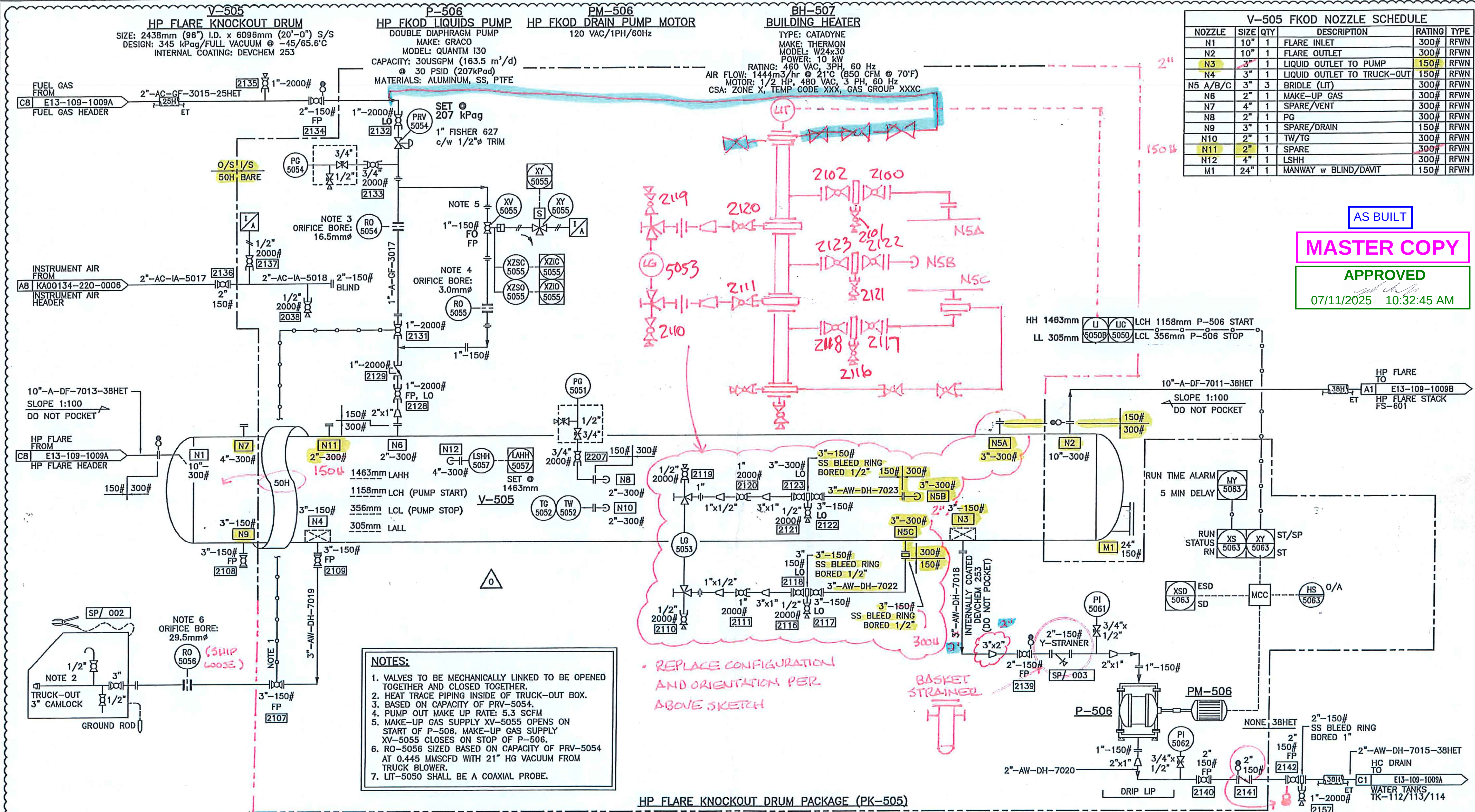

V-505
HP FLARE KNOCKOUT DRUM
SIZE: 2438mm (96") I.D. x 6096mm (20'-0") S/S
DESIGN: 345 kPag/FULL VACUUM @ -45/65.6°C
INTERNAL COATING: DEVCHEM 253
P-506
HP FKOD LIQUIDS PUMP
DOUBLE DIAPHRAGM PUMP
MAKE: GRACO
MODEL: QUANTM 130
CAPACITY: 30USGPM (163.5 m³/d) @ 30 PSID (207kPad)
MATERIALS: ALUMINUM, SS, PTFE
PM-506
HP FKOD DRAIN PUMP MOTOR
120 VAC/1PH/60Hz
BH-507
BUILDING HEATER
TYPE: CATADYNE
MAKE: THERMON
MODEL: W24x30
POWER: 10 kW
RATING: 460 VAC, 3PH, 60 Hz
AIR FLOW: 1444m3/hr @ 21°C (850 CFM @ 70°F)
MOTOR: 1/2 HP, 480 VAC, 3 PH, 60 Hz
CSA: ZONE X, TEMP CODE XXX, GAS GROUP XXXC
FUEL GAS FROM C8 E13-109-1009A FUEL GAS HEADER
2"-AC-GF-3015-25HET
INSTRUMENT AIR FROM A8 KA00134-220-0006 INSTRUMENT AIR HEADER
2"-AC-IA-5017
2"-AC-IA-5018
HP FLARE FROM C8 E13-109-1009A HP FLARE HEADER
10"-A-DF-7013-38HET
SLOPE 1:100
DO NOT POCKET
10"-A-DF-7011-38HET
HP FLARE TO A1 E13-109-1009B HP FLARE STACK FS-601
SET @ 207 kPag
1" FISHER 627 c/w 1/2"ø TRIM
NOTE 3 ORIFICE BORE: 16.5mmø
NOTE 4 ORIFICE BORE: 3.0mmø
NOTE 6 ORIFICE BORE: 29.5mmø
HH 1463mm
LL 305mm
LCH 1158mm P-506 START
LCL 356mm P-506 STOP
1463mm LAHH
1158mm LCH (PUMP START)
356mm LCL (PUMP STOP)
305mm LALL
V-505
RUN TIME ALARM
5 MIN DELAY
RUN STATUS
ESD
MCC
O/A
TRUCK-OUT 3" CAMLOCK
GROUND ROD
P-506
PM-506
DRIP LIP
2"-AW-DH-7020
2"-AW-DH-7015-38HET
HC DRAIN TO C1 E13-109-1009A WATER TANKS TK-112/113/114
3"-AW-DH-7018
INTERNALLY COATED DEVCHEM 253 (DO NOT POCKET)
SS BLEED RING BORED 1/2"
Y-STRAINER
HP FLARE KNOCKOUT DRUM PACKAGE (PK-505)
REPLACE CONFIGURATION AND ORIENTATION PER ABOVE SKETCH
BASKET STRAINER
(SHIP LOOSE)

V-505 FKOD NOZZLE SCHEDULE					
NOZZLE	SIZE	QTY	DESCRIPTION	RATING	TYPE
N1	10"	1	FLARE INLET	300#	RFWN
N2	10"	1	FLARE OUTLET	300#	RFWN
N3	~~3"~~ 2"	1	LIQUID OUTLET TO PUMP	150#	RFWN
N4	3"	1	LIQUID OUTLET TO TRUCK-OUT	150#	RFWN
N5 A/B/C	3"	3	BRIDLE (LIT)	300#	RFWN
N6	2"	1	MAKE-UP GAS	300#	RFWN
N7	4"	1	SPARE/VENT	300#	RFWN
N8	2"	1	PG	300#	RFWN
N9	3"	1	SPARE/DRAIN	150#	RFWN
N10	2"	1	TW/TG	300#	RFWN
N11	2"	1	SPARE	~~300#~~ 150#	RFWN
N12	4"	1	LSHH	300#	RFWN
M1	24"	1	MANWAY w BLIND/DAVIT	150#	RFWN

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NOTES:

1. VALVES TO BE MECHANICALLY LINKED TO BE OPENED TOGETHER AND CLOSED TOGETHER.
2. HEAT TRACE PIPING INSIDE OF TRUCK-OUT BOX.
3. BASED ON CAPACITY OF PRV-5054.
4. PUMP OUT MAKE UP RATE: 5.3 SCFM
5. MAKE-UP GAS SUPPLY XV-5055 OPENS ON START OF P-506. MAKE-UP GAS SUPPLY XV-5055 CLOSES ON STOP OF P-506.
6. RO-5056 SIZED BASED ON CAPACITY OF PRV-5054 AT 0.445 MMSCFD WITH 21" HG VACUUM FROM TRUCK BLOWER.
7. LIT-5050 SHALL BE A COAXIAL PROBE.

HP FLARE KNOCKOUT DRUM PACKAGE (PK-505)

DRAWING NO.	REFERENCE DRAWINGS

ENGINEER STAMP

PERMIT TO PRACTICE
BLUESTAR ENGINEERING LTD.
RM SIGNATURE: ____
RM APEGA ID #: ____
DATE: ____
PERMIT NUMBER: P012700
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

PERMIT STAMP

REV.	DESCRIPTION	BY	DATE	CHK	APP.	ENG.
0	ISSUED FOR CONSTRUCTION (AFE# FC230544)	AM	2025-02-12	JMG	NP	GJE

DRAWN BY: T. TONG	DATE: 2024-03-27
DESIGNED BY: -	DATE: -
CHECKED BY: -	DATE: -
APPROVED BY: -	DATE: -
CLIENT BY: -	DATE: -

Canadian Natural

BLUESTAR ENGINEERING LTD.

TITLE: KARR MULTI WELL OIL BATTERY
LSD 01-34-065-03 W6M
HP FLARE KNOCKOUT DRUM PACKAGE (PK-505)
PIPING & INSTRUMENTATION DIAGRAM

SCALE:	JOB NO.	DRAWING NO.	REV.
N.T.S.	236625	KAR-0134-PID-PR-000055-001	0

GENERAL NOTES FOR BUILDING:

GENERAL NOTES:

1. BUILDING PACKAGE CONFORMS TO:
   – NATIONAL BUILDING CODE 2023–ALBERTA EDITION

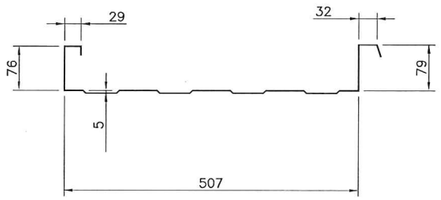
2. GROUP F DIVISION 3 OCCUPANCY CATEGORY AS PER NATIONAL BUILDING CODE CANADA 2020, TABLE 3.1.2.1

   BUILDING IMPORTANCE CATEGORY – NORMAL

BUILDING COMPONENTS:

– EXTERIOR WALL AND ROOF PANELS:
22GA PREPAINTED GALVALUME PANELS CONFORMING TO ASTM A792–09, WITH COATING CONFORMING TO AZ50.

SELF–FRAMING PANEL DIMENSIONS:



BUILDING NOTES:

1. MULTI OIL WELL BATTERY BUILDING SHALL BE A GABLE STYLE SELF–FRAMING BUILDING, ERECTED ON A STEEL SKID IN OUR YARD.

2. WALL TO CONSIST OF:
   – 22GA SELF–FRAMING WALL PANELS;
   – R12 (76mm) MINERAL WOOL INSULATION;
   – CONTINUOUS 6MIL CERTIFIED POLY VAPOR BARRIER;
   – 24GA WHITE FLUTED ALUMINUM LINER.

3. ROOF TO CONSIST OF:
   – 22GA SELF–FRAMING ROOF PANELS;
   – 24GA INSULATION CLIPS 9" DEEP 24GA;
   – R20 (152mm) MINERAL WOOL INSULATION;
   – CONTINUOUS 6MIL CERTIFIED POLY VAPOR BARRIER;
   – 24GA WHITE FLUTED ALUMINUM LINER.

4. 1 @ FULL LENGTH ANGLE ICE RAKES

5. 1 @ FULL LENGTH EAVES TROUGH C/W GUTTER, DOWNSPOUT AND ELBOW.

6. 1 @ 16GA 1829mm W x 2,134mm H R4 INSULATED HOLLOW CORE DOUBLE DOOR C/W:
   – 16GA DOUBLE DOOR FRAME;
   – HYDRAULIC CLOSER; — Removed.
   – CHECK CHAIN;
   – TWO (2) 610mm W x 610mm H IWG WINDOWS;
   – BARREL BOLTS;
   – DOREX PANIC HARDWARE;
   – WEATHER STRIPPING;
   – SWEEPS;
   – THRESHOLD;
   – 16GA DOUBLE DOOR CANOPY W/ TWO (2) 16GA VERTICAL SUPPORT CHANNELS.

7. 1 @ 1087mm W x 500mm H ACCESS DOOR

8. HVAC

   (REFER TO DATA SHEETS FOR FULL SPECS; ANY DISCREPANCY BETWEEN THESE DRAWINGS AND DATA SHEETS, THE DATA SHEETS SHALL BE ASSUMED CORRECT)

   2 @ 12"W x 12"H MANUALLY OPERABLE LOUVER C/W:
   – FLANGE FRAME;
   – MANUAL WING NUT CONTROLLER;
   – BIRD SCREEN;
   – 22GA STORM HOOD.

   1 @ 12" EXPLOSION PROOF EXHAUST FAN (120V/1PH/60HZ) C/W:
   – SHUTTER;
   – BACK GUARD; Removed.
   – BIRD SCREEN;
   – 22GA STORM HOOD.

   1 @ SUPPLY ONLY CATADYNE WX24x30 CATALYTIC HEATER C/W:
   – 20,000 BTUH;
   – NATURAL GAS CONFIG.;
   – 12V START;
   – THERMOSTAT APPLIANCE REGULATOR;
   – SAFETY SHUT–OFFVALVE;
   – WALL MOUNT BRACKET AND VENT HOOD ASSEMBLY.

ARCHITECTURAL SCHEDULES

WALL (EXTERIOR)	TAN	QC–8315
WALL (INTERIOR)	WHITE ALUMINUM	
ROOF (EXTERIOR)	METRO BROWN	QC–8228
ROOF (INTERIOR)	WHITE ALUMINUM	
WALL FLASHINGS (EXTERIOR)	METRO BROWN	QC–8228
WALL FLASHINGS (INTERIOR)	CAMBRIDGE WHITE	QC–8695
ROOF FLASHINGS (SIDE AND FRONT)	METRO BROWN	QC–8228
ICE RAKES	STONE GREY	QC–8305
EAVESTROUGH	METRO BROWN	QC–8228
DOWNSPOUTS	METRO BROWN	QC–8228
DOOR FRAME	TAN METRO BROWN	QC–8228
DOOR SLAB	TAN	QC–8315
CANOPY	METRO BROWN	QC–8228

BLUESTAR ENGINEERING LTD
VENDOR APPROVAL

BLUESTAR REF: 236625

ACCEPTED. WORK MAY PROCEED. SUBMIT WITH FINAL DOCUMENTATION	X
REVISE & RESUBMIT. WORK MAY PROCEED SUBJECT TO INCORPORATION OF CHANGES INDICATED.	
CORRECT AND RESUBMIT. WORK MAY **NOT** PROCEED.	
FOR INFORMATION ONLY. SUBMIT WITH FINAL DOCUMENTATION.	
AS-BUILT REQUIRED	

DEPT	SIGN	DATE
PROJECT	CL	Jul 7, 2025
MECH	RA	27-Jun-2025
PROCESS		
E & I		
CSA		
PIPING		
DC		
CLIENT		

Straight–Up Metal Buildings Ltd.

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DESIGN DATA

LOCATION	AB
LSD	01–34–065–03 W6M
q–1/50	0.43 kPa
Ss	2.2 kPa
Sr	0.1 kPa
Sa(0.2,X)	0.269
Sa(0.5,X)	0.238
Sa(1.0,X)	0.136
Sa(2.0,X)	0.0743
Sa(5.0,X)	0.042
Sa(10.0,X)	0.026
PGA	–

BUILDING WEIGHT:
APPROX. 1,633 kgs

NO.	DATE	REVISION	DRN	CHK	ENG	APR
0	06 MAY/25	ISSUED FOR APPROVAL	MO	JV	MF	
0A	23 JUN/25	RE–ISSUED FOR APPROVAL	AG	JV	MF	
.	.	.	.	.	.	

CLIENT/VENDOR

CONSULTANT LOGO

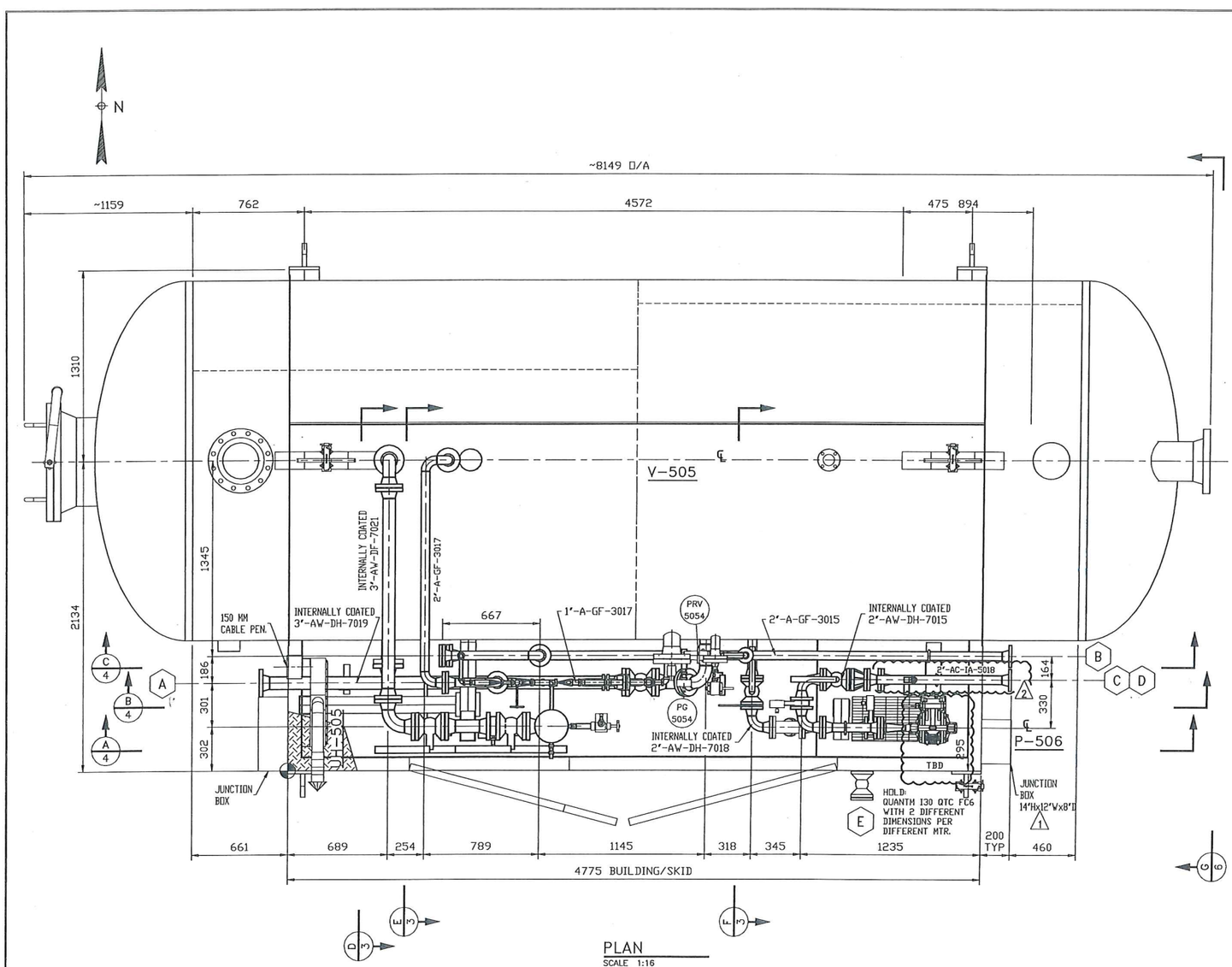
STRAIGHT-UP METAL BUILDINGS LTD.

ENGINEERING RECORD	BY	DATE
DRAWN	MO	05 MAY/25
CHECKED	JV	... MAY/25
DESIGNED	MF	... MAY/25
REVIEWED		
P.O.	5895	
CONTRACT No.	Y24–110224	
PROJECT No.	25–8852	

TRIPLE SSS

FLARE KNOCKOUT DRUM BUILDING
KARR MULTI WELL OIL BATTERY
ARCHITECTURAL – FLOOR PLAN & SECTION

SCALE	DRAWING NUMBER	VDRL	REV
	25–8852–BLD–1		0A



PLAN
SCALE 1:16

ELEVATION
SCALE 1:16
LOOKING EAST

NOZZLE#	SIZE	RATING	DESCRIPTION/LINE#
A	3"	CL150	TRUCK OUT
B	2"	CL150	FUEL GAS INLET
C	2"	CL150	HC DRAIN OUTLET
D	2"	CL150	I/A INLET
E	2"	CL150	SKID DRAIN

NOTES:
1. PIPING DESIGNED AND FABRICATED PER ASME B31.3 2022 EDITION, SOUR SERVICES.
2. DESIGN PRESSURE AND HYDROSTATIC TEST PRESSURE AS SHOWN IN LINE LIST.
3. PROCESS PIPING DESIGNED TO CNRL PIPING CLASS "A", "AW", FOR CL150 PIPING.
4. LOW TEMP MATERIAL TO BE USED FOR THE PORTION OF PIPING EXTENDING OUT BUILDING, A-333 GR6 FOR PIPE AND A350 LF2 CL1 FOR FLANGE, IF PIPE CLASS IS NOT LOW TEMP.
5. RADIOGRAPHY: AS PER LINE LIST FOR EACH LINE.
6. PIPING STRESS RELIEVED: NO.
7. TO BE PAINTED AS FOLLOWS:
   SAND BLAST: SSPC-SP6;
   PRIMER: EPOXY PRIMER, DFT PER SHOP STANDARD;
   PAINT: COATED WARM GREY CLOVERDALE ARMOR SHIELD XP ALIPHATIC URETHANE (2-3 MILS DFT)
8. WEIGHTS: SHOWN IN SKID DRAWING.

AS BUILT

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NO.	DATE	BY	APP'D	DESCRIPTION
2	APR 3/25	CD	CD	PUMP DISCHARGE REVISED PER P&ID CHANGE. ISSUED FOR CONSTRUCTION
1	JAN 12/25	CD	CD	ADD ADDITIONAN JUNC BOX. ISSUED FOR CONSTRUCTION
0	JAN 12/25	EL	CD	ISSUED FOR CONSTRUCTION
E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

△2

REFERENCE DRAWINGS	
P&ID	KAR-0134-PID-PR-000055-001 REV 0

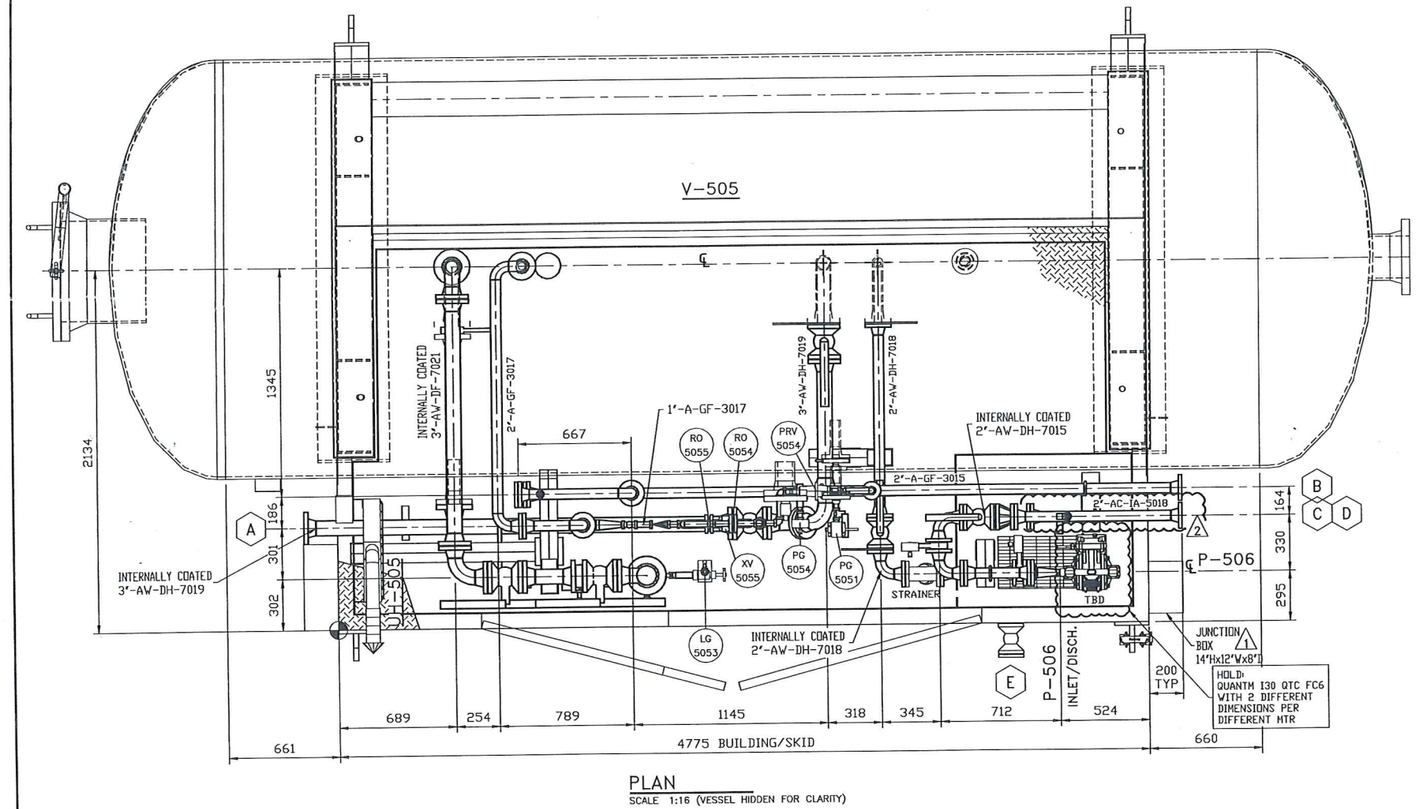
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

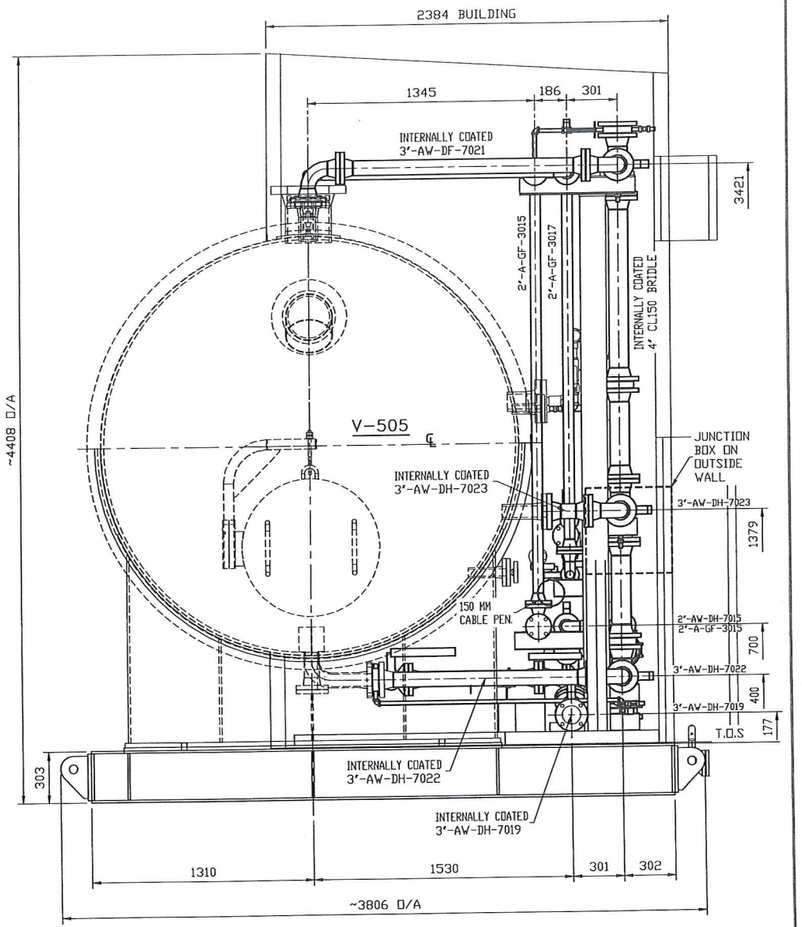
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
PLAN VIEW AND ELEVATION

SCALE –
DRAWING NO. 976-3000 1 OF 7
REV. 2



PLAN
SCALE 1:16 (VESSEL HIDDEN FOR CLARITY)



ELEVATION
SCALE 1:16
LOOKING EAST
VESSEL & BUILDING HEATER HIDDEN FOR CLARITY

AS BUILT

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E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

TRIPLE S
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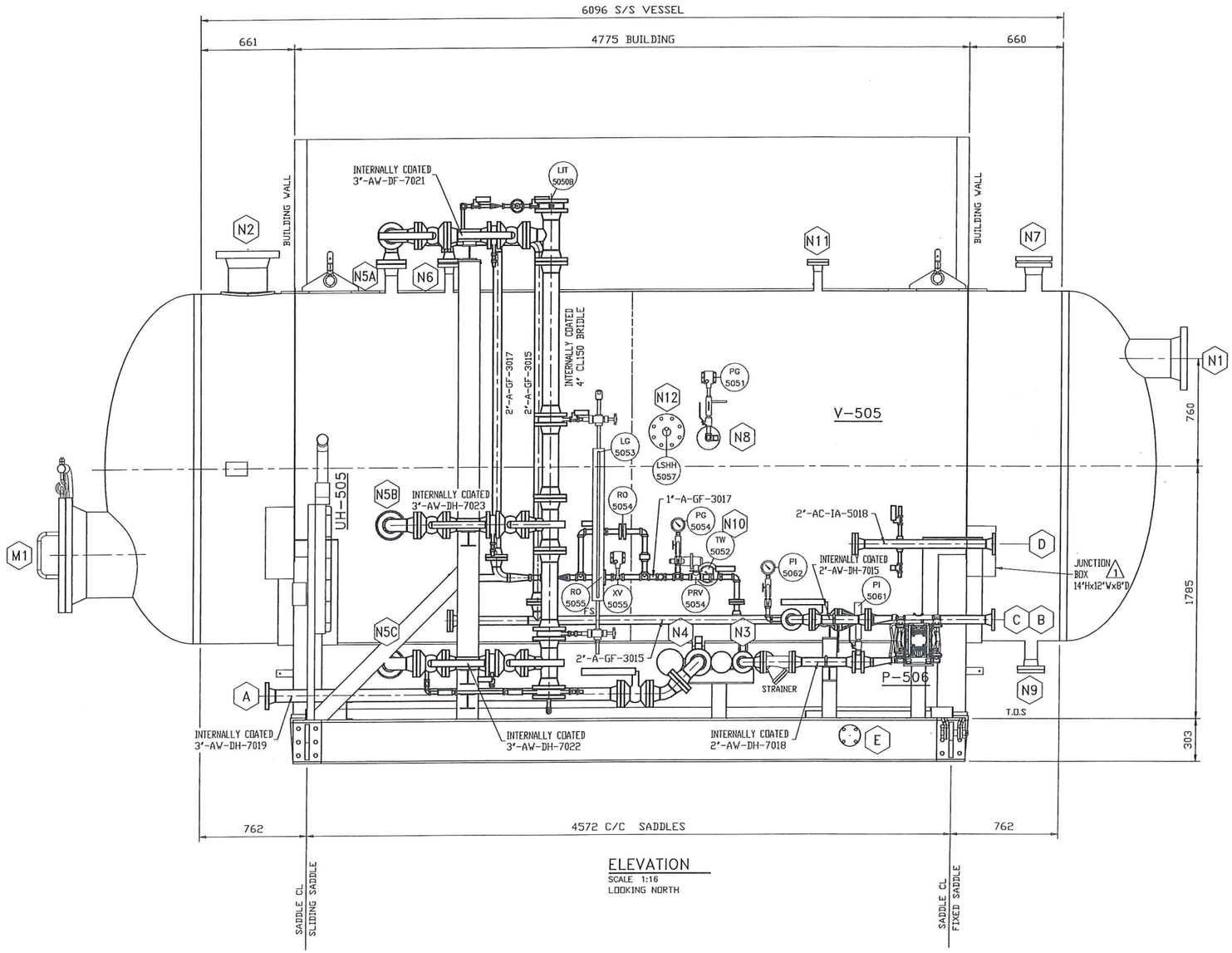
DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
PLAN VIEW AND ELEVATION (VESSEL HIDDEN)

SCALE –
DRAWING NO. 976-3000 2 OF 7
REV. 2



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E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

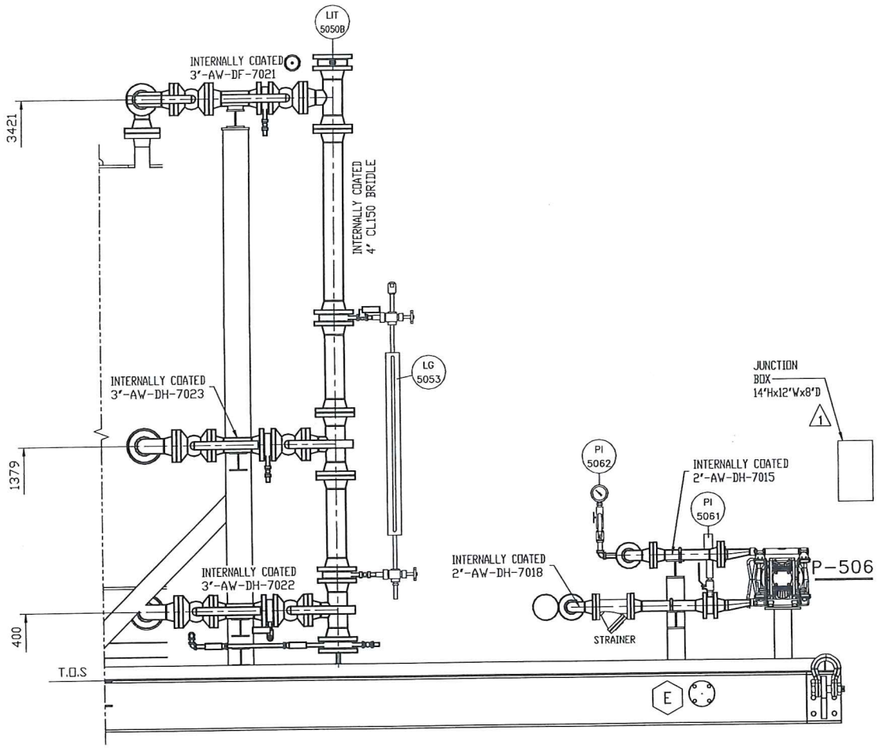
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

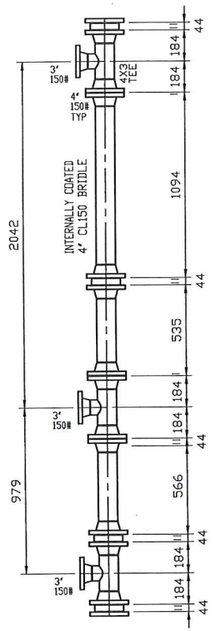
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
FRONT VIEW AND SECTION VIEW

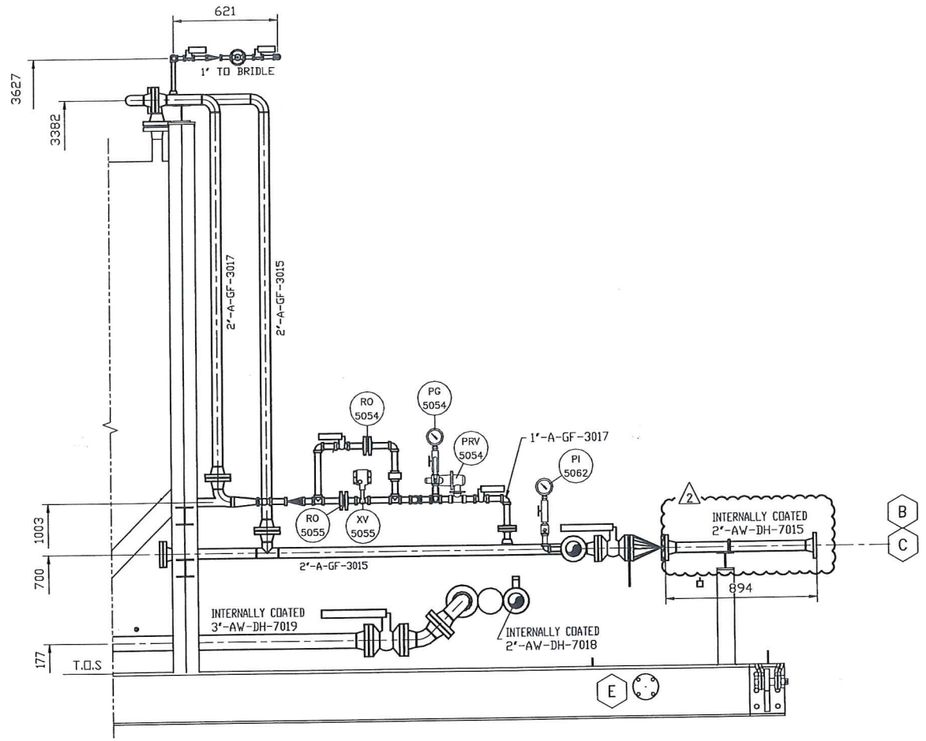
SCALE	DRAWING NO.	REV.
-	976-3000 3 OF 7	2



ELEVATION A
SCALE 1:16



BRIDLE DIMENSION
SCALE 1:16



ELEVATION B
SCALE 1:16

AS BUILT

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0	JAN 12/25	EL	CD	ISSUED FOR CONSTRUCTION
E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

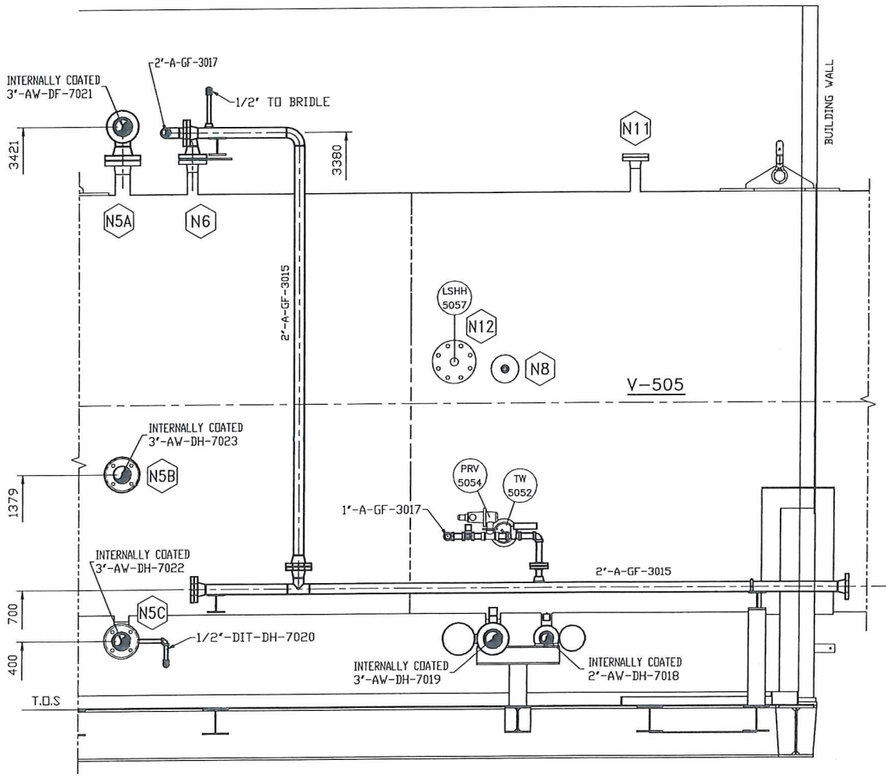
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

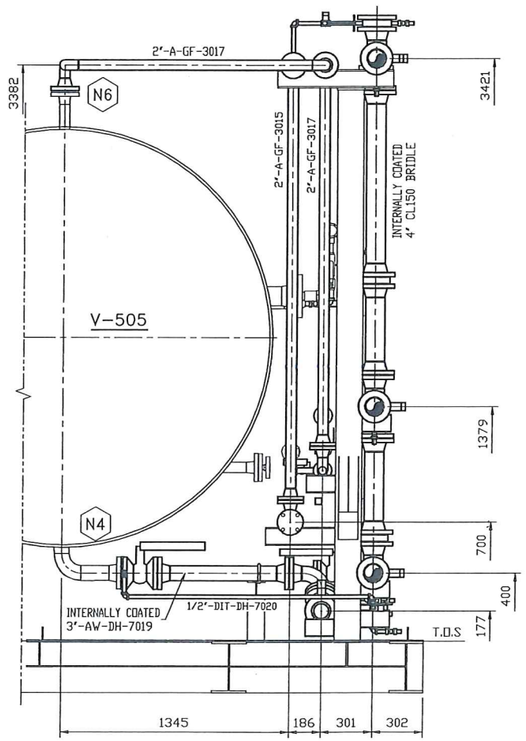
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
FRONT ~~VSECTION AND SIDE~~ VIEW

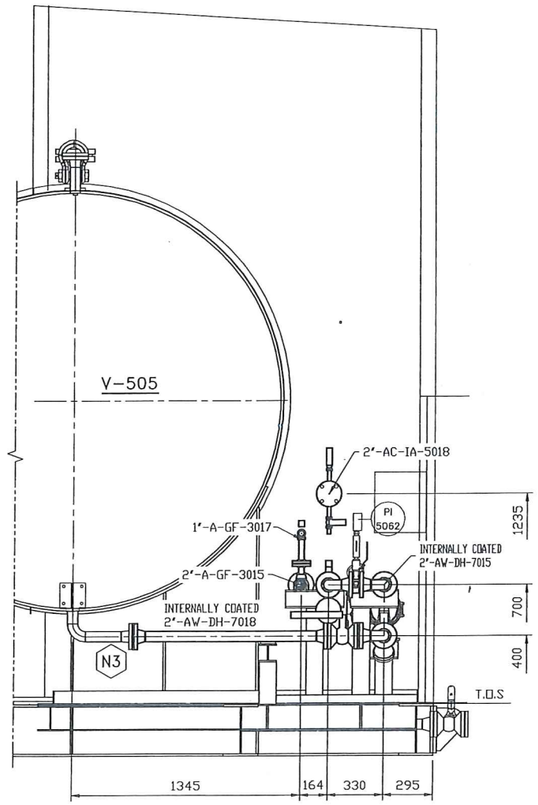
SCALE _ | DRAWING NO. 976-3000 a 0F 7 | REV. 2



ELEVATION
SCALE 1:16 C 1



SECTION
SCALE 1:16 E 1



SECTION
SCALE 1:16 F 1

AS BUILT

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D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

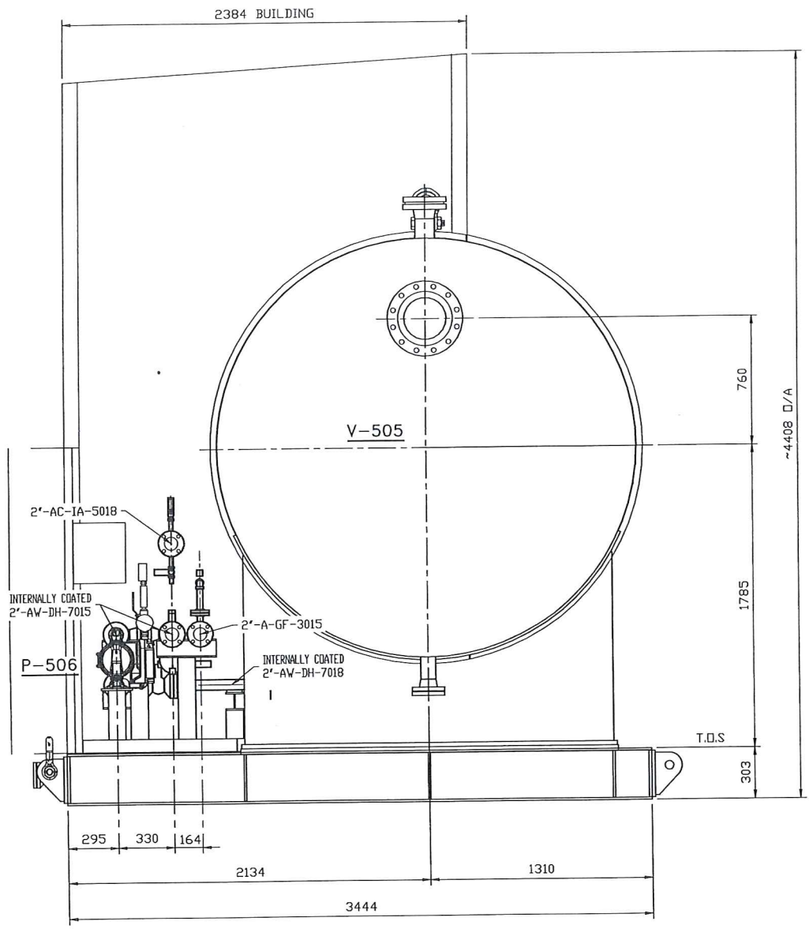
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. V.O. 976	

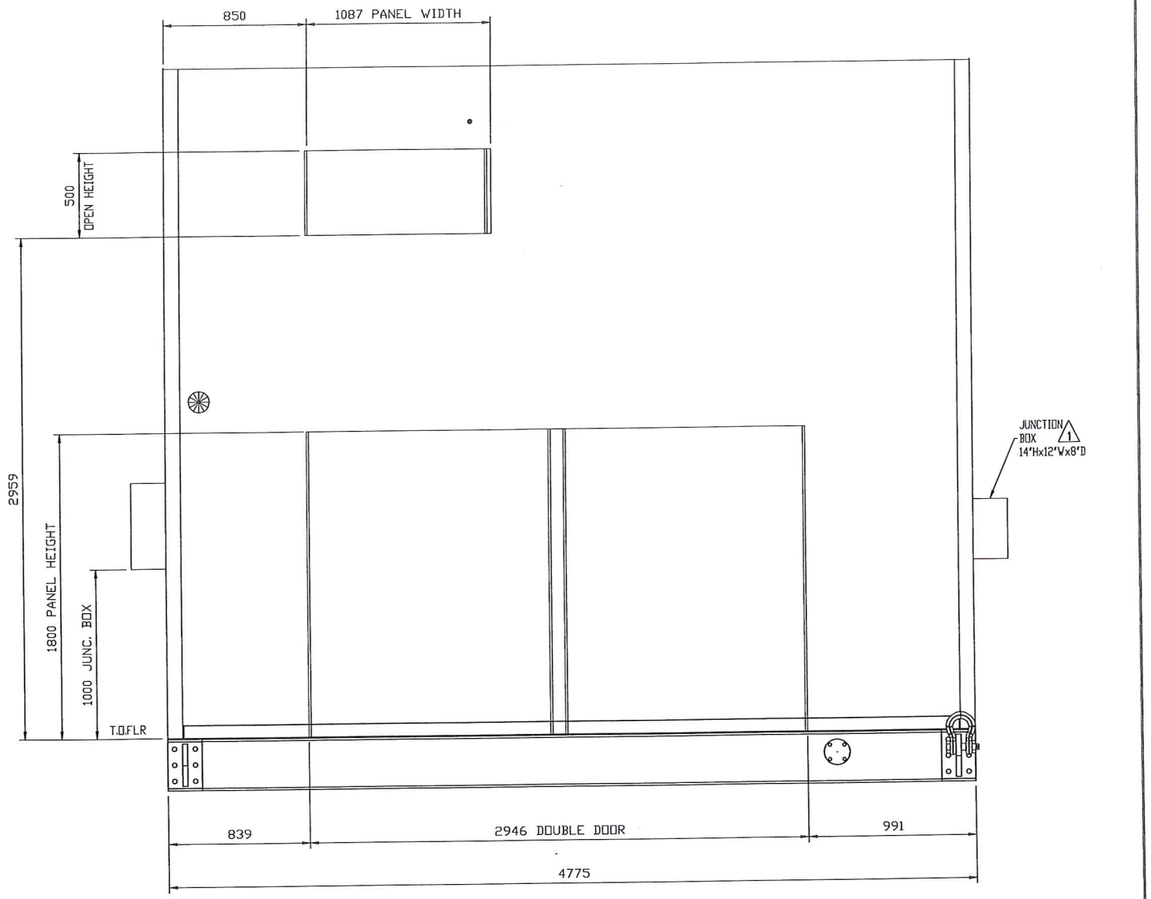
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
FRONT VIEW AND SECTION VIEW

SCALE	DRAWING NO.	REV.
- -	976-3000 3 OF 7	2



SECTION G/1
SCALE 1:16



FRONT DOOR PANEL LOCATION
SCALE 1:16

AS BUILT

MASTER COPY

APPROVED
07/11/2025 10:33:21 AM

NO.	DATE	BY	APP'D	DESCRIPTION
2	APR 3/25	CD	CD	PUMP DISCHARGE REVISED PER P&ID CHANGE. ISSUED FOR CONSTRUCTION
1	JAN 12/25	CD	CD	ADD ADDITIONAL JUNC BOX. ISSUED FOR CONSTRUCTION
0	JAN 12/25	EL	CD	ISSUED FOR CONSTRUCTION
E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

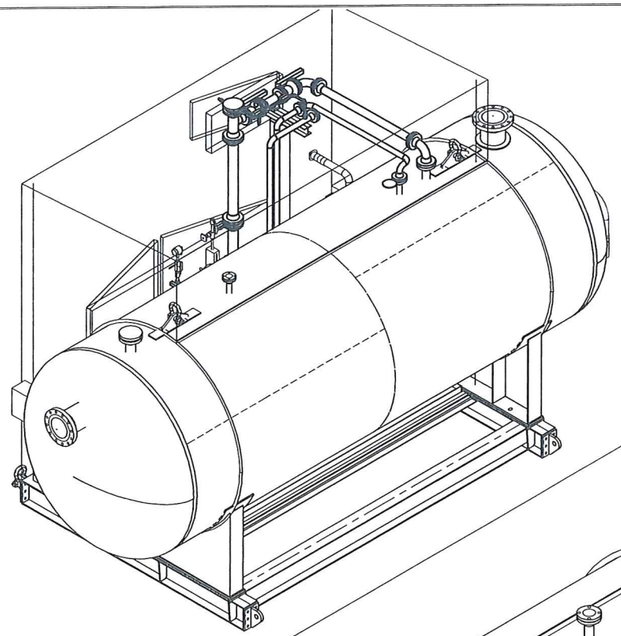
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

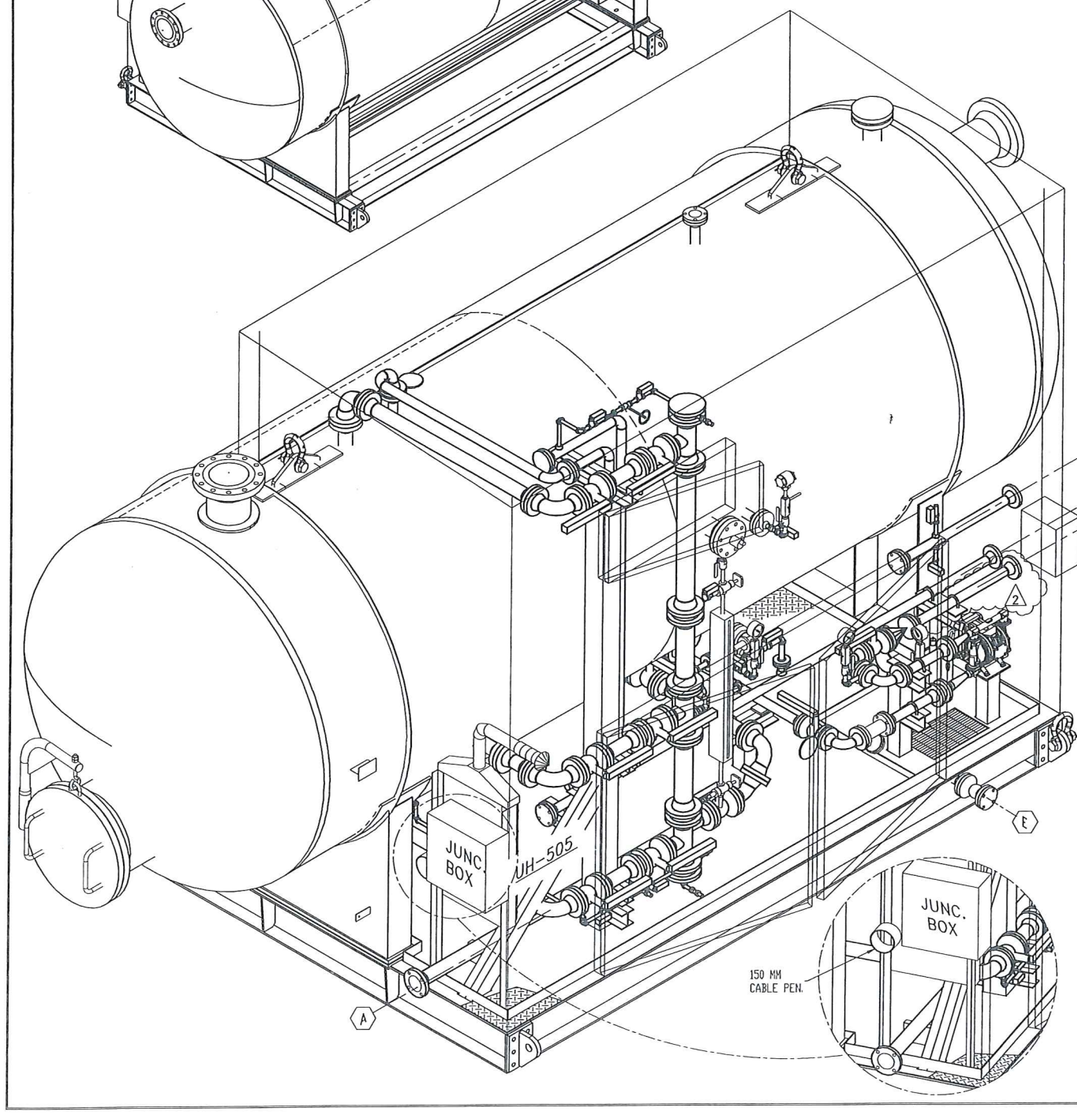
DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

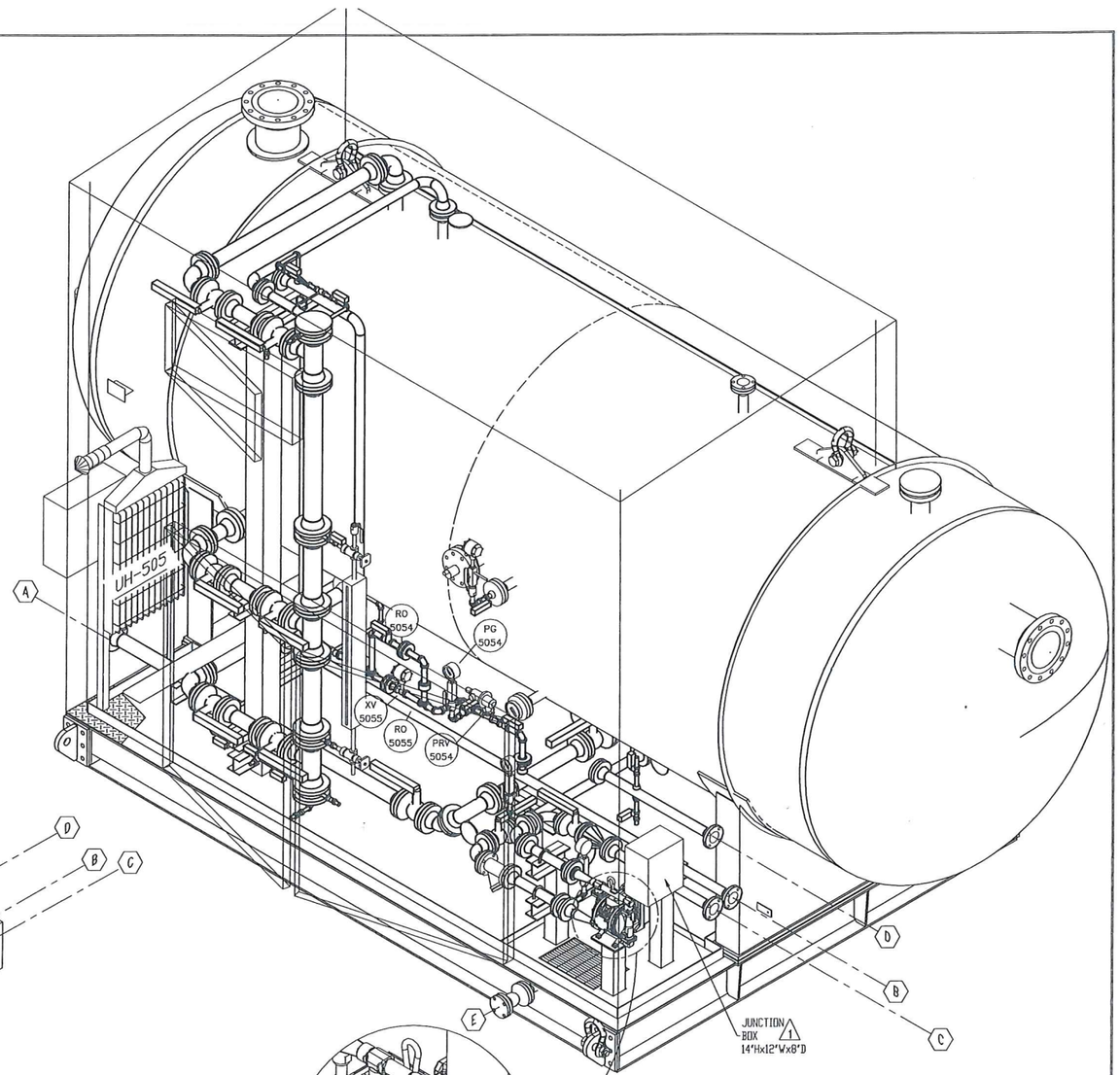
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
LSD: 01-34-065-03 W6M

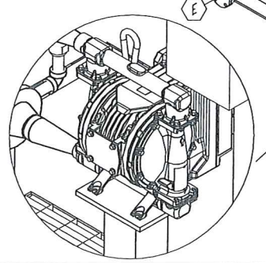
TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
FRONT VIEW AND SECTION VIEW

SCALE _ | DRAWING NO. 976-3000 8 OF 7 | REV. 2









AS BUILT

MASTER COPY

APPROVED
07/11/2025 10:33:26 AM

NO.	DATE	BY	APP'D	DESCRIPTION
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1	JAN 12/25	CD	CD	ADD ADDITIOAN JUNC BOX. ISSUED FOR CONSTRUCTION
0	JAN 12/25	EL	CD	ISSUED FOR CONSTRUCTION
E	DEC 13/24	CD		ISSUED FOR APPROVAL
D	NOV12/24	CD		ISSUED FOR APPROVAL
C	OCT 25/24	CD		ISSUED FOR APPROVAL
B	SEP 24/24	CD		ISSUED FOR INPUT AND REVIEW
A	SEP 12/24	CD		ISSUED FOR INPUT AND REVIEW

REVISIONS

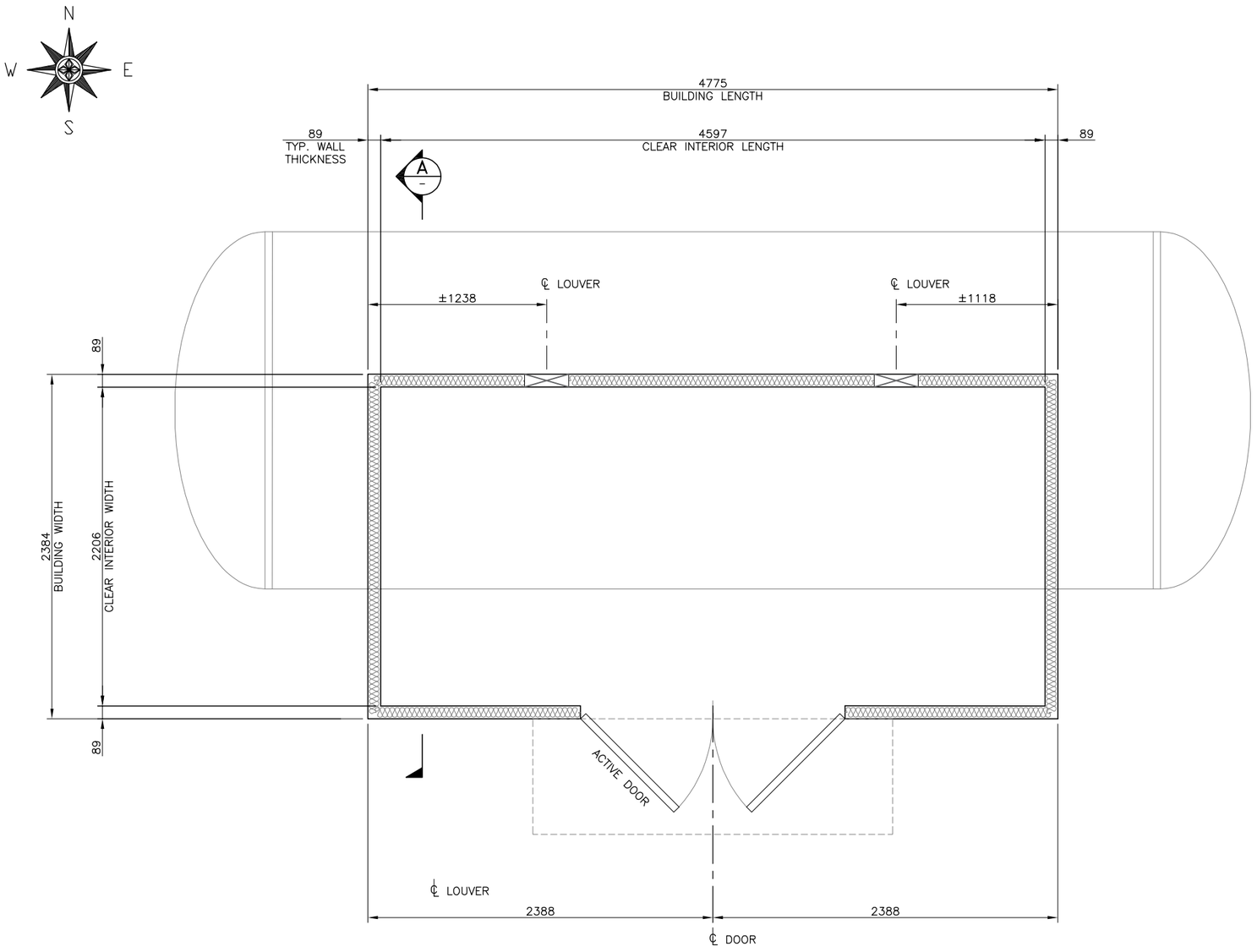
TRIPLE S
SPECIALTY WELDING & FABRICATION LTD

DRAWN CD	DATE SEP 12/24
CHECKED EL	DATE DEC 27 2024
ENG. APP'L. CD	DATE DEC 27 2024
WORK ORDER No. W.O. 976	

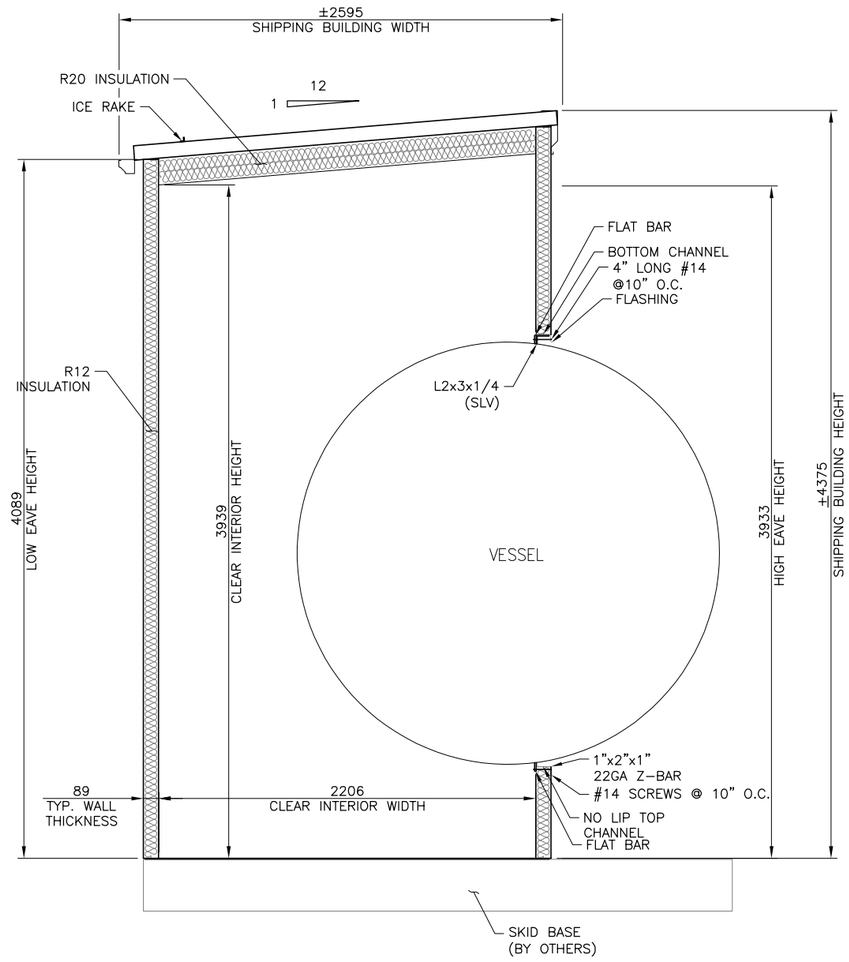
CUSTOMER/PROJECT/LOCATION
CANADIAN NATURAL
KARR MULTI WELL OIL BATTERY
L.S.D: 01-34-065-03 W6M

TITLE
HP FLARE KNOCK OUT DRUM PACKAGE (BU-505)
GENERAL ARRANGEMENT DRAWING
FRONT ISOMETRIC SECTION VIEW

SCALE –
DRAWING NO. 976-3000 3 OF 7
REV. 2



FLOOR PLAN
1:35



A – SECTION
1:35

NO.	DATE	REVISION	DRN	CHK	ENG	APR
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0A	23 JUN/25	RE-ISSUED FOR APPROVAL	AG	JV	MF	
1	08 JUL/25	ISSUED FOR CONSTRUCTION	MF	JV	MF	
1A	06 AUG/25	REVISION	MF	JV	MF	
2	06 NOV/25	AS BUILT	AR	JV	MF	

PROFESSIONAL ENGINEER ALBERTA
MAX FORSBERG
Structural Review Only
ID# 96210
2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE: Max Forsberg
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

CLIENT/VENDOR

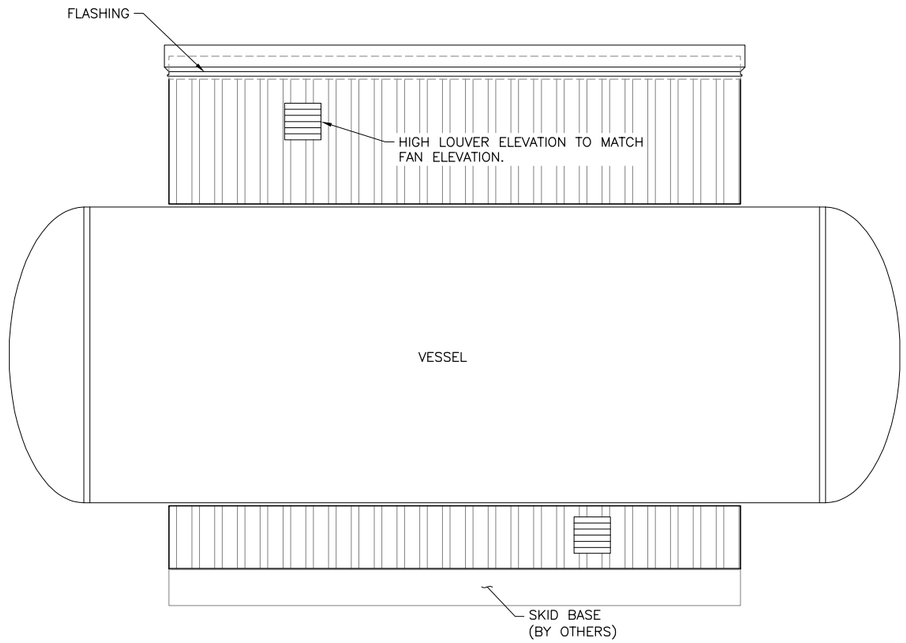
CONSULTANT LOGO
STRAIGHT-UP METAL BUILDINGS LTD.

ENGINEERING RECORD	BY	DATE
DRAWN	MO	05 MAY/25
CHECKED	JV	... MAY/25
DESIGNED	MF	... MAY/25
REVIEWED		
P.O.	5895	
CONTRACT No.	Y24-110224	
PROJECT No.	25-8852	

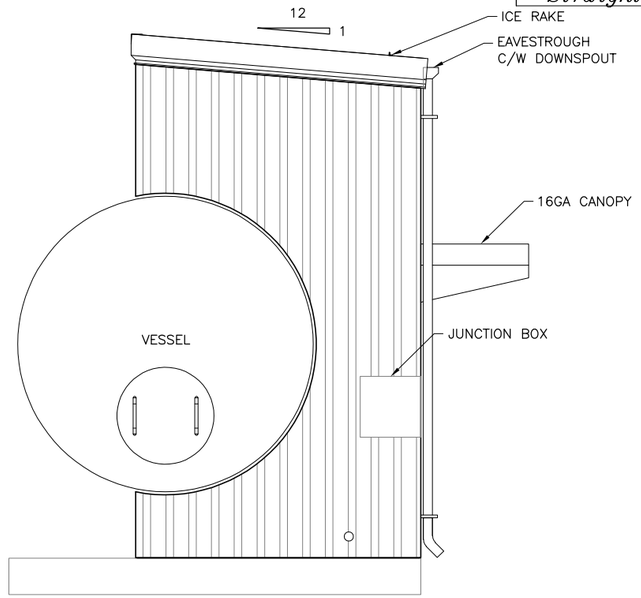
TRIPLE SSS

FLARE KNOCKOUT DRUM BUILDING
KARR MULTI WELL OIL BATTERY
ARCHITECTURAL – FLOOR PLAN & SECTION

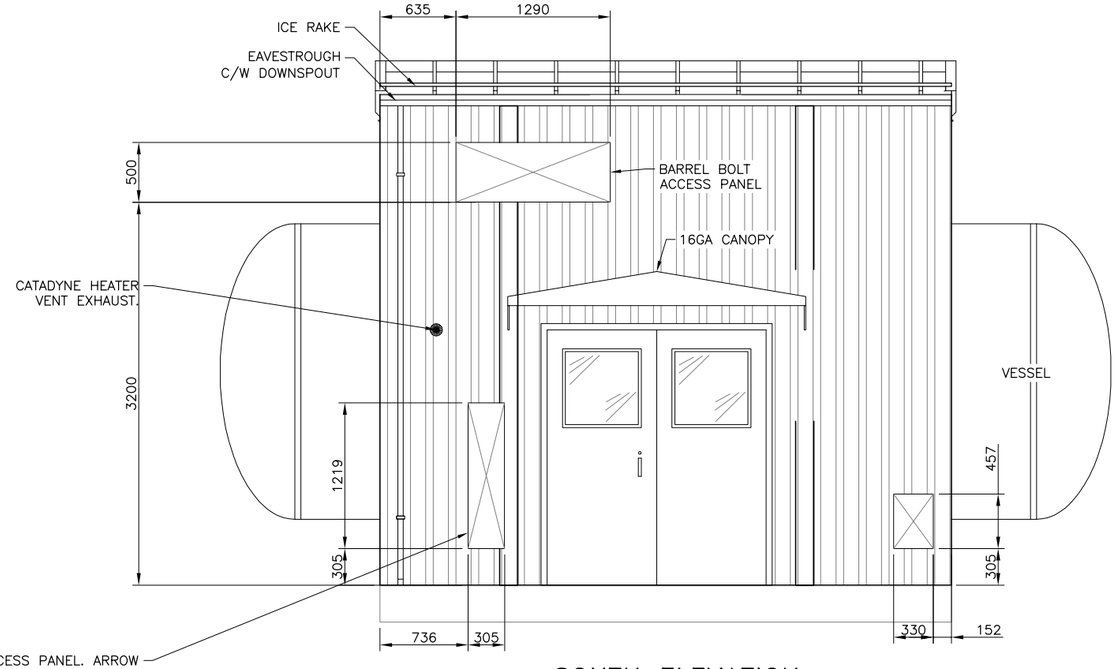
SCALE	DRAWING NUMBER	VDRL	REV
	25-8852-BLD-2		2



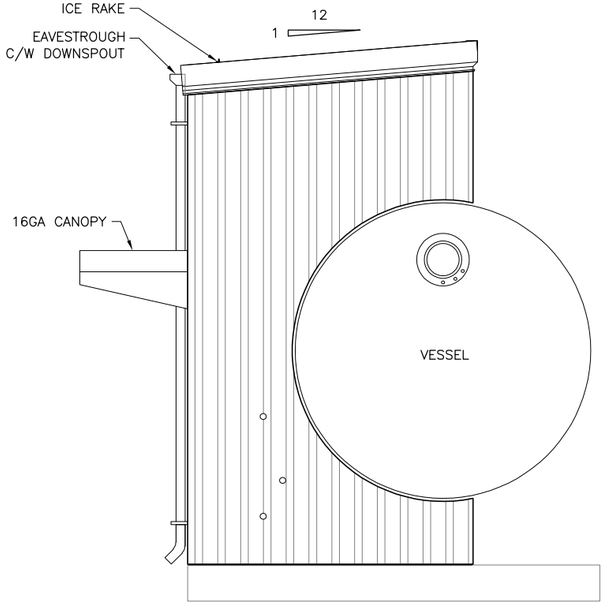
NORTH ELEVATION
1:50



EAST ELEVATION
1:50



SOUTH ELEVATION
1:50



WEST ELEVATION
1:50

NO.	DATE	REVISION	DRN	CHK	ENG	APR
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0A	23 JUN/25	RE-ISSUED FOR APPROVAL	AG	JV	MF	
1	08 JUL/25	ISSUED FOR CONSTRUCTION	MF	JV	MF	
1A	06 AUG/25	REVISION	MF	JV	MF	
1B	10 SEP/25	REVISION	MF	JV	MF	
2	06 NOV/25	AS BUILT	AR	JV	MF	

PROFESSIONAL ENGINEER ALBERTA — MAX FORSBERG — Effective Review Only — ID# 96210 — 2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE: Max Forsberg
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

CLIENT/VENDOR

CONSULTANT LOGO

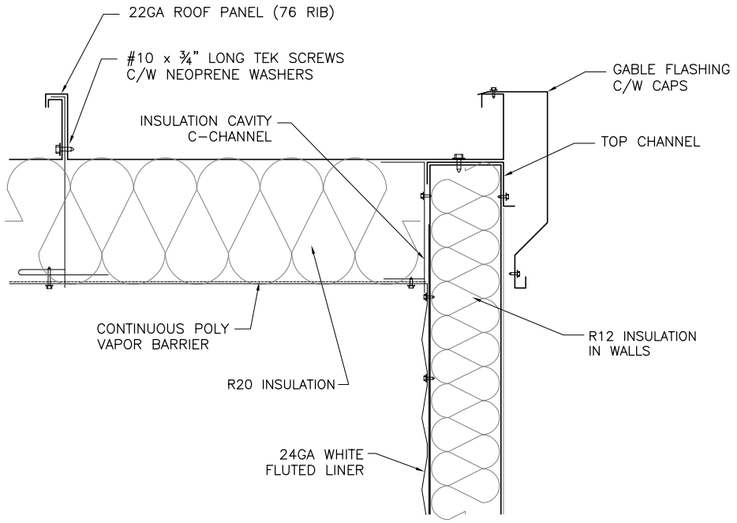
STRAIGHT-UP METAL BUILDINGS LTD.

ENGINEERING RECORD	BY	DATE
DRAWN	MO	05 MAY/25
CHECKED	JV	... MAY/25
DESIGNED	MF	... MAY/25
REVIEWED		
P.O.	5895	
CONTRACT No.	Y24-110224	
PROJECT No.	25-8852	

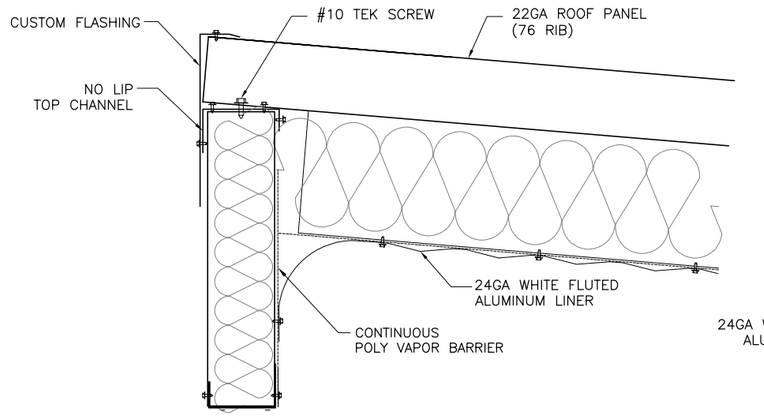
TRIPLE SSS

FLARE KNOCKOUT DRUM BUILDING
KARR MULTI WELL OIL BATTERY
ARCHITECTURAL – ELEVATIONS

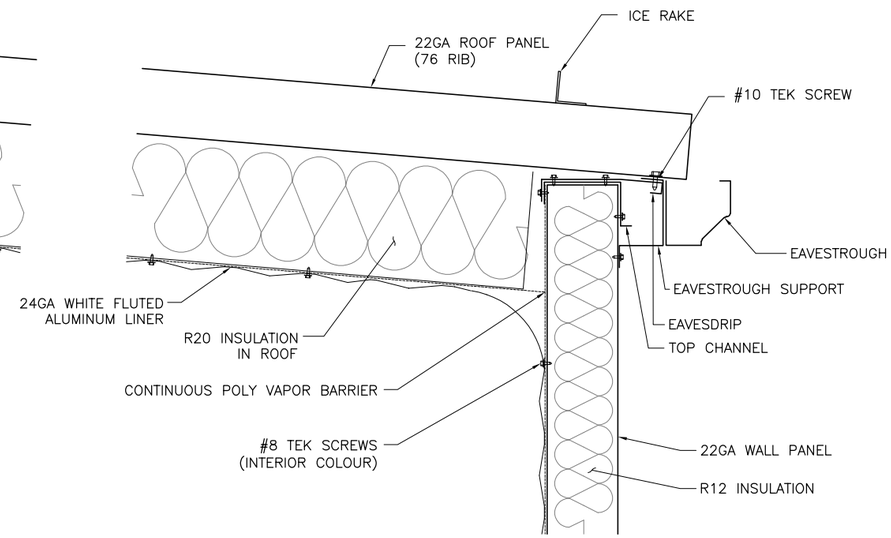
SCALE	DRAWING NUMBER	VDRL	REV
	25-8852-BLD-3		2



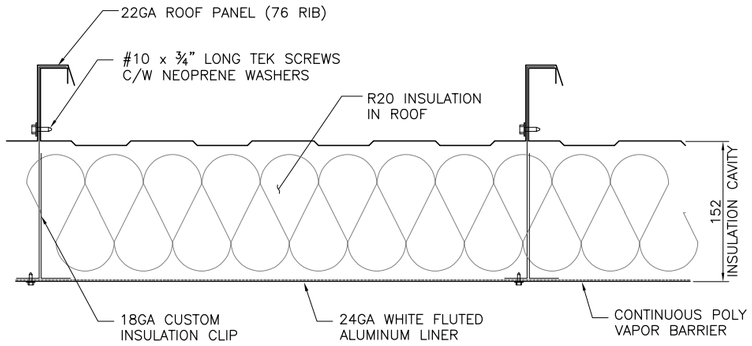
WALL ROOF CONNECTION DETAIL
NTS



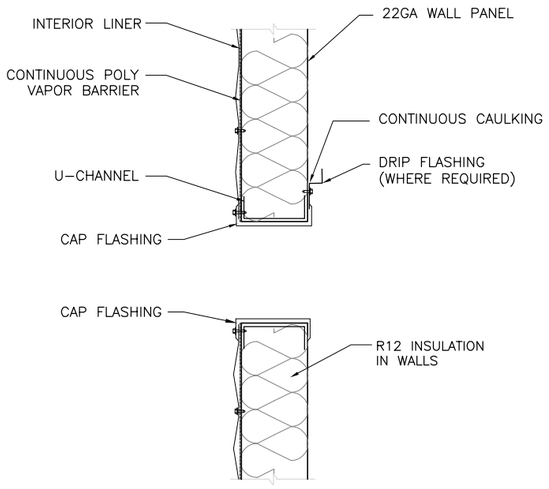
WALL SECTION AT HIGH EAVE
NTS



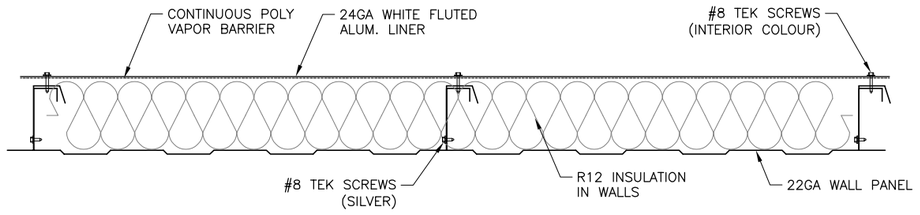
WALL SECTION AT LOW EAVE
NTS



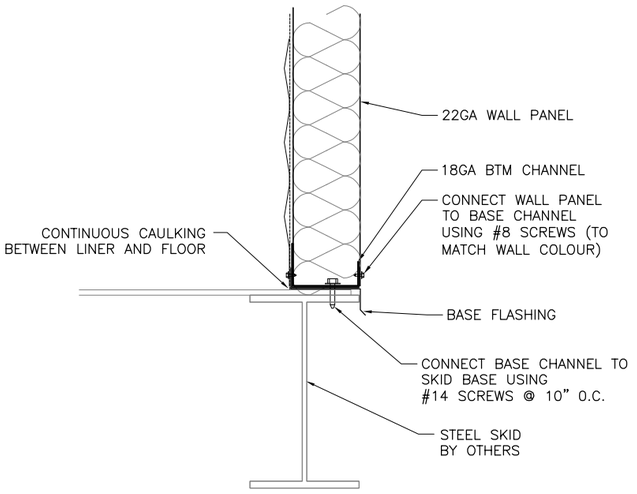
ROOF SECTION
NTS



TYPICAL FRAMED OPENING
NTS



WALL SECTION



WALL TO BASE SECTION
NTS

NO.	DATE	REVISION	DRN	CHK	ENG	APR
0	06 MAY/25	ISSUED FOR APPROVAL	MO	JV	MF	
0A	23 JUN/25	RE-ISSUED FOR APPROVAL	AG	JV	MF	
1	08 JUL/25	ISSUED FOR CONSTRUCTION	MF	JV	MF	
2	06 NOV/25	AS BUILT	AR	JV	MF	

PROFESSIONAL ENGINEER ALBERTA
MAX FORSBERG
Structural Review Only
ID# 96210
2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE: Max Forsberg
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

CLIENT/VENDOR

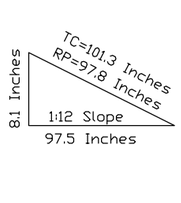
CONSULTANT LOGO
STRAIGHT-UP METAL BUILDINGS LTD.

ENGINEERING RECORD	BY	DATE
DRAWN	MO	05 MAY/25
CHECKED	JV	... MAY/25
DESIGNED	MF	... MAY/25
REVIEWED		
P.O.	5895	
CONTRACT No.	Y24-110224	
PROJECT No.	25-8852	

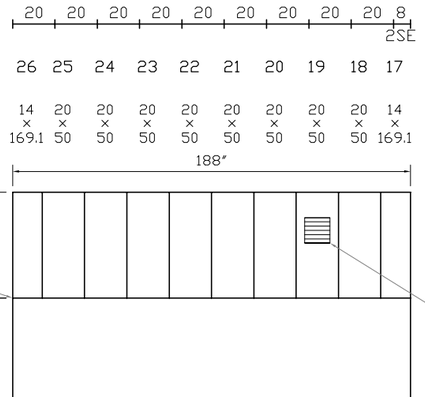
TRIPLE SSS

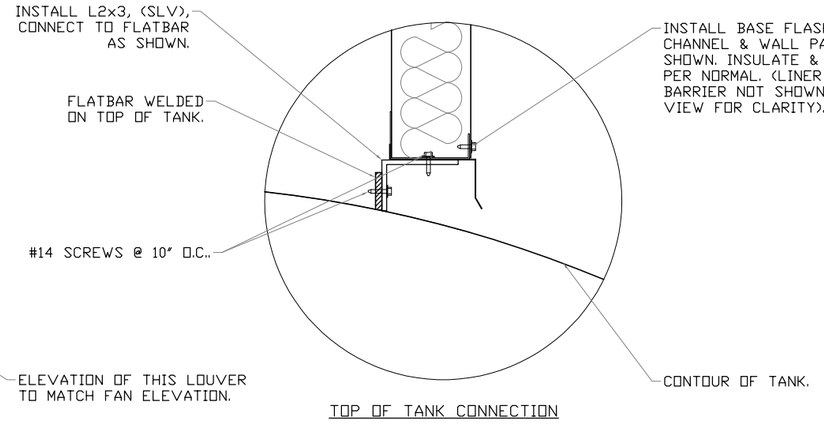
FLARE KNOCKOUT DRUM BUILDING
KARR MULTI WELL OIL BATTERY
ARCHITECTURAL – DETAILS

SCALE	DRAWING NUMBER	VDRL	REV
	25-8852-BLD-4		2

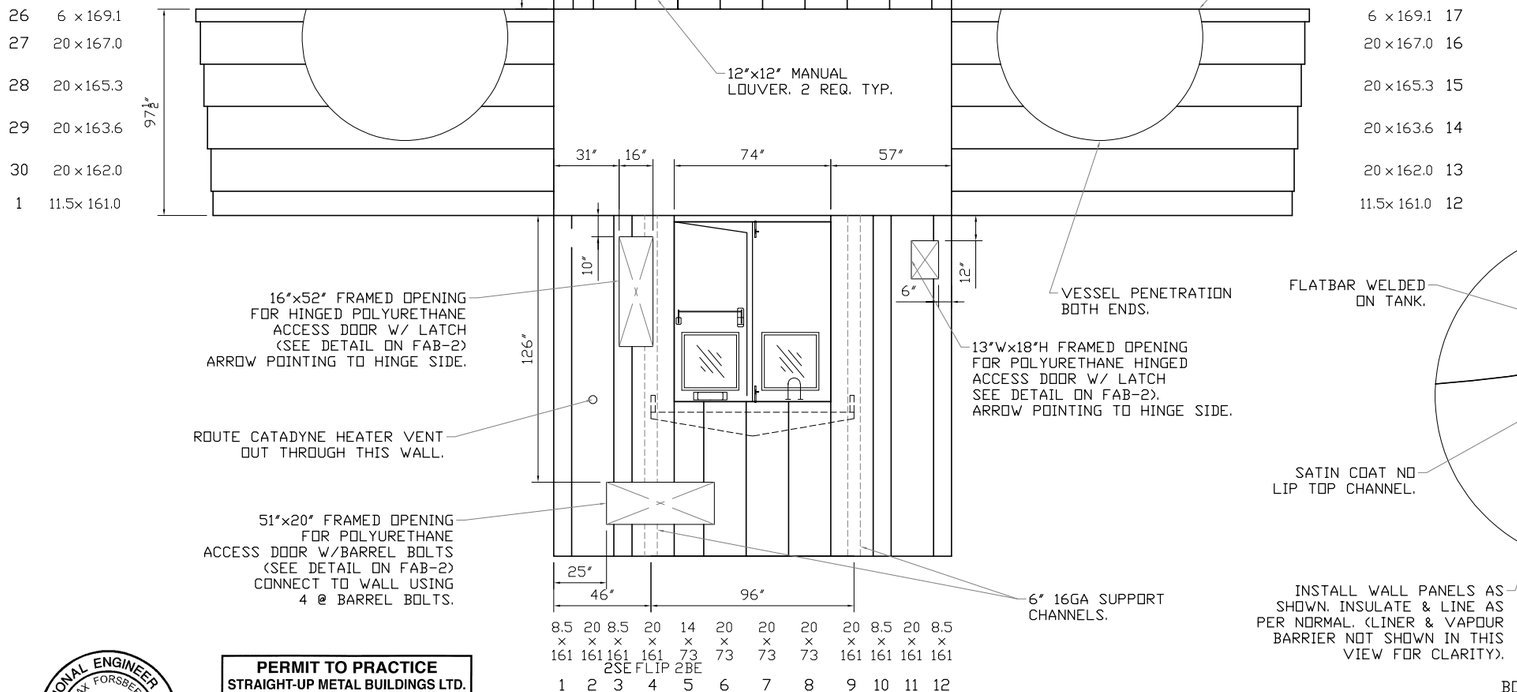


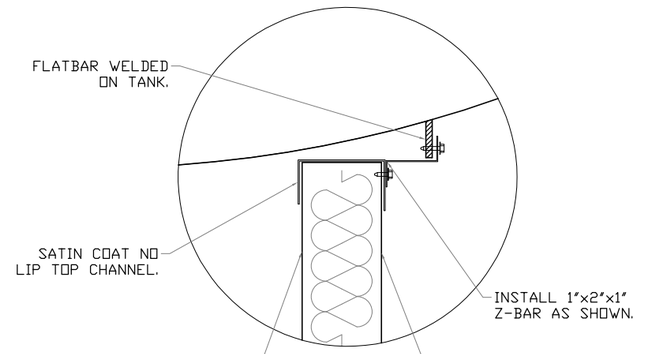
ROOF PANELS
9 @ 20x101.3
1 @ 8x101.3 2SE





TOP OF TANK CONNECTION





BOTTOM OF TANK CONNECTION

DESIGN DATA	
LOCATION	AB
LSD	01-34-065-03 W6M
$q_{1/50}$	0.43 kPa
Ss	2.2 kPa
Sr	0.1 kPa
Sa(0.2X)	0.269
Sa(0.5X)	0.238
Sa(1.0X)	0.136
Sa(2.0X)	0.0743
Sa(5.0X)	0.042
Sa(10.0X)	0.026
PGA	–

PROFESSIONAL ENGINEER ALBERTA
MAX FORSBERG
Structural Review Only
ID# 96210
2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE:
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

REVISION	STATUS	DRAWN BY	DATE
2	AS BUILT	A. ROY	NOV 06/25
1B	ISSUED FOR CONSTRUCTION	M. FORSBERG	SEP 12/25
1A	ISSUED FOR CONSTRUCTION	M. FORSBERG	AUG 06/25
1	ISSUED FOR CONSTRUCTION	M. FORSBERG	JUL 07/25

Straight-Up Metal Buildings Ltd.

22GA Tan Exterior Walls R-12
22GA Metro Brown Exterior Roof R-20
24GA Fluted Alum. White Interior Liner
22GA Metro Brown Trim & Tan Doors

ERECTORS NOTES

- CONNECT BOTTOM CHANNEL TO SKID USING #14 SCREWS @ 10" O.C. OR ON EITHER SIDE OF WALL PANEL RIB.
- CONNECT WALL PANELS TO EACH OTHER USING #8 SCREWS @ 18" O.C. IN SIDE WALLS & @ 16" O.C. IN END WALLS.
- CONNECT EACH ROOF PANEL TO BUILDING USING 8 @ #10 SCREWS, 4 @ HIGH WALL & 4 @ LOW WALL
- CONNECT ROOF PANELS TO EACH OTHER USING #10 SCREWS @ 18" O.C.
- CONNECT STARTER ROOF PANEL TO END WALL TOP CHANNEL USING #10 SCREWS @ 18" O.C.
- CONNECT INTERIOR LINER TO WALL PANEL RIBS USING WHITE #8 SCREWS IN EVERY 2nd LOW LINER PROFILE.
- CONNECT THRESHOLD TO SKID USING THRESHOLD SCREWS.
- APPLY CLEAR CAULKING AROUND DOOR FRAMES.
- APPLY TREMSIL 600 FOR CAULKING ROOF
- FLASH AROUND EXTERIOR OF ACCESS BOXES WITH OUTSIDE COOLER FLASHING AND INTERIOR WITH INSIDE LOUVER TRIM. CAULK BOTH SIDES COMPLETELY.

DESIGN NOTES

- STEEL USED IN WALL PANELS, ROOF PANELS AND FLASHINGS CONFORM TO ASTM A792-09 GRADE 37, WITH AZ50 COATING CLASS.
- REFER TO SPECIAL NOTES & BUILDING ASSEMBLY MANUAL FOR COMPLETE ERECTION INSTRUCTIONS.
- NORMAL IMPORTANCE CATEGORY AND SEISMIC CATEGORY D ASSUMED

NOTES

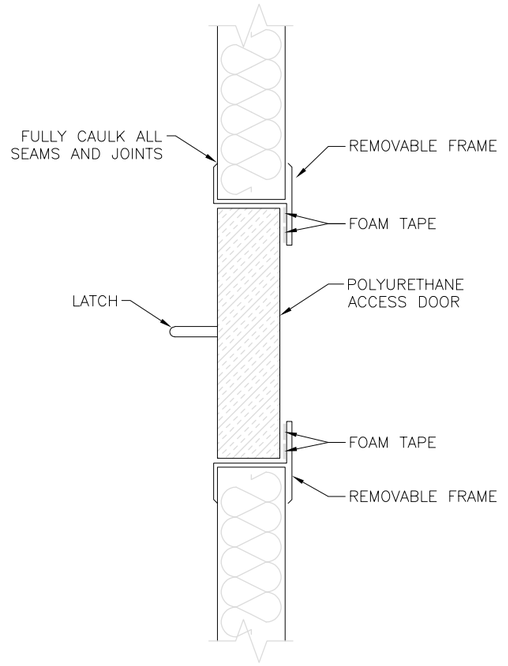
- ALL DIMENSIONS ARE IN INCHES AND FRACTIONS OF AN INCH.
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS TO WINDOWS AND DOORS ARE TO ROUGH OPENINGS
- CONFIRM LOCATION OF ANY LOUVERS AND OR ANY FANS BEFORE INSTALLING.

CLIENT:	TRIPLE S				
PROJECT:	WO 976 FLARE KO BUILDING				
TITLE:	PLAN\PANEL LAYOUT				
SIZE:	W 15'8"	L 8'1.5"	H 13'5"		1:12
Sq.FT:	W 649'	G 5'	R 128'	T 782'	
Perimeter	47'7"	Weight	–		
Quote:	Y24-110223R2		Unit:	–	
Drawn by:	M. FORSBERG		Date:	JUL 07/25	
Checked by:	M. FORSBERG		Date:	JUL 07/25	
APPROVED BY:	M. FORSBERG		Date:		
Job:	25-8852	Drawing:	25-8852-FAB-1	Rev:	2

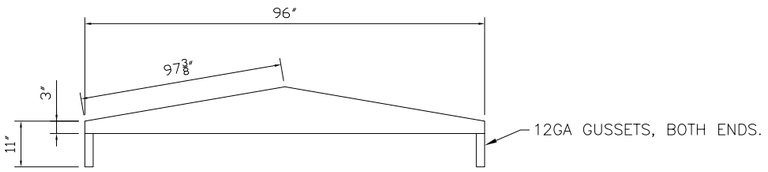
BUILDING COMPONENTS	Produced & Inspected	Shipped By	
BRAKE			
5 @ 10' Bottom Channel			
5 @ 10' Top Channel			
2 @ 10' Satin Coat Tan No Lip Top Channel			
2 @ 10' Eaves Drip			
2 @ 169.0" Lining Corners			
2 @ 161.0" Lining Corners			
2 @ 89.8" of 6" insulation Channel			
9 @ 89.8" of 9" Insulation Ribs 24Ga			
10 @ 10' U Channel (Door Header) 3"			
5 @ 10' Base Flashing			
5 @ 10' Containment Ring Flashing			2.75"x1.25"x1"
1 @ 3" Raised Base for Double Door			
2 @ 10' Eaves Trough Support			
2 @ 106.3" Side Shed Flashing			
1 @ 194.0" Front Shed Flashing.			
3 @ 10' of Door/Window Drip			
2 @ 10' of Inside louver trim			
2 @ 10' of 1"x2"x1" Tan 22Ga Angle			
2 @ 160" of 6" 16Ga Support Channel			
ACCESSORIES			
2 Flashing EndCaps			
1 @ 15'8" EavesTrough 2 Caps			
1 @ 12'11" DownSpouts 1 Elbows 2 Brackets			
2 @ 46" Removable Frame Header			mitre both ends; See detail
2 @ 23" Removable Frame Legs			mitre both ends; See detail
1 @ 50¼"W x 19¼"H Polyurethane Panel door (3" Tan) c/w 4 barrel bolts, frame, 2 pull handles, and butyl tape			See Detail
1 @ 12¼"W x 17¼"H Polyurethane Panel door (3" Tan) c/w piano hinge on the left, frame, rubber latch on the right, and butyl tape			See Detail
1 @ 15¼"W x 51¼"H Polyurethane Panel door (3" Tan) c/w piano hinge on the left, frame, rubber latch on the right, and butyl tape			See Detail
1 @ 20"Wx20"Hx20"D Storm Hood			
1 @ 16"Wx16"Hx16"D Storm Hood			No Top Drip
1 @ 16Ga Double Door Canopy. Metro Brown			See Detail

DOORS		
# TP SW C P L C A B WS S T H FM		
1 DD R 2 1 – 1 1 2 2 2 2 2 1		
FABRICATION		
1 @ 15'8" Ice Rake		
1 @ 15'7" 2"x3"x3/16" Angle. Paint Warm Grey		
MISC		
2 Roll of 6mil Certified Poly Vapour Barrier		
31 @ 3x10 Fluted Alum. White Liner		
5 @ Bags of R12 Insulation (133)		
2 @ Bags of R20 Insulation (73)		
2000 @ 1/2" long silver #8 Screws		
2000 @ 1/2" long white #8 Screws		
1000 @ 1/2" long tan #8 Screws		
400 @ 3/4" long #10 Screws		
20 @ 1.25" long super #10 Screws		
150 @ 1.5" long #14 Screws		
12 @ Tubes of White Caulking		
12 @ Tubes of Gray Caulking		
3 @ Tubes of Clear Caulking		
12 @ Tubes of Tremsil600 Caulking		
5 @ Threshold screws		
1 Roll 1/2" Butyl Tape		
3 Rolls of Tuck Tape		
HVAC		
2 @ 12"x12" Manually Operable Louver c/w: Flange frame; Manual Wing Nut Controller; Screen and 22Ga Storm Hood.		
1 @ 24"x30" Catadyne Heater. (Supply Only)		

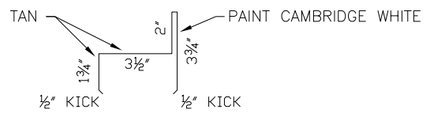
16GA R4 Slab, 16GA Frame, Closure, WIndow, Panic Hardware. Tan



ACCESS DOOR, HINGED
or W/ BARREL BOLTS



16GA DOUBLE DOOR CANOPY
(36" PROJECTION)



REMOVABLE FRAME (HEADER AND LEGS)

PROFESSIONAL ENGINEER ALBERTA
MAX FORSBERG
Structural Review Only
ID# 96210
2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE: Max Forsberg
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Straight-Up Metal Buildings Ltd.

22GA Tan Exterior Walls R-12
22GA Metro Brown Exterior Roof R-20
24GA Fluted Alum. White Interior Liner
22GA Metro Brown Trim & Tan Doors

DOOR LEGEND:
TP=TYPE (SD=SINGLE DOOR DD=DOUBLE DOOR)
SW=SWING (L=LEFT R=RIGHT)
G=GLASS
P=PANIC HARDWARE
L=LOCKSET
C=CHECK CHAIN
A=AUTO CLOSURE
B=BARREL BOLTS
WS=WEATHERSTRIPPING
S=SWEEPS
T=THRESHOLD
H=HINGES
FM=FRAME

REVISION	STATUS	DRAWN BY	DATE
2	AS BUILT	A. ROY	NOV 06/25
1B	ISSUED FOR CONSTRUCTION	M. FORSBERG	SEP 12/25
1A	ISSUED FOR CONSTRUCTION	M. FORSBERG	AUG 06/25
1	ISSUED FOR CONSTRUCTION	M. FORSBERG	JUL 07/25

CLIENT:	TRIPLE S				
PROJECT:	WO 976 FLARE KO BUILDING				
TITLE:	CUTLIST				
SIZE:	W 15'8"	L 8'1.5"	H 13'5"		1:12
Sq.FT:	W 649'	G 5'	R 128'	T 782'	
Perimeter	47'7"	Weight	–		
Quote:	Y24-110223R2		Unit:	–	
Drawn by:	M. FORSBERG		Date:	JUL 07/25	
Checked by:	M. FORSBERG		Date:	JUL 07/25	
APPROVED BY:	M. FORSBERG		Date:		
Job:	25-8852	Drawing:	25-8852-FAB-2	Rev:	2

GENERAL NOTES FOR BUILDING:

GENERAL NOTES:

1. BUILDING PACKAGE CONFORMS TO:
   – NATIONAL BUILDING CODE 2023–ALBERTA EDITION

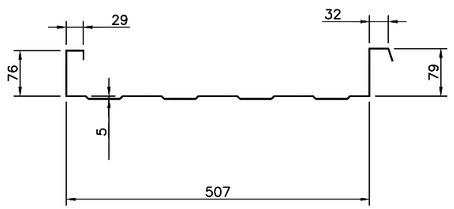
2. GROUP F DIVISION 3 OCCUPANCY CATEGORY AS PER NATIONAL BUILDING CODE CANADA 2020, TABLE 3.1.2.1

   BUILDING IMPORTANCE CATEGORY – NORMAL

BUILDING COMPONENTS:

– EXTERIOR WALL AND ROOF PANELS:
22GA PREPAINTED GALVALUME PANELS CONFORMING TO ASTM A792–09, WITH COATING CONFORMING TO AZ50.

SELF–FRAMING PANEL DIMENSIONS:



BUILDING NOTES:

1. MULTI OIL WELL BATTERY BUILDING SHALL BE A GABLE STYLE SELF–FRAMING BUILDING, ERECTED ON A STEEL SKID IN OUR YARD.

2. WALL TO CONSIST OF:
   – 22GA SELF–FRAMING WALL PANELS;
   – R12 (76mm) INSULATION;
   – CONTINUOUS 6MIL CERTIFIED POLY VAPOR BARRIER;
   – 24GA WHITE FLUTED ALUMINUM LINER.

3. ROOF TO CONSIST OF:
   – 22GA SELF–FRAMING ROOF PANELS;
   – 24GA INSULATION CLIPS 9" DEEP 24GA;
   – R20 (152mm) INSULATION;
   – CONTINUOUS 6MIL CERTIFIED POLY VAPOR BARRIER;
   – 24GA WHITE FLUTED ALUMINUM LINER.

4. 1 @ FULL LENGTH ANGLE ICE RAKES

5. 1 @ FULL LENGTH EAVES TROUGH C/W GUTTER, DOWNSPOUT AND ELBOW.

6. 1 @ 16GA 1829mm W x 2,134mm H R4 INSULATED HOLLOW CORE DOUBLE DOOR C/W:
   – 16GA DOUBLE DOOR FRAME;
   – HYDRAULIC CLOSER;
   – CHECK CHAIN;
   – TWO (2) 610mm W x 610mm H IWG WINDOWS;
   – BARREL BOLTS;
   – DOREX PANIC HARDWARE;
   – WEATHER STRIPPING;
   – SWEEPS;
   – THRESHOLD;
   – 16GA DOUBLE DOOR CANOPY W/ TWO (2) 16GA VERTICAL SUPPORT CHANNELS.

7. 1 @ 1087mm W x 500mm H ACCESS DOOR

8. HVAC

   (REFER TO DATA SHEETS FOR FULL SPECS; ANY DISCREPANCY BETWEEN THESE DRAWINGS AND DATA SHEETS, THE DATA SHEETS SHALL BE ASSUMED CORRECT)

   2 @ 12"W x 12"H MANUALLY OPERABLE LOUVER C/W:
   – FLANGE FRAME;
   – MANUAL WING NUT CONTROLLER;
   – BIRD SCREEN;
   – 22GA STORM HOOD.

   1 @ SUPPLY ONLY CATADYNE WX24x30 CATALYTIC HEATER C/W:
   – 20,000 BTUH;
   – NATURAL GAS CONFIG.;
   – 12V START;
   – THERMOSTAT APPLIANCE REGULATOR;
   – SAFETY SHUT–OFFVALVE;
   – WALL MOUNT BRACKET AND VENT HOOD ASSEMBLY.

ARCHITECTURAL SCHEDULES

WALL (EXTERIOR)	TAN	QC–8315
WALL (INTERIOR)	WHITE ALUMINUM	
ROOF (EXTERIOR)	METRO BROWN	QC–8228
ROOF (INTERIOR)	WHITE ALUMINUM	
WALL FLASHINGS (EXTERIOR)	METRO BROWN	QC–8228
WALL FLASHINGS (INTERIOR)	CAMBRIDGE WHITE	QC–8695
ROOF FLASHINGS (SIDE AND FRONT)	METRO BROWN	QC–8228
ICE RAKES	METRO BROWN	QC–8305
EAVESTROUGH	METRO BROWN	QC–8228
DOWNSPOUTS	METRO BROWN	QC–8228
DOOR FRAME	METRO BROWN	QC–8228
DOOR SLAB	TAN	QC–8315
CANOPY	METRO BROWN	QC–8228

Straight–Up Metal Buildings Ltd.

DESIGN DATA

LOCATION	AB
LSD	01–34–065–03 W6M
Q–1/50	0.43 kPa
Ss	2.2 kPa
Sr	0.1 kPa
Sa(0.2,X)	0.269
Sa(0.5,X)	0.238
Sa(1.0,X)	0.136
Sa(2.0,X)	0.0743
Sa(5.0,X)	0.042
Sa(10.0,X)	0.026
PGA	–

BUILDING WEIGHT:
APPROX. 1,633 kgs

NO.	DATE	REVISION	DRN	CHK	ENG	APR
0	06 MAY/25	ISSUED FOR APPROVAL	MO	JV	MF	
0A	23 JUN/25	RE–ISSUED FOR APPROVAL	AG	JV	MF	
1	08 JUL/25	ISSUED FOR CONSTRUCTION	MF	JV	MF	
2	06 NOV/25	AS BUILT	AR	JV	MF	

PROFESSIONAL ENGINEER ALBERTA
MAX FORSBERG
Straight-Up Metal Buildings Ltd.
ID# 96210
2025-11-07

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE:
RM APEGA ID #: ID# 96210
DATE: 2025-11-07
PERMIT NUMBER: P012663
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

CLIENT/VENDOR

CONSULTANT LOGO

STRAIGHT-UP METAL BUILDINGS LTD.

ENGINEERING RECORD	BY	DATE
DRAWN	MO	05 MAY/25
CHECKED	JV	... MAY/25
DESIGNED	MF	... MAY/25
REVIEWED		
P.O.	5895	
CONTRACT No.	Y24–110224	
PROJECT No.	25–8852	

TRIPLE SSS
FLARE KNOCKOUT DRUM BUILDING
KARR MULTI WELL OIL BATTERY
ARCHITECTURAL – FLOOR PLAN & SECTION

SCALE	DRAWING NUMBER	VDRL	REV
	25–8852–BLD–1		2

Certificate of Design and Manufacturing Conformance with NBC, 2020

This Certificate is to affirm that all components of the steel building system described below, to be supplied by the Manufacturer, Straight-Up Metal Buildings Ltd., certified in accordance with CSA A660, have been or will be designed and fabricated in accordance with the following Standards to carry the loads and load combinations specified.

1. DESCRIPTION:

Manufacturer's Name and Address	Straight-Up Metal buildings Ltd. 98 Carmek Blvd. Rocky View County, AB, T1X 1X1
Manufacturer's Certificate No. under CSA A660	strai0
Customer Order Number	Straight-Up job 25-8852
Building Type and Size	2,384mm W x 4,775mm L x 3,734mm H Shed Style Building
Intended Use and Occupancy	Group F division 3
Importance Category (*NBC* , Sentence 4.1.2.1.(3))	Normal
Site Location	01-34-065-03 W6M
Applicable Building Code	National Building Code 2023- Alberta Edition
Builder's Name and Address	Straight-Up Metal buildings Ltd. 98 Carmek Blvd. Rocky View County, AB, T1X 1X1
Owner's Name and Address	CNRL

2. DESIGN STANDARDS — **Engineer's Initials*** MF

National Building Code of Canada, 2020, Part 4: Structural Design

CAN/CSA-S16-19, *Limit States Design of Steel Structures*

CAN/CSA-S136-16, *North American Specification for the Design of Cold-Formed Steel Structural Members*

Other (specify) CSA A277 Dated 25-Jun-25

3. MANUFACTURING STANDARDS — MF

(A) Fabrication has been or will be in accordance with CAN/CSA-S16 and CAN/CSA-S136, as applicable

(B) Welding has been or will be performed in accordance with CSA W59 and CAN/CSA-S136, as applicable

(C) The Manufacturer has been certified in accordance with CSA W47.1, for Division 1 or 2, and/or CSA W55.3, if applicable

(D) Welders have been qualified in accordance with CSA W47.1

4. PURLIN STABILITY — N/A

Purlin braces are provided in accordance with CAN/CSA-S136, Clause D3 and Appendix B, Clause D3.2.3. In particular, for a standing seam roof supported on movable clips, braces providing lateral support to both top and bottom purlin flange have been or will be provided. The number of rows is determined by analysis but in no case is less than 1 for spans up to 7m inclusive or less than 2 for spans greater than 7m.

5. LOADS

(A) Snow and Rain Load — MF

1-in-50 year ground snow load, Ss,	2.2	(kPa)
1-in-50 year associated rain load, Sr,	0.1	(kPa)
Wind exposure factor, Cw,	1	
Importance Factor, Is,	1	
Roof snow load, S,	1.86	(kPa)
Drift load considered (*NBC* Sub-section 4.1.6.2.8) refer to drawing of specific building		
Specified rain load (*NBC* , Article 4.1.6.4)	-	(mm)

Initial each true statement. Mark N/A if statement does not apply.

Certificate of Design and Manufacturing Conformance with NBC, 2020

5. LOADS con't...

Engineer's Initials*
N/A

(B) Full and Partial Snow Load

(i) Applied on any one and any two adjacent spans of continuous purlins

(ii) Applied on any one and any two adjacent spans of modular rigid frames with continuous roof beams

(iii) Applied as described for the building geometry in *NBC 2020* , Part 4.1.6.

(C) Wind Load MF

I-in-50 year reference velocity pressure 0.43 (kPa)

Importance Factor, Iw 1

(D) Wind Load Application MF

(i) Applied as per *NBC* , Part 4, Sub-section 4.1.7

(ii) Pressure coefficients as per NBC 2020 Part 4.1.7, Figures 4.1.7.6-A - 4.1.7.6-H.

(iii) Building internal pressure Category 1 per NBC 2020, Part 4.1.7, Table 4.1.7.7.

(E) Crane Loads (where applicable) N/A

Type N/A (top running)(under-running)(jib)

Capacity N/A (tonnes)

Wheel Base N/A (m)

Maximum Static, vertical wheel load N/A (kN)

Vertical impact factor N/A %

Lateral Factor N/A % Lateral Wheel Load N/A (kN)

Longitudinal Factor N/A % Maximum Longitudinal Load N/A (kN/side)

(F) Mezzanine Live Load N/A (kPa) N/A

(G) Seismic Load: MF

Applied as per *NBC, Part 4, Sub-Section 4.1.8 S* (0.2,X) 0.269 S (0.5,X) 0.238 S (1.0,X) 0.136 S (2.0,X) 0.0743 S(5.0,X) 0.042 S(10.0,X) 0.026

I_E 1

(H) Other Live Loads (specify) MF

1.0 kPa live load on roof

(I) Dead Loads MF

Dead Load of building components is incorporated in the design

Collateral load (mechanical, electrical, ceiling, sprinklers, etc.)

Mezzanine N/A (kPa) Other (Specify) 0.5 (kPa)

(J) Load Combinations MF

Applied in accordance with NBC, Part 4, Section 4.1.

1.25D+1.5S, 0.9D+1.4W

6. GENERAL REVIEW DURING CONSTRUCTION

The Manufacturer, Straight-Up Metal Buildings Ltd., does not provide general review during construction for regulatory purposes.

Initial each true statement. Mark N/A if statement does not apply.

7. CERTIFICATION BY ENGINEER

I **Max Forsberg**, a Professional Engineer registered or licensed to practice in the Province or Territory of **Alberta**, hereby certify that I have reviewed the design and manufacturing process for the steel building system described. I certify that the foregoing statements, initialed by me, are true.

NAME Max Forsberg

TITLE P.Eng

AFFILIATION Straight-Up Metal Buildings Ltd

SIGNATURE

DATE / / (DD / YY)

Professional Seal

PROFESSIONAL ENGINEER ALBERTA MAX FORSBERG

ID# 96210
2025-06-24

PERMIT TO PRACTICE
STRAIGHT-UP METAL BUILDINGS LTD.
RM SIGNATURE:
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