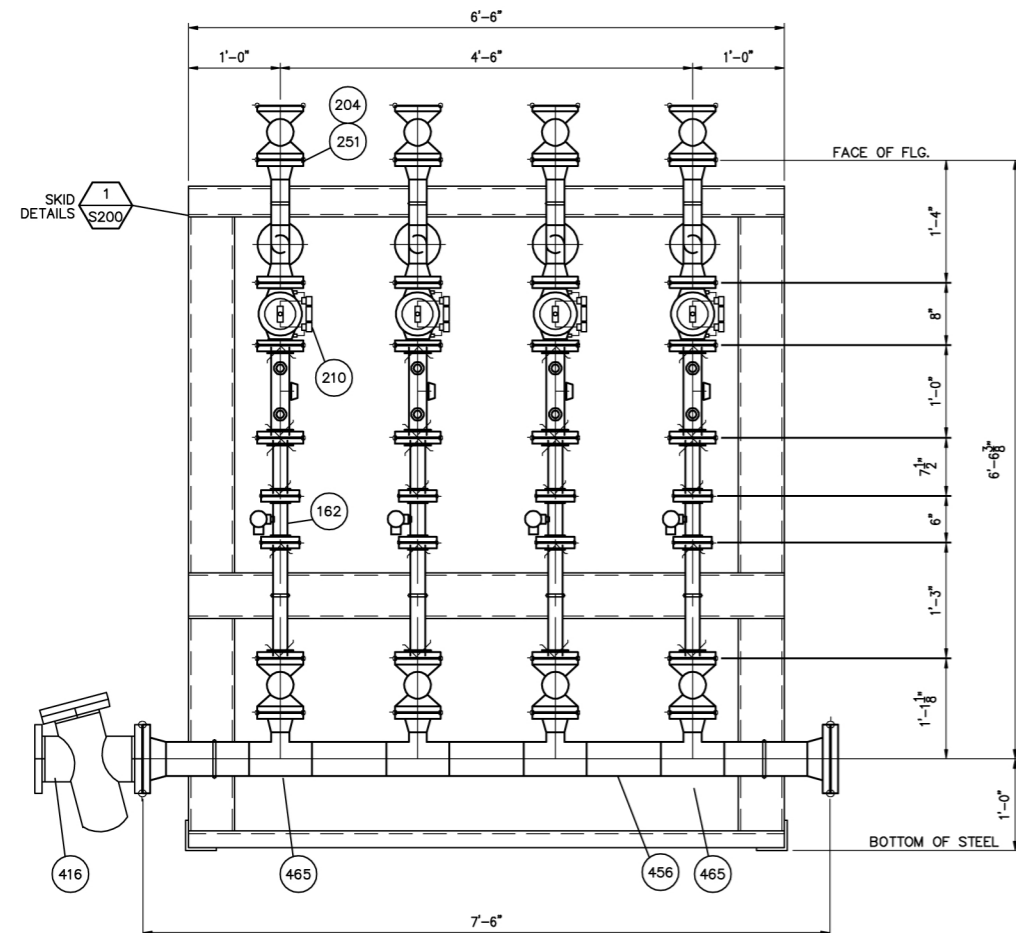


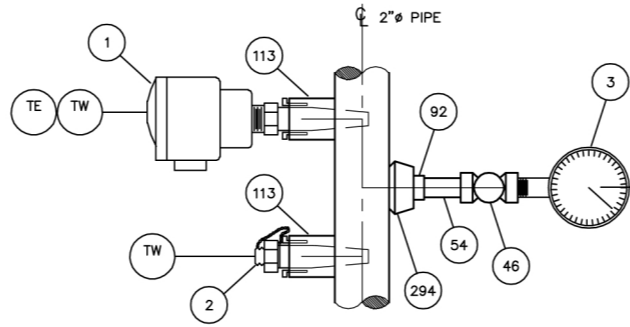
PLAN



SECTION "A-A"  
SCALE: 1"=1'-0"  
FROM THIS DWG.

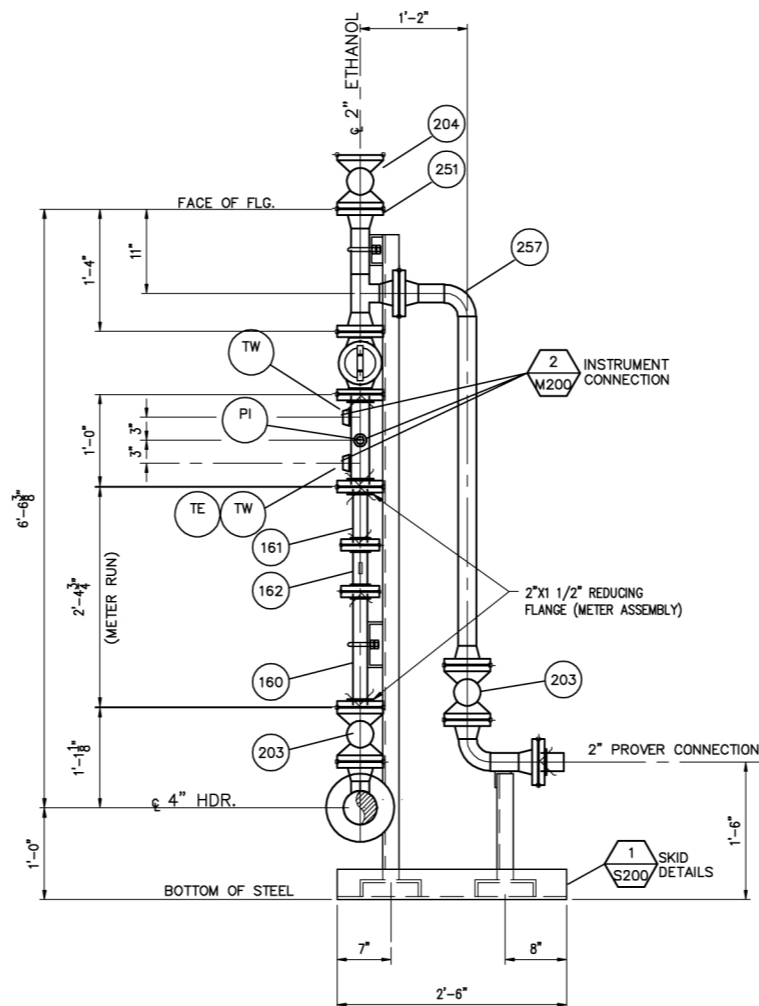
BIODIESEL BLENDING SKID

DETAIL 1  
SCALE: 1"=1'-0" M200



INSTRUMENT CONNECTIONS

DETAIL 2  
SCALE: N.T.S.  
FROM THIS DWG.



SECTION "B-B"  
SCALE: 1"=1'-0"  
FROM THIS DWG.

BILL OF MATERIAL

ITEM	QTY.	SIZE	DESCRIPTION
1	4	1/2"	RTD PROBE, PLATINUM SENSOR, 100 OHM, 4-WIRE, SPRING LOADED, U DIMENSION 2.5", SINGLE SENSOR, WITH NIPPLE & CONNECTION HEAD
2	4	3/4"x 1/2"	EXPLOSION PROOF, WITH THERMOWELL, 3/4" THREADED PROCESS CONNECTION THERMOWELL, 3/4" NPT THREADED PROCESS CONNECTION, U DIMENSION 2.5", W/CAP & CHAIN
3	8	1/2"	PRESSURE GAUGE, +/-0.5% FULL SCALE ACCURACY, 30" VAC.x200 PSI, 4.5" DIAL SIZE, ALL 316 S.S., 1/2" NPT PROCESS CONNECTION
46	8	1/2"	BALL VALVE, CLASS 600, THREADED, C.S., SOFT SEAT, FIRE SAFE
54	AS REQ'D.	1/2"	PIPE, SCHEDULE 160, C.S., THREADED ENDS, SEAMLESS
86	1	3/4"	BALL VALVE, CLASS 600, THREADED, C.S., SOFT SEAT, FIRE SAFE
92	8	3/4"x 1/2"	RED. HEX. HEAD BUSHING
94	AS REQ'D.	3/4"	PIPE, SCHEDULE 160, C.S., THREADED ENDS, SEAMLESS
97	1	3/4"	PLUG, ROUND, 3 INCHES LONG, SOLID, THREADED, C.S.
113	8	3/4"	FULL COUPLING, CLASS 3000, THREADED, C.S.
160	4	1-1/2"	FLOW STRAIGHTENING ASSEMBLY, UPSTREAM, SMITH METER CAT. K22AAA000 CLASS 150 ANSI, 2" X 1 1/2" REDUCING FLANGE INLET, 1 1/2" FLANGE OUTLET, LENGTH 10 PIPE DIAMETERS, C. STEEL, MAX. WORKING PRESSURE 285 PSIG,
161	4	1-1/2"	FLOW STRAIGHTENING ASSEMBLY, DOWNSTREAM, SMITH METER CAT. K22AAA000 CLASS 150 ANSI, 2" FLANGE INLET, 2" X 1 1/2" REDUCING FLANGE OUTLET, LENGTH 5 PIPE DIAMETERS, C. STEEL, MAX. WORKING PRESSURE 285 PSIG
162	4	1-1/2"	TURBINE METER, SMITH GUARDSMAN LB CATALOG CODE K2CAA0030, CLASS 150 ANSI, RF FLANGE, MAX. WORKING PRESSURE 285 PSIG FLOW RATE RANGE 13-130 GPM, DESIGN LINEARITY +/-0.25% WITH TWO PICK UP COILS AND TWO PA-6 PRE-AMPLIFIERS
172	AS REQ'D	1/2" x 3"L.	(4) STUD BOLT, ASTM A-193 GRADE B7, WITH ASTM A-194 GRADE 2H NUTS
179	8	1-1/2"	GASKET, FLAT RING, 1/16 INCH THICK FLEXIBLE GRAPHITE
203	8	2"	BALL VALVE, CLASS 150, FULL PORT, RFFE, C.S.
204	4	2"	KUKA DOUBLE BLOCK & BLEED VALVE, CLASS 150, FULL PORT, RFFE, C.S.
210	4	2"	CONTROL VALVE, CLASS 150, RF FLANGE, FLOW TEK MODEL F15-WCB
249	AS REQ'D	5/8"x3-1/4"L.	(4) STUD BOLT, ASTM A-193 GRADE B7, WITH ASTM A-194 GRADE 2H NUTS
251	24	2"	FLANGE, CLASS 150, WELD NECK, RF, STANDARD BORE
255	36	2"	GASKET, FLAT RING, 1/16" THICK FLEXIBLE GRAPHITE
256	50'	2"	PIPE, STANDARD WEIGHT, C.S., BEVELED ENDS, SEAMLESS
257	4	2"	90 DEG ELL, L.R. STANDARD WEIGHT, BUTT WELD, SEAMLESS, C.S.
263	4	2"	TEE, STRAIGHT, STANDARD WEIGHT, BUTT WELD, SEAMLESS, C.S.
294	1	2"x3/4"	THREDOLET, CLASS 3000, CARBON STEEL
416	1	4"	STRAINER, IN-LINE BASKET, CLASS 150, RF FLANGE, SMITH METER MAX. WORKING PRESSURE 285 PSIG, BASKET: 304 STAINLESS STEEL 40 MESH PERMANENT LINER WITH TWO (2) 1/2" NPT DIFFERENTIAL PRESSURE TAPS LOCATED (1) EACH ON INLET/OUTLET NOZZLES
449	2	5/8"x3-3/4"L.	STUD BOLT, ASTM A-193 GRADE B7, WITH ASTM A-194 GRADE 2H NUTS
451	2	4"	FLANGE, CLASS 150, WELD NECK, RF, STANDARD BORE
454	1	4"	FLANGE, CLASS 150, BLIND, RF
455	1	4"	GASKET, FLAT RING, 1/16" THICK FLEXIBLE GRAPHITE
456	20'	4"	PIPE, STANDARD WEIGHT, C.S., BEVELED ENDS, SEAMLESS
465	4	4"x4"x2"	TEE, REDUCING, STANDARD WEIGHT, BUTT WELD, SEAMLESS, C.S.

REV	DATE	DESCRIPTION	DRN	CHK	APP	REV	DATE	DESCRIPTION	DRN	CHK	APP
A	11/07	ISSUED FOR REVIEW							WJS	RC	

DRAWN	WJS	DATE	10/07	CHECKED	RC	DATE	10/07
APPROVED		DATE		CLIENT APP		DATE	



BIODIESEL BLENDING SKID  
FOUR BLENDING STREAMS  
PIPING DETAILS

CLIENT DRAWING NO.	SCALE	1"=1'-0"	DRAWING NO.	CES-M-200	REV	A
	DATE	11/07				