

**PROCESS & INSTRUMENTATION DIAGRAMS  
(P&IDS)  
FOR  
TANK SYSTEMS**

*[NOTE: Sheets to be added or removed are indicated by a **RED** note.]*

Revised: January 2014

# CWM CHEMICAL SERVICES, LLC. MODEL CITY FACILITY

1550 BALMER ROAD  
MODEL CITY, NEW YORK 14107

SHEET NO.	DRAWING NO.	SHEET NAME	SHEET NO.	DRAWING NO.	SHEET NAME
1	C-INDEX	INDEX SHEET	14	C-TKFR	LEACHATE TANK FARM
2	C-110	LEGENDS AND SYMBOLS	15	C-FRACTK	FRAC TANK FT-3
3	C-RMU-1	RMU-1 LIFT STATION	16	C-111	UNLOADING AND PRETREATMENT
4	C-N2	SLF 7 & 11 LEACHATE HOLDING	17	C-111A	SOLIDS DISSOLVING, SULFURIC ACID, DRUMS AND SUMPS
5	C-N3	SLF 10 LEACHATE HOLDING	18	C-112	OXIDIZING AND REDUCING
6	C-N4	SLF 1-6,7,10&11 OIL WATER SEPARATOR	19	C-112A	BIOTOWERS & CHEMICAL FEED
7	C-PRETR	SLF 1-6 PRETREATMENT	20	C-113	ALKALIZATION
8	C-GW	GROUNDWATER PUMPING SYSTEMS	21	C-113A	FILTER PRESSES
8A	C-GWA	GROUNDWATER PUMPING SYSTEMS PA III & PA IV	22	C-113B	CAUSTIC SCRUBBER
9	C-SLF12	SLF 12 OIL WATER SEPARATOR	23	C-113C	LIME SYSTEM
10	C-TRCKWA	TRUCK WASH SUMP	24	C-200	MULTI-MEDIA FILTRATION SYSTEM
11	C-STAB	MAIN STABILIZATION	25	C-210	ADSORPTION SYSTEM
12	C-STABN	STABILIZATION NORTH EXPANSION	25a	C-220	ARSENIC REMOVAL SYSTEM
13	C-STABS	STABILIZATION SOUTH EXPANSION	26	C-109	FILTRATE AND TREATED EFFLUENT TANKS
			27	C-T-58	TANK 58

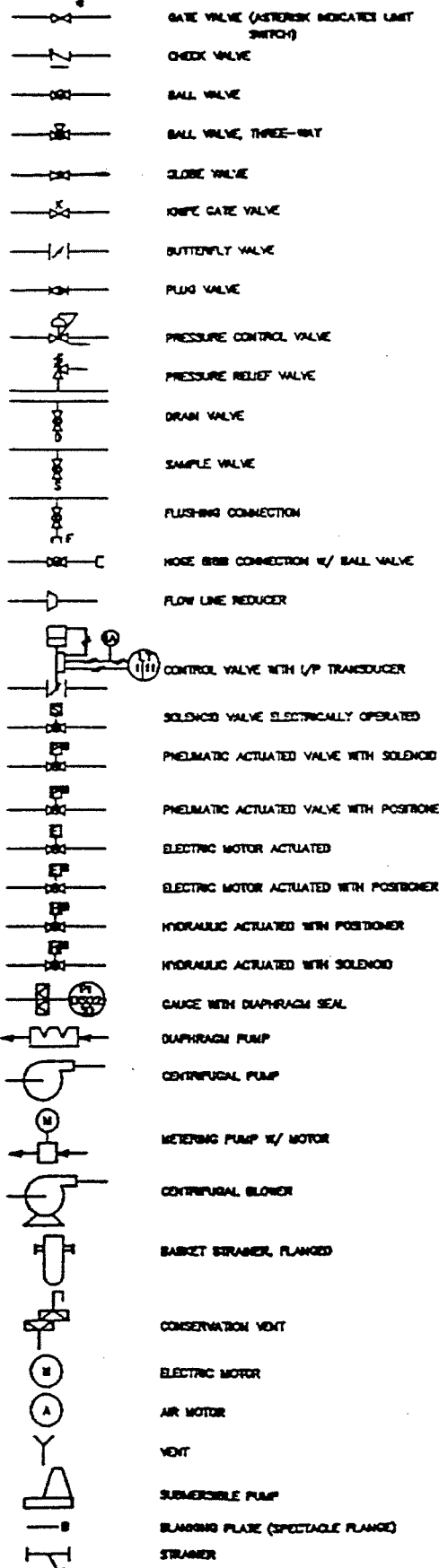
**NOTES**

- ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993. UPDATED AND REVISED BY BBL MARCH AND DECEMBER 2001.

REVISION	NO.	BY	DATE		PROJECT NO: 05-7017	TITLE: INDEX SHEET PROCESS AND INSTRUMENTATION DIAGRAM			DRAWING	
					SCALE: NOT TO SCALE					
ADDED SHEET NO. 25a.		TAS	9/10/13		DWG: 05-7017-INDEX SHT.DWG	PROJECT: CWM FACILITY P & ID UPDATES			C-INDEX	
ADDED SHEET NO. 8A.		JCD	4/24/12		DRAWN BY: AJZ	CHECKED BY: BDS	PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY			
RENAMED SHEET NO. 26.		BDS	5/2/06		DATE: MAY 2006	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	(SHEET 1)	
				<b>EnSol, Inc.</b> Environmental Solutions 661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928						

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.

VALVE AND FLOW LINE EQUIPMENT LEGEND



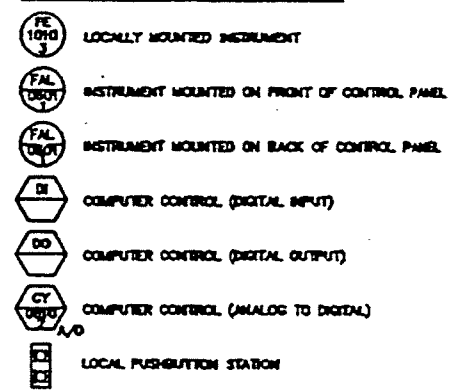
DEFINITIONS - INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER	SUCCEEDING LETTERS			
	MEASURED OR INTRINSIC VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION
A	ANALYSIS		ALARM	
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)		USER'S CHOICE	CONTROL
D	DENSITY(MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL		
E	VOLTAGE (EMF)		PRIMARY ELEMENT	
F	FLOW RATE	RATIO(FRACTION)		
G	GAGING (DIMENSIONAL)		GLASS	
H	HANDMANUALLY INITIATED			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME OR TIME SCHEDULE			CONTROL STATION
L	LEVEL		LIGHT(FLUO)	
M	MOISTURE OR HUMIDITY			LOW MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
P	PRESSURE OR VACUUM		USER'S CHOICE	
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE		
R	RADIOACTIVITY		RECORD OR PRINT REGULATING	
S	SPEED OR FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE			MULTIFUNCTION VALVE, DAMPER, OR LOUVER
V	VISCOSITY			MULTIFUNCTION
W	WEIGHT OR FORCE		WELL	
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED
Y	USER'S CHOICE		RELAY OR COMPUTE	
Z	POSITION		DRIVE, ACTUATE, OR UNCLASSIFIED FINAL CONTROL ELEMENT	

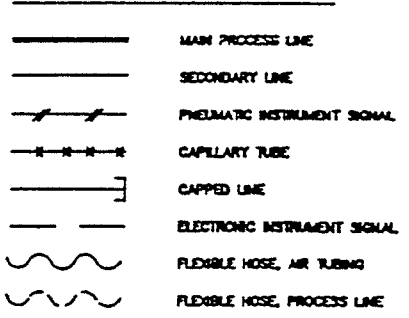
LINE ABBREVIATIONS AND DEFINITIONS

ASO	AMMONIA STRIPPER OVERFLOW	PA	PLANT AIR, 100 PSIG
ASF	AMMONIA STRIPPER FEED	RTV	REDUCING TANK VENT
ASD	AMMONIA STRIPPER DISCHARGE	RTD	REDUCING TANK DISCHARGE
ASV	AMMONIA STRIPPER VENT	RCV	REACTOR TANK VENT
ASR	AMMONIA STRIPPER RECYCLE	RDD	REACTOR TANK DISCHARGE
		RTO	REDUCING TANK OVERFLOW
		RRO	REACTOR TANK OVERFLOW
CAR	CHEMICAL ADDITION TO REACTORS	SAD	SULFURIC ACID DISCHARGE
CR	CAUSTIC SCRUBBER INTRODUCTION	STC	SPECIAL TREATMENT CAUSTIC
CSD	CAUSTIC SCRUBBER DISCHARGE	STD	SPECIAL TREATMENT DISCHARGE
CAO	CHEMICAL ADDITION DISCHARGE	STF	STRIPPER FEED TO DRUMS
CTU	CAUSTIC TRUCK UNLOADING	STV	SPECIAL TREATMENT VENT
CSR	CAUSTIC SCRUBBER RECYCLE	SAU	SULFURIC ACID UNLOADING
CSF	CAUSTIC STORAGE SUPPLY	STO	SPECIAL TREATMENT TANK OVERFLOW
CSV	CAUSTIC SCRUBBER VENT	STO	STRIPPER FEED TANK OVERFLOW
CSD	CAUSTIC SCRUBBER OVERFLOW	SAD	SULFURIC ACID STORAGE TANK OVERFLOW
CTO	CAUSTIC STORAGE TANK OVERFLOW	SPD	SEAL POT OVERFLOW
CSOA	CAUSTIC SCRUBBER DISCHARGE - A (112-03)	SSD	SLUDGE STORAGE DISCHARGE
CSOB	CAUSTIC SCRUBBER DISCHARGE - B (112-03)	SLO	SPILL LIQUID DISCHARGE
		SLS	SPILL LIQUID SUMP
DUR	DRUM UNLOADING - REDUCING	STC	SPECIAL TREATMENT CAUSTIC
DUO	DRUM UNLOADING - OXIDIZING	SSO	SLUDGE STORAGE TANK OVERFLOW
DUV	DRUM UNLOADING VENT	STV	SLURRY (LIME) TANK VENT
DSO	DRUM SOLIDS DISCHARGE	SSV	SLUDGE STORAGE VENT
		STH	SAMPLE TAP HEADER
FDN	FILTER DISCHARGE TO NEUTRALIZATION		
FDS	FILTER DISCHARGE TO SLUDGE STORAGE		
FTH	FINAL FILTRATE TO HOLDING		
FPV	FILTER PRESS VENT		
FSH	FUME SCRUBBER HEADER		
FFD	FILTER PRESS DISCHARGE		
FFM	FINAL FILTER DISCHARGE		
FED	FILTRATE EQUALIZATION OVERFLOW		
FEO	FILTRATE EQUALIZATION DISCHARGE		
LLS	LANDFILL LEACHATE TO STORAGE		
LTO	LEACHATE TANK OVERFLOW		
LTU	LIME TRUCK UNLOADING		
LSF	LIME SLURRY TO FILTER		
LSD	LIME SLURRY TANK OVERFLOW		
LSO	LEACHATE SUMP DISCHARGE		
OSF	ORGANIC STORAGE FEED		
OSV	ORGANIC STORAGE VENT		
OTD	OXIDIZING TANK DISCHARGE		
OTV	OXIDIZING TANK VENT		
OTO	OXIDIZING TANK OVERFLOW		
OSO	ORGANIC STORAGE TANK OVERFLOW		
OSD	ORGANIC STORAGE DRAINAGE		
		TUD	TRUCK UNLOADING OXIDIZING
		TUR	TRUCK UNLOADING REDUCING
		TUN	TRUCK UNLOADING NEUTRALIZATION
		WN	PLANT WATER
		WNL	PLANT WATER, LIME SLURRY TANK
		WNO	PLANT WATER, CAUSTIC DILUTION
		WNC	PLANT WATER TO CHEMICAL ADDITION
		WNS	PLANT WATER TO SCRUBBER
		WSS	PLANT WATER, SLUDGE STORAGE

GENERAL INSTRUMENT SYMBOLS



INSTRUMENT AND PROCESS LINE

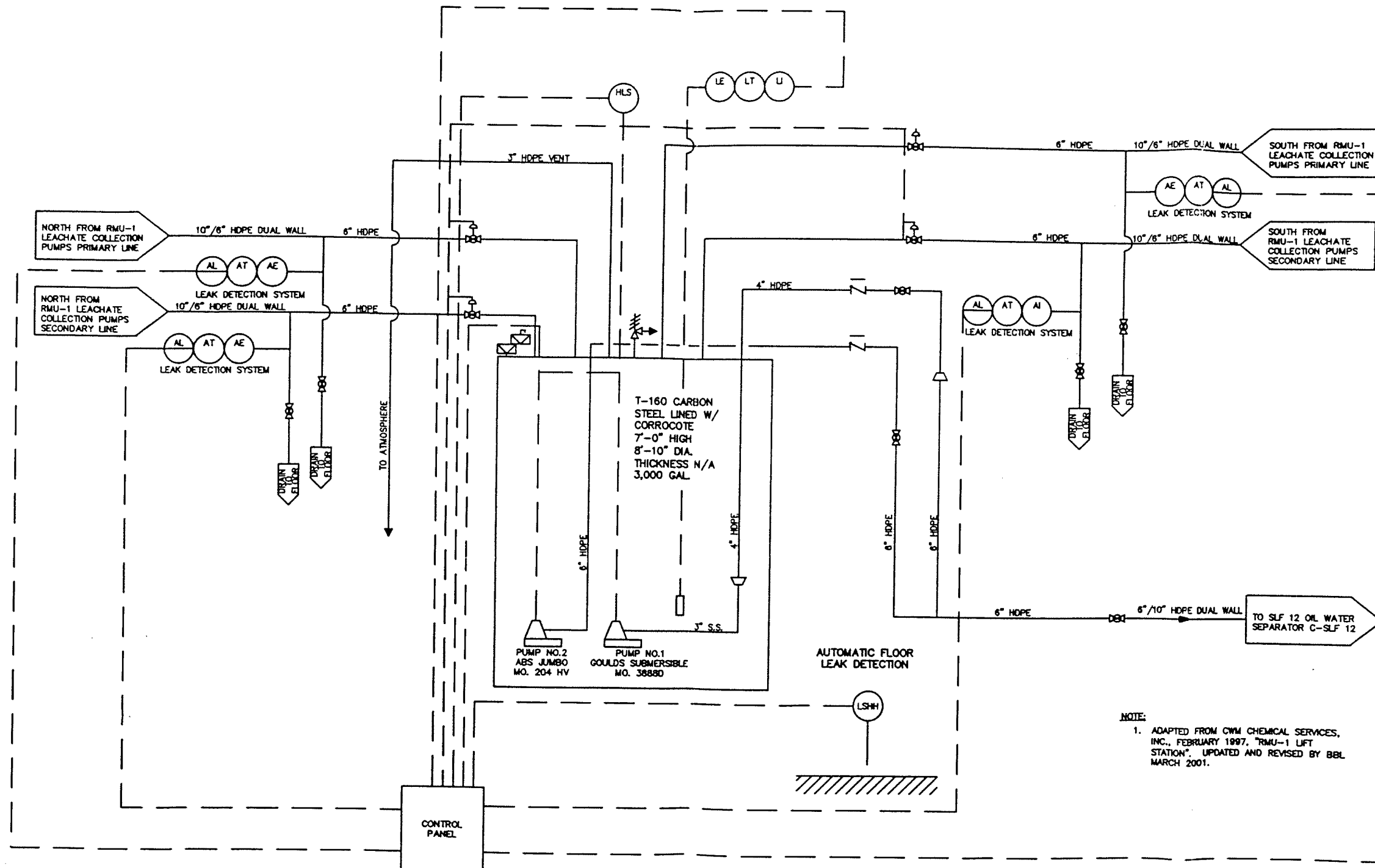


NO.	REVISIONS	MADE	CHK	DATE	NO.	REVISIONS	MADE	CHK	DATE

<table border="1"> <tr> <th>REVISED</th> <th>DATE</th> </tr> <tr> <td>DESIGN: JPO</td> <td>3-1-83</td> </tr> <tr> <td>DESIGN CHECKED: WCL</td> <td>3-8-83</td> </tr> <tr> <td>APP'D: CHL</td> <td>3-8-83</td> </tr> <tr> <td>APP'D:</td> <td></td> </tr> <tr> <td>APP'D:</td> <td></td> </tr> </table>	REVISED	DATE	DESIGN: JPO	3-1-83	DESIGN CHECKED: WCL	3-8-83	APP'D: CHL	3-8-83	APP'D:		APP'D:		<p><b>PROCESS &amp; INSTRUMENTATION DIAGRAM LEGENDS &amp; SYMBOLS</b></p> <p>MODEL CITY FACILITY CWM-CHEMICAL SERVICES, INC.</p>	<p><b>RUST ENVIRONMENT &amp; INFRASTRUCTURE</b></p> <p>PROJECT NUMBER: 18808.400 DATE: 3-8-83</p> <p>FILE NUMBER: C-110 SHEET NUMBER: 2</p>
REVISED	DATE													
DESIGN: JPO	3-1-83													
DESIGN CHECKED: WCL	3-8-83													
APP'D: CHL	3-8-83													
APP'D:														
APP'D:														

The drawings, specifications and other documents prepared by the Engineer for this project are instruments of the Engineer's service for use solely with respect to this project and, unless otherwise provided, the Engineer shall be deemed the author of these documents and shall retain all statutory and other reserved rights, including the copyright.

NOTE: Sheet to be removed.



NOTE:  
1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "RMU-1 LIFT STATION". UPDATED AND REVISED BY BBL MARCH 2001.

L: ON=, OFF=REF\*  
P: CONT=MVB,PCP  
12/31/01 SYR-54 DUP ROC-54-SLM  
05052080/05052001.DWG

Graphic Scale  
**NOT TO SCALE**  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
1	12/01	GENERAL SYSTEM UPDATES	BDS

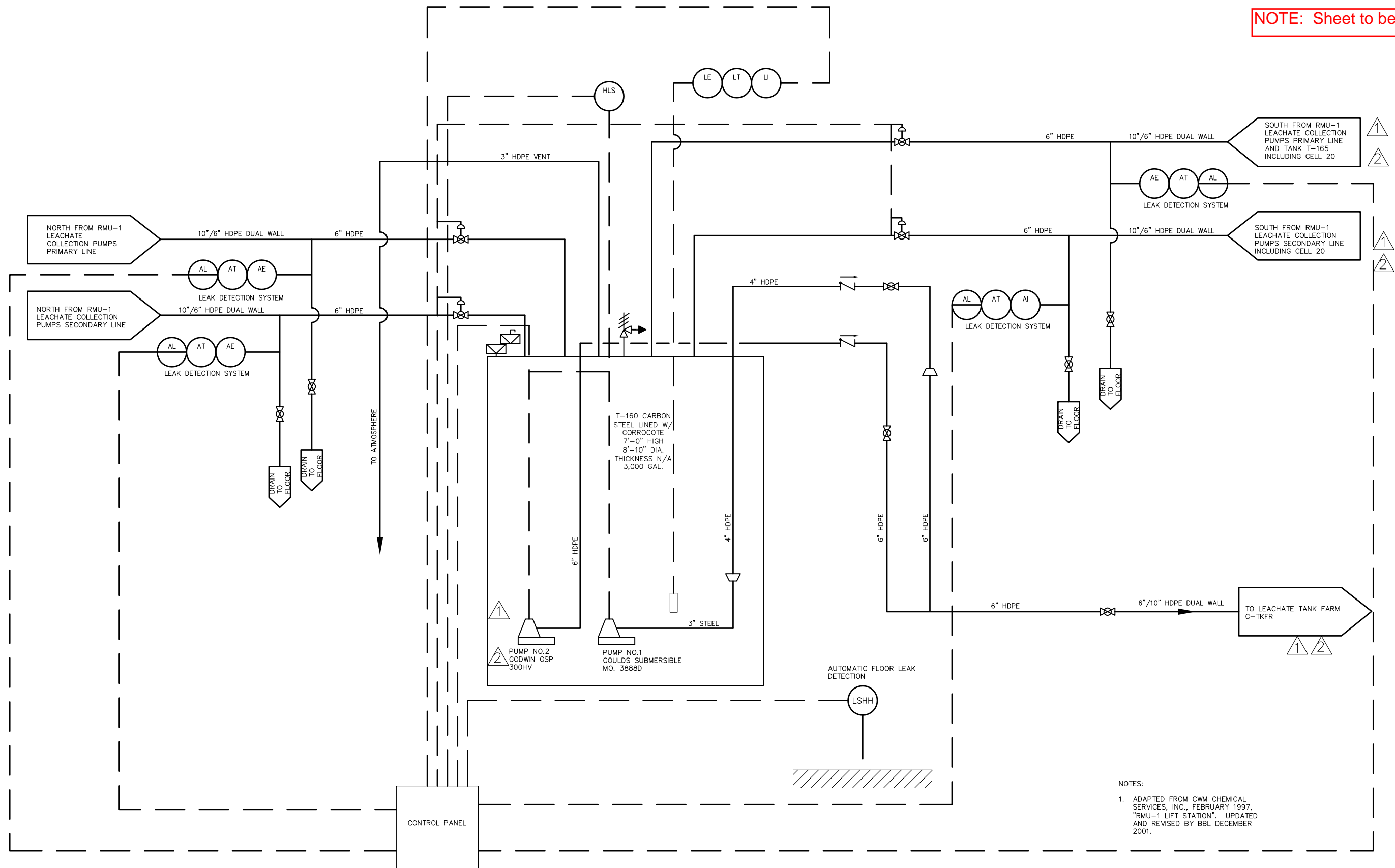
Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

CWM CHEMICAL SERVICES, LLC  
MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**RMU-1 LIFT STATION**

File Number FILE NO.	DRAWING NO.
Date DECEMBER 2001	<b>C-RMU-1</b>
Blasland, Bouck & Lee, Inc. Corporate Headquarters 6723 Towpath Road Syracuse, NY 13214 315-446-9120	
(SHEET 3)	

NOTE: Sheet to be added.



NOTES:  
 1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "RMU-1 LIFT STATION". UPDATED AND REVISED BY BBL DECEMBER 2001.

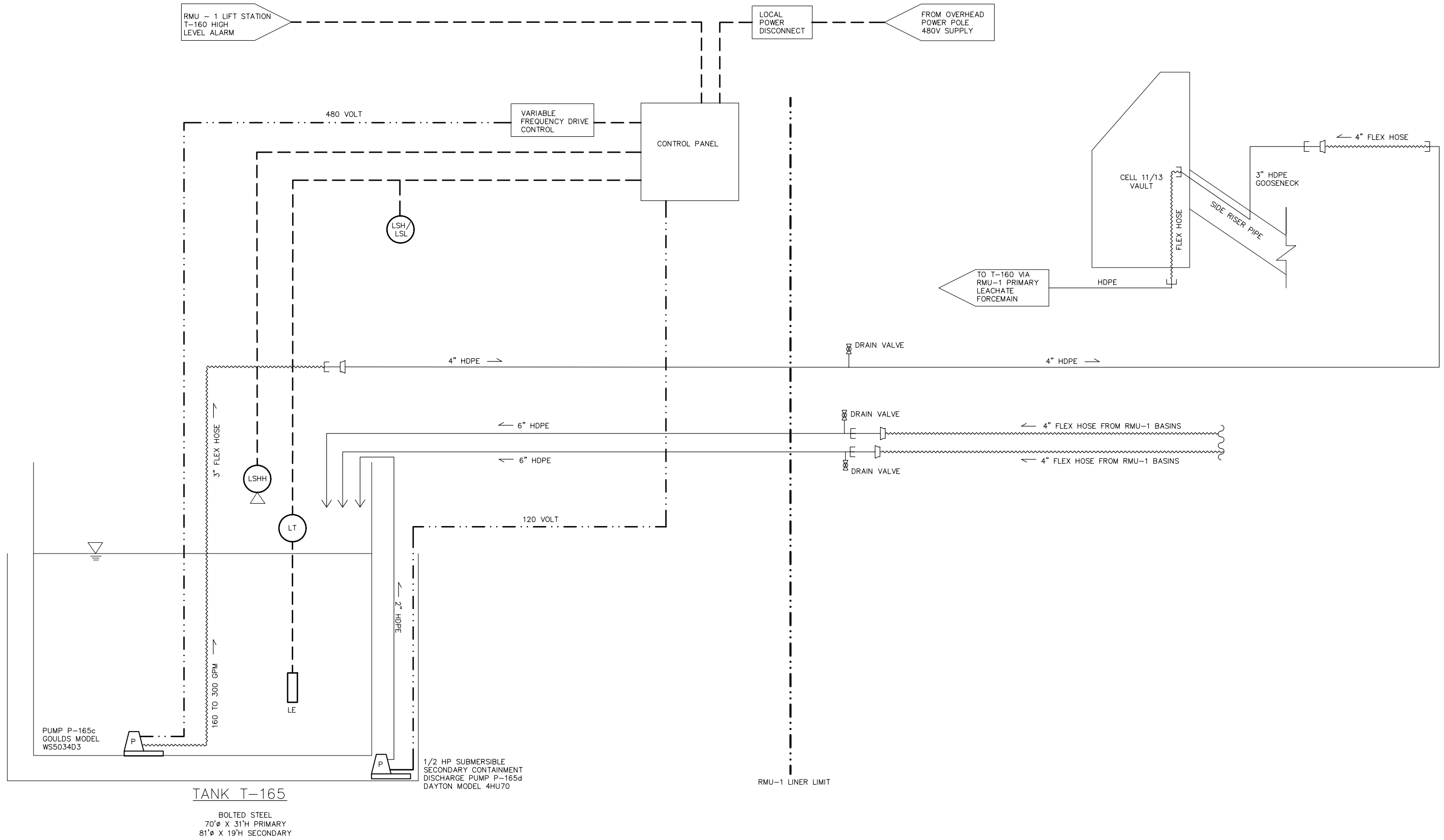
X:\AAAgj\CWM\13-7017\_RM-2\_Permit\_P & ID\_Drawing\_Updates (Task 3)\ACAD\003\_12-7008\_C-RMU-1\_SHT3\_REV 2.dwg, 5/24/2013 1:31:27 PM

REVISION	NO.	BY	DATE
ADDED RMU-2 CELL 20 AND GENERAL SYSTEM UPDATES	1	JCD	5/23/13
GENERAL SYSTEM UPDATES	2	JCD	3/20/12

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	12-7008	TITLE:	RMU-1 LIFT STATION WITH RMU-2 CELL 20 PROCESS AND INSTRUMENTATION DIAGRAM		
SCALE:	NOT TO SCALE	PROJECT:	CWM FACILITY P&ID UPDATES		
DWG:	D03_12-7008 C-RMU-1 SHT3 REV 2.dwg	PREPARED FOR:	CWM CHEMICAL SERVICES, LLC. MODEL CITY FACILITY		
DES. BY:	JCD	DRW. BY:	JCD	CHK. BY:	BDS
DATE:	MARCH 2012	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	
		DRAWING		C-RMU-1 WITH CELL 20 (SHEET 3)	

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.



**TANK T-165**  
 BOLTED STEEL  
 70"Ø X 31'H PRIMARY  
 81"Ø X 19'H SECONDARY

PUMP P-165c  
 GOULDS MODEL  
 WS5034D3

1/2 HP SUBMERSIBLE  
 SECONDARY CONTAINMENT  
 DISCHARGE PUMP P-165d  
 DAYTON MODEL 4HU70

X:\AA\p\CWM\12-7008 Sitewide Permit P & ID Drawing Updates (Task 4) Tank T-165 (Sheet 3A) VACAD\03A\_12-7008-Tank T-165 SHT3A.dwg, Sheet 3, 5/17/2012 8:34:32 AM, J. Darling

REVISION	NO.	BY	DATE

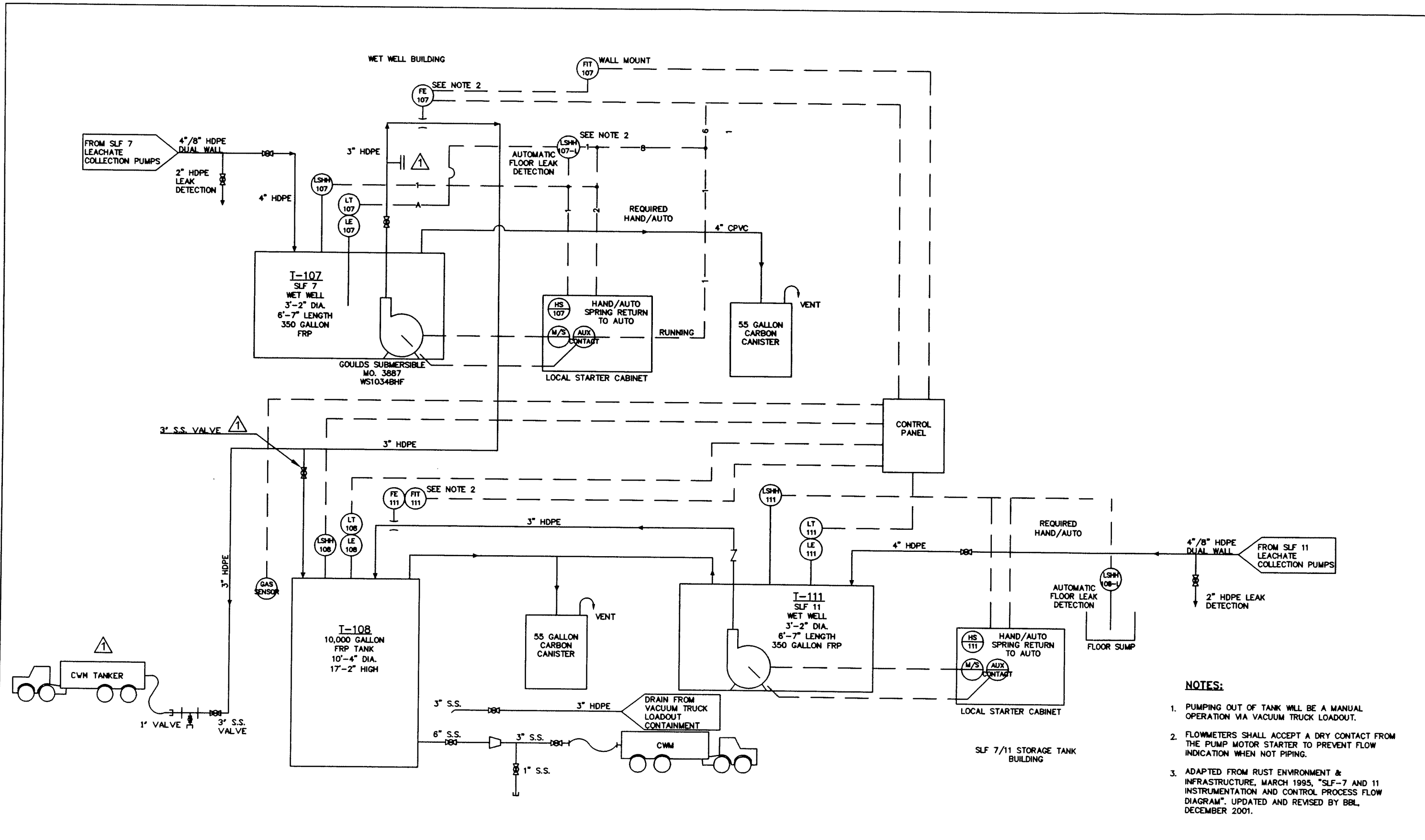
**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	12-7008
SCALE:	NOT TO SCALE
DWG:	D03A_12-7008-Tank T-165 SHT3A.dwg
DRAWN BY:	JCD
CHECKED BY:	BDS
DATE:	MAY 2012

TITLE:	<b>TANK T-165</b>		
	PROCESS AND INSTRUMENTATION DIAGRAM		
PROJECT:	CWM FACILITY P&ID UPDATES		
PREPARED FOR:	CWM CHEMICAL SERVICES, LLC		
	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK

DRAWING  
**C-T-165**  
 (SHEET 3A)

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.



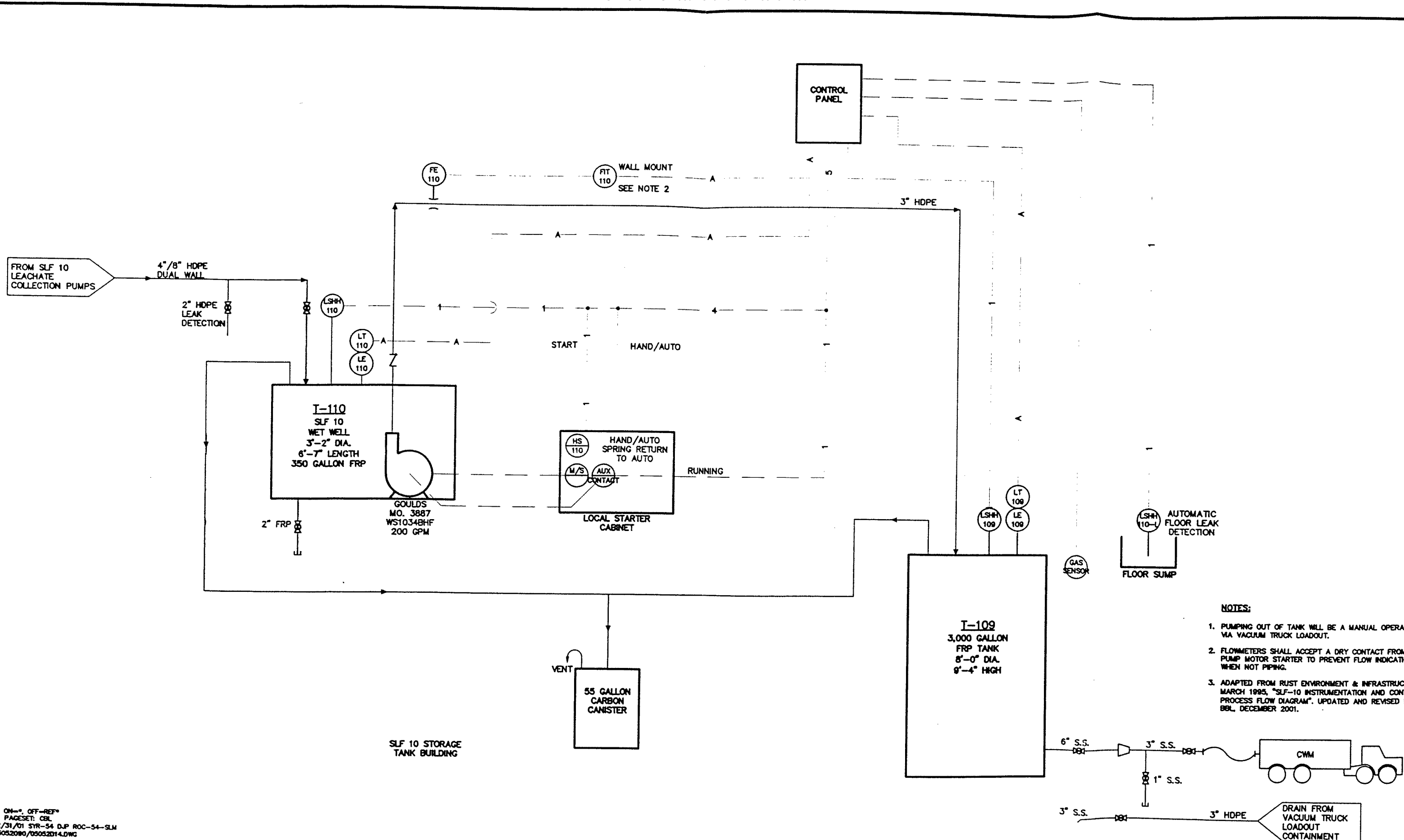
- NOTES:**
- PUMPING OUT OF TANK WILL BE A MANUAL OPERATION VIA VACUUM TRUCK LOADOUT.
  - FLOWMETERS SHALL ACCEPT A DRY CONTACT FROM THE PUMP MOTOR STARTER TO PREVENT FLOW INDICATION WHEN NOT PIPING.
  - ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MARCH 1995, "SLF-7 AND 11 INSTRUMENTATION AND CONTROL PROCESS FLOW DIAGRAM". UPDATED AND REVISED BY BBL, DECEMBER 2001.

REVISION	REV	BY	DATE
Added blank flange. Added 3" HDPE bypass line with valves to tanker unloading from T-107.	1	KMH	7/23/08

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO: 08-7033	TITLE: SLF 7 & 11 LEACHATE HOLDING PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NOT TO SCALE	PROJECT: CWM FACILITY P & ID UPDATES
DWG: 08-7033 C-N2 Sht.04.dwg	PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY
DRAWN BY: KMH CHECKED BY: BDS	TOWN OF PORTER COUNTY OF NIAGARA STATE OF NEW YORK
DATE: JULY 2008	DRAWING C-N2 (SHEET 4)

X:\AA\Ap\CWM\08-7033 Sht.04.dwg, HP 1220C 11x17, 7/23/2008 1:39:13 PM, Brian Shah, EnSol Inc. 1:1  
 PHD Drawing Updates (Task 12)\ACAD\08-7033 C-N2 Sht.04.dwg, HP 1220C 11x17, 7/23/2008 1:39:13 PM, Brian Shah, EnSol Inc. 1:1  
 X:\AA\Ap\CWM\08-7033 Sht.04.dwg, HP 1220C 11x17, 7/23/2008 1:39:13 PM, Brian Shah, EnSol Inc. 1:1



- NOTES:**
- PUMPING OUT OF TANK WILL BE A MANUAL OPERATION VIA VACUUM TRUCK LOADOUT.
  - FLOWMETERS SHALL ACCEPT A DRY CONTACT FROM THE PUMP MOTOR STARTER TO PREVENT FLOW INDICATION WHEN NOT PIPING.
  - ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MARCH 1995, "SLF-10 INSTRUMENTATION AND CONTROL PROCESS FLOW DIAGRAM". UPDATED AND REVISED BY BBL, DECEMBER 2001.

L: ON-OFF-REF  
 P: PAGESET: CBL  
 12/31/01 SYR-54 D.P. ROC-54-SLM  
 050520980/05052014.DWG

Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init	Project Mgr.

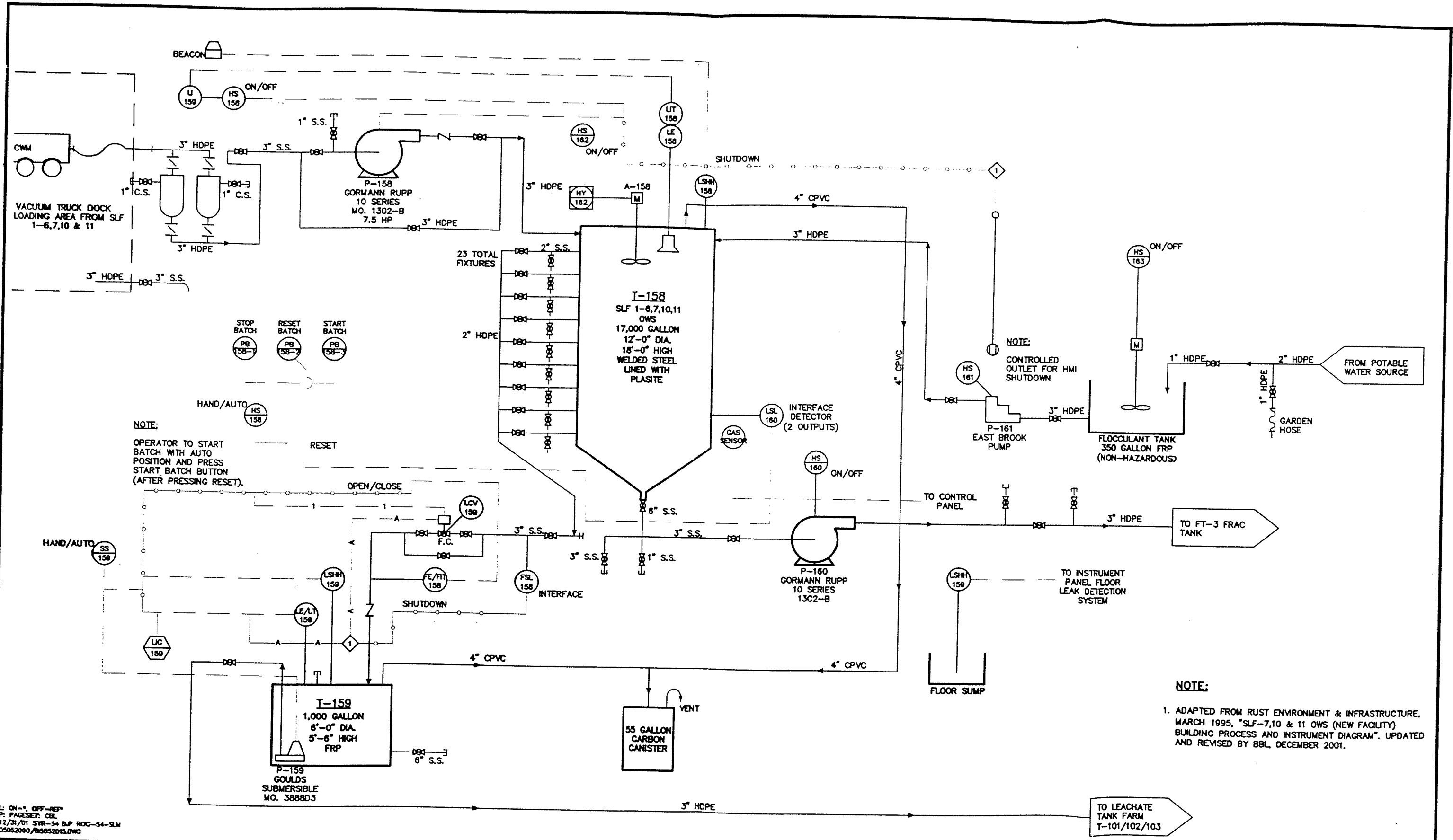
**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**SLF 10 LEACHATE HOLDING**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Towpath Road  
 Syracuse, NY 13214  
 315-446-9120

DRAWING NO.  
**C-N3**  
 (SHEET 5)





NOTE:  
OPERATOR TO START BATCH WITH AUTO POSITION WITH PRESS START BATCH BUTTON (AFTER PRESSING RESET).

NOTE:  
CONTROLLED OUTLET FOR HMI SHUTDOWN

NOTE:  
1. ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MARCH 1995, "SLF-7,10 & 11 OWS (NEW FACILITY) BUILDING PROCESS AND INSTRUMENTATION DIAGRAM". UPDATED AND REVISED BY BBL, DECEMBER 2001.

L: ON-OFF-RES\*  
P: PAGESET: CBL  
12/31/01 SVR-54 DUP ROC-54-SLM  
05052090/05052015.0WG

Graphic Scale  
**NOT TO SCALE**  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

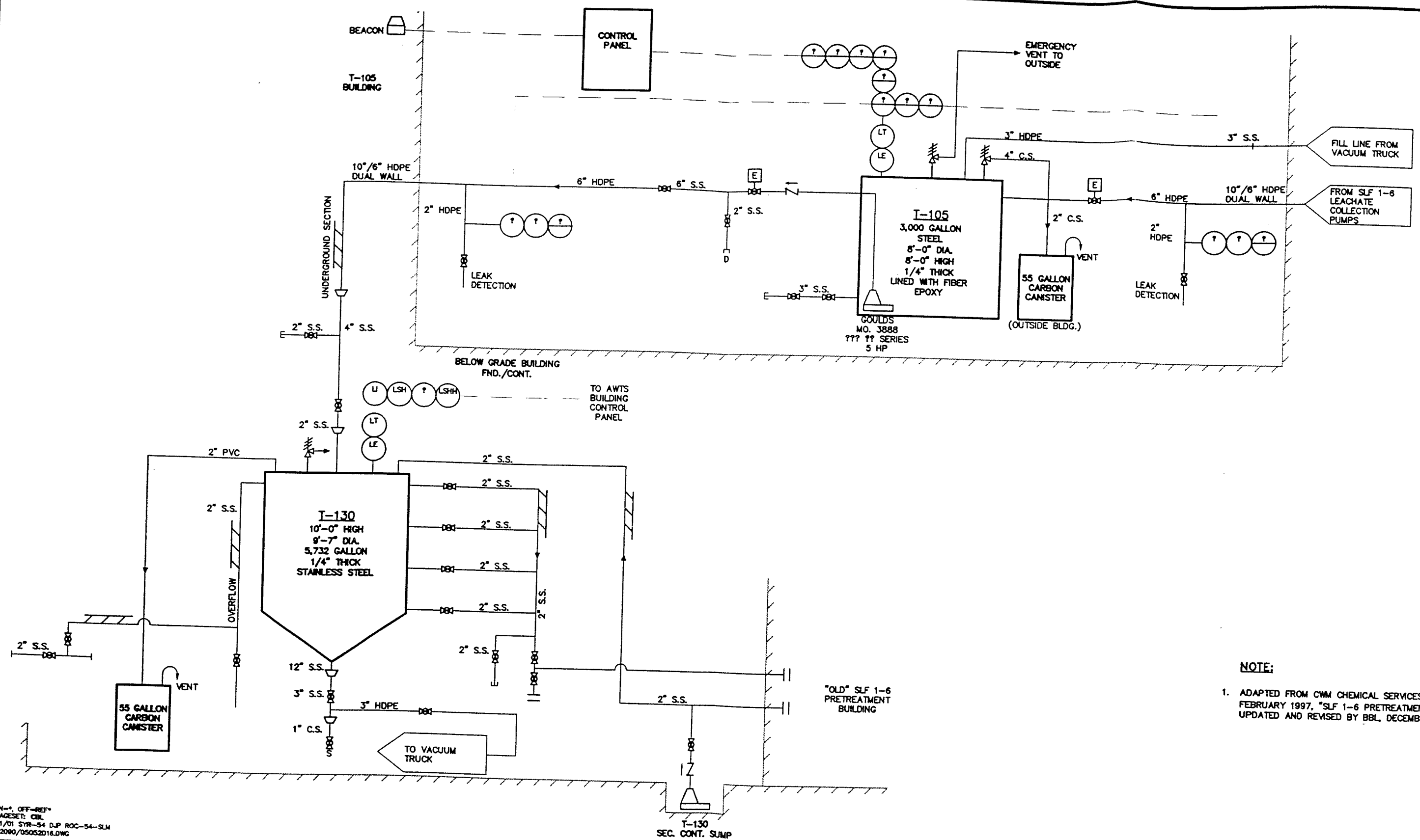
No.	Date	Revisions	Int	Project Mgr.

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

CWM CHEMICAL SERVICES, LLC  
MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
SLF 1-6,7,10 & 11 OIL WATER SEPARATOR

File Number  
FILE NO.  
Date  
DECEMBER 2001  
Blasland, Bouck & Lee, Inc.  
Corporate Headquarters  
6723 Towpath Road  
Syracuse, NY 13214  
315-448-0120

DRAWING NO.  
**C-N4**  
(SHEET 6)



**NOTE:**  
 1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "SLF 1-6 PRETREATMENT". UPDATED AND REVISED BY BBL, DECEMBER 2001.

L: ON=\*, OFF=REF\*  
 P: PAGESET: CBL  
 12/31/01 SYR-54 DUP ROC-54-SLM  
 05052090/05052016.DWG

Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

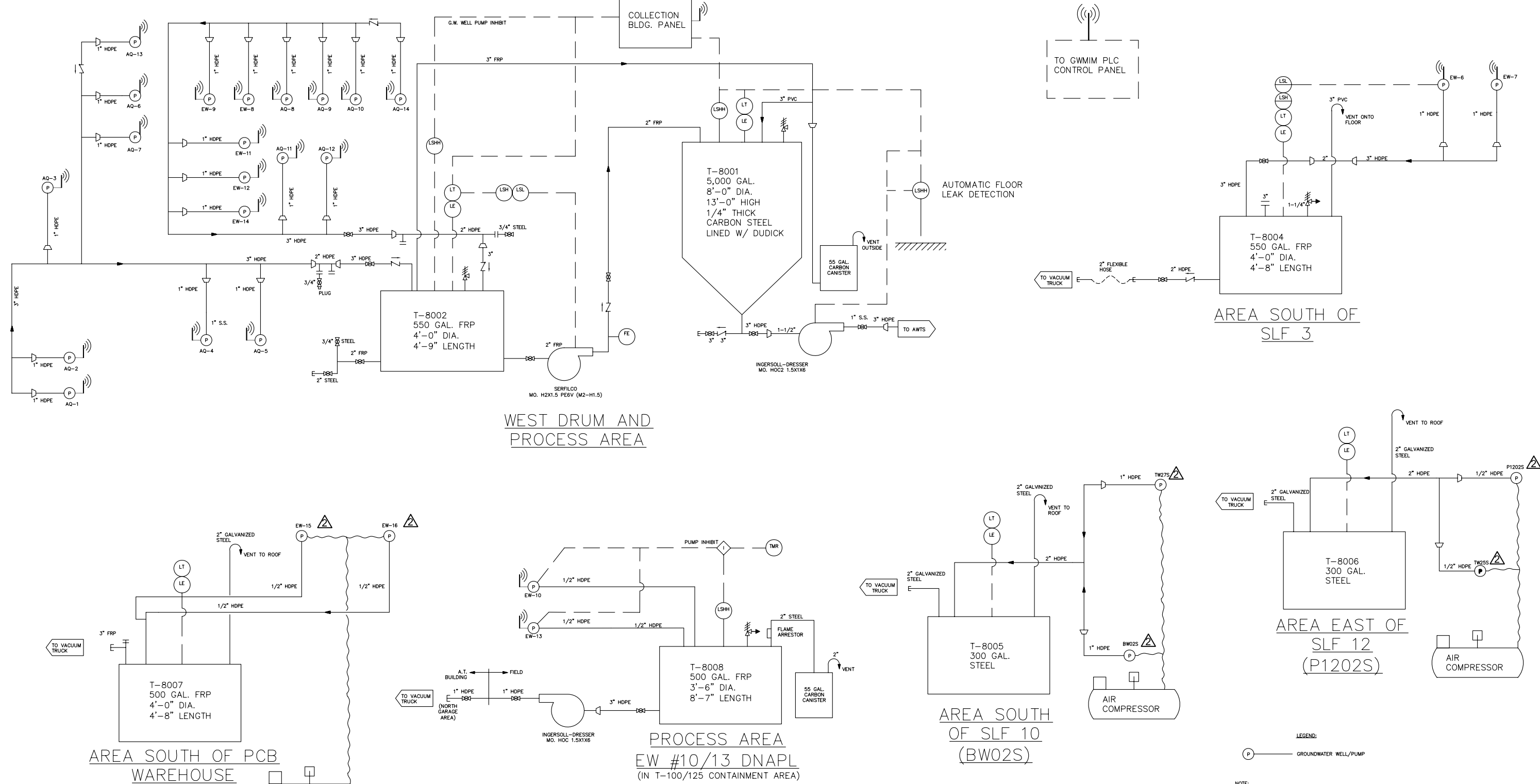
No.	Date	Revisions	Init	Project Mgr.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**SLF 1-6 PRETREATMENT**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Towpath Road  
 Syracuse, NY 13214

DRAWING NO.  
**C-PRETR**



REVISION	NO.	BY	DATE
ADDED WELL ID'S TO T-8005, T-8006, T-8007 SYSTEMS	1	JCD	4/24/12
Revised tanks T-8001, T-8002, T-8004, T-8008 piping and controls.	2	MJM	5/14/10

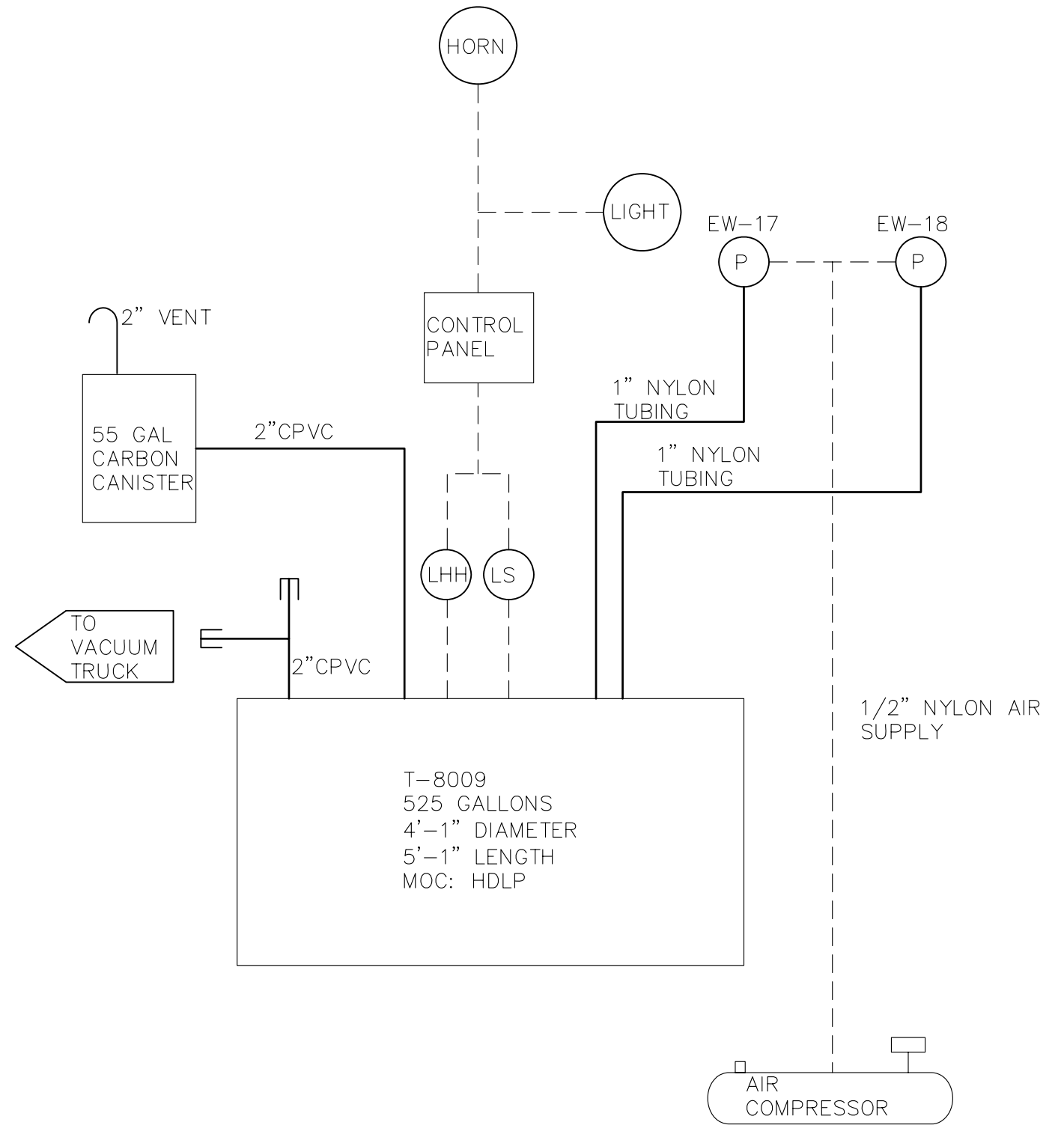
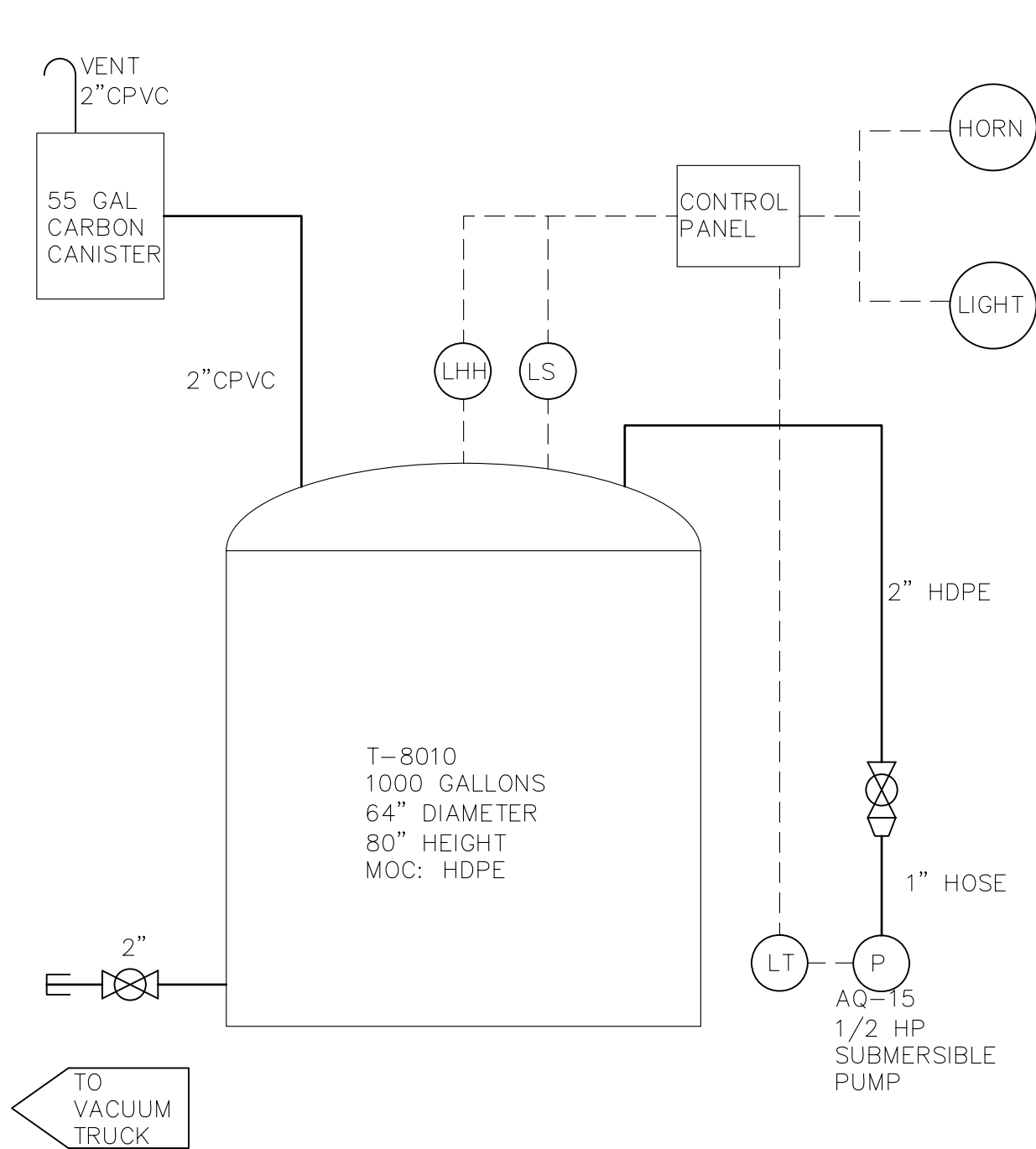

**EnSol, Inc.**  
**Environmental Solutions**  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	09-7026
SCALE:	NOT TO SCALE
DWG:	D08_09-7026-C-GW-SHT8-REV1.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	MAY 2010

TITLE:	<b>GROUNDWATER PUMPING SYSTEMS PROCESS AND INSTRUMENTATION DIAGRAM</b>		
PROJECT:	CWM FACILITY P & ID UPDATES		
PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	

DRAWING  
**C-GW**  
 (SHEET 8)

X:\AAApj\CWM\12-7008 Sitewide Permit P & ID Drawing Updates (Task 4) Groundwater Pumping Systems (Sheets 8 & 9) ID08\_09-7026-C-GW-SHT8-REV1.DWG, 4/24/2012 2:56:37 PM, J. Drafting



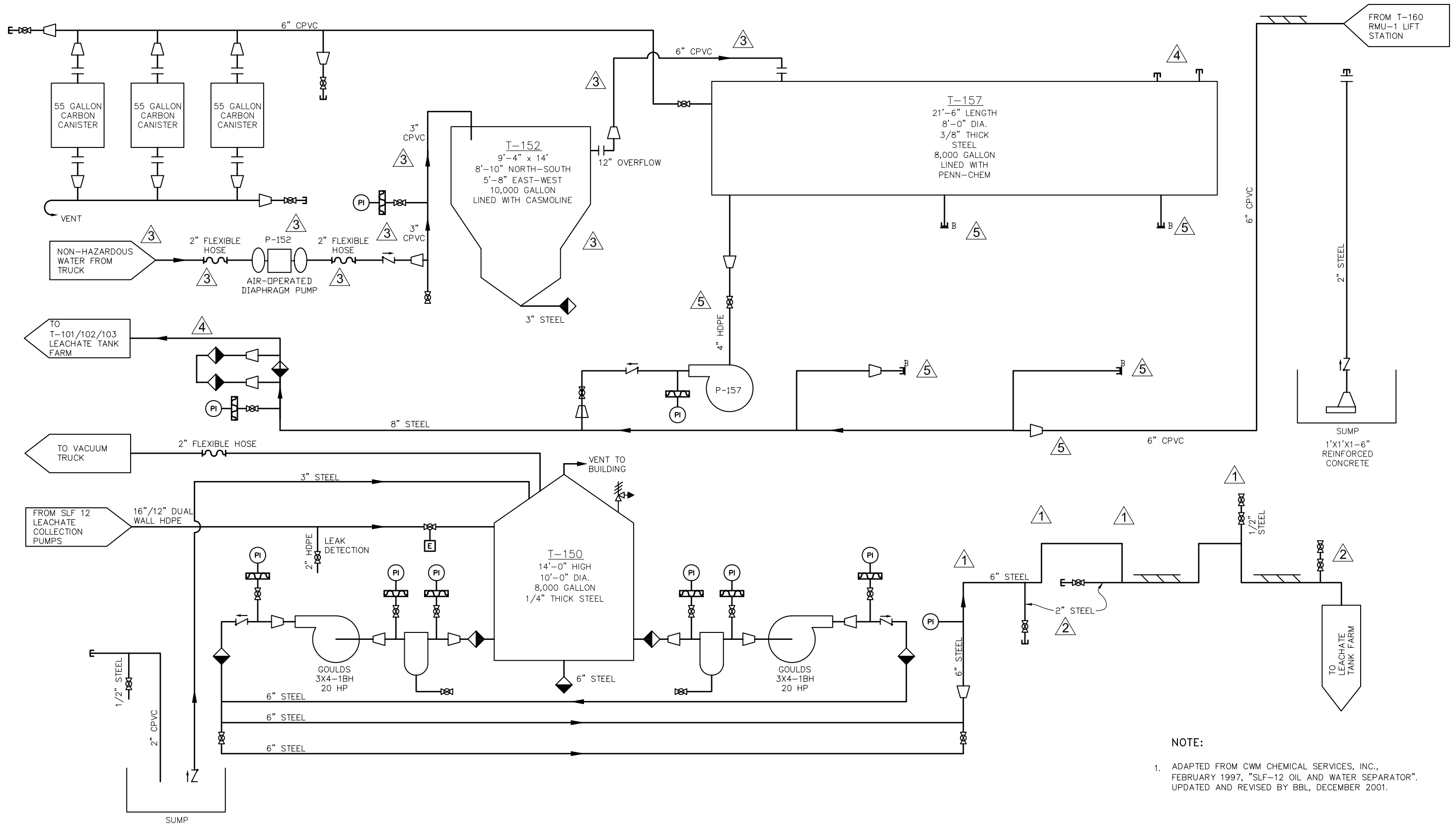
X:\AA\A\CWM\12-7008 Sitewide Permit P & ID Drawing Updates (Task 4) Groundwater Pumping Systems (Sheets 8 & 8A) D08A-12-7008-C-GWA-SHT8A.dwg, 4/24/2012 2:53:20 PM, J. Darling

REVISION	NO.	BY	DATE

**EnSol, Inc.**  
Environmental Solutions  
661 MAIN STREET  
NIAGARA FALLS, NY 14301  
PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO: 12-7008	TITLE: <b>GROUNDWATER PUMPING SYSTEM PA III AND PA IV</b>		
SCALE: NOT TO SCALE	PROCESS AND INSTRUMENTATION DIAGRAM		
DWG: D08A-12-7008-C-GWA-SHT8A.dwg	PROJECT: CWM FACILITY P&ID UPDATES		
DRAWN BY: JCD	CHECKED BY: BDS	PREPARED FOR: CWM CHEMICAL SERVICES, LLC. MODEL CITY FACILITY	
DATE: APRIL 2012	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK
DRAWING			DRAWING
C-GWA			C-GWA
			(SHEET 8A)

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER ANY ITEM IN ANY WAY.



NOTE:  
 1. ADAPTED FROM CWM CHEMICAL SERVICES, INC.,  
 FEBRUARY 1997, "SLF-12 OIL AND WATER SEPARATOR".  
 UPDATED AND REVISED BY BBL, DECEMBER 2001.

REVISION	NO.	BY	DATE
REMOVED P-158 AND P-159 AND 8" Ø STEEL PIPING, BLIND FLANGED T-157 OUTLETS.	3	JCD	4/24/12
DISCONNECTED/ CLOSED TANK T-157. REMOVED 8" Ø PIPING, ADDED 6" Ø CPVC BY PASS.	4	CAC	9/14/11
ADDED TANK T-152 AND ASSOCIATED PIPING & COMPONENTS	5	MJM	4/25/08
REMOVED BAG FILTERS; LABELLED PUMPS; REMOVED PRESSURE GAGE AND VALVES; LABELLED "2" STEEL".	6	MJM	11/15/06
REMOVAL OF VACUUM RELIEFS	7	MJM	7/28/06

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017
SCALE:	NOT TO SCALE
DWG:	05-7017-SLF12 OWS SHT9.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	JULY 2006

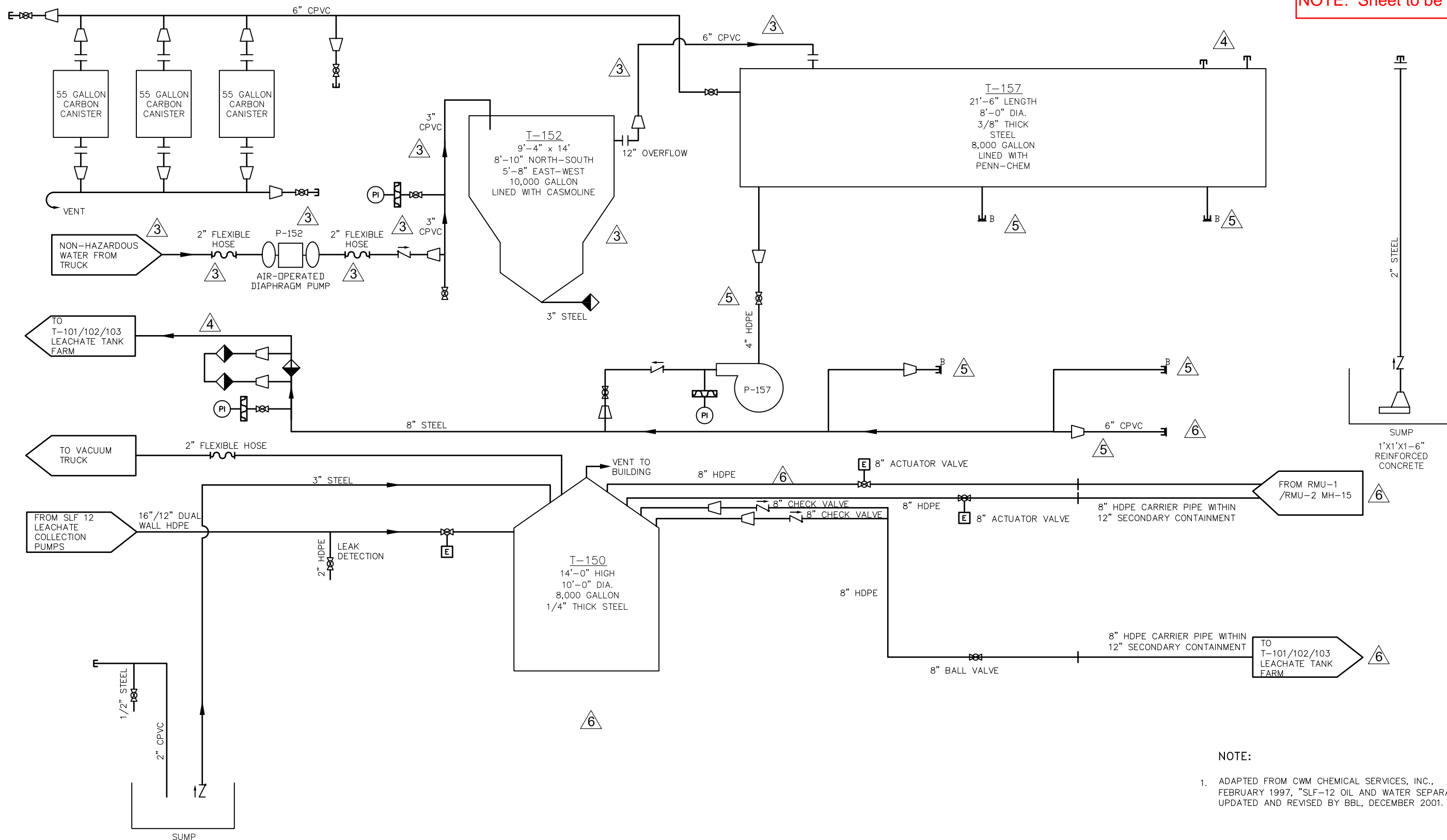
TITLE: <b>SLF12 OIL WATER SEPARATOR PROCESS AND INSTRUMENTATION DIAGRAM</b>		
PROJECT: CWM FACILITY P & ID UPDATES		
PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK

DRAWING  
**C-SLF12**  
 (SHEET 9)

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7208 FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.

X:\AAApj\CWM\12-7008 Sitewide Permit P & ID Drawing Updates (Task 4) \SLF 12 OWS (Sheet 9) \ACAD\ID09\_08-7020-SLF12 OWS SHT9 REV.05.dwg, 4/24/2012 2:59:45 PM, J. Darling

**NOTE: Sheet to be added.**



**NOTE:**  
 1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "SLF-12 OIL AND WATER SEPARATOR". UPDATED AND REVISED BY BBL, DECEMBER 2001.

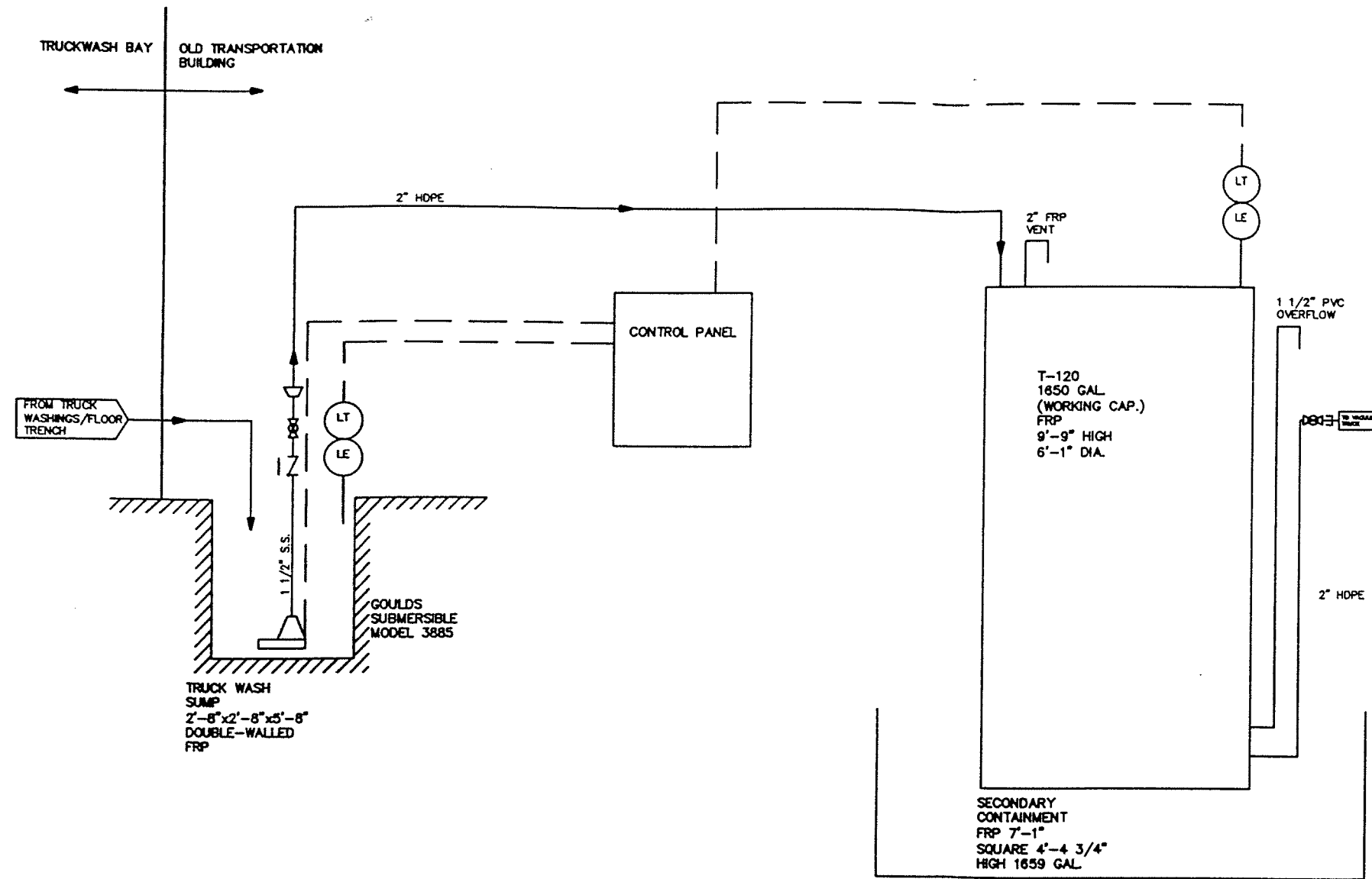
REVISION	NO.	BY	DATE
REMOVED 6" Ø CPVC AND 6" Ø STEEL PIPING FROM T-150. ADDED 8" Ø HDPE PIPING WITH VALVES FROM T-150 TO T-101/102/103	3	JCD	5/23/13
REMOVED P-158 AND P-159 AND 8" Ø STEEL PIPING. BLIND FLANGED T-157 OUTLETS.	4	JCD	4/24/12
DISCONNECTED/ CLOSED TANK T-157. REMOVED 8" Ø PIPING. ADDED 6" Ø CPVC BY PASS.	5	CAC	9/14/11
ADDED TANK T-152 AND ASSOCIATED PIPING & COMPONENTS	6	MJM	4/25/08
REMOVED BAG FILTERS; LABELLED PUMPS; REMOVED PRESSURE GAGE AND VALVES; LABELLED 2" STEEL.	7	MJM	11/15/06

**EnSol, Inc.**  
**Environmental Solutions**  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017
SCALE:	NOT TO SCALE
DWG:	05-7017-SLF12 OWS SHT9.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	JULY 2006

TITLE: <b>SLF12 OIL WATER SEPARATOR (RMU-2 FINAL BUILDOUT)</b>		
PROCESS AND INSTRUMENTATION DIAGRAM		
PROJECT: CWM FACILITY P & ID UPDATES		
PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK
DRAWING		<b>C-SLF12</b>
		(SHEET 9A)

X:\AAAF\CMW\13-7017\_RMU-2\_Permit P & ID Drawing Updates (Task 3)\ACAD\009\_08-7025-SLF12\_OWS\_SHT9\_REV6.dwg, 5/24/2013 1:56:49 PM



NOTE:  
 1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "TRUCK WASH SUMP". UPDATED AND REVISED BY BBL MARCH 2001.

L: ON-\*, OFF-REF\*  
 P: CONT-MAV.LPCP  
 12/28/01 SYR-64 DUP ROC-54-SLM  
 05052090/05052003.DWG

Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
1	12/01	GENERAL SYSTEM UPDATES	BDS

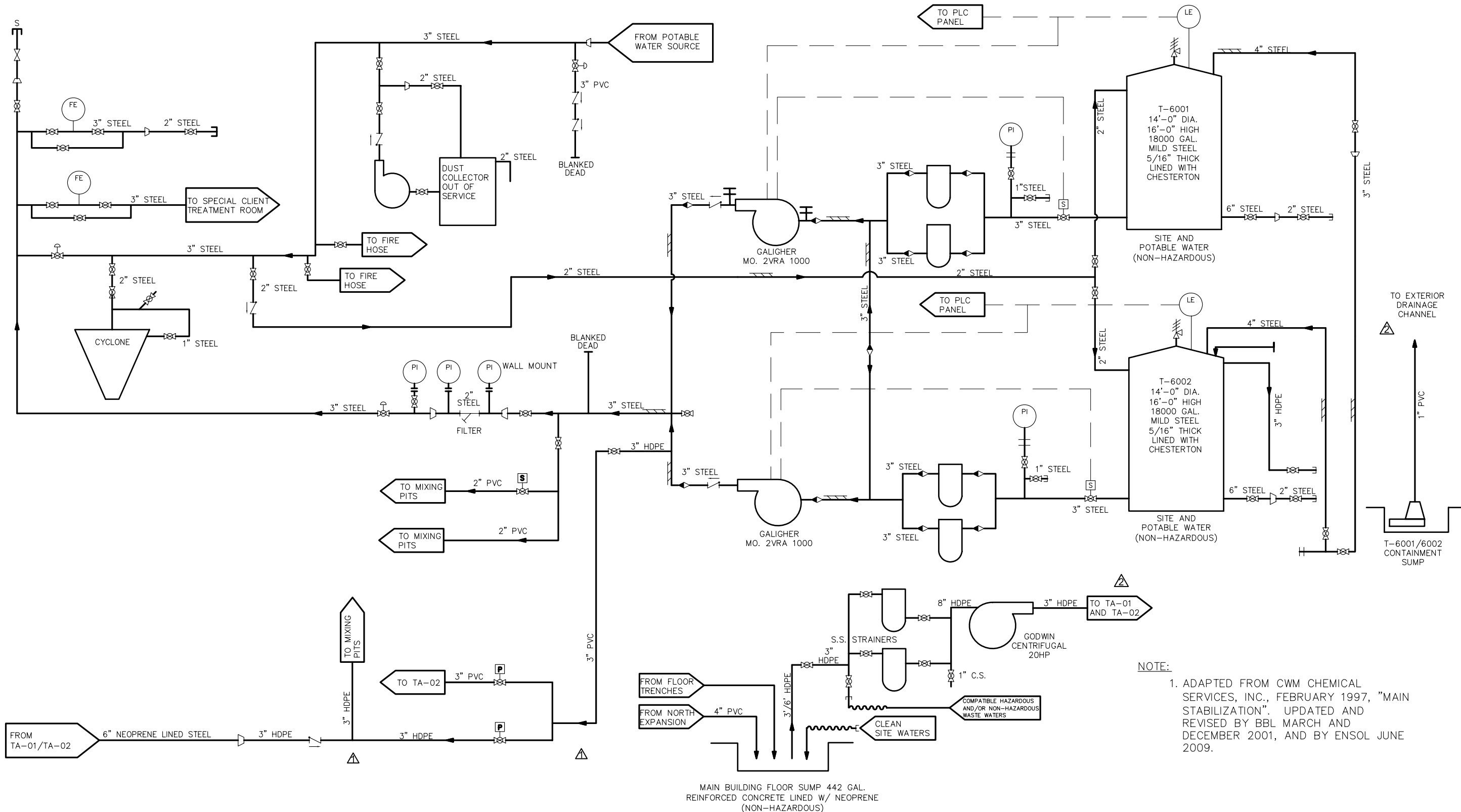
Project Mgr. \_\_\_\_\_  
 Designed by \_\_\_\_\_  
 Drawn by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Prof. Eng. \_\_\_\_\_  
 PE License \_\_\_\_\_

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**TRUCK WASH SUMP**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Towpath Road  
 Syracuse, NY 13214  
 315-446-9120

DRAWING NO.  
**C-TRCKWA**  
 (SHEET 10)



MAIN BUILDING FLOOR SUMP 442 GAL.  
REINFORCED CONCRETE LINED W/ NEOPRENE  
(NON-HAZARDOUS)

NOTE:  
1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "MAIN STABILIZATION". UPDATED AND REVISED BY BBL MARCH AND DECEMBER 2001, AND BY ENSOL JUNE 2009.

REVISION	NO.	BY	DATE
revised T-6001/6002 Cont. Sump outlet & added TA-02	1	BDS	3/12/10
Removed Shredder SH-01, Rolloff Box, Hydraulic Unit. Removed T-6003 FRP Tank, Control Panel and associated piping.	2	MJM	6/19/09

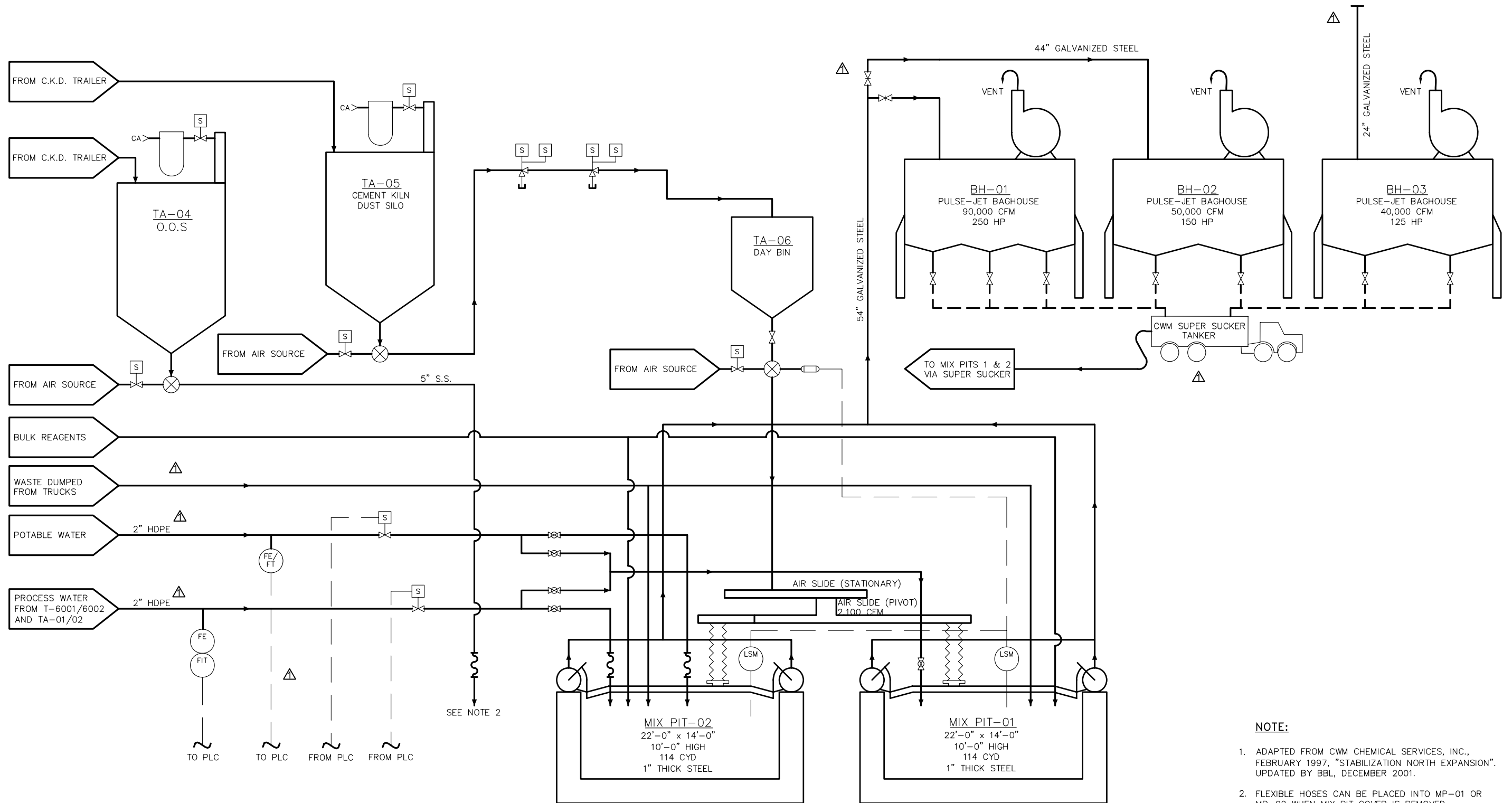
**EnSol, Inc.**  
Environmental Solutions

661 MAIN STREET  
NIAGARA FALLS, NY 14301  
PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	09-7010
SCALE:	NOT TO SCALE
DWG:	D11_09-7010 C-STAB Sht.11.dwg
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	JUNE 2009

TITLE: <b>MAIN STABILIZATION PROCESS AND INSTRUMENTATION DIAGRAM</b>		
PROJECT: CWM FACILITY P & ID UPDATES		
PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY	
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK
DRAWING		<b>C-STAB</b>
		(SHEET 11)





**NOTE:**

- ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "STABILIZATION NORTH EXPANSION". UPDATED BY BBL, DECEMBER 2001.
- FLEXIBLE HOSES CAN BE PLACED INTO MP-01 OR MP-02 WHEN MIX PIT COVER IS REMOVED.

SEE NOTE 2

REVISION	NO.	BY	DATE
Designated TA-04 as O.O.S.	△	BDS	3/12/10
Added Baghouses being emptied by Super Sucker to mix pits 1 & 2; Deleted lines from Shredder and from bldg. expansion ventilation; modified pipe mat. for Pot. & Proc. Wtr.	△	MJM	6/19/09

**EnSol, Inc.**  
**Environmental Solutions**  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO: 09-7010  
 SCALE: NOT TO SCALE  
 DWG: D12\_09-7010 C-STABN Sht.12.dwg  
 DRAWN BY: MJM CHECKED BY: BDS  
 DATE: JUNE 2009

TITLE: **STABILIZATION NORTH EXPANSION**  
 PROCESS AND INSTRUMENTATION DIAGRAM  
 PROJECT: CWM FACILITY P & ID UPDATES  
 PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY  
 TOWN OF PORTER COUNTY OF NIAGARA STATE OF NEW YORK

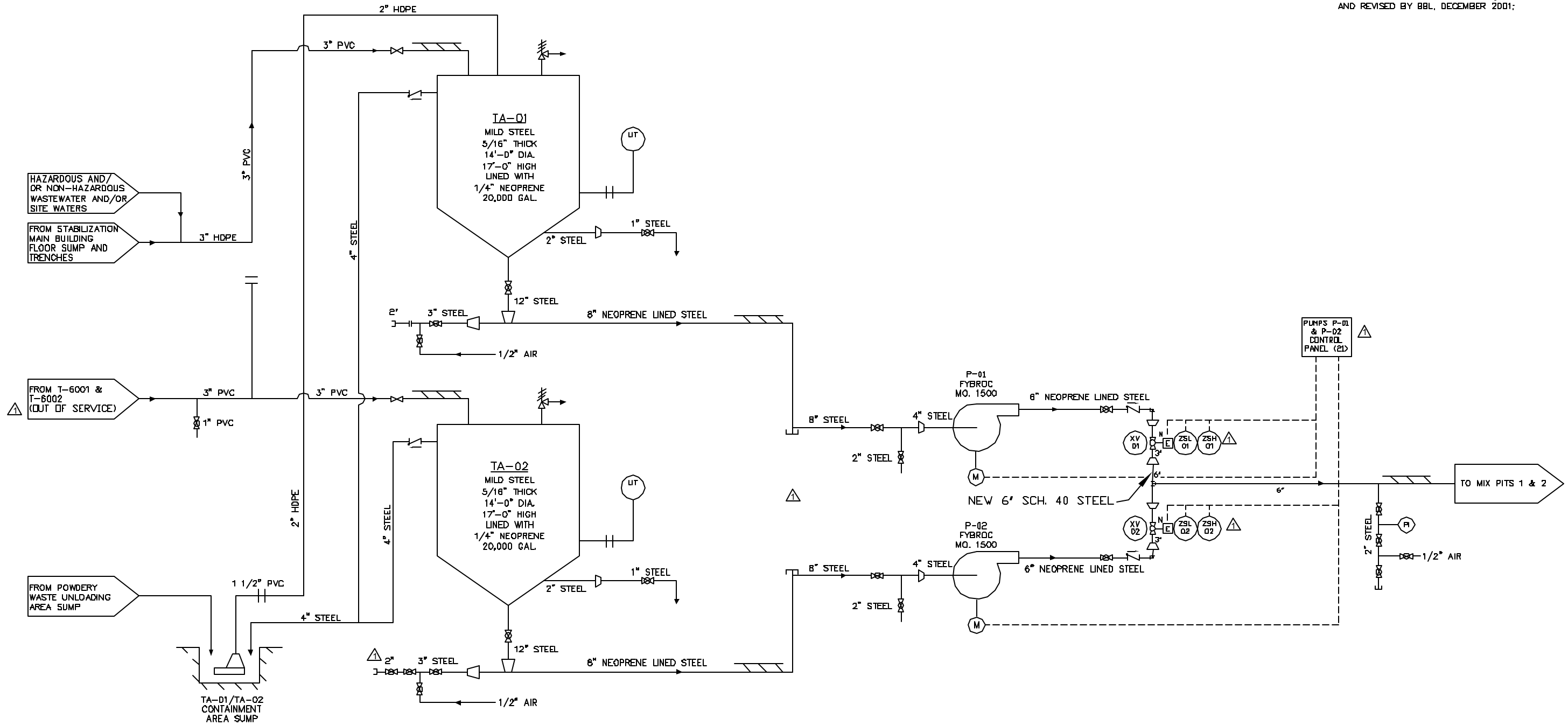
DRAWING  
**C-STABN**  
 (SHEET 12)

X:\AA\AP\CV\10-7006 Silewskie Permit PID Drawing Updates (Task 3)\ACAD\012\_10-7006 C-STABN Sht.12\_Rev 2.dwg HP 7345 11x17 3/12/2010 1:18:18 PM Charles C. Ensol Inc. Table1: 1:1

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7205, FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.

NOTES

- EXISTING PROCESS BASEMAP ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "STABILIZATION SOUTH EXPANSION", UPDATED AND REVISED BY BBL, DECEMBER 2001;

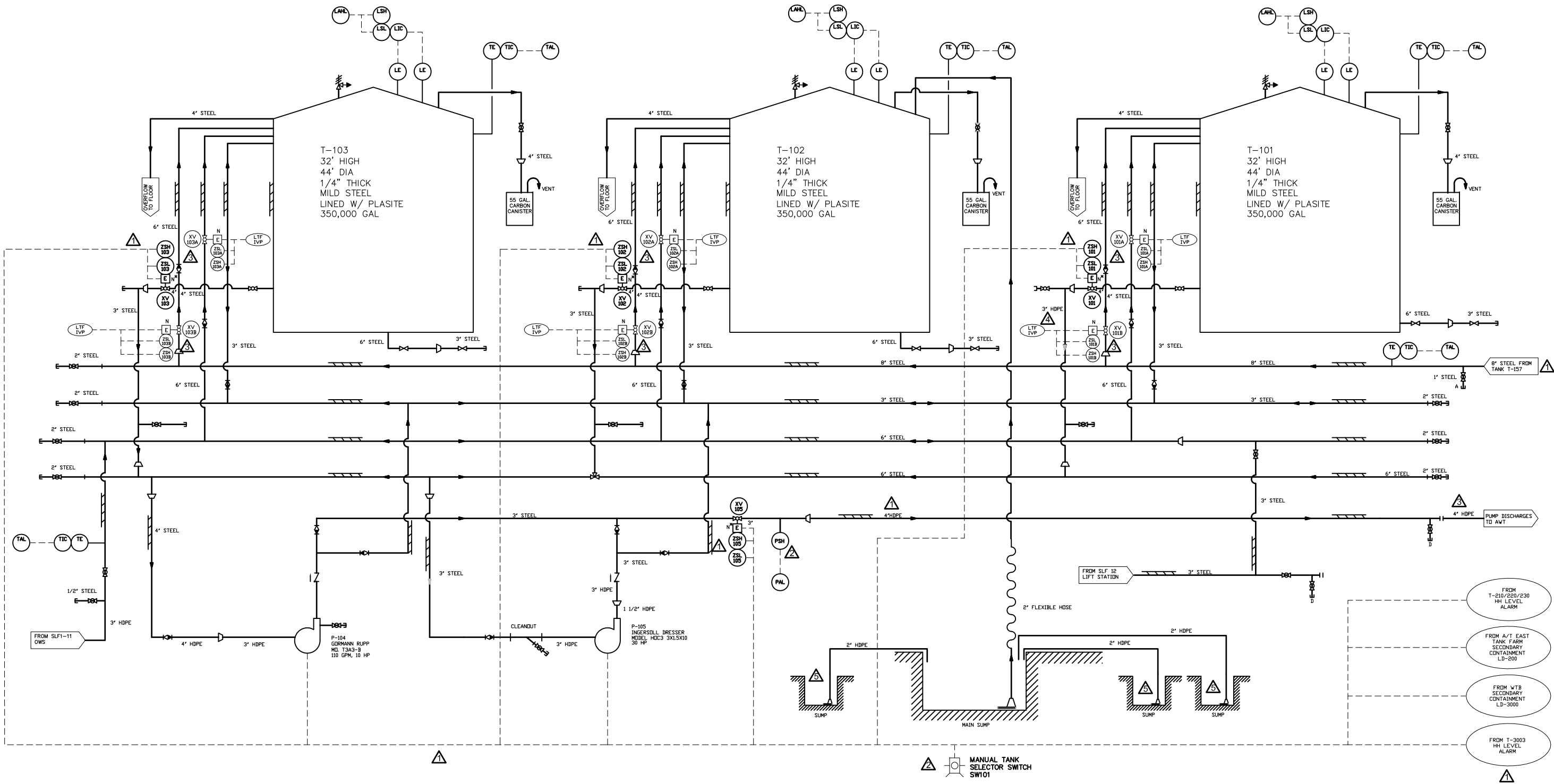


X:\AAApj\CWM\05-7017 Stewie Permitt PID Drawing Updates (Task 4)\05-7017-STAB SH.13.dwg, HP, 12/20/06 2:54:30 PM, sagafarid, Tabloid [11 x 17 in], 1:1, 00073

REVISION	NO.	BY	DATE
ADDED INTERCONNECTED TANKS PROJECT DETAILS WITH GENERAL SYSTEM UPDATES.		BDS	5/2/06

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017	TITLE:			<b>STABILIZATION SOUTH EXPANSION</b>		
SCALE:	NOT TO SCALE				PROCESS AND INSTRUMENTATION DIAGRAM		
DWG:	05-7017-STAB SH.13.DWG	PROJECT:	CWM FACILITY P & ID UPDATES				
DRAWN BY:	MJM	CHECKED BY:	BDS	PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
DATE:	MAY 2006	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	DRAWING		
				C-STABS			
				(SHEET 13)			



**NOTES**

- EXISTING PROCESS BASEMAP ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "LEACHATE TANK FARM". UPDATED AND REVISED BY BBL MARCH & DEC. 2001.

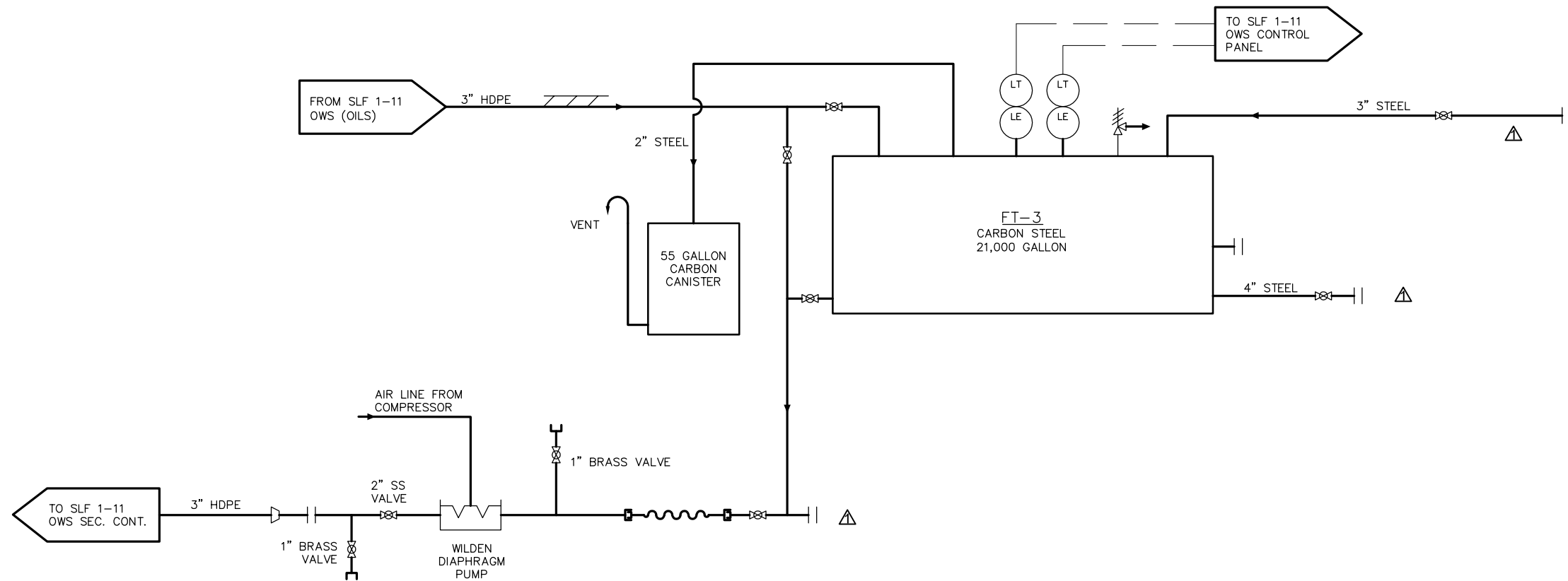
REVISION	NO.	BY	DATE
ADDED ADDITIONAL SUMPS IN SECONDARY CONTAINMENT	△	TAS	8/31/10
CHANGED 3" STEEL OUTLET LINE TO 3" HDPE	△	BDS	3/6/07
LEACHATE TANK FARM ACTUATOR VALVES RECORD REVISIONS; CHANGED PUMP DISCH. LINE TO AWT FROM 4" STEEL TO 4" HDPE.	△	BDS	7/25/06
INTERCONNECTED TANKS RECORD REVISIONS.	△	BDS	5/2/06
ADDED INTERCONNECTED TANKS PROJECT DETAILS; MODIFIED PORTION OF MAIN DISCHARGE LINE FROM 3" STEEL TO 4" HDPE.	△	BDS	11/10/05

**EnSol, Inc.**  
Environmental Solutions

661 MAIN STREET  
NIAGARA FALLS, NY 14301  
PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017
SCALE:	NOT TO SCALE
DWG:	05-7017-LTF-SHT14.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	NOVEMBER 2005

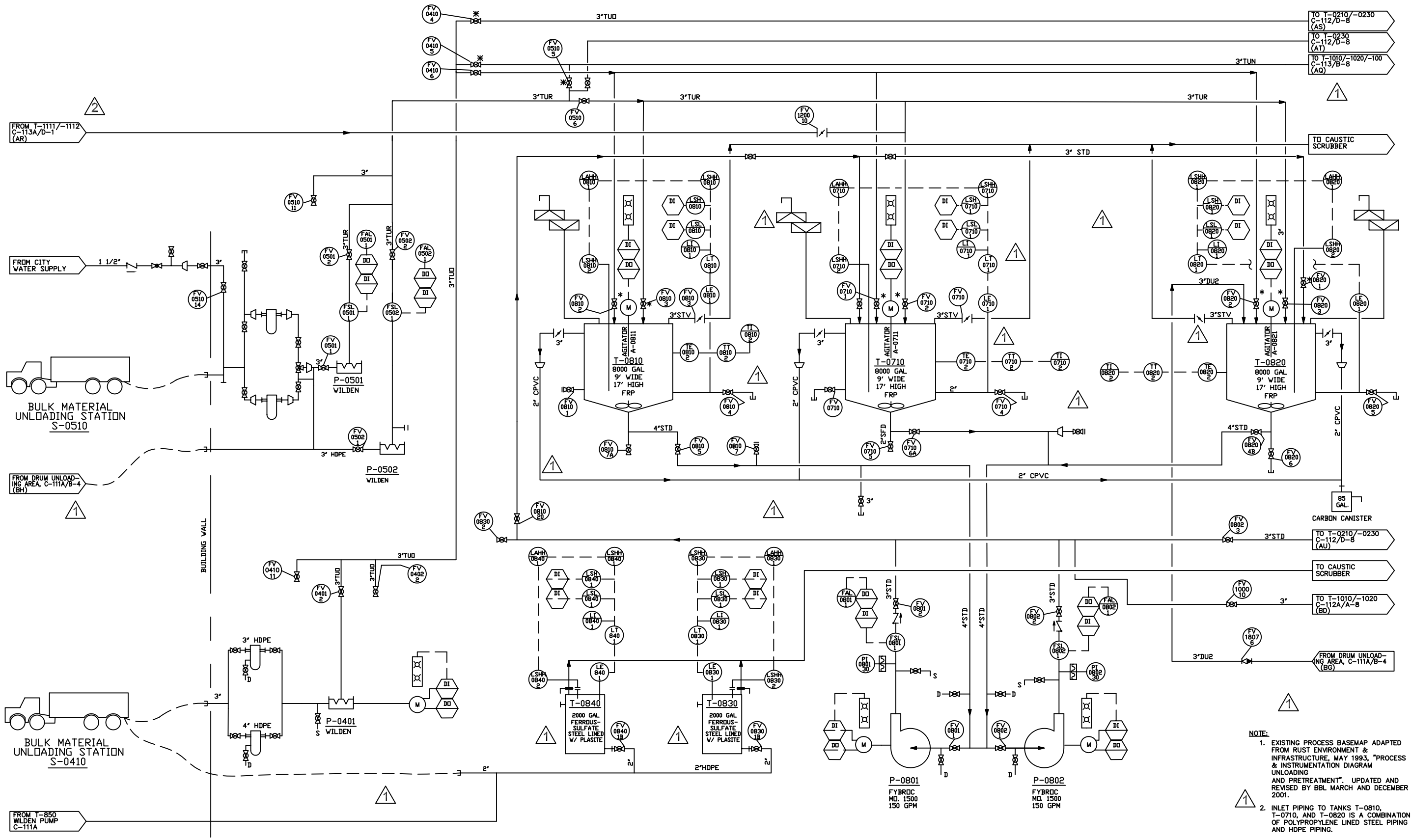
TITLE:		<b>LEACHATE TANK FARM</b>	
		PROCESS AND INSTRUMENTATION DIAGRAM	
PROJECT:		CWM FACILITY P & ID UPDATES	
PREPARED FOR:		CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY	
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	
			DRAWING <b>C-TKFR</b> (SHEET 14)



**NOTE:**

1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "FRAC TANK FT-3". UPDATED AND REVISED BY BBL, DECEMBER 2001; UPDATED BY ENSOL, JUNE 2009.

REVISION	NO.	BY	DATE	EnSol, Inc. Environmental Solutions		PROJECT NO:	TITLE:		
Deleted vacuum track conn.'s; Added conn. to SLF 1-11 OWS Sec. Cont. with piping, diaphragm pump and valving.	1	MJM	6/19/09	661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928		09-7010	FRAC TANK FT-3 PROCESS AND INSTRUMENTATION DIAGRAM		
						SCALE:	PROJECT:		
						DWG:	CWM FACILITY P & ID UPDATES		
						DRAWN BY:	PREPARED FOR:		
						CHECKED BY:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
						DATE:	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK
							DRAWING		
							C-FRACTK (SHEET 15)		



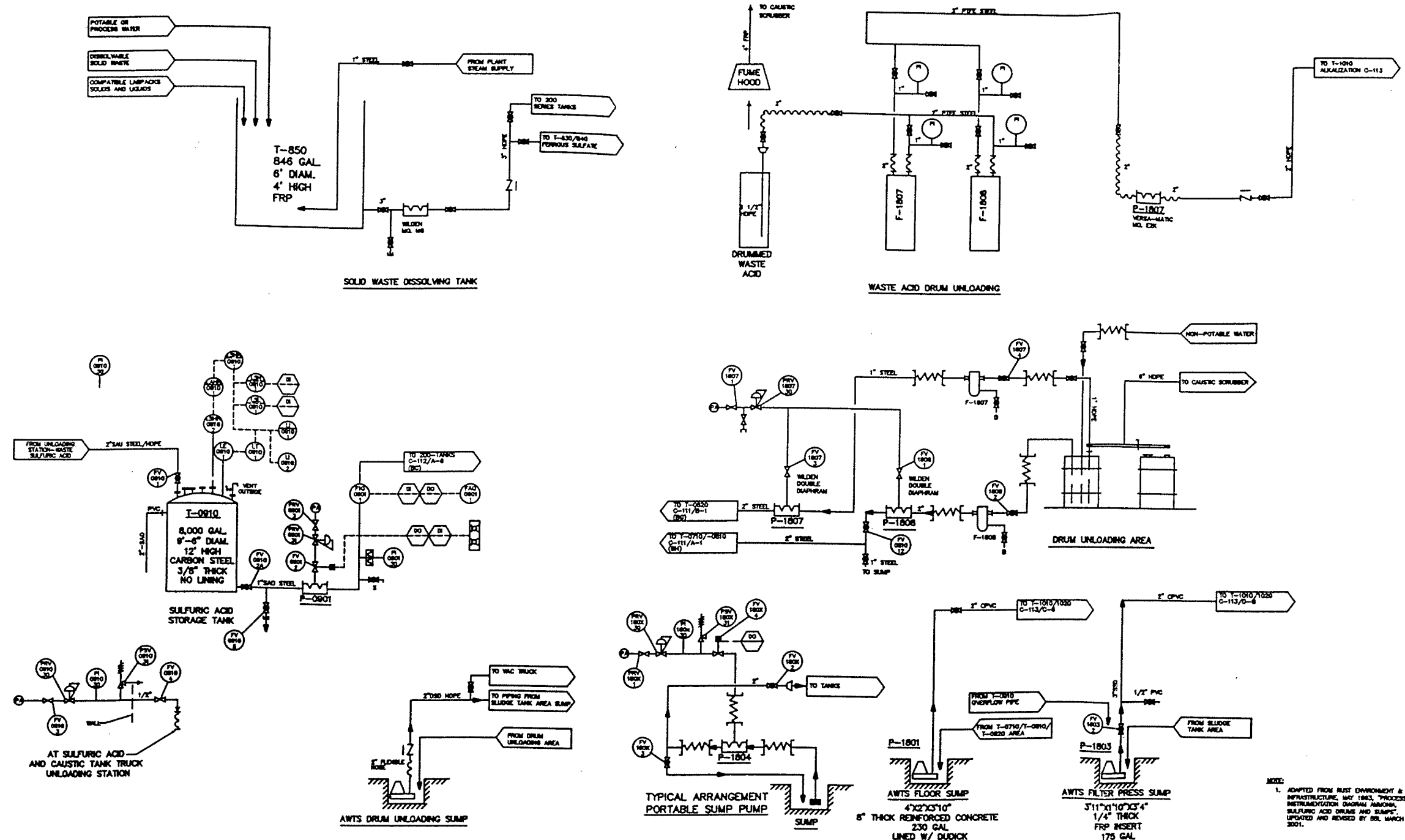
- NOTE:**
- EXISTING PROCESS BASEMAP ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993. "PROCESS & INSTRUMENTATION DIAGRAM UNLOADING AND PRETREATMENT". UPDATED AND REVISED BY BBL MARCH AND DECEMBER 2001.
  - INLET PIPING TO TANKS T-0810, T-0710, AND T-0820 IS A COMBINATION OF POLYPROPYLENE LINED STEEL PIPING AND HDPE PIPING.

REVISION	REV	BY	DATE
Removed carbon canisters from T-830/840; revised carbon canister for T-710/810/820; added inlet from T-850; removed P-0702; revised tank info.; general system updates.	1	MJM	1/29/07

**EnSol, Inc.**  
**Environmental Solutions**  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	07-7002	TITLE:	<b>UNLOADING AND PRETREATMENT PROCESS AND INSTRUMENTATION DIAGRAM</b>		
SCALE:	NOT TO SCALE	PROJECT:	CWM FACILITY P & ID UPDATES		
DWG:	07-7002 C111 Sht.16.dwg	PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
DRAWN BY:	MJM	CHECKED BY:	BDS	TOWN OF PORTER	COUNTY OF NIAGARA
DATE:	JANUARY 2007			STATE OF NEW YORK	DRAWING <b>C-111</b> (SHEET 16)

X:\AAAp\CV\07-7002 Sht.16.dwg, HP 1220C 11x17, 1/29/2007 2:17:07 PM, bshah, Ledger, 1:1



L: 081-\*, OFF-REF\*  
 P: 001-\*, MBL-PCP  
 12/28/01 SYR-54 KLN ROC-54-SLM  
 05032090/05052011.DWG

Graphic Scale	NOT TO SCALE		
	NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW		

No.	Date	Revisions
1	12/01	GENERAL SYSTEM UPDATES

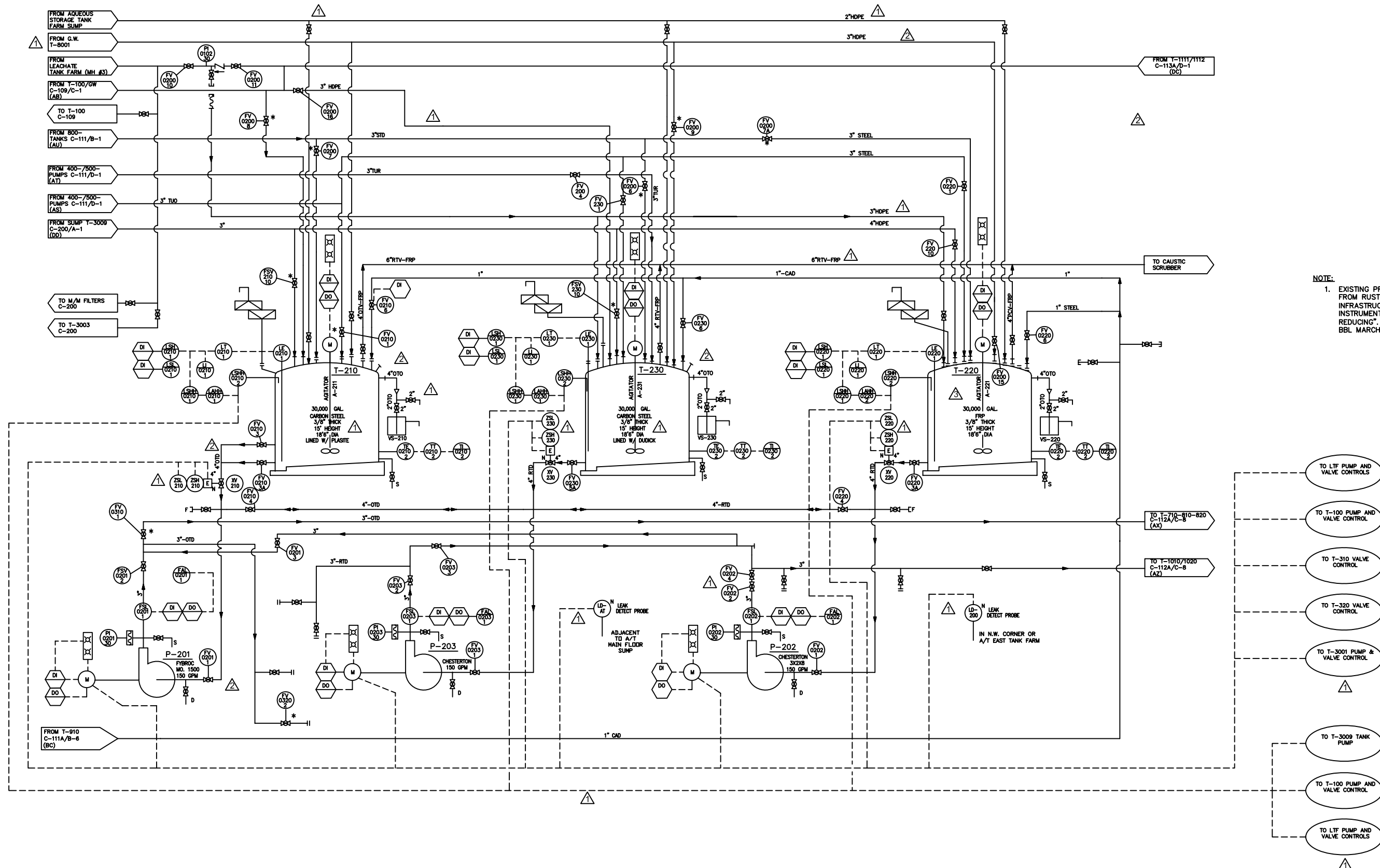
Project Mgr.	Init
Designed by	BDS
Drawn by	
Checked by	
Prof. Eng.	
PE License	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**SOLIDS DISSOLVING, SULFURIC ACID, DRUMS AND SUMPS**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Towpath Road  
 Syracuse, NY 13214  
 315-446-9120

DRAWING NO.  
**C-111A**  
 (SHEET 17)



NOTE:  
 1. EXISTING PROCESS BASEMAP ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993, "PROCESS & INSTRUMENTATION DIAGRAM OXIDIZING & REDUCING". UPDATED AND REVISY BY BBL MARCH AND DECEMBER 2001.

- TO LTF PUMP AND VALVE CONTROLS
- TO T-100 PUMP AND VALVE CONTROL
- TO T-310 VALVE CONTROL
- TO T-320 VALVE CONTROL
- TO T-3001 PUMP & VALVE CONTROL
- TO T-3009 TANK PUMP
- TO T-100 PUMP AND VALVE CONTROL
- TO LTF PUMP AND VALVE CONTROLS

REVISION	NO.	BY	DATE
ADDED TANK T-220 PROJECT DETAILS & INTERCONNECTED TANKS PROJECT DETAILS WITH GENERAL SYSTEM UPDATES.	3	BDS	8/10/07
DELETED TANK T-220, FOUNDATION, AND ALL ASSOCIATED INLET AND OUTLET PIPING; CHANGED P-201 INLET PIPE LABEL; REMOVED LINE FROM FAC POND #3 AND ASSOCIATED PIPING.	2	BDS	11/13/06
ADDED TANK T-220 PROJECT DETAILS & INTERCONNECTED TANKS PROJECT DETAILS WITH GENERAL SYSTEM UPDATES.	1	BDS	5/2/06

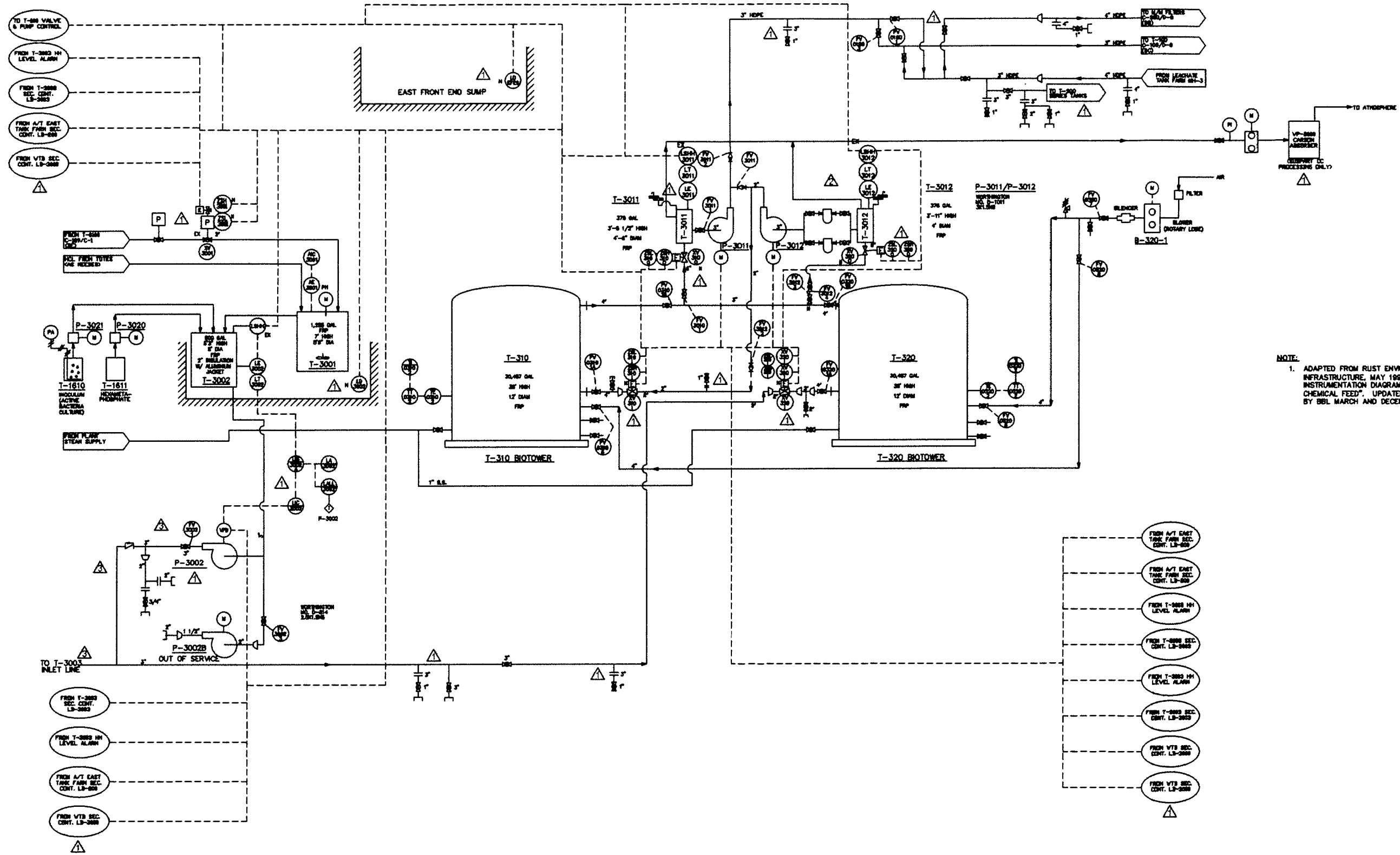
**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017
SCALE:	NOT TO SCALE
DWG:	05-7017-SHT.18.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	MAY 2006

TITLE:	<b>OXIDIZING &amp; REDUCING PROCESS AND INSTRUMENTATION DIAGRAM</b>		
PROJECT:	CWM FACILITY P & ID UPDATES		
PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	

DRAWING  
**C-112**  
 (SHEET 18)

X:\AA\proj\CWM07-7012 Tank T-220 NYSDEC Comments\Acad\Submittal 7-2-07\05-7017-Sht.18\_Rev3.dwg, 6/2/2011 4:52:05 PM, Brian Shih, EnSol Inc.



NOTE:  
1. ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993, "PROCESS & INSTRUMENTATION DIAGRAM BIOTOWERS & CHEMICAL FEED", UPDATED AND REVISED BY BBL MARCH AND DECEMBER 2001.

REVISION	NO.	BY	DATE
REMOVE VALVES ON P-3002 OUTLET	1	BDS	3/3/10
ADDED DUAL BASKET STRAINERS TO T-3012 OUTLET	2	BDS	2/10/10
ADDED INTERCONNECTED TANKS PROJECT DETAILS, CHANGED T-3011/T-3012 TO FULL PORT BALL VALVES, REMOVED P-3002 DISCHARGE CONTROL VALVE, WITH GENERAL SYSTEM UPDATES.	3	BDS	5/2/08

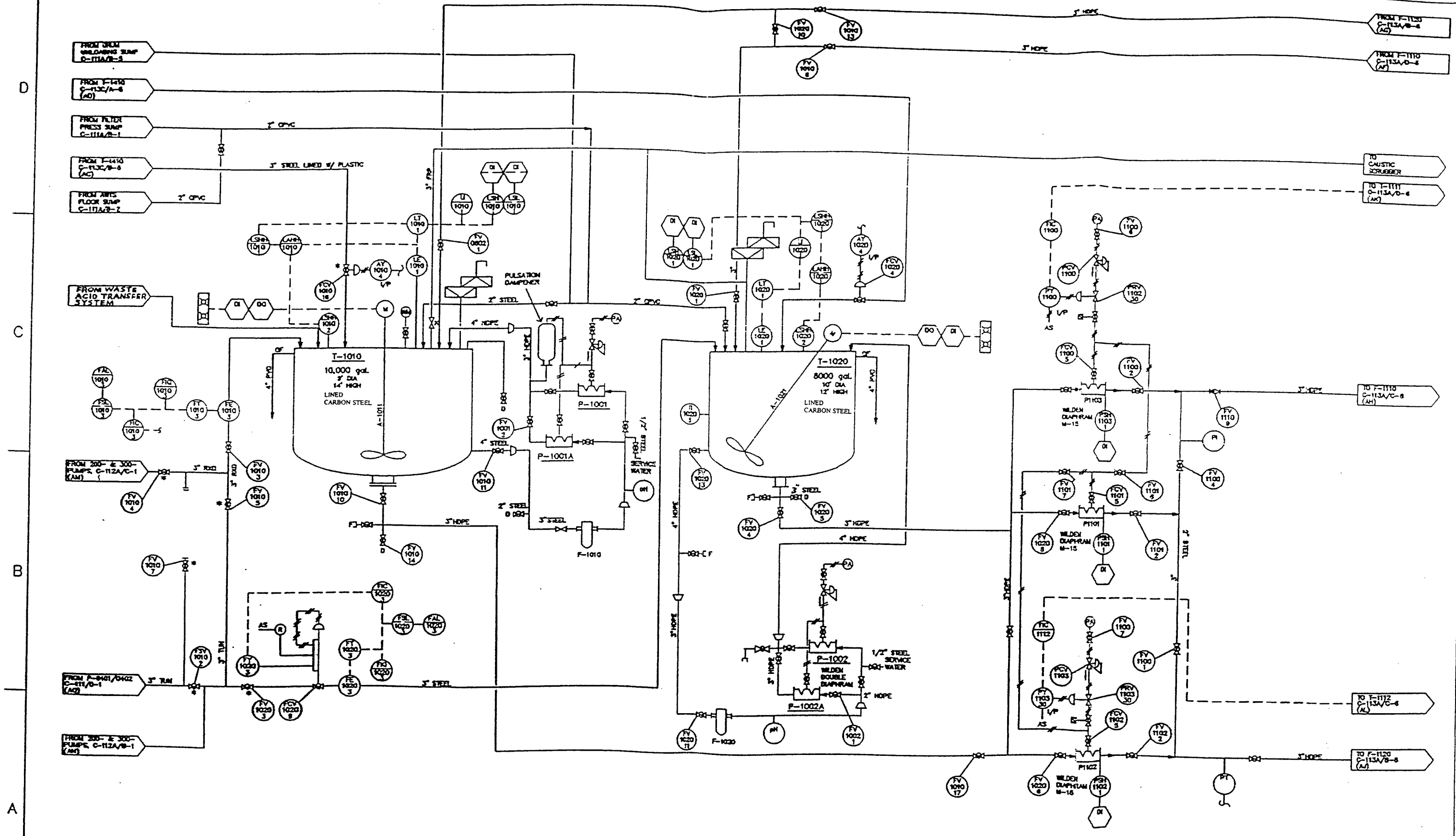
**EnSol, Inc.**  
Environmental Solutions  
661 MAIN STREET  
NIAGARA FALLS, NY 14301  
PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	10-7006
SCALE:	NOT TO SCALE
DWG:	D19_10-7006-SHT19_REV3.DWG
DRAWN BY:	MJM
CHECKED BY:	BDS
DATE:	FEBRUARY 2010

TITLE: <b>BIO-TOWERS &amp; CHEMICAL FEED</b> PROCESS & INSTRUMENTATION DIAGRAM		
PROJECT: CWM FACILITY P & ID UPDATES		
PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY		
TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK
		DRAWING <b>C-112A</b> (SHEET 19)

X:\A\p\c\10-7006-SHT19.dwg, 1:1





NO.	REVISIONS	MADE	CHK	DATE	NO.	REVISIONS	MADE	CHK	DATE

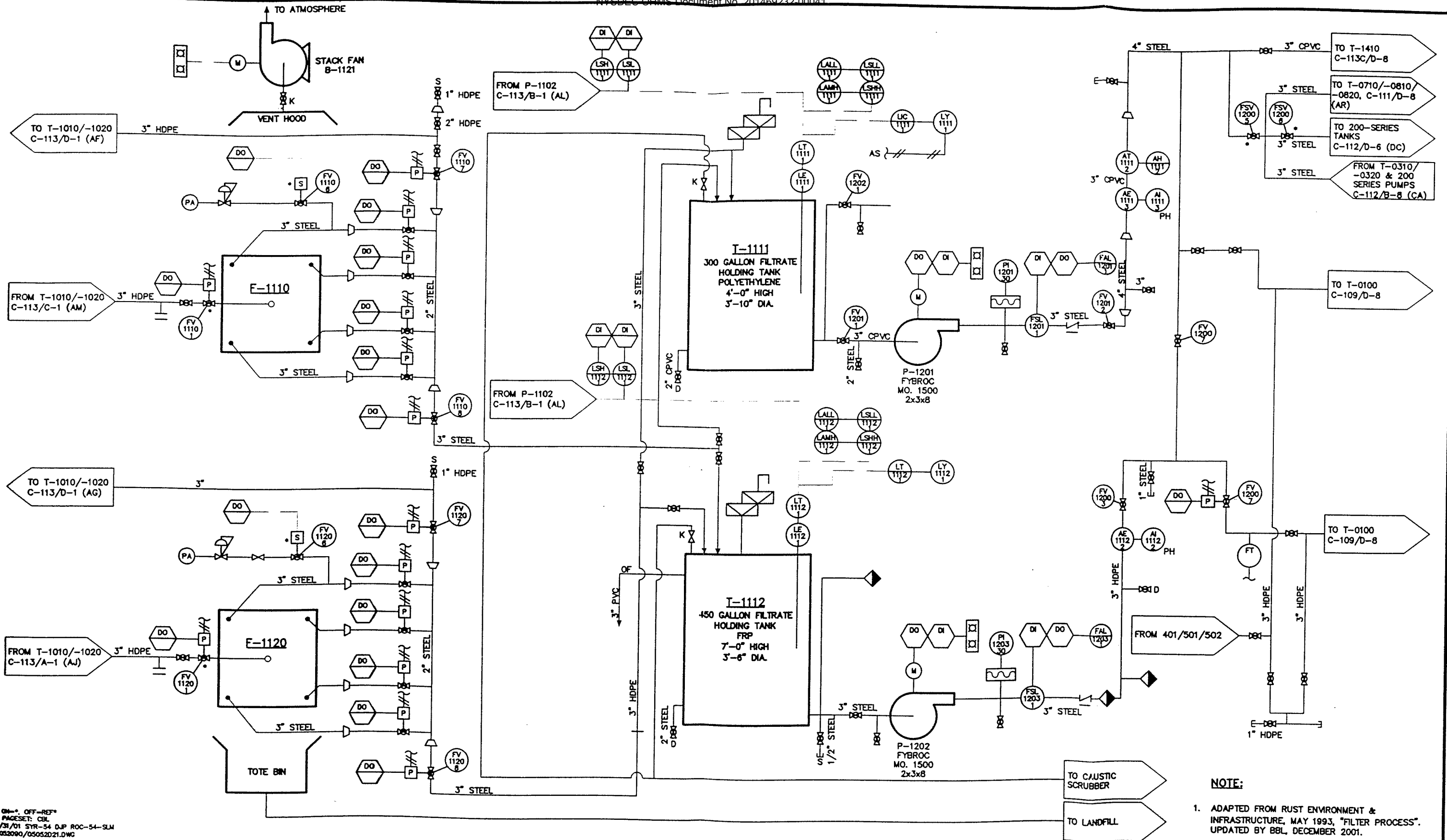
NAME	DATE
OWNER JPS	3-4-83
DESIGN	
CHECKED/REV	3-8-83
P/E	
APP'D. CHL	3-8-83
APP'D.	
APP'D.	

**PROCESS & INSTRUMENTATION  
DIAGRAM  
ALKALIZATION**

MODEL CITY FACILITY  
CVM-CHEMICAL SERVICES, INC.  
NEW YORK

<b>RUST ENVIRONMENT &amp; INFRASTRUCTURE</b>	
PROJECT NUMBER: 100400	DATE: 8-8-83
PLANT Dwg NUMBER: C-113	FILE NUMBER:
CLIENT Dwg NUMBER: 8	SHEET NUMBER: 22

The drawings, specifications and other documents prepared by the Engineer for this project are instruments of the Engineer's service for use solely with respect to this project and, unless otherwise provided, the Engineer shall be deemed the author of these documents and shall retain all common law, statutory and other reserved rights, including the copyright.



**NOTE:**  
 1. ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993, "FILTER PROCESS". UPDATED BY BBL, DECEMBER 2001.

L: 01-01 OFF-REF\*  
 P: PAGESET: CBL  
 12/28/01 SYR-54 D/P ROC-54-SLM  
 05052090/05052021.DWG

Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

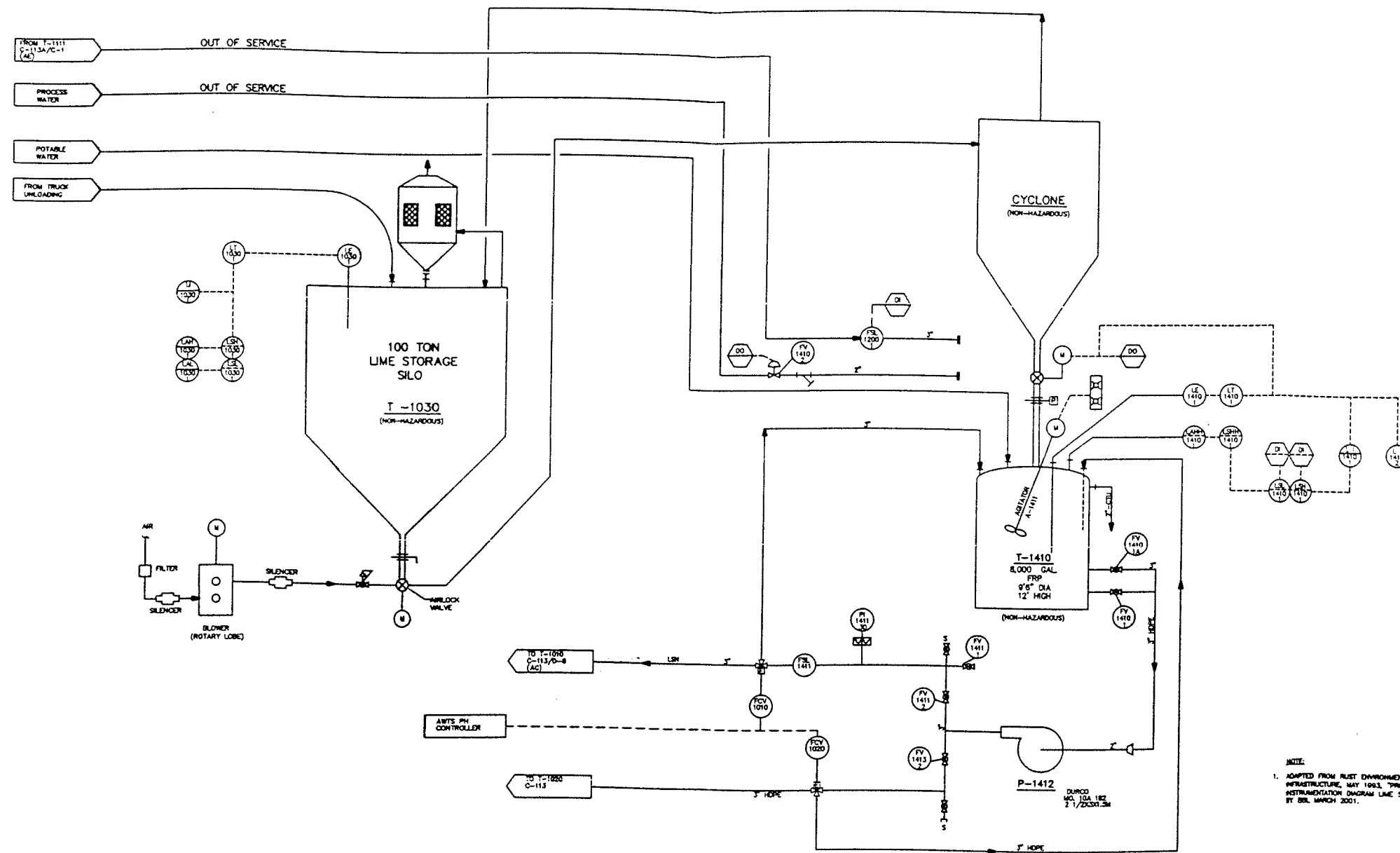
No.	Date	Revisions	Init

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**FILTER PASSES**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Tawpath Road  
 Syracuse, NY 13214  
 315-448-9120  
**DRAWING NO.**  
**C-113A**  
 (SHEET 21)



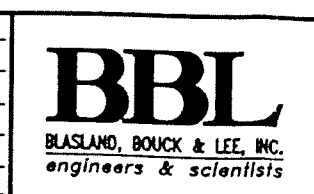


NOTE:  
 1. ADAPTED FROM FIRST ENVIRONMENT & INFRASTRUCTURE, MAY 1993, "PROCESS & INSTRUMENTATION DIAGRAM LIME SYSTEM". UPDATED AND REVISED BY BBL MARCH 2001.

L: REF=OFF  
 P: STD=PCP/BL  
 12/31/01 ROC-54-SLM  
 05052090/05052006.DWG

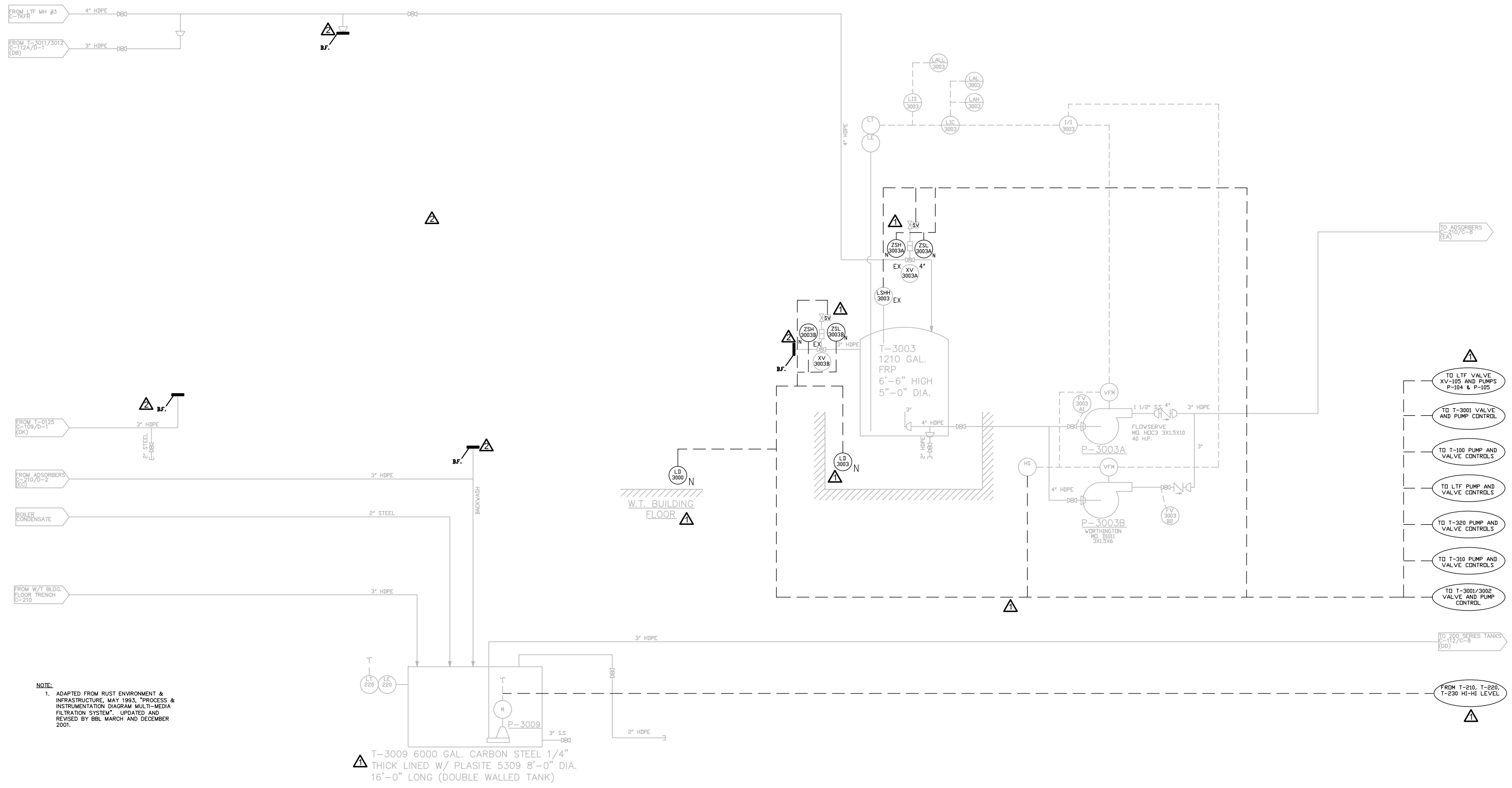
Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init	Project Mgr.
1	12/01	GENERAL SYSTEM UPDATES	BOS	Designed by _____ Drawn by _____ Checked by _____ Prof. Eng. _____ PE License _____



CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**LIME SYSTEM**

File Number FILE NO.	DRAWING NO.
Date DECEMBER 2001	<b>C-113C</b>
Blasland, Bouck & Lee, Inc. Corporate Headquarters 6723 Towpath Road Syracuse, NY 13214 315-446-9120	
(SHEET 23)	



REVISION	NO.	BY	DATE
REMOVED MULTI-MEDIA FILTER SYSTEM AND LAB RINSE WATER PIPE TO T-3009	△	AMW	3/29/13
ADDED INTERCONNECTED TANKS PROJECT DETAILS AND REVISED T-3009 LINING.	△	BDS	5/2/06

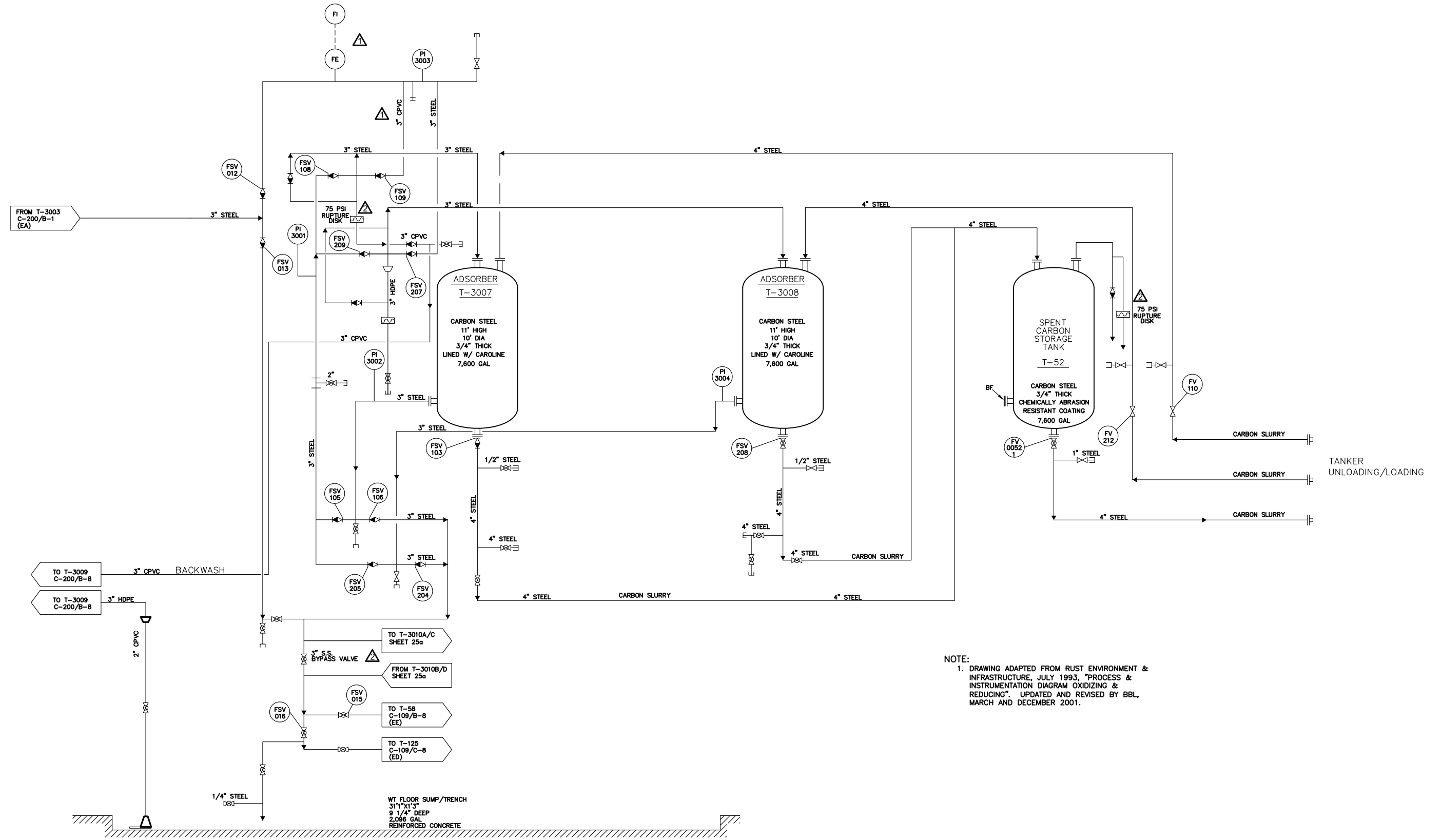
**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO: 05-7017  
 SCALE: NOT TO SCALE  
 DWG: 05-7017-MMFIL SHT24.DWG  
 DRAWN BY: MJM CHECKED BY: BDS  
 DATE: MAY 2006

TITLE: **MULTI-MEDIA FILTRATION SYSTEM**  
 PROCESS AND INSTRUMENTATION DIAGRAM  
 PROJECT: CWM FACILITY P & ID UPDATES  
 PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY  
 TOWN OF PORTER COUNTY OF NIAGARA STATE OF NEW YORK

DRAWING  
**C-200**  
 (SHEET 24)

X:\AAAR\05\CWM\13-7005 Shevline Permit P & ID Drawing Updates (Task 1)\Asstn\Removal System (Sheet 24, 25, 253)\ACAD\DD24\_05-7017-MMFIL\_SHT24.dwg, 9/10/2013 8:55:10 AM



NOTE:  
 1. DRAWING ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, JULY 1993, "PROCESS & INSTRUMENTATION DIAGRAM OXIDIZING & REDUCING". UPDATED AND REVISED BY BBL, MARCH AND DECEMBER 2001.

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO: 05-7017  
 SCALE: NOT TO SCALE  
 DWG: 05-7017-Sht.25.DWG  
 DRAWN BY: AJZ CHECKED BY: BDS  
 DATE: MAY 2006

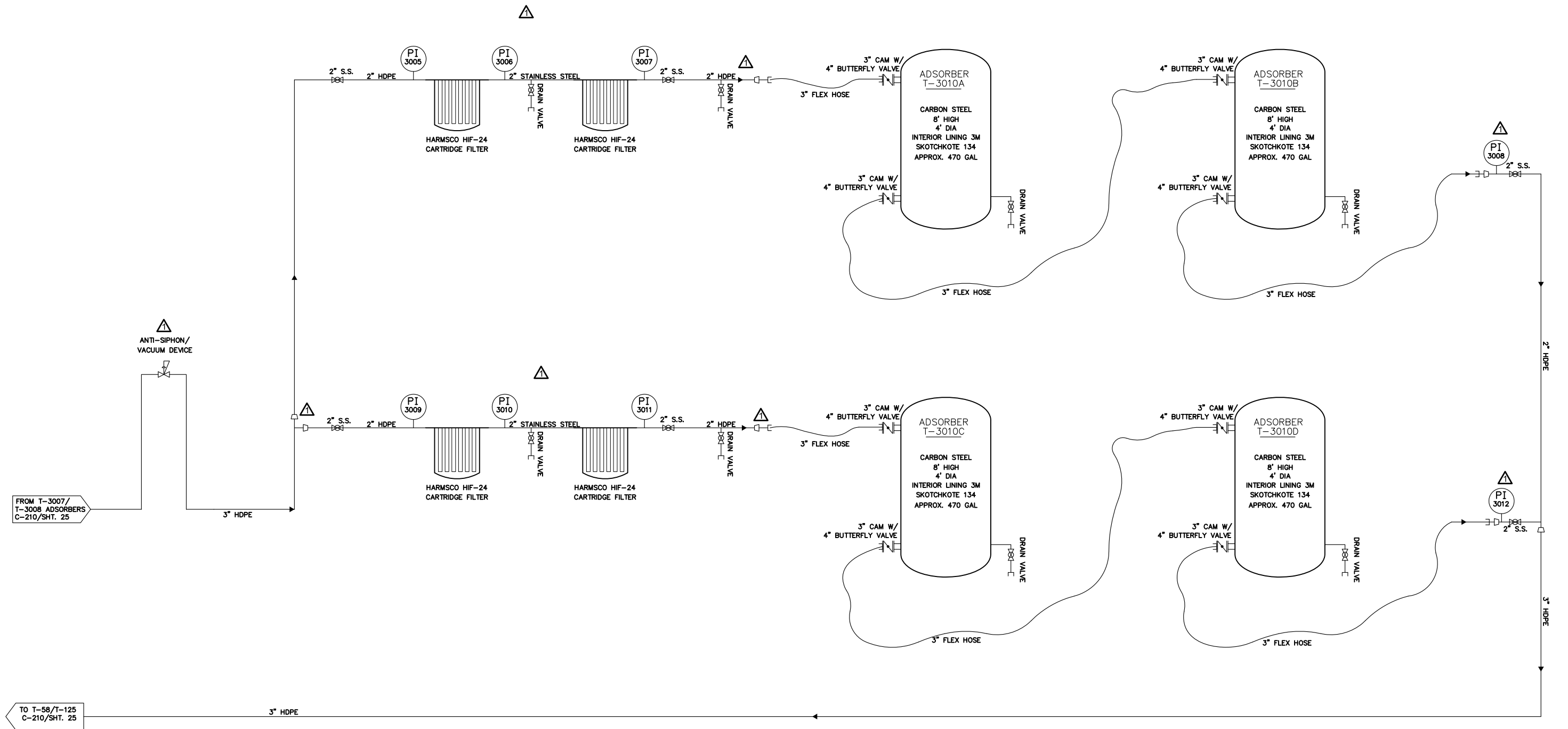
TITLE: **CARBON ADSORPTION SYSTEM**  
 PROCESS AND INSTRUMENTATION DIAGRAM  
 PROJECT: CWM FACILITY P & ID UPDATES  
 PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY  
 TOWN OF PORTER COUNTY OF NIAGARA STATE OF NEW YORK

DRAWING  
**C-210**  
 (SHEET 25)

REVISION	NO.	BY	DATE
ADDED T-3010 SYSTEM BYPASS AND RUPTURE DISK PRESSURE	1	AMW	5/22/13
ADDED ADSORBER TANKS INLET FLOW METER.	2	BDS	5/2/06

X:\AAAR\05\CWM\13-7005-Sheffield Permitt P & ID Drawing Updates (Task 1)\Asanik Removal System (Sheets 24, 25, 25b)\ACAD\ID25\_05-7017-Sht.25.DWG, 9/10/2013 8:56:22 AM

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.



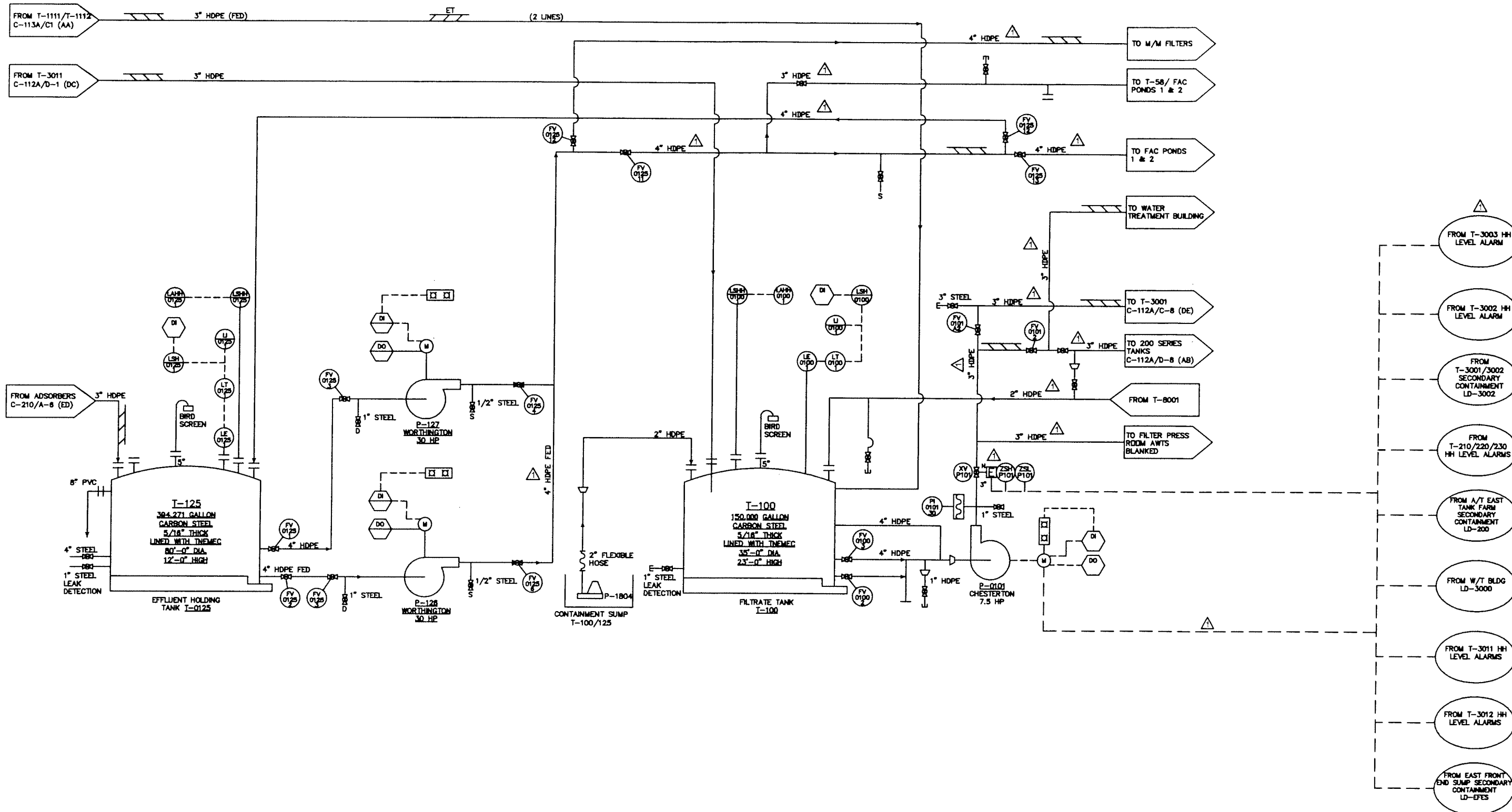
REVISION	NO.	BY	DATE			
ADDED PRESSURE INDICATORS, ANTI-SIPHON LOOP, AND REDUCERS	1	AMW	5/22/13			
				<b>EnSol, Inc.</b> Environmental Solutions 661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928		PROJECT NO: 13-7009 SCALE: NOT TO SCALE DWG: D25A_13-7009-SHT.25A.DWG DRAWN BY: AMW CHECKED BY: BDS DATE: APRIL 2013
				TITLE: <b>ARSENIC REMOVAL SYSTEM</b> PROCESS AND INSTRUMENTATION DIAGRAM		DRAWING <b>C-220</b> (SHEET 25a)
				PROJECT: CWM FACILITY P& ID UPDATES PREPARED FOR: CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY TOWN OF PORTER COUNTY OF NIAGARA STATE OF NEW YORK		

X:\AAAR\01\CWM\13-7005-Sheffield Permitt P & ID Drawing Updates (Task 1)\Arsenic Removal System (Sheets 24, 25, 25a)\ACAD\DWG\25a\_13-7009-SHT.25a.DWG, 9/10/2013 8:53:32 AM

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 SECTION 7209, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.

**NOTE:**

- EXISTING BASEMAP ADAPTED FROM RUST ENVIRONMENT & INFRASTRUCTURE, MAY 1993, "FILTRATE & LEACHATE TANKS", UPDATED BY BBL, DECEMBER 2001.



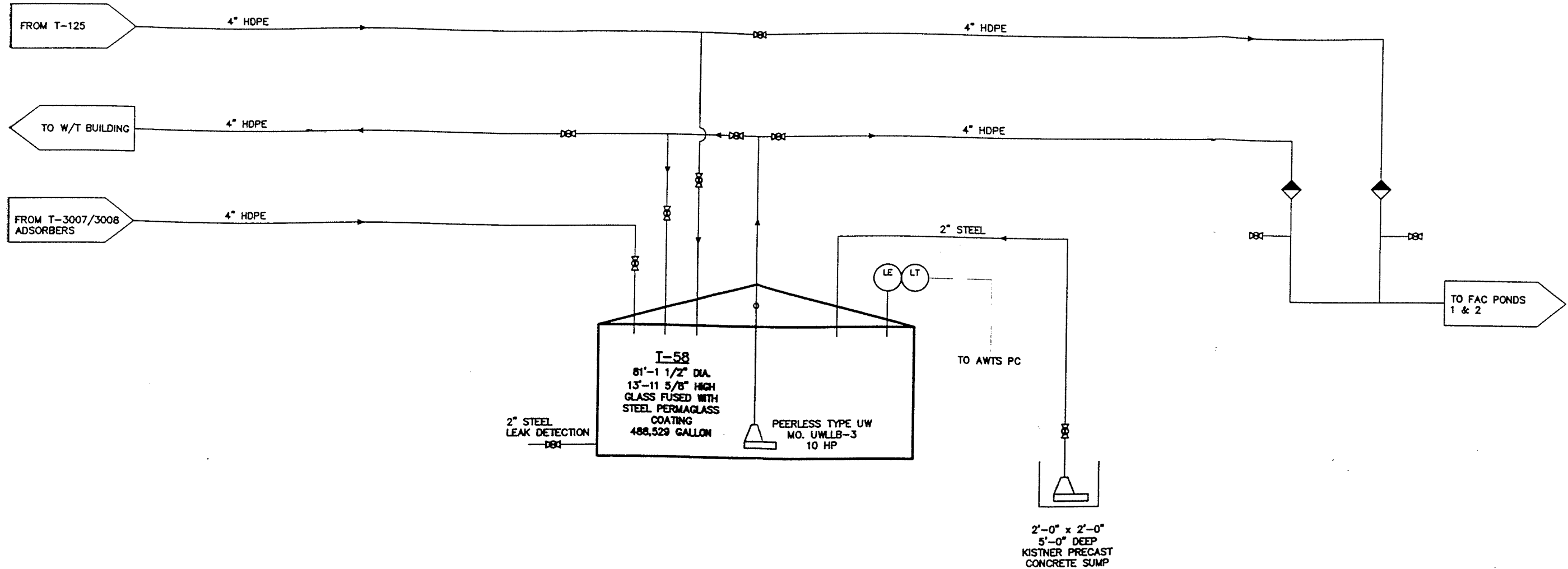
X:\AA\p\CVMM05-7017 Silewide Permitt... Drawing Updates (Task 4)05-7017-SHT 26 DWG, HP 1220C 11x17, 5/2/06 11:32:06 AM, azpelarski, Ledger (11 x 17), 1:1

REVISION	NO.	BY	DATE
ADDED INTERCONNECTED TANKS PROJECT DETAILS, REVISED T-100/125 DISCHARGE PIPING FROM STEEL TO HDPE, WITH GENERAL SYSTEM UPDATES, RENAMED DRAWING	1	BDS	5/2/06

**EnSol, Inc.**  
 Environmental Solutions  
 661 MAIN STREET  
 NIAGARA FALLS, NY 14301  
 PHONE (716) 285-3920 FAX (716) 285-3928

PROJECT NO:	05-7017	TITLE:	<b>FILTRATE &amp; TREATED EFFLUENT TANKS</b>		
SCALE:	NOT TO SCALE		PROCESS AND INSTRUMENTATION DIAGRAM		
DWG:	05-7017-SHT 26 DWG	PROJECT:	CWM FACILITY P & ID UPDATES		
DRAWN BY:	MJM	CHECKED BY:	BDS	PREPARED FOR:	CWM CHEMICAL SERVICES, LLC., MODEL CITY FACILITY
DATE:	MAY 2006	TOWN OF PORTER	COUNTY OF NIAGARA	STATE OF NEW YORK	DRAWING <b>C-109</b> (SHEET 26)





**NOTE:**

1. ADAPTED FROM CWM CHEMICAL SERVICES, INC., FEBRUARY 1997, "TANK 58". UPDATED AND REVISED BY BBL, DECEMBER 2001.

L: ON-\*, OFF-BEEP  
 P: PAGES: 081  
 12/31/01 SYR-94 DLP ROC-54-SLM  
 05052090/05052094.DWG

Graphic Scale  
**NOT TO SCALE**  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init

Project Mgr. \_\_\_\_\_  
 Designed by \_\_\_\_\_  
 Drawn by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Prof. Eng. \_\_\_\_\_  
 PE License \_\_\_\_\_

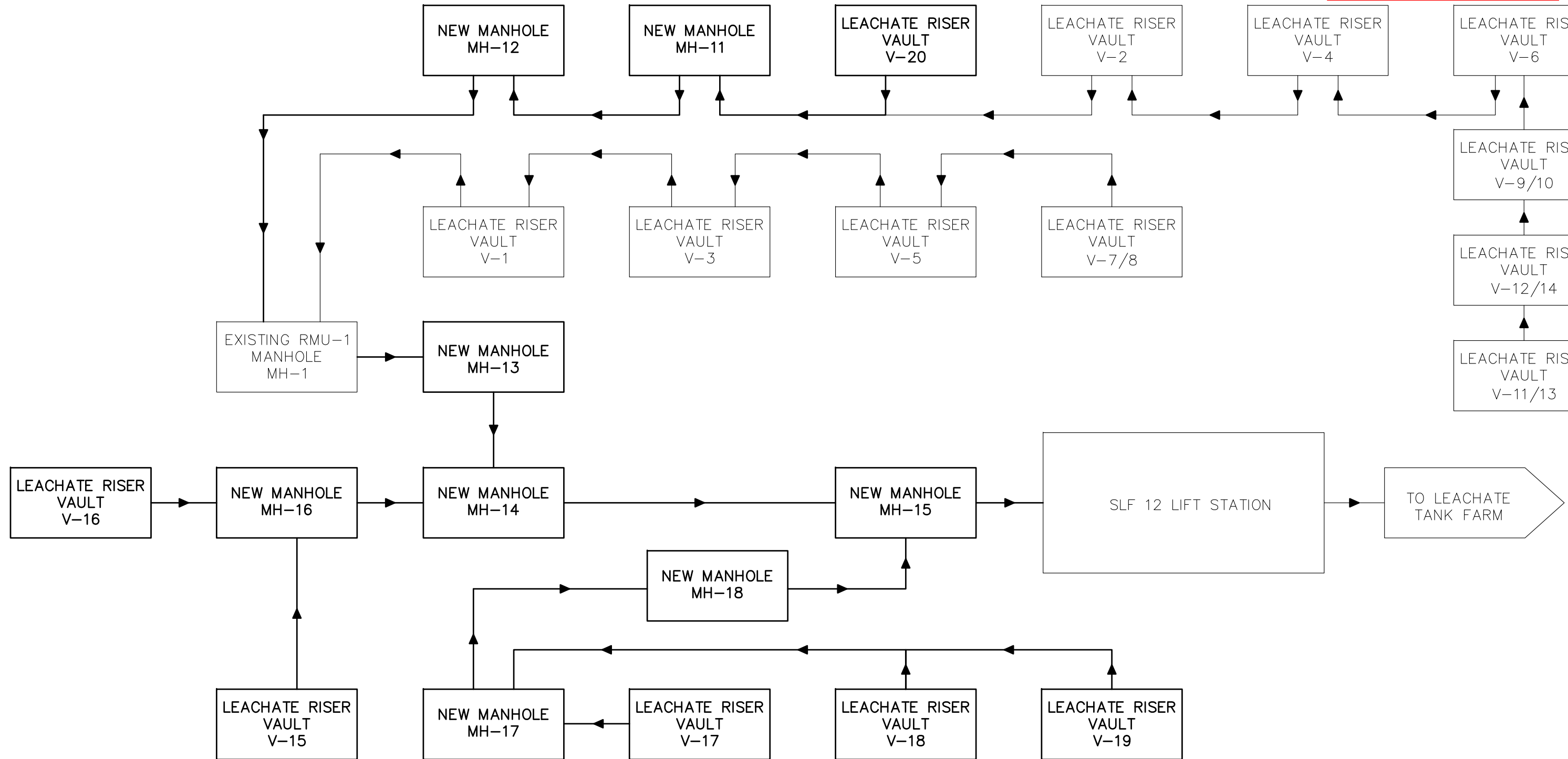


CWM CHEMICAL SERVICES, LLC  
 MODEL CITY, NEW YORK  
**PROCESS & INSTRUMENTATION DIAGRAM**  
**TANK 58**

File Number  
 FILE NO.  
 Date  
 DECEMBER 2001  
 Blasland, Bouck & Lee, Inc.  
 Corporate Headquarters  
 6723 Towpath Road  
 Syracuse, NY 13214  
 315-446-9120

DRAWING NO.  
**C-T-58**  
 (SHEET 27)

**NOTE: Sheet to be added.**



NOTES:  
1. BOLD INDICATES NEW INFRASTRUCTURE

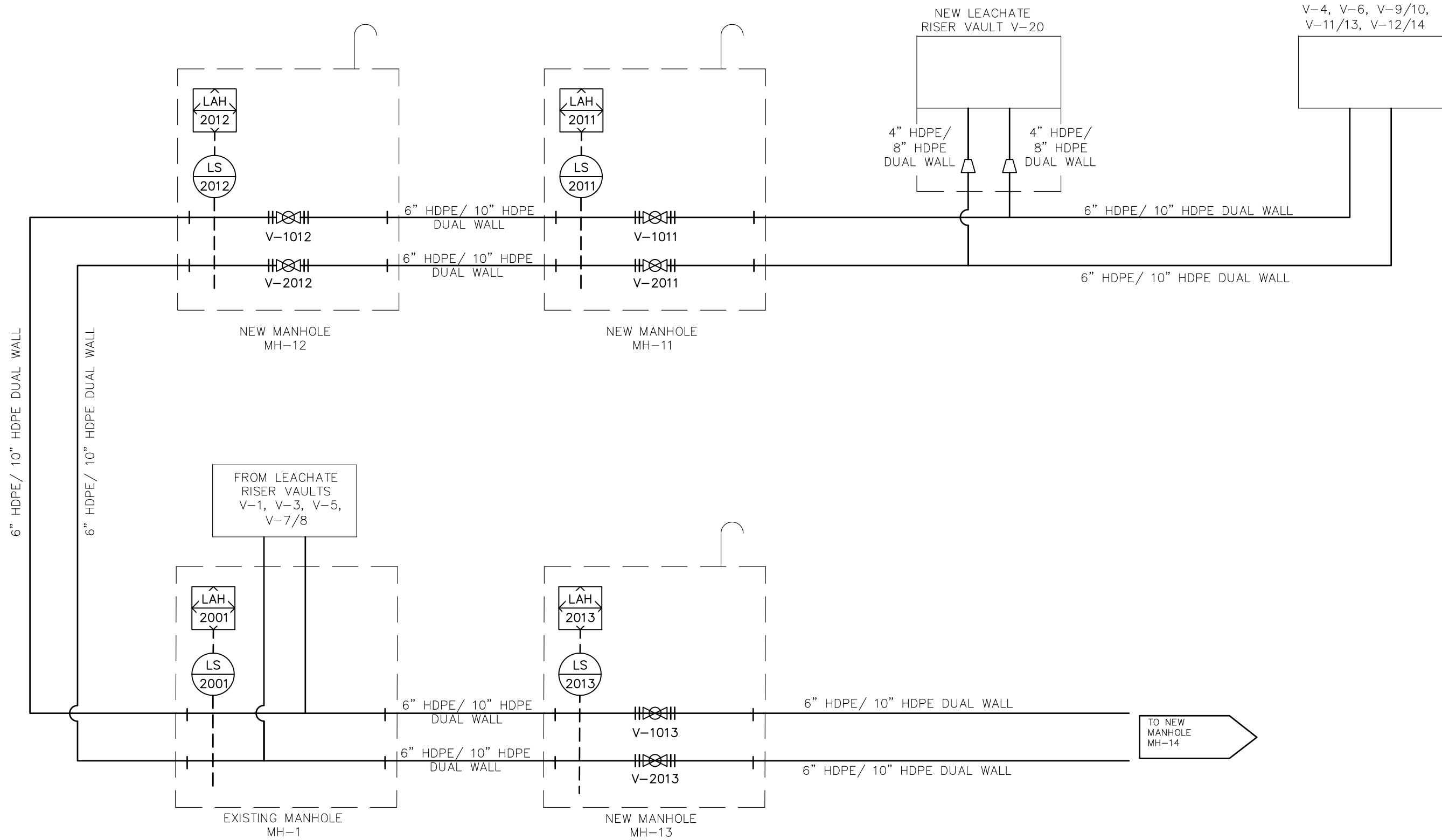
RMU-2 <b>PROCESS FLOW DIAGRAM</b> FINAL BUILDOUT	
CWM CHEMICAL SERVICES, LLC <small>MODEL CITY, STATE OF NEW YORK</small>	
<b>EnSol, Inc.</b> Environmental Solutions	661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928
MAY 2013	PN: 13-7017

**FIGURE**  
**1**

X:\AAAgj\CWM\13-7017 RMU-2 Permit P & ID Drawing Updates (Task 3)\ACAD\01\_13-7017 RMU-2 PROCESS FLOW DIAGRAM.dwg, 5/24/2013 1:38:10 PM

**NOTE: Sheet to be added.**

FROM LEACHATE RISER VAULTS V-2, V-4, V-6, V-9/10, V-11/13, V-12/14



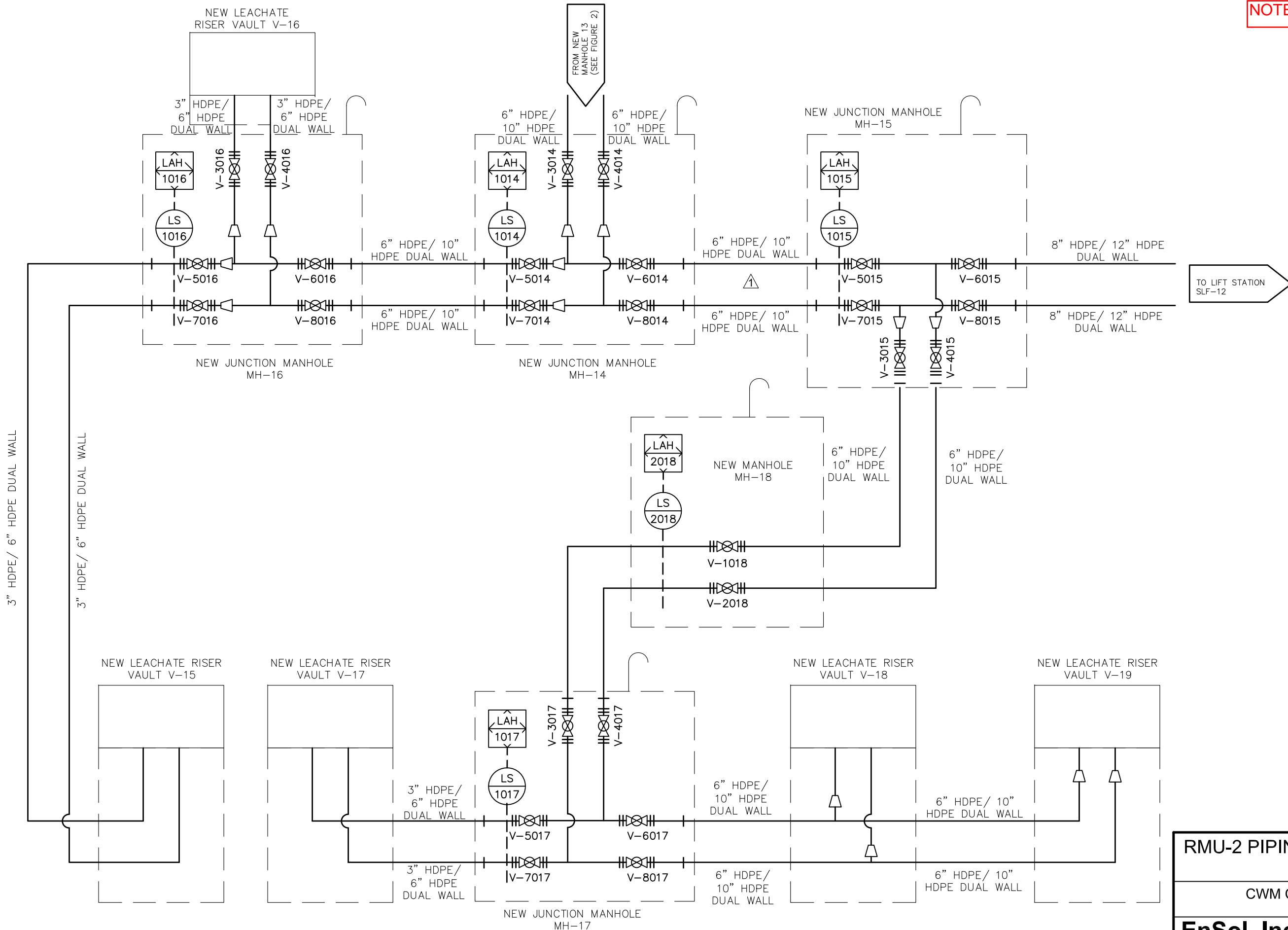
NOTES:  
 1. THIS DRAWING REPRESENTS THE P&ID AFTER RMU-1 LIFT STATION CLOSURE

<b>RMU-1 PIPING AND INSTRUMENTATION DIAGRAM</b>	
CWM CHEMICAL SERVICES, LLC MODEL CITY, STATE OF NEWYORK	
<b>EnSol, Inc.</b> Environmental Solutions	661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928
MAY 2013	PN: 13-7017

**FIGURE 2**

X:\AAAgj\CWM\13-7017 RMU-2 Permit P & ID Drawing Updates (Task 3)\ACAD\F02\_13-7017 RMU-2 PIPING AND INSTRUMENTATION DIAGRAM.dwg, 5/24/2013 1:48:45 PM

NOTE: Sheet to be added.



X:\AAApj\CWM\13-7017 RMU-2 PIPING AND INSTRUMENTATION DIAGRAM rev1.dwg, 10/4/2013 1:54:55 PM, avelington

REVISIONS	BY	DATE
CHANGED SECTION OF PIPE FROM 8/12 DUAL WALLED TO 6/10 DUAL WALLED	TAS	10/1/13

<b>RMU-2 PIPING AND INSTRUMENTATION DIAGRAM</b>	
CWM CHEMICAL SERVICES, LLC MODEL CITY, STATE OF NEW YORK	
<b>EnSol, Inc.</b> Environmental Solutions	661 MAIN STREET NIAGARA FALLS, NY 14301 PHONE (716) 285-3920 FAX (716) 285-3928
MAY 2013	PN: 13-7017

**FIGURE**  
**3**