



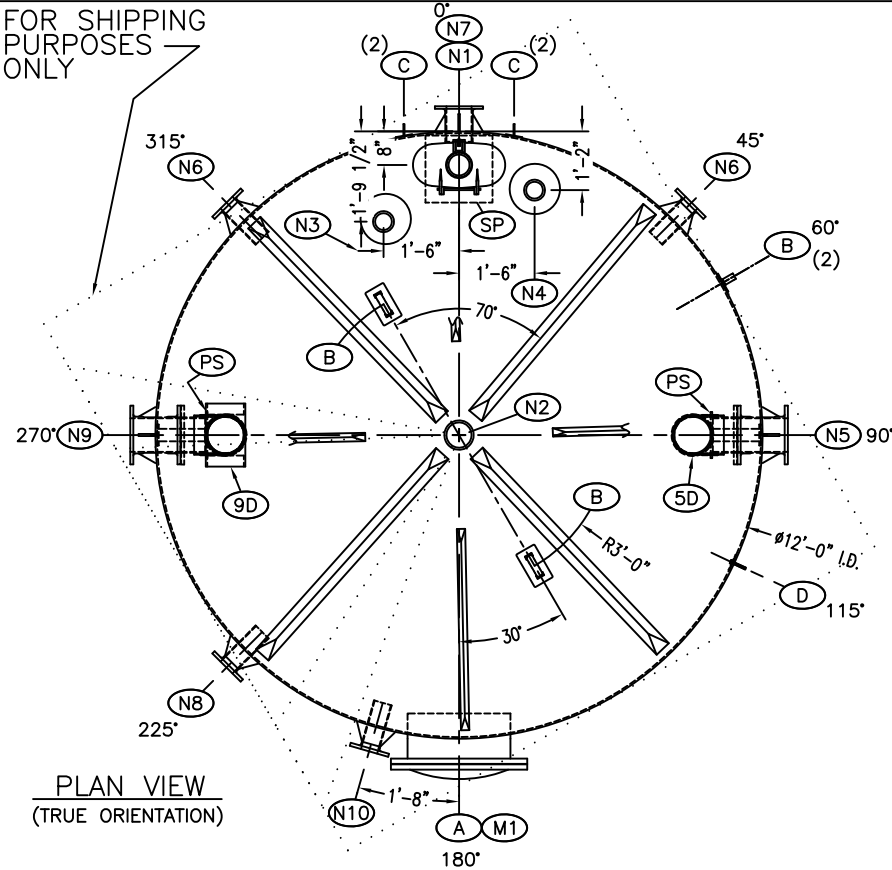
API- 12P Vertical FRP Tank

Storage Capacity 400 BBL (16,900 Gallons)

Tank Size 12' Diameter x 20' Straight Shell

Contact our Sales Department for Pricing

FOR SHIPPING PURPOSES ONLY



Palmer MANUFACTURING AND TANK INC.

API SPEC 12P PART NUMBER F400-05B REV. 0

SERIAL NUMBER _____

YEAR BUILT ??/20??

NOMINAL DIAMETER 12'-0"

NOMINAL HEIGHT 20'-0"

NOMINAL CAPACITY 400 BBL

RESIN ISO/ORTHO S.G. 1.3

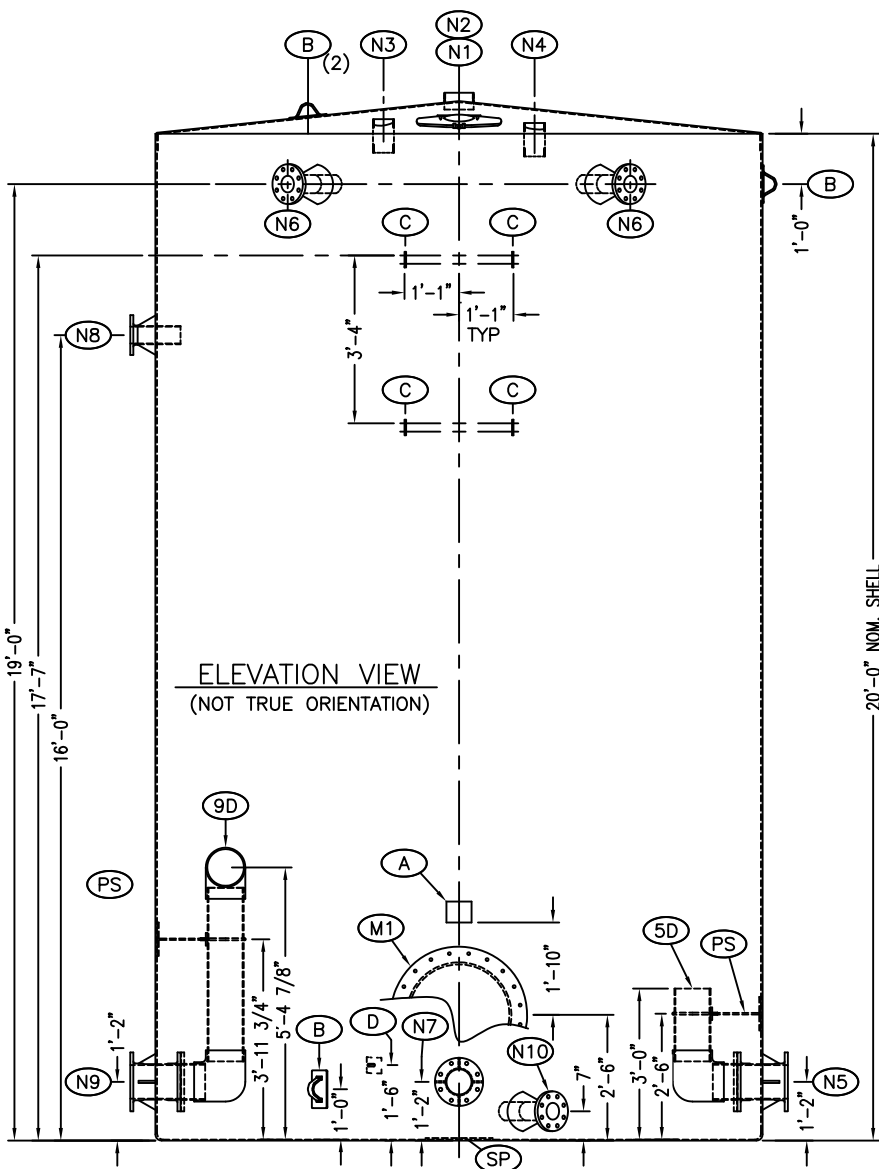
MAXIMUM TEMPERATURE 120 °F

DESIGN VAC. 1.2 OZ 2 IN. W.C.

DESIGN PRESSURE 4 OZ.

API NAMEPLATE
NTS

PLAN VIEW
(TRUE ORIENTATION)



ELEVATION VIEW
(NOT TRUE ORIENTATION)

NOTES:

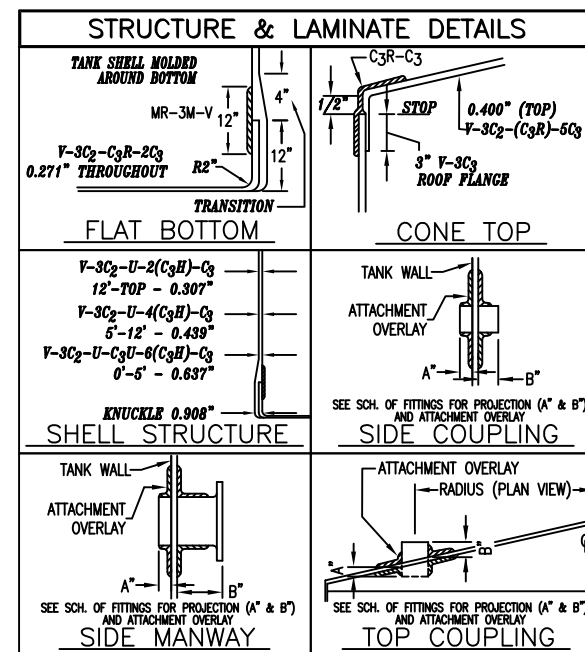
- STRUCTURAL LAYER ANALYSIS:
MINIMUM KNUCKLE RADIUS = 2"
C₁ = CHOP 27% E GLASS REINFORCEMENT 0.010"
C₂ = CHOP 27% E GLASS REINFORCEMENT 0.033"
C₃ = CHOP 27% E GLASS REINFORCEMENT 0.043"
C_M = COREMAT 0.157"
F = FABMAT (1.5oz MAT & 24oz ROVING) 0.076"
H = HOOP WOUND 50% E GLASS REINFORCEMENT 0.023"
M = 1.5oz RANDOM STRAND MAT 0.043"
N = NEXUS VEIL 0.010"
P = 3D FABRIC 0.1875"
Q = INTERSTITIAL HONEYCOMB 0.750"
R = 24oz WOVEN ROVING 0.033"
U = UNIGLASS 0.023"
V_C = CARBON-VEIL 0.010"
V = C-VEIL 0.010"
- NOZZLE FLANGES TO BE FF (FLAT FACED ONE PIECE CONSTRUCTION) W/50# RATING & 150# DRILLING PER ANSI B16.5 CLASS 150.
- FLANGES INSTALLED IN THE SHELL WILL BE INSTALLED WITH BOLT HOLES STRADDLING THE TANKS VERTICAL OR HORIZONTAL C. FLANGES INSTALLED IN THE HEADS WILL BE INSTALLED WITH BOLT HOLES STRADDLING THE 0°-180° & 90°-270° C'S.
- THE TANK IS TO BE POSITIVELY VENTED TO THE ATMOSPHERE AT ALL TIMES. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO DETERMINE THE PROPER SIZE OF VENT TO PREVENT THE TANK FROM BEING OVER PRESSURIZED DURING FILLING & TO PREVENT THE TANK FROM COLLAPSING DURING REMOVAL OF THE PRODUCT. THE OVERFLOW FITTING IS NOT AN ACCEPTABLE VENTING METHOD. UNDER NO CIRCUMSTANCES SHALL THE FACTORY SIZED VENT BE REDUCED. ---OTHERWISE --- **WARRANTY IS NULL & VOID.**
- TANK EXTERIOR TO BE PIGMENTED: CARLSBAD CANYON TAN
- TANK TO BE HYDROSTATIC TESTED BY FILLING WITH WATER 12" ABOVE THE TOP CROWN OF THE TANK. HOLD WATER FOR A MINIMUM OF 4 HOURS.
- ALL DIMENSIONS SHOWN AS NOMINAL (NOM.) ARE ±1/2".
- PURCHASER ASSUMES RESPONSIBILITY FOR DETERMINING COMPATIBILITY OF PRODUCT TO BE STORED IN THE TANK. PALMER'S WARRANTIES FOR ONLY THE PRODUCT LISTED ON NAMEPLATE.**
- TANK CONTAINS 1%-3% RENFIL (NOT USED AS A FILLER) TO RESIN RATIO BY WEIGHT TO REDUCE STYRENE EMISSIONS.
- BOLTING HARDWARE IS SAE J429/J995 GRADE 5 BOLTS/NUTS.

BILL OF MATERIALS

QUAL CHK.	SYM.	PALMER INVENTORY	QTY.	DESCRIPTION	NOTES/MODEL NO.	ATTACHMENT OVERLAY		MATERIAL
						OUTSIDE	INSIDE	
			1	FLAT BOTTOM: 12' I.D.				ISO/ORTHO
			1	CONE TOP: 12' I.D.				ISO/ORTHO
			1	SHELL: 12' I.D.				ISO/ORTHO
A		10049	1	NAMEPLATE BRACKET				ALUMINUM
		07531A	1	NAMEPLATE			2M	ALUMINUM
B		30043	4	PALMER #1 LIFT LUG				CARBON STEEL
		50152	1	24" SIDE MANWAY HARDWARE			2F-M	CARBON STEEL
		08011	1	24" MANWAY GASKET				NEOPRENE
		50141	1	8" THIEF HATCH HARDWARE				CARBON STEEL
SP		06044A8	1	CRIMP/SOLDER LUG (GROUNDING)	8" THIEF HATCH BOLT KIT, GROUNDING LUG, & STRIKER PLATE			COPPER EYELET
		30037	1	1/4" x 16" x 16" STRIKER PLATE			2M-V	CARBON STEEL
C		30044	4	WALKWAY BRACKET				CARBON STEEL
		10010A	1	S.S. GROUNDING LUG			2F-M	316 S.S.
D		01524C	1	12" CARBON VEIL LINER STRIP			MR-M	Vc-2MR-3M-Vc
		07152	1	8" FFGO FLANGE				CARBON VEIL
		08008	1	8" FF FLANGE GASKET				VINYL ESTER
		34533	8	3/4" HHCS BOLTS x 4 1/4" LONG				316 S.S.
		34616	16	3/4" FLAT WASHERS				316 S.S.
		34600	8	3/4" HEX NUTS				316 S.S.
5D		07152	1	8" FFGO FLANGE	5D ASSEMBLY SHIPS LOOSE			VINYL ESTER
		02518	1	8" FRP PIPE x 5 3/4" LONG				VINYL ESTER
		07233	1	8" FRP 90° ELBOW				VINYL ESTER
		02518	1	8" FRP PIPE x 1'-5 3/8" LONG				VINYL ESTER
PS			2	CUSTOM PIPE SUPPORT (SEE SHEET 2)	PS SHIPS INSTALLED		2MR-2M	316 S.S.
		60088B	2	8" U-BOLT				316 S.S.
		07152	1	8" FFGO FLANGE				VINYL ESTER
		08008	1	8" FF FLANGE GASKET				NEOPRENE
		34533	8	3/4" HHCS BOLTS x 4 1/4" LONG				316 S.S.
		34616	16	3/4" FLAT WASHERS				316 S.S.
		34600	8	3/4" HEX NUTS				316 S.S.
9D		07152	1	8" FFGO FLANGE	9D ASSEMBLY SHIPS INSTALLED			VINYL ESTER
		02518	1	8" FRP PIPE x 5 3/4" LONG				VINYL ESTER
		07233	1	8" FRP 90° ELBOW				VINYL ESTER
		02518	1	8" FRP PIPE x 3'-5 3/8" LONG				VINYL ESTER
		07428A	1	8" FRP TEE				VINYL ESTER
		07171	2	FRP GLUE KIT				FRP

QUAL CHK.	SYM.	PALMER INVENTORY	QTY.	SCHEDULE OF FITTINGS	SERVICE	PROJECTION		ATTACHMENT OVERLAY			MATERIAL
						OUTSIDE-B	INSIDE-A	OUTSIDE	INSIDE	REPAD	
	M1	04026	1	24" SIDE MANWAY w/COVER AND HARDWARE	SIDE ACCESS	6"	A/R	2MR-2M	1MR-3M-V	5MR-M	ISO
	N1		1	8" ENARDO ES660-L-4 LONG PAN W/4 oz. SPRING	LEVEL/INSPECTION			(BOLTED)			ALUMINUM
	N2	07041	1	6" NPT HALF COUPLING	VENT	1 1/2"	A/R	1MR-2M	3M-V		VINYL ESTER
	N3	07120	1	4" NPT FULL COUPLING	AUXILIARY	1 1/2"	A/R	1MR-2M	3M-V		VINYL ESTER
	N4	07120	1	4" NPT FULL COUPLING	FILL	1 1/2"	A/R	1MR-2M	3M-V		VINYL ESTER
	N5	07020	1	8" FF FLANGE/PLATE GUSSETS/INTERNAL	WATER OUTLET	6"	A/R	2MR-2M	3M-V	3MR-2M	ISO
	N6	07018	2	4" FF FLANGE/CONICAL GUSSET	OVERFLOW	6"	A/R	1MR-2M	3M-V		ISO
	N7	07019	1	6" FF FLANGE/PLATE GUSSETS	PIPE LINE	6"	2"	3MR-2M	3M-V		ISO
	N8	07018	1	4" FF FLANGE/CONICAL GUSSET	OIL OUTLET	6"	A/R	1MR-2M	3M-V		ISO
	N9	07020	1	8" FF FLANGE/PLATE GUSSETS/INTERNAL	INLET	6"	A/R	2MR-2M	3M-V	3MR-2M	ISO
	N10	07018	1	4" FF FLANGE/CONICAL GUSSET	DRAIN	6"	A/R	2MR-2M	3M-V		ISO

QUAL CHK.	SYM.	PALMER INVENTORY	QTY.	ITEMS TO SHIP LOOSE	NOTES/MODEL NO.	MATERIAL



APPROVED FOR PRODUCTION: _____

DATE: _____

DESIGN CONDITIONS	MATERIAL CONSTRUCTION
PRESSURE: ATMOSPHERIC	LINER RESIN: ISO
TEMPERATURE: AMBIENT	LINER CURE: COBALT/DMA/MEKP
CONTENTS: OIL & SALTWATER	LINER MATERIAL: C-VEIL
S.G. OR LBS/GAL. 1.3 / 10.8# (MAX)	STRUCTURE RESIN: ORTHO
EMPTY WEIGHT: 3,700 LBS NOM.	STRUCTURE CURE: COBALT/DMA/MEKP
CAPACITY: 400 BBL (NOM)	STRUCTURE MATERIAL: E GLASS
WIND VELOCITY: N/A	UV INHIBITOR: TINUVEN
SEISMIC ZONE: S ₅ =N/A / S ₁ =N/A	MFG. SPEC: API-12P 3rd Ed. (MODIFIED)
SCALE: 3/8"=1'-0"	DATE: 9/3/13
	CHKD.BY: JK
	DWN.BY: TGF

Palmer MFG. & TANK, INC.
GARDEN CITY, KANSAS.

SALES ORDER # _____

API 12P MODIFIED 400BBL

PART NUMBER: F400-05B REV: 0

DRAWING NUMBER: F400-05B-1 REV: A

SHEET: 1 OF 2

DWG.	PART	DRAWING REVISIONS	CHKD. BY	DATE	DWN. BY

12'-0" Ø x 20'-0" HEIGHT
FIBERGLASS STORAGE TANK