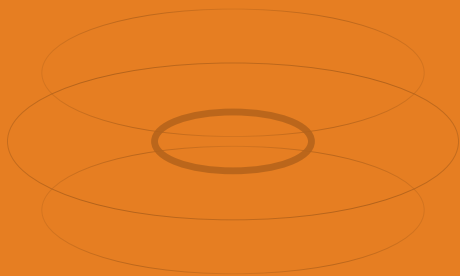


OWNER

Pig Receiver PR-101 Sizing and Closure Safety

Calculation



Document No.: [REDACTED] MEC-CAL-007

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Project: [REDACTED] [REDACTED]



TORUS

[REDACTED], [REDACTED] County, [REDACTED]

ISSUE SUMMARY AND APPROVAL

This page records each issue of MEC-CAL-007. The preparer, reviewer and approver sign for each revision.

Rev.	Date	Issue purpose	Description
A	2026-09-29	Issued for Review	First issue

Contributors

Rev.	Discipline	Prepared by	Reviewed by	Approved by
A	Mechanical			

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APPENDIX A. PIG RECEIVER PR-101 GENERAL ARRANGEMENT..... 10

1. OBJECTIVE

This calculation sizes inlet pig receiver PR-101, an NPS 12 line by NPS 16 barrel trap on the Owner's upstream 12-inch lateral, for the cleaning pigs and in-line inspection (ILI) tools expected on that line. It checks the barrel wall and the kicker connection to ASME Section VIII Division 1, sets the receiving flow limits, and defines the blowdown and the quick-opening closure safety requirements. It also gives the saddle loads. The results feed the datasheet MEC-DS-002 and the general arrangement PIP-DWG-005 (Appendix A).

2. METHODOLOGY

TORUS checked the barrel length against the longest tool. The tool must come to rest downstream of the kicker bore, so that gas bypasses it through the kicker and it stops, with one barrel diameter of clearance to the closure and with its tail clear of trap valve HV-101B so that the valve can be closed behind it.

The barrel wall was checked with the outside-radius formula of ASME VIII-1 Appendix 1-1, with the 12.5 % mill undertolerance and the corrosion allowance deducted. The kicker connection was checked for area replacement to UG-37. Gas densities are from the GERG-2008 equation of state at the design gas composition (GEN-DB-001), and the kicker velocity is screened against the API RP 14E erosional velocity with $C = 100$.

Barrel blowdown through BDV-102 and restriction orifice RO-102 was integrated step by step with choked, then subsonic, real-gas orifice flow at 60 °F. The orifice equations use the isentropic exponent $\kappa = \rho c_p^2 / p$, taken from the real-gas speed of sound, not the real-gas ratio c_p / c_v . At 1,150 psig and 60 °F κ is 1.410, while c_p / c_v is 1.708; the ratio would overstate the discharge coefficient term and understate the stored energy. The governing adiabatic blowdown of the barrel is in PRO-CAL-008; the isothermal result here confirms it.

Saddle reactions were found by statics, with the closure, reducer, minor barrel, nozzles and contents located along the barrel.

3. DESIGN INPUTS

The inputs in Table 3-1 govern the calculation.

Table 3-1: Design Inputs

Input	Value	Source
Design pressure	1,440 psig at -20 to 133 °F; 1,420 psig at 150 °F (Class 600 flange limited)	GEN-DB-001; MEC-CAL-006

Input	Value	Source
Minimum design metal temperature	-20 °F	GEN-DB-001
Corrosion allowance	1/16 in	GEN-DB-001
Barrel materials	NPS 16 Sch 80 (0.844 in) and NPS 12 Sch 80 (0.688 in), SA-333 Gr 6 SMLS, S = 17,100 psi	ASME II-D, Table 1A
Station line	NPS 12 x 0.375 in X52, 3R bends and barred tee on the pig path	PIP-DWG-005
Barrel position	Closure outer face X = 24.0 ft, barrel centerline EL 1154.50 ft (2.8 ft above grade), east-west, closure at the west end	MEC-DWG-001, PIP-DWG-005
HV-101B west face (N2 flange face)	X = 45.83 ft	PIP-DWG-005
Kicker	NPS 8, top of the major barrel at X = 39.0 ft, to line 8"-G-1101-A6	PRO-DWG-101
Pig and tool lengths	Bi-directional pig 1.67 ft; foam or brush pig 2.0 ft; gauge pig 1.75 ft; geometry tool 5.5 ft; magnetic flux leakage (MFL) ILI tool 9.0 ft; train of two bi-directional pigs 3.84 ft	Assumed (HOLD H-16)
Receiving flows and pressures	20 to 120 MMSCFD at 900 to 1,150 psig, 60 °F	GEN-DB-001
Closure	16 in Class 600, door face to inside face 0.50 ft, to hub weld 1.25 ft, about 1,650 lb	Typical (HOLD H-15)
RO-102	3/16 in bore, discharge coefficient 0.62	PRO-CAL-008

4. ASSUMPTIONS

1. Tool lengths and the pigging program are assumed. A tool longer than about 13 ft needs a longer barrel. *Verification required (HOLD H-16).*
2. The upstream lateral MAOP does not exceed 1,440 psig. *Verification required (HOLD H-16).*
3. Closure dimensions, weight and interlock hardware are typical values. *Verification required (HOLD H-15).*
4. Gas properties are at the design composition. The rich case changes densities by less than 5 %.
5. Liquids received with a pig fill no more than 25 % of the major barrel volume.

5. REFERENCES

1. ASME Boiler and Pressure Vessel Code, Section VIII Division 1 (2023): UG-27, Appendix 1-1, UG-35.2, UG-36, UG-37, UG-44, UG-99, UCS-66, and UG-150 to UG-156.
2. ASME Boiler and Pressure Vessel Code, Section XIII (2023), Rules for Overpressure Protection.
3. ASME Boiler and Pressure Vessel Code, Section II Part D (2023), Table 1A.
4. ASME B31.8-2022, Gas Transmission and Distribution Piping Systems.
5. ASME B16.5-2020, Pipe Flanges and Flanged Fittings; ASME B16.9-2018, Factory-Made Wrought Butt welding Fittings.
6. API Recommended Practice 14E, 5th Edition (1991, reaffirmed 2013), Design and Installation of Offshore Production Platform Piping Systems.
7. GERG-2008 equation of state, as implemented in CoolProp 8.0.
8. GEN-DB-001, Basis of Design.
9. PRO-DWG-101, P&ID Station Inlet: IJ-101, Pig Receiver PR-101, Inlet SDV-101.
10. PRO-CAL-007, Relief System Calculation; PRO-CAL-008, Blowdown, Vent Header and Vent Stack Calculation.
11. MEC-CAL-003, Hydrostatic Test Calculation; MEC-CAL-005, Pipe Support Spans and Support Load Schedule; MEC-CAL-006, Flange, Gasket and Bolting, and Pressure-Temperature Rating Checks.
12. MEC-DS-002, PR-101 Inlet Pig Receiver Mechanical Datasheet; MEC-DWG-001, Plot Plan.
13. PIP-DWG-005, Pig Receiver PR-101 General Arrangement (Appendix A).

6. CALCULATION

6.1. BARREL GEOMETRY AND LENGTH

Table 6-1 gives the barrel stations along the plot plan X axis. The major barrel is 15.00 ft of NPS 16, followed by a 16 x 12 eccentric reducer (flat on bottom, 1.17 ft) and 3.88 ft of NPS 12 minor barrel to the N2 weld neck flange. The overall length from the closure face to the N2 face is 21.83 ft, which matches the 22 ft allowed in the basis layout.

Table 6-1: Barrel Stations

Point	X, ft
Closure outer face	24.00
Closure inside face	24.50
Closure hub to major barrel weld	25.25
Kicker nozzle N3 centerline	39.00

Point	X, ft
Major barrel end, reducer large end	40.25
Reducer small end, minor barrel weld	41.42
Minor barrel to weld neck flange weld	45.30
N2 flange face, HV-101B west face	45.83

The governing tool is the 9.0 ft MFL tool. The zone in which it can rest runs from the downstream edge of the 7.625 in kicker bore to the inside face of the closure:

Pigging practice, tool rest zone

$$L_{rest} = \left(X_{kicker} - \frac{d_{kicker}}{2} \right) - X_{door} = \left(39.00 - \frac{7.625}{24} \right) - 24.50 = 14.18 \text{ ft}$$

$$L_{req} = L_{ILI} + D_{16} = 9.00 + \frac{14.312}{12} = 10.19 \text{ ft}$$

The barrel therefore holds the tool with 4.0 ft to spare, and could receive a tool of about 13 ft. Table 6-2 sets out all the length criteria.

Table 6-2: Barrel Length Criteria

Criterion	Provided, ft	Required, ft
Tool rest zone, kicker bore to closure inside face, at least tool length plus one barrel diameter	14.18	10.19
Major barrel at least 1.5 times the ILI tool length	15.00	13.50
Major barrel at least twice the length of a two-pig train	15.00	7.68
Minor barrel at least 1.5 times NPS 12	3.88	1.50
Minor barrel and reducer at least one bi-directional pig, so the last pig clears the HV-101B bore	5.05	1.67
ILI tool tail to HV-101B face, tool nose one diameter from the closure	11.13	0.50
Kicker no more than 2 ft from the reducer large end, so the pig passes the kicker before it stops	1.25	2.00 (max.)

Every criterion is met, so the plot plan position of PR-101 needs no change.

6.2. BARREL WALL

The required thickness of the NPS 16 major barrel uses the outside radius $R_o = 8.000$ in, with joint efficiency $E = 1.0$ for SMLS pipe:

ASME VIII-1, Appendix 1-1(a)(1)

$$t_{req} = \frac{PR_o}{SE + 0.4P} + CA = \frac{1440(8.000)}{17,100(1.0) + 0.4(1440)} + 0.0625 = 0.652 + 0.063 = 0.714 \text{ in}$$



The Sch 80 wall less its 12.5 % mill undertolerance is $0.844 \times 0.875 = 0.738$ in, above the 0.714 in required. The maximum allowable working pressure (MAWP) of the corroded minimum wall, $t_c = 0.738 - 0.0625 = 0.676$ in, is:

$$MAWP = \frac{SE t_c}{R_o - 0.4 t_c} = \frac{17,100(0.676)}{8.000 - 0.4(0.676)} = 1,495 \text{ psig}$$

For the NPS 12 Sch 80 minor barrel, the same equations give 0.582 in required against 0.602 in provided, and an MAWP of 1,498 psig. The inside-radius formula of UG-27(c)(1) gives 0.703 in for the major barrel, slightly less than the Appendix 1-1 value, which governs. Both barrels are therefore stronger than the Class 600 flanges and closure, and the vessel MAWP is set by the flanges: 1,480 psig at 100 °F and 1,420 psig at 150 °F. The design pressure of 1,440 psig holds up to 133 °F.

6.3. KICKER CONNECTION

An NPS 8 Sch 80 nozzle set on the NPS 16 barrel was checked first, because it is the simplest connection. The required area uses the finished opening in the corroded condition, $d = 7.875$ in, and the required shell thickness $t_r = 0.652$ in:

ASME VIII-1, UG-37

$$A = d t_r F = 7.875(0.652)(1.0) = 5.132 \text{ in}^2$$

$$A_1 = d(E_1 t - F t_r) = 7.875(0.676 - 0.652) = 0.191 \text{ in}^2$$

$$A_2 = 5(t_n - t_m) f_{r2} t_n = 5(0.375 - 0.351)(1.0)(0.375) = 0.044 \text{ in}^2$$

With a 3/8 in fillet weld ($A_{41} = 0.141 \text{ in}^2$), the available area is 0.376 in^2 against 5.132 in^2 required. The barrel wall has almost no excess thickness to give, so a set-on nozzle cannot be made adequate. A reinforcing pad would need to reach the 2d limit of 15.75 in diameter, which wraps 113° of the 16 in barrel, at 0.668 in thick; this is impractical to fit and to inspect.

TORUS therefore selected an ASME B16.9 NPS 16 x 8 reducing tee, SA-420 WPL6, Sch 80 run and XS branch, welded into the major barrel with the branch vertical. A B16.9 fitting is a standard pressure part rated as the matching SMLS pipe under UG-44, so no area replacement calculation is required, and the branch keeps the full 7.625 in bore. Three guide bars across the branch keep pigs from entering or catching on the kicker.

A forged integrally reinforced nozzle was also evaluated as an alternate. To keep the 7.625 in bore, and with it the kicker capacity found below, it needs a wall of about 1.94 in (11.5 in outside diameter) to satisfy UG-37. That is heavier and harder to fit on a 16 in barrel than the tee, so it is acceptable only with a vendor UG-37 calculation and the full bore.

The NPS 2 and NPS 1 nozzles have finished openings under 2-3/8 in in a shell thicker than 3/8 in, and are exempt from reinforcement calculation under UG-36(c)(3).

6.4. RECEIVING VELOCITIES AND KICKER CAPACITY

When a pig is received, trap bypass HV-101A is closed and all flow passes through the barrel and out of the kicker. Table 6-3 gives the velocities over the range of flows and pressures.

Table 6-3: Receiving Velocities, 60 °F

Flow, MMSCFD	Pressure, psig	Density, lb/ft ³	NPS 12 lateral, ft/s	NPS 16 barrel, ft/s	NPS 8 kicker, ft/s	Erosional velocity, ft/s	Kicker within limit
20	900	3.59	4.0	2.8	9.9	52.7	Yes
20	1,150	4.80	3.0	2.1	7.4	45.6	Yes
40	900	3.59	8.0	5.6	19.9	52.7	Yes
40	1,150	4.80	6.0	4.2	14.9	45.6	Yes
60	900	3.59	12.0	8.5	29.8	52.7	Yes
60	1,150	4.80	9.0	6.3	22.3	45.6	Yes
90	900	3.59	18.0	12.7	44.7	52.7	Yes
90	1,150	4.80	13.5	9.5	33.5	45.6	Yes
120	900	3.59	24.1	16.9	59.6	52.7	No
120	1,150	4.80	18.0	12.7	44.6	45.6	Yes

The erosional velocity for solids-free gas is:

API RP 14E, erosional velocity

$$V_e = \frac{C}{\sqrt{\rho}} = \frac{100}{\sqrt{3.59}} = 52.8 \text{ ft/s}$$

at 900 psig. The 7.625 in kicker bore (0.317 ft²) passes 16.7 ft³/s at this velocity, which is 106 MMSCFD. At the design maximum of 120 MMSCFD at the minimum supply pressure of 900 psig, the full flow cannot pass the kicker. For receiving above 100 MMSCFD, HV-101A shall be kept partly open so that part of the flow bypasses the barrel, as the P&ID PRO-DWG-101 notes, or the pig shall be received at a supply pressure of 1,150 psig.

ILI tools normally need 3 to 15 ft/s. In the NPS 12 lateral at 1,000 psig this corresponds to 17 to 85 MMSCFD (10 ft/s at 56 MMSCFD), which is within the kicker capacity. The ILI vendor will confirm the speed window.

6.5. BLOWDOWN, STORED ENERGY AND CLOSURE THRUST

Before the closure is opened, the 19.5 ft³ barrel is vented through BDV-102 and RO-102. The initial choked flow at 1,150 psig and 60 °F, with density $\rho = 4.80 \text{ lb/ft}^3$ and $\kappa = 1.410$, is:

Compressible orifice flow, choked



$$\dot{m} = C_d A \sqrt{\kappa P \rho g_c \left(\frac{2}{\kappa + 1} \right)^{\frac{\kappa + 1}{\kappa - 1}}} = 0.62(1.917 \times 10^{-4}) \sqrt{1.410(167,630)(4.80)(32.174)(0.3342)} = 0.415 \text{ lb/s}$$

Integrating the falling pressure step by step, the barrel reaches 5 psig in 930 s, 15.5 min, at a constant 60 °F. PRO-CAL-008 models the same blowdown adiabatically, with the gas cooling as it expands, and finds 15.3 min to 5 psig for the barrel and its nozzles. The two agree, and the key interlock below allows 15 min of venting before the barrel can be confirmed at zero.

The energy the gas would release if the closure failed at 1,150 psig, taken as an isentropic expansion to atmosphere, is:

Isentropic expansion energy

$$E = \frac{P_1 V}{\kappa - 1} \left[1 - \left(\frac{P_a}{P_1} \right)^{\frac{\kappa - 1}{\kappa}} \right] = \frac{167,630(19.5)}{0.410} \left[1 - \left(\frac{14.10}{1164.1} \right)^{0.291} \right] = 5.76 \times 10^6 \text{ ft} \cdot \text{lbf}$$

This is 7.8 MJ, about 1.9 kg of TNT equivalent. The thrust on the closure is the pressure on the 14.312 in barrel bore: 231,700 lbf at 1,440 psig, and still 800 lbf at 5 psig.

6.6. CLOSURE SAFETY REQUIREMENTS

A closure opened with even a few psig in the barrel is thrown with enough force to kill, so the closure shall not be openable while any pressure remains. The following requirements apply to the closure and to the station interlock I-08:

1. The closure shall meet UG-35.2 for quick-actuating closures. The holding elements shall be fully engaged before pressure can build, and the closure shall be designed so that it cannot be released while the holding elements carry load.
2. A pressure warning device shall be integral with the locking mechanism. It shall have to be opened before the lock can move, and shall vent any residual pressure audibly to the operator's side.
3. Mechanical key interlock I-08 shall enforce the sequence: HV-101B closed and locked releases key A; key A permits BDV-102 and drain valve HV-101E to be opened; BDV-102 locked open releases key B; key B alone unlocks the closure. The barrel cannot be pressurized again until the closure is locked and the keys return in reverse order.
4. Barrel gauge PI-102 (0 to 2,000 psig) and a low-range gauge (0 to 30 psig, with overpressure protector) shall be readable from the operator position and shall confirm zero before the pressure warning device is opened.
5. The closure shall hinge on the north side and open away from the operator, who stands on the south side, out of line with the barrel axis. The axis points west across the pig handling pad toward the fence. The exclusion zone in line with the closure shall be marked on the pad and kept clear during pressurizing and receiving.

6. The major barrel shall slope 1:100 down toward the closure, so that liquids collect at drain N4 (X = 26.5 ft) before the closure is opened.

PR-101 is an ASME VIII-1 vessel and needs overpressure protection under UG-150 and Section XIII. With its valves open it is part of the inlet section protected by PSV-101 (PRO-CAL-007). Isolated, it can be heated by sun while blocked in, so the operating procedure shall not leave the barrel isolated under pressure: it shall be either open to the inlet section or vented through BDV-102.

6.7. BARREL DRAIN

Liquid received with a pig, up to 25 % of the major barrel (4.19 ft³, 31 gal), drains through N4 and line 1061 to the liquids system. Driven by 10 psig of residual gas against a total resistance coefficient of 13.4, the drain flows at about 97 gpm and empties the barrel in under 1 min.

6.8. WEIGHTS AND SADDLE REACTIONS

PR-101 sits on two saddles, at X = 28.0 ft and X = 37.5 ft. Table 6-4 gives the weights and reactions.

Table 6-4: Weights and Saddle Reactions

Case	Weight, lb	Center of gravity X, ft	Saddle at X 28.0, lb	Saddle at X 37.5, lb
Empty	5,457	32.41	2,921	2,536
Operating, gas at 1,440 psig	5,588	32.45	2,970	2,619
Hydrotest	6,674	32.70	3,369	3,304

Note 1: The weight of HV-101B and the pig path is carried by the line 1001 supports (MEC-CAL-005), not by N2.

The saddle at X = 37.5 ft is fixed, because it is next to the kicker and the pig path connection, where the piping loads enter. The saddle at X = 28.0 ft slides on a PTFE plate with slotted holes, to take thermal movement. Pig arrival impact is carried by the closure into the fixed saddle. The foundation design shall add a horizontal load equal to twice the ILLI tool weight, applied along the barrel axis at the fixed saddle (HOLD H-16).

7. RESULTS AND CONCLUSIONS

Table 7-1 summarizes the results.

Table 7-1: PR-101 Summary

Item	Result
Barrel	NPS 16 Sch 80 major barrel 15.0 ft, NPS 12 Sch 80 minor barrel 3.9 ft, 21.8 ft closure face to N2 face
Longest tool received	9.0 ft MFL tool with 4.0 ft margin; up to about 13 ft



Item	Result
Wall	0.738 in minimum provided against 0.714 in required; MAWP set by the Class 600 flanges
Kicker	B16.9 NPS 16 x 8 WPL6 reducing tee with guide bars; set-on nozzle not adequate (0.376 against 5.132 in ²)
Kicker capacity	106 MMSCFD at 900 psig
Blowdown to 5 psig	About 15 min through RO-102
Closure	16 in Class 600 quick-actuating closure to UG-35.2 with pressure warning device and key interlock I-08
Shop hydrotest	2,225 psig, so that PR-101 can be included in field test section TS-01A

TORUS draws the following conclusions:

1. The barrel geometry on the plot plan receives the assumed 9.0 ft ILI tool and all cleaning pigs and pig trains. No change to the plot plan is needed.
2. NPS 16 Sch 80 SA-333 Gr 6 is adequate for the barrel. The vessel MAWP is set by the Class 600 flanges and closure.
3. The kicker shall be a B16.9 NPS 16 x 8 reducing tee with guide bars. A set-on Sch 80 nozzle does not meet UG-37, and a forged alternate is acceptable only with the full 7.625 in bore and a vendor UG-37 calculation.
4. Pigs shall be received with HV-101A partly open above 100 MMSCFD, and ILI tools run at 17 to 85 MMSCFD.
5. The closure shall have a pressure warning device and key interlock I-08, and the barrel shall be vented for at least 15 min through RO-102 and confirmed at zero before opening.
6. PR-101 shall be shop tested at 2,225 psig. This is above the UG-99(b) minimum of $1.3 \times 1,440 = 1,872$ psig so that the receiver can take the field test (MEC-CAL-003). At this pressure the barrel membrane stress is 23,200 psi, 66 % of yield.
7. The barrel shall not be left isolated under pressure; its overpressure protection is PSV-101.

The following items remain open: the tool lengths, pigging program and upstream lateral MAOP (HOLD H-16), and the closure dimensions, weight and interlock hardware (HOLD H-15).

APPENDIX A. PIG RECEIVER PR-101 GENERAL ARRANGEMENT



SCALE 1 IN = 5 FT



SCALE 1 IN = 5 FT



SCALE 1 IN = 2.5 FT



MARK	SIZE	RATING	SERVICE	X / FROM DOOR	ORIENT.
N1	16"	CL 600 QOC	CLOSURE + PWD (N9)	24.00 / 0'-0"	END W
N2	12"	CL 600 RF WN	INLET, TO HV-101B	45.83 / 21'-10"	END E
N3	8"	CL 600 RF, TEE	KICKER 1101	39.00 / 15'-0"	TOP
N4	2"	CL 600 RF LWN	DRAIN 1061	26.50 / 2'-6"	BOTTOM
N5	2"	CL 600 RF LWN	VENT BDV-102	30.00 / 6'-0"	TOP
N6	2"	CL 600 RF LWN	EQUALIZING 1102	44.00 / 20'-0"	SIDE S
N7	2"	CL 600 RF LWN	SIGNALER XI-102	43.00 / 19'-0"	TOP
N8	1"	CL 600 RF LWN	PI-102 + LOW RANGE	28.00 / 4'-0"	TOP

ITEM	VALUE
CODE	ASME VIII DIV 1, U-STAMP; CLOSURE UG-35.2
DESIGN	1,440 PSIG @ -20/133 F; 1,420 PSIG @ 150 F
MDMT / CA	-20 F @ 1,440 PSIG / 1/16 IN
MATERIALS	SA-333-6 PIPE, SA-420 WPL6, SA-350 LF2
SHOP TEST	2,225 PSIG + CLOSURE / INTERLOCK TESTS
TOOLS	BI-DI 1.67 FT, MFL ILI 9.0 FT (HOLD H-16)
REST ZONE	14.18 FT vs 10.19 FT REQUIRED
WEIGHT	EMPTY 5,457 LB / TEST 6,674 LB

1. CLOSE AND LOCK HV-101B: RELEASES KEY A
2. KEY A: OPEN BDV-102 (VIA RO-102, ABOUT 15 MIN), CONFIRM 0 PSIG ON PI-102
3. BDV-102 LOCKED OPEN: RELEASES KEY B
4. KEY B: OPEN PRESSURE WARNING DEVICE, THEN UNLOCK DOOR
5. OPERATOR ON S SIDE OF DOOR, NEVER ON BARREL AXIS
6. RETURN TO SERVICE IN REVERSE ORDER

1. DIMENSIONS FT-IN; COORDINATES AND ELEVATIONS FT (NAVD88). SEE MEC-DWG-001, PIP-DWG-001.
2. PR-101 DESIGN PER MEC-DS-002, SIZING PER MEC-CAL-007. VENDOR DATA HOLD H-15.
3. KICKER N3: B16.9 NPS 16x8 WPL6 REDUCING TEE WITH GUIDE BARS (SET-ON NOZZLE NOT ADEQUATE).
4. PIG PATH BENDS 3R (36 IN RADIUS). SADDLE X 37.5 FIXED, X 28.0 SLIDING (PTFE SLIDE PLATE).
5. NO PERSONNEL ON THE BARREL AXIS WEST OF THE DOOR WHEN PRESSURIZED OR RECEIVING.
6. PIERS, PIG PAD AND LANE BY CIVIL. SADDLE LOADS PER CAL-007 7.5 PLUS PIG ARRIVAL LOAD.
7. HYDROTEST: PR-101 IN TS-01A (MEC-CAL-003), 2160 TO 2,190 PSIG AT HIGH POINT.
REF: PRO-DWG-101, MEC-DS-002, MEC-CAL-007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	2026-09-29	ISSUED FOR REVIEW (IFR)			

NOT SEALED
PRELIMINARY

PE NO. _____

120 MMSCFD RECEIPT INTO _____

_____, COUNTY, _____

DISCIPLINE: PIPING
SCALE: 1 IN = 5 FT (AS NOTED)

SHEET 1 OF 1 REV A