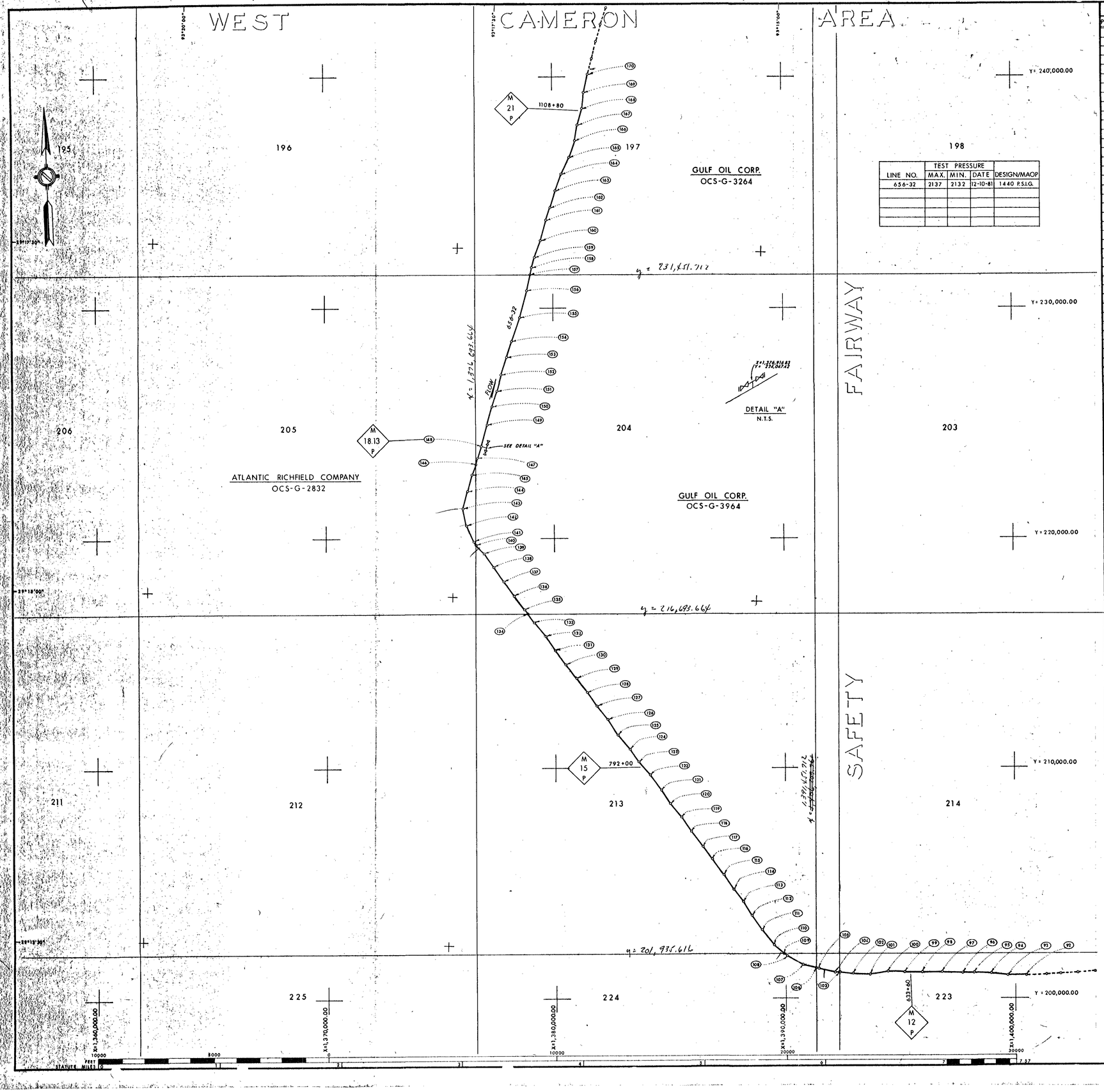


TEST PRESSURE				
LINE NO.	MAX.	MIN.	DATE	DESIGN/MAOP
656-32	2137	2132	12-10-81	1440 P.S.I.G.

TRAVERSE DATA

656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS-G-~~4472~~) 4621

POINT	STATION	BEARING	X	Y	REMARKS
92	583 + 04	S87°51'17"W	1,400,486.22	200,960.42	
93	591 + 32	N81°08'58"W	1,399,658.92	200,929.43	
94	598 + 35	N88°00'38"W	1,398,963.85	201,037.66	
95	606 + 18	N89°51'27"W	1,398,181.09	201,064.85	
96	613 + 58	N89°51'22"W	1,397,441.09	201,066.69	
97	621 + 11	N88°57'18"W	1,396,688.39	201,064.80	
98	628 + 59	N89°16'40"W	1,395,941.07	201,078.43	
99	636 + 10	N89°50'31"W	1,395,189.80	201,087.90	
100	643 + 71	S89°20'53"W	1,394,428.42	201,090.00	
101	651 + 20	N87°26'27"W	1,393,679.59	201,081.48	
102	658 + 69	N87°26'14"W	1,392,931.16	201,114.93	
103	664 + 62	N76°18'08"W	1,392,339.30	201,141.42	W/L Safety Fairway
104	666 + 02	N82°33'16"W	1,392,202.92	201,174.66	
105	673 + 59	N72°57'44"W	1,391,452.33	201,272.75	
106	673 + 60	N72°48'04"W	1,391,451.71	201,272.94	E/L Blk. 224
107	681 + 05	N63°09'33"W	1,390,739.99	201,493.99	
108	688 + 35	N44°30'07"W	1,390,088.23	201,823.05	
109	689 + 93	N44°30'12"W	1,389,977.60	201,935.62	S/L Blk. 213
110	695 + 94	N39°48'12"W	1,389,556.72	202,363.86	
111	703 + 28	N34°38'56"W	1,389,086.40	202,928.29	
112	711 + 00	N34°17'20"W	1,388,647.37	203,563.25	
113	718 + 61	N35°10'26"W	1,388,219.19	204,191.49	
114	725 + 97	N36°20'41"W	1,387,795.12	204,793.23	
115	733 + 32	N37°13'47"W	1,387,359.38	205,385.45	
116	741 + 06	N37°29'22"W	1,386,891.07	206,001.76	
117	748 + 52	N36°39'12"W	1,386,436.77	206,594.04	
118	755 + 94	N38°15'15"W	1,385,994.36	207,188.59	
119	763 + 77	N36°41'33"W	1,385,509.28	207,803.82	
120	771 + 47	N36°12'28"W	1,385,049.01	208,421.49	
121	778 + 97	N36°47'30"W	1,384,605.85	209,026.82	
122	786 + 63	N36°27'25"W	1,384,147.64	209,639.51	
123	794 + 38	N36°59'21"W	1,383,686.66	210,263.47	
124	801 + 44	N37°32'57"W	1,383,261.89	210,827.38	
125	808 + 93	N37°32'08"W	1,382,805.32	211,421.34	
126	816 + 55	N36°23'45"W	1,382,341.28	212,025.31	
127	824 + 12	N36°49'07"W	1,381,891.95	212,634.86	
128	831 + 72	N35°52'01"W	1,381,436.85	213,242.79	
129	839 + 08	N37°10'41"W	1,381,005.55	213,839.33	
130	846 + 63	N38°41'09"W	1,380,549.23	214,440.99	
131	854 + 37	N35°54'12"W	1,380,065.43	215,045.18	
132	861 + 74	N35°37'11"W	1,379,693.56	215,641.71	
133	869 + 07	N36°11'30"W	1,379,206.62	216,237.62	
134	874 + 72	N36°11'32"W	1,378,872.95	216,693.66	S/L Blk. 204
135	876 + 85	N34°59'19"W	1,378,747.05	216,865.73	
136	884 + 46	N34°30'49"W	1,378,310.57	217,489.35	
137	891 + 87	N36°01'23"W	1,377,891.00	218,099.52	
138	899 + 40	N36°30'36"W	1,377,448.14	218,708.55	BEGIN 1.42 SPEC. GR. END 1.33 SPEC. GR.
139	906 + 92	N34°13'50"W	1,377,000.30	219,313.55	
140	912 + 37	N34°13'52"W	1,376,693.64	219,764.27	E/L Blk. 205
141	914 + 42	N23°14'45"W	1,376,578.83	219,933.01	
142	922 + 06	N06°21'31"W	1,376,277.22	220,635.17	
143	929 + 56	N11°37'24"E	1,376,194.17	221,380.45	
144	937 + 05	N15°50'21"E	1,376,345.21	222,114.75	
145	944 + 60	N17°40'44"E	1,376,551.26	222,841.02	
146	949 + 29	N17°40'43"E	1,376,693.64	223,287.72	W/L Blk. 204
147	952 + 06	N15°40'08"E	1,376,777.80	223,551.77	
	957 + 10		1,376,912.44	224,031.77	Transition
148	957 + 21	N16°48'25"E	1,376,916.83	224,047.42	Dual 12" Side Tap
	957 + 32		1,376,921.57	224,063.10	Transition
149	967 + 15	N16°22'19"E	1,377,204.32	224,999.22	
150	974 + 70	N17°25'29"E	1,377,416.96	225,723.02	
151	982 + 24	N17°06'00"E	1,377,642.71	226,442.30	
152	989 + 79	N17°21'36"E	1,377,864.86	227,164.41	
153	997 + 09	N16°38'43"E	1,378,082.76	227,861.43	
154	1004 + 90	N22°00'02"E	1,378,306.37	228,609.36	
155	1015 + 54	N11°40'57"E	1,378,704.84	229,595.58	
156	1027 + 61	N16°35'53"E	1,378,949.22	230,777.45	
157	1034 + 64	N16°35'43"E	1,379,150.20	231,451.71	S/L Blk. 197
158	1035 + 33	N16°40'07"E	1,379,169.78	231,517.41	
159	1042 + 59	N17°29'07"E	1,379,378.11	232,213.19	
160	1050 + 28	N17°35'06"E	1,379,609.11	232,946.48	
161	1059 + 49	N15°09'48"E	1,379,887.31	233,824.28	
162	1065 + 15	N17°59'39"E	1,380,035.37	234,370.61	
163	1072 + 72	N18°45'37"E	1,380,269.37	235,091.04	
164	1080 + 60	N27°04'05"E	1,380,522.62	235,836.65	
165	1088 + 76		1,380,894.21	236,563.80	

CONTINUED ON F-5E, SHEET 2 OF 2

MATERIAL SUMMARY

WD/COVER	DESCRIPTION	QUANTITY
-	Line Pipe: 20" O.D. × 0.375" W.T, API-5LX-X52	
61'/10'	SOCIETE VALLOUREC, 3/8" Somastic, 1.83	
61'/10'	Thick Continuous Concrete Coating (190#/	
60'/10'	Cu. Ft.), 1.33 Specific Gravity	31,677.6 L.F.
60'/10'	394 Lb. Zinc Anode Bracelets	67 Ea
60'/10'		
60'/11'		
60'/10'		
60'/10'		
60'/11'		
61'/11'		
61'/10'		
61'/10'		
60'/10'		
60'/10'		
60'/10'		
60'/10'		
60'/10'	E/L Blk. 224	
60'/9'		
60'/7'		
60'/8'	S/L Blk. 213	
59'/7'		
59'/6'		
59'/7'		
58'/6'		
58'/5'		
58'/8'		
58'/6'		
58'/6'		
60'/3'		
59'/5'		
59'/4'		
59'/4'		
57'/4'		
57'/4'		
57'/4'		
60'/3'		
59'/3'		
58'/3'		
60'/4'	S/L Blk. 204	
60'/4'		
60'/4'		
60'/5'		
59'/6'	Line Pipe: 20" O.D. × 0.375" W.T, API-5LX-X52	
59'/5'	SOCIETE VALLOUREC, 3/8" Somastic, 2.25" Thick	
59'/6'	Continuous Concrete Coating (190#/Cu Ft.)	
59'/6'	1.42 Specific Gravity	18,872.4 L.F.
59'/6'		
58'/5'		
58'/5'		
58'/5'		
57'/4'		
57'/4'		
57'/7'		
57'/3'	See Const. Dwg. AL-PL-01-A-158	
57'/7'		
58'/4'		
59'/4'		
59'/3'		
60'/5'		
60'/5'		
60'/4'		
60'/4'		
58'/3'		
58'/4'		
59'/4'		
60'/3'		
59'/4'		
58'/4'		
58'/4'		
57'/4'		

NOTES

1. Stationing Indicates Pipe Footage.
2. Grid Based on Louisiana (Lambert) Plane Coordinate System - South Zone.
3. Locations of Platforms and Pipelines owned by others, based on owner's data.
4. Facilities Installed in Accordance With DOT Regulations.

LEGEND

- Main Line Valve
- Check Valve
- Side Valve (Single)
- Side Valve (Dual)
- Rectifier
- Platform
- Platform w/Helipad
- Survey Point
- Mile Post

CONSTRUCTION DATA

E-4E	E-5E	E-6E
F-4E	F-5E	F-6E
G-4E	G-5E	G-6E

KEY

RECEIVED
MAR 21 11 47 AM '82
BUREAU OF LAND MANAGEMENT
MERIDIAN, MISSISSIPPI

6/4/2010

Dual 12" Subsea Side Tap Assembly	AL-PL-01-A-158
REFERENCE	NUMBER

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY DKB	DATE 2-9-82	APPROVED BY	DATE 3/23/82
DRAFTING CHK WAH	DATE 2-24-82	APPROVED BY	
DESIGN CHK RER	DATE 2-24-82		
SCALE 1" = 2,000		PROJECT MANAGER	

OFFSHORE GATHERING SYSTEM
WEST CAMERON AREA
OFFSHORE LOUISIANA

DRAWING NUMBER F-5E — SHEET 1 OF 2

STATE OF LOUISIANA — DAVID L. EDGAR — REG. NO. 31270 — REGISTERED PROFESSIONAL ENGINEER — MECHANICAL ENGINEERING

DAVID L. EDGAR — REG. NO. 31270 — REGISTERED PROFESSIONAL ENGINEER — LOUISIANA

SN V996

OCS-G-4621
KC (R)
(4)
RENG 80

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY
656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS-G-~~4472~~) 4621								
165	1088+76	N18°25'27"E	1,380,894.21	236,563.80		57'/4'	Line Pipe: 20" O.D. × 0.375" W.T., API-5LX-	
166	1096+07	N09°28'22"E	1,381,125.14	237,257.03		57'/3'	X52, SOCIETE VALLOUREC, 5/8" Somastic,	
167	1102+85	N17°22'15"E	1,381,236.77	237,926.05		57'/3'	225" Thick Continuous Concrete Coating	
168	1110+01	N10°27'07"E	1,381,450.39	238,608.93		56'/4'	(190#/Cu. Ft.), 1.42 Specific Gravity	3,6550 L.F.
169	1117+65	N12°04'20"E	1,381,589.00	239,360.32		56'/4'	394 Lb Zinc Anode Bracelets	5 Ea
170	1125+31		1,381,749.25	240,109.60		57'/5'		
CONTINUED ON SHEET E-5E								

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

6/11/2010

REFERENCE	NUMBER

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY DKB	DATE 2-12-82	APPROVED BY	DATE
DRAFTING CHK WAH	DATE 2-24-82	APPROVED BY	
DESIGN CHK BEC	DATE 3-24-82		
SCALE 1" = 2000'			PROJECT MANAGER

OFFSHORE GATHERING SYSTEM
WEST CAMERON AREA
OFFSHORE LOUISIANA

DRAWING NUMBER F-5E

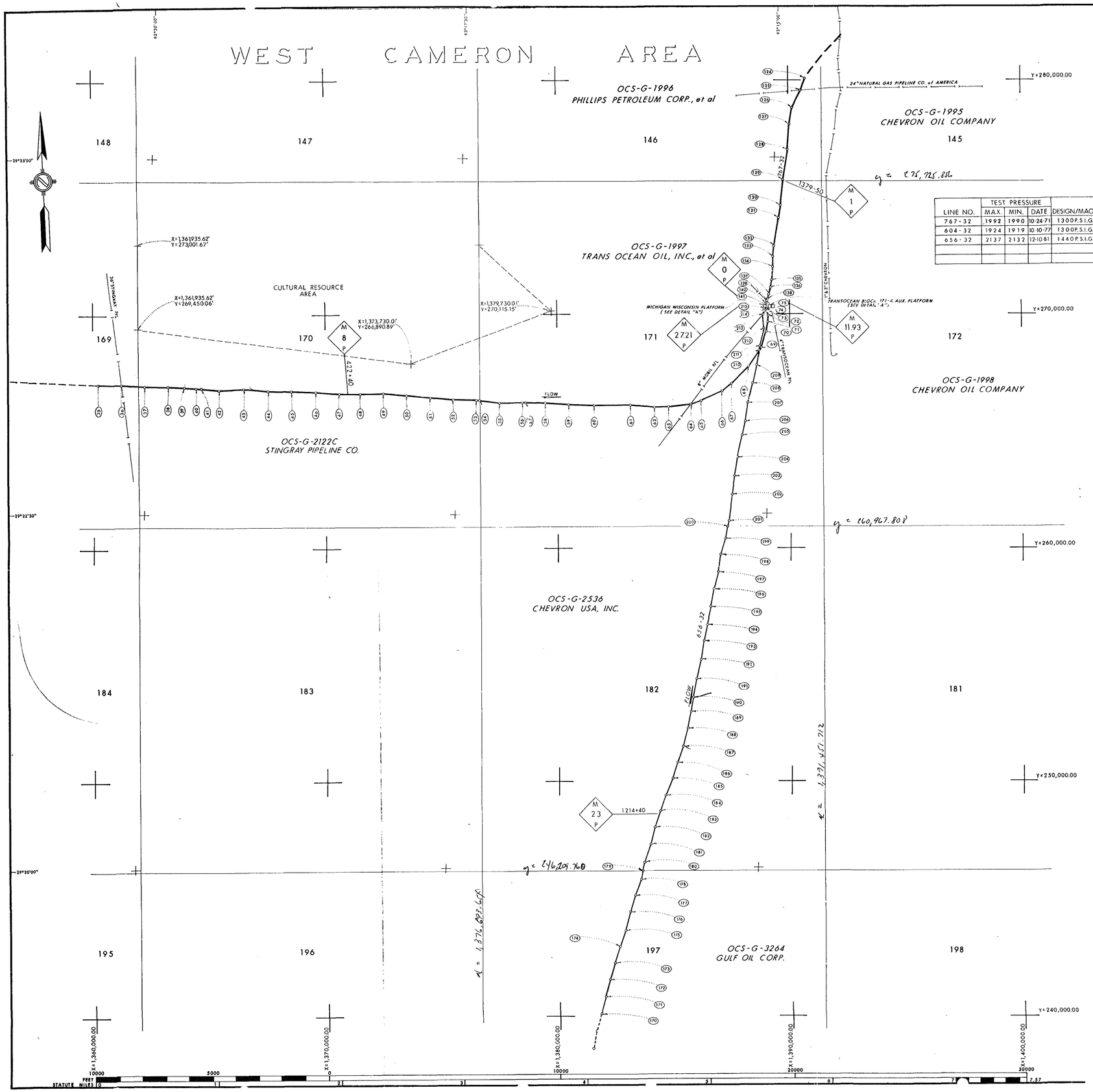
SHEET 2 OF 2

SN 5996

OCS-G 4621

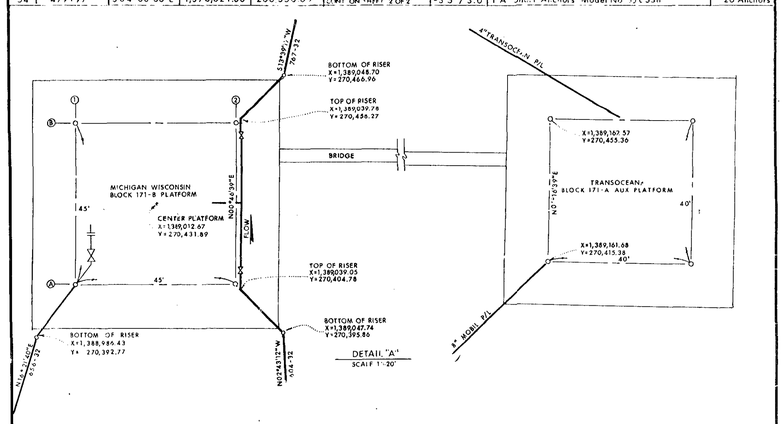
5596

5997



TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./Cover	DESCRIPTION	QUANTITY
767-32: 30" BLOCK 171 LATERAL							Pipe Line: 30" O.D. × 0.500" W.T., API-5LX-X60	9,769'
		CONTINUED FROM SHEET D-5E					Continuous Concrete Coated, U.S. STEEL	
124	1333 + 68	S26°22'56" W	1,390,758.44	280,082.20	Match Point		Plasticized Enamel, 15 lb. Asbestos Felt	
125	1339 + 31	S26°57'12" W	1,390,508.42	279,578.15	24" Nat. Gas Pipeline			
126	1347 + 41	S09°48'31" W	1,390,140.91	278,855.42				
127	1354 + 46	S03°41'02" W	1,390,020.84	278,160.93				
128	1365 + 32	S08°31'07" W	1,389,951.05	277,077.00				
129	1379 + 01	S06°18'10" W	1,389,748.27	275,723.20				
130	1389 + 47	S08°57'23" W	1,389,633.48	274,683.93				
131	1394 + 77	S08°20'29" W	1,389,551.00	274,160.60		-44'/5.5'		
132	1407 + 02	S06°18'12" W	1,389,373.66	272,951.10		-44'/6.0'		
133	1411 + 77	S00°20'57" W	1,389,321.71	272,480.81				
134	1416 + 24	S04°52'58" W	1,389,319.00	272,036.00				
135	1421 + 81	S09°26'52" W	1,389,271.86	271,484.18		-45'/7.0'		
136	1425 + 38	S14°29'56" W	1,389,213.55	271,133.78		-45'/9.0'		
137	1428 + 36	S13°24'09" W	1,389,139.49	270,847.39				
138	1431 + 37	S13°24'07" W	1,389,070.37	270,557.31			Pipe Line: 30" O.D. × 0.500" W.T., API-5LX-X60	67
139	1431 + 99	S13°40'37" W	1,389,056.00	270,497.00	4" P/L X-ING, 7.0' Clr.	-45'/8.0'	Italsider, Continuous Concrete Coating, Somastic	
140	1432 + 04	S13°39'17" W	1,389,054.72	270,491.74	BEGIN TRANSITION		See Const. Dwg. WC-171-A-9305	
141	1432 + 30		1,389,048.70	270,466.96	¾ ELL. BOTTOM OF RISER	-45'/8.0'		
604-32: 30" BLOCK 167 TO 171					CONTINUED FROM SHEET E-4E			
35	315+29	S86°56'23" E	1,360,223.48	267,053.66	Match Point	-43'/3.0'	Pipe Line: 30" O.D. × 0.500" W.T., API-5LX-X60	16,468'
36	326+11	S88°45'12" E	1,361,302.00	266,996.00	36" P/L X-ING, 1.5' Clr.	-43'/0.0'	Italsider, Continuous Concrete Coated, 5/8"	
37	335+22	S89°01'16" E	1,362,210.54	266,976.23		-42'/3.0'	Somastic, 1.36 Specific Gravity	
38	345+42	S87°16'31" E	1,363,227.73	266,958.85		-42'/3.5'		
39	352+57	S87°21'51" E	1,363,939.00	266,925.00	Begin Anchors	-42'/3.5'	T.A. Short Anchors, Model No. 1336338	7 Anchors
40	357+84	S86°04'08" E	1,364,463.37	266,900.86		-42'/3.0'		
41	359+19	S86°04'02" E	1,364,598.12	266,891.60	End Anchors	-42'/3.0'		
42	367+89	N88°17'58" E	1,365,463.19	266,832.13		-42'/3.5'		
43	378+32	S86°17'37" E	1,366,503.31	266,863.01		-41'/3.0'		
44	388+54	S88°16'27" E	1,367,520.27	266,797.13		-41'/3.0'		
45	398+76	S88°12'04" E	1,368,539.76	266,766.41		-41'/3.5'		
46	409+10	S83°15'41" E	1,369,570.82	266,734.03		-40'/3.5'		
47	418+99	N89°47'22" E	1,370,550.62	266,618.26		-40'/4.0'		
48	428+25	N89°42'18" E	1,371,473.67	266,621.65		-38'/4.5'		
49	438+33	S87°36'35" E	1,372,479.41	266,626.83		-31'/3.5'		
50	448+73	S84°40'55" E	1,373,516.30	266,583.55		-27'/3.0'		
51	458+92	S83°20'42" E	1,374,527.95	266,489.38		-29'/3.5'		
52	468+86	S89°37'30" E	1,375,512.72	266,374.48		-34'/4.0'		
53	478+86	S84°10'01" E	1,376,510.19	266,367.95		-35'/3.0'		
54	479+97	S84°08'06" E	1,376,621.00	266,356.69	BEGIN ANCHORS (START ON SHEET 2 OF 2)	-35'/3.0'	T.A. Short Anchors Model No. 1336338	26 Anchors

TEST PRESSURE				
LINE NO.	MAX.	MIN.	DATE	DESIGN/MAOP
767-32	1992	1990	10-24-71	1300 P.S.I.G.
604-32	1924	1919	10-10-77	1300 P.S.I.G.
656-32	2137	2132	12-10-81	1440 P.S.I.G.



NOTES

1. Stationing Indicates Pipe Footage Beginning and Ending at Bottom of Riser.
2. Grid Based on Louisiana (Lambert) Plane Coordinate System – South Zone.
3. Locations of Platforms and Pipelines owned by others, based on owner's data.
4. Facilities Installed in Accordance with D.O.T. Regulations.

LEGEND

- Main Line Valve
- Check Valve
- Side Valve (Single)
- Side Valve (Dual)
- Rectifier
- Platform
- Platform w/Heliport
- Survey Point
- Mile Post

CONSTRUCTION DATA

D-4E	D-5E	D-6E
E-4E	E-5E	E-6E
F-4E	F-5E	F-6E

KEY

NO.	DATE	REVISION	BY	CHK.	APPD.
6	2-15-82	Added Trunk No. 656-32	DKB		
5	6-22-79	Added 1 & 3" Chevron Pipelines	S.S.		
4	3-2-79	Added Pressure Data	E.W.		
3	5-22-78	Added Mile Posts	DW.		
2	3-3-78	ADDED "TRUNK 604-32" & MILE POST	C.H.		
1	6/13/77	GENERAL REVISION	TA		

REFERENCE	NUMBER
Mobil 8" Pipeline Crossing	FX-656-32-3
Mich. Wisc. 30" Pipeline Crossing	FX-656-32-2
20" Riser Assembly Plan And Details	WC-171A-9347
30" Outlet Riser (Trunk No. 767-32)	WC-171A-9305
30" Inlet Riser (Trunk No. 604-32)	WC-171A-9304

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

AMERICAN NATURAL GAS SYSTEM

ENGINEERING DEPARTMENT
MICHIGAN WISCONSIN PIPE LINE CO.
DETROIT, MICHIGAN

DRAWN BY E. RITTER	DATE	APPROVED BY	DATE
DRAFTING CHK.	DATE	APPROVED BY	
DESIGN CHK.	DATE		
SCALE 1"=2,000'		PROJECT MANAGER-OFFSHORE	

OFFSHORE GATHERING SYSTEM
BLOCK 171 LATERAL
WEST CAMERON AREA

TRUNK NUMBER	STATE CODE	SHEET
767-604	32	E-5E

SHEET 1 OF 2

SW 5996

OCS-G 4621

GRAPHIC MEDIA GRAPHIC CONTROLS CORPOR. Brooklyn, New York Printed in U.S.A. ASTROFILM 10888.4M 17888

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY
55	489+00	N89°59'34"E	1,377,516.62	266,264.63	Continued From Sheet E-5E, 1of2	- 37'/4.5'	Pipe Line: 30"O.D. × 0.500"W.T., API-5LX-X60	14,977'
56	498+68	S87°18'52"E	1,378,482.68	266,264.75		- 38'/4.5'	Italsider, Continuous Concrete Coating, 5/8"	
57	500+37	S87°19'17"E	1,378,651.11	266,256.85	End Anchors	- 39'/4.5'	Somastic, 1.36 Specific Gravity	
58	508+67	S87°46'44"E	1,379,477.90	266,218.17		- 41'/4.5'		
59	518+66	S86°34'39"E	1,380,474.21	266,179.53		- 42'/4.5'		
60	529+91	N89°14'25"E	1,381,593.70	266,112.58		- 40'/3.5'		
61	545+10	N84°49'31"E	1,383,110.11	266,132.69		- 43'/4.5'		
62	555+48	N88°50'17"E	1,384,141.46	266,039.29		- 43'/4.5'		
63	561+80	N82°59'21"E	1,384,770.59	266,052.05		- 43'/4.5'		
64	571+65	N67°47'16"E	1,385,746.00	266,172.00	8"P/L X-ING, 2.5'Clr.	- 43'/3.0'		
65	576+40	N66°33'09"E	1,386,183.38	266,350.60		- 44'/3.0'		
66	586+15	N53°25'25"E	1,387,075.65	266767.60		- 44'/3.0'		
67	591+37	N44°59'05"E	1,387,492.83	267047.16		- 45'/3.0'		
68	601+45	N33°53'33"E	1,388,204.26	267,758.97		- 46'/3.0'		
69	611+53	N20°05'02"E	1,388,764.39	268,592.77		- 46'/3.0'		
70	618+28	N08°02'12"E	1,388,995.32	269,224.37		- 45'/3.0'		
71	622+56	N02°08'33"E	1,389,054.75	269,545.28		- 45'/3.0'		
72	625+96	N02°43'06"W	1,389,067.37	269,982.59	End Anodes	- 45'/8.0'		
73	628+87	N02°43'21"W	1,389,053.66	270,271.33	8"P/L X-ING, 7.0'Clr.	- 45'/8.0'		
74	629+74	N02°43"12"W	1,389,049.56	270,357.55	Transition	- 45'/8.0'	See Const. Dwg. WC-171A-9304	
75	630+12		1,389047.74	270,395.86	℄ ELL BOTTOM RISER	- 45'/8.0'		
656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS-G-~~[illegible]~~) #621								
170	1125+31	N17°20'46"E	1,381,749.25	240,109.60		57'/5'	Line Pipe: 20"O.D. × 0.375"W.T., API-5LX-	
171	1132+83	N11°35'27"E	1,381,973.53	240,827.64		57'/5'	X52, SOCIETE VALLOUREC, 5/8" Somastic,	
172	1140+22	N16°35'26"E	1,382,122.12	241,552.10		57'/5'	2.25" Thick Continuous Concrete Coating	
173	1148+01	N19°30'07"E	1,382,344.92	242,299.92		58'/5'	(190#/Cu. Ft.), 1.42 Specific Gravity	31,094.7 L.F.
174	1155+28	N18°38'24"E	1,382,588.07	242,986.48		58'/5'	394 Lb. Zinc Anode Bracelets	47 Ea.
175	1162+82	N17°11'32"E	1,382,829.23	243,701.42		58'/4'		
176	1170+61	N15°48'37"E	1,383,059.86	244,446.82		56'/4'		
177	1177+99	N18°58'52"E	1,383,261.24	245,157.99		56'/4'		
178	1185+46	N14°07'37"E	1,383,504.34	245,864.76		56'/4'		
179	1189+00	N14°07'34"E	1,383,591.17	246,209.76	S/L Blk. 182	56'/4'		
180	1192+86	N17°26'55"E	1,383,685.47	246,584.46		56'/4'		
181	1200+55	N16°36'35"E	1,383,916.31	247,318.89		56'/4'		
182	1208+03	N19°29'11"E	1,384,130.48	248,036.86		56'/4'		
183	1215+33	N17°04'21"E	1,384,374.21	248,725.65		55'/4'		
184	1223+01	N20°06'31"E	1,384,600.18	249,461.43		54'/4'		
185	1230+46	N18°42'05"E	1,384,856.61	250,161.83		54'/4'		
186	1238+01	N19°04'25"E	1,385,098.89	250,877.56		53'/5'		
187	1245+42	N13°58'24"E	1,385,341.54	251,579.34		53'/3'		
188	1253+05	N12°35'14"E	1,385,525.96	252,320.47		53'/3'		
189	1260+59	N10°21'28"E	1,385,690.47	253,057.21		52'/3'		
190	1266+74	N12°50'47"E	1,385,801.25	253,663.32		50'/5'		
191	1274+59	N09°51'31"E	1,385,975.98	254,429.53		52'/4'		
192	1282+60	N08°21'15"E	1,386,113.29	255,219.64		50'/5'		
193	1290+75	N10°57'19"E	1,386,231.91	256,027.40		50'/5'		
194	1298+23	N11°55'38"E	1,386,374.14	256,762.18		49'/5'		
195	1305+73	N11°16'18"E	1,386,529.90	257,499.57		48'/5'		
196	1313+10	N10°12'00"E	1,386,674.42	258,224.68		48'/5'		
197	1320+75	N11°27'10"E	1,386,810.51	258,981.04		47'/5'		
198	1328+28	N13°53'43"E	1,386,960.67	259,722.22		45'/5'		
199	1335+87	N11°56'04"E	1,387,143.67	260,461.95		42'/5'		
200	1341+02	N11°56'09"E	1,387,250.59	260,967.81	S/L Blk. 171	41'/4'		
201	1343+39	N08°57'40"E	1,387,300.39	261,203.40		41'/4'		
202	1355+28	N06°59'16"E	1,387,485.96	262,380.20		40'/3'		
203	1362+83	N10°42'24"E	1,387,578.36	263,134.06		39'/3'		
204	1371+09	N10°46'44"E	1,387,732.19	263,947.66		39'/3'		
205	1380+60	N12°26'22"E	1,387,910.56	264,884.59		44'/4'		
206	1386+77	N10°22'37"E	1,388,044.13	265,490.11		44'/4'		
207	1394+62	N13°13'53"E	1,388,186.04	266,265.07		46'/5'		
208	1402+95	N11°08'34"E	1,388,377.40	267,078.94		45'/5'		
209	1410+74	N12°09'27"E	1,388,528.56	267,846.37		44'/3'		
210	1416+95	N08°15'31"E	1,388,660.05	268,456.73	Mich. Wisc. 30" Pipeline	44'/3'	See Const. Dwg. FX-656-32-2	
211	1418+61	N09°15'25"E	1,388,684.31	268,623.87		44'/5'		
212	1426+52	N08°47'24"E	1,388,811.95	269,407.00	1435+69 END ZINC ANODES SPACED ON 796.6 ℄	44'/5'		
213	1434+78	N17°50'48"E	1,388,939.81	270,233.88	Mobil 8" Pipeline	45'/9'	See Const. Dwg. FX-656-32-3	
214	1436+25.7	N16°20'40"E	1,388,983.83	270,383.91	Transition	45'/8'		
215	1436+39.9		1,388,986.43	270,392.77	℄ Ell At Bottom Of Riser	45'/8	See Const. Dwg. WC-171-A-9347	

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

TRAVERSE DATA							MATERIAL SUMMARY	
POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

REFERENCE	NUMBER
30" Inlet Riser	WC-171A-9304

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY CEH	DATE 3-3-78	APPROVED BY	DATE 3-30-79
DRAFTING CHK. HLM	DATE 3-28-78	APPROVED BY	
DESIGN CHK.	DATE		
SCALE		PROJECT MANAGER-OFFSHORE	

OFFSHORE GATHERING SYSTEM
BLOCK 171 LATERAL
WEST CAMERON AREA

DRAWING NUMBER	STATE CODE	SHEET
604	32	E-5E

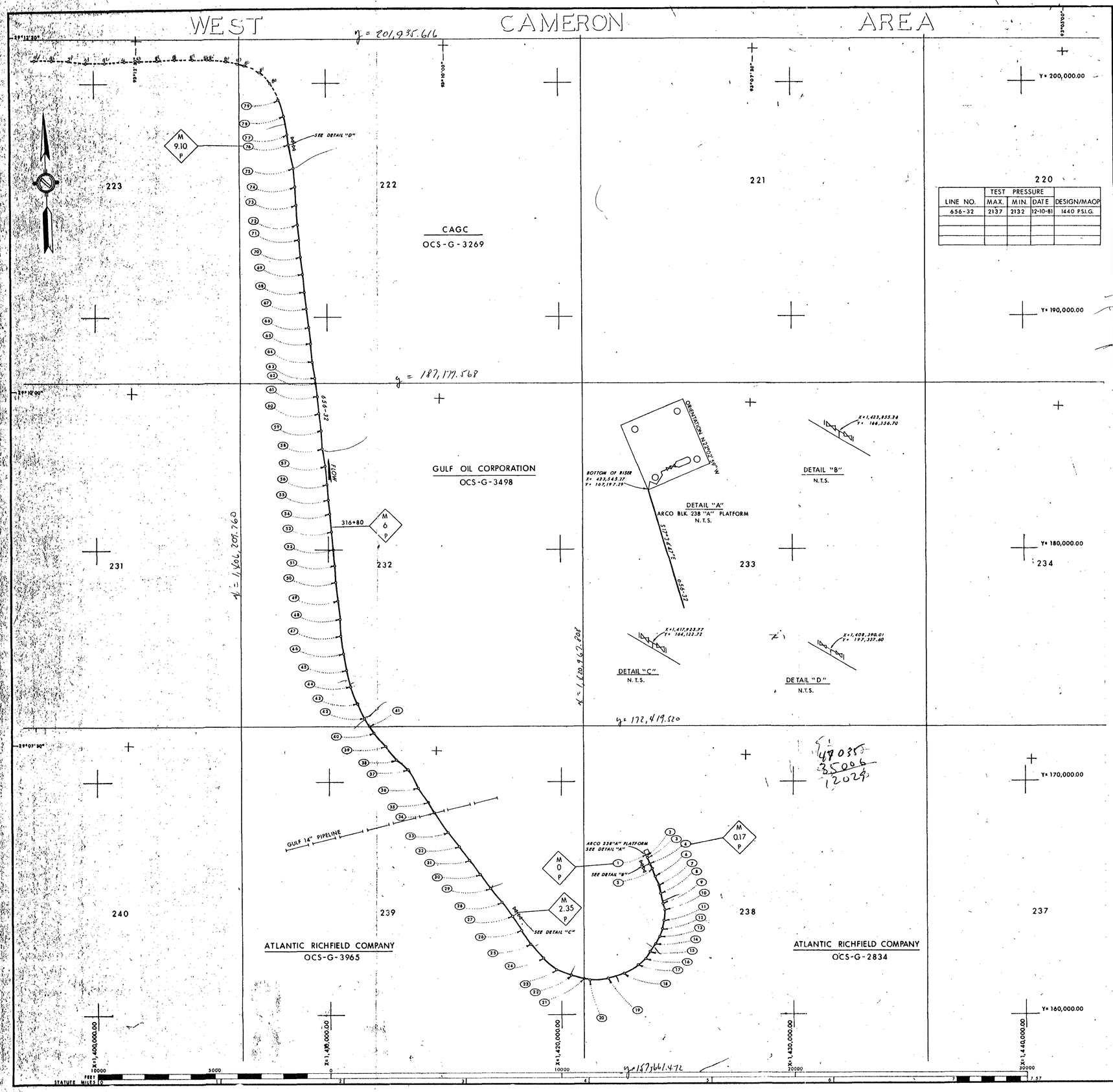
SHEET 2 OF 2

NO.	DATE	REVISION	BY	CHK	APPD
1	3-26-82	Added Tours No. 656-32			

Dwg. No. E-5E

SN 5996

2/11/2010 OCS-G 4621



LINE NO.	TEST PRESSURE MAX.	MIN.	DATE	DESIGN/MAOP
656-32	2137	2132	12-10-81	1440 P.S.I.G.

TRAVERSE DATA

656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS/G-~~4552~~) 4621

POINT	STATION	BEARING	X	Y	REMARKS	WD/COVER
1	0+00.0	S17°34'47" E	1,423,545.27	167,197.29	6 Ell At Bottom Of Riser	67.5'/8.5'
2	0+15.0	S17°34'47" E	1,423,549.80	167,182.99	Transition	67'/8'
3	6+23	S26°17'08" E	1,423,733.47	166,603.28	2-90 BRGIN ZINC ANODES SPACED ON 76.6' ±	67'/8'
	8+87		1,423,848.03	166,371.34	Transition	68'/7'
4	8+98	S25°32'21" E	1,423,855.26	166,356.70	Dual 12" Side Tap	68'/3'
	9+10		1,423,862.37	166,341.81	Transition	68'/7'
5	11+47	S21°23'47" E	1,423,962.73	166,131.34		68'/6'
6	15+07	S21°04'56" E	1,424,094.63	165,795.15		68'/6'
7	19+19	S18°18'53" E	1,424,243.09	165,410.05		68'/6'
8	22+73	S12°22'49" E	1,424,354.76	165,072.68		69'/6'
9	27+03	S07°58'19" E	1,424,446.89	164,652.96		69'/6'
10	30+34	S02°36'12" W	1,424,492.75	164,325.48		70'/6'
11	34+06	S12°08'02" W	1,424,475.82	163,953.13		70'/5'
12	37+72	S22°34'01" W	1,424,399.00	163,595.83		70'/5'
13	41+66	S26°26'29" W	1,424,247.57	163,231.45		70'/5'
14	44+77	S31°14'54" W	1,424,109.20	162,953.21		70'/5'
15	49+23	S37°47'38" W	1,423,877.69	162,571.67		71'/5'
16	52+72	S47°52'01" W	1,423,664.03	162,296.16		71'/6'
17	56+79	S57°36'58" W	1,423,362.18	162,023.10		68'/6'
18	64+33	S70°53'51" W	1,422,725.37	161,619.22		68'/6'
19	71+82	S88°41'28" W	1,422,018.12	161,374.28		69'/5'
20	79+31	N76°07'13" W	1,421,268.82	161,357.16		69'/5'
21	82+41	N76°07'09" W	1,120,967.81	161,431.54	E/L Blk. 239	69'/5'
22	87+29	N61°21'29" W	1,420,494.07	161,548.61		69'/6'
23	94+61	N50°15'11" W	1,419,852.20	161,899.18		69'/6'
24	102+16	N35°32'17" W	1,419,271,73	162,381.90		69'/7'
25	109+67	N40°36'33" W	1,418,834.99	162,993.33		69'/7'
26	117+27	N37°01'03" W	1,418,340.36	163,570.24		69'/6'
	124+08		1,417,933.55	164,109.75,	Transition	69'/7'
27	124+19	N38°13'54" W	1,417,923.77	164,122.72	Dual 12" Side Tap	69'/3'
	124+30		1,417,913.69	164,135.52	Transition	69'/7'
28	132+35	N37°28'34" W	1,417,418.58	164,763.97		69'/5'
29	139+87	N36°24'48" W	1,416,961.27	165,360.46		69'/4'
30	147+46	N36°37'22" W	1,416,510.59	165,971.45		67'/4'
31	155+00	N35°51'20" W	1,416,060.66	166,576.78		67'/4'
32	162+54	N34°52'52" W	1,415,619.33	167,187.45		67'/5'
33	169+96	N36°34'21" W	1,415,194.54	167,796.80		67'/5'
34	180+08	N34°39'04" W	1,414,591.91	168,609.09	Gulf 14" Pipeline	68'/4'
35	183+06	N39°17'12" W	1,414,208.51	169,019.09		68'/3'
36	192+67	N27°01'33" W	1,413,858.46	169,632.06		67'/4'
37	201+52	N49°36'10" W	1,413,456.25	170,420.56		67'/4'
38	208+23	N39°01'33" W	1,412,945.03	170,855.60		66'/3'
39	215+85	N38°16'05" W	1,412,465.19	171,447.61		66'/4'
40	223+40	N38°03'01" W	1,411,997.52	172,040.46		66'/4'
41	228+22	N38°03'01" W	1,411,700.83	172,419.52	S/L Blk. 232	65'/3'
42	231+05	N25°56'54" W	1,411,526.46	172,642.30		65'/3'
43	238+47	N20°56'23" W	1,411,201.77	173,309.54		65'/3'
44	246+08	N15°32'27" W	1,410,929.63	174,020.72		63'/5'
45	254+05	N06°40'58" W	1,410,716.07	174,788.67		63'/3'
46	261+15	N07°09'52" W	1,410,533.43	175,493.97		63'/4'
47	267+69	N04°40'44" W	1,410,539.40	176,242.02		63'/6'
48	276+11	N07°46'20" W	1,410,478.86	176,981.71		63'/4'
49	283+74	N04°49'21" W	1,410,375.73	177,737.30		63'/4'
50	291+50	N05°15'42" W	1,410,310.46	178,510.92		63'/4'
51	298+90	N04°46'00" W	1,410,242.02	179,247.59		63'/4'
52	306+38	N04°11'57" W	1,410,180.49	179,992.66		63'/5'
53	313+91	N05°15'43" W	1,410,125.37	180,743.40		63'/4'
54	321+60	N05°29'18" W	1,410,054.85	181,509.10		63'/3'
55	327+43	N01°00'54" W	1,409,999.03	182,090.04		62'/4'
56	334+36	N08°52'31" W	1,409,986.76	182,782.64		62'/4'
57	342+54	N05°04'46" W	1,409,860.59	183,590.63		63'/4'
58	350+06	N06°58'34" W	1,409,794.00	184,339.79		63'/4'
59	357+70	N05°03'12" W	1,409,701.13	185,098.77		63'/3'
60	365+19	N07°01'02" W	1,409,635.23	185,844.01		63'/3'
61	372+66	N05°22'33" W	1,409,543.98	186,585.35		63'/3'
62	378+60	N05°22'40" W	1,409,488.25	187,177.57	S/L Blk. 222	62'/3'
63	380+30	N08°39'36" W	1,409,472.34	187,346.58		62'/3'
64	387+64	N05°44'41" W	1,409,361.80	188,072.35		62'/3'
65	395+36	N06°23'56" W	1,409,284.56	188,840.14		62'/5'
66	402+82	N07°05'08" W	1,409,201.38	189,581.84		63'/3'
67	410+42	N05°27'33" W	1,409,107.72	190,335.33		63'/3'
68	417+77	N07°03'45" W	1,409,037.77	191,067.26		63'/3'
69	425+25	N05°37'42" W	1,408,945.74	191,810.07		63'/5'
70	432+79	N05°25'47" W	1,408,871.86	192,559.75		62'/5'
71	440+29	N05°17'16" W	1,408,800.84	193,306.93		63'/6'
72	446+91		1,408,739.83	193,966.12		62'/7'

CONTINUED ON SHEET 2 OF 2

MATERIAL SUMMARY

DESCRIPTION	QUANTITY
See Const. Dwg. M(TX)R-902	
See Const. Dwg. AL-PL-01-A-157	
Line Pipe: 20" O.D. × 0.375" W.T., API-5LX-X52	
SOCIETE VALLOUREC, 5/8" Somastic, 1.83"	
Thick Continuous Concrete Coating (190 #/Cu. Ft.)	
1.33 Specific Gravity	44,631.0 L.F.
394 Lb. Zinc Anode Bracelets	60 Ea.

NOTES

1. Stationing Indicates Pipe Footage.
2. Grid Based on Louisiana (Lambert) Plane Coordinate System – South Zone.
3. Locations of Platforms and Pipelines owned by others, based on owner's data.
4. Facilities Installed in Accordance With DOT Regulations.

LEGEND

- Main Line Valve
- Check Valve
- Side Valve (Single)
- Side Valve (Dual)
- Rectifier
- Platform
- Platform w/Heliport
- Survey Point
- Mile Post

CONSTRUCTION DATA

F-5E	F-6E	F-7E
G-5E	G-6E	G-7E
H-5E	H-6E	H-7E

KEY

6/11/2010

REFERENCE	NUMBER
20" Riser Assembly ARCO Platform 238 "A"	M(TX)R-902
Gulf 14" Pipeline Crossing	FX-656-32-1
Dual 12" Subsea Sidetap Assembly Blk. 239	AL-PL-01-A-156
Dual 12" Subsea Sidetap Assembly Blk. 238	AL-PL-01-A-157

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY DKB	DATE 2-3-82	APPROVED BY	DATE 3-25-82
DRAFTING CHK WAH	DATE 3-24-82	APPROVED BY	
DESIGN CHK. BER	DATE 3-24-82		PROJECT MANAGER
SCALE 1" = 2,000'			

OFFSHORE GATHERING SYSTEM
WEST CAMEROON AREA
OFFSHORE LOUISIANA

DRAWING NUMBER G-6E — SHEET 1 OF 2

OCS-G 4621

SN 5996

TRAVERSE DATA / MATERIAL SUMMARY

656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS-G-4621) Rd

POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY
72	446 + 91	N04°27'16"W	1,408,739.83	193,966.12	✓	62'/7'	Line Pipe: 20" O.D. × 0.375" W.T., API-5LX-	
73	455 + 36	N03°45'08"W	1,408,674.19	194,808.71		62'/6'	X52, SOCIETE VALLOUREC, 3/8" Somastic,	
74	462 + 87	N 05°35'44" W	1,408,625.07	195,557.71		62'/6'	1.83" Thick Continuous Concrete Coating	
75	470 + 35	N 08°59'03" W	1,408,552.14	196,302.12	✓	62'/6'	(190#/Cu. Ft.), 1.33 Specific Gravity	5,358.0 L.F.
	480 + 62		1,408,392.57	197,311.38	Transition	62'/7'	394 Lb. Zinc Anode Bracelets	7 Ea.
76	480 + 73	N 08°52'24" W	1,408,390.01	197,327.60 ✓	Dual 12" Side Tap	62'/3'	See Const. Dwg. AL-PL-01-A-155	
	480 + 84		1,408,387.50	197,343.66	Transition	62'/7'		
77	485 + 45	N 10°52'46" W	1,408,317.23	192,793.78		62'/7'		
78	493 + 06	N 15°43'45" W	1,408,173.51	198,541.56	✓	62'/6'		
79	500 + 71		1,407,966.17	199,277.76	✓	62'/7'		

CONTINUED ON SHEET F-6E

TRAVERSE DATA / MATERIAL SUMMARY

POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

TRAVERSE DATA / MATERIAL SUMMARY

POINT	STATION	BEARING	X	Y	REMARKS	W.D./COVER	DESCRIPTION	QUANITY

Dual 12" Subsea Side Tap Assembly Blk. 222 — REFERENCE

AL-PL-01-A-155 — NUMBER

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY DKB	DATE 2-5-81	APPROVED BY	DATE
DRAFTING CHK. WAH	DATE 3-24-81	APPROVED BY	
DESIGN CHK. BEE	DATE 3-24-81		PROJECT MANAGER
SCALE 1" = 2,000'			

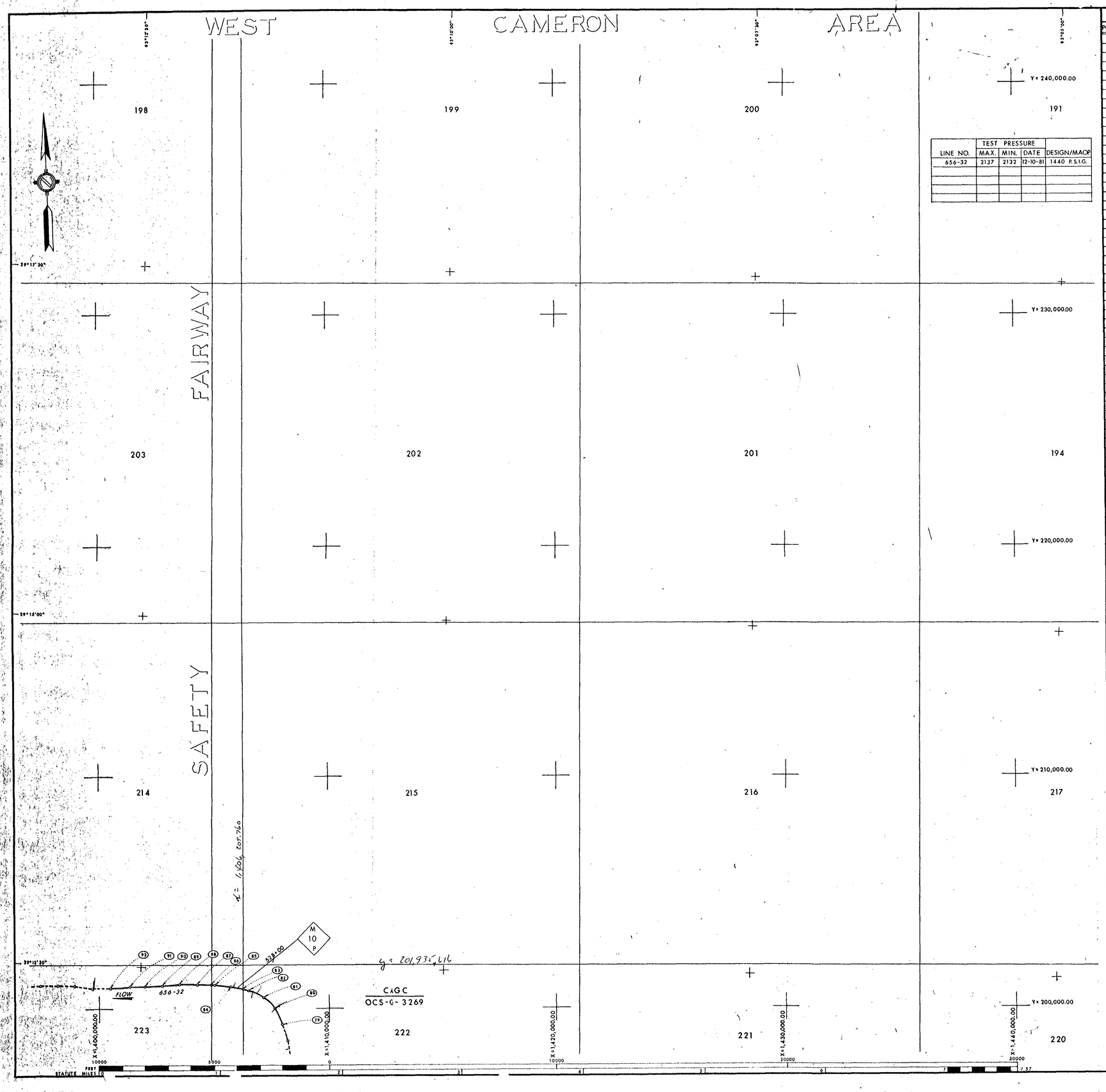
OFFSHORE GATHERING SYSTEM
WEST CAMERON AREA
OFFSHORE LOUISIANA

DRAWING NUMBER G-6E — SHEET 2 OF 2

REVISION: NO. | DATE | BY | CHK. | APPD.

SN 5996

6/11/2010 OCS-G 4621 Rd



LINE NO.	TEST PRESSURE MAX.	MIN.	DATE	DESIGN/MAOP
656-32	2137	2132	12-10-81	1440 P.S.I.G.

TRAVERSE DATA

POINT	STATION	BEARING	X	Y	REMARKS
656-32 20" WEST CAMERON BLK. 238 TO BLK. 171 (OCS-G-~~4472~~) 4621					
79	500+71	N26°32'25"W		199,277.76	✓
80	508+85	N44°38'00"W	1,407,602.49	200,005.91	✓
81	515+37	N62°01'05"W	1,407,144.55	200,469.75	✓
82	522+87	N78°08'39"W	1,406,482.33	200,821.59	✓
83	525+65	N78°08'44"W	1,406,209.76	200,878.81	E/L Blk. 223
84	530+46	N85°57'11"W	1,405,739.50	200,977.52	✓
85	537+87	N87°35'57"W	1,405,000.71	201,029.79	✓
86	538+91	N87°36'41"W	1,404,896.72	201,034.15	✓ E/L Safety Fairway
87	545+42	S88°23'40"W	1,404,246.35	201,061.28	
88	552+99	S87°06'42"W	1,403,489.66	201,040.07	✓
89	560+52	S89°27'17"W	1,402,737.65	201,002.13	✓
90	568+09	N89°37'09"W	1,401,980.06	200,994.92	
91	574+47	S87°24'32"W	1,401,342.23	200,999.16	✓
92	583+04		1,400,486.22	200,960.42	✓
	CONTINUED ON SHEET F-5E				

MATERIAL SUMMARY

WD/COVER	DESCRIPTION	QUANTITY
62'/7'	Line Pipe: 20" O.D. × 0.375" W.T., API-5LX-X52	
62'/7'	SOCIETE VALLOUREC, 5/8" Somastic 1.83" Thick	
62'/6'	Continuous Concrete Coating (190#/Cu. Ft.)	
62'/6'	1.33 Specific Gravity	8,233.0 L.F.
62'/6'	394 Lb. Zinc Anode Bracelets	11 Ea.
61'/7'		
61'/10'		
61'/10'		
61'/10'		
61'/10'		
61'/11'		
61'/11'		
61'/10'		

NOTES

1. Stationing Indicates Pipe Footage.
2. Grid Based on Louisiana (Lambert) Plane Coordinate System - South Zone.
3. Locations of Platforms and Pipelines owned by others, based on owner's data.
4. Facilities Installed in Accordance With DOT Regulations.

LEGEND

- Main Line Valve
- Check Valve
- Side Valve (Single)
- Side Valve (Dual)
- Rectifier
- Platform
- Platform w/Heliport
- Survey Point
- Mile Post

CONSTRUCTION DATA

E-5E	E-6E	E-7E
F-5E	F-6E	F-7E
G-5E	G-6E	G-7E

KEY

SN 5996

RECEIVED
MAR 31 11 47 AM '82
OUTER CONTINENTAL SHELF
NEW ORLEANS, LA.

6/11/2000

REFERENCE	NUMBER

PREPARED BY
Ford, Bacon & Davis Construction Corporation
MONROE LOUISIANA

MICHIGAN WISCONSIN PIPE LINE CO.
ENGINEERING DEPARTMENT
DETROIT, MICHIGAN

DRAWN BY DKB	DATE 2-5-82	APPROVED BY	DATE 3/25/82
DRAFTING CHK. WAH	DATE 3-24-82	APPROVED BY	
DESIGN CHK. BZR	DATE 3-24-82		
SCALE 1" = 2,000'			PROJECT MANAGER

OFFSHORE GATHERING SYSTEM
WEST CAMERON AREA
OFFSHORE LOUISIANA

DRAWING NUMBER F-6E — SHEET 1 OF 1

5 5996 3 47

OCS-G4621
KC (R) (R) (R) NS SP