STRATEGIC PETROLEUM RESERVE

ENGINEERING CHANGE PROPOSAL

SUMMARY SHEET
CLASS I CHANGE

ECP NUMBER SJ-M/O-4655	TITLE Sugarland Terminal LoCap to B.C. Meter Connection
BUDGET SOURCE	AUTHORITY ☒ PCCB ☐ ECC

☐ SPR BLI _____

☐ CONTRACTOR BASELINE

☐ BCR

☐ OTHER

SCHEDULE

☐ YES

MILESTONE NUMBER _____

CMCR NUMBER _____

☐ NO

TOTAL ESTIMATED COST OF CHANGE

	FY ___	FY ___	FY ___
DESIGN			
CONST. MNGMT.			
CONSTR./M&O			
GFE:			
LOE:			
TOTAL			

PCCB / ECC SIGNATURES	DISPOSITION CONCUR	NON CONCUR	DATE	COMMENTS CONDITIONS / LIMITATIONS
DOE SENIOR SITE OFFICIAL				
APM TECHNICAL ASSURANCE	✓		4-9-13	
APM SYSTEMS AND PROJECTS	✓		4/9/13	
APM MAINTENANCE AND OPERATIONS	✓		4/9/13	
for Helen A. Wormhoudt APM MANAGEMENT AND ADMINISTRATION	✓		4/9/13	
DEPUTY PROJECT MANAGER				
DOE CMO				
PROJECT MANAGER				
DEPUTY ASSISTANT SECRETARY -SPR				

PCCB / ECC ACTION

☒ FULL APPROVAL ☐ CONDITIONAL / LIMITED APPROVAL ☐ DISAPPROVAL

NUMBER: SJ-M|O-4655
TITLE: **Sugarland Terminal LoCap to B.C. Meter Connection**

EXECUTIVE SUMMARY:

Business opportunity exists to increase flow rates to LoCap and allow simultaneous movements to barges for loading. A connection from the Bayou Choctaw Meters to LoCap would allow increased flowrates to LoCap and simultaneous use of the Weeks Island meter for barge loading thus increasing overall volume transfer at facility.

IMPLEMENTATION PLAN:
Installation of Meter Connection to be completed by Shell Distribution's Project Engineering Group following industry and company standards and processes. Project design to be completed by Worley Parson's Engineering. Contractors will be selected by bidding process, but must meet Shell's stringent safety requirements before being allowed to bid. A databook will be created for the project which will include detailed documentation of the project design, equipment installed and applicable drawings and specifications followed.

IMPLEMENTATION COST:

DESIGN: .3 M
CONSTRUCTION: 1 M

TOTAL: 1.3 M – project to be paid for by Shell

LIFE CYCLE COST:

IMPACT SUMMARY:

LEVEL I, II, III CRITERIA:

CONTRACT COMPLETION DATES:

CODES, REGULATIONS, PERMITS, ETC.:

GFE:

SAFETY, ENVIRONMENTAL, FIRE PROTECTION SYSTEMS, SECURITY:

SCHEDULES:

STRATEGIC PETROLEUM RESERVE

WR #

ENGINEERING CHANGE PROPOSAL

ECP NUMBER	ECP TITLE	
SJ-M\0-4655	**Sugarland Terminal LoCap to B.C. Meter Connection**	PAGE 1 OF 6

CONTRACTOR CHANGE NO./REV.	INITIATED BY	DATE	SUBMITTED BY	DATE
	Moises Martinez	**1/14/2013**		
PRIORITY	ORG./CONTRACTOR	PHONE NO.	ORG./CONTRACTOR	PHONE NO.
☐ EMERGENCY	**Shell Pipeline Co.**	**713-241-1850**		

VALUE ENGINEERING	DRAWDOWN CRITICAL	ROM ESTIMATE
☐ VEP (MANDATORY)	☐ YES	_____
☐ VECP (VOLUNTARY)	☐ NO	

☐ URGENT

☒ ROUTINE

DESCRIPTION:

PROBLEM / EXISTING CONFIGURATION:

Current meter configuration prevents flow to LoCap when barge loading is taking place and vice versa. Currently, LoCap is limited to metering through the Weeks Island Meter as is the line used for barge loading.

PROPOSED SOLUTION / ENHANCEMENT:

A connection from the Bayou Choctaw Meter to the Weeks Island Meter outlet to LoCap would allow simultaneous barge loading and LoCap movements as well as an increased flow rate to LoCap due to the higher capacity of the Bayou Choctaw Meters.

The LoCap Line will require integrity meter installation since HCC will lose ability to monitor off LoCap Tank with increased flow rates.

- Installation of 110 feet of pipe plus fittings from the other branch of the tee to the downstream of the WI meter which goes to the LoCap line. Hydrostatic testing will be completed on the line upon installation.
- Installation of one DBB valve on BC meter side and one DBB valve at the WI tie-in side.
- Installation of up to three required pipe supports. Pipe support will be up to 20' deep w/ 30" dia drilled shaft foundation till 12" above ground, then steel wide flange column with steel wide flange beam on top of the column below the pipe (T support).
- Installation of a Flexim Ultrasonic Meter/Flow Computer on LoCap Line.
- Installation of 2-1000 ft segments of 1 in. conduit and wire for Flexim meter @ LoCap end of tie. (2-pr analog/digital IO, 1-3/c #12 power for transmitter).
- Installation of 2- 300 ft. segments of 1 in conduit and wire for each motor operated valve at metering skid (1-9/c #16 for controls and 1-4/c #10 for power).

See attached drawings for plot plans and design details.

REASON / JUSTIFICATION:

Proposed changes will aid in debottlenecking efforts at terminal thus increasing capacity for increased flowrates and multiple product movements in the future.

CI'S AFFECTED

TECHNICAL ANALYSIS/RECOMMENDATION	IMPLEMENTATION METHOD
	☐ SUBCONTRACT ☐ M&O LABOR (LOE) ☐ COMBINATION

ENGINEERING	DATE	DOE SSR	DATE
			☐ CONCUR ☐ NONCONCUR

STRATEGIC PETROLEUM RESERVE
ENGINEERING CHANGE PROPOSAL
CONFIGURATION CHANGE AFFECTED REPORT

WR #

TO BE COMPLETED BY TECHNICAL REVIEW PROCESS, ENGINEERING AND CONFIGURATION MANAGEMENT ORGANIZATION DEFINED PROCESS

ECP NO.	CONRACTOR CHANGE NO.	REV.	CHANGE CLASSIFICATION ☐ CLASS I ☐ CLASS II
SJ-M10-4655			

FUNCTIONS AFFECTED

YEES/NO	ITEM
YES	LEVEL I ☐ LEVEL II ☐ CRITERIA
NO	PERFORMANCE CRITERIA
NO	RAM
NO	INTERFACE CHARCTERISTICS
NO	I/O POINTS
NO	DOE LEVEL I, II, III SCHEDULES
NO	GUARANTEES/DELIVERABLES
NO	SAFETY/ENV/FP (CIRCLE ONE)
NO	SECURITY REQUIREMENTS
NO	OPCS SOFTWARE
NO	OPCS HARDWARE
NO	OPCS FIRMWARE
NO	SETPOINTS/RANGES
NO	DIP SWITCH SETTINGS/JUMPERS
NO	MASTER CI LIST
NO	WELLHEAD CONFIGURATION
NO	SPARES/ROVISIONING REQUIREMENTS
NO	GOVERNMENT FURNISHED EQUIPMENT
NO	ENERGY USAGE
NO	OPERATIONS MODESL
NO	OTHER

DOCUMENTS AFFECTED

YES/NO	ITEMS
	PIPING
YES	101 - PROCESS FLOW DIAGRAMS
YES	102 - MECHANICAL FLOW DIAGRAMS
NO	103 - PIPING AND INSTRUMENTATION DIAGRAMS (P&ID'S)
YES	104 - UTILITY FLOW DIAGRAMS
YES	105 - GENERAL PIPING PLANS
NO	106 - AREA PLANS (MECHANICAL EQUIPMENT LOCATION)
NO	122 - WELL HEAD DRAWINGS
YES	130 - VALVE LIST
NO	135 - LINE LIST
NO	140 - PSV LIST
NO	150 - STANDARDS
	CIVIL/STRUCTURAL
NO	201 - PLOT PLANS
NO	202 - SITE WORK: GRADING (ROUGH & FINISH) DRAIN FENCING
NO	210 - FOUNDATIONS: LOCATION PLANS
NO	216 - MINES (WEEKS ISLAND ONLY)
NO	250 - STANDARDS
	ELECTRICAL
NO	301 - AREA CLASSIFICATION
YES	302 - ONE LINE DIAGRAMS
NO	303 - SCHEMATIC DIAGRAMS
NO	304 - POWER PLANS AND DETAILS
NO	305 - LIGHTING PLANS AND DETAILS
NO	307 - SUBSTATION PLANS AND DETAILS
NO	308 - WIRING DIAGRAMS
NO	310 - GROUNDING
YES	311 - CONDUIT & CABLE SCHEDULES (INCLUDING INST.)
NO	313 - MCC/SWITCH GEAR EVALUATION & SCHEDULE

DOCUMENTS AFFECTED

YES/NO	ITEM
	ELECTRICAL (cont'd)
NO	315 - CATHODIC PROTECTION
NO	350 - STANDARDS
	INSTRUMENTATION
NO	401 - BLOCK DIAGRAM
NO	402 - LOOP DIAGRAMS
NO	403 - INSTRUMENT PLANS
NO	404 - INSTRUMENT WIRING DIAGRAM
NO	409 - INSTRUMENT INDEX
NO	450 - STANDARDS
	MAPPING
NO	501 - ALIGNMENT SHEETS
NO	509 - PIPELINE DRWGS (MAINLINE VALVES, DRIPS, SCRAPER, TRAPS, ETC.)
NO	550 - STANDARDS
	ARCHITECTUAL
NO	720 - ELEVATIONS AND FLOOR PLANS
NO	750 - STANDARDS
	DOCUMENTATION
NO	900 - RESERVED
NO	901 - TECHNICAL/PERFORMANCE/DESIGN CRITERIA
NO	910 - DESIGN DESCRIPTION/BASIS
NO	911 - PROCESS SET POINT DOCUMENTS
YES	912 - EQUIPMENT LIST
YES	913 - MOV LIST
NO	915 - ELECTRICAL SAFETY
NO	920 - I/O DOCUMENT
NO	930 - OPERATIONS MANUALS
NO	930 - MAINTENANCE MANUALS
NO	950 - STANDARD SPECIFICATIONS
NO	970 - TASK SPECIFICATIONS
NO	990 - CONFIGURATION MANAGEMENT REPORTS/I.B.M.

COMENTS:

ENGINEERING DATE

CONFIGURATION MANAGEMENT DATE

STRATEGIC PETROLEUM RESERVE

WR #

ENGINEERING CHANGE PROPOSAL

SOFTWARE, HARDWARE, FIRMWARE CHANGE

CONTRACTOR CHANGE NUMBER	REVISION NUMBER	ECP NUMBER SJ-M/O-4655	PAGE 3 OF 6

SOFTWARE CHANGE ANALYSIS	HARDWARE/SOFTWARE AFFECTED (NOTE: REDLINE CI BOM)

DISPOSITION OF PARTS

☐ REWORK SITE COMPONENTS ONLY ☐ REWORK ALL SITE COMPONENTS ☐ COMPONENTS NOT AFFECTED

☐ OTHER (DESCRIBE)

COMPONENT COMPATIBILITY (LIST COMPONENTS SEPERATELY IF COMPATIBILITIES ARE DIFFERENT)

☐ INTERCHANGEABLE ☐ DRAWDOWN COMPATIBLE ☐ NONCOMPATIBLE

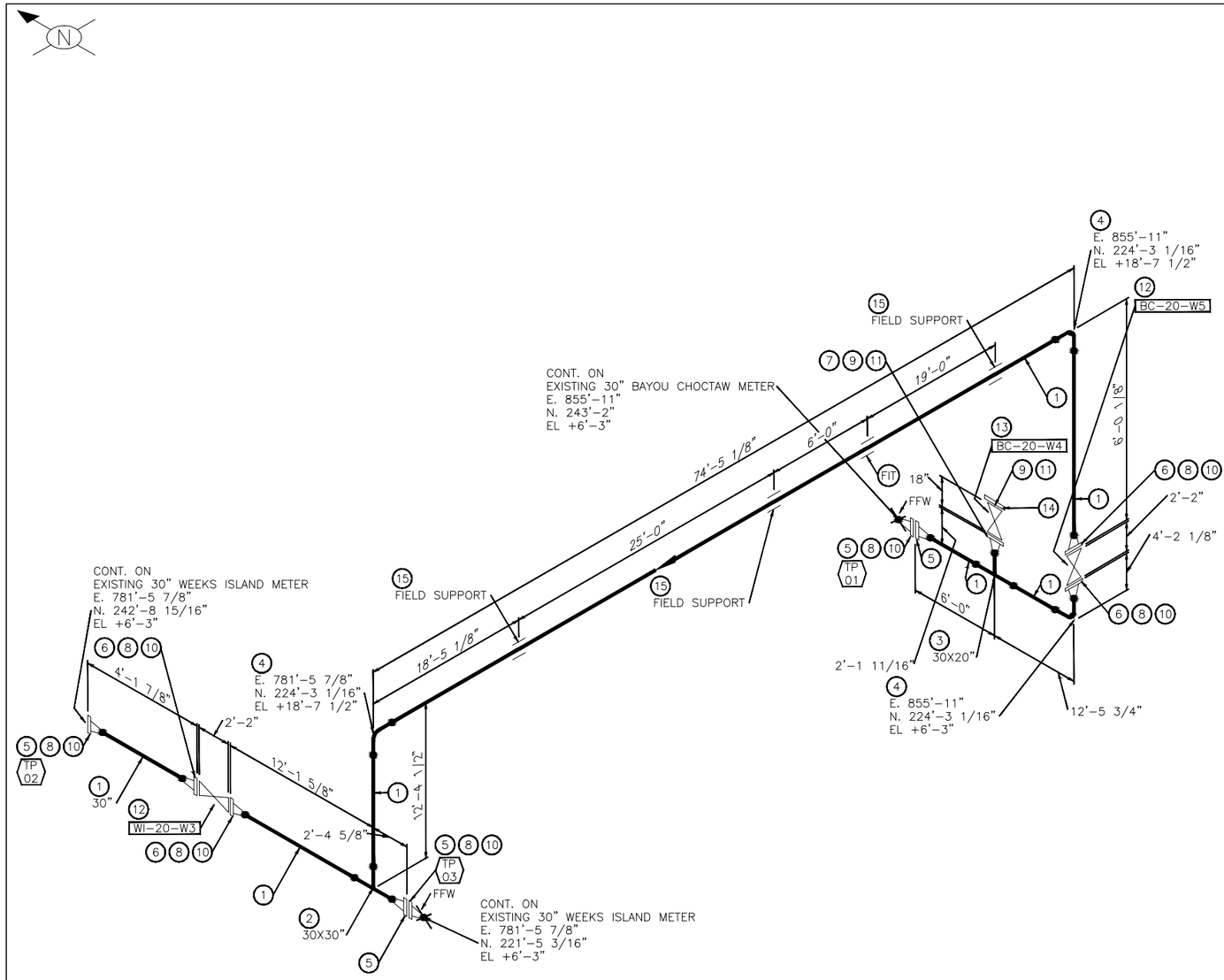
OPCS SUPPORT ENGINEER DATE FUNCTIONAL MANAGER DATE

IMPLEMENTATION / TEST COMMENTS

WITNESSED BY	DATE

TEST APPROVED BY	DATE	CHANGE RELEASE AUTHORITY	DATE

W:\E&C_STDS\FORMS\ECP.DOT



SHOP MATERIALS

BILL OF MATERIAL

PT NO	SIZE	DESCRIPTION	TAG	QTY
	PIPE			
1	30	PIPE, BE, SMLS, SCH STD, ASME B36.10, ASTM A106 GR B		99'2"
	FITTINGS			
2	30X30	TEE, STR, BW, SMLS, SCH STD, ASME B16.9, ASTM A234 GR WPB		1
3	30X20	TEE, REDUCING, BW, SMLS, SCH 40, ASME B16.9, ASTM A234 GR WPB		1
4	30	ELBOW, 90 DEG, LR, BW, SMLS, SCH STD, ASME B16.9, ASTM A234 GR WPB		3
	FLANGES			
5	30	FLANGE, RFWN, CL150, SCH STD BORE, ASME B16.5, ASTM A105-N		5
6	30	FLANGE, RFWN, CL150, SCH 40 BORE, ASME B16.5, ASTM A105-N		4
7	20	FLANGE, RFWN, CL150, SCH STD BORE, ASME B16.5, ASTM A105-N		1

FIELD MATERIALS

BILL OF MATERIAL

PT NO	SIZE	DESCRIPTION	TAG	QTY
	GASKETS			
8	30	GASKET, CL150, 1/8" THK RF, 316 SS GRAPHOIL FILLED, CS CENTERING RING, 316 SS INNER RING, ASME B16.20		7
9	20	GASKET, CL150, 1/8" THK RF, 316 SS GRAPHOIL FILLED, CS CENTERING RING, 316 SS INNER RING, ASME B16.20		2
	BOLTS			
10	1 1/4X7 1/2	STUD BOLTS, CL150, ASTM A193 GR B7, FLUOROPOLYMER COATING, W/ (2) HEX HEAD NUTS EA., ASTM A194 GR 2H, ASME B16.5		196
11	1 1/8X6 3/4	STUD BOLTS, CL150, ASTM A193 GR B7, FLUOROPOLYMER COATING, W/ (2) HEX HEAD NUTS EA., ASTM A194 GR 2H, ASME B16.5		40
	VALVES / IN-LINE ITEMS			
12	30	VALVE, KNIFE GATE, RF, CL150, GO, THROUGH CONDUIT, API 6D	WI-20-W3	2
13	20	VALVE, KNIFE GATE, RF, CL150, GO, THROUGH CONDUIT, API 6D	BC-20-W4	1
14	20	FLANGE, BLIND, RF, CL150, ASME B16.5, ASTM A105-N		1
	SUPPORTS			
15	30	1.00-2 ANCHOR		3

± = FIELD TO VERIFY DIMENSION.

FFW = FIELD FIT WELD, SHOP TO ADD 6" FOR FIELD TRIM.

NOTES:

1. ALL SOCKET WELD AND SCREWED PIPING IS ASSUMED TO BE FIELD FABRICATED, UNLESS NOTED OTHERWISE. FABRICATOR TO VERIFY ALL CRITICAL FIT DIMENSIONS.
2. FIELD TO VERIFY ROUTE AND DIMENSIONS PRIOR TO FABRICATION OF LINE.

REV	DATE	DESCRIPTION	BY	CHK	ENG	APVD
01	11/12	ISSUED FOR CLIENT REVIEW	CJ		SK	JA
A	11/12	ISSUED FOR SQUAD CHECK	SW		SK	MO

STATUS:

LINE NO: 30"-0001-A

X-RAY: | PWHT: | SEAL WELD: | STRESS ANALYZED:

PAINT SPEC: | MIN HYDRO TEST: PSIG | PIPING SPEC: A

INSULATION
THK:
TYPE:
TRACER:

OPERATING: PSIG @ °F

DESIGN: PSIG @ °F

WorleyParsons resources & energy

PROJ. NO: 00203

CLIENT: SHELL

PROJECT: LOCAP

LOCATION: ST. JAMES, LOUISANA

REFERENCE P&ID DWG: NA

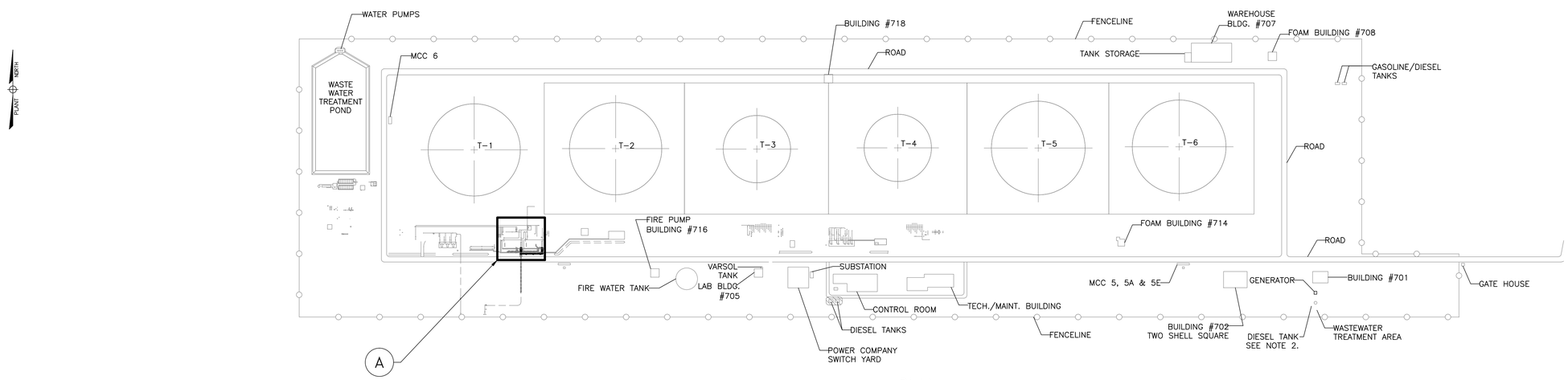
SERVICE:

DWG NAME: 30"-0001-A

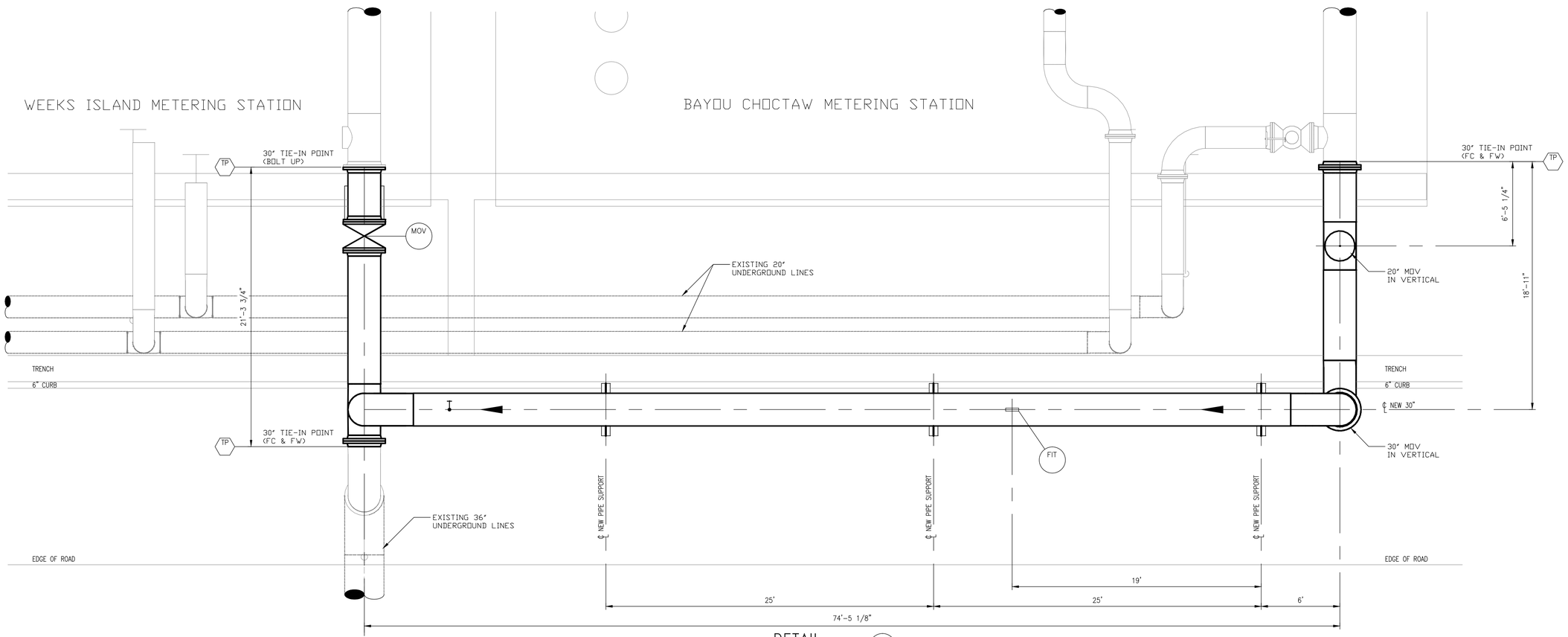
SHT. NO. 1 / 1

REV: 01

ACAD FILE NAME: 30_-0001-A.DWG



PLAN
SCALE 1" = 200'-0"



DETAIL A
SCALE 1/4" = 1'-0"

X:\Shell\08203\Model\SD-100443.dwg plotted on Nov 29, 2012 - 10:37am

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WorleyParsons resources & energy

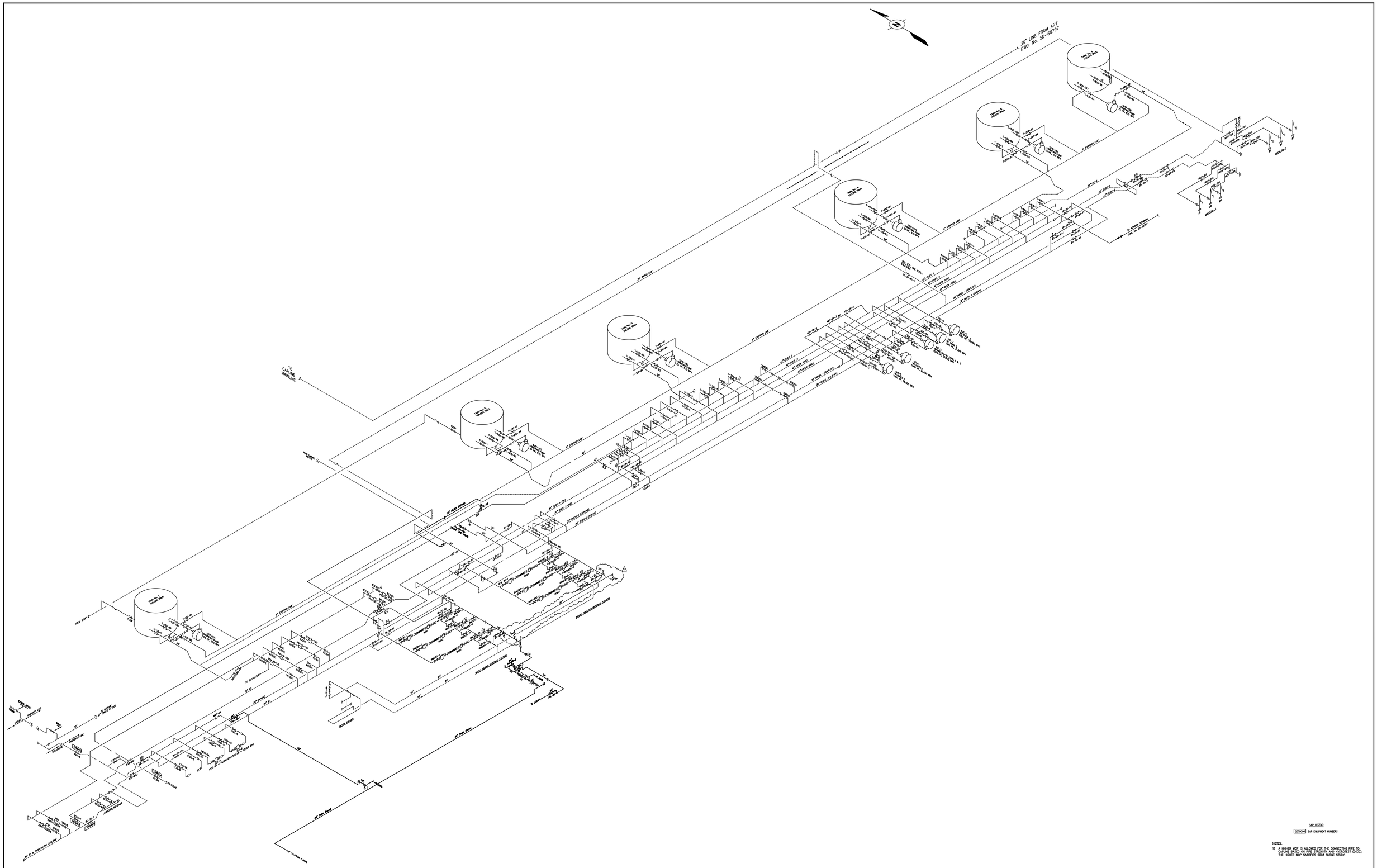
REVIEWED BY:	DATE	REV	DESCRIPTION	BY	CHKD	APP'D
PROJ ENGR						
ENGR						
OPR						
CONST	11/12	01	ISSUED FOR CLIENT REVIEW	CJ	RB	JA
HS&E	11/12	A	ISSUED FOR SQUAD CHECK	CJ	RB	MO

RELEASED ONLY FOR:	PROJ. ENGR.	FAC. ENGR.	DATE
PRELIM.			
APPROVAL			
BID			
CONSTR.			

SHELL EXPLORATION & PRODUCTION COMPANY

PLOT PLAN
METER MODIFICATIONS
SUGARLAND FACILITY
ST. JAMES, LOUISIANA

ENGR: MO DGN: CJ
DATE: 11/14/2012
SCALE: AS NOTED
SD-100443
01



SAP LEGEND

2019004	SAP EQUIPMENT NUMBERS

NOTES:

1) A HIGHER MOP IS ALLOWED FOR THE CONNECTING PIPE TO CAPLINE BASED ON PIPE STRENGTH AND HYDROTEST (2002). THE HIGHER MOP SATISFIES 2003 SURGE STUDY.

CAD DRAWING DO NOT REVISE MANUALLY	10	01/08	ADDED PLAINS 3-VALVE MANIFOLD AND LOCAP AND REDISTICK CONNECTIONS	BDE	SJA	SJA	KNM
	09	10/06	ADDED SL-10 W/ MTR BYPASS, CL-20-10 (05190) & MODIFIED W/ METER OUTLET	BDE	SJA	SJA	SJA
	08	04/05	ADDED SAP EQUIPMENT NUMBERS	BDE	DPB	DPB	LJW
	07	04/05	REMOVED PSV-W1-320 REVISED XOVER ON SUC.1 & 2 LINES	BDE	JEH	JEH	JEH
	11	11/12	BAYOU CHOCTAW AND WEEKS ISLAND BYPASS LINE	SKW	LG	SK	
	REV	DATE	DESCRIPTION OF REVISION	BY	CHK	DES	APP

SUGARLAND TERMINAL

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VALVE CHART
DOE – SUGARLAND TERMINAL

SCALE	PLOT AT .85 SCALE	DATE	S – 32841
DRAWN	BDE/ZELL	12/96	

REV. 11

TO VIEW LINE FILL INFORMATION, TURN OFF LAYERS "PIPE1", "PIPE2", "TEXT", AND "TXT". TURN ON LAYERS BEGINNING WITH "LF".