ADDENDUM No. 2 TO THE CONTRACT DOCUMENTS

Project: *Captain's Bay 35kV Line Extension*

Addendum Issue Date: May 11, 2017

Issued for Bid Date: April 14, 2017

Bid Due Date: May 16, 2017, 2:00pm (AK)

Previous Addenda Issued: Addendum No. 1, April 27, 2017

Issued By: William Farrell
Electric Power Systems, Inc.
3305 Arctic Blvd., Suite 201
Anchorage, Alaska 99503

Notice to Bidders:

Bidders must acknowledge receipt of this addendum prior to the date set for bid opening by one of the following methods:

(1) By acknowledging receipt of this addendum on the bid submitted.
(2) By fax which includes a reference to the project and addendum number.

The bid documents require acknowledgment individually of all addenda to the drawings and/or specifications. This is a mandatory requirement and any bid received without acknowledgment of receipt of addenda may be classified as not being a responsive bid. If, by virtue of this addendum it is desired to modify a bid already submitted, such modification may be made by fax provided such a fax makes reference to this addendum and is received prior to the opening date specified above.

The contract Documents for the above project are amended as follows (all other terms and conditions remain unchanged):

ITEM 1
Contract: *City of Unalaska Captain's Bay 35kV Line Extension*
Section: *Project Drawings*

The attached drawing E1.14 has been added to the plans set in order to provide further detailed information regarding existing utilities located at and around the Westward Seafoods Captain's Bay facility. Facilities in this area are owned by Westward, North Pacific Fuel and the City of Unalaska. Requirements for obtaining locates are not changed.

Note that this increases the sheet count to 31 drawings. Page numbers on existing drawings should all now read Sheet X of 31 rather than Sheet X of 30. However, this drawing update will not be modified prior to bid opening.

ITEM 2
Contract: *City of Unalaska Captain's Bay 35kV Line Extension*
Section: *Project Drawings*

The attached PDF photos are from a recent excavation at the Westward facility. These photos are a visual aide and representation of the site utilities in the vicinity of the Westward Powerhouse at the time the photos were taken. They are provided for informational purposes only for interpretation by the Contractor.

The PDF documents are Fish Oil Line at Westward (Attachment #2, 11 pages), Misc. Utilities at Westward (Attachment #3, 42 pages) and Westward 4160 Volt (Attachment #4, 41 pages)

ITEM 3
Contract: *City of Unalaska Captain's Bay 35kV Line Extension*
Section: *Project Drawings and Bid Tab*

The following bidder question and corresponding answer was provided by email on May 4, 2017.

Bidder Question:

Please confirm the description for the requested cables. The description you provided calls for a 1/3 neutral. The Okonite Part Number you provided (135-23-3656) is an MV-105 Cable with a copper tape shield.

Answer:
The 35kV cable description on the bid tab is correct. The revised Okonite Part Number for a 1/0 AL 1/3 concentric cable with 133% insulation (420 mils) is 160-23-7072. The drawing reference to 345 mils on Sheet E1.03 is incorrect and is to be 420 mils.

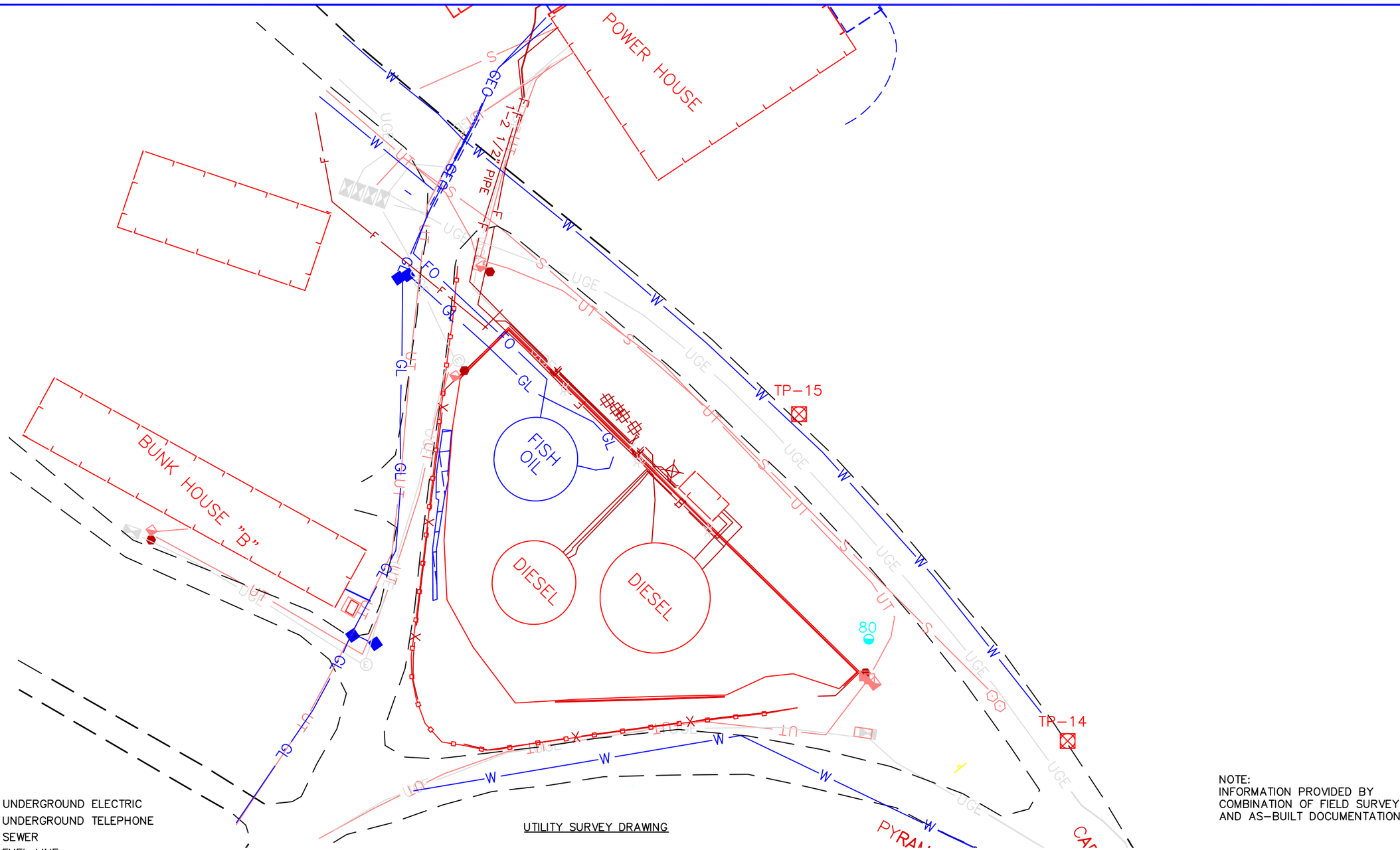
ITEM 4
Contract: *City of Unalaska Captain's Bay 35kV Line Extension*
Section: *Part 10 Geotechnical/As-built*

The PDF drawing set titled Petro Star, Inc. Westward Seafoods Fuel Upgrade As-Built (10 pages) is provided for informational purposes only for interpretation by the Contractor.

END OF ADDENDUM

Attachment 1

“Drawing E1.14”



LEGEND:

UGE	UNDERGROUND ELECTRIC
UT	UNDERGROUND TELEPHONE
S	SEWER
F	FUEL LINE
W	WATER
FO	FISH OIL
GL	GLYCOL

UTILITY SURVEY DRAWING

NOTE:
INFORMATION PROVIDED BY
COMBINATION OF FIELD SURVEY
AND AS-BUILT DOCUMENTATION

PROJECT: WESTWARD 35 kV INTERTIE DESIGN-BUILD
DESIGNER/PROJECT ENGINEER: WILLIAM FARRELL/EARL GEORGE - EPS W.O. #: 16-0011

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
0	ISSUED FOR BID	DRK/05-05-17	WBF/05-05-2017	

ENG. STAMP

Electric Power Systems Inc.
Consulting Engineers
TEL: (907) 522-1953
FAX: (907) 522-1182

DRAWING NAME:
DUTCH HARBOR
WESTWARD/CITY INTERTIE
WESTWARD FACILITY SITE PLAN
EXISTING UNDERGROUND UTILITIES

16-0011_captain_bay_road_line_extension.dwg

REF DWG(S):

DRAWING NO.: E1.14

SHEET 31 OF 31

Attachment 2

"Fish Oil Line at Westward"

CAUTION DO NOT ENTER CAUTION DO NOT ENTER


NO
TRESPASSING


CASE

Alaska


CASE

Attachment 3

"Misc. Utilities at Westward"


NO
TRE PASSING


CAT
301.5


CAT
301.5


450C
JOHN DEERE


RESERVED PARKING
RESERVED PARKING
RESERVED PARKING


09/30/2012 14:38

09/30/2012 14:38


09/30/2012 14:38


The
Royal Dut

The Royal Dutch Inn

Attachment 4

“Westward 4160 Volt”


10/19/2012 16:43


10/19/2012 16:43


10/19/2012 16:43


10/19/2012 16:43


RESERVED PARKING
UNAUTHORIZED VEHICLES TOWED AWAY
RESERVED PARKING
RESTRICTED AREA
AUTHORIZED EMPLOYEES ONLY
DANGER
HIGH VOLTAGE
10/19/2012 16:44


10/19/2012 16:44


10/19/2012 16:44


10/19/2012 16:45


10/19/2012 16:57


10/19/2012 16:58


10/19/2012 16:58


10/19/2012 16:59


10/21/2012 12:48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10/21/2012 12:58


10/21/2012 12:58


10/22/2012 15:48


10/22/2012 15:48


10/22/2012 15:49


10/22/2012 15:49


10/22/2012 15:49


CAUTION: BURIED ELECTRIC LINE BELOW
CAUTION: BURIED ELECTRIC LINE BELOW
CAUTION: BURIED ELECTRIC LINE BELOW
10/22/2012 15:51


CAUTION BURIED ELECTRIC LINE BELOW
CAUTION BURIED ELECTRIC LINE BELOW
10/22/2012 15:51


10/22/2012 15:51


RESERVED PARKING
RESERVED PARKING
DANGER
HIGH VOLTAGE
10/19/2012 16:43

Attachment 5

“Petro Star, Inc. Westward Seafoods Fuel Upgrade As-Built”

AS-BUILT
RECORD 11/24/00

PETRO STAR, INC.
WESTWARD SEAFOODS FUEL UPGRADE
AT UNALASKA, ALASKA

CONTRACTOR: MAC COULTER
INDUSTRIAL & COMMERCIAL CONSTRUCTION

ENGINEER: MARK ROCKWELL, P.E.
ROCKWELL ENGINEERING & CONSTRUCTION

DRAWING INDEX

DWG. No.	TITLE
0	COVER SHEET
1	FUEL PIPELINE ROUTING PLAN
2	FUEL PIPELINE BURIAL DETAILS AND GENERAL NOTES
3	DOCK LAYOUT PLAN AND SECTIONS
4	FUEL STATION PLAN AND DETAILS
5	TANK CONTAINMENT PLAN
M1	MECHANICAL SITE PLAN, FLOOR PLAN AND DETAILS
M2	MECHANICAL SPECIFICATIONS
E1	ELECTRICAL SITE PLAN AND DETAILS
E2	ELECTRICAL SPECS, POWER PLAN AND DETAILS

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants

1506 West 36th Avenue,
Anchorage, Alaska 99503 (907) 561-1011

ISSUED FOR CONSTRUCTION 3/27/00

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed: EF
Checked: JWP
Approved: ABC
Project No: 99067

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants

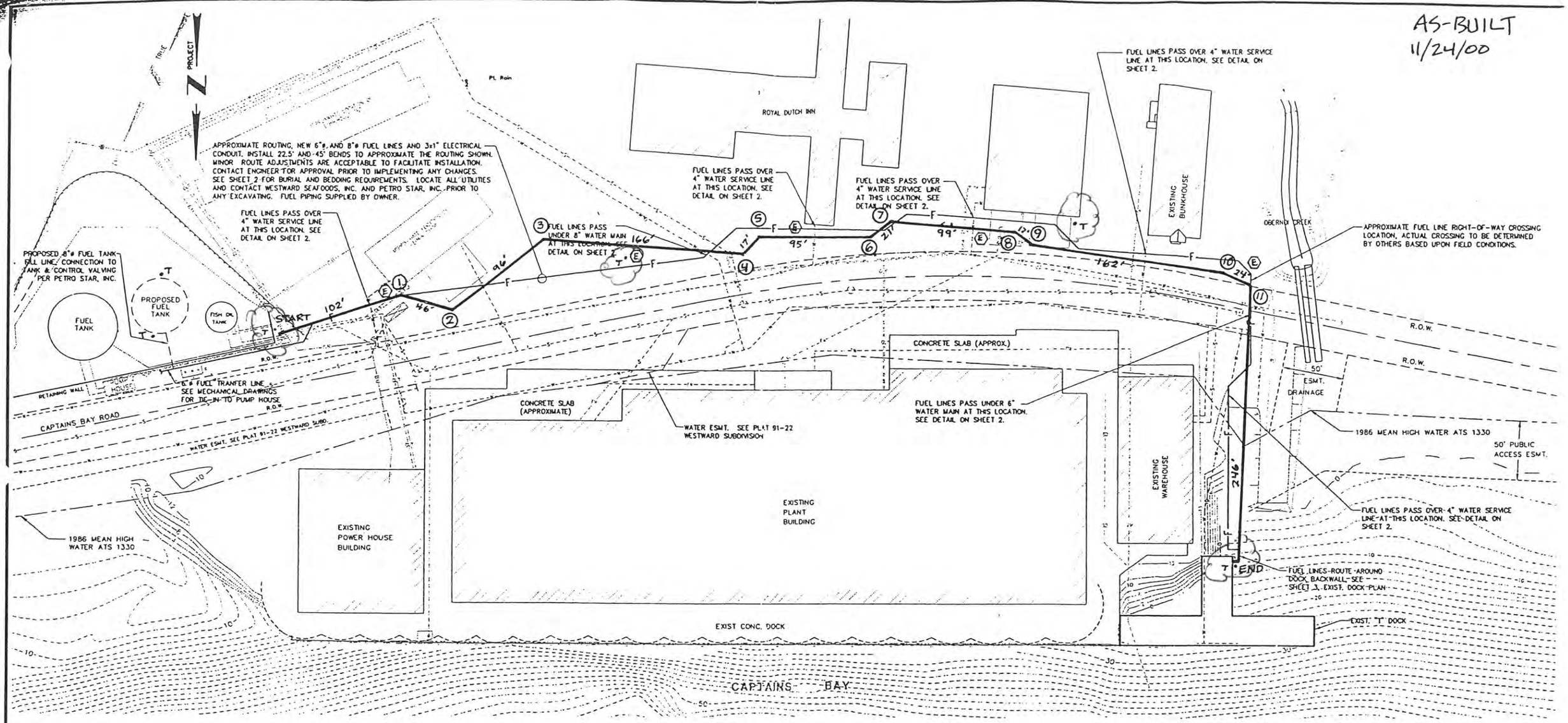
1506 West 36th Avenue,
Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

Date: 3/22/00
Scale: AS SHOWN

COVER SHEET

sheet 0 of 5

AS-BUILT
11/24/00



LEGEND

EXISTING	NEW	DESCRIPTION
——12——		CONTOUR LINE
——W——		WATER LINE
——S——		SEWER LINE
——FW——		FISH WASTE
	——F——	FUEL LINE
——U——		BURIED UTILITY LINE
——GLY——		GLYCOL HEATING LINE
⊡		SEWER CLEANOUT
○		SEWER MANHOLE
⧗		GATE VALVE WITH VALVE BOX
□		ELECTRICAL JUNCTION BOX
⊙		FIRE HYDRANT

CAUTION!!

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE. THERE MAY ALSO BE ADDITIONAL UTILITIES THAT ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING EXCAVATION.

WATER AND WASTEWATER	(907) 581-1260
TELEPHONE AND CABLE TV	(907) 581-1398
POWER & LIGHT	(907) 581-1260

AS-BUILT LEGEND

- •T CATHODIC PROTECTION TEST STATION
- (E) ELECTRICAL PULL BOX

PLAN

SCALE
0 40 80 120 FEET

ISSUED FOR CONSTRUCTION 3/27/00

Peratrovich, Nottingham, and Drage, Inc. (PN&D) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Drawings are for the use of this project only and are not intended for reuse without written approval from PN&D. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PN&D.

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

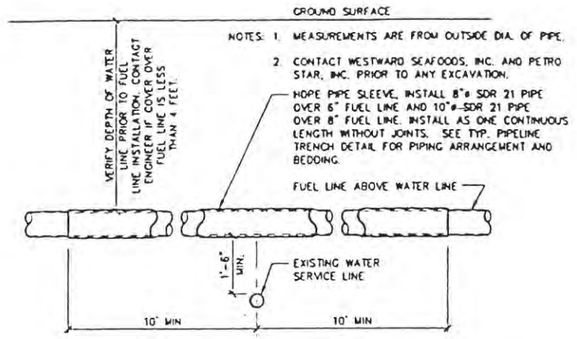
Designed:	EF
Checked:	JWP
Approved:	ABC
Project No:	99067
Date:	3/22/00
Scale:	NOTED

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Anchorage, Alaska 99503
(907) 561-1011 FAX (907) 563-4220

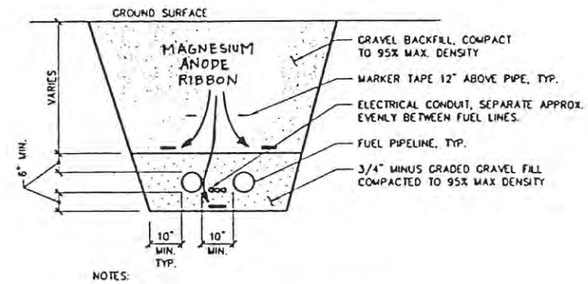
FUEL PIPELINE ROUTING PLAN

sheet 1 of 5

AS BUILT
11/24/00



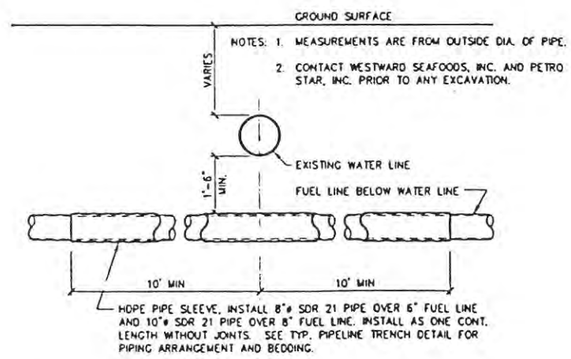
FUEL LINES OVERCROSSING WATER LINE TYPICAL DETAIL



NOTES:

1. MEASUREMENTS ARE FROM OUTSIDE DIA. OF PIPE.
2. TRENCH SIDE SLOPE WILL VARY W/ MATERIAL AND DEPTH.
3. CONTACT WESTWARD SEAFOODS, INC. AND PETRO STAR, INC. PRIOR TO ANY EXCAVATION.

TYPICAL PIPELINE TRENCH DETAIL



FUEL LINES UNDERCROSSING WATER LINE TYPICAL DETAIL

GENERAL NOTES

DATUM

TIDAL LEVELS – ELEVATION DATUM FOR THIS PROJECT IS 0.0 MEAN LOWER LOW WATER.

TIDAL LEVELS FROM PORT OF UNALASKA

EXTREME HIGH WATER	+6.6 FT
MEAN HIGHER HIGH WATER (MHHW)	+3.7 FT
MEAN HIGH WATER (MHW)	+3.4 FT.
MEAN LOW WATER (MLW)	+1.2 FT.
MEAN LOWER LOW WATER (MLLW)	+0.0 FT
EXTREME LOW WATER	-2.7 FT

MATERIALS

STEEL PIPE-
ALL STEEL PIPE USED FOR FUEL LINES SHALL BE ASTM A53 GRADE B. ALL PIPING IS OWNER SUPPLIED

HOPE PIPE SLEEVE-
ALL FUEL LINE CROSSING OF WATER LINES AND LOCATIONS WHERE FUEL LINES ARE WITHIN 10 FEET HORIZONTALLY OF A WATER LINE SHALL BE SLEEVED WITH SDR 21 HOPE PIPE AS SHOWN IN THE DRAWINGS.

PIPING & CONDUIT SUPPORT-
UNDER DOCK PIPING SUPPORTS SHALL BE 12 GAUGE UNISTRUT P2544, GALVANIZED, OR ENGINEER APPROVED EQUAL.

FASTENERS-
ALL NUTS, BOLTS, WASHERS, SCREWS, AND CLAMPS SHALL BE GALVANIZED.

PIPE BEDDING-
PIPE BEDDING SHALL CONFORM TO THE FOLLOWING GRADING REQUIREMENTS.

SIEVE DESIGNATION	% PASSING BY WEIGHT
3-INCH	100
1-INCH	30-70
#40	0-10

INSTALLATION

STRUCTURAL STEEL WELDING-
PIPE SUPPORT WELDING SHALL BE PER LATEST AWS D1.1 BY WELDERS QUALIFIED PER AWS FOR THE TYPE AND POSITION AS NEEDED.

EARTHWORK-
POST-BURIAL EARTHWORK SHALL LEAVE THE SITE IN PRE-CONSTRUCTION CONDITION. ALL BACKFILL SHALL BE GRADED SO THAT IT IS SMOOTH AND FLUSH WITH ADJACENT EXISTING GROUND CONTOURS.

SUBMITTALS-
CERTIFICATIONS, MANUFACTURER'S DATA, AND OTHER INFORMATION FOR ALL MATERIALS, INCLUDING THOSE NOT SPECIFICALLY NOTED IN THE GENERAL NOTES OR SHOWN ON INDIVIDUAL DRAWINGS, SHALL BE SUBMITTED TO THE ENGINEER FOR WRITTEN APPROVAL. ALL METHODS AND MATERIALS SHALL CONFORM TO THE CONTRACT DOCUMENTS, GENERAL NOTES, THE PLANS, GOOD WORKMANSHIP, GENERALLY ACCEPTED INDUSTRY STANDARDS, AND MANUFACTURER'S RECOMMENDATIONS.

THE FOLLOWING IS A LIST OF REQUIRED SUBMITTALS FOR THIS PROJECT:

1. AWS WELDING CERTIFICATION FOR ALL WELDERS UTILIZED ON THIS PROJECT
2. PROPOSED WELDING PROCEDURES
3. HOPE PIPE
4. REDLINED AS-BUILT DRAWINGS

ISSUED FOR CONSTRUCTION 3/27/00

CAUTION!!

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE. THERE MAY ALSO BE ADDITIONAL UTILITIES THAT ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING EXCAVATION.

WATER AND WASTEWATER	(907) 581-1260
TELEPHONE AND CABLE TV	(907) 581-1398
POWER & LIGHT	(907) 581-1260

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

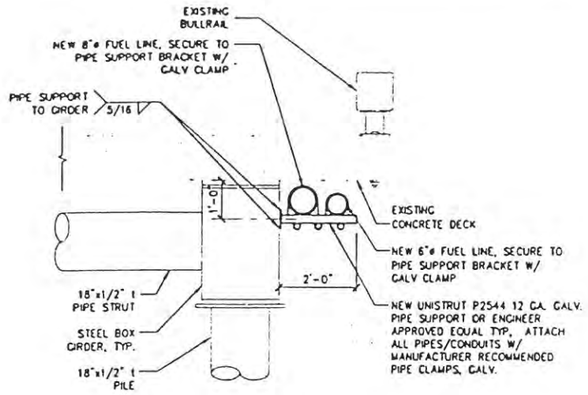
Designed:	EF
Checked:	JWP
Approved:	ABC
Project No:	99067
Date:	3/22/00
Scale:	NOTED

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

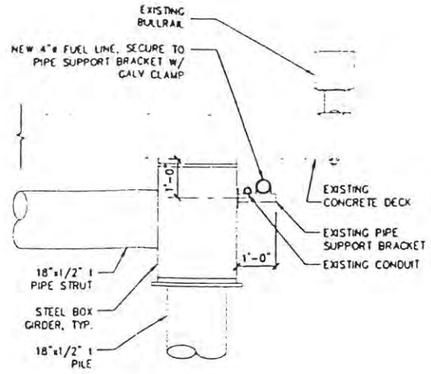
FUEL PIPELINE BURIAL DETAILS & GENERAL NOTES

sheet 2 of 5

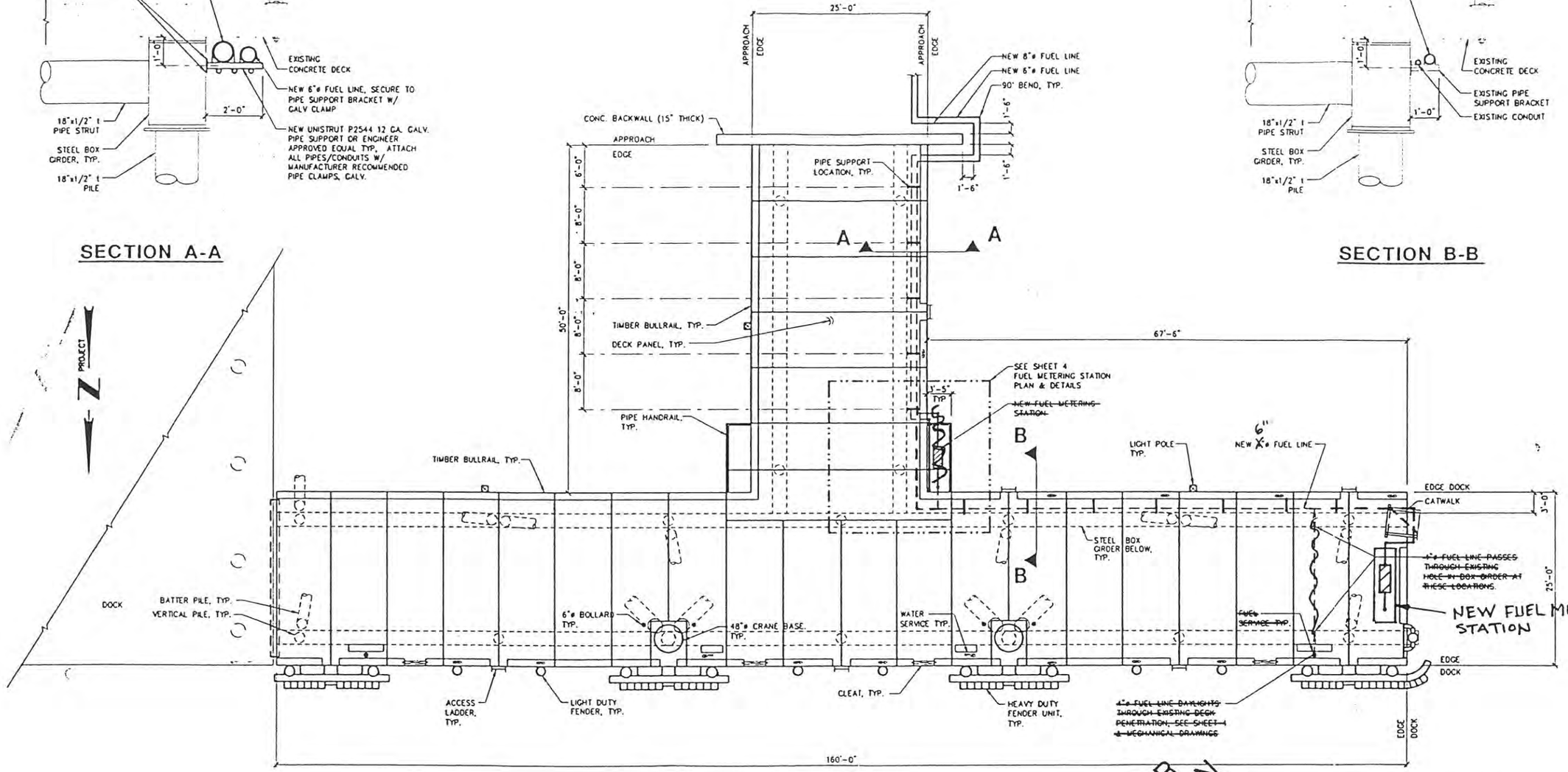
AS BUILT
11/24/00



SECTION A-A



SECTION B-B



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WATER AND WASTEWATER	(907) 581-1260
TELEPHONE AND CABLE TV	(907) 581-1398
POWER & LIGHT	(907) 581-1260

GRAPHIC SCALE
0 8 16 24 32

EXISTING DOCK PLAN

ISSUED FOR CONSTRUCTION 3/27/00

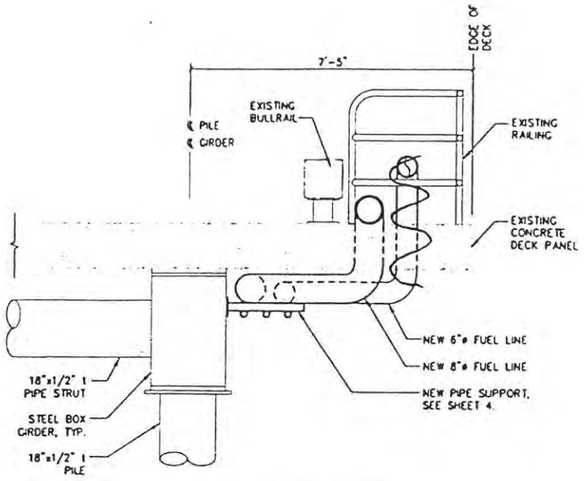
PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed:	EF
Checked	JWP
Approved:	ABC
Project No:	99067
Date:	3/22/00
Scale:	NOTED

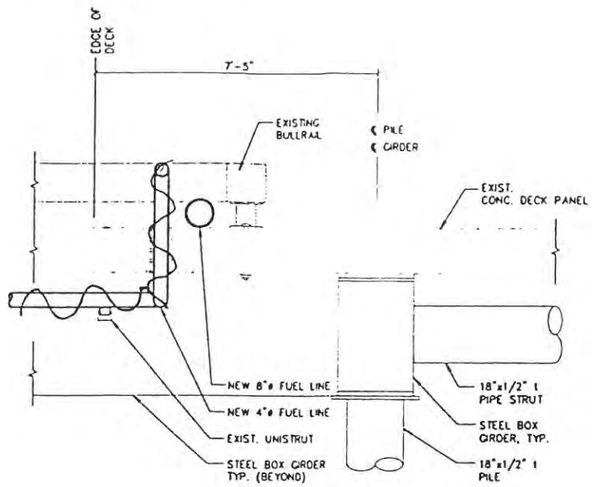
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

DOCK LAYOUT PLAN AND SECTIONS

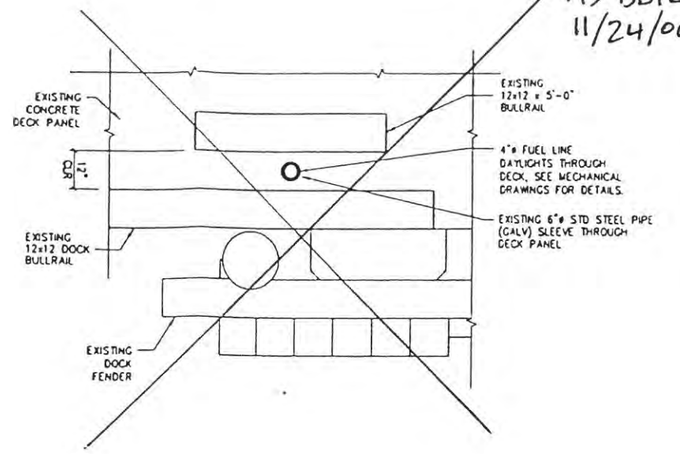
AS BUILT
11/24/00



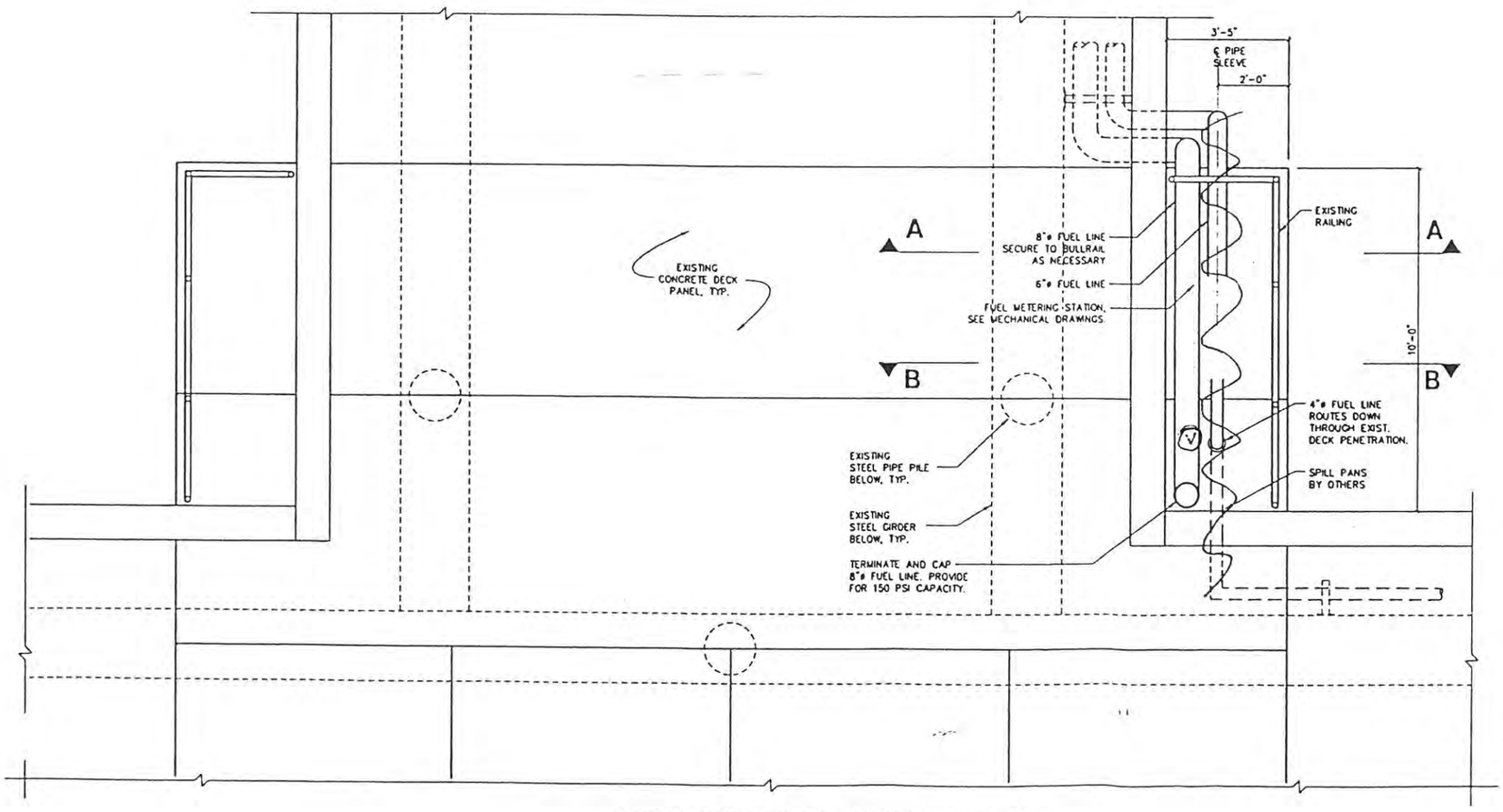
SECTION A-A



SECTION B-B



FUEL LINE - SERVICE PLAN



FUEL METERING STATION PLAN

SCALE: 1/2" = 1'-0"

ISSUED FOR CONSTRUCTION
3/27/00

CAUTION!!

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POWER & LIGHT	(907) 581-1260

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed:	KWB
Checked:	JWP
Approved:	ABC
Project No:	99067
Date:	3/22/00
Scale:	NOTED

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Anchorage, Alaska 99503
(907) 561-1011 FAX (907) 563-4220

FUEL STATION PLAN AND DETAILS

AS BUILT
11/24/00

CAPTAINS BAY ROAD

EXISTING OIL/WATER SEPARATOR

EXISTING OIL FILTER TANK

EXISTING CONCRETE RETAINING WALL TOP OF WALL EL.=30.7'

MAN GATE

EXISTING LOW SECTION OF RETAINING WALL EL.=28.7'. RAISE HEIGHT TO EL.=30.7' FINISH FLUSH WITH ADJACENT WALL

EXISTING FISH OIL TANK (800 BBLS)

BUILD UP EXISTING EARTHEN RETAINING WALL TO EL.=31.0'

GABION BASKETS

EXISTING FUEL TANK (18,000 BBLS)

A/5

NEW TANK 42' DIA X 24'H (6,000 BBLS)

BUILD UP EXISTING EARTHEN RETAINING WALL TO EL.=31.0'

VEHICLE GATE

NEW CONCRETE WALL ADDITION TO 31.0'

NEW 6' FENCE

EXTEND LINED CONTAINMENT AREA TO EL.=31' (APPROXIMATED BY SHADING.) INSTALL LINER SYSTEM THAT IS SIMILAR TO AND COMPATIBLE WITH THE EXISTING CONTAINMENT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

30

40

N

PROJECT

NOTE:
CONTRACTOR TO FIELD VERIFY SITE CONDITIONS FOR EVALUATION OF EARTHWORK REQUIREMENTS.

CONTAINMENT INFORMATION

VOLUME OF LARGEST TANK	= 18,000 BBLS
x 110%	= 19,800 BBLS
VOLUME OF UPGRADED CONTAINMENT	= 20,400 BBLS

PLAN

SCALE 0 10 20 30 FEET

ISSUED FOR CONSTRUCTION 3/27/00

CAUTION!!

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TELEPHONE AND CABLE TV	(907) 581-1398
POWER & LIGHT	(907) 581-1260

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed: EF
Checked: JWP
Approved: ABC
Project No: 99067

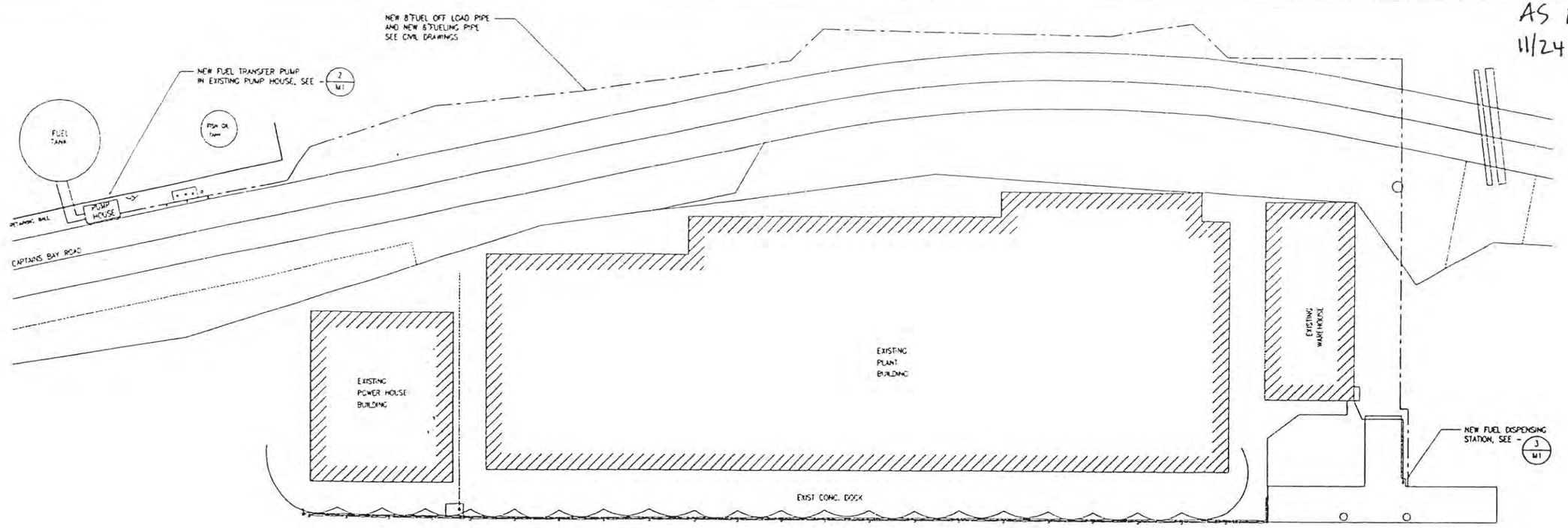
Date: 3/22/00
Scale: NOTED

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

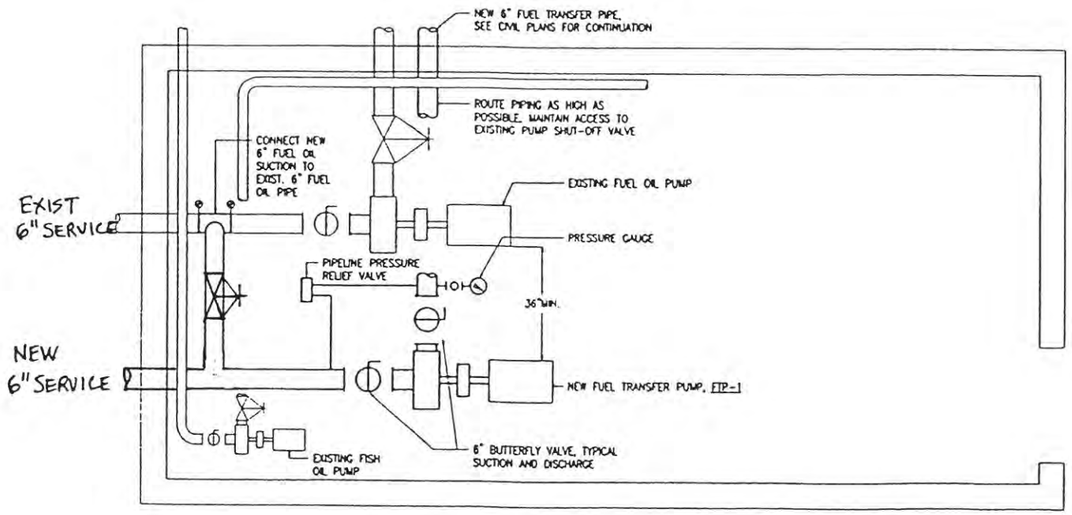
TANK CONTAINMENT PLAN

sheet 5 of 5

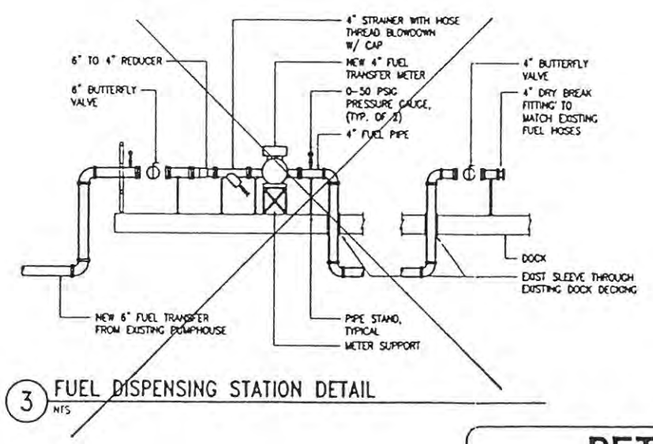
AS BUILT
11/24/00



1 MECHANICAL SITE PLAN
1" = 40'



2 PUMPHOUSE PLAN
1/2" = 1'-0"



3 FUEL DISPENSING STATION DETAIL
NTS

STATE OF ALASKA — LEE F. HOLMES — REGISTERED PROFESSIONAL ENGINEER

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed:	LFH
Checked:	MWB
Approved:	LFH
Project No:	99205
Date:	03/13/00
Scale:	AS SHOWN

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue,
Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

RSA Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS

3" 1"=1' 1/2"=1' 3/8"=1' 1/8"=1' 0" 1" = 100' 1" 1" = 40' 2" 1" = 60' 3"
1-1/2"= 1' 3/4"=1' 1/4"=1' 1" = 50' 1" = 20' 1" = 30'

MECHANICAL SITE PLAN, FLOOR PLAN AND DETAILS

sheet M1 of 2

AS BUILT
11/24/00

SECTION 15050 - BASIC MECHANICAL MATERIALS AND METHODS

PART 1 GENERAL

1.1 PROJECT RECORD DRAWINGS

A. In addition to other requirements of Division 1, mark up a clean set of drawings as the work progresses to show the dimensioned location and routing of all mechanical work which will become permanently concealed. Show routing of work in concealed blind spaces within the building.

B. Show the location of all valves and their appropriate tag identification.

1.2 MANUFACTURER'S DIRECTIONS

A. All manufactured articles shall be applied, installed and handled as recommended by the manufacturer, unless specifically called out otherwise in the plans. Advise the Engineer of any such conflicts before installation.

1.3 PERMITS, FEES, ETC.

A. The Contractor shall arrange for a permit from the local authority. The Contractor shall pay for any inspection fees or other fees and charges required by ordinance, law, codes and these specifications.

1.9 TESTING

A. The Contractor shall, at his own expenses, perform the various tests as specified and required by the Architect and as required by applicable code, the State, and local authorities.

PART 2 PRODUCTS

2.1 MATERIALS

A. All equipment shall be regularly cataloged items of the manufacturer and shall be supplied as a complete unit in accordance with the manufacturer's standard specifications along with any optional items required for proper installation unless otherwise noted. Maintain manufacturer's identification, model number, etc. on all equipment at all times.

2.11 EARTHQUAKE RESTRAINTS

A. Secure tons to structure to prevent movement during seismic disturbance in UBC seismic Zone 4.

PART 3 EXECUTION

3.1 INSTALLATION

A. All work shall comply with the latest adopted applicable codes and ordinances including, but not limited to, the UMC, UPC, UBC, NFPA and UFC Standards; all local and state amendments to all codes and standards.

3.2 OPERATING INSTRUCTIONS

A. Before the facility is turned over to the Owner, instruct the Owner or Owner's personnel in the operation, care and maintenance of all systems and equipment. These instructions shall also be included in a written summary in the Operating and Maintenance Manuals.

3.3 OPERATING AND MAINTENANCE MANUALS

A. Submit operating and maintenance manuals to the Owner covering all equipment installed by the Contractor.

B. The operation and maintenance manuals shall be bound in a loose leaf binder with reinforced holes in the sheets so as to prevent lost pages. The manual shall contain, but not limited to, the following types of information:

1. Catalog cuts of all equipment, fixtures, etc. installed (Marked to identify the specific items used).
2. Manufacturer's maintenance and overhaul instruction booklets including exploded views.
3. Identification numbers of all parts and nearest source for obtaining parts and services.
4. Reduced scale drawings of the control system and a verbal description of how these controls operate.
6. A copy of valve schedule and reduced scale drawings showing valve locations.
7. Written summary of instructions to Owner.

C. A periodic maintenance form that includes all of the equipment shall be provided with the maintenance manual. The form shall list each piece of equipment and how often maintenance is required (daily, weekly, monthly, annually). Opposite each task shall be squares for check-offs for a full year (initials) to verify that the tasks are being done.

3.4 IDENTIFICATION

A. Tag all valves with heat resistant laminated plastic labels or brass tags engraved with readily legible letters. Securely fasten to the valve stem or bonnet with beaded chain. Provide a framed, typewritten directory under glass, and installed where directed. Provide complete record drawings that show all valves with their appropriate label.

B. Label all equipment with heat resistant laminated plastic labels having engraved lettering 1/2" high. If items are not specifically listed on the schedules, consult the Engineer concerning designation to use.

C. Identify piping to indicate contents and flow direction of each pipe exposed to view by a labeled sleeve in letters readable from floor at least once in each room and at intervals of not more that 20' apart.

3.6 INSTALLATION OF EQUIPMENT

A. Unless otherwise indicated, mount all equipment and install in accordance with manufacturer's recommendations and approved submittals. Where equipment is to be anchored to structure, furnish and locate necessary anchoring and vibration isolation devices.

3.7 PIPE HANGERS AND SUPPORTS

A. Support all piping independent of connected equipment.

SECTION 15484 - FUEL SYSTEMS

PART 1 GENERAL

1.1 SEE SECTION 15050 - BASIC MATERIALS AND METHODS

PART 2 PRODUCTS

2.1 FUEL PIPING, ABOVE GRADE

A. Steel Pipe: Provide same material and weight as exterior piping except bare pipe, no protective coating. See Civil drawings for pipe requirements. Joints: Welded

2.2 BUTTERFLY VALVES

A. Ductile iron with upper and lower bushings, lug style, for NASI 150 flanges, 200 PSI rated, aluminum bronze disc, Buna-N liner, 416 stainless steel stem, with lever handle and locking notched throttling plate.

2.3 STRAINER

A. Fisher-Rosemount Petroleum, in line strainer

2.4 FUEL TRANSFER PUMP

A. Gorman-Rupp, model RSJA31-B, self priming centrifugal pump, electric motor driven, 7.5 HP, 270 GPM at 50 ft. hd.

2.5 PIPELINE EXPANSION RELIEF VALVE

A. Morrison Series 77 expansion relief valve. All brass construction for copper tube fittings. 40 PSI setting

2.6 PRESSURE GAUGE

A. 4-1/2 inch cast aluminum case, phosphor bronze bourdon tube, rotary bronze movement, brass socket, with silicone fluid dampening, black figures on white background, one percent mid-scale accuracy, 0-60 PSIG range. Trerice Model 800C.
B. Provide Jomar Mini T-82-M lever handle ball type isolation valve. Provide pulsation damper, Series 870 by Trerice.

PART 3 EXECUTION

3.1 INSTALLATION - PIPING

A. Install piping to conserve building space and not interfere with use of space.
B. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
C. Provide clearance for access to valves and fittings.
D. Test piping to 100 PSIG for four hours with no noticeable pressure drop.
E. Install valves with acutuators and handles upright or horizontal. Do not install inverted.

3.2 INSTALLATION - PUMPS

A. Install in accordance with manufacture's recommendations.
B. Provide base as required to properly support and secure the pump.
C. Maintain manufacture's recommended minimum clearances.

STATE OF ALASKA
LEE F. HOLMES
ME-7744
3-13-00
REGISTERED PROFESSIONAL ENGINEER

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed:	LFH
Checked:	MWB
Approved:	LFH
Project No:	99205
Date:	03/13/00
Scale:	AS SHOWN

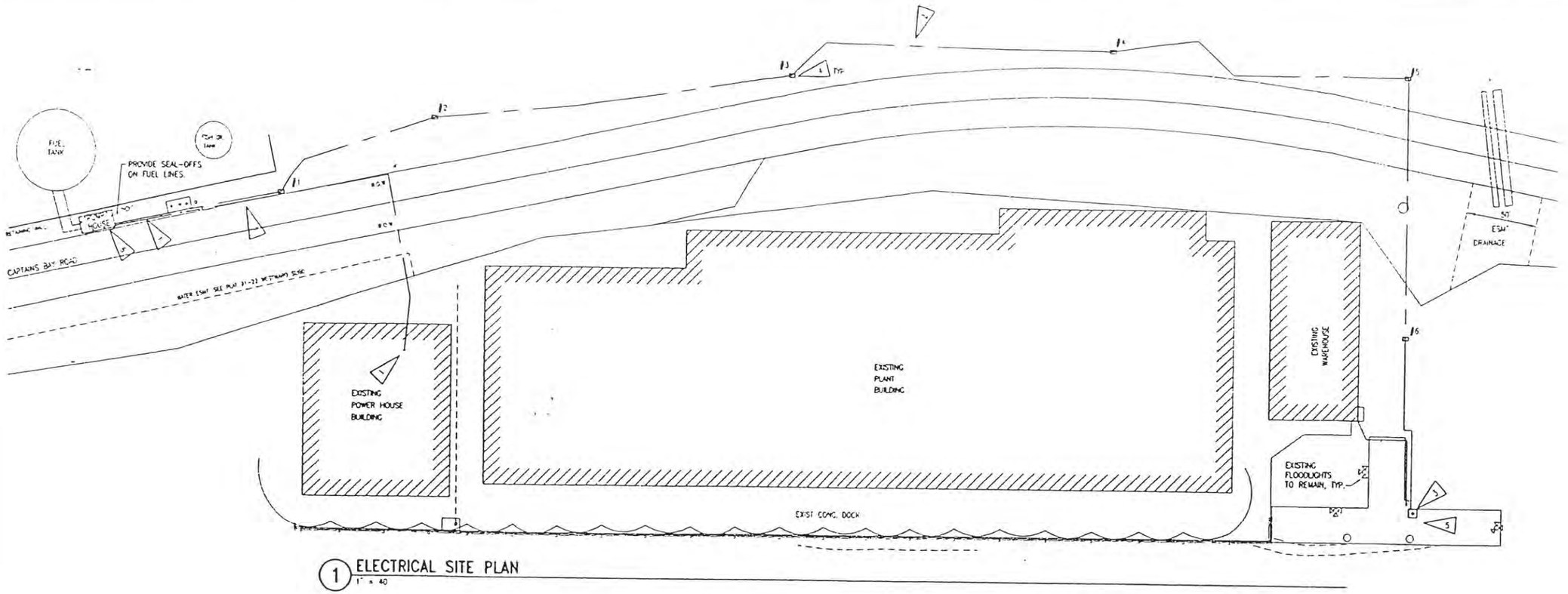
Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue,
Anchorage, Alaska 99503 (907) 561-1011 FAX (907) 563-4220

RSA Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS

MECHANICAL SPECIFICATIONS

sheet **M2 2**

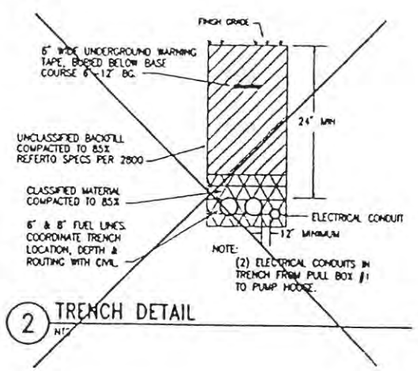
AS BUILT
11/24/00



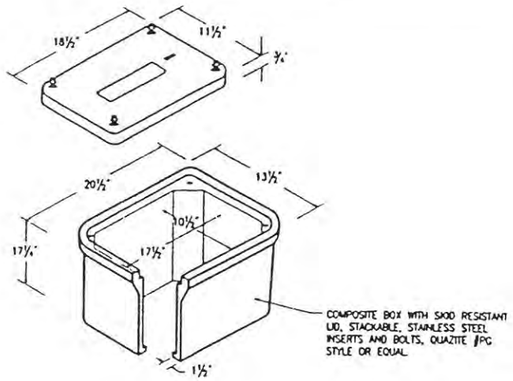
1 ELECTRICAL SITE PLAN
1" = 40

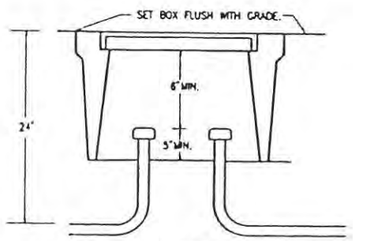
NOTES:

1. CONNECT TO NEW 50A,3P CIRCUIT BREAKER IN EXISTING 120/208V, PANELBOARD IN EXISTING POWER HOUSE BUILDING. COORDINATE WITH OWNER FOR LOCATION. RUN IN TRENCH ALONG ROAD WITH FUEL PIPING. COORDINATE WITH OWNER ON LOCATION TO RUN TRENCH ACROSS ROAD.
2. PROVIDE NEW 1"C IN TRENCH WITH FUEL PIPING FROM PUMP HOUSE TO DOCK FOR PUMP CONTROLS. SEE 2/E1 FOR TRENCH DETAIL.
3. CONNECT TO FUEL PUMP MOTOR STARTER IN PUMP HOUSE WITH 2/10 IN 1"C.
4. PULL BOX, SEE 3/E1.
5. PROVIDE NEW STEEL, ZINC-PLATED GROUNDING REEL WITH 50' NYLON COATED CABLE (DANIEL WOODHEAD #143051 OR APPROVED EQUAL). COORDINATE WITH OWNER FOR CABLE CLAMP TYPE TO PROVIDE TO BE COMPATIBLE WITH SHIP FUELING GROUNDING CONNECTION. MOUNT ON NEW DECK AS REQUIRED. PROVIDE #2 BARE CU GROUND CONNECTION TO EXISTING GROUND AT DOCK STEEL PILINGS AND TO GROUND CONNECTION AT FUEL DISPENSER.
6. SEE 3/E2 FOR PUMP HOUSE PLAN.



2 TRENCH DETAIL
NTS





3 PULL BOX DETAIL
NTS

LEGEND	
⊗	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER
	MOTOR (SIZED AS NOTED)
	CONDUIT, CONCEALED
#10	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)
	HOMERUN TO PANEL
C	CONDUIT
1	NOTE TAG (No. INDICATES NOTE)

STATE OF ALASKA 49TH TIMOTHY HALL EE-9131 REGISTERED PROFESSIONAL ENGINEER

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed: RWM
Checked: RPH
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ELECTRICAL SITE PLAN & DETAILS

sheet E1 ~ 2

AS BUILT
11/24/00

ELECTRICAL SPECIFICATIONS

SCOPE OF WORK - FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT FOR A COMPLETE AND WORKABLE ELECTRICAL SYSTEM AS INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

STANDARDS, CODES AND REGULATIONS - COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, UNIFORM BUILDING CODE INCLUDING ALL STATE AND LOCAL AMENDMENTS TO THESE CODES.

Y2K COMPLIANCE - ALL GOODS AND EQUIPMENT WHICH THE CONTRACTOR IS REQUIRED TO PURCHASE UNDER THE CONTRACT AND WHICH CONTAIN EMBEDDED CODES, CHIPS, MICROPROCESSORS, MICROCONTROLLERS, CLOCK CIRCUITS (INCLUDING INTEGRATED CIRCUITS), COMPUTER OPERATING SYSTEMS, COMPUTER SOFTWARE, CUSTOM APPLICATION PROGRAMMING, OR OTHER SIMILAR SYSTEMS/TECHNOLOGIES THAT CALCULATE DATE OR TIME DATA SHALL BE CERTIFIED YEAR 2000 COMPLIANT IN THAT THEY CORRECTLY AND WITHOUT FAILURE, PROCESS DATE OR TIME DATA BEFORE, DURING AND BEYOND AUGUST 31, 1999, INCLUDING LEAP YEARS.

DRAWINGS - THE DRAWINGS ARE DIAGRAMMATIC, NOT NECESSARILY SHOWING ALL OFFSETS OR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. UNLESS SPECIFICALLY DIMENSIONED. REVIEW THE DRAWINGS AND SPECIFICATIONS FOR EQUIPMENT FURNISHED BY OTHER CRAFTS BUT INSTALLED IN ACCORDANCE WITH THIS SECTION. BRING QUESTIONABLE OR OBSCURE ITEMS, APPARENT CONFLICTS BETWEEN PLANS AND SPECIFICATIONS, GOVERNING CODES OR UTILITIES REGULATIONS TO THE ATTENTION OF THE ARCHITECT. CODES, ORDINANCES, REGULATIONS, MANUFACTURER'S INSTRUCTIONS OR STANDARDS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS.

RECORD DRAWINGS - MARK UP A CLEAN SET OF DRAWINGS AS THE WORK PROGRESSES TO SHOW THE DIMENSIONED LOCATION AND ROUTING OF ALL ELECTRICAL WORK WHICH WILL BECOME PERMANENTLY CONCEALED. SHOW ROUTING OF WORK IN PERMANENTLY CONCEALED BLIND SPACES WITHIN THE BUILDING. SHOW COMPLETE ROUTING AND SIZING OF ANY SIGNIFICANT REVISIONS TO THE SYSTEMS SHOWN.

WORKMANSHIP - INSTALLATION OF ALL WORK SHALL BE MADE SO THAT ITS SEVERAL COMPONENT PARTS SHALL FUNCTION AS A WORKABLE SYSTEM COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND/OR INSTALLATION DRAWINGS AND IN ACCORDANCE WITH NECA STANDARDS. MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM WITH APPLICABLE INDUSTRY STANDARDS, NEMA STANDARDS AND UNDERWRITERS LABORATORIES STANDARDS WHERE APPLICABLE.

SUBMITTALS - PROVIDE MATERIAL AND EQUIPMENT SUBMITTALS CONTAINING A COMPLETE LISTING OF MATERIAL AND EQUIPMENT SHOWN ON THE DRAWINGS. INCLUDE CATALOG NUMBERS, WIRING DIAGRAMS, ROUGH-IN DIMENSIONS AND PERFORMANCE DATA FOR ALL MATERIAL AND EQUIPMENT. SUBMITTALS SHALL BE BOUND IN HARD COVER, LOOSELEAF BINDERS SEPARATE FROM WORK FURNISHED UNDER OTHER DIVISIONS. INDEX AND CLEARLY IDENTIFY ALL MATERIAL AND EQUIPMENT BY ITEM, NAME OR DESIGNATION USED ON THE DRAWINGS. SUBMITTAL REVIEW IS FOR GENERAL DESIGN AND ARRANGEMENT ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE SUBMITTALS ARE NOT CHECKED FOR QUANTITY, DIMENSION, OR FOR PROPER OPERATION. WHERE DEVIATIONS OF A SUBSTITUTE PRODUCT OR SYSTEM PERFORMANCE HAVE NOT BEEN SPECIFICALLY NOTED IN THE SUBMITTAL BY THE CONTRACTOR, PROVISIONS OF A COMPLETE AND SATISFACTORY WORKING INSTALLATION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

OPERATION AND MAINTENANCE MANUALS - PROVIDE OPERATION AND MAINTENANCE MANUALS FOR TRAINING OF THE OWNER'S PERSONNEL. DESCRIBE THE PROCEDURES NECESSARY TO OPERATE THE SYSTEM INCLUDING START-UP, OPERATION, EMERGENCY OPERATION AND SHUTDOWN. PROVIDE INSTRUCTIONS AND A SCHEDULE OF PREVENTIVE MAINTENANCE IN TABULAR FROM FOR ALL ROUTINE CLEANING, INSPECTION AND LUBRICATION WITH RECOMMENDED LUBRICANTS. PROVIDE INSTRUCTIONS FOR MINOR REPAIR OR ADJUSTMENTS REQUIRED FOR PREVENTIVE MAINTENANCE ROUTINES. PROVIDE MANUFACTURER'S DESCRIPTIVE LITERATURE INCLUDING APPROVED SHOP DRAWINGS COVERING DEVICES USED IN ANY CONTRACTOR-PROVIDED EQUIPMENT OR SYSTEMS WITH ILLUSTRATION, EXPLODED VIEWS, ETC.

WARRANTY - THE CONTRACTOR SHALL GUARANTEE ALL WORK EXECUTED UNDER THIS CONTRACT TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM BENEFICIAL OCCUPANCY. ANY FAULTY MATERIALS OR WORKMANSHIP SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER DURING THE GUARANTEE PERIOD.

PERMITS - SECURE AND PAY FOR ALL FEES, PERMITS, ETC REQUIRED BY LOCAL AND STATE AGENCIES AND ALL LOCAL UTILITY COMPANIES. COSTS OF LINE EXTENSIONS TO THE METER ARE TO BE PAID BY THE OWNER.

REFERENCE SYMBOLS - THE ELECTRICAL "LEGEND" ON THE DRAWINGS IS A STANDARDIZED VERSION, AND ALL SYMBOLS SHOWN MAY NOT BE USED. USE THE "LEGEND" AS A REFERENCE FOR THE SYMBOLS USED ON THE DRAWINGS.

IDENTIFICATION - PROVIDE ENGRAVED THREE-LAYER LAMINATED PLASTIC NAMEPLATES WITH WHITE LETTERS ON A BLACK BACKGROUND TO IDENTIFY ALL ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT, LOADS SERVED AND AS NOTED ON THE DRAWINGS. LETTER HEIGHTS SHALL BE 1/8 INCH FOR INDIVIDUAL SWITCHES, MOTOR STARTERS, AND LOADS SERVED AND 1/4 INCH ON PANELBOARDS. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS, RIVETS OR ADHESIVES. SECURE NAMEPLATE TO INSIDE FACE OF RECESSED PANELBOARD DOORS IN FINISHED LOCATIONS.

CONDUITS - MARK ALL CONDUITS ENTERING OR LEAVING PANELBOARDS WITH INDELIBLE BLACK MAGIC MARKER WITH THE CIRCUIT NUMBERS OF THE CIRCUITS CONTAINED INSIDE.

JUNCTION BOXES - MARK ALL CIRCUIT NUMBERS OF WIRING ON ALL JUNCTION BOXES WITH SHEET STEEL COVERS. MARK WITH INDELIBLE BLACK MARKER.

CONDUIT - ALL WIRING SHALL BE INSTALLED IN METALLIC RACEWAY. RACEWAY SHALL BE INSTALLED CONCEALED EXCEPT AT SURFACE MOUNTED CABINETS, MOTORS AND EQUIPMENT CONNECTIONS. THE RACEWAY SYSTEM SHALL NOT BE USED AS THE EQUIPMENT GROUNDING CONDUCTOR. PROVIDE A SEPARATE GREEN GROUNDING CONDUCTOR IN ALL RACEWAYS. UTILIZE GALVANIZED RIGID STEEL OR INTERMEDIATE METAL CONDUIT IN WET LOCATIONS, IN DIRECT CONTACT WITH CONCRETE OR BELOW SLAB ON GRADE. ELECTRICAL METALLIC TUBING MAY BE USED IN ALL CONCEALED, DRY, INTERIOR LOCATIONS. UTILIZE SHORT EXTENSIONS (36 INCHES MAXIMUM) OF LIQUIDTIGHT FLEXIBLE CONDUIT FOR ALL MOTOR AND EQUIPMENT CONNECTIONS. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.

CONDUCTORS - ALL CONDUCTORS SHALL BE COPPER WITH TYPE XHHW, THWN, THW OR THHN INSULATION. MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE SHALL BE 12 AWG. MINIMUM CONTROL CIRCUIT CONDUCTOR SIZE SHALL BE #18 AWG. PULL ALL CONDUCTORS INTO THE RACEWAY AT THE SAME TIME. COLOR CODE CONDUCTORS AS FOLLOWS: 120/208 VOLT SYSTEMS: BLACK, RED, BLUE AND WHITE. USE PROPERLY SIZED INSULATED SPRING WIRE CONNECTORS WITH PLASTIC CAPS FOR ALL CONDUCTORS #8 AWG AND SMALLER. TERMINATE #6 AWG AND LARGER CONDUCTORS WITH CRIMP OR COMPRESSION TYPE CONNECTORS INSTALLED WITH TOOL RECOMMENDED BY CONNECTION MANUFACTURER AND INSULATE WITH PROPERLY SIZED 600 VOLT RATED HEAT SHRINK TUBING.

OUTLET BOXES - PROVIDE GALVANIZED OR CADMIUM PLATED, ONE PIECE PRESSED STEEL OUTLET BOXES 4 INCH SQUARE OR OCTAGONAL, 1 1/2 INCHES DEEP MINIMUM SIZE FOR USE IN INTERIOR AREAS. PROVIDE CAST ALUMINUM OR FERALLOY TYPE BOXES WITH GASKETED COVER, THREADED HUBS, AND NEMA 3R RATING FOR USE IN EXTERIOR OR WET LOCATIONS. PROVIDE OUTLET BOXES AS SHOWN ON THE DRAWINGS, AND AS REQUIRED FOR SPLICES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, DEVICE INSTALLATION AND CODE COMPLIANCE. SUPPORT BOXES INDEPENDENTLY OF CONDUIT.

PANELBOARDS - PANELBOARDS ARE EXISTING. NEW CIRCUIT BREAKERS SHALL BE MOLDED CASE CIRCUIT BREAKERS SHALL BE BOLT-ON THERMAL MAGNETIC TRIP TYPE WITH COMMON TRIP HANDLE FOR ALL POLES. PROVIDE NEW CIRCUIT BREAKERS TO MATCH EXISTING STYLE, MANUFACTURER, AND AIC RATING.

EQUIPMENT CONNECTIONS - PROVIDE WIRING AND CONNECTION OF EQUIPMENT REQUIRING ELECTRICAL POWER BUT SPECIFIED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS. EQUIPMENT SHALL INCLUDE BUT IS NOT LIMITED TO PUMP CONTROLS AND FUEL DISPENSER. REVIEW EQUIPMENT SUBMITTALS PRIOR TO INSTALLATION AND ELECTRICAL ROUGH-IN. VERIFY LOCATION, SIZE, TYPE OF CONNECTIONS, AND THAT EQUIPMENT IS READY FOR ELECTRICAL CONNECTION. MAKE WIRING CONNECTIONS IN CONTROL PANEL OR IN WIRING COMPARTMENT OF PREWIRED EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROVIDE INTERCONNECTING WIRING AND DISCONNECTS WHERE REQUIRED.

DISCONNECT SWITCHES - PROVIDE UL LISTED 250V, HEAVY DUTY FUSIBLE QUICK-MAKE, QUICK BREAK, LOAD INTERRUPTER, ENCLOSED KNIFE SWITCHES WITH EXTERNALLY OPERABLE HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION, HANDLE LOCKABLE IN OFF POSITION, AND FUSE CLIPS DESIGNED TO ACCOMMODATE CLASS R FUSES AND REJECT ALL OTHER CLASS FUSES. ENCLOSURES SHALL BE NEMA 1 OR 3R AS INDICATED ON THE DRAWINGS. INSTALL ANSI/UL 198E CLASS RK5 250 VOLT ONE-TIME FUSES, 200,000 RMS AMPERE INTERRUPTING RATED OF SIZE INDICATED ON THE DRAWINGS IN ALL FUSIBLE DISCONNECT SWITCHES.

MOTOR STARTERS - PROVIDE MAGNETIC MOTOR STARTERS; NEMA ICS 2, AC GENERAL-PURPOSE CLASS A MAGNETIC CONTROLLER FOR INDUCTION MOTORS RATED IN HORSEPOWER. FULL VOLTAGE STARTING, NON-REVERSING TYPE. OVERLOAD RELAY SHALL BE SOLID STATE TYPE, WITH 3 TO 1 ADJUSTMENT FOR TRIP CURRENT AND PHASE LOSS AND UNBALANCE PROTECTION. COMBINE MOTOR STARTERS WITH FUSIBLE SWITCH DISCONNECT IN COMMON ENCLOSURE. PROVIDE TWO FIELD CONVERTIBLE CONTACTS IN ADDITION TO SEAL-IN CONTACT. PROVIDE HAND/OFF/AUTO SELECTOR SWITCH AND A RED "RUN" INDICATOR LIGHT IN FRONT COVER. PROVIDE CONTROL POWER TRANSFORMERS AS REQUIRED. INSTALL MOTOR CONTROL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL FUSES IN FUSIBLE SWITCHES. SELECT AND INSTALL HEATER ELEMENTS IN MOTOR STARTERS TO MATCH INSTALLED MOTOR CHARACTERISTICS. MOTOR DATA: PROVIDE NEATLY TYPED LABEL INSIDE EACH MOTOR STARTER ENCLOSURE DOOR IDENTIFYING MOTOR SERVED, NAMEPLATE HORSEPOWER, FULL LOAD AMPERES, CODE LETTER, SERVICE FACTOR, AND VOLTAGE/PHASE RATING.

PENETRATIONS - ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED BARRIERS SHALL BE SEALED IN ACCORDANCE WITH NEC ARTICLE 300-21 AND THE FOLLOWING:

ALL HOLES OR VOIDS CREATED TO EXTEND ELECTRICAL SYSTEMS THROUGH FIRE RATED FLOORS AND WALLS SHALL BE SEALED WITH AN ASBESTOS-FREE INTUMESCENT FIRE STOPPING MATERIAL CAPABLE OF EXPANDING 8 TO 10 TIMES WHEN EXPOSED TO TEMPERATURES 250 DEGREES F OR HIGHER.

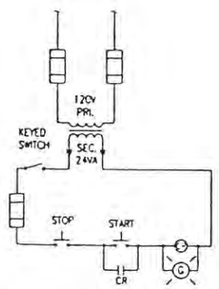
MATERIALS SHALL BE SUITABLE FOR THE FIRE STOPPING OF PENETRATIONS MADE BY STEEL, GLASS, PLASTIC AND SHALL BE CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH THE REQUIREMENTS OF ASTM E814, UL 1479 AND THE UL FIRE RESISTANCE DIRECTORY REQUIREMENTS FOR THROUGH-PENETRATION FIRESTOP DEVICES (XHGR).

THE RATING OF THE FIRE STOPS SHALL BE THE SAME AS THE TIME-RATED FLOOR, OR WALL ASSEMBLY.

INSTALL FIRE STOPPING MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

UNLESS PROTECTED FROM POSSIBLE LOADING OR TRAFFIC, INSTALL FIRE STOPPING MATERIALS IN FLOORS HAVING VOID OPENINGS OF FOUR (4) INCHES OR MORE TO SUPPORT THE SAME FLOOR LOAD REQUIREMENTS AS THE SURROUNDING FLOOR.

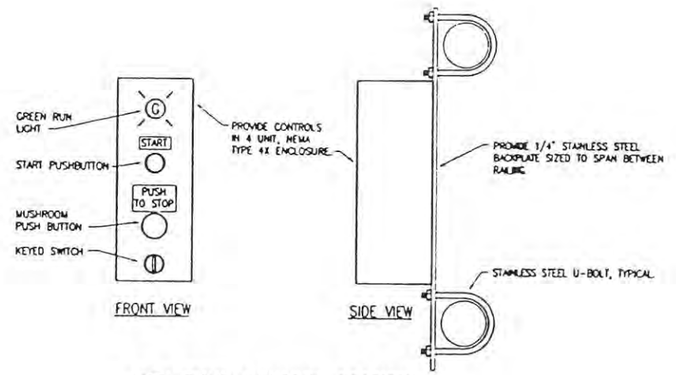
RACEWAYS PENETRATING VAPOR BARRIERS OR PENETRATING AREAS FROM COLD TO WARM SHALL BE SEALED WITH A NON-HARDENING DUCT SEALING COMPOUND TO PREVENT THE ACCUMULATION OF MOISTURE, AND SHALL INCLUDE A VAPOR BARRIER ON THE OUTSIDE.



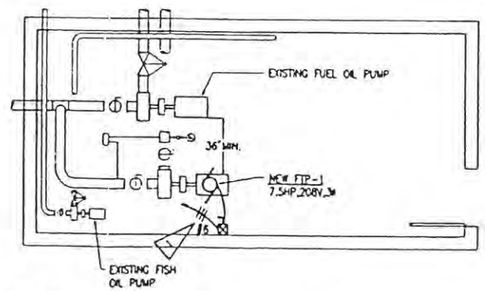
1 PUMP CONTROL STATION SCHEMATIC
NTS

NOTES:

1. CONNECT TO NEW 50A,3P CIRCUIT BREAKER IN EXISTING 120/208V, PANELBOARD IN EXISTING POWER HOUSE BUILDING. COORDINATE WITH OWNER FOR LOCATION. RUN IN TRENCH ALONG ROAD WITH FUEL PIPING. COORDINATE WITH OWNER ON LOCATION TO RUN TRENCH ACROSS ROAD.



2 PUMP CONTROL STATION
NTS



3 PUMP HOUSE POWER PLAN
1/4" = 1'-0"

STATE OF ALASKA
TIMOTHY HALL
EE-9121
REGISTERED PROFESSIONAL ENGINEER

PETRO STAR INC.
WESTWARD SEAFOODS FUEL UPGRADE

Designed:	RPH
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ELECTRICAL SPECS
POWER PLAN AND DETAILS

Sheet E2 of 2