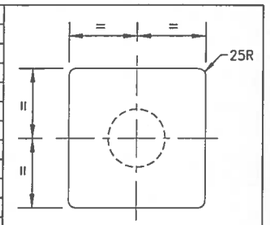
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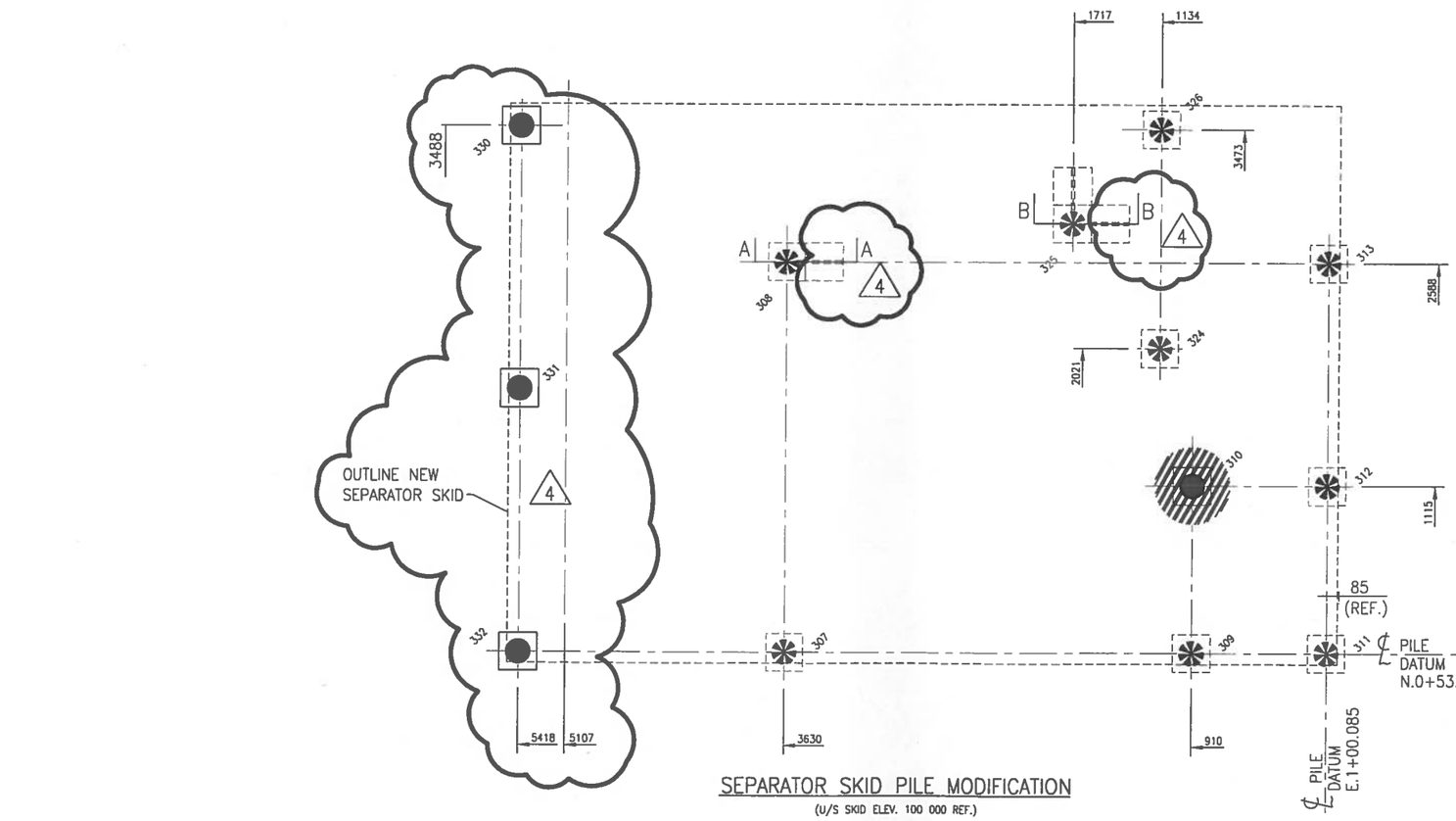
PILE SCHEDULE

PILE NUMBER	QTY	LOCATION	PILE DIA (mm)	MIN DEPTH OF PILE BELOW GRADE (m)	PILE CUT OFF ELEVATION (mm)	TOP OF PLATE ELEVATION (mm)	CAP TYPE	TYPE OF PILE	REMARKS
301–313	13	GLYCOL DEHYDRATOR PILES	NOTE 11	7m	99 987	100 000	2	DRIVEN	
320–326	5	GLYCOL DHYDRATOR PILES	NOTE 11	7m	99 987	100 000	2	DRIVEN	
330–332	3	NEW SEPARATOR PACKAGE	NOTE 11	7m	99 987	100 000	2	DRIVEN	PILES ADDED TO ACCOMIDATE NEW SEPARATOR

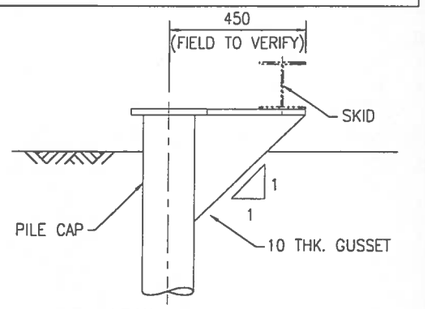
TYPE	SIZE
1	145 x 145 x 13 THK.
2	250 x 250 x 13 THK.
3	250 x 250 x 20 THK.
4	300 x 300 x 13 THK.
5	300 x 300 x 20 THK.
6	300 x 300 x 25 THK.
7	350 x 350 x 13 THK.
8	350 x 350 x 20 THK.
9	405 x 405 x 13 THK.
10	405 x 405 x 20 THK.
11	405 x 405 x 25 THK.
12	457 x 457 x 20 THK.
13	610 x 610 x 25 THK.



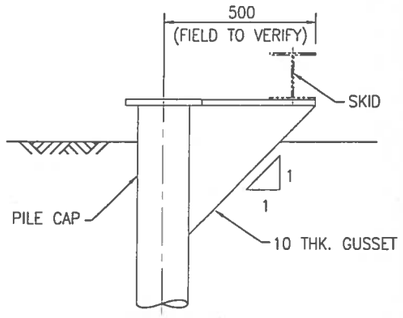
PILE CAP DETAIL
N.T.S.



SEPARATOR SKID PILE MODIFICATION
(U/S SKID ELEV. 100 000 REF.)



SECTION A–A
PILE CAP EXTENSION
SCALE 1:10



SECTION B–B
PILE CAP EXTENSION
SCALE 1:10

NOTE: ABANDON PILES MARKED

EXISTING PILE

NUMBER	REFERENCE DRAWINGS
A1–WR–03–PP–01	PLOT PLAN
A1–WR–03–C–01	PIPE RACK PILE LOCATION PLAN

NO	REVISION DESCRIPTION	BY	DATE	CHD	APPD
A	ISSUED FOR APPROVAL	LMG			
0	ISSUED FOR CONSTRUCTION	LMG	00.09.01	MT	
1	RE–ISSUED FOR CONSTRUCTION	LMG	00.09.07		
2	REVISED LAYOUT TO MATCH NEW SKID	LMG	00.10.14		
3	AS–BUILT AS PER Q.C. MANUAL	LR	01.11.28		
B	ISSUED FOR REVIEW	T.D.	02.08.26		
4	RE–ISSUED FOR CONSTRUCTION	T.D.	03.05.20		

03016
PROJ: PS-RACA1

ENGINEERS & PERMIT STAMPS

PROFESSIONAL ENGINEER ALBERTA
MICHAEL HAYDEN

PERMIT TO PRACTICE
Tundra Engineering Ltd.
Signature
Date
PERMIT NUMBER: P-5951
The Association of Professional Engineers, Geologists and geophysicists of Alberta

TUNDRA

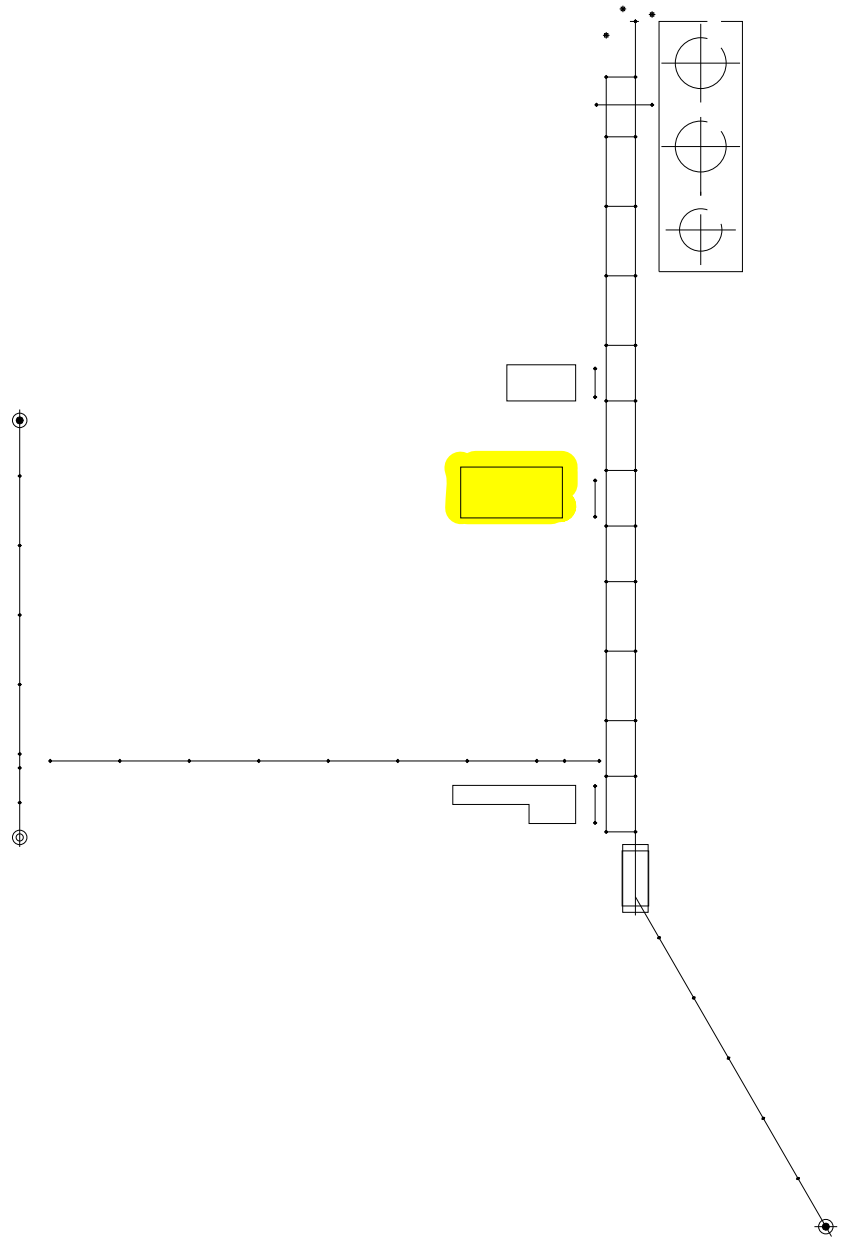
TUNDRA ENGINEERING LTD.
CALGARY, ALBERTA

	DRAWN	CHECKED	APPROVED
BY	K.ROBERTS	J.D.	K.L.
DATE	03.05.13	03.05.20	03.05.20

Anadarko Canada Corporation

WILD RIVER
LSD: 12–36–56–24 W5M
SEPARATOR SKID
PILE MODIFICATION

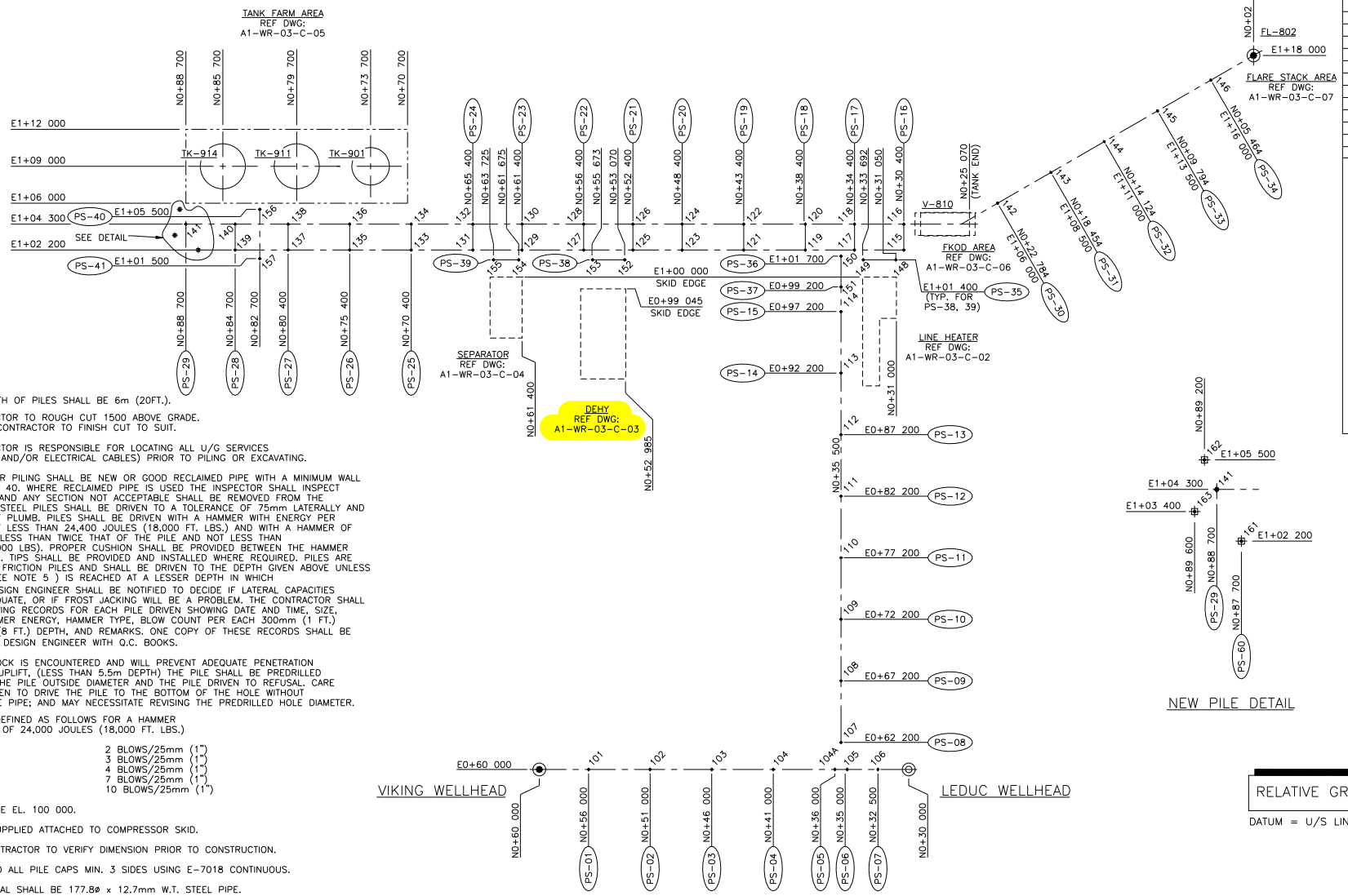
SCALE	DRAWING NUMBER	REV
1:20	A1–WR–03–C–09	4

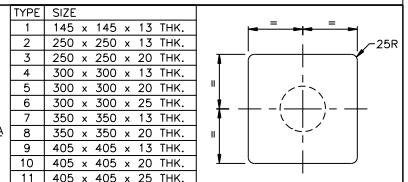


PILE SCHEDULE

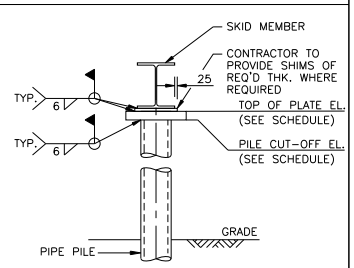
PILE NUMBER	QTY	LOCATION	PILE DIA (mm)	MIN DEPTH OF PILE BELOW GRADE (m)	PILE CUTOFF ELEVATION (m)	TOP OF PLATE ELEVATION (m)	CAP TYPE	TYPE OF PILE	REMARKS
101–114	15	PS–01 TO PS–15	NOTE 11	7m	101 048	N/A	N/A	DRIVEN	
115–141	27	PS–16 TO PS–29	NOTE 11	7m	101 048	N/A	N/A	DRIVEN	
142–146	5	PS–30 TO PS–34	NOTE 11	7m	99 987	100 000	2	DRIVEN	ORIENTATE CAPS ALONG COMMON ℄
147	1	RTU / TEG UNIT	NOTE 11	7m	100 447	100 460	2	DRIVEN	LOCATE AT N1+12 000, E0+52 000
148–157	10	PS–35 TO PS–41	NOTE 11	7m	99 987	100 000	2	DRIVEN	
161	1	PS–60	114	7m	100 037	100 050	2	SCREW	PILES TO BE AS CLOSE AS POSSIBLE TO SPECIFIED LOCATION
162 & 163	2	FUTURE PIG LAUNCHERS	114	7m	99 837	99 850	2	SCREW	PAINT CAPS BRIGHT ORANGE. PILES TO BE AS CLOSE AS POSSIBLE TO SPECIFIED LOCATION

SITE & TRUE NORTH





PILE CAP DETAIL
N.T.S.



PILE WITH CAP TO SKID DETAIL
N.T.S.

RELATIVE GRADE EL.=99 850

DATUM = U/S LINE HEATER SKID = 100 000

NOTES:

1. MINIMUM DEPTH OF PILES SHALL BE 6m (20FT.).
2. PILE CONTRACTOR TO ROUGH CUT 1500 ABOVE GRADE. MECHANICAL CONTRACTOR TO FINISH CUT TO SUIT.
3. PILE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL U/G SERVICES (IE. PIPELINE AND/OR ELECTRICAL CABLES) PRIOR TO PILING OR EXCAVATING.
4. MATERIALS FOR PILING SHALL BE NEW OR GOOD RECLAIMED PIPE WITH A MINIMUM WALL OF SCHEDULE 40. WHERE RECLAIMED PIPE IS USED THE INSPECTOR SHALL INSPECT EACH PIECE, AND ANY SECTION NOT ACCEPTABLE SHALL BE REMOVED FROM THE SITE. DRIVEN STEEL PILES SHALL BE DRIVEN TO A TOLERANCE OF 75mm LATERALLY AND WITHIN 2% OF PLUMB. PILES SHALL BE DRIVEN WITH A HAMMER WITH ENERGY PER BLOW OF NOT LESS THAN 24,400 JOULES (18,000 FT. LBS.) AND WITH A HAMMER OF A MASS NOT LESS THAN TWICE THAT OF THE PILE AND NOT LESS THAN 1300 KG (3,000 LBS). PROPER CUSHION SHALL BE PROVIDED BETWEEN THE HAMMER AND THE PILE. TIPS SHALL BE PROVIDED AND INSTALLED WHERE REQUIRED. PILES ARE DESIGNED AS FRICTION PILES AND SHALL BE DRIVEN TO THE DEPTH GIVEN ABOVE UNLESS REFUSAL (SEE NOTE 5) IS REACHED AT A LESSER DEPTH IN WHICH CASE THE DESIGN ENGINEER SHALL BE NOTIFIED TO DECIDE IF LATERAL CAPACITIES WILL BE ADEQUATE, OR IF FROST JACKING WILL BE A PROBLEM. THE CONTRACTOR SHALL MAINTAIN DRIVING RECORDS FOR EACH PILE DRIVEN SHOWING DATE AND TIME, SIZE, LENGTH, HAMMER ENERGY, HAMMER TYPE, BLOW COUNT PER EACH 300mm (1 FT.) AFTER 2.4m (8 FT.) DEPTH, AND REMARKS. ONE COPY OF THESE RECORDS SHALL BE SENT TO THE DESIGN ENGINEER WITH Q.C. BOOKS.
5. WHERE BEDROCK IS ENCOUNTERED AND WILL PREVENT ADEQUATE PENETRATION TO PREVENT UPLIFT, (LESS THAN 5.5m DEPTH) THE PILE SHALL BE PREDRILLED TO 90% OF THE PILE OUTSIDE DIAMETER AND THE PILE DRIVEN TO REFUSAL. CARE MUST BE TAKEN TO DRIVE THE PILE TO THE BOTTOM OF THE HOLE WITHOUT DAMAGING THE PIPE; AND MAY NECESSITATE REVISING THE PREDRILLED HOLE DIAMETER.
6. REFUSAL IS DEFINED AS FOLLOWS FOR A HAMMER WITH ENERGY OF 24,000 JOULES (18,000 FT. LBS.)

114mm (4")	2 BLOWS/25mm (1")
139mm (5")	3 BLOWS/25mm (1")
168mm (6")	4 BLOWS/25mm (1")
219mm (8")	7 BLOWS/25mm (1")
273mm (10")	10 BLOWS/25mm (1")

7. ASSUME GRADE EL. 100 000.
8. PILE CAPS SUPPLIED ATTACHED TO COMPRESSOR SKID.
9. • DENOTES CONTRACTOR TO VERIFY DIMENSION PRIOR TO CONSTRUCTION.
10. WELD SKID TO ALL PILE CAPS MIN. 3 SIDES USING E–7018 CONTINUOUS.
11. PILING MATERIAL SHALL BE 177.8ø x 12.7mm W.T. STEEL PIPE.

NUMBER	REFERENCE DRAWINGS
A1–WR–03–PP–01	PLOT PLAN

NO	REVISION DESCRIPTION	BY	DATE	CHD	APPD
A	ISSUED FOR APPROVAL	LMG			
0	ISSUED FOR CONSTRUCTION	LMG	00.09.01	MT	
1	RE–ISSUED FOR CONSTRUCTION	LMG	00.09.07		
2	REVISED DEHY SKID	LMG	00.10.14		
3	ADD PILES 161 TO 163	S.S.	01.03.14		
4	ASBUILT AS PER Q.C. MANUAL	LR	01.11.28		

ENGINEERS & PERMIT STAMPS

PROFESSIONAL ENGINEER CRAIG M. BACHER ALBERTA

PERMIT TO PRACTICE
Tundra Engineering Ltd.
Signature
Date
PERMIT NUMBER: P–5951
The Association of Professional Engineers, Geologists and geophysicists of Alberta

Tundra
TUNDRA ENGINEERING LTD.
CALGARY, ALBERTA

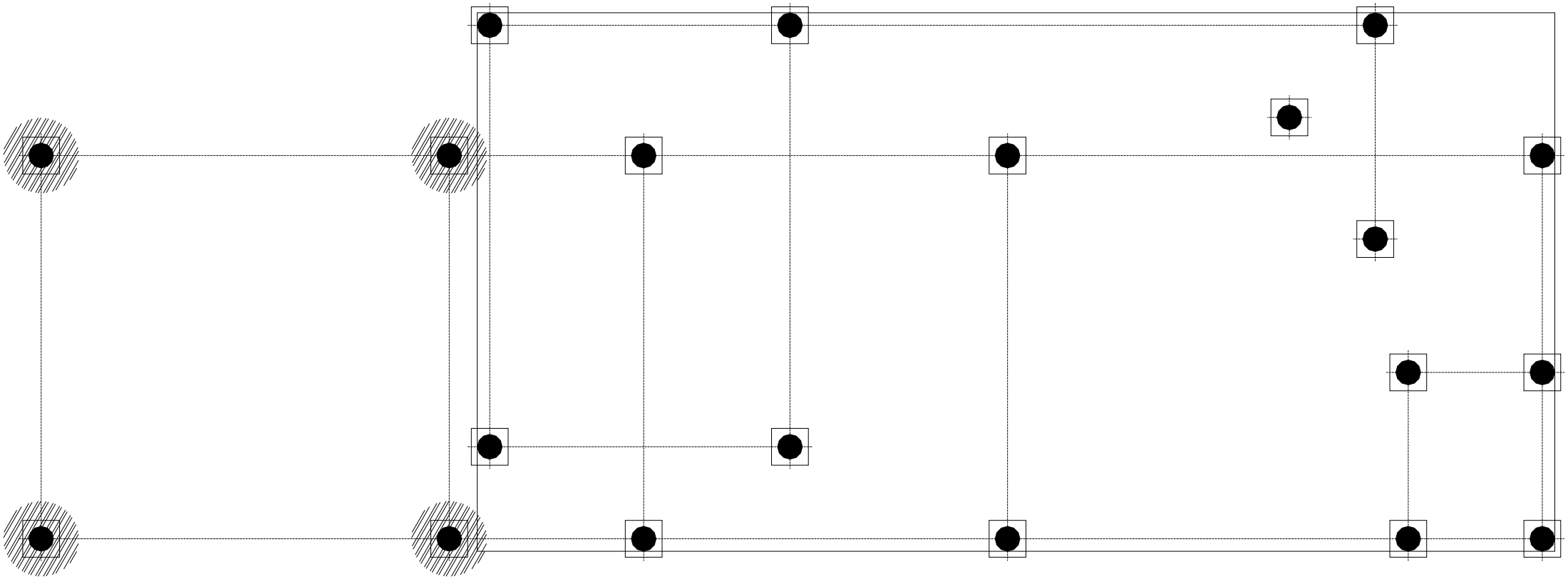
BPC Berkley Petroleum Corp.
Berkley Petroleum Corp.

WILD RIVER
LSD: 12–36–56–24 W5M
PIPE RACK
PILE LOCATION PLAN

	DRAWN	CHECKED	APPROVED
BY	LMG		
DATE	00.08.31		

SCALE	DRAWING NUMBER	REV
1:200	A1–WR–03–C–01	4

00041
PROTO: PS–ROZ_A1

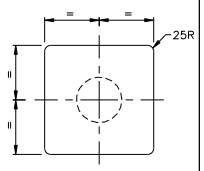


WIR-1236-FDN-CI-000004

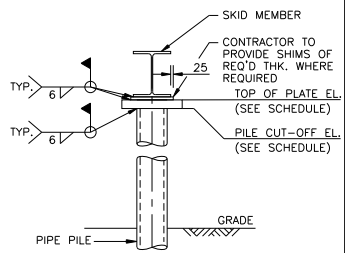
PILE SCHEDULE

PILE NUMBER	QTY	LOCATION	PILE DIA (mm)	MIN DEPTH OF PILE BELOW GRADE (m)	PILE CUTOFF ELEVATION (m)	TOP OF PLATE ELEVATION (m)	CAP TYPE	TYPE OF PILE	REMARKS
301–313	13	GYLCOL DEHYDRATOR PILES	NOTE 11	7m	99 987	100 000	2	DRIVEN	
320–326	5	GYLCOL DEHYDRATOR PILES	NOTE 11	7m	99 987	100 000	2	DRIVEN	PILES ADDED TO ACCOMODATE NEW DEHY SKID

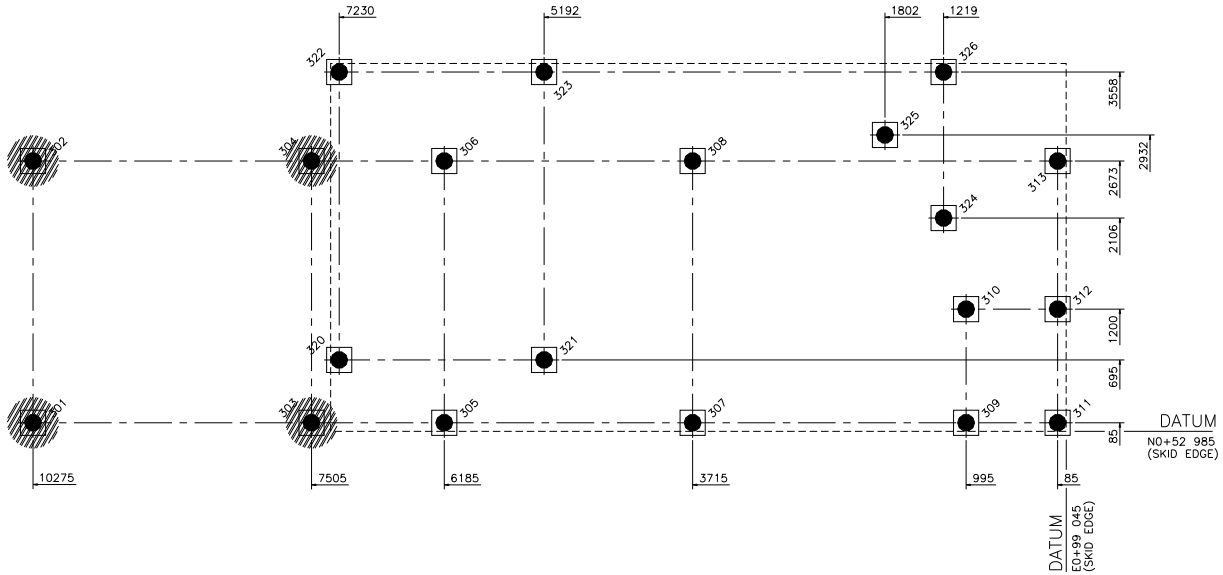
TYPE	SIZE
1	145 x 145 x 13 THK.
2	250 x 250 x 13 THK.
3	250 x 250 x 20 THK.
4	300 x 300 x 13 THK.
5	300 x 300 x 20 THK.
6	300 x 300 x 25 THK.
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9	405 x 405 x 13 THK.
10	405 x 405 x 20 THK.
11	405 x 405 x 25 THK.
12	457 x 457 x 20 THK.
13	610 x 610 x 25 THK.



PILE CAP DETAIL
N.T.S.



PILE WITH CAP TO SKID DETAIL
N.T.S.



GLYCOL DEHYDRATOR

– PILES MARKED THUS SHALL BE DEMOLISHED BY FIELD

RELATIVE GRADE EL.=99 850

DATUM = U/S LINE HEATER SKID = 100 000

NOTES:

1. MINIMUM DEPTH OF PILES SHALL BE 6m (20FT.).
2. PILE CONTRACTOR TO ROUGH CUT 1500 ABOVE GRADE. MECHANICAL CONTRACTOR TO FINISH CUT TO SUIT.
3. PILE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL U/G SERVICES (IE. PIPELINE AND/OR ELECTRICAL CABLES) PRIOR TO PILING OR EXCAVATING.
4. MATERIALS FOR PILING SHALL BE NEW OR GOOD RECLAIMED PIPE WITH A MINIMUM WALL OF SCHEDULE 40. WHERE RECLAIMED PIPE IS USED THE INSPECTOR SHALL INSPECT EACH PIECE, AND ANY SECTION NOT ACCEPTABLE SHALL BE REMOVED FROM THE SITE. DRIVEN STEEL PILES SHALL BE DRIVEN TO A TOLERANCE OF 75mm LATERALLY AND WITHIN 2% OF PLUMB. PILES SHALL BE DRIVEN WITH A HAMMER WITH ENERGY PER BLOW OF NOT LESS THAN 24,400 JOULES (18,000 FT. LBS.) AND WITH A HAMMER OF A MASS NOT LESS THAN TWICE THAT OF THE PILE AND NOT LESS THAN 1300 KG (3,000 LBS). PROPER CUSHION SHALL BE PROVIDED BETWEEN THE HAMMER AND THE PILE. TIPS SHALL BE PROVIDED AND INSTALLED WHERE REQUIRED. PILES ARE DESIGNED AS FRICTION PILES AND SHALL BE DRIVEN TO THE DEPTH GIVEN ABOVE UNLESS REFUSAL (SEE NOTE 5) IS REACHED AT A LESSER DEPTH IN WHICH CASE THE DESIGN ENGINEER SHALL BE NOTIFIED TO DECIDE IF LATERAL CAPACITIES WILL BE ADEQUATE, OR IF FROST JACKING WILL BE A PROBLEM. THE CONTRACTOR SHALL MAINTAIN DRIVING RECORDS FOR EACH PILE DRIVEN SHOWING DATE AND TIME, SIZE, LENGTH, HAMMER ENERGY, HAMMER TYPE, BLOW COUNT PER EACH 300mm (1 FT.) AFTER 2.4m (8 FT.) DEPTH, AND REMARKS. ONE COPY OF THESE RECORDS SHALL BE SENT TO THE DESIGN ENGINEER WITH Q.C. BOOKS.
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168mm (6")	4 BLOWS/25mm (1")
219mm (8")	7 BLOWS/25mm (1")
273mm (10")	10 BLOWS/25mm (1")

7. ASSUME GRADE EL. 100 000.
8. PILE CAPS SUPPLIED ATTACHED TO COMPRESSOR SKID.

* 9. DENOTES CONTRACTOR TO VERIFY DIMENSION PRIOR TO CONSTRUCTION.

10. WELD SKID TO ALL PILE CAPS MIN. 3 SIDES USING E-7018 CONTINUOUS.
11. PILING MATERIAL SHALL BE 177.8ø x 12.7mm W.T. STEEL PIPE.

00041

NUMBER	REFERENCE DRAWINGS	NO	REVISION DESCRIPTION	BY	DATE	CHD	APPD
A1-WR-03-PP-01	PLOT PLAN	A	ISSUED FOR APPROVAL	LMG			
A1-WR-03-C-01	PIPE RACK PILE LOCATION PLAN	0	ISSUED FOR CONSTRUCTION	LMG	00.09.01	MT	
		1	RE-ISSUED FOR CONSTRUCTION	LMG	00.09.07		
		2	REVISED LAYOUT TO MATCH NEW SKID	LMG	00.10.14		
		3	ASBUILT AS PER Q.C. MANUAL	LR	01.11.28		

ENGINEERS & PERMIT STAMPS

PROFESSIONAL ENGINEER ALBERTA CRAIG M. BACHER 9999

PERMIT TO PRACTICE
Tundra Engineering Ltd.
Signature
Date
PERMIT NUMBER: P-5951
The Association of Professional Engineers, Geologists and geophysicists of Alberta

Tundra

TUNDRA ENGINEERING LTD.
CALGARY, ALBERTA

Berkley Petroleum Corp.

WILD RIVER
LSD: 12-36-56-24 W5M
GLYCOL DEHYDRATOR
PILE LOCATION PLAN

	DRAWN	CHECKED	APPROVED
BY	LMG		
DATE	00.08.24		

SCALE	DRAWING NUMBER	REV
1:30	A1-WR-03-C-03	3

PROTO: PS-RAX_A1

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