

- P-101**  
CHARGE PUMP  
MAKE: GOULDS  
MODEL: 1"X1.5"-6, 3908  
SUCTION: 1.5"-150# F.F.  
DISCHARGE: 1"-150# F.F.

**M-101**  
ELECTRIC MOTOR (CHARGE PUMP)  
MAKE: TECO-WESTINGHOUSE  
SIZE: 5HP, 3600 rpm  
480V/60Hz/3 PHASE  
FRAME: 184T

**P-201**  
MA-155M TRIPLEX PLUNGER PUMP  
(CUSTOMER SUPPLIED)  
MAKE: APLEX  
MODEL: A-50  
SIZE: TBA  
SUCTION: 3"-150# F.F.  
DISCHARGE: 2"-1500# TAPPED NPT  
PLUNGER SIZE: -

**M-201**  
ELECTRIC MOTOR (PLUNGER PUMP)  
(CUSTOMER SUPPLIED)  
MAKE: TECO-WESTINGHOUSE  
SIZE: -  
480V/60Hz/3 PHASE  
FRAME: -

**P-202**  
MA-155M TRIPLEX PLUNGER PUMP  
(CUSTOMER SUPPLIED)  
MAKE: APLEX  
MODEL: B-85M  
SIZE: TBA  
SUCTION: 3"-150# F.F.  
DISCHARGE: 2"-1500# L.F.  
PLUNGER SIZE: -

**M-202**  
ELECTRIC MOTOR (PLUNGER PUMP)  
(CUSTOMER SUPPLIED)  
MAKE: TECO-WESTINGHOUSE  
SIZE: -  
480V/60Hz/3 PHASE  
FRAME: -

**PSL-101, 102**  
LOW PRESSURE SWITCH  
MAKE: CCS DUAL SNAP  
MODEL: 6900 SERIES  
SIZE: 1/2"  
MAX. PRESS.: 15 psi  
DESIGN PRESS.: FALLING SHUTOFF

**PI-101, 102, 103, 104, 107**  
SUCTION PRESSURE INDICATOR  
MAKE: Wika/WBI  
MEASUREMENT: 0-100 PSI  
SIZE: 4" FACE, 1/2" NPT

**PSH-101, 102**  
HIGH PRESSURE SWITCH  
MAKE: CCS DUAL SNAP  
MODEL: 6900 SERIES  
SIZE: 1/2"  
MAX. PRESS.: 2050 psi  
DESIGN PRESS.: RISING SHUTOFF

**PI-105, 106**  
DISCHARGE PRESSURE INDICATOR  
MAKE: Wika/WBI  
MEASUREMENT: 0-5,000 PSI  
SIZE: 4" FACE, 1/2" NPT

**FQI-101**  
TURBINE FLOW METER  
FLOW TOTALIZER  
MAKE: PRIMARY FLOW  
MODEL: WM0150X2  
SIZE: 1-1/2"x2.0"  
MAX. PRESSURE: 3,700 psi  
END CONNECTIONS: SANDWICH STYLE  
FLOW ANALYZER  
LOCAL INDICATION ONLY

**PSV-101, 102**  
PRESSURE RELIEF VALVE  
MAKE: FARRIS  
MODEL: 27DA33H-M20  
INLET x OUTLET: 3/4" NPT x 1" NPT  
ORIFICE AREA (sq.): 0.110  
SET PRESSURE: 2200 psig  
(FLANGED CONNECTIONS INSTALLED)

**F-101**  
SUCTION FILTER  
MAKE: J.L. FILTRATION  
MODEL: S-BAG FILTER  
FILTER SIZE: 30 MICRON  
CONNECTION SIZE: 3" 150# R.F.

**S-101, 102**  
SUCTION STABILIZER  
MAKE: STATUS FLOW  
MODEL: SFV-1504-F-600  
CONNECTION: 4" 150# R.F.

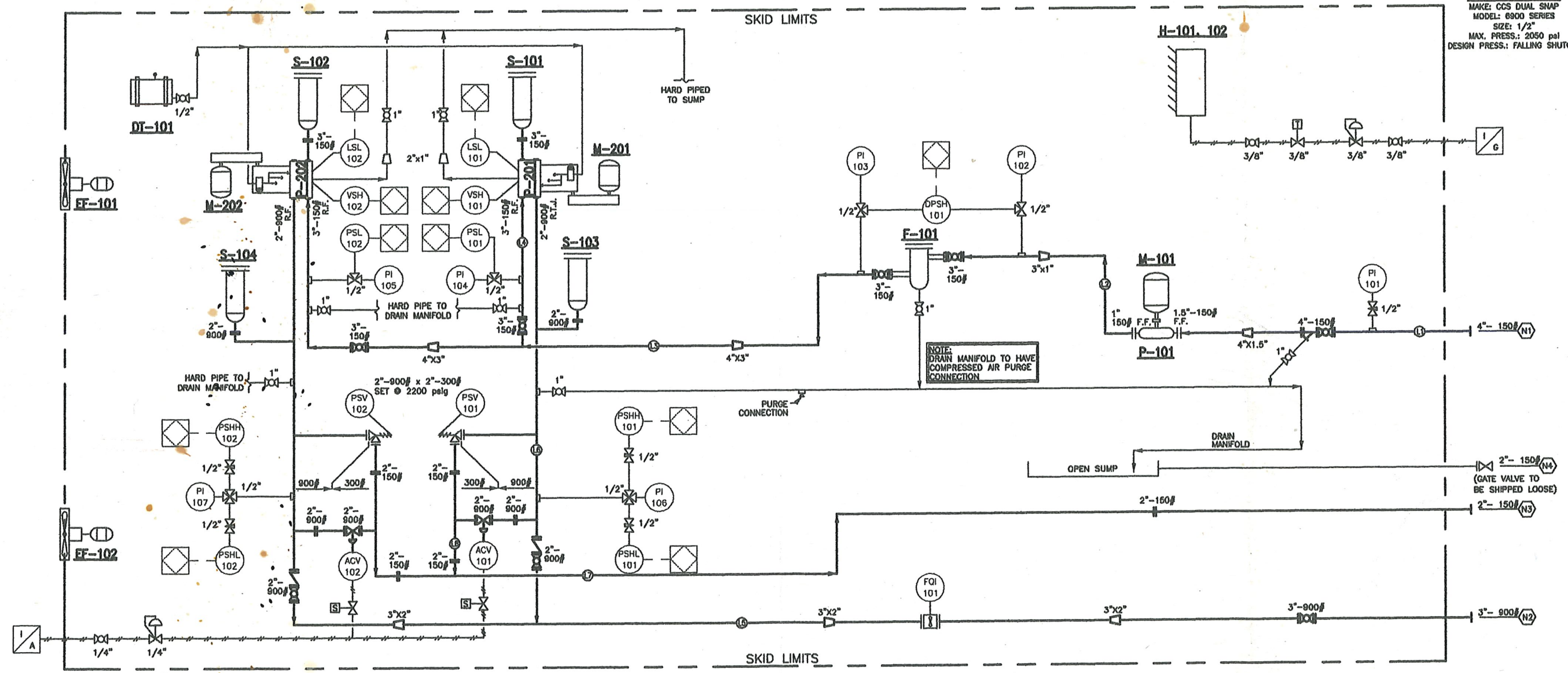
**DT-101**  
DAY TANK  
MAKE: KENCO  
SIZE: 50 GAL.

**LSL-101, 102**  
LEVEL SWITCH LOW  
MAKE: MURPHY  
MODEL: EL-150-EX

**ACV-101, 102**  
MANUAL BYPASS CONTROL VALVE  
MAKE: BETTIS  
SIZE: 2"-800 ANSI  
ACTUATION: PNEUMATIC

**DPSH-101**  
DIFF. PRESS. SHUTDOWN SWITCH  
MAKE: CCS DUAL SNAP  
MODEL: 6480ZE2  
SET PRESS.: 15 psi RISING  
CONNECTION: 1/2" NPT

**PSHL-101, 102**  
HIGH PRESSURE SWITCH  
MAKE: CCS DUAL SNAP  
MODEL: 6900 SERIES  
SIZE: 1/2"  
MAX. PRESS.: 2050 psi  
DESIGN PRESS.: FALLING SHUTOFF



LINE LIST									
LINE NUMBER	DESCRIPTION		DESIGN		OPERATING		HYDRO TEST PRESS. (kPa)	C.A. (mm)	PIPE SCH.
	FROM	TO	PRESS. (kPa)	TEMP. (°C)	PRESS. (kPa)	TEMP. (°C)			
L1	SKID EDGE	P-103	1965	-29 TO 38	138	21	207	-	80
L2	P-103	F-101	1965	-29 TO 38	278	21	414	-	80
L3	F-101	P-102	1965	-29 TO 38	278	21	414	-	80
L4	L3	P-101	1965	-29 TO 38	278	21	414	-	80
L5	P-102/L6	SKID EDGE	15 306	-29 TO 38	13 983	21	20 975	-	80
L6	P-101	L5	15 306	-29 TO 38	13 983	21	20 975	-	80
L7	PSV-102/HCV-102	SKID EDGE	1965	-29 TO 38	138	21	207	-	80
L8	PSV-101/HCV-101	L7	1965	-29 TO 38	138	21	207	-	80

REVISIONS:					APPROVALS:		
REV	DATE	DESCRIPTION	DWN	CHK	APP		
A	2005.06.13	PRELIMINARY	A.R.				
B	2005.06.15	PRELIM MODIFICATIONS	A.R.				
C	2005.06.16	ISSUED FOR APPROVAL	A.R.				
D	2005.06.20	ISSUED FOR CONSTRUCTION	A.R.				
1	2005.08.22	FOR CLARIFICATION	M.C.				
2	2005.10.13	AS-BUILTS	R.M.				

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

**APPROVED FOR CONSTRUCTION**

DRAWINGS SHALL NOT BE USED FOR FABRICATION UNLESS THE THIS STAMP HAS BEEN SIGNED AND DATED BY CANDYNE PERSONNEL. WORK COMPLETED WITHOUT THIS APPROVAL IS AT THE RISK AND EXPENSE OF THE FABRICATOR. REFER TO NOTES BELOW.

☐ APPROVED - PROCEED WITH CONSTRUCTION  
☐ APPROVED AS NOTED - PROCEED WITH CONSTRUCTION

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**CanDyne**  
Pump Services Inc.

CLIENT: \_\_\_\_\_

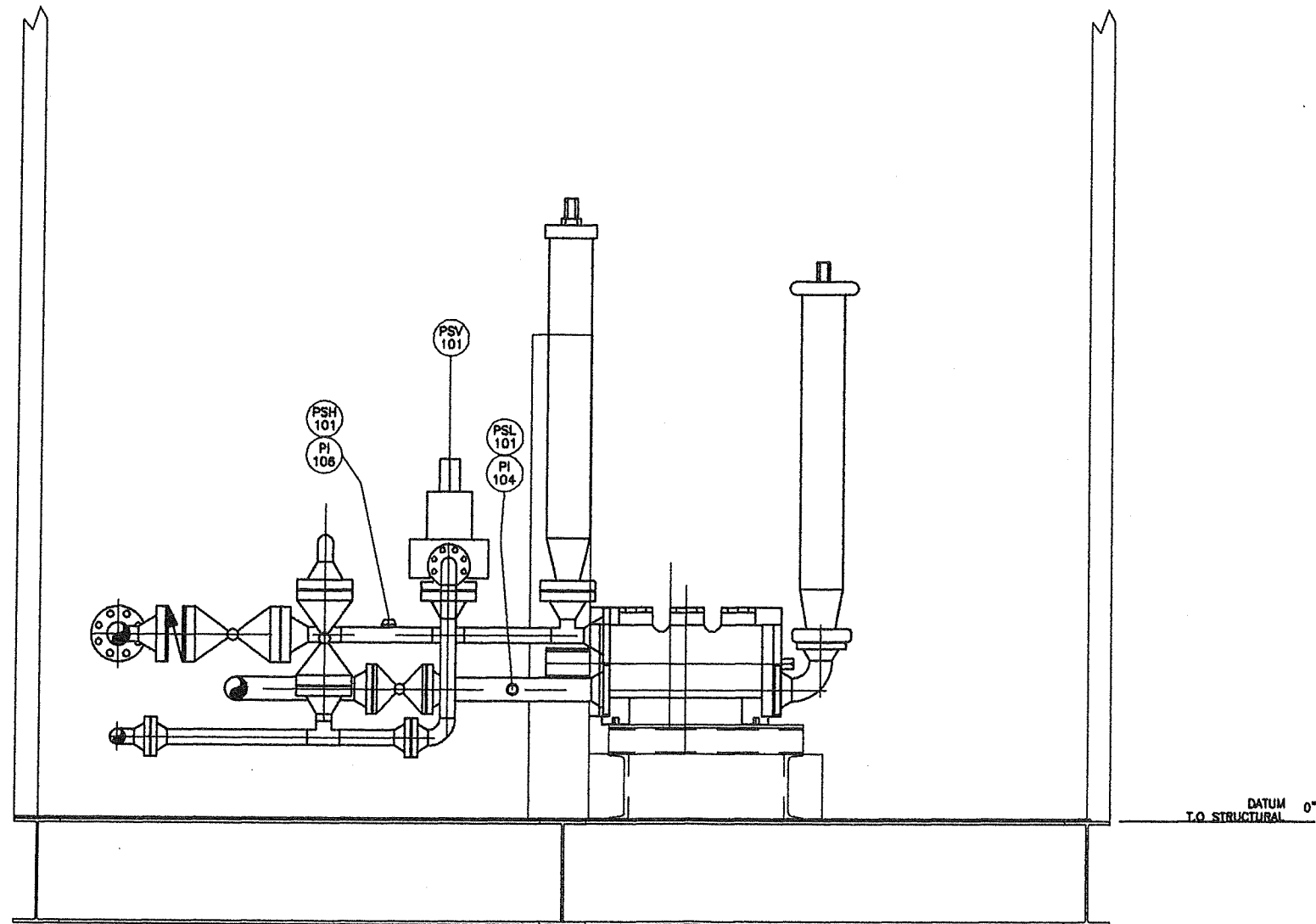
PACKAGE: **PROJECT# 2344**  
**PLUNGER PUMP PACKAGE**  
**PROCESS & INSTRUMENTATION DIAGRAM**

DRAWN: \_\_\_\_\_ DATE: 2005.05.09 DESIGN: \_\_\_\_\_ SCALE: \_\_\_\_\_ REV: 2

DRAWING NUMBER: **2344-01**







ELEVATION VIEW SECTION B-B

NOZZLE SCHEDULE

TAG	DESCRIPTION	SIZE (O.D.)	RATING	FACING	± ELEV./F.O.F.	COMMENTS
N1	SUCTION INLET	4"	150 ANSI	R.F.	T.B.A.	-
N2	DISCHARGE OUTLET	3"	900 ANSI	R.F.	T.B.A.	-
N3	PSV / BYPASS OUTLET	2"	150 ANSI	R.F.	T.B.A.	-
N4	SUMP OUTLET	2"	150 ANSI	R.F.	T.B.A.	-

REVISIONS:

REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.08.13	PRELIMINARY	A.R.		
B	2005.08.15	PRELIM MODIFICATIONS	A.R.		
C	2005.08.16	ISSUED FOR APPROVAL	A.R.		
D	2005.08.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.08.22	FOR CLARIFICATION	H.C.		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

APPROVALS:

APPROVED FOR CONSTRUCTION

DRAWINGS SHALL NOT BE USED FOR FABRICATION UNLESS THE THIS STAMP HAS BEEN SIGNED AND DATED BY CANDYNE PERSONNEL. WORK COMPLETED WITHOUT THIS APPROVAL IS AT THE RISK AND EXPENSE OF THE FABRICATOR. REFER TO NOTES BELOW.

- ☐ APPROVED - PROCEED WITH CONSTRUCTION  
☐ APPROVED AS NOTED - PROCEED WITH CONSTRUCTION

SIGNATURE

DATE

**CanDyne**  
Pump Services Inc.

CLIENT:

PACKAGE:

**PROJECT# 2344**  
**PLUNGER PUMP PACKAGE**  
**ELEVATION LAYOUT**

DRAWN:

DATE:

DESIGN:

SCALE:

REV:

A.R. 2005.05.09

G.P. 1" : 1'

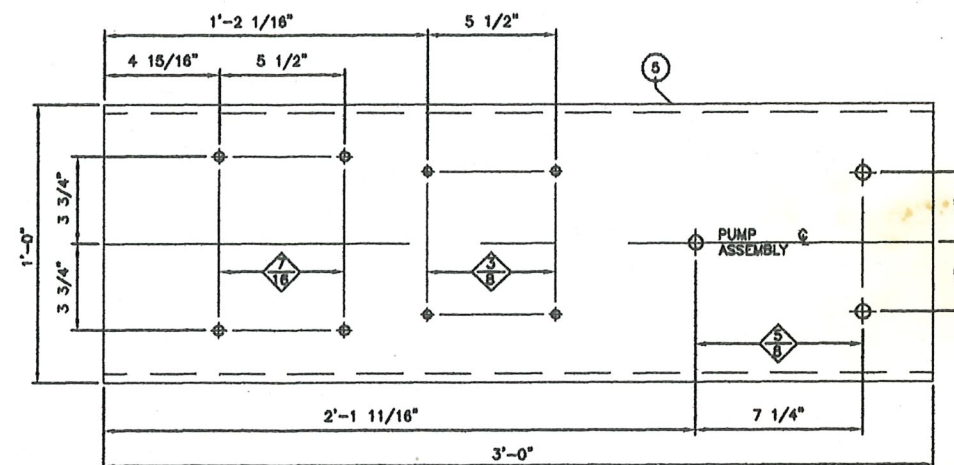
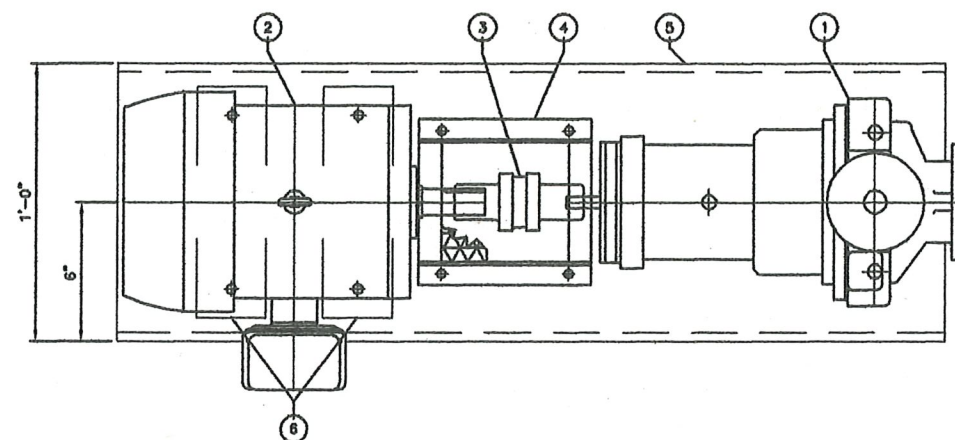
2

DRAWING NUMBER:

**2344-12**

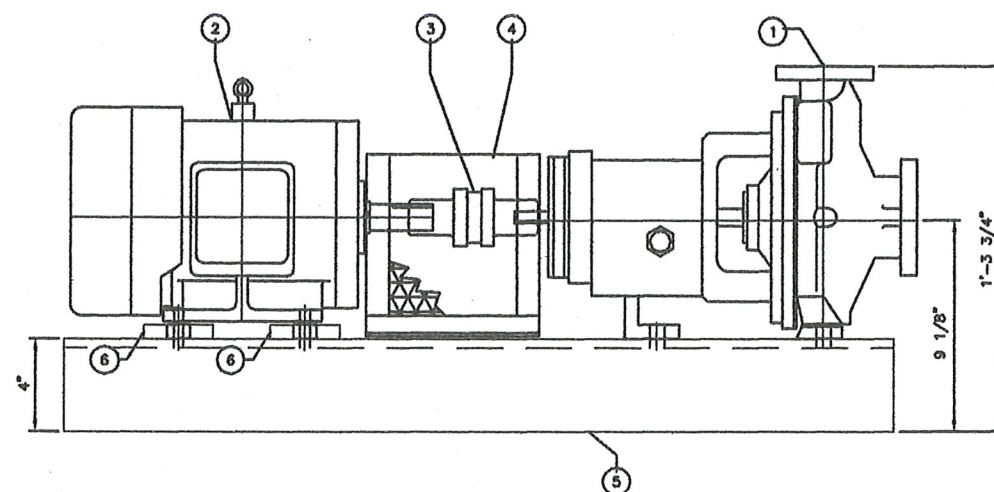






CHARGE PUMP ASSEMBLY - PLAN VIEW

**NOTE:**  
1/8" SHIMS TO BE USED  
UNDERNEATH MOTOR



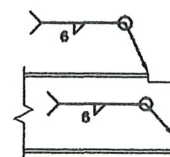
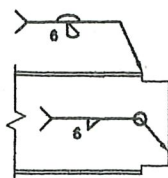
CHARGE PUMP ASSEMBLY - ELEVATION VIEW

[illegible]

**NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO CSA Q40.20 & Q40.21, GRADE 300W FOR ROLLED SHAPES AND GRADE 350W CLASS C FOR HSS SHAPES.
2. ALL STRUCTURAL STEEL FABRICATION & ASSEMBLY SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA-518.1-94 "LIMIT STATES DESIGN OF STEEL STRUCTURES", UNLESS STATED OTHERWISE.
3. ALL SHOP CONNECTIONS SHALL BE FULLY WELDED, UNLESS NOTED OR DETAILED OTHERWISE, WITH A 6mm CONTINUOUS FILLET WELD.
4. ALL STRUCTURAL STEEL SURFACES TO BE PAINTED AND CLEANED IN ACCORDANCE WITH SSPC SPECIFICATION SP-8 "COMMERCIAL BLAST CLEANING".
5. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S SPECIFICATIONS.

## STRUCTURAL DETAILS



**FULL COPE**

HALF COPE

**REVISIONS:**

REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.06.13	PRELIMINARY	A.R.		
B	2005.06.15	PRELIM MODIFICATIONS	A.R.		
C	2005.06.16	ISSUED FOR APPROVAL	A.R.		
O	2005.06.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.08.22	FOR CLARIFICATION	M.C		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

APPROVALS:

**CanDyne**  
Pump Services Inc.

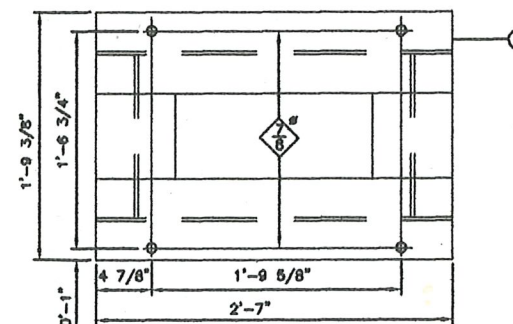
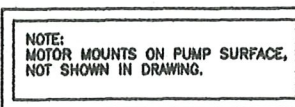
**CLIENT:**

PACKAGE: PROJECT #2344  
PLUNGER PUMP PACKAGE  
CHARGE PUMP ASSEMBLY

DRAWN:	DATE:	DESIGN:	SCALE:	REV:
A.R.	2005.05.09		3"=1'	2
DRAWING NUMBER:				

DRAWING NUMBER: 2344-30



[illegible]

**NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO CSA 040.20 & 040.21. GRADE 300W FOR ROLLED SHAPES AND GRADE 350W CLASS C FOR HSS SHAPES.
2. ALL STRUCTURAL STEEL FABRICATION & ASSEMBLY SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA-518.1-94 "LIMIT STATES DESIGN OF STEEL STRUCTURES", UNLESS STATED OTHERWISE.
3. ALL SHOP CONNECTIONS SHALL BE FULLY WELDED, UNLESS NOTED OR DETAILED OTHERWISE, WITH A 6mm CONTINUOUS FILLET WELD.
4. ALL STRUCTURAL STEEL SURFACES TO BE PAINTED AND CLEANED IN ACCORDANCE WITH SSPC SPECIFICATION SP-8 "COMMERCIAL BLAST CLEANING".
5. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S SPECIFICATIONS.

## STRUCTURAL DETAILS



**REVISIONS:**

REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.06.13	PRELIMINARY	A.R.		
B	2005.06.15	PRELIM MODIFICATIONS	A.R.		
C	2005.06.16	ISSUED FOR APPROVAL	A.R.		
0	2005.06.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.06.22	FOR CLARIFICATION	M.C		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

**APPROVALS:**

**CanDyne**  
Pump Services Inc.

**CLIENT:**

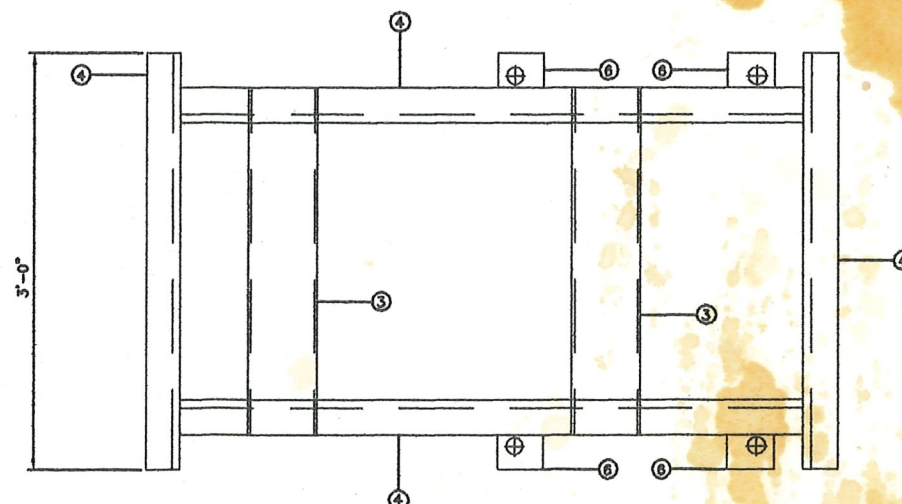
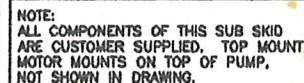
PACKAGE: PROJECT #2344  
PLUNGER PUMP PACKAGE  
SUB-SKID LAYOUT

DRAWN:	DATE:	DESIGN:	SCALE:	REV:
A.R.	2005.05.09		1-1/2"=1'	2

**DRAWING NUMBER:**

2344-31

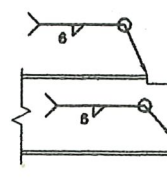


[illegible]

**NOTES:**

1. STRUCTURAL STEEL SHALL CONFORM TO CSA 440.20 & 440.21, GRADE 300W FOR ROLLED SHAPES AND GRADE 350W CLASS C FOR HSS SHAPES.
2. ALL STRUCTURAL STEEL FABRICATION & ASSEMBLY SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA-516.1-94 "LIMIT STATES DESIGN OF STEEL STRUCTURES", UNLESS STATED OTHERWISE.
3. ALL SHOP CONNECTIONS SHALL BE FULLY WELDED, UNLESS NOTED OR DETAILED OTHERWISE, WITH A 6mm CONTINUOUS FILLET WELD.
4. ALL STRUCTURAL STEEL SURFACES TO BE PAINTED AND CLEANED IN ACCORDANCE WITH SSPC SPECIFICATION SP-6 "COMMERCIAL BLAST CLEANING".
5. ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S SPECIFICATIONS.

## STRUCTURAL DETAILS



**FULL COPE**

HALF COPE

**REVISIONS:**

REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.06.13	PRELIMINARY	A.R.		
B	2005.06.15	PRELIM MODIFICATIONS	A.R.		
C	2005.06.16	ISSUED FOR APPROVAL	A.R.		
D	2005.06.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.08.22	FOR CLARIFICATION	M.C		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

APPROVALS:

**CanDyne**  
Pump Services Inc.

**CLIENT:**

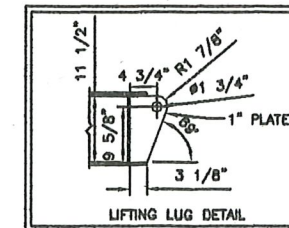
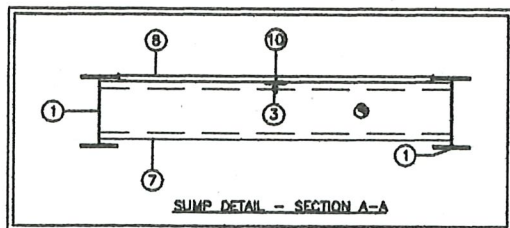
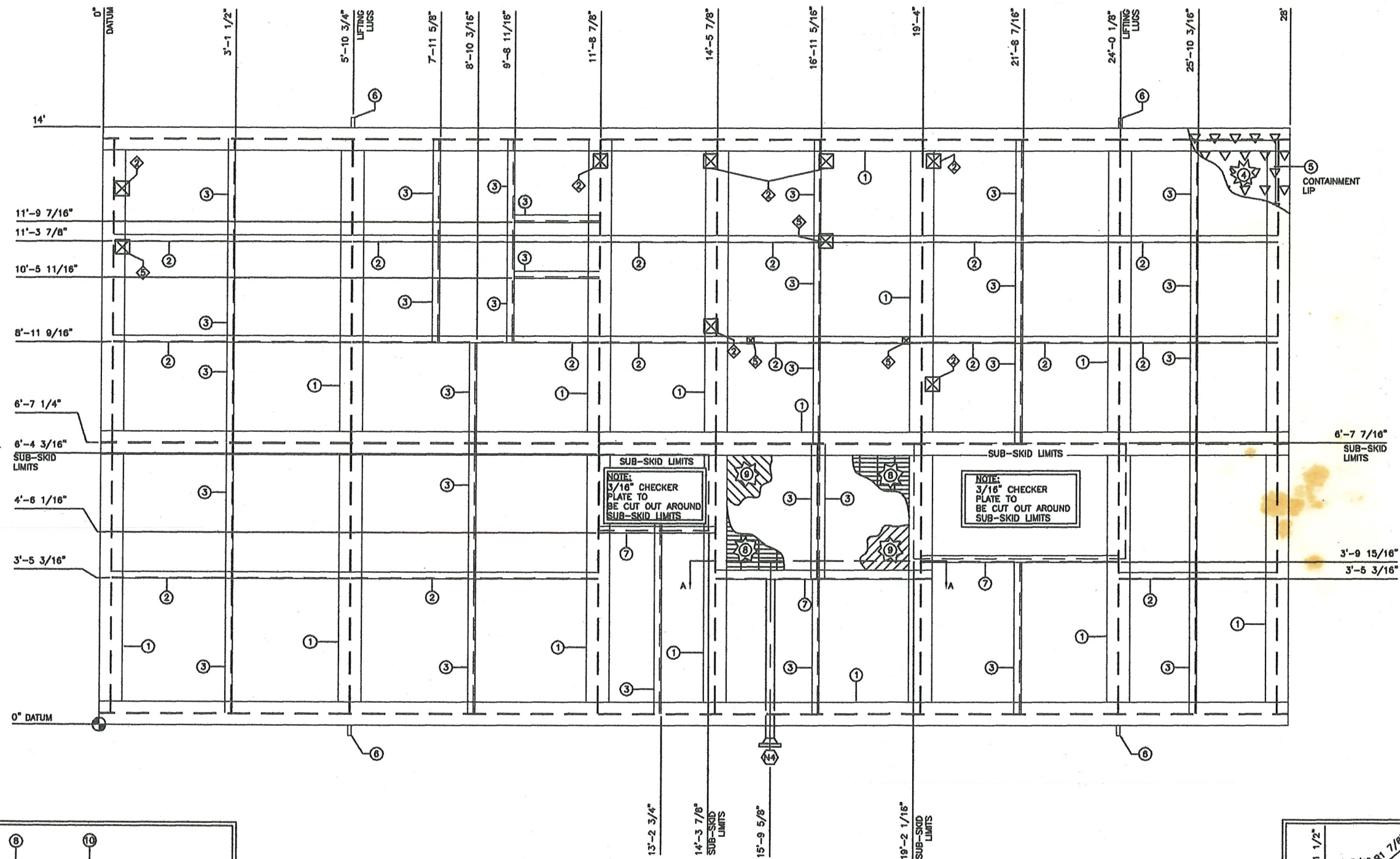
PACKAGE: PROJECT #2344  
PLUNGER PUMP PACKAGE  
SUB-SKID LAYOUT

DRAWN:	DATE:	DESIGN:	SCALE:	REV:
A.R.	2005.05.09		1-1/2"=1'	

DRAWING NUMBER:

2344-32



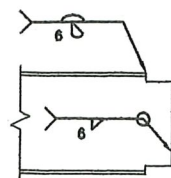


BILL OF MATERIALS		
ITEM	DESCRIPTION	WEIGHT
1	W12x30	-
2	C6x8.2	-
3	L2x2x3/8	-
4	3/16\" CHECKER PLATE	-
5	2\"x1/4\" FLAT BAR	-
6	LIFTING LUGS	-
7	C10 X 15.3	-
8	GRATING	-
9	1/4\" PLATE	-
10	L1-1/4\"x1-1/4\"x1/4\"	-

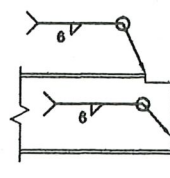
#### NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20 & G40.21. GRADE 300W FOR ROLLED SHAPES AND GRADE 350W CLASS C FOR HSS SHAPES.
- ALL STRUCTURAL STEEL FABRICATION & ASSEMBLY SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA-516.1-94 "LIMIT STATES DESIGN OF STEEL STRUCTURES", UNLESS STATED OTHERWISE.
- ALL SHOP CONNECTIONS SHALL BE FULLY WELDED, UNLESS NOTED OR DETAILED OTHERWISE, WITH A 6mm CONTINUOUS FILLET WELD.
- ALL STRUCTURAL STEEL SURFACES TO BE PAINTED AND CLEANED IN ACCORDANCE WITH SSPC SPECIFICATION SP-6 "COMMERCIAL BLAST CLEANING".
- ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINT MANUFACTURER'S SPECIFICATIONS.

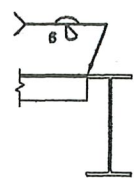
#### STRUCTURAL DETAILS



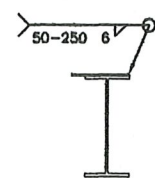
FULL COPE



HALF COPE



ANGLE



FLOOR PLATE

#### REVISIONS:

REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.06.13	PRELIMINARY	A.R.		
B	2005.06.15	PRELIM MODIFICATIONS	A.R.		
C	2005.06.16	ISSUED FOR APPROVAL	A.R.		
D	2005.06.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.08.22	FOR CLARIFICATION	M.C.		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

#### APPROVALS:

#### APPROVED FOR CONSTRUCTION

DRAWINGS SHALL NOT BE USED FOR FABRICATION UNLESS THE THIS STAMP HAS BEEN SIGNED AND DATED BY CANDYNE PERSONNEL. WORK COMPLETED WITHOUT THIS APPROVAL IS AT THE RISK AND EXPENSE OF THE FABRICATOR. REFER TO NOTES BELOW.

- ☐ APPROVED - PROCEED WITH CONSTRUCTION  
☐ APPROVED AS NOTED - PROCEED WITH CONSTRUCTION

SIGNATURE

DATE

**CanDyne**  
 Pump Services Inc.

CLIENT:

PACKAGE:

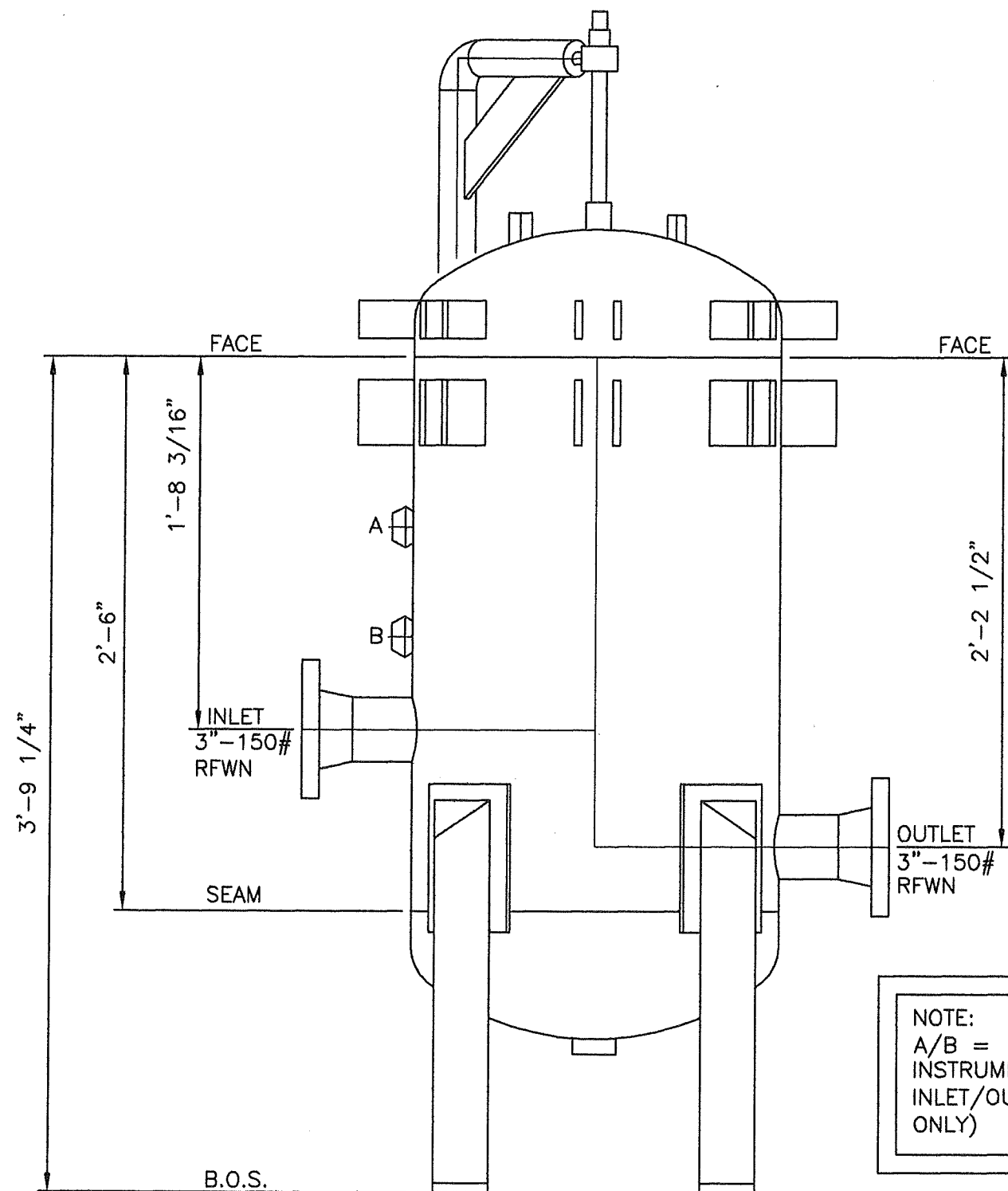
**PROJECT # 2344**  
**PLUNGER PUMP PACKAGE**  
**STRUCTURAL LAYOUT**

DRAWN: A.R. DATE: 2005.05.09 DESIGN: A.R. SCALE: 3/4"=1' REV: 2

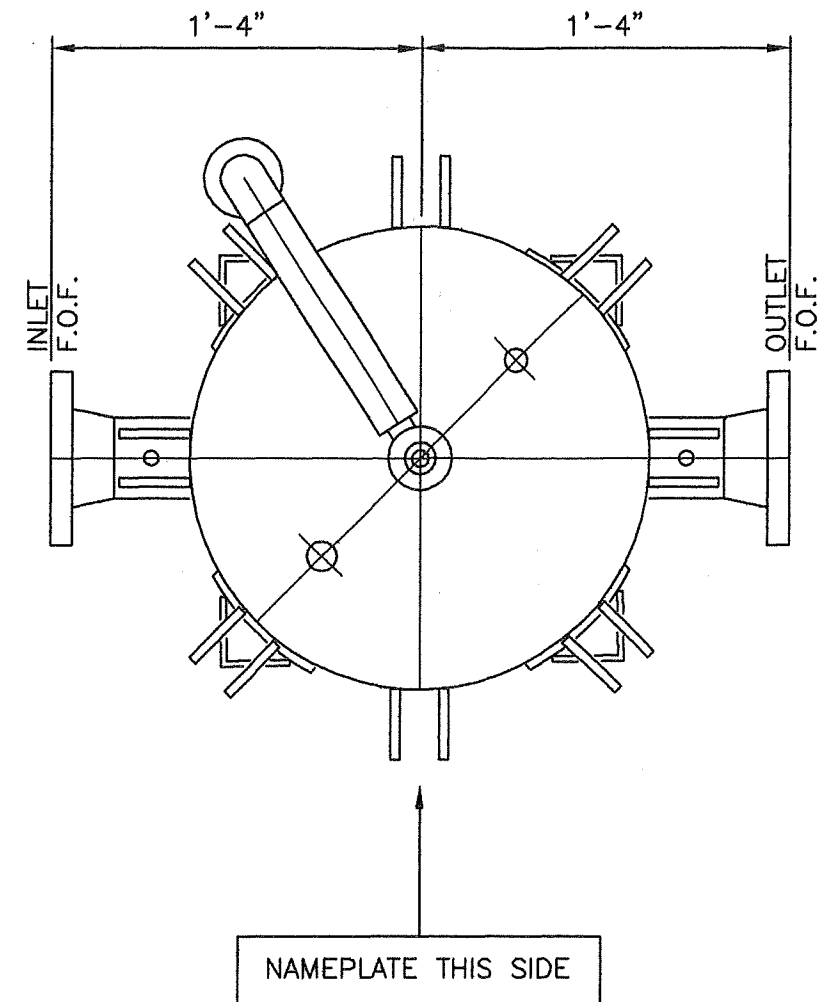
DRAWING NUMBER:

**2344-20**





NOTE:  
A/B = 1/2" HALF COLARS,  
INSTRUMENTATION TIE IN FOR  
INLET/OUTLET (DEPICTION  
ONLY)



3 BAG FILTER, 30 MICRON

REVISIONS:					
REV	DATE	DESCRIPTION	DWN	CHK	APP
A	2005.06.13	PRELIMINARY	A.R.		
B	2005.06.15	PRELIM MODIFICATIONS	A.R.		
C	2005.06.16	ISSUED FOR APPROVAL	A.R.		
D	2005.08.20	ISSUED FOR CONSTRUCTION	A.R.		
1	2005.08.22	FOR CLARIFICATION	M.C.		
2	2005.10.13	AS-BUILTS	R.M.		

THIS DRAWING AND DATA EMBODY INFORMATION WHICH IS THE CONFIDENTIAL PROPERTY OF CANDYNE PUMP SERVICES INC. AND SHALL NOT BE COPIED, REPRODUCED, DISCLOSED TO OTHERS, OR USED IN WHOLE OR IN PART FOR ANY PURPOSE, WITHOUT THE EXPRESS WRITTEN CONSENT OF CANDYNE PUMP SERVICES INC.

APPROVALS:

**APPROVED FOR CONSTRUCTION**

DRAWINGS SHALL NOT BE USED FOR FABRICATION UNLESS THE THIS STAMP HAS BEEN SIGNED AND DATED BY CANDYNE PERSONNEL. WORK COMPLETED WITHOUT THIS APPROVAL IS AT THE RISK AND EXPENSE OF THE FABRICATOR. REFER TO NOTES BELOW.

- ☐ APPROVED - PROCEED WITH CONSTRUCTION  
☐ APPROVED AS NOTED - PROCEED WITH CONSTRUCTION

SIGNATURE

DATE

**CanDyne**  
Pump Services Inc.

CLIENT:

PACKAGE: **PROJECT #2344**  
**PLUNGER PUMP PACKAGE**  
**FILTER DETAIL**

DRAWN: A.R. DATE: 2005.05.09 DESIGN: G.P. SCALE: 3"=1' REV: 2

DRAWING NUMBER:

2344-41



