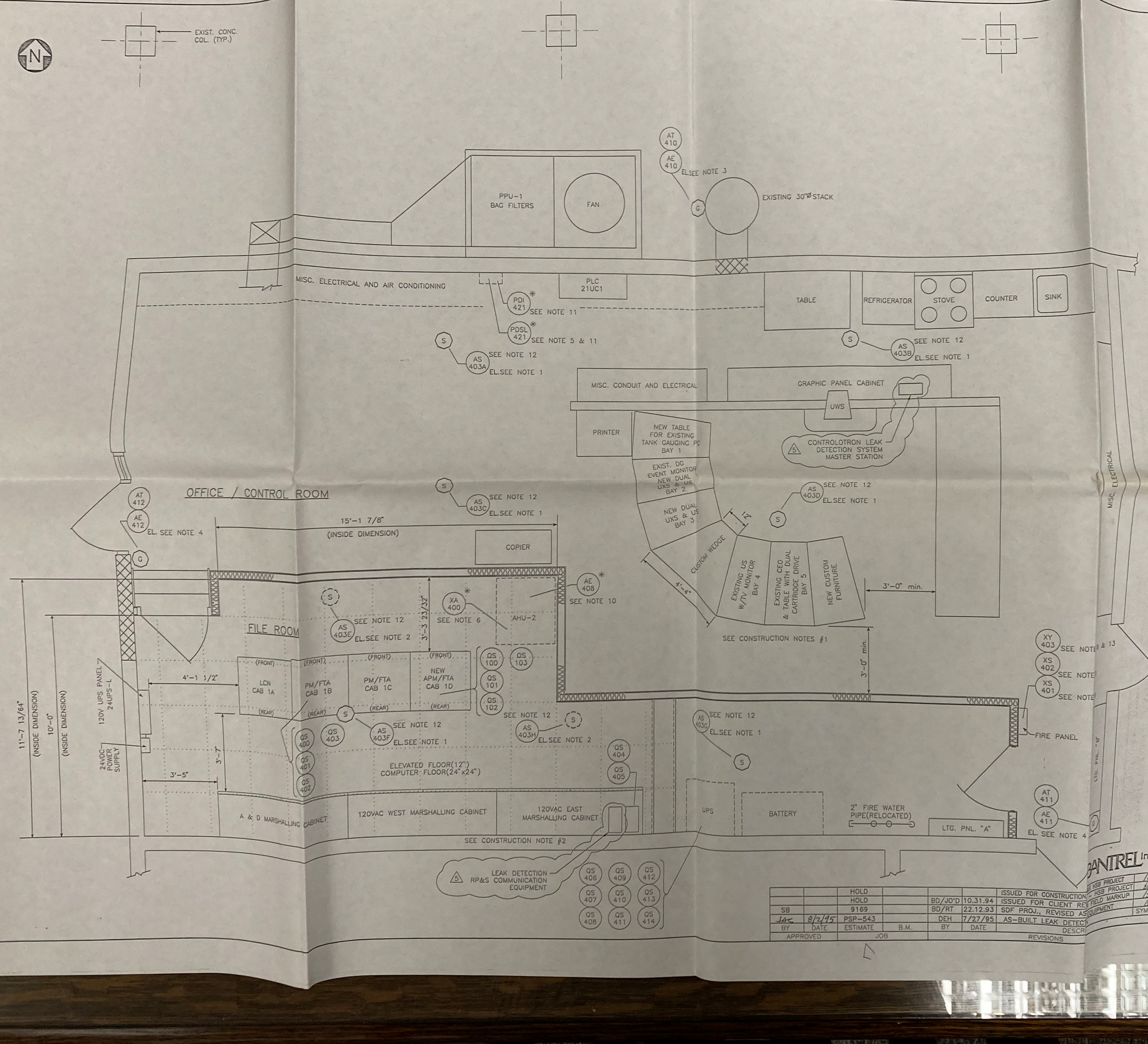


NOTES:

1.) SMOKE DETECTOR – CEILING MOUNT
2.) SMOKE DETECTOR – MOUNTED BELOW COMPUTER FLOOR
3.) COMBUSTIBLE GAS DETECTOR – DUCT MOUNT (ELEVATION TO BE CONFIRMED LATER)
4.) COMBUSTIBLE GAS DETECTOR – MOUNTED 6" ABOVE FLOOR
5.) LOSS OF CONTROL BLDG. POSITIVE PRESSURE WIRED BACK TO TDC.
6.) COMMON TROUBLE ALARM WIRED BACK TO TDC.
7.) * SUPPLIED BY TEXACO.
8.) COMMON FIRE ALARM WIRED BACK TO TDC.
9.) HVAC TRIP OUTPUTS.
10.) AE408 SMOKE DETECTOR OUTPUT TRIPS AHU-2. WIRED BY VENDOR.
11.) CONTRACTOR TO RETAG 24PDI400 & 24PDSL400 TO 24PDI421 & 24PDSL421 RESPECTIVELY.
12.) CONTRACTOR TO RETAG SMOKE DETECTORS 24AE400 TO 24AE407 INCLUSIVE TO 24AE403A TO 24AE403H.
13.) CONTRACTOR TO RETAG COMMON FIRE ALARM 24XA403 TO 24XY403.

REFERENCE DRAWINGS	
CONTROL ROOM ELECTRICAL LAYOUT	24-DP-56
CONTROL ROOM LAYOUT ARCHITECTURAL	24-DR-31
PM CABINET AND FTA CABINET LAYOUT	24-DJ-25
120 VAC WEST MARSHALLING CABINET LAYOUT	24-DJ-21
A & D MARSHALLING CABINET LAYOUT	24-DJ-22
120 VAC EAST MARSHALLING CABINET LAYOUT	24-DJ-78

CONSTRUCTION NOTES:

1.) 2 RADIOS, 2 TELEPHONES, 1 FAX AND CCTV CONTROL PAD LOCATIONS TO BE DETERMINED.

2.) SUITABLE SHELVING TO BE INSTALLED IN TOP LEFT CORNER OF 120 VAC EAST MARSHALLING CABINET FOR RELOCATED 24V BULK DC POWER SUPPLIES AS PER DWG. 24-DJ-78. EXISTING UPS CCTS 24UP-LCCT.2 AND 24UP-LCCT.4 TO BE RECONNECTED TO POWER SUPPLIES. NEW CCTS FOR 24 VDC & COM. BP BULK DC SUPPLY #1 & 2 FAIL TO BE INSTALLED AND CONNECTED BETWEEN POWER SUPPLIES AND A & D MARSHALLING CABINET AS PER DWG. 24-BJ-79.

JEFFREY A. CURTIS — STATE OF WASHINGTON — 19445 — REGISTERED PROFESSIONAL ENGINEER
Jeffrey A. Curtis 8/2/95 REV5
EXPIRES 10-31-95

TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

PLANT 24– BLENDING PLANT CONTROL ROOM EQUIPMENT LOCATION AND LAYOUT

		HOLD				ISSUED FOR CONSTRUCTION - HSB PROJECT	
		HOLD		BD/JO'D	10.31.94	ISSUED FOR CLIENT REVIEW - HSB PROJECT	
SB		9169		BD/RT	22.12.93	SDF PROJ., REVISED AS FIELD MARKUP	
JAC	8/2/95	PSP-543		DEH	7/27/95	AS-BUILT LEAK DETECTION EQUIPMENT	
BY	DATE	ESTIMATE	B.M.	BY	DATE	DESCRIPTION	SYMBOL
APPROVED		JOB		REVISIONS			

BANTREL Inc.

INITIALS–	DATE	SCALE	1/2" = 1'-0"
DWN. BY BA	9/15/92	CAD FILE NO.	24DR0006
CKD. BY EB	9/17/92	DRAWING NUMBER	REV NO
APP'D BY		24-DR-36	5
CHF. ENGR.			

Appendix B

3.12.0 Within 12 months of Ecology's oil spill prevention operation standards, install, test and maintain automated line shutoff equipment for the crude oil transfer pipelines in accordance with the state regulations. Within 2 months of the installation of this equipment, submit documentation to Ecology which includes an itemized description of the shutoff equipment installed, where the equipment was installed, and the results of the performance tests conducted which demonstrate that the installed shutoff equipment will meet shutoff standards.

Status: Item Closed. The Facility Oil Handling Operations and Design Standards Rule Chapter 173-180A-100, Transfer Pipeline requirements did not set forth requirements to install automated line shutoff equipment.

Appendix B

3.13.0 Identify all remaining pumps in the refinery which have cast iron casings and have the potential to impact the waters of the state. Internally and externally inspect each pump and verify structural and mechanical integrity. Remove pumps with cracked casings from operation. All replacement pumps must meet current API pump standards. Cast iron pumps which are found to be mechanically and structurally sound may remain in service. Texaco shall develop a replacement schedule for all cast iron pumps which is prioritized on the protection of worker health and safety and environmental protection.

Status: Item Closed. Information relating to the pumps which were identified and changed as a result of the consent decree from cast iron casings to carbon steel casings are as follows;

• Crude Booster Pump	22RG-2	Cast Iron to Carbon Steel
• Crude Booster Pump	22RG-3	Removed from Service
• Clean Systems LFR/LFP Inj.	22RG-13	Cast Iron to Carbon Steel (Dock)
• Clean Systems LR Inj.	22RG-16	Cast Iron to Carbon Steel (Dock)
• Butane Unloading Pump	22NG-5	Cast Iron to Carbon Steel (Truck Rack)
• Jiskoot Pump	22RG-35	Carbon Steel (Dock), Installed new in 1984
• A-Anchor Sump Pump	22RG-39	Stainless Steel (A-Anchor Sump), Installed new 1995.
• Dock Slop Pump	22RG-1	Carbon Steel Dock Berth #3
• MLA Pump Out	22RG-25	Carbon Steel Dock Berth #1
• MLA Pump Out	22RG-26	Carbon Steel Dock Berth #2

Pump specification information is provided in Volume II on the following pumps; 22RG2, 22RG-13, 22RG-16 and 22NG-5 resulting in the change in kind from cast iron to carbon steel.. All other pumps were installed new as carbon steel or stainless prior to or after the 91 Fidalgo Bay Spill.

Appendix B

3.14.0 Expose and radiologically examine segments of underground transfer pipeline in intervals not exceeding five years and submit operating practices to Ecology.

Status: Active. The first inspection was completed on March 2, 1992, the procedure and the inspectors comments are enclosed in this section.

The excavation, installation, repair, inspection, and backfilling of underground lines must be accomplished using the following guides to assure that coatings are properly installed and intact in order to provide corrosion protection and minimize the possibility of line failure.

Prior to excavating, either for new installations or for work on existing lines, obtain the proper permits to assure safety and to establish the location of other lines or electrical lines. (See section XIII SPECIAL HAZARDS, paragraph A. DITCHING OR EXCAVATING in the SAFETY WORK PERMIT instruction book.) If the piping is under cathodic protection, see STANDING INSTRUCTION NO. 38 for additional instructions.

Care should be exercised in removing soil from above and around the piping to prevent damaging the line or line coating. The last few inches of soil should be removed manually to avoid this possibility. If the excavation is sufficiently deep, the sides of the trench should be properly shored to prevent their collapse, in accordance with OSHA regulations, where applicable. If the coating or wrapping is deteriorated or damaged, it should be removed in that area to inspect the condition of the underlying metal. (API 570 7.1.6c)

DB
MAF
LWH
PLM
GLA
GLJ

Excavate the piping full circumference for a length of six to eight feet for inspection of the type and extent of corrosion and the condition of the coating. If inspection reveals damaged coating or corroded piping, additional piping shall be excavated until the extent of the condition is identified. (API 570 7.2.6)

All ungalvanized carbon steel pipe (buried in soil or sand) whose normal operating temperature is 150 degrees F or lower shall be protected by an external coating. (GEMS J-1D19 6.11.2)

Coated lines shall be handled in a manner which will not damage the coating. Use padded slings for lifting lines, support lines with materials which will not gouge or crush the coating, etc.

Pressure test new or repaired lines before coating welds.

Lines shall be coated as specified in GEMS J-6M6.

Primer and prefabricated tape shall be from the same manufacturer. Application of cold-applied tape and mastic shall conform to American Water Works Association C-209, Section 3. (GEMS J-6M6 4.3)

Valves, flanges, and other irregular surfaces in underground service shall have a mastic coating over entire exposed surface. Coverage shall be complete and a tight seal made with adjacent pipe wrap. (GEMS J-6M6 4.3)

Risers from underground pipe shall be wrapped with tape to a minimum of 6 in. above finish grade (top of paving) and neatly terminated with two full laps of tape. (GEMS J-6M6 4.3)

After a line has been coated, use an electric holiday detector to determine if there are any defects in the coating. Repair all defects in the coating and repeat the holiday test on the repaired area.

After successful testing, backfill with washed sand a minimum of six inches below and above the line. Rocks, welding rod, construction debris, roots, etc. shall not be permitted to contact the coating. Native backfill material may be placed over the sand. All backfill material should be compacted to prevent settling.

TEXACO -- PSP INSPECTION DEPARTMENT	WHARF TRANSFER LINES	INSP. PROCEDURE Rev. 0 January 5, 1995 Page 1 of 2
AUTHORIZED BY: J. C. Quinn		DATE: 3/10/95

OBJECTIVE: The purpose of this procedure is to define the extent, location and type of inspection to be performed on transfer lines from the refinery to the wharf to ensure the integrity of the lines.

INSPECTION FREQUENCY:
Visual -- monthly
Pressure testing -- annually
Ultrasonic thickness -- three years
Radiographic -- five years

PROCEDURE:
The transfer lines between "A" anchor and the wharf shall be visually inspected monthly to check the general condition of the piping, insulation or paint. The top sides of the lines will be inspected from the causeway, and the bottom sides of the lines will be inspected from a boat. The results of this inspection are recorded on a MONTHLY FACILITY INSPECTION SHEET provided by the EH&S department. A copy of the form is filed in the inspection department's zone 4 - wharf files, and the original form is returned to EH&S.

DL DB
MAF
LWH
PLM
GLA
CLJ

Annually, when directed by the monthly inspection work list, the inspector for zone 4 will issue a work order to M&C to pressure test the transfer lines at 1.5 times the MAWP. The section of lines to be tested is from the end of the lines at the wharf to the first block valve inside secondary containment. "Inside secondary containment" is within the tank No. 1 dike for the crude line and at the shipping pumps for the other product lines. Lines will be tested using the product normally in the line. The test is held for a minimum of twenty minutes with the initial and final pressures recorded. Results of each test are recorded on the inspection department's WHARF LINE PRESSURE TESTING form and filed in the inspection department's zone 4 - wharf - loading lines file.

The drain lines from the transfer lines at "A" anchor will be inspected annually using ultrasonic and / or radiographic NDE in conjunction with the annual pressure test.

Ultrasonic thickness measurements shall be taken every three years on the above ground transfer lines, as scheduled by the monthly inspection list, at locations set up in the PLANT CORROSION MONITORING SYSTEM (PCMS). Results of the thickness survey will be recorded in PCMS where the corrosion rate and next inspection date for each point will be calculated. If the next inspection date is less than three years, a special inspection date will be established for that point and added to the monthly inspection list for zone 4.

At the time the ultrasonic inspections are made, visual inspections will be made on the lines where they slide on the pipe supports.

The underground portions of the transfer lines will have three areas ten feet long exposed for visual and radiographic inspections every five years. When scheduled by the monthly inspection list, the zone 4 inspector will issue a TMASS work order to initiate the excavation of the lines. Radiographs will be made by an authorized NDE contractor on at least five feet of each line. Results of these inspections will be recorded in the inspection department's zone 4 wharf files.

The inspector will issue a TMASS work order to correct deficiencies observed in the transfer line inspections.

3/2/92 THE UNDERGROUND LINES GOING TO THE DOCK WERE EXPOSED AT THREE LOCATIONS TO CHECK FOR CORROSION. THE FIRST LOCATION WAS AT THE LEAK IN THE BUNKER LINE - THE LINES WERE IN GOOD CONDITION. THE SECOND LOCATION WAS AT THE CORNER OF NORTH TEXAS ROAD AND WEST MARCHES POINT ROAD - THE LINES WERE IN GOOD CONDITION. THE THIRD LOCATION WAS ACROSS THE WEST MARCHES POINT ROAD FROM TERA - THE LINES WERE IN GOOD CONDITION. THE LINES WERE UT CALIPERED AND RADIOGRAPHED (X-RAYED) AT ALL LOCATIONS WITH NO PROBLEMS NOTED, JRV THIS INSPECTION WAS APPROVED BY J.C. OIEN NAT BD OWNER USER COMM NO 304.

Appendix B

3.15.0 Pressure test all dock lines annually and submit standard operating practices to Ecology.

Status: Active. The procedure and annual test results are provided in this section.

TEXACO -- PSP INSPECTION DEPARTMENT	WHARF TRANSFER LINES	INSP. PROCEDURE Rev. 0 January 5, 1995 Page 1 of 2
AUTHORIZED BY: J. C. Quinn		DATE: 3/10/95

OBJECTIVE: The purpose of this procedure is to define the extent, location and type of inspection to be performed on transfer lines from the refinery to the wharf to ensure the integrity of the lines.

INSPECTION FREQUENCY:
Visual -- monthly
Pressure testing -- annually
Ultrasonic thickness -- three years
Radiographic -- five years

PROCEDURE:
The transfer lines between "A" anchor and the wharf shall be visually inspected monthly to check the general condition of the piping, insulation or paint. The top sides of the lines will be inspected from the causeway, and the bottom sides of the lines will be inspected from a boat. The results of this inspection are recorded on a MONTHLY FACILITY INSPECTION SHEET provided by the EH&S department. A copy of the form is filed in the inspection department's zone 4 - wharf files, and the original form is returned to EH&S.

DB DB
MAF
LWH
PLM
GLA
GLJ

Annually, when directed by the monthly inspection work list, the inspector for zone 4 will issue a work order to M&C to pressure test the transfer lines at 1.5 times the MAWP. The section of lines to be tested is from the end of the lines at the wharf to the first block valve inside secondary containment. "Inside secondary containment" is within the tank No. 1 dike for the crude line and at the shipping pumps for the other product lines. Lines will be tested using the product normally in the line. The test is held for a minimum of twenty minutes with the initial and final pressures recorded. Results of each test are recorded on the inspection department's WHARF LINE PRESSURE TESTING form and filed in the inspection department's zone 4 - wharf - loading lines file.

The drain lines from the transfer lines at "A" anchor will be inspected annually using ultrasonic and / or radiographic NDE in conjunction with the annual pressure test.

Ultrasonic thickness measurements shall be taken every three years on the above ground transfer lines, as scheduled by the monthly inspection list, at locations set up in the PLANT CORROSION MONITORING SYSTEM (PCMS). Results of the thickness survey will be recorded in PCMS where the corrosion rate and next inspection date for each point will be calculated. If the next inspection date is less than three years, a special inspection date will be established for that point and added to the monthly inspection list for zone 4.

At the time the ultrasonic inspections are made, visual inspections will be made on the lines where they slide on the pipe supports.

The underground portions of the transfer lines will have three areas ten feet long exposed for visual and radiographic inspections every five years. When scheduled by the monthly inspection list, the zone 4 inspector will issue a TMASS work order to initiate the excavation of the lines. Radiographs will be made by an authorized NDE contractor on at least five feet of each line. Results of these inspections will be recorded in the inspection department's zone 4 wharf files.

The inspector will issue a TMASS work order to correct deficiencies observed in the transfer line inspections.

Summer 1995

WHARF LINE PRESSURE TESTING

DATE 5-30-95	DATE 5/30/95
LINE AVJET NO 1	LINE AVJET NO 2
PRESS START 325 PSI	PRESS START 325 PSI
PRESS FINISH 340	PRESS FINISH 340
TIME START 1330	TIME START 1330
TIME FINISH 1350	TIME FINISH 1350
DATE 6-1-95	DATE 6-1-95
LINE DIESEL #1	LINE DIESEL #2
PRESS START 350 PSI	PRESS START 350 PSI
PRESS FINISH 375	PRESS FINISH 370
TIME START 0910	TIME START 1250
TIME FINISH 0930	TIME FINISH 1310
DATE 6-1-95	DATE 5-31-95
LINE DIESEL #3	LINE BUNKER
PRESS START 350 PSI	PRESS START 250 PSI
PRESS FINISH 370	PRESS FINISH 260
TIME START 1230	TIME START 1030
TIME FINISH 1250	TIME FINISH 1050
DATE 5-31-95	DATE 5-30-95
LINE SUPR LD FREE SKY CHIEF	LINE FIRE CHIEF
PRESS START 225 PSI	PRESS START 225 PSI
PRESS FINISH 250	PRESS FINISH 250
TIME START 1030	TIME START 11 AM
TIME FINISH 1050	TIME FINISH 11:20 AM
DATE 7-14-95	DATE 6-29-95
LINE BALLAST	LINE CRUDE
PRESS START ~~125~~ PSI 100	PRESS START 200 PSI
PRESS FINISH 100	PRESS FINISH 200
TIME START 3 PM 7/13/95	TIME START 10:00
TIME FINISH 3 PM 7/14/95	TIME FINISH 10:20
DATE 5-30-95	DATE 6-1-95
LINE LEAD FREE	LINE FLUSHING OIL
PRESS START 225 PSI	PRESS START 200 PSI
PRESS FINISH 250	PRESS FINISH 230 "
TIME START 11 AM	TIME START 1030 AM
TIME FINISH 11:20 AM	TIME FINISH 1100

INSPECTOR D Bugg

WHARF LINE PRESSURE TESTING

DATE 7/18/94	DATE 7-19-94
LINE AVJET NO 1	LINE AVJET NO 2
PRESS START 325 PSI	PRESS START 325 PSI
PRESS FINISH 345	PRESS FINISH 325
TIME START 11:05	TIME START 1255
TIME FINISH 11:30 DB	TIME FINISH 1320 DB
DATE 7/19/94	DATE 7/19/94
LINE DIESEL #1	LINE DIESEL #2
PRESS START 350 PSI	PRESS START 350 PSI
PRESS FINISH 365	PRESS FINISH 365
TIME START 11:15	TIME START 11:15
TIME FINISH 11:35 DB	TIME FINISH 11:35 DB
DATE 7/25/94	DATE 7/14/94
LINE DIESEL #3	LINE BUNKER
PRESS START 350 PSI	PRESS START 250 PSI
PRESS FINISH 365	PRESS FINISH 255
TIME START 11:15	TIME START 13:30
TIME FINISH 11:35 DB	TIME FINISH 14:00 DB
DATE 7/20/94	DATE 7/13/94
LINE SUPR LD FREE SKY CHIEF	LINE FIRE CHIEF
PRESS START 225 PSI	PRESS START 225 PSI
PRESS FINISH 245	PRESS FINISH 235
TIME START 1500	TIME START 15:15
TIME FINISH 1525 DB	TIME FINISH 15'45 DB
DATE 7/22/94	DATE 7/22/94
LINE BALLAST	LINE CRUDE
PRESS START 125 PSI	PRESS START 200 PSI
PRESS FINISH 125	PRESS FINISH 220
TIME START 0915	TIME START 1255
TIME FINISH 0930 DB	TIME FINISH 1327 DB
DATE 7/13/94	DATE 7/22/94
LINE LEAD FREE	LINE FLUSHING OIL
PRESS START 225 PSI	PRESS START 200 PSI
PRESS FINISH 250	PRESS FINISH 220
TIME START 11:30 AM	TIME START 1255
TIME FINISH 12:00 NOON DB	TIME FINISH 1327 DB

INSPECTOR J Bergy

7/29/93 these Are Due.

WHARF LINE PRESSURE TESTING

DATE 9-17-93	DATE 9/17/93
LINE AVJET NO 1	LINE AVJET NO 2
PRESS START 325 PSI	PRESS START 325 PSI
PRESS FINISH 330 PSI	PRESS FINISH 325
TIME START 9:15 AM	TIME START 1450
TIME FINISH 10:00 AM DWT	TIME FINISH 1510 DB
DATE 9/16/93	DATE 9/16/93
LINE DIESEL #1	LINE DIESEL #2
PRESS START 350 PSI ~~DB~~	PRESS START 350 PSI
PRESS FINISH 375	PRESS FINISH 360
TIME START 09:55	TIME START 10:50
TIME FINISH 10:15 DB	TIME FINISH 11:10 DBugg
DATE 9-16-93	DATE 11/5/93
LINE DIESEL #3	LINE BUNKER
PRESS START 350 PSI	PRESS START 250 PSI
PRESS FINISH 360	PRESS FINISH 255
TIME START 11:30	TIME START 10:30
TIME FINISH 11:50 DB	TIME FINISH 10:50
DATE 8-9-93 9-14-93	DATE 8-9-93
LINE SUPR LD FREE SKY CHIEF	LINE FIRE CHIEF
PRESS START ~~225~~ PSI 240 240	PRESS START 225 PSI
PRESS FINISH 250 250	PRESS FINISH ~~225~~ 225
TIME START 13:25 14:00	TIME START 14:20
TIME FINISH 13:50 14:25 DBugg	TIME FINISH 14:45 DBugg
DATE 3/93	DATE 10/26/93
LINE BALLAST	LINE CRUDE ~~10-26-93~~
PRESS START 125 PSI	PRESS START 200 PSI
PRESS FINISH 124	PRESS FINISH 200
TIME START 09:00	TIME START 12:30 PM
TIME FINISH 09:30 DWT	TIME FINISH 12:50 PM DBugg
DATE 9-13-93	DATE ~~9-13-93~~
LINE LEAD FREE	LINE FLUSHING OIL
PRESS START 225 PSI	PRESS START 200 PSI
PRESS FINISH 240	PRESS FINISH 305
TIME START 14:00	TIME START 12:40
TIME FINISH 14:30 DBugg	TIME FINISH 1:10 GCJ

INSPECTOR DBugg

Inspector Copy

WHARF LINE PRESSURE TESTING

DATE 12/18/92	DATE 12/22/92
LINE AVJET NO 1	LINE AVJET NO 2
PRESS START 325 PSI	PRESS START ~~325~~ PSI 266
PRESS FINISH 325	PRESS FINISH 266
TIME START 1450	TIME START 1500
TIME FINISH 1510 DB	TIME FINISH 1530

NORMAL PRESSURE NOT USED BECAUSE NO WATER AT DOCK TO USE TEST PUMP + BLD. P. PUMP WOULD NOT PRODUCE ANY HIGHER PSI. DB

DATE	DATE 12/21/92
LINE DIESEL #1	LINE DIESEL #2
PRESS START 350 PSI	PRESS START 350 PSI
PRESS FINISH 380	PRESS FINISH 360
TIME START 0900	TIME START 13:25
TIME FINISH 0925 DB	TIME FINISH 13:45 DB

DATE 12/21/92	DATE 12/18/92
LINE DIESEL #3	LINE BUNKER
PRESS START 350 PSI	PRESS START 250 PSI
PRESS FINISH 366	PRESS FINISH 250
TIME START 1035	TIME START 10:30
TIME FINISH 1056 DB	TIME FINISH 11:00 DB

DATE 12/17/92	DATE
LINE SUPR LD FREE SKY CHIEF	LINE FIRE CHIEF
PRESS START ~~225~~ PSI 245	PRESS START 225 PSI
PRESS FINISH 250	PRESS FINISH
TIME START 10:20 AM	TIME START
TIME FINISH 10:40 AM DB	TIME FINISH

DATE 3/93 APPROX.	DATE
LINE BALLAST	LINE CRUDE
PRESS START 125 PSI	PRESS START 200 PSI
PRESS FINISH 124	PRESS FINISH 200
TIME START 09.30 P.M DA	TIME START 10.55
TIME FINISH 09.30 P.M DA	TIME FINISH 11:25 DB

DATE 12/17/92	DATE
LINE LEAD FREE	LINE ~~FLUSHING OIL~~ MTBE
PRESS START ~~225~~ PSI 230	PRESS START 200 PSI
PRESS FINISH 240	PRESS FINISH 200
TIME START 13:15	TIME START 14:15
TIME FINISH 13:40 DB	TIME FINISH 14:35 DB

INSPECTOR Dick L Bugg

10-91

WHARF LINE PRESSURE TESTING

DATE 10-1-91 JRV	DATE 10-1-91 JRV
LINE **AVJET NO 1**	LINE **AVJET NO 2**
PRESS START 325 PSI	PRESS START 325 PSI
PRESS FINISH 360 PSI	PRESS FINISH 360 PSI
TIME START 2:00 PM	TIME START 2:00 PM
TIME FINISH 2:20 PM	TIME FINISH 2:20 PM
DATE 10-1-91 JRV	DATE 10-1-91 JRV
LINE **DIESEL #1**	LINE **DIESEL #2**
PRESS START 350 PSI	PRESS START 350 PSI
PRESS FINISH 380 PSI	PRESS FINISH 380 PSI
TIME START 9:35 AM	TIME START 9:35 AM
TIME FINISH 9:55 AM	TIME FINISH 9:55 AM
DATE 10-1-91 JRV	DATE 10-1-91 DB
LINE **DIESEL #3**	LINE **BUNKER**
PRESS START 350 PSI	PRESS START 250 PSI
PRESS FINISH 380 PSI	PRESS FINISH 260 PSI
TIME START 9:35 AM	TIME START 1550
TIME FINISH 9:55	TIME FINISH 1610
DATE 9-26-91 DB	DATE 9-26-91 LWH
LINE **SUPR LD FREE SKY CHIEF**	LINE **FIRE CHIEF**
PRESS START 225 PSI	PRESS START 225 PSI 225 PSI
PRESS FINISH 250 PSI	PRESS FINISH 250 PSI
TIME START 4:00 PM	TIME START 2:25 PM
TIME FINISH 4:25 PM	TIME FINISH 3:00 PM
DATE	DATE 10-2-91 JRV
LINE **BALLAST**	LINE **CRUDE**
PRESS START 125 PSI	PRESS START 200 PSI
PRESS FINISH	PRESS FINISH 200 PSI
TIME START	TIME START 1110 PM
TIME FINISH	TIME FINISH 1:30 PM
DATE 9-30-91 DB	DATE 10-2-91 JRV
LINE **LEAD FREE**	LINE **FLUSHING OIL**
PRESS START 225 PSI 225	PRESS START 200 PSI
PRESS FINISH 250 PSI	PRESS FINISH 200 PSI
TIME START 15:55	TIME START 1:10 PM
TIME FINISH 16:15	TIME FINISH 1:30 PM

INSPECTOR J. R. Valentine

Appendix B

3.16.0 Pressure test all marine loading arms annually and submit standard operating practices to Ecology.

Status: Active. The procedure and annual test results are provided in this section.

TEXACO -- PSP INSPECTION DEPARTMENT	WHARF MARINE LOADING ARMS	INSP. PROCEDURE Rev. 0 January 6, 1995 Page 1 of 1
AUTHORIZED BY: J.C. Quin		DATE: 3/10/95

OBJECTIVE: The purpose of this procedure is to define the extent and type of inspections to be performed on marine loading arms.

INSPECTION FREQUENCY: Marine loading arms are inspected and tested annually.

PROCEDURE: Issue a TMASS work order for hydrotesting of marine loading arms per Standing Instruction No. 99 when scheduled by the monthly inspection list.

Witness the testing and conduct a visual inspection of the loading arms. The loading arm and swing joints must be leak free.

Issue a TMASS work order to correct deficiencies found during the inspection and test.

Update the monthly work list.

DOCUMENTATION: Record the results of the inspection and test on the *Dock Loading Arm Test* form and file it in the Wharf Loading Arms binder located in the zone 4 - Wharf filing cabinet.

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	8/4/94 DB	
		2			"	"	8/4/94 DB	
		3			"	"	8/4/94 DB	
1	2	1	FMC	GASO/DIESEL AVJET	265	400	5/10/94 DB	
		2			"	"	5/10/94 DB	
		3			"	"	5/10/94 DB	
1	3	1	FMC	BUNKER BALLAST	265	400	5/12/94 DB	
		2			"	"	5/12/94 DB	
		3			"	"	5/12/94 DB	
1	4	1	FMC	CRUDE	265	400	6/94 PZM	
		2			"	"	6/94 PZM	
		3			"	"	6/94 PZM	
1	5	1	FMC	CRUDE	265	400	6/94 PZM	
		2			"	"	6/94 PZM	
		3			"	"	6/94 PZM	

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
2	1	1	FMC	GASO/DIESEL AVJET	265	400	8/4/94	Ya
		2			"	"	8/4/94	Ya
		3			"	"	8/4/94	Ya
2	2	1	FMC	GASO/DIESEL AVJET	265	400	8/3/94	DB
		2			"	"	8/3/94	DB
		3			"	"	8/3/94	DB
2	3	1	FMC	BALLAST BUNKER/CRUDE	265	400	8/3/94	DB
		2			"	"	8/3/94	DB
		3			"	"	8/3/94	DB

ALUMINUM SPOOL PICES (8 TOTAL)

NO	PIPE SIZE	FLANGE SIZE		INSPECTOR	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
10	12"	12X16		DB	400	7/94	7/95
20	12"	12X16		DB	"	7/94	
30	10"	10X12		DB	"	7/94	
40	8"	8X8 8X10	(2) ~~(2)~~ (1)	DB	"	7/94	
50	6"	6X8	(2)	DB	"	7/94	

ARMS ARE NUMBERED EAST TO WEST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
NE 1	1	1	FMC	GASO/DIESEL AVJET	265	400		
		2			"	"		
		3			"	"		
1	2	1	FMC	GASO/DIESEL AVJET	265	400		
		2			"	"	5/4/94 Temp seat installed. TEST ok @ 400. DB	
		3			"	"		
1	3	1	FMC	BUNKER BALLAST	265	400		
		2			"	"		
		3			"	"		
1	4	1	FMC	CRUDE	265	400		
		2			"	"	NEW seat installed OK, 9/17/93 DB	
		3			"	"		
1	5	1	FMC	CRUDE	265	400		
		2			"	"	10/11/93 New seat installed	
		3			"	"	TEST OK @ 400 DB	

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	9-5-93 [illegible]	
		2			"	"	9-5-93 [illegible]	
		3			"	"	9-5-93 [illegible]	
1	2	1	FMC	GASO/DIESEL AVJET	265	400	9-5-93 [illegible]	
		2			"	"	9-5-93 [illegible]	
		3			"	"	9-5-93 [illegible]	
1	3	1	FMC	BUNKER BALLAST	265	400	9-6-93 [illegible]	
		2			"	"	9-6-93 [illegible]	
		3			"	"	9-6-93 [illegible]	
1	4	1	FMC	CRUDE	265	400	9-6-93 [illegible]	
		2			"	"	9-6-93 [illegible]	
		3			"	"	9-6-93 [illegible]	
1	5	1	FMC	CRUDE	265	400	9-8-93 [illegible]	
		2			"	"	9-8-93 [illegible]	
		3			"	"	9-8-93 [illegible]	

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
2	1	1	FMC	GASO/DIESEL AVJET	265	400	9/6/93 PJH	
		2			"	"	9/6/93 PJH	
		3			"	"	9/6/93 PJH	
2	2	1	FMC	GASO/DIESEL AVJET	265	400	9/6/93 PJH	
		2			"	"	9/6/93 PJH	
		3			"	"	9/6/93 PJH	
2	3	1	FMC	BALLAST BUNKER/CRUDE	265	400	9/6/93 PJH	
		2			"	"	9/6/93 PJH	
		3			"	"	9/6/93 PJH	

Tested OK 9/10/93 after changing gasket. Leaking flange-Work order # 93VB440

ALUMINUM SPOOL PICES (8 TOTAL)

NO	PIPE SIZE	FLANGE SIZE		INSPECTOR	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
~~10~~ 1	12"	12X16		GLJ-LWH	400	9-3-93	
20 2	12"	12X16		GLJ-LWH	"	9-3-93	
30 3	10"	10X12		GLJ-LWH	"	9-3-93	
40 4	8"	8X10	~~(7)~~	GLJ-LWH	"	9-3-93	
50 7	6"	6X8	~~(7)~~	GLJ-LWH	"	9-3-93	

only one 6"

ARMS ARE NUMBERED EAST TO WEST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

#5 8" 8x8 9-3-93
#6 8" 8x8 9-3-93

DOCK [illegible]ING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	6/28/93	Seal was
		2			"	"	Changed.	Tested
		3			"	"	@ 250 PSI	NITROGEN. PLM/GLA
1	2	1	FMC	GASO/DIESEL AVJET	265	400		
		2			"	"		
		3			"	"		
1	3	1	FMC	BUNKER BALLAST	265	400		
		2			"	"		
		3			"	"		
1	4	1	FMC	CRUDE	265	400		
		2			"	"		
		3			"	"		
1	5	1	FMC	CRUDE	265	400		
		2			"	"		
		3			"	"		

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK L[illegible]ING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	4-9-92	SEALS CHANGED JRV FOR MTBE
		2			"	"		
		3			"	"		
1	2	1	FMC	GASO/DIESEL AVJET	265	400		
		2			"	"		
		3			"	"		
1	3	1	FMC	BUNKER BALLAST	265	400		
		2			"	"		
		3			"	"		
1	4	1	FMC	CRUDE	265	400		
		2			"	"		
		3			"	"		
1	5	1	FMC	CRUDE	265	400		
		2			"	"		
		3			"	"		

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
2	1	1	FMC	GASO/DIESEL AVJET	265	400	4-10-92	SEALS CHANGED FOR MTBE. JRV
		2			"	"		
		3			"	"		
2	2	1	FMC	GASO/DIESEL AVJET	265	400		
		2			"	"		
		3			"	"		
2	3	1	FMC	BALLAST BUNKER/CRUDE	265	400		
		2			"	"		
		3			"	"		

ALUMINUM SPOOL PICES (8 TOTAL)

NO	PIPE SIZE	FLANGE SIZE		INSPECTOR	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
10	12"	12X16			400	11/92	11/94
20	12"	12X16			"		
30	10"	10X12			"		
40	8"	8X10	(3)		"		
50	6"	6X8	(2)		"	DB	

ARMS ARE NUMBERED ~~WEST~~ EAST TO ~~EAST~~ WEST

JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	10-18-91 JRV	10-92
		2			"	"	"	
		3			"	"	"	
1	2	1	FMC	GASO/DIESEL AVJET	265	400	10-18-91 JRV	
		2			"	"	"	
		3			"	"	"	
1	3	1	FMC	BUNKER BALLAST	265	400	10-29-91 JRV	
		2			"	"	"	
		3			"	"	"	
1	4	1	FMC	CRUDE	265	400	10-30-91 JRV	
		2			"	"	"	
		3			"	"	"	
1	5	1	FMC	CRUDE	265	400	10-30-91 JRV	
		2			"	"	"	
		3			"	"	"	

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
1	1	1	FMC	GASO/DIESEL AVJET	265	400	8-1-91	8-1-92
		2			"	"	"	"
		3			"	"	"	"
1	2	1	FMC	GASO/DIESEL AVJET	265	400	9-17-91	9-17-92
		2			"	"	"	"
		3			"	"	"	"
1	3	1	FMC	BUNKER BALLAST	265	400	9-17-91	9-17-92
		2			"	"	"	"
		3			"	"	"	"
1	4	1	FMC	CRUDE	265	400	9-21-91	9-21-92
		2			"	"	"	"
		3			"	"	"	"
1	5	1	FMC	CRUDE	265	400	10-4-91	10-4-92
		2			"	"	"	"
		3			"	"	"	"

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

DOCK LOADING ARM TEST

BERTH NO	ARM NO	JOINT NO	MANUF	PRODUCT	MWAP	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
2	1	1	FMC	GASO/DIESEL AVJET	265	400	10-10-91 PLM	10-92
		2			"	"	"	
		3			"	"	"	
" 2	2	1	FMC	GASO/DIESEL AVJET	265	400	10-15-91 PLM	
		2			"	"	"	
		3			"	"	"	
2	3	1	FMC	BALLAST BUNKER/CRUDE	265	400	10-18-91 JRV	
		2			"	"	"	
		3			"	"	"	

ALUMINUM SPOOL PICES (8 TOTAL)

NO	PIPE SIZE	FLANGE SIZE		INSPECTOR	TEST PRESS	DATE LAST TEST	NEXT TEST DUE
10	12"	12X16		JRV	400	11-1-91	11-92
20	12"	12X16		JRV	"	11-1-91	
30	10"	10X12		JRV	"	11-1-91	
40	8"	8X10	(3)	JRV	"	11-1-91	
50	6"	6X8	(2)	JRV	"	11-1-91	

ARMS ARE NUMBERED WEST TO EAST
JOINTS ARE NUMBERED FROM UPSTREAM TO END OF NOZZLE

Appendix B

3.17.0 Conduct ultrasonic tests on all above ground transfer lines at intervals not exceeding three years and submit standard operating practices to Ecology.

Status: Active. The procedure and test results are provided in this section.

TEXACO -- PSP INSPECTION DEPARTMENT	WHARF TRANSFER LINES	INSP. PROCEDURE Rev. 0 January 5, 1995 Page 1 of 2
AUTHORIZED BY: J. C. Quinn		DATE: 3/10/95

OBJECTIVE: The purpose of this procedure is to define the extent, location and type of inspection to be performed on transfer lines from the refinery to the wharf to ensure the integrity of the lines.

INSPECTION FREQUENCY:
Visual -- monthly
Pressure testing -- annually
Ultrasonic thickness -- three years
Radiographic -- five years

PROCEDURE:
The transfer lines between "A" anchor and the wharf shall be visually inspected monthly to check the general condition of the piping, insulation or paint. The top sides of the lines will be inspected from the causeway, and the bottom sides of the lines will be inspected from a boat. The results of this inspection are recorded on a MONTHLY FACILITY INSPECTION SHEET provided by the EH&S department. A copy of the form is filed in the inspection department's zone 4 - wharf files, and the original form is returned to EH&S.

DB DB
MAB
LWH
PLM PTL
GLA
GLJ

Annually, when directed by the monthly inspection work list, the inspector for zone 4 will issue a work order to M&C to pressure test the transfer lines at 1.5 times the MAWP. The section of lines to be tested is from the end of the lines at the wharf to the first block valve inside secondary containment. "Inside secondary containment" is within the tank No. 1 dike for the crude line and at the shipping pumps for the other product lines. Lines will be tested using the product normally in the line. The test is held for a minimum of twenty minutes with the initial and final pressures recorded. Results of each test are recorded on the inspection department's WHARF LINE PRESSURE TESTING form and filed in the inspection department's zone 4 - wharf - loading lines file.

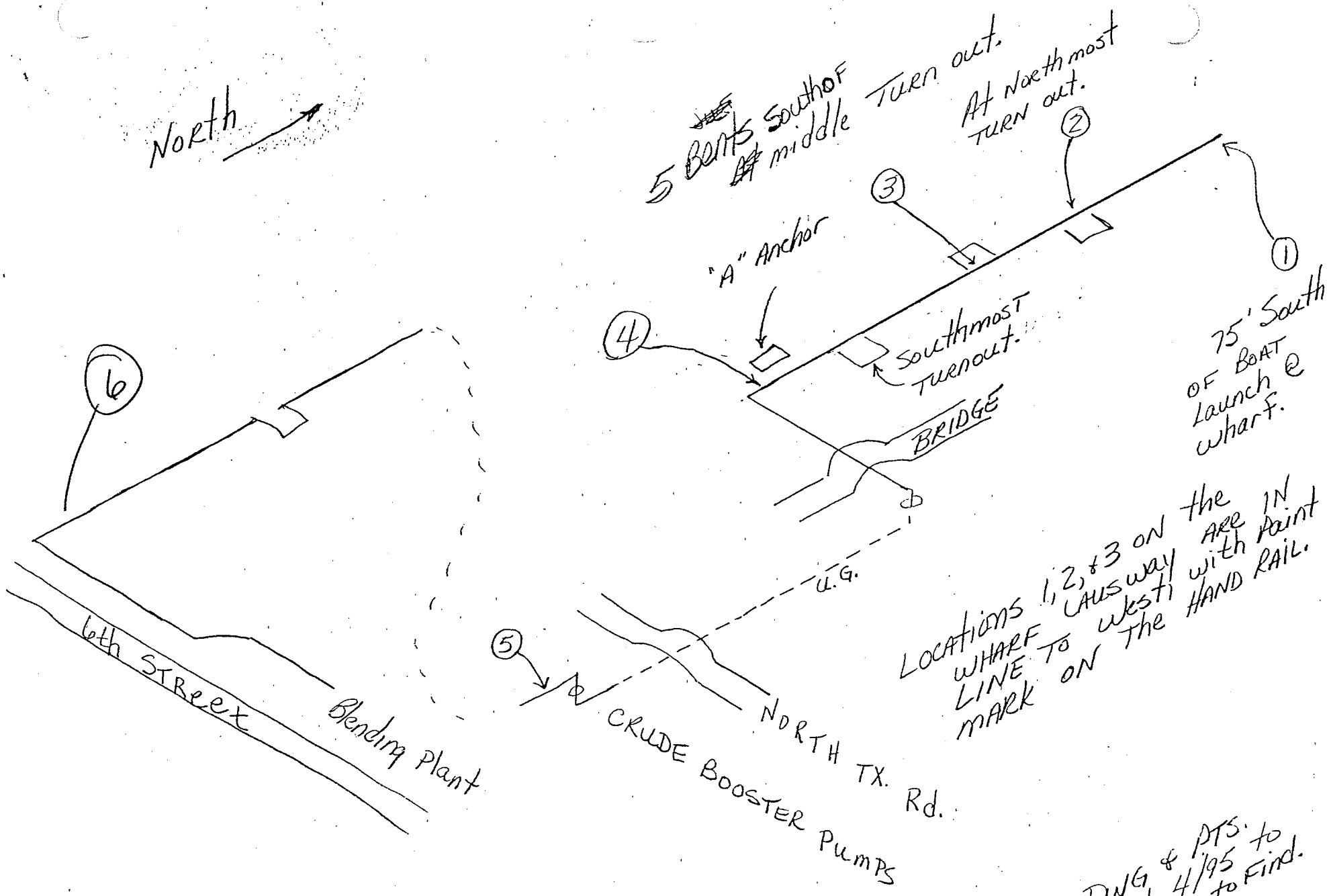
The drain lines from the transfer lines at "A" anchor will be inspected annually using ultrasonic and / or radiographic NDE in conjunction with the annual pressure test.

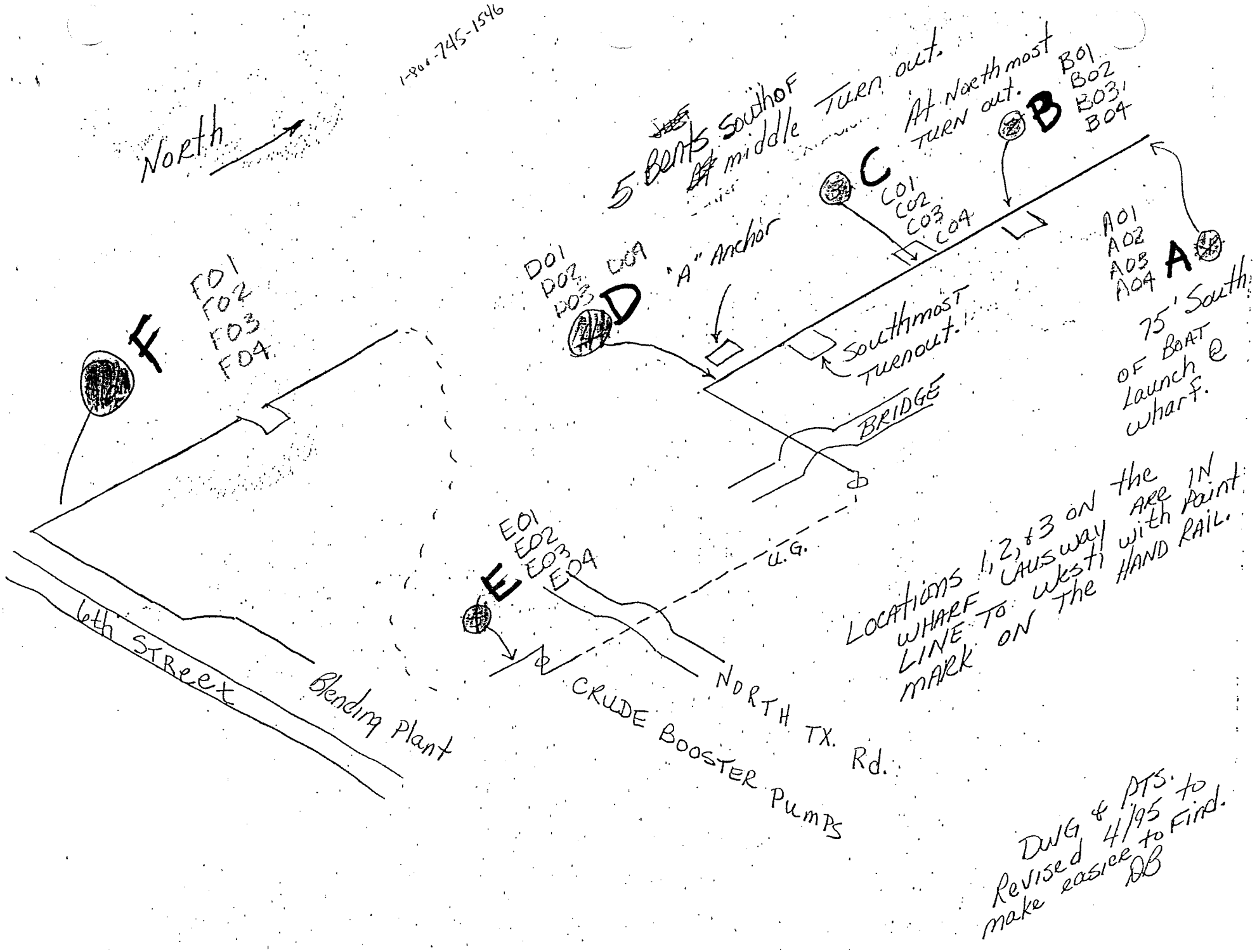
Ultrasonic thickness measurements shall be taken every three years on the above ground transfer lines, as scheduled by the monthly inspection list, at locations set up in the PLANT CORROSION MONITORING SYSTEM (PCMS). Results of the thickness survey will be recorded in PCMS where the corrosion rate and next inspection date for each point will be calculated. If the next inspection date is less than three years, a special inspection date will be established for that point and added to the monthly inspection list for zone 4.

At the time the ultrasonic inspections are made, visual inspections will be made on the lines where they slide on the pipe supports.

The underground portions of the transfer lines will have three areas ten feet long exposed for visual and radiographic inspections every five years. When scheduled by the monthly inspection list, the zone 4 inspector will issue a TMASS work order to initiate the excavation of the lines. Radiographs will be made by an authorized NDE contractor on at least five feet of each line. Results of these inspections will be recorded in the inspection department's zone 4 wharf files.

The inspector will issue a TMASS work order to correct deficiencies observed in the transfer line inspections.


North
5 Bents South of middle Turn out.
At Northmost TURN out.
2
3
"A" Anchor
1
75' South OF BOAT Launch @ wharf.
4
Southmost Turnout.
BRIDGE
6
U.G.
5
6th Street
Blending Plant
CRUDE Booster Pumps
NORTH TX. Rd.
LOCATIONS 1, 2, & 3 ON the WHARF ARE IN CAUSWAY LINE TO WEST! with Paint MARK ON THE HAND RAIL.
DWG & PTS. to Revised 4/95 to make easier to Find. DB


1-800-745-1546
North
5 Bents South of middle Turn out.
At Northmost Turn out.
B
B01
B02
B03
B04
C
C01
C02
C03
C04
A01
A02
A03
A04
A
75' South of Boat Launch & wharf.
D01
D02
D03
D04
D
"A" Anchor
Southmost Turnout.
BRIDGE
F
F01
F02
F03
F04
E01
E02
E03
E04
E
U.G.
6th Street
Blending Plant
CRUDE Booster Pumps
NORTH TX. Rd.
Locations 1, 2, & 3 on the WHARF CAUSWAY ARE IN LINE TO WEST WITH PAINT MARK ON THE HAND RAIL.
DWG & PTS. to Revised 4/95 to make easier to Find.
DB

*TP: Through Paint
*CG = Couldn't Get

WHARF PRODUCT LINE CALIPERINGS PT. NO. 2 New PTS ESTABLISHED

NORTH TO SOUTH EDGE OF PIPEWAY		ORIG.	DATE 3/20/86				DATE 3/90				DATE 3/92				DATE 4/95			
LINE NO.	SERVICE		T	B	N	S	T	B	N	S	T	B	N	S	T	B	E	W
6" 22R-0-DW-1	Fire and Drinking Water	.28	30		27	31	29		26	30					26	30	27	27
24" 22R-SW-2	Effluent	.375	52		54	51	51		53	51					37	40	36	37
30" 22R-0-1	Crude Insulated	.325	35			37	35			36								
16" 22R-SW-4	Ballast	.375	30		30	30	29		30	29					30	TP 32	30	31
6" 22R-ST-500	80# Steam Insulated	.28				35				35								
12" 22R-0-18	Bunker Insulated	.33				37				36								
12" 22R-0-115	Flush Oil to Wharf	.375	40		40	37	40		39	36					38	38	38	39
14" 22R-0-120	Lead Free	~~.312~~ .250	25		29	25	24		29	25					27	CG	24	24
14" 22R-0-6	Regular Gas	.312	31		30	31	30		31	31					32	TP 33	32	30
14" 22R-0-4	Premium Gas	.312	32		32	32	31		32	31					30	TP 33	30	30
8" 22R-0-16	431 Burner Bypass	.277	35		33	36	36		34	35					28	TP 31	28	29
8" 22R-0-8	Avjet #2	.277	31		31	32	30		30	32					28	27	28	28
8" 22R-0-10	Avjet #1	.277	32		32	32	32		32	32					27	27	28	28
8" 22R-0-14	~~454~~ Diesel 2	.277	32		32	33	31		31	30					27	28	28	26
8" 22R-0-12	~~456~~ Diesel 1	.277	32		34	32	31		34	33					27	28	27	28
6" 22R-A-21	Plant Air	.28	30		27	30	29		26	29								

WHARF PRODUCT LINE CALIPERINGS PT. No 4

ESTABLISHED NEW POINTS

EAST TO WEST EDGE OF PIPEWAY		ORIG.	DATE 3/20/86				DATE 3/90				DATE 3/92				DATE 4/95			
LINE NO.	SERVICE		T	B	E	W	T	B	E	W	T	B	E	W	T	B	E	W
6" 22R-O-DW-1	Fire and Drinking Water	.28	31	32	32	30	31	31	31	30								
24" 22R-SW-2	Effluent Ell (T P-1)	.375	36	36	36	36	35	35	36	34								
30" 22R-O-1	Crude	.325	36	39		34	35	38		33								
16" 22R-SW-4	Ballast	.375	32	32	33	32	31	32	32	31					32	TP 34	33	33
6" 22R-ST-500	80# Steam Ell Only INSulated	.28			31				30									
12" 22R-O-18	Bunker Ell Only INSulated	.33			41				40									
12" 22R-O-115	Flush Oil to Wharf	.375	37	37	37	37	36	36	37	36					38	NA	31	38
14" 22R-O-120	Lead Free	~~.312~~ .250	26	26	26	26	25	25	24	25					27	NA ~~26~~	26	25
14" 22R-O-6	Regular Gas	.312	30	33	32	30	30	33	32	30					32	TP 34	30	31
.4" 22R-O-4	Premium Gas	.312	30	32	33	29	30	31	32	30					33	TP 34	29	33
" 22R-O-16	431 Burner	.277	27	27	29	30	26	26	28	29					30	TP 33	28	27
" 22R-O-8	Avjet #2	.277	31	28	32	28	31	28	32	28					27	TP 32	26	27
" 22R-O-10	Avjet #1	.277	30	28	30	28	30	28	29	29					27	TP 34	29	28
" 22R-O-14	~~454~~ Diesel 2	.277	27	27	28		26	26	27						27	28	26	28
" 22R-O-12	~~456~~ Diesel 1	.277	27	27	28	27	26	26	28	26					28	28	27	27
" 22R-A-21	Plant Air	.28	31	30	28		31	30	28						32	32	32	32
" 22R-O-121	Pumpout	.237	27	27	28	27	27	27	28	27								

WHARF PRODUCT LINE CALIPERING PT. NO 5.

ESTABLISHE NEW POINTS

EAST TO WEST EDGE OF PIPEWAY		ORIG.	DATE 3/20/86				DATE 3/90				DATE 3/92				DATE 4/95			
LINE NO.	SERVICE		T	B	E	W	T	B	E	W	T	B	E	W	T	B	E	W
30" 22R-0-1	Crude	.328	41	42	42		40	41	41									
12" 22R-0-89	Flush Oil from Storage	.33	32	40	30	33	31	39	29	32					33	TP 38	33	34
6" 22R-OW-1	Fire and Drinking Water	.28	30	29	29	38	31	30	30	37								
6" 22R-ST-500	80# Stm Ell Only *Insulated*	.28																
12" 22R-0-18	Bunker Ell Only *INSulated*	.33																
14" 22R-0-120	Lead Free	~~.312~~ .250	26	27	27	26	26	27	27	26					25	TP 31	25	27
14" 22R-0-6	Reg Gas	.312	30	30	31	30	30	29	30	29					31	TP 33	32	32
14" 22R-0-4	Pre Gas	.312	30	30	31	31	31	31	30	31					31	TP 35	30	31
8" 22R-0-16	431 Burner	.277	30	28	28	29	29	28	28	29					27	TP 30	28	29
8" 22R-0-8	Avjet #2	.277	30	33	32	32	30	31	31	31					31	TP 33	30	30
8" 22R-0-10	Avjet #1	.277	29	30	31	31	29	29	29	30					31	TP 32	29	31
8" 22R-0-14	~~456~~ Diesel 2	.277	29	29	30	32	29	29	31	31					30	TP 32	29	30
8" 22R-0-12	~~456~~ Diesel 1	.277	28	29	31	31	28	28	30	30					29	TP 31	29	29
6" 22R-~~A-R1~~	Plant Air	.28	31	31	32	32	31	31	31	30					-	-	-	-
			N	S	E	W	N	S	E	W	N	S	E	W	N	S	E	W
12" 22R-0-115	Flush Oil to Wharf (N-S-E-W)	.375	37	38	37	40	36	36	36	39					Delete			
										JEY								

B Seamed

WHARF PRODUCT LINE CALIPERINGS PT. NO 6

↓ NEW PTS ESTABLISHED

EAST TO WEST EDGE OF PIPEWAY		ORIG.	DATE		5/95		DATE				DATE				DATE			
LINE NO.	SERVICE		T	B	E	W	T	B	E	W	T	B	E	W	T	B	E	W
6" 22R-DW-1	Fire and Drinking Water	.28																
6" 22R-ST-500	80# Steam ~~Ell Only~~ INSL.	.28																
12" 22R-0-18	Bunker ~~Ell Only~~ INSL.	.33																
14" 22R-0-120	Lead Free	~~.312~~ .250	.25	.25	.25	.25												
14" 22R-0-6	Regular Gas	.312	.31	.31	.30	.32												
14" 22R-0-4	Premium Gas	.312	.30	.32	.32	.30												
8" 22R-0-16	~~431 Burner~~ DSL. #3	.277	.27	.30 TP	.29	.28												
" 22R-0-8	Avjet #2	.277	.27	.30 TP	.28	.28												
" 22R-0-10	Avjet #1	.277	.27	.29 TP	.27	.28												
" 22R-0-14	~~454~~ Diesel #2	.277	.26	.30	.25	.27												
" 22R-0-12	~~456~~ Diesel #1	.277	.26	TP .29	.28	.27												
" 22R-C-1	Oil Caustic SLOP/AIR	.28	.28	.30 TP.	.29	.29												

Established

WHARF PRODUCT LINE CALIPERINGS — PT. NO 1

75' South of Boat Launch

New Pts. ↓

EAST TO WEST EDGE OF PIPEWAY		ORIG.	DATE 3/20/86				DATE 3/90				DATE 3/92				DATE 3/95				
LINE NO.	SERVICE		T	B	E	W	T	B	E	W	T	B	E	W	T	B	E	W	
8" 22R-FW-3	Fire Water	.277	26				26								29	30	30	30	16
6" 22R-O-DW-1	Fire and Drinking Water	.28	31		30	31	31		30	30	LINES				36	35	36	36	15
24" 22R-SW-2	BALLAST Effluent Ell (E-W-N)	.375		N 40	46	47		N 40	45	47	" B "				38	38	38	38	14
30" 22R-O-1	Crude	.325		41	39			40	40						38	39	38	38	13 INS.
16" 22R-SW-4	Ballast	.375	31	31	31	31	31	31	30	31	SCANNED				31	31	31	31	12
6" 22R-ST-500	80# Steam	.28			32				31										11 INS.
12" 22R-O-18	Bunker	.33	No	Hole							By								10 INS.
12" 22R-O-115	Flush Oil to Wharf	.375	37	37	38	38	36	36	37	37					38	38	38	38	9
14" 22R-O-120	Lead Free	~~.312~~ .250	25		25	25	25		25	25	ANVIL				25	25	25	25	8
14" 22R-O-6	Regular Gas	.312	29		30	30	29		29	30					37	38	NA	37	7
14" 22R-O-4	Premium Gas	.312	29		32	30	29		31	30	See				31	33	NA	32	6
8" 22R-O-16	431 Burner	.277	32		34	34	32		33	33	Manila				29	28	29	29	5
8" 22R-O-8	Avjet #2	.277	31		32	32	30		31	31	Folder				29	29	29	30	4
8" 22R-O-10	Avjet #1	.277	31		32	32	31		32	32	This				28	27	28	28	3
8" 22R-O-14	~~454~~ Diesel 2	.277	32		32	32	32		31	32	File				29	28	28	29	2
8" 22R-O-12	~~456~~ Diesel 1	.277	32	32	32	32	31	32	32	32					29	27	31	30	1 WEST
6" 22R-A-21	Plant Air	.28	30		29	28	30		30	29									

Appendix B

3.3.0

Bill of Materials 5129 / 5129A
Installation of Video Cameras and Radio at Crude Booster Pump and A-Anchor

DB

50-1301-T

TEXACO
BILL OF MATERIAL
PUGET SOUND PLANT

B.M. 5129

W.O. 9315352

TITLE: RP&S - INSTALL VIDEO CAMERAS AND RADIO AT BOOST PUMP AND "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S CONTROL ROOM.

CHARGE: PSP 305 MODIFICATION REVIEW CONDUCTED N

APPROVAL: JAC P&ID'S REVISED N/A REV 0

MASTER DIST.		PM	AMM	AMO	AMT	OPR	PWR	PRO	ER	EH&S	LAB	ENG	CA	GMF
			X	X	X	X	X					X	X	X
	REVISIONS	0	0	0	0	0	0							
		SK 11	22 -	22 -	22 -	SK 11	SK 11							
B M C O P I E S	D R A W I N G S	- 11 - 93	EJ - 13	EJ - 14	EJ - 15	- 13 - 93	- 14 - 93							
21	TOTALS	18	18	18	18	18	18							
1	M&C	1	1	1	1	1	1							
1	STOREHOUSE													
3	PF/I&T	3	3	3	3	3	3							
4	PF/I&E	4	4	4	4	4	4							
1	I&E (WEO)	1	1	1	1	1	1							
	AF/NS													
	AF/SS													
	AF/OFF PLT													
	AF/SHOPS													
	F/MACH SHP													
	F/MT-BT													
	F/FCU-BoHo													
	F/POLY-ALK													
	F/CRU-HTU													
	F/CPD													
3	F/RP&S	3	3	3	3	3	3							
2	INSP DEPT	2	2	2	2	2	2							
1	ENG'R DEPT													
1	EQUIP FILE													
	"R" STAMP													
1	RAM													
1	JAC/PWR	1	1	1	1	1	1							
1	DEL/PWR	1	1	1	1	1	1							
1	RNW/PWR	1	1	1	1	1	1							

JEFFREY A. CURTIS STATE OF WASHINGTON 15150 REGISTERED PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/27/94

10/31/95

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

BM 5129

WO 9315352

TITLE: RP&S, INSTALL VIDEO CAMERAS AND RADIO AT BOOST PUMP AND "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S CONTROL ROOM.

CHARGE PSP305 MADE BY DEL CHECKED BY ISSUE DATE 11-16-93

PURPOSE: IT IS THE PURPOSE OF THIS BM TO PROVIDE A VIDEO SYSTEM TO MONITOR THE AREA AROUND THE DOCK LINE CRUDE BOOST PUMP AND THE AREA AROUND "A" ANCHOR. THE VIDEO FROM THESE AREAS WILL BE MONITORED BY THE OPERATOR THE RP&S CONTROL ROOM. INSTALLATION BUDGET IS ESTIMATED AT $30,000. THE INSTALLATION OF THIS SYSTEM IS A COMPLIANCE ISSUE FOR THE STATE OF WASHINGTON. INSTALLATION MUST BE COMPLETED BY 12-17-93.

SCOPE: MOVEABLE CLOSED CIRCUIT VIDEO CAMERAS ARE MOUNTED ON TWO TOWERS, ONE 30' HIGH AT THE CRUDE BOOST PUMP NAMED VIDEO SYSTEM #1 AND ONE 40' HIGH AT THE TERA CAMPGROUND OVERLOOKING "A" ANCHOR NAMED VIDEO SYSTEM #2. POWER IS TO BE PROVIDED AT BOTH SITES UNDER BM 5129A.

- AT THE CAMERA TOWERS -

1. BUILD AND INSTALL CONTROL PANEL ON EACH CAMERA TOWER (ONE SOUTH OF BOOST PUMP AND ONE BY FENCE AT TERA) PER DWGS 22-EJ-13, 22-EJ-14, AND 22-EJ-15. INSTALL GROUNDING. NOTE: DO NOT REMOVE ANY METAL FROM TOWER STRUCTURE BY DRILLING OR ANY OTHER MEANS.

2. MAKE UP BACKING PLATES FOR THE REAR OF EACH CAMERA ENCLOSURE AND ATTACH. REF SK111393. INSTALL CAMERAS IN ENCLOSURES AND ENCLOSURES ON PAN/TILT MECHANISMS. CHECK CAMERAS, LENSES, PAN/TILT UNITS, AND ENCLOSURE HEATERS AND DE-FOGGERS IN THE SHOP FOR PROPER OPERATION. MOUNT ASSEMBLIES ON TOWERS. MOUNT VIDEO TRANSMITTERS AND REVERSE LINK RECEIVER ANTENNAE ON TOWERS. MOUNT THE RECEIVER ANTENNAE AS HIGH AS PRACTICAL LEAVING JUST ENOUGH OF THE FACTORY ATTACHED LEAD-IN TO REACH THE RECEIVER ON THE INSIDE OF THE ENCLOSURES.

3. INSTALL THE CONDUIT AND FITTINGS ON THE TOWERS PER 22-EJ-13 AND PULL THE FOLLOWING CONDUCTOR CABLES:

-FROM THE CONTROL ENCLOSURE TO THE VIDEO TRANSMITTER (IN THE DC CONDUIT) PULL A 2-CONDUCTOR 18 AWG CABLE.

-FROM THE CAMERA ENCLOSURE TO THE VIDEO TRANSMITTER PULL A COAX WITH BNC CONNECTORS ON EACH END.

-FROM THE CONTROL ENCLOSURE TO THE CAMERA ENCLOSURE, PULL A 5-CONDUCTOR 18 AWG CABLE. (IN THE DC CONDUIT)

-FROM THE CONTROL ENCLOSURE TO THE CAMERA ENCLOSURE, PULL A 3-CONDUCTOR 18 AWG CABLE. (IN THE AC CONDUIT)

-FROM THE CONTROL ENCLOSURE TO THE BASE OF THE PAN/TILT MECHANISM, PULL A 6-CONDUCTOR 18 AWG CABLE. (IN THE AC CONDUIT) NOTE: THIS CABLE REQUIRES INSTALLATION OF THE SUPPLIED PLUG ON THE TOP END.

TITLE: INSTALL VIDEO CAMERAS AND RADIOS AT BOOST PUMP AND "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S CONTROL ROOM.

CHARGE PSP 305 MADE BY DEL CHECKED BY ISSUE DATE - - 93

4. MAKE ALL TERMINATIONS PER 22-EJ-15 AND APPLICABLE INSTALLATION MANUALS. CHECK FOR CONTINUITIES AND FAULTS BEFORE APPLYING POWER.

- BLENDING PLANT CONTROL ROOM -

5. FABRICATE ANTENNA MAST PER SK-111193. INSTALL THE SUPPORT BRACKET ON THE WEST WALL OF THE BLENDING PLANT CONTROL ROOM, RELOCATING AS NECESSARY TO AVOID THE REBAR IN THE CINDERBLOCK WALL. BOLT THROUGH THE BLOCK WALL THROUGH THE BACKING PLATE TO ATTACH THE SUPPORT, USING SHIM AS NECESSARY TO ENSURE PLUMB.

6. LOCATE, EXCAVATE, AND FORM THE MAST FOOTING DIRECTLY BELOW THE MAST SUPPORT BRACKET.

7. INSTALL THE MAST AND CLAMP IN PLACE AT THE PROPER ELEVATION. NOTE: THE MAST MUST BE INSTALLED BY LIFTING OVER THE 2" VENT PIPE SHOWN ON SK-11-11-93 AND LOWERED BETWEEN IT AND THE BUILDING. POUR THE FOOTING WITH THE ANCHOR BOLTS INSTALLED IN THE BASEPLATE OF THE MAST. STRIP FORMS WHEN CONCRETE IS CURED AND BACKFILL TO MATCH AREA.

8. BUILD AND INSTALL CONTROL ENCLOSURE PER DWGS 22-EJ-13, 22-EJ-14, 22-EJ-15, AND SK-11-14-93. INSTALL ANTENNAE ON MAST PER THE SAME DWGS PLACING THE REVERSE LINK TRANSMITTER ANTENNA AT THE TOP OF THE MAST AND KEEPING THE TWO VIDEO RECEIVER YAGI ANTENNAE AT LEAST 5' BELOW.

9. MOUNT VICON COLOR MONITOR IN THE UPPER TIER OF THE BLENDER'S HONEYWELL OP STATION USING THE HONEYWELL BEZEL KIT PROVIDED.

10. CONNECT VIDEO CABLES, POWER, AND CONTROL WIRING TO MONITOR AND CONTROLLER.

8. POWER UP ENTIRE SYSTEM AND CHECK FOR PROPER OPERATION.

TEXACO
PUGET SOUND PLANT
BILL of MATERIALS

ITEM	QUAN	DESCRIPTION	FURNISHED BY
1	2	CAMERA ENCLOSURE, PELCO EH4500	PO 01670
2	2	PAN/TILT UNIT, PELCO PT1250P	PO 01670
3	2	TRANSMITTER, VIDEO, WIRELESS FSTX-900B	PO 01670
4	2	ANTENNA, REVERSE LINK RECEIVER, WIRELESS	PO 01670
5	2	FITTING, 3/4" TEE, FORM 7, C-H #T27	I&E
6	1	ENCLOSURE, NEMA 12, HOFFMAN A363608LP	R 347045
7	2	ENCLOSURE, NEMA 4X, HOFFMAN A24H2008SSLP	R 347045
8	5	FITTING, UNIV BREATHER/DRAIN, C-H #ECD15	I&E
9	3	FITTING, 1" X 1/2" REDUCER, C-H #RE31	I&E
10	A/R	CHANNEL, 1 5/8" X 1 5/8", B-LINE #B-22SH	I&E
11	22	U-BOLT, 1/4-20, GALVANIZED	I&E
12	A/R	CONDUIT, 1-1/2 RIGID, GALVANIZED	I&E
13	4	FITTING, 1-1/2" HUB,MYERS #ST-5	I&E
14	3	FITTING, 1" GROUND HUB, MYERS #STG-3	I&E
15	2	FITTING, 1-1/2" X 1/2" REDUCER, C-H #RE51	I&E
16	A/R	CONDUIT, 3/4" LIQUITITE, TYPE UA	I&E
17	6	FITTING, 3/4" ELL, FORM 7, C-H #LB27	I&E
18	9	CLAMP, CONDUIT, 1" B-LINE #B2010	I&E
19	9	CLAMP, CONDUIT, 1-1/2" B-LINE #B2012	I&E
20	A/R	CONDUIT, 1" RIGID, GALVANIZED	I&E
21	11	FITTING, 1-1/2" TEE, C-H #TB57	I&E
22	2	FITTING, 3/4" CORD, BUSHING A/R, C-H #CGB__	I&E
23	2	FITTING, 1" CORD, BUSHING A/R, C-H #CGB__	I&E
24	2	FITTING, 1-1/2" CORD, BUSHING A/R, C-H #CGB___	I&E
25	8	FITTING, OUTLET BODY, 3/4" C-H #GUAW26	I&E
26	4	FITTING, 1/2" CORD, BUSHING A/R, C-H #CGB___	I&E
27	1	SERVICE ENTRANCE, 1", C-H #F385	I&E
28	2	FITTING, 3/4" X 2" NIPPLE, RIGID, GALVANIZED	I&E
29	9	FITTING, 1" ELL, C-H #LB37	I&E
30	4	FITTING, 1/2" GROUND HUB, MEYERS #STG-1	I&E
31	2	FITTING, 3/4" HUB, MYERS #ST-2	I&E
32	1	VIDEO SYSTEM INTERFACE, WIRELESS RL-450-SI	PO 01670
33	2	VIDEO RECEIVER, WIRELESS FSRX900B	PO 01670
34	1	REVERSE LINK TRANSMITTER, WIRELESS RL-450-TX	PO 01670
35	1	QUAD PROCESSOR, WIRELESS QP-256	PO 01670
36	1	BACK PANEL, HOFFMAN A36P36	R 347045
37	1	AC ADAPTER, 120VAC/24VAC, CALRAD 45774	PO 01670

TEXACO
PUGET SOUND PLANT
BILL of MATERIALS

ITEM	QUAN	DESCRIPTION	FURNISHED BY
38	3	OUTLET, DUPLEX W/GFCI, LEVITON 6598-HG1	I&E
39	3	POWER SUPPLY, 120VAC/12VDC, CALRAD	I&E
40	A/R	WIREDUCT, 2" X 2", TYPE E, PANDUIT E2X2LG6	I&E
41	A/R	COVER, 2", TYPE C, PANDUIT C2LG6	I&E
42	3	OUTLET STRIP, RT ANGLE, 15A, 120VAC, WABER UL24RA-6	I&E
43	1	FITTING, 1" GROUND HUB, MYERS #STG3	I&E
44	3	GROUND CONNECTOR, BURNDY #K2C15	I&E
45	7	FITTING, 3/4" GROUND HUB, #STG2	I&E
46	3	TERMINAL MARK SYST, WEIDMLR. 2924.6, 2937.9, 2940.0	I&E
47	8	TERM END BRACKT, WEIDMULLER 2061.6	I&E
48	A/R	TERM ASSY RAIL, WEIDMULLER TS32, 1228	I&E
49	4	TERM, DEKAFIX TAG, VERT 1-50, WEIDMULLER 4687.6	I&E
50	44	TERMINAL BLOCK, WEIDMULLER SAK 1100.2	I&E
51	4	TERMINAL END SECTION, WEIDMULLER AP/SAK10 1179.6	I&E
52	8	TERM., GROUNDING FOR SAK10, WEID. EK10 3546.6	I&E
53	A/R	WIREDUCT, 1-1/2" X 1-1/2", TYPE E, PAND. E1.5X1.5LG6	I&E
54	A/R	COVER, 1-1/2" TYPE C, PANDUIT C1.5LG6	I&E
55	A/R	DIN RAIL, RELAY MOUNT, P&B 24A110	I&E
56	8	SOCKET, RELAY, P&B 27E893	I&E
57	8	RELAY, DPDT, 24VAC COIL, P&B KUP11A15 24VAC	I&E
58	2	DRIVER/RECEIVER UNIT, WIRELESS RL-450-DX	PO 01670
59	2	BACK PANEL, HOFFMAN A24P20	R 347045
60	A/R	WIRE, 10AWG, STRANDED COPPER, GREEN, THWN	I&E
61	4	FITTING, 1/2" GROUND HUB, MYERS STG3	I&E
62	4	FITTING, 1/2" CGB	I&E
63	1	CUSTOM HONEYWELL BEZEL FOR VIDEO MONITOR	RA34681401
64	3	NAMEPLATES, PER SK-11-14-93	I&E
65	2	FITTING, 1" TEE, C-H TB37	I&E
66	1	FITTING, 1" SEAL, C-H EYS31	I&E

50-1301-T

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

B/M# 5129A

W.O.# 9314308

SHT. 1 OF 5

TITLE: WHARF - INSTALL VIDEO CAMERAS AND RADIOS AT BOOST PUMP AND "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S CONTROL ROOM. (ELECTRICAL)

CHARGE: PSP-305

MODIFICATION REVIEW CONDUCTED

APPROVAL: W Tejada

P&ID'S REVISED N/A

REV 0

MASTER DIST.	PM	AMM	AMO	AMT	OPR	PWR	PRO	ER	AWC	LAB	ENG	CA	GMF
		X	X	X	X	X					X	X	X

	REVISIONS	0	6	7	7	0	10	1	4	1	0	0	2	1	0	0	1	0	0			
BM COPIES	DRAWINGS	SK 10 - 14 - 93	30 - AP - 1	22 - BP - 19	22 - AP - 30	29 - EP - 1 REF	40 - AS - 1 REF	SK - 08 - 11 - 93	40 - AA - 3	41 - BP - 1 2 0	41 - BP - 1 0 9	22 - BP - 25	22 - DP - 44	SK - 03 - 25 - 93	50 - EP - 26 REF	50 - EP - 38 REF	22 - BP - 46	30 - C & C SCHED	41 - C & C SCHED			
13	TOTALS	9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8			
1	M&C	1																				
1	STOREHOUSE																					
	PF/I&T																					
4	PF/I&E	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
1	I&E (WEO)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
	AF/NS																					
	AF/SS																					
	AF/OFF PLT																					
	AF/SHOPS																					
	F/MACH SHP																					
	F/MT-BT																					
	F/FCU-BoHo																					
	F/POLY-ALK																					
	F/CRU-HTU																					
	F/CPD																					
2	F/RP&S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
	INSP DEPT																					
1	ENG'R DEPT																					
	EQUIP FILE																					
	"R" STAMP																					
1	JMB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1	RAP/I&E																					
1	RAM																					

STATE OF WASHINGTON — JEFFREY A. CURTIS — REGISTERED PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/27/94

10/31/95

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

B/M# 5129A

W.O.# 9314308

SHT. 2 OF 5

TITLE: INSTALL VIDEO CAMERAS AND RADIOS AT THE BOOSTER PUMPS AND AT "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S (ELECTRICAL)

CHARGE PSP-305 MADE BY JMB CHECKED BY WT ISSUE DATE 11 -10 -93

PURPOSE: TO PROVIDE 120VAC POWER TO NEW CAMERAS AND RADIOS LOCATED AT CRUDE BOOSTER PUMPS AND AT "A" ANCHOR. THE OVERVIEW OF THE ELECTRICAL INSTALLATION IS AS SHOWN ON SCOPE SKETCH #SK10-14-93 AND ON DRAWING #40-AA-3.

ESTIMATED COMPLETION DATE: BEFORE DECEMBER 31, 1993.

SCOPE: CONTRACTOR AND/OR PLANT FORCES SHALL PERFORM THE FOLLOWING WORK AS LABOR/MATERIALS BECOMES AVAILABLE. THE CONSTRUCTION CREW SHALL NOTIFY MATT BROWN, AT EXT. #534 WHEN WORK IS TO BEGIN. SHOULD QUESTIONS ARISE DURING INSTALLATION, CONTACT POWER DEPARTMENT: MATT BROWN AT EXT. #534, OR BILL TEZAK AT EXT. #537.

CAUTION: TAKE ALL NECESSARY SAFETY PRECAUTIONS WHEN PERFORMING WORK IN VICINITY OF ENERGIZED LINES, AND/OR EQUIPMENT. THIS WORK WILL REQUIRE APPROACHING ENERGIZED LINES, EQUIPMENT & DEVICES WITH VOLTAGES OF UP TO 240V LINE-TO-LINE AND UP TO 120V LINE-TO-GROUND.

NOTE TO PLANNER:
COORDINATE THIS BM WITH BM'S #4980 AND 5129.

POWER SUPPLY TO CAMERA TOWER AT CRUDE BOOSTER PUMPS

1. LOCATE EXISTING SWITCH RACK #SWRK. 22B AT THE EAST SIDE OF POLE #20, SEE DRAWING 30-AP-1. ROUTE (1) 1" RGS CONDUIT #30-SP-369 WITH CONDUITS 30-P-366 & 30-P-367 (TO BE INSTALLED PER B.M. #4980) BELOW GRADE FROM SOUTH SIDE OF SWRK. 22B PAD TO EAST SIDE OF CRUDE BOOSTER PUMP AREA. CONTINUE CONDUIT #30-P-366 UNDERGROUND TO THE CAMERA TOWER FOUNDATION, AS SHOWN ON DRAWINGS 22-DP-44, 22-AP-30, 22-BP-25, 30-AP-1 & 50-EP-26.

2. POUR RED CONCRETE AND BACKFILL DUCT BANK EXCAVATION PER TEXACO GEMS #A-1P9. AT THE BACK SIDE OF SWRK. 22B, BACK-FILL WITH CRUSH ROCK TO BE LEVEL WITH SWRK 22B FOUNDATION.

3. MOUNT 120/240V, 15AT, 70AF, NEMA 3R ENCLOSURE, ENCLOSED CIRCUIT BREAKE ON THE SOUTH SIDE OF SWRK. 22B (FIELD SHALL SUPPORT ENCLOSURE AS REQUIRED), SEE DRAWING 22-DP-44.

4. INSTALL 3/4" CONDUIT HUB ON EXISTING 240V, 50A, 2-POLE, SAFETY SWITCH FOR PANEL #LP-22J AND ROUTE 3/4" CONDUIT TO THE NEW ENCLOSED CIRCUIT BREAKE MOUNTED ON THE SOUTH SIDE OF SWRK. 22B, SEE DRAWING 22-DP-44.

5. INSTALL 1" CONDUIT HUB ON NEW ENCLOSED CIRCUIT BREAKER MOUNTED ON THE SOUTH SIDE OF SWRK. 22B AND ROUTE 1" RGS CONDUIT TO 1" SEALING FITTING ON CONDUIT #30-P-366, SEE DRAWING 22-DP-44.

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

B/M# 5129A

W.O.# 9314308

SHT. 3 OF 5

TITLE: INSTALL VIDEO CAMERAS AND RADIOS AT THE BOOSTER PUMPS AND AT "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S (ELECTRICAL)

6. BOND EXISTING #4 STRANDED BARE GROUNDING CONDUCTOR AT SWRK 22B TO CONDUIT #30-P-366 WITH GROUNDING CONNECTOR.

7. AT CAMERA TOWER FOUNDATION INSTALL WEATHERPROOF OUTLET BOX WITH 15A TWIST-LOCK RECEPTACLE AND COVER NEXT TO VIDEO CAMERA JUNCTION BOX INSTALLED BY B.M. #5129, COMPLETE INSTALLATION OF CONDUIT #30-P-366 WITH 1" SEALING FITTING TO THIS BOX, AS SHOWN ON DRAWING #22-BP-25.

8. INSTALL A 1" COUPLING AND PLUG ON CONDUIT #30-P-369 WHERE IT TRANSITIONS ABOVE GRADE AT EACH END.

9. PULL IN AND TERMINATE CONDUCTORS PER DRAWING 22-BP-19, 22-DP-47 AND PLANT 30 CONDUIT AND CONDUCTOR SCHEDULE. COMPLETE TESTING AS PER ITEM #18.

10. INSTALL NAMEPLATE ON THE CIRCUIT BREAKER ENCLOSURE PER DRAWING #22-BP-46.

POWER SUPPLY TO CAMERA TOWER AT "A" ANCHOR

11. LOCATE EXISTING PANEL #41PP-CJ AT THE NORTH SIDE OF TERA AREA SEE DRAWING 40-AA-3. ROUTE (1) 1" RGS CONDUIT #41-P-29 ABOVE GROUND FROM PANEL #41PP-CJ TO FENCE POST EAST SIDE OF CAMERA TOWER FOUNDATION, USING THE FENCE TO SUPPORT THE 1" CONDUIT #41-P-29. INSTALL A PULLING FITTING AND MAKE A TRANSITION TO UNDERGROUND FROM THE FENCE TO CAMERA TOWER FOUNDATION. INSTALL WEATHERPROOF OUTLET BOX WITH 15A TWIST-LOCK RECEPTACLE AND COVER NEXT TO VIDEO CAMERA JUNCTION BOX INSTALLED BY B.M. #5129 AND COMPLETE CONDUIT #41-P-29 INSTALLATION TO RECEPTACLE JUNCTION BOX. SEE STUB-UP DETAIL ON DRAWING #22-BP-25.

12. POUR RED CONCRETE AND BACKFILL DUCT BANK EXCAVATION PER TEXACO GEMS #A-1P9.

13. INSTALL 15AT, 70AF, 1-POLE, CIRCUIT BREAKER IN PANEL #41PP-CJ. SEE PANEL SCHEDULE ON DRAWING #41-BP-109.

14. BOND EXISTING #4 STRANDED BARE GROUNDING CONDUCTOR AT PANEL #41PP-CJ AREA TO CONDUIT #41-P-29 WITH GROUNDING CONNECTOR.

15. PULL IN AND TERMINATE CONDUCTORS PER DRAWING 40-AA-3, AND PLANT 41 CONDUIT AND CONDUCTOR SCHEDULE. COMPLETE TESTING AS PER ITEM 18.

16. INSTALL NAMEPLATES ON THE PANEL #41PP-CH & J ENCLOSURES PER DRAWING #41-BP-120.

17. CORRECT POOR EXISTING SUPPORT STRUCTURE AT PANEL #41PP-CJ BY MODIFYI SUPPORTS ON THE LEVEL INDICATING LIGHTS, AS SHOWN ON SKETCH #SK03-25-93.

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

B/M# 5129A

W.O.# 9314308

SHT. 4 OF 5

TITLE: INSTALL VIDEO CAMERAS AND RADIOS AT THE BOOSTER PUMPS AND AT "A" ANCHOR AND RECEIVERS AND CONTROLS AT RP&S (ELECTRICAL)

GENERAL

18. PRIOR TO TERMINATION, ALL 600V INSULATED CONDUCTORS, SHALL BE MEGGER TESTED PER TEXACO GEMS #L-1P9, PARAGRAPH #14.3. ALSO AS PER ELECTRICAL ACTIVITY GUIDE #EAG-004 AND RECORDED ON TEST REPORT FORM #ETR-011.

19. UPON COMPLETION OF ALL REQUIRED WORK ON THIS PROJECT, ALL WORK WILL BE INSPECTED AND TESTED WITH FIELD AS-BUILT DRAWINGS TO BE RETURNED TO THE POWER DEPARTMENT - ELECTRICAL GROUP.

50-1304-T

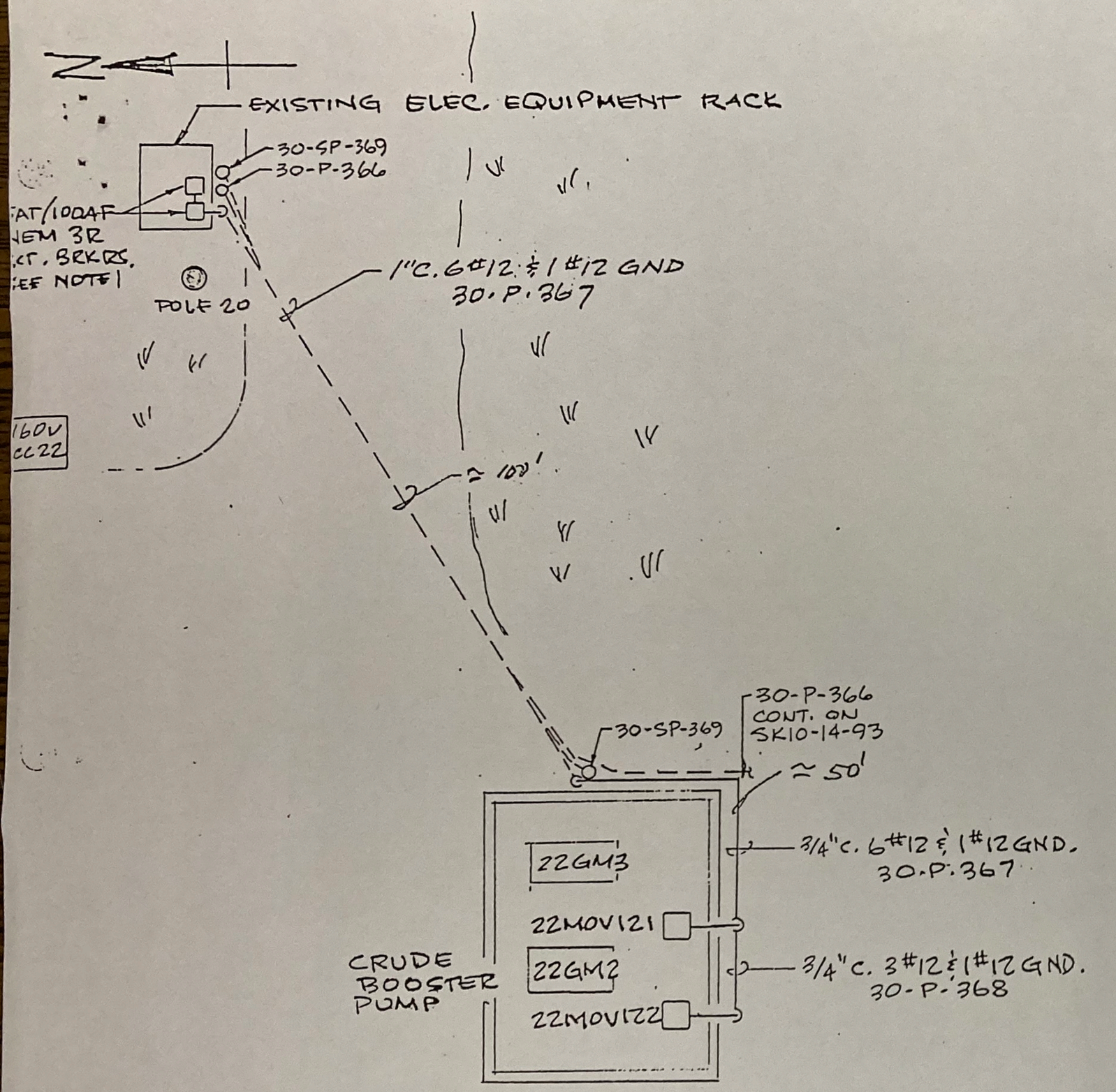
TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

B/M# 5129A

W.O.# 9314308

SHT. 5 OF 5

ITEM	QUANTITY	DESCRIPTION	FURNISHED BY
	1650LF	WIRE, #12AWG, TYPE THWN, 600V, COLOR BLACK	I & E
	400LF	WIRE, #12AWG, TYPE THWN, 600V, COLOR GREEN	I & E
	340LF	CONDUIT, 1", RGS	I & E
	10 LF	CONDUIT, 3/4", RGS	I & E
	2 EA	CIRCUIT BREAKER, 15AT, 70AF, 1-POLE, 120V, PLUG-ON, SQUARE D #QO115	I & E
	1 EA	PANELBOARD, 40A LUGS, 2 CKT., 120/240V, 2-POLE, NEMA 3R ENCLOSURE, SQUARE D #QO2L40RB AND #PK3GTA-1 EQUIPMENT GROUND BAR KIT	RA34647701B
	2 EA	GROUND CONNECTOR, 1", UL LISTED FOR GROUNDING, BURNDY #GAR154C	I & E
	2 EA	SEALING FITTING, 1", W/DRAIN, C-H #EYD3	I & E
	2 EA	HUB, 3/4", MYERS #ST-2	I & E
	4 EA	HUB, 1", MYERS #ST-3	I & E
	2 EA	BOX, WEATHERPROOF BELL BOX, ONE GANG, MOUNTING TABS, 1" CONDUIT OPENING IN BOTTOM, BELL #891-L	I & E
	2 EA	RECEPTACLE, 3-WIRE, GOUNDING, 15A, NEMA L5-15R HUBBLE #4700	I & E
	2 EA	COVER, WEATHERPROOF, DEEP COVER, ONE GANG,LOCKING VERTICAL MOUNT, TAYMAC #10550	I & E



JEFFREY A. CURTIS
STATE OF WASHINGTON
19445
REGISTERED
PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/27/94

EXPIRES 10/31/95

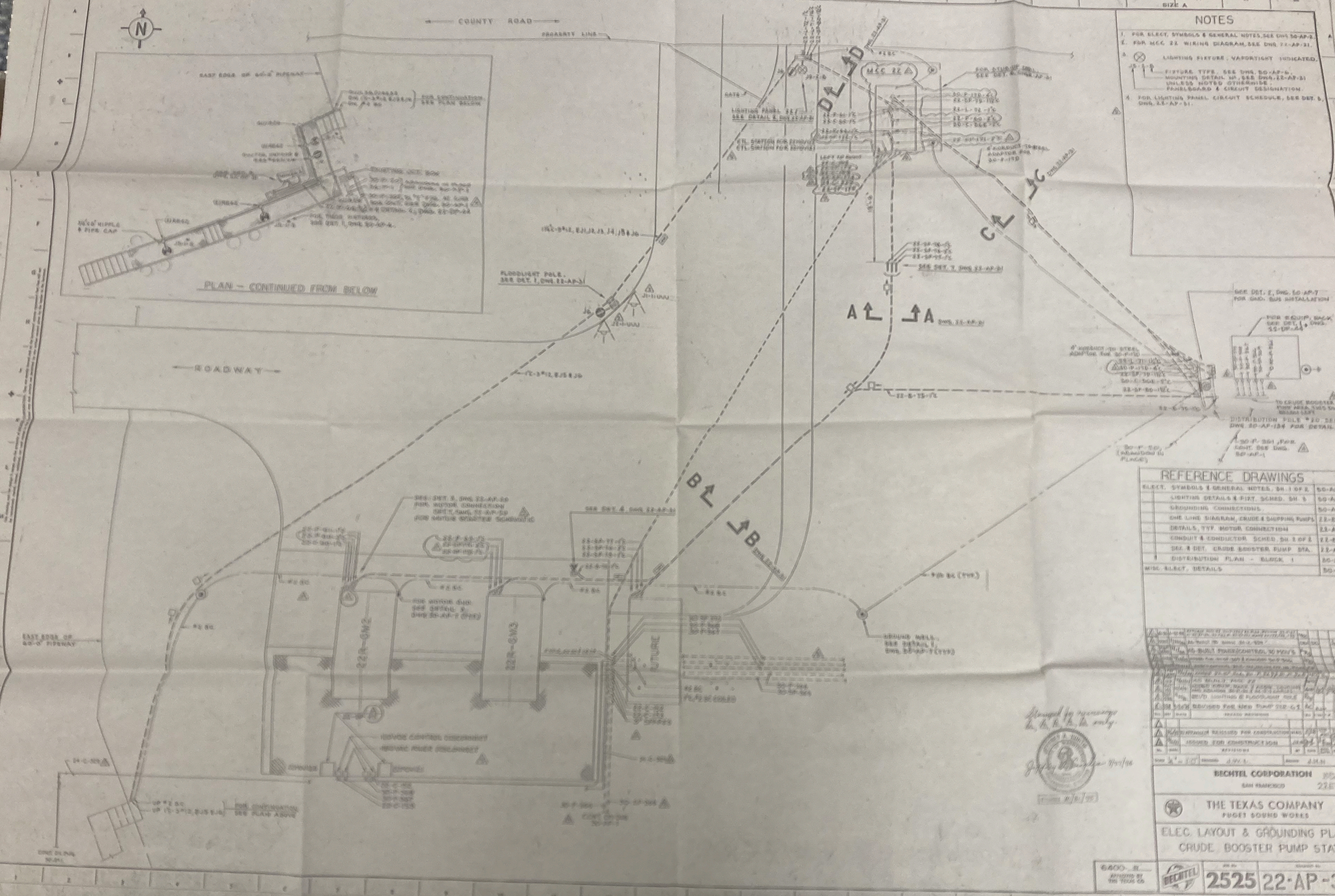
NOTES:

1. FEEDERS FOR MOV'S SHALL BE TAPPED IN EXISTING 480V 3Φ, 3 WIRE MCC BOX.

ELECTRICAL INSTALLATION
R,P&S INSTALL MOV'S
@ CRUDE BOOSTER PUMP
W.O. 9312387 B.M. 4980

SCOPE SKETCH

M.C. CHRISTY
SK081193 REV. 1



NOTES

1. FOR ELECT. SYMBOLS & GENERAL NOTES, SEE DWG 50-AP-2.
2. FOR MCC 22 WIRING DIAGRAM, SEE DWG 22-AP-21.
3. ⊗ LIGHTING FIXTURE, VAPORTIGHT INDICATED.
   FIXTURE TYPE, SEE DWG 50-AP-6.
   MOUNTING DETAIL Nº, SEE DWG 22-AP-31 UNLESS NOTED OTHERWISE.
   PANELBOARD & CIRCUIT DESIGNATION.
4. FOR LIGHTING PANEL CIRCUIT SCHEDULE, SEE DET. 6, DWG 22-AP-31.

REFERENCE DRAWINGS

ELECT. SYMBOLS & GENERAL NOTES, SH. 1 OF 2	50-AP-2
LIGHTING DETAILS & FIXT. SCHED. SH. 3	50-AP-6
GROUNDING CONNECTIONS	50-AP-7
ONE LINE DIAGRAM, CRUDE & SHIPPING PUMPS	22-EP-19
DETAILS, TYP. MOTOR CONNECTION	22-AP-20
CONDUIT & CONDUCTOR SCHED. SH. 1 OF 2	22-EP-24
SEC. & DET. CRUDE BOOSTER PUMP STA.	22-AP-31
DISTRIBUTION PLAN – BLOCK 1	50-AP-1
MISC. ELECT. DETAILS	50-AP-9

REVISED FOR NEW PUMP 22R-G-1

ISSUED FOR CONSTRUCTION

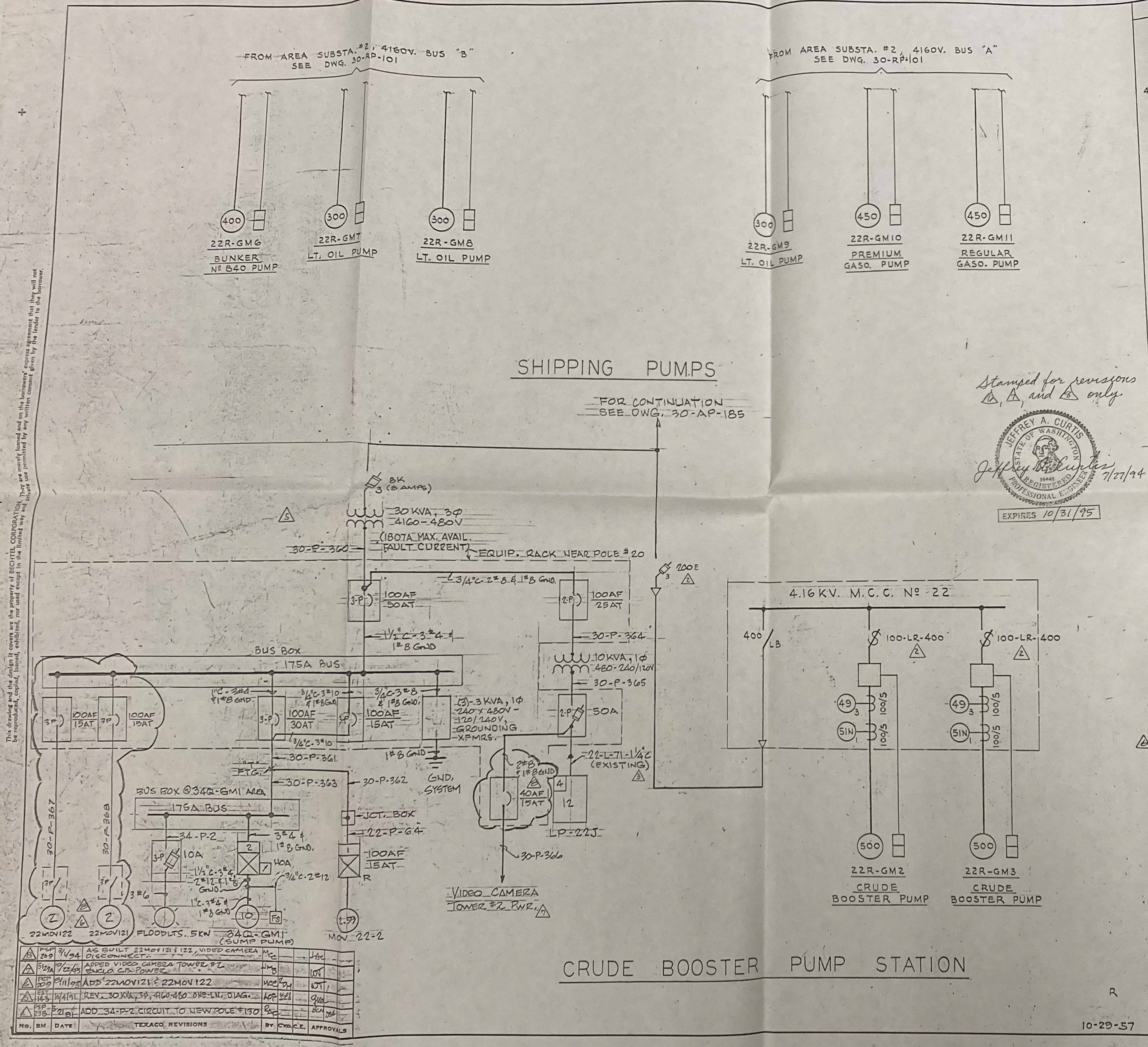
BECHTEL CORPORATION
SAN FRANCISCO

SCANNED
22EP0092

THE TEXAS COMPANY
PUGET SOUND WORKS

ELEC. LAYOUT & GROUNDING PLAN
CRUDE BOOSTER PUMP STATION

BECHTEL 2525 22-AP-30 11


FROM AREA SUBSTA. #2, 4160V. BUS "B"
SEE DWG. 30-RP-101
FROM AREA SUBSTA. #2, 4160V. BUS "A"
SEE DWG. 30-RP-101
400
22R-GM6
BUNKER
Nº 840 PUMP
300
22R-GM7
LT. OIL PUMP
300
22R-GM8
LT. OIL PUMP
300
22R-GM9
LT. OIL PUMP
450
22R-GM10
PREMIUM
GASO. PUMP
450
22R-GM11
REGULAR
GASO. PUMP
SHIPPING PUMPS
FOR CONTINUATION
SEE DWG. 30-AP-185
8K
(8 AMPS)
30 KVA, 3Ø
4160-480V
(1807A MAX. AVAIL. FAULT CURRENT)
EQUIP. RACK NEAR POLE #20
30-P-360
3/4"C-2#8 & 1#8 GND
100AF
50AT
2-P
100AF
25AT
200E
30-P-364
1 1/2"C-3#4 &
1#8 GND
10KVA, 1Ø
480-240/120V
30-P-365
BUS BOX
175A BUS
100AF
15AT
100AF
15AT
100AF
30AT
100AF
15AT
(3)-3KVA, 1Ø
240 X 480V-
120/240V
GROUNDING
XFMRS.
2-P
50A
22-L-71-1 1/4"C
(EXISTING)
30-P-361
30-P-363
30-P-362
GND.
SYSTEM
40AF
15AT
4
12
LP-22J
BUS BOX @ 34Q-GM1 AREA
175A BUS
34-P-2
10A
40A
JCT. BOX
22-P-64
100AF
15AT
30-P-366
VIDEO CAMERA
TOWER #2 PWR.
30-P-367
30-P-368
22MOV122
22MOV121
FLOODLTS. 5KW
34Q-GM1
(SUMP PUMP)
MOV 22-2
4.16 KV. M.C.C. Nº 22
400
LB
100-LR-400
100-LR-400
49
51N
100/5
500
22R-GM2
CRUDE
BOOSTER PUMP
500
22R-GM3
CRUDE
BOOSTER PUMP
CRUDE BOOSTER PUMP STATION
Stamped for revisions 1, 2, and 3 only.
JEFFREY A. CURTIS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
7/27/94
EXPIRES 10/31/95
10-29-57

SIZE B

SYMBOLS

FUSED CUTOUT, POLE MOUNTING. 3-1 POLES INDICATED.

LOADBREAK DISCONNECT SWITCH. 400 INDICATES CURRENT RATING.

MOTOR STARTER WITH CURRENT-LIMITING FUSES. 3-POLE, 4.16 KV.

COMBINATION MOTOR STARTER
100 -- INDICATES BREAKER FRAME SIZE.
15 -- BREAKER TRIP SETTING.
1 -- NEMA SIZE
R -- REVERSING

TRANSFORMER. RATING AS NOTED.

CURRENT TRANSF. QUANTITY & RATING AS NOTED.

LIGHTING PANEL. 240/120V. 3W. 1Ø
4 INDICATES NEMA ENCLOSURE TYPE.
12 -- NUMBER OF CIRCUITS.

PUSHBUTTON STATION. START-LOCKOUT STOP

HAND-OFF-AUTO SELECTOR SWITCH.

FLOAT SWITCH

POTHEAD OR STRESS CONE

RELAY: Nº OUTSIDE CIRCLE INDICATES QUANT.
49 : THERMAL OVERLOAD-THERMAL.
51N : GROUND OVERCURRENT-TIME.

SQUIRREL CAGE INDUCTION MOTOR Nº INDICATES H.P. RATING.

REFERENCE DRAWINGS

ONE LINE DIAGRAM - ELECT. DISTRIBUTION	30-RP-101
ELECT. LAYOUT - CRUDE BOOSTER PUMP STA.	22-AP-30
ELECT. U.G. PLAN BLENDING AREA	24-AP-3
ELEC. MISC., SECTS. & DETS., CRUDE B'STER	22-DP-44

No.	DATE	REVISIONS	BY
4		REVISED LTG. PNL. SIZE, CONDUIT NOS. REVISED OR ADDED. MOV22-2 RATING ADDED	WNS
3		ADDED FUSE RATINGS	WNS
2		ISSUED FOR CONSTRUCTION PER TL-21660R	
1		ISSUED FOR APPROVAL	WNS

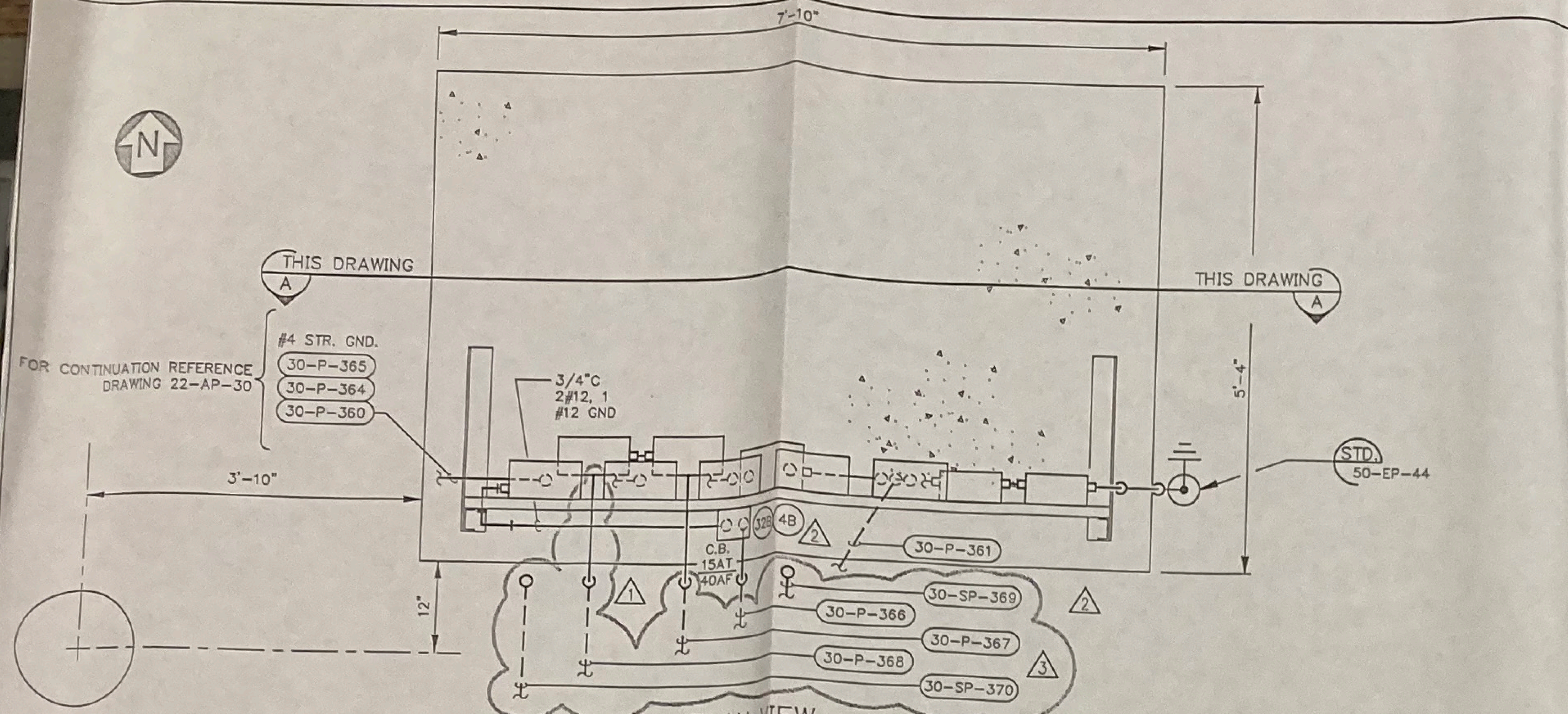
BECHTEL CORPORATION
SAN FRANCISCO

THE TEXAS COMPANY
PUGET SOUND WORKS

ELECTRICAL ONE LINE DIAGRAM
CRUDE AND SHIPPING PUMPS

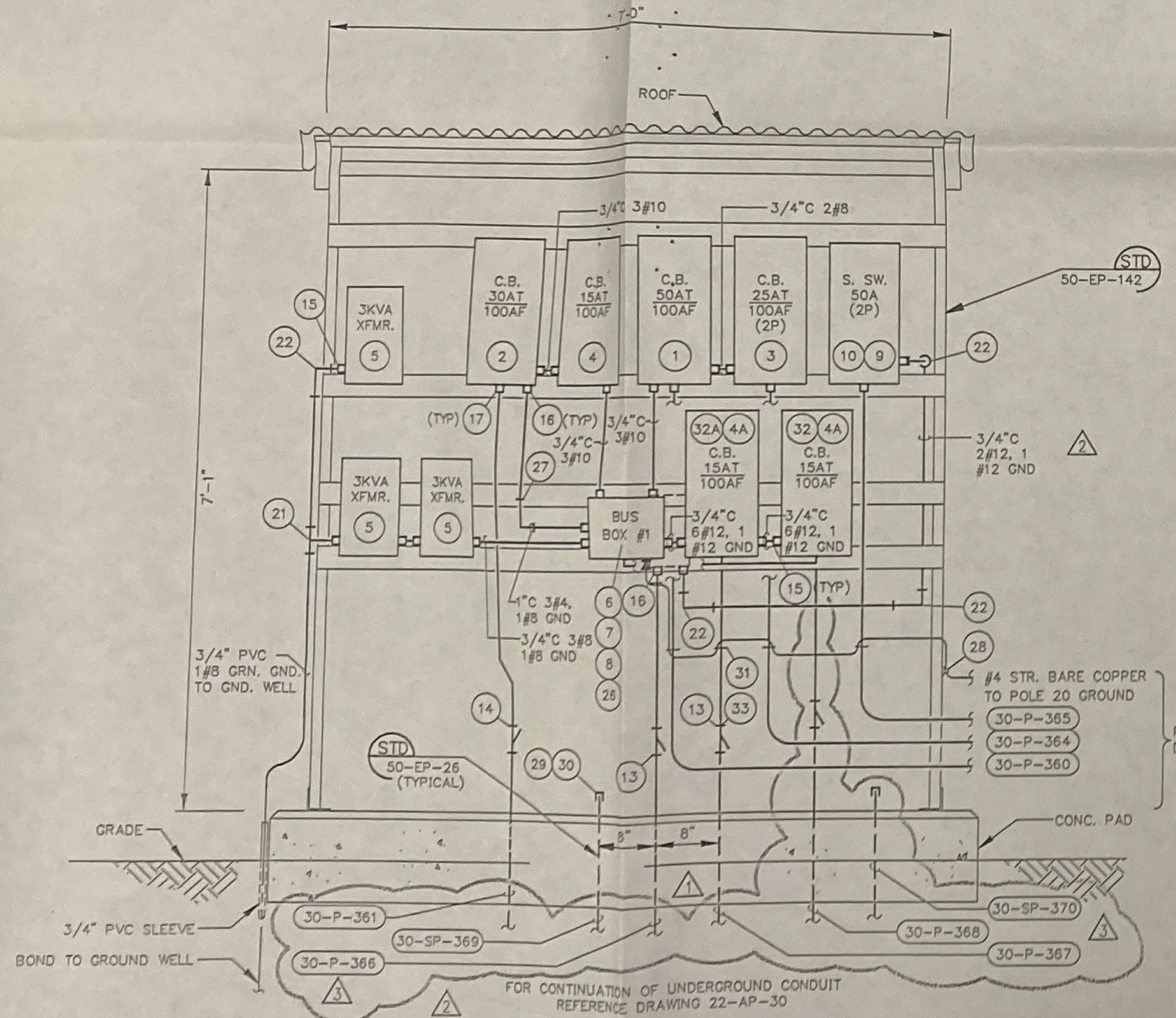
DESIGNED WNS
DRAWN WNS
CHECKED
SCALE NONE

JOB No. 2525 DRAWING No. 22-BP-198 REV. 8



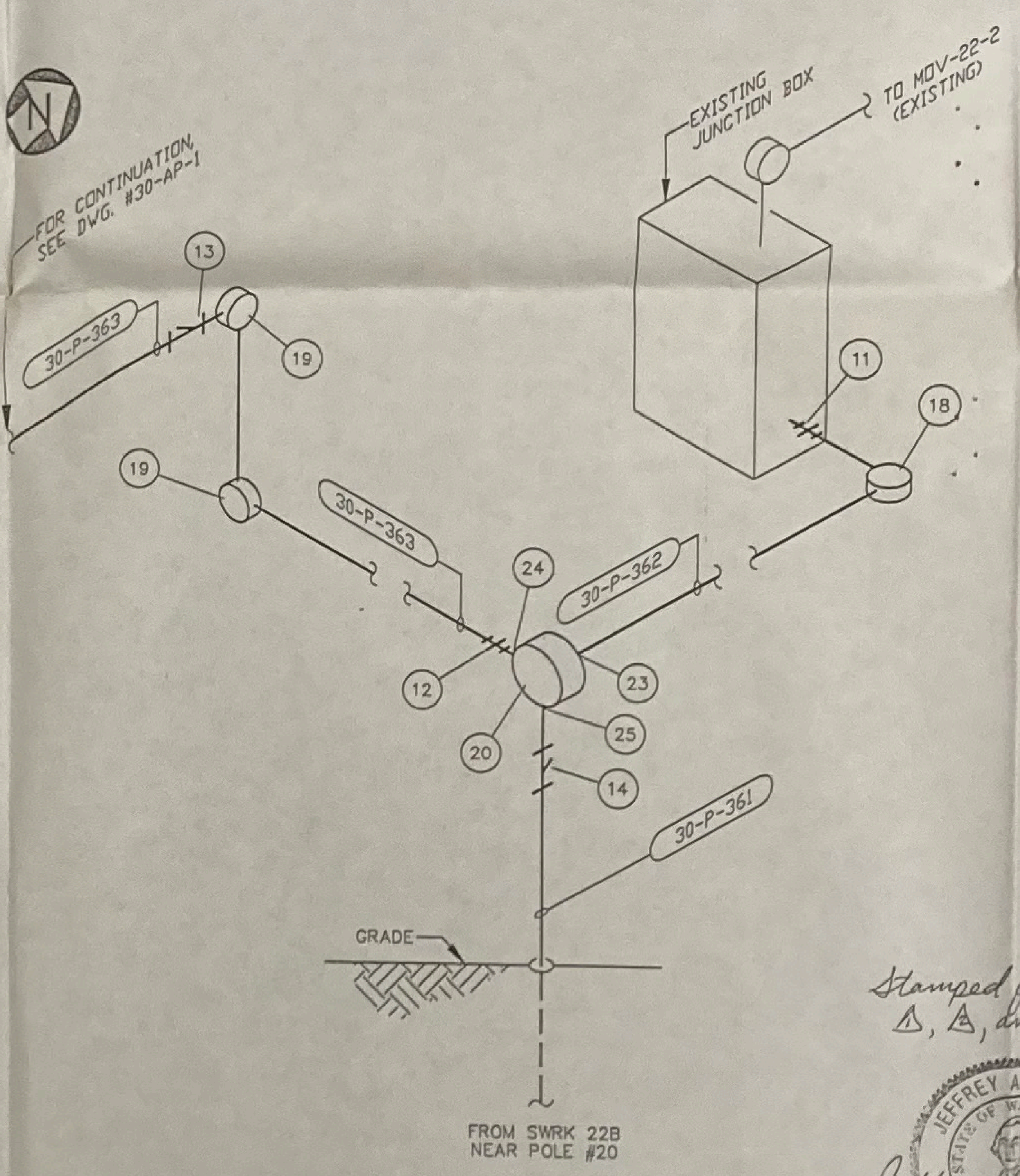
PLAN VIEW

SWRK 22B – REF. DWG. 22-AP-30
SCALE: 1"=1'-0"



ELEVATION A

SWRK 22B – VIEW LOOKING SOUTH
SCALE: 1"=1'-0"



DETAIL 2

(REF. DWG. #22-AP-30)
N.T.S.

Stamped for revisions 1, 2, and 3 only.

JEFFREY A. CURTIS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
Jeffrey A. Curtis 7/27/94
EXPIRES 10/31/95

LIST OF MATERIALS

ITEM NO.	DESCRIPTION
1	CIRCUIT BREAKER, 50AT/100AF, 480V, 3-POLE, NEMA TYPE 4X ENCLOSURE, SQUARE D #FAL34050 AND #FA100DS
2	CIRCUIT BREAKER, 30AT/100AF, 480VAC, 3-POLE, NEMA TYPE 3R ENCLOSURE, SQUARE D #FAL34030 & FA100DS
3	CIRCUIT BREAKER, 25AT/100AF, 480V, 2-POLE, NEMA TYPE 4X ENCLOSURE, SQUARE D #FAL24025 AND FA100DS
4	CIRCUIT BREAKER, 15AT/100AF, 480VAC, 3-POLE, NEMA TYPE 3R ENCLOSURE, SQUARE D #FAL34015 & FA100DS
4A (△1)	CIRCUIT BREAKER, 15AT/100AF, 480VAC, 3-POLE, NEMA TYPE 12/3R ENCLOSURE, SQUARE D #FAL34015 AND FA100AWK WITH EQUIPMENT GROUND BAR
4B (△2)	CIRCUIT BREAKER, 15AT/70AF, 120VAC, 1-POLE, NEMA TYPE 3R ENCLOSURE, SQUARE D #QO2L40RB AND QO115 WITH EQUIPMENT GROUND BAR #PK3GTA-1
5	TRANSFORMER, DRY TYPE, 3KVA, 1PH., 240 x 480V–120-240V, FOR OUTDOOR USE, SQUARE D #3S51F
6	BUS BOX, 10"x 8"x 4", NEMA TYPE 4, CONTINUOUS HINGE & CLAMP COVER, 14 GAUGE, HOFFMAN #A-1008CHNF
7	BUS BOX MOUNTING PANEL, FOR ITEM #4, HOFFMAN #A-10P8
8	POWER DISTRIBUTION BLOCK, LINE LUG, #2/0-#8 CU-AL, LOAD LUG (4) #4-#14 CU-AL, MAT'L & AMPACITY AL-175, BUSS #16025
9	FUSE, 50A, 250VAC, ONE TIME, GENERAL PURPOSE BUSS #NON-50 (ONE BOX = 10 FUSES)
10	SAFETY SWITCH, 60A, 240VAC, 2-POLE, FUSIBLE WITH ISOLATED NEUTRAL BUS AND GROUND BUS, NEMA TYPE 3R SQUARE D #H222NRB/H60SN/PK3GTA-1
11	UNION, 3/4", FORM 7, C-H #UNY205
12	UNION, 1", C-H #UNY305
13	SEAL FITTING, 1", C-H #EYD3
14	SEAL FITTING, 1 1/2", C-H #EYS5
15	HUB, 3/4", MYERS #ST-2
16	HUB, 1", MYERS #ST-3
17	HUB, 1 1/2", MYERS #ST-5
18	CONDUIT FITTING, 3/4", GUA SERIES, C-H #GUAL26
19	CONDUIT FITTING, 1", GUA SERIES, C-H #GUAL36
20	CONDUIT FITTING, 2", QUA SERIES, C-H #GUAM69
21	CONDUIT FITTING, 3/4" T, FORM 7, C-H #T27
22	CONDUIT FITTING, 3/4" L, FORM 7, C-H #LB27
23	REDUCER, 2" - 3/4", C-H #RE62
24	REDUCER, 2" - 1", C-H #RE63
25	REDUCER, 2" - 1 1/2", C-H #RE65
26	CORD AND CABLE FITTING, CGB SERIES, W/ GLAND NUT AND NEOPRENE BUSHING, C-H #CGB292
27	CONDUIT FITTING, 1", FORM 7, C-H #LB37
28	GROUND CONNECTOR, BURNDY #KC25
29 (△1)	CONDUIT COUPLING, 1", RGS
30	CONDUIT PLUG, 1", C-H #PLG35
31	GROUND CONNECTOR, 3/4", BURNDY #GAR144C
32	NAMEPLATE, 22MOV121
32A	NAMEPLATE, 22MOV122
32B (△2)	NAMEPLATE, VIDEO CAMERA TOWER
33	REDUCER, 1" - 3/4", C-H #RE32

REFERENCE DRAWINGS (△1)

22-BP-19	ONE-LINE DIAGRAM, CRUDE AND SHIPPING PUMPS
22-AP-30	ELEC. LAYOUT & GROUNDING PLAN, CRUDE BOOSTER
30-AP-1	ELECTRICAL DISTRIBUTION PLAN BLOCK 1
22-BP-46	ELECTRICAL NAMEPLATE SCHEDULE, RACK AT POLE 20
PLANT 30	CONDUIT AND CONDUCTOR SCHEDULE

NOTES:

1. (△1) FIELD TO SUPPORT EQUIPMENT AS REQUIRED.
2. REFERENCE NAMEPLATE SCHEDULE 22-BP-46.

TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

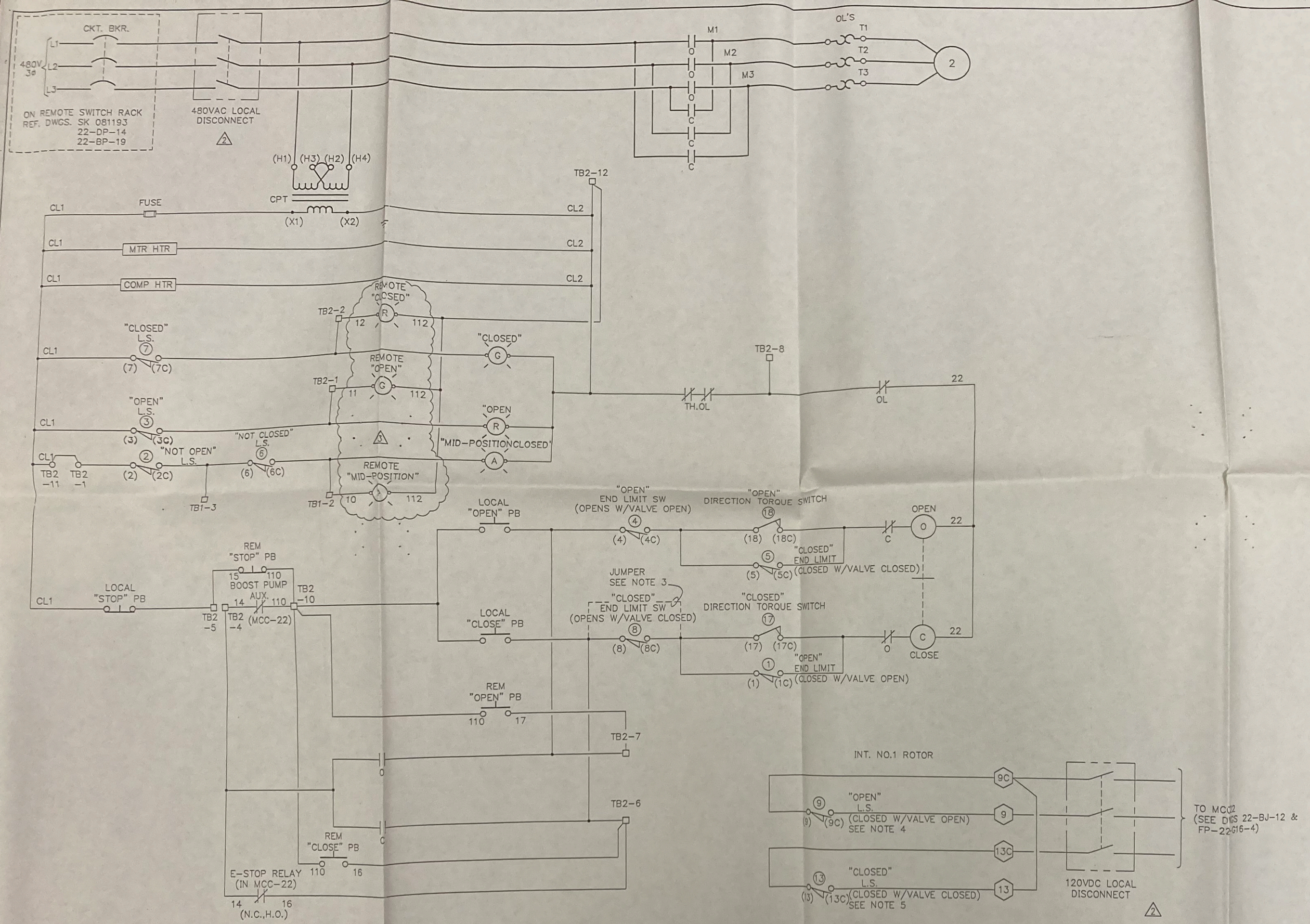
PLT 22–CRUDE BOOSTER PUMP AREA SWRK 22B ELECTRICAL SECTION & DETAILS

APPROVED BY	APPROVED DATE	JOB ESTIMATE	JOB B.M.	BY	DATE	DESCRIPTION	SYMBOL
JAC	4/22/94	PSP-290	4980	ARD	2/28/94	AS-BUILT, ADDED 30-P-368, 30-SP-370	△3
WJT	11/9/93	PSP-305	5129A	JMB	10/22/93	ADD 1 BRKR, 30-SP-369 & 370	△2
WJT	8-13-93	PSP 290	4980	MCC	8-10-93	ADD 2 BRKRS, 30-SP-366, 30-P-367, AS-BUILT	△1
GKA	4-17-92	–	4099A	RDM	3-16-92	ISSUED FOR CONSTRUCTION	△0

REVISIONS

INITIALS–		DATE
DWN. BY	RDM	3-16-92
CKD. BY	GLS	3-30-92
APP'D BY	GKA	4-17-92
CHF. ENGR.		

SCALE: AS NOTED (1=12)
CAD FILE NO. 22DP0001
DRAWING NUMBER: 22-DP-44
REV NO: 3



22MOV121

AT CRUDE BOOSTER PUMP 22R-G2 (INLET)

JEFFREY A. CURTIS
STATE OF WASHINGTON
19449
REGISTERED
PROFESSIONAL ENGINEER
Jeffrey A. Curtis 7/27/94
EXPIRES 10/31/95

NOTES

1. ROTORS INT.1 & INT.2 CAN BE SET AT VALVE POSITION FULL OPEN. FULL CLOSED OR ANY POSITION IN BETWEEN AS INDICATED BY POINT A AND B.
2. TRANSFORMER CONNECTION FOR HIGH VOLTAGE CONNECT H3 TO H2, H1 TO L1 & H4 TO L2. FOR LOW VOLTAGE CONNECT H1 & H3 TO L1.
3. JUMPER OUT LOCAL SWITCH 8 FOR CLOSING VALVE AGAINST TORQUE SWITCH 17.
4. SET LIMIT SWITCH TO CLOSE WHEN (4) OPENS.
5. SET LIMIT SWITCH TO CLOSE BEFORE (8) OR (17) OPENS.

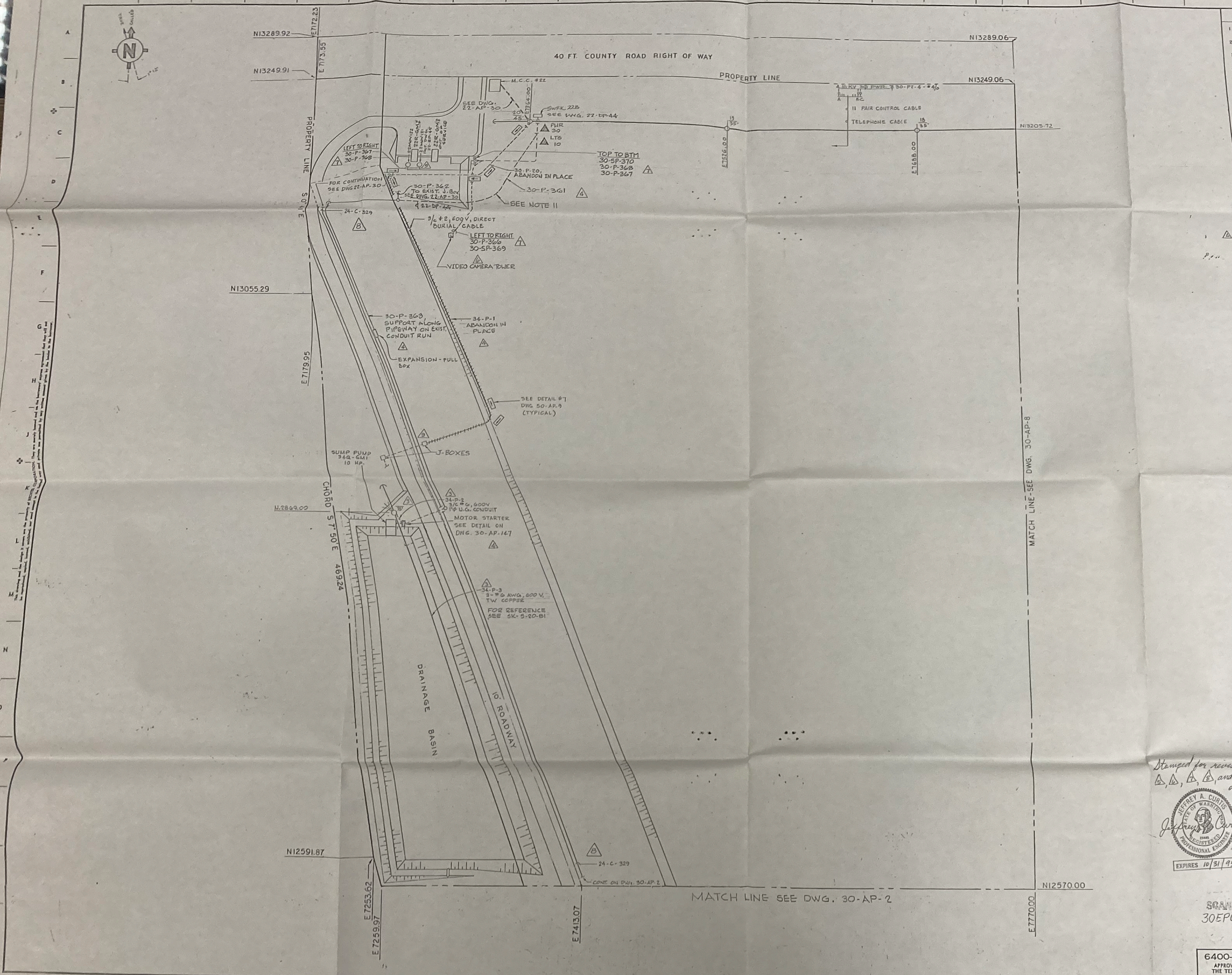
TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

PLANT 22 – WHARF & LOADING 480V MOTOR OPERATED VALVE INLET MOTOR CNTRL SCHEMATIC–22MOV121

BY	DATE	ESTIMATE	B.M.	BY	DATE	DESCRIPTION
JAC	4/18/94		5059	DEH	12/2/93	AS-BUILT
			5059	MCC	11/93	ADDED DISCONNECTS
			5059	DLS	09/16/93	ADDED PUSHBUTTONS, LIGHT
WJT	8/13/93	PSP 290	4980	MCC	8/13/93	ISSUED FOR CONSTRUCTION

APPROVED — JOB — REVISIONS

SYMBOL			
3	INITIALS–	DATE	SCALE NONE
2	DWN. BY DLS	9/16/93	CAD FILE NO. 22DP0007
1	CKD. BY		DRAWING NUMBER 22-DP-47
	APP'D BY		REV NO 3
	CHF. ENGR.		



SIZE A

GENERAL NOTES

1. ALL WOOD POLES, CROSSARMS, & LOG ANCHORS TO BE FULL PENTA-CHLOROPHENOL TREATED.
2. ALL FIELD CUTS ON "PENTA" TREATED WOOD TO BE FULL "PENTA" BRUSHED.
3. ALL OVERHEAD 4160 VOLT LINES TO BE #4/0 P.V.C., MEDIUM HARD DRAWN, STRANDED COPPER WIRE.
4. ALL OVERHEAD WIRE CONNECTIONS TO BE MADE WITH PRESSURE CONNECTORS AND SHALL BE TAPED WITH SCOTCH 33 ELECTRICAL TAPE.
5. ALL OVERHEAD STREET LIGHTING LINES TO BE #6 P.V.C., MEDIUM HARD DRAWN, SOLID COPPER WIRE.
6. UNDERGROUD STREET LIGHTING LINES TO BE 1/C #6 BUTYL RUBBER INSULATED, NEOPRENE JACKETED, DIRECT BURIAL CABLE.
7. UNDERGROUND DIRECT BURIAL CABLE FOR 480 VOLT CIRCUITS TO BE 3/C #2, BUTYL RUBBER INSULATED, NEOPRENE JACKETED.
8. OPEN WIRE 480 VOLT CIRCUITS ON POLES TO BE MINIMUM OF #2/0 P.V.C., MEDIUM HARD DRAWN, STRANDED COPPER WIRE.
9. OPEN WIRE 120/208 VOLT CIRCUITS ON POLES TO BE #4 P.V.C., MEDIUM HARD DRAWN, SOLID COPPER WIRE.
10. PHASE DESIGNATION FOR 4160 VOLT CIRCUITS SHALL BE AS FOLLOWS:
    WHEN ALL THREE CONDUCTORS ARE ON THE SAME SIDE OF THE POLE, PHASE DESIGNATION IS A, B, C READING FROM POLE TOWARD END OF CROSSARM.
    WHEN CONDUCTORS ARE SPLIT WITH ONE ON ONE SIDE OF THE POLE AND TWO ON THE OTHER, PHASE DESIGNATION IS "A" FOR THE SINGLE CONDUCTOR, "B" FOR THE MIDDLE CONDUCTOR, AND "C" FOR THE OUTSIDE CONDUCTOR.
11. ENCASE UNDERGROUND CONDUITS IN RED CONCRETE.

SYMBOLS

○ 20/45'	WOOD POLE	TOP NUMERAL (20) INDICATES POLE Nº. LOWER " (45') " POLE HEIGHT.
○ 14G/40'	GUY STUB POLE	TOP NUMERAL (14G) INDICATES POLE Nº. LOWER " (40') " POLE HEIGHT.
	DOWN GUY WITH EXPANDING ANCHOR.	
	DOWN GUY WITH LOG ANCHOR.	
	OVERHEAD LINE	
	UNDERGROUND CONDUIT OR DUCT	
	DIRECT BURIAL CABLE	
	DEADEND OF OVERHEAD LINE	
△ PWR 30	TRANSFORMER, 3Φ, 4160-480 VOLTS	PWR - DENOTES POWER SERVICE; 30 - INDICATES KVA RATING
△ LTG 15	TRANSFORMER, 3Φ, 4160-120/208 VOLTS	LTG - DENOTES LIGHTING SERVICE
△ LTG 5	TRANSFORMER, 1Φ, 480-120/240 VOLTS	15 (5) - INDICATES KVA RATING
△ ST 2	STREET LIGHTING TRANSFORMER, 25 KW	ST - DENOTES STREET LIGHTING; 2 - INDICATES CIRCUIT Nº.
1-6 IV	INCANDESCENT STREET LIGHT - MAST ARM MTD. ON WOOD POLE	1 - INDICATES CIRCUIT Nº.; 6 - INDICATES LIGHT Nº.; IV - INDICATES REFRACTOR TYPE
1-15	MERCURY VAPOR FLOOD-LIGHT - MAST ARM MTD. ONE WOOD POLE	1 - INDICATES CIRCUIT Nº.; 15 - INDICATES LIGHT Nº.
2-23 II	MERCURY VAPOR STREET LIGHT ON ALUMINUM STD.	2 - INDICATES CIRCUIT Nº.; 23 - INDICATES LIGHT Nº.; II - INDICATES REFRACTOR TYPE
1-29 II	MERCURY VAPOR STREET LIGHT ON GALV. STEEL STD.	1 - INDICATES CIRCUIT Nº.; 29 - INDICATES LIGHT Nº.; II - INDICATES REFRACTOR TYPE
	X-ARM; SECONDARY RACK; AERIAL CABLE	INDICATES POSITION OF CONDUCTORS ON POLES LOOKING IN THE DIRECTION OF THE ARROW.
	CABLE MARKER - SEE DETAIL 7, DWG. 30-AP-9	

REFERENCE DRAWINGS

ELECTRICAL DISTRIBUTION - KEY INDEX PLAN	30-RP-100
ELECTRICAL DISTRIBUTION - 13.8 KV & 4.16 KV FDR. DIAG.	30-AP-90
ELECTRICAL DISTRIBUTION - STREET LTG. PLAN	30-AP-95
ELECTRICAL DISTRIBUTION - ONE LINE DIAGRAM	30-RP-101
ELECTRICAL DISTRIBUTION - SECTION & DETAILS	30-AP-134
CRUDE BOOSTER PUMPS - STATION LAYOUT	22-AP-30

Stamped for revisions 6, 7, 8, and 9 only.

JEFFREY A. CURTIS, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
Jeffrey A. Curtis 7/25/94
EXPIRES 10/31/95

No.	DM	DATE	TEXACO REVISIONS	BY	CHK.		APPROVALS
9	4005A	5/2/94	AS-BUILT POWER TO SUMP PUMP 34-Q-GM1	ARD	MCC		
8	5022	3/28/94	AS-BUILT TO SHOW 24-C-329	DEA	DEL		
7	PSP 230	3/1/94	AS-BUILT PWR. TO MOV'S & VIDEO CAMERA	ARD			
6		10/22/93	ADDED 30-P-367, CHANGED T-77, CHANGED 30-P-366				
5	PSP 230	8/11/92	ADDED 30-SP-366, 30-P-367 & 30-P-368	MCC			
4	EST. 143	10/3/91	ADDED NEW FEEDER TO SUMP PUMP 34Q-GM1				
3	PSP 238	5/20/81	ADD POLE #130 & ELECT. SERVICE				

No.	DATE	REVISIONS	BY	CHK.	DFTG. SUPVR.	ENG'R	CHIEF ENG'R	CLIENT
2		CHANGED 34Q-GM1 FROM 7½ TO 10 HP	DHL					
1	11/21/55	RELOCATED PUMP STA., RESPACED POLES	DHL					
0	12/1/57	ISSUED FOR CONSTRUCTION	DHL					

SCALE 1" = 30' | DESIGNED D.H.L. | DRAWN BGM.

BECHTEL CORPORATION
SAN FRANCISCO

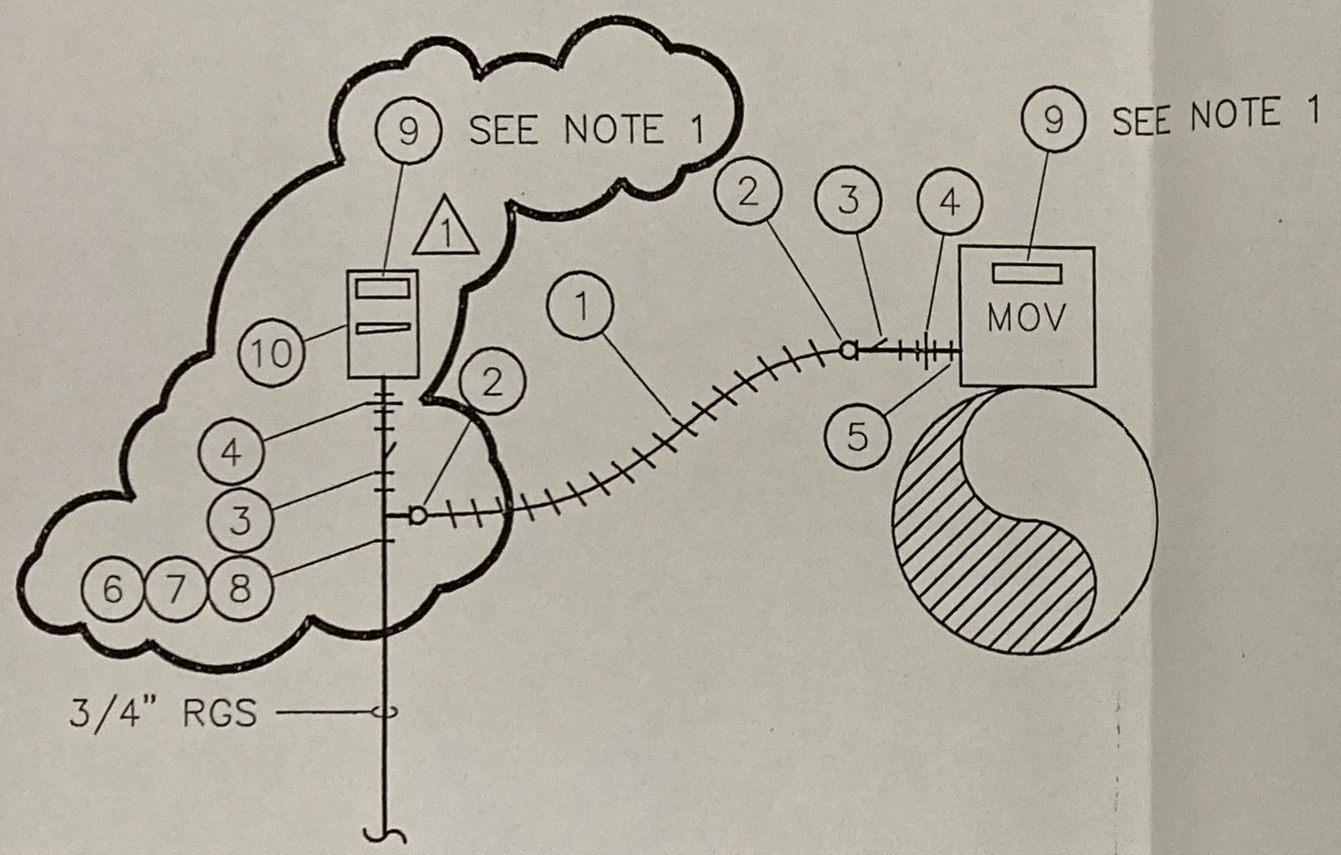
THE TEXAS COMPANY
PUGET SOUND WORKS

ELECTRICAL DISTRIBUTION PLAN
BLOCK I

SCANNED 30EP0050

6400-I APPROVED BY THE TEXAS CO.

BECHTEL	JOB No.	DRAWING No.	REV.
	2525	30-AP-1	10



DETAIL A

TYPICAL FOR 22MOV121 & 22MOV122

REFERENCE DRAWING 22-AP-30

LIST OF MATERIALS	
ITEM #	ITEM DESCRIPTION
1	LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 3/4", TYPE "UA"
2	CONNECTOR, LIQUIDTIGHT, 3/4", STRAIGHT, O-Z/GEDNEY #4Q-75
3	CONDUIT SEAL, 3/4", C-H #EYS3
4	UNION, 3/4", C-H #UNY205
5	REDUCER, 1 1/2"-3/4", C-H #RE52
6	CONDUIT OUTLET BODY, 3/4", C-H #T37
7	CONDUIT OUTLET BODY COVER, C-H #270
8	CONDUIT OUTLET BODY GASKET, C-H #GASK572
9	NAMEPLATE
10	DISCONNECT, 3P, 600V, NEMA 7, HP RATED, WITH LOCKABLE OPERATOR. SQUARE D #KR2

1

NOTES:

1. REFERENCE NAMEPLATE SCHEDULE 22-BP-46.

JEFFREY A. CURTIS
STATE OF WASHINGTON
19475
REGISTERED
PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/27/94

EXPIRES 10/31/95

BY	DATE	ESTIMATE	B OF M	APPROVED
WJT	12/1/93	PSP 290	4980	MCC
WJT	8/13/93	PSP 290	4980	MCC

JOB

SYMBOL	DESCRIPTION	DATE	BY
1	ADD DISCONNECT	11/29/93	MCC
0	ISSUED FOR CONSTRUCTION	8/11/93	

REVISIONS

TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

PLANT 22 - WHARF & LOADING ELECTRICAL INSTALLATION DETAIL 480V MOV FEEDER CONNECTION

INITIALS-		DATE	SCALE: NONE	
DWN BY	MCC	8/11/93	CAD FILE NO. 22BP0005	
CKD BY	RDM	8/13/93	DRAWING NO.	REV NO
APP'D BY	WJT	8/13/93	22-BP-45	1
CHF. ENGR.	-	-		

Appendix B

3.6.0

Bill of Materials 4980 / 5059
Installation of MOV's (Motor Operated Valves)
Crude Booster Pump and Installation of MOV Controls

50-1301-T

Master
File Copy

TEXACO
BILL OF MATERIAL
PUGET SOUND PLANT

B.M. 4980

W.O. 9312387

SHEET 1 of 4

TITLE: RP&S, DOCKLINE CRUDE BOOSTER PUMP, INSTALL MOV'S

CHARGE: PSP 290

MODIFICATION REVIEW CONDUCTED

APPROVAL: WJT JAK

P&ID'S REVISED N/A

REV 0

MASTER DIST.	PM	AMM	AMO	AMT	OPR	PWR	PRO	ER	AWC	LAB	ENG	CA	GMF
		X	X	X	X	X					X	X	X

BM COPIES	REVISIONS	0	6	6	0	0	1	0	0	5	0	0	0	0	
	DRAWINGS	SK 08 11 93	22 - AP - 30	22 - BP - 19	22 - BP - 45	22 - BP - 46	22 - DP - 44	22 - DP - 47	29 - EP - 1 REF	30 - AP - 1	50 - EP - 26 REF	50 - EP - 38 REF	E A G - 0 0 4	E T R - 0 1 1	P L A N T 30 C & C
14	TOTALS	11	10	8	8	8	8	8	8	8	8	8	8	8	8
1	M&C	1	1												
1	STOREHOUSE														
	PF/I&T														
4	PF/I&E	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1	I&E (WEO)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	AF/NS														
	AF/SS														
	AF/OFF PLT														
	AF/SHOPS														
	F/MACH SHP														
	F/MT-BT														
	F/FCU-BoHo														
	F/POLY-ALK														
	F/CRU-HTU														
	F/CPD														
2	F/RP&S	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	INSP DEPT														
1	ENG'R DEPT														
	EQUIP FILE														
	"R" STAMP														
1	RAM	1	1												
1	RAP/I&E														
1	MCC/PWR	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	WJT/PWR	1													

JEFFREY A. CURTIS
STATE OF WASHINGTON
19446
REGISTERED PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/21

10/31/95

Master
File Copy

TEXACO
PUGET SOUND PLANT
BILL OF MATERIAL

BM 4980

WO 9312387

TITLE: RP&S, DOCKLINE CRUDE BOOSTER PUMP, INSTALL MOV,S

CHARGE PSP 290 MADE BY MCC CHECKED BY RDM ISSUE DATE 8 -20- 93

PURPOSE: TO PROVIDE 480VAC POWER TO NEW MOTOR OPERATED VALVES 22MOV121 & 22MOV122 LOCATED AT SOUTH SIDE OF CRUDE BOOSTER PUMP 22R-G2. OVERVIEW OF ELECTRICAL INSTALLATION IS AS SHOWN ON SCOPE SKETCH SK081193.

SCOPE: CONTRACTOR AND/OR PLANT FORCES SHALL PERFORM THE FOLLOWING WORK AS MANPOWER AND MATERIALS BECOME AVAILABLE. THE CONSTRUCTION CREW SHALL NOTIFY MIKE CHRISTY, EXT 717 WHEN WORK IS TO BEGIN. SHOULD QUESTIONS ARISE DURING INSTALLATION, CONTACT POWER DEPARTMENT: MIKE CHRISTY EXT 717, OR BILL TEZAK EXT 537.

CAUTION: TAKE ALL NECESSARY SAFETY PRECAUTIONS WHEN PERFORMING WORK IN VICINITY OF ENERGIZED LINES, AND/OR EQUIPMENT. THIS WORK WILL REQUIRE APPROACHING ENERGIZED LINES, EQUIPMENT & DEVICES WITH VOLTAGES OF UP TO 480V LINE-TO-LINE AND UP TO 480V LINE-TO-GROUND.

1. LOCATE EXISTING ELECTRICAL EQUIPMENT RACK AT EAST SIDE OF POLE 20 (REFERENCE DRAWING 30-AP-1). ROUTE (2) 1" RGS CONDUITS (30-SP-366 & 30-P-367) BELOW GRADE FROM SOUTH SIDE OF EQUIPMENT RACK PAD TO EAST SIDE OF CRUDE BOOSTER PUMP AREA AS SHOWN ON DRAWINGS 22-DP-44, 22-AP-30, 30-AP-1 & 50-EP-26.

2. POUR RED CONCRETE AND BACKFILL DUCT BANK EXCAVATION PER TEXACO GEMS A-1P9.

3. INSTALLATION OF ITEMS AT EQUIPMENT RACK SHALL BE AS FOLLOWS (REFERENCE DRAWING 22-DP-44):

A. MOUNT (2) 480V, 15AT, 100AF, NEMA 3R CIRCUIT BREAKERS AND ENCLOSURES ON ELECTRICAL EQUIPMENT RACK (FIELD SHALL SUPPORT EQUIPMENT AS REQUIRED).

B. INSTALL 3/4" CONDUIT HUB ON EXISTING 480V BUS BOX AND ROUTE 3/4" CONDUIT AND/OR NIPPLES BETWEEN BUS BOX AND MOV CIRCUIT BREAKER ENCLOSURES.

C. INSTALL 3/4" CONDUIT HUB ON 22MOV121 CIRCUIT BREAKER ENCLOSURE AND ROUTE 3/4" RGS CONDUIT TO A 1"-3/4" CONDUIT REDUCER, 1" COUPLING AND 1" SEALING FITTING ON 30-P-367.

D. 30-SP-366 SHALL BE FITTED WITH A 1" COUPLING AND PLUG WHERE IT TRANSITIONS ABOVE GRADE.

E. EXISTING #4 STRANDED BARE COPPER GROUNDING CONDUCTOR SHALL BE BONDED TO 30-P-367 WITH GROUNDING CONNECTOR (UL LISTED FOR GROUNDING).

4. INSTALLATION OF ITEMS AT CRUDE BOOSTER PUMP AREA SHALL BE AS FOLLOWS (REFERENCE DRAWINGS 22-AP-30 AND 22-BP-45, 30-AP-1):

A. INSTALL 1" SEALING FITTING WITH DRAIN ON 30-P-367 WHERE IT TRANSITIONS ABOVE GRADE. INSTALL 1"-3/4" CONDUIT REDUCER AND ROUTE 3/4" CONDUIT TO 22MOV121 AS SHOWN ON DRAWING 22-AP-30, FROM A "TEE" FITTING NEAR 22MOV121 ROUTE 30-P-368 TO 22MOV122 (FIELD SHALL SUPPORT CONDUIT AND ROUTE AS REQUIRED). INSTALLATION DETAIL SHOWING LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND SEALING FITTINGS FOR 480V FEEDER CONNECTION TO MOV'S IS SHOWN ON DRAWING 22-BP-45.

B. 30-SP-366 SHALL BE FITTED WITH A 1" COUPLING AND PLUG WHERE IT TRANSITIONS ABOVE GRADE.

5. PULL IN AND TERMINATE CONDUCTORS PER DRAWINGS 22-BP-19, 22-DP-47 AND PLANT 30 CONDUIT AND CONDUCTOR SCHEDULE.

6. INSTALL NAMEPLATES ON 22MOV121, 22MOV122 AND ASSOCIATED CIRCUIT BREAKER ENCLOSURES PER DRAWINGS 22-BP-45, 22-BP-46, 22-BP-44 AND 50-EP-38.

7. ALL WIRE AND CABLE SHALL BE MEGGER TESTED PER TEXACO GEMS #L-1P9 ITEM #14.3 WIRING, AND ELECTRICAL ACTIVITY GUIDE EAG-004. RECORD RESULTS ON ELECTRICAL TEST REPORT FORM ETR-011.

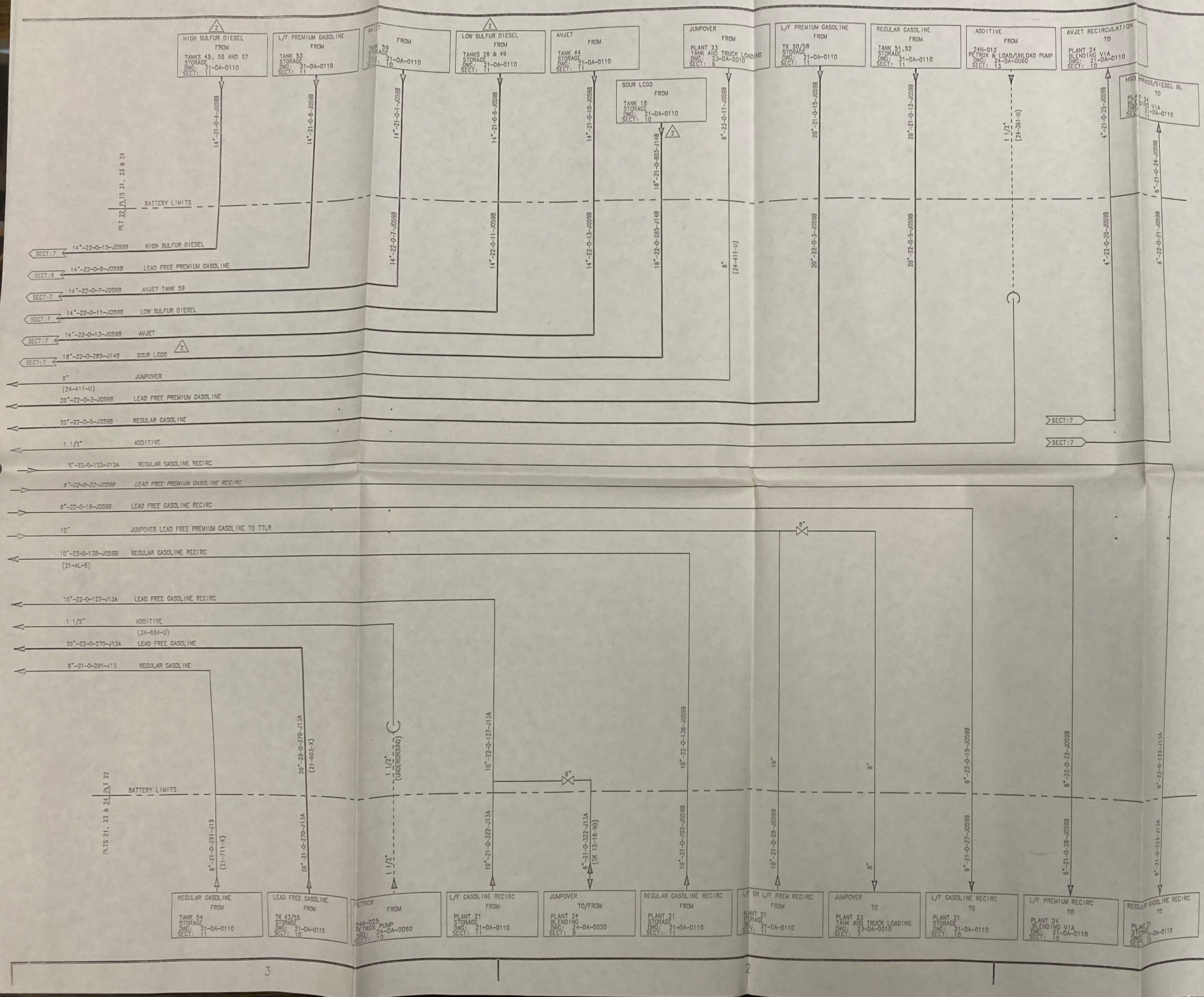
8. UPON COMPLETION OF PROJECT, ALL WORK WILL BE INSPECTED AND TESTED BY A TEXACO PSP REPRESENTATIVE AND AS-BUILT DRAWINGS SHALL BE RETURNED TO TEXACO PSP POWER DEPARTMENT.

50-1304-T

TEXACO
PUGET SOUND PLANT
BILL of MATERIALS

B of M 4980
SHEET 4 OF 4

ITEM	QUAN	DESCRIPTION	FURNISHED BY
1	1	CIRCUIT BREAKER, 480V, 15AT, 100AF, 3 POLE, NEMA TYPE 12/3R ENCLOSURE, SQUARE "D" #FAL34015 AND #FA100AWK ENCLOSURE WITH EQUIPMENT GROUND BAR	RA34411301B
2	2	SEALING FITTING, 1", W/DRAIN, C-H #EYD3	I & E
3	2	SEALING FITTING, 3/4", C-H #EYS2	I & E
4	6FT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 3/4", TYPE "UA"	I & E
5	4	CONNECTOR, LIQUIDTIGHT, 3/4", STRAIGHT, O-Z/GEDNEY #4Q-75	I & E
6	1	GROUND CONNECTOR, 3/4", UL LISTED FOR GROUNDING, BURNDY #GAR144C	I & E
7	5	HUB, 3/4", MYERS #ST-2	I & E
8	2	CONDUIT PLUG, 1", SQUARE HEAD, C-H #PLG35	I & E
9	1	CONDUIT BODY, 3/4", FORM 7, C-H #T27	I & E
10	2	CONDUIT BODY, 3/4", FORM 7, C-H #LB27	I & E
11	3	CONDUIT BODY COVER, 3/4", FORM 7, C-H #270	I & E
12	3	CONDUIT BODY GASKET, 3/4", FORM 7, C-H #GASK572	I & E
13	2	REDUCER, 1 1/2"-3/4", C-H #RE52	I & E
14	2	REDUCER, 1"-3/4", C-H #RE32	I & E
15	200FT	CONDUIT, 1", TYPE RGS	I & E
16	60FT	CONDUIT, 3/4", TYPE RGS	I & E
17	150FT	WIRE, #12 AWG COPPER, GREEN, 600V TYPE THWN	I & E
18	1000FT	WIRE, #12 AWG COPPER, BLACK, 600V TYPE THWN	I & E



EQUIPMENT LIST

EQUIPMENT NO.	DESCRIPTION	SECTION
22R-G2	CRUDE BOOSTER PUMP	14
22R-G3	CRUDE BOOSTER PUMP	13
22R-G6	BUNKER FUEL OIL PUMP	11
22R-G7	DIESEL / AVJET PUMP	9
22R-G8	DIESEL / AVJET PUMP	8
22R-G9	DIESEL PUMP	7
22R-G10	PREMIUM GASOLINE PUMP	6
22R-G11	REGULAR GASOLINE PUMP	5
22R-G20	LEAD FREE GASOLINE PUMP	4

Stamped for revision 5 only.

JEFFREY A. CURTIS — STATE OF WASHINGTON — 15445 — REGISTERED PROFESSIONAL ENGINEER

Jeffrey A. Curtis 7/27/94

EXPIRES 10/31/95

NOTES

1. UTILITIES ARE CONTINUED TO THE FOLLOWING DRAWINGS:
   -ONSHORE UTILITIES.....22-DA-0010
   -OFFSHORE UTILITIES.....22-DA-0030
2. INSTRUMENT TAG NUMBERS ARE PRECEDED BY THE PLANT NUMBER UNLESS OTHERWISE INDICATED.
3. DESIGN DATA INDICATES EQUIPMENT MAWP UNLESS NOTED WITH A LEADING *.
4. HIGH / LOW POINT DRAIN VALVES, DRAIN VALVES AT CONTROL STATIONS AND INSTRUMENT ROOT VALVES REQUIRED BY GEMS ARE NOT SHOWN.
5. SHIPPING PUMP EMERGENCY STOPS LOCATED AT BERTHS 1, 2 & 3 INTERCONNECT VIA TELEPHONE CABLE.
6. SEE DRAWING 22-AP-21 FOR WIRING DIAGRAM DETAIL OF TORQUE SWITCH CONTROL CIRCUIT INTERRUPTS.

REFERENCE DRAWINGS

DWG NO.	TITLE
22-AL-8	PIPING PLAN AT SHIPPING PUMPS

REDRAWN P&ID's

22-RA-2	WHARF LOADING FACILITIES

SYM	DATE	BM NUMBER	REVISIONS	BY	CHK'D BY	TEXACO APPV'D
5	9/10/93	5059	ADDED MOV121 AND MOV122 – WO9313410	EW	DEL	JAC
4	8/24/93		SDF PROJECT EST 9169 ISSUED AS BUILT	RBB	RPK	
3	6/1/93		UPDATE CONTINUATION BOXES	RBB	TCW	CKM
2	10/9/92		ISSUED APPROVED	TCW	TCW	FAS

TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

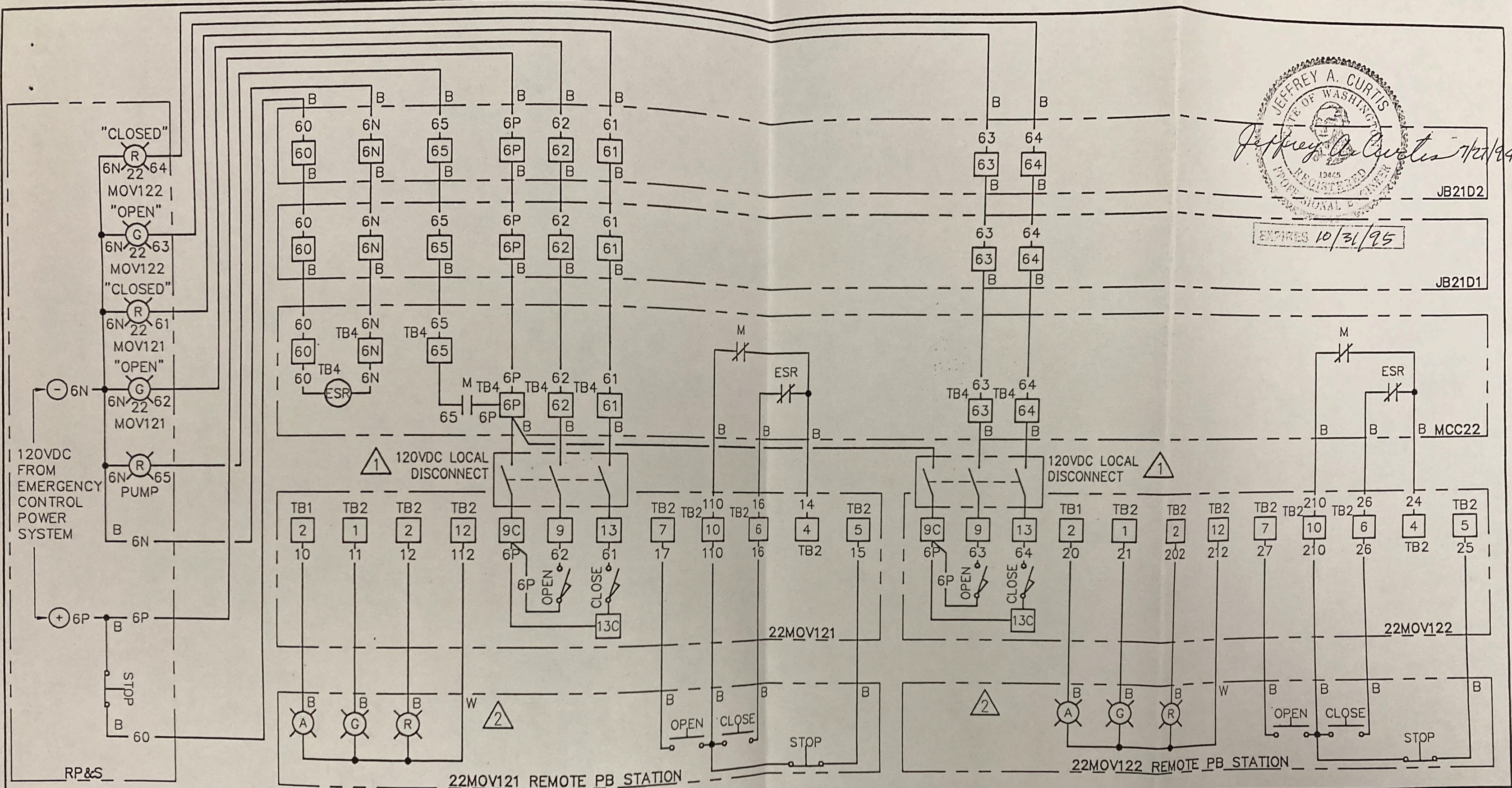
WHARF AND LOADING FACILITIES PIPING AND INSTRUMENT DIAGRAM PRODUCT SHIPPING PUMPS

INITIALS		DATE	SCALE NONE	
DWN. BY	JDT	4/15/92	CAD FILE NO. 22DA0021	
CKD. BY	RPK	4/15/92	DRAWING NUMBER	REV NO.
APP'D BY			22-DA-0020 FR.1	3
CHF. ENGR.				

ACAD File: 22DA0021
Last Edit: 03/21/94 15:52

22-DA-0020 FR-1


"A" ANCHOR
SUMP AT "A" ANCHOR
22R-G2
CRUDE BOOSTER PUMP
PSP- 2440
NORMAL FLOW: 16900 GPM
RATED FLOW: 12250 GPM
DIFF. HEAD: 161 FT
22R-GM2
CRUDE BOOSTER PUMP MOTOR
PSP: 2441
RATED POWER: 500 HP
22R-GM3
CRUDE BOOSTER PUMP MOTOR
PSP: 550
RATED POWER: 500 HP
CRUDE OIL
840 BUNKER (BFO)
MTBE/FLUSHING CRUDE OIL
LEAD FREE GASOLINE
MTBE/REGULAR GASOLINE
LEAD FREE PREMIUM GASOLINE
LOW SULFUR DIESEL (LINE #3)
AVJET (LINE #2)
AVJET (LINE #1)
HIGH SULFUR DIESEL (LINE #1)
MTBE
SLOPS
(UNDERGROUND TYP.)
CATHODIC PROTECTION
BLENDING CONTROL ROOM
START/STOP
REMOTE
AT MOV
22R-G2
22R-G3
15
14
13
TITLE: PRODUCT SHIPPING PUMPS
DWG#: 22-DA-0020 FR.5
ACAD File: 22DA0025
Last Edit: 03/21/94 11:50



JEFFREY A. CURTIS
STATE OF WASHINGTON
13425
REGISTERED
PROFESSIONAL ENGINEER
Jeffrey A. Curtis 7/27/94
EXPIRES 10/31/95

NOTES:

1. PERMANENTLY LABEL WIRES USING RAYCHEM TMS SLEEVE SYSTEM (TYPEWRITTEN) OR TEXACO APPROVED EQUAL.
2. PANDUIT #PV18-6F (OR TEXACO APPROVED EQUAL) CRIMP CONNECTORS REQUIRED WHEN TERMINATING WIRES TO FIELD TERMINAL BLOCKS (EXCLUDING J-BOX) WIRE MUST EXTEND 4"-6" FROM THE TERMINAL BLOCK BEFORE LANDING TO INSURE ADEQUATE WORKING ROOM.
3. SEE DWGS. #22-DP-47, #22-DP-48 & #22-DA-0020.

BY	DATE	ESTIMATE	B OF M
APPROVED		JOB	
JAC	4/18/94		5059
			5059
			5059
			5059

NUMBER	DESCRIPTION	DATE	BY
	REVISIONS		
3	AS BUILT	4/15/93	MCC
2	CHANGED LIGHT COLORS	12/2/93	DEH
1	ADDED DISCONNECTS	11/93	MCC
0	ISSUED FOR CONSTRUCTION	9/15/93	EW

TEXACO REFINING & MARKETING INC.
PUGET SOUND PLANT
ANACORTES, WASHINGTON

PLANT 22 - WHARF & LOADING INTERCONNECTION DIAGRAM MOV121 & MOV122 PB STATIONS

INITIALS-	DATE	SCALE: NONE	
DWN BY EW	9/15/93	CAD FILE NO. 22BJ0004	
CKD BY		DRAWING NO.	REV NO
APP'D BY		22-BJ-12	3
CHF. ENGR.			

Third floor dehumidifi