

CITY OF ROCKWALL, TEXAS

CONSTRUCTION PLANS FOR

EASTSIDE PUMP STATION REPLACEMENT OF PUMPS 1 AND 2

(ADDITIVE ALTERNATE: INSTALL PUMP NO. 4)

INCLUDED IN
THIS PROJECT

CONTRACTOR: TRIPLE D, INC.
P.O. BOX 1149
KELLER, TX. 76244

PROJECT SUPERINTENDENT: BOB SKINNER

CITY INSPECTOR: MIKE WHISENHUNT

CONTRACT COMPLETION DATE: NOV. 23, 1999

ORIGINAL CONTRCT AMOUNT: \$374.000

FINAL CONTRCT AMOUNT: \$357.909

COUNCIL MEMBERS

GEORGE HATFIELD, MAYOR
NELL WELBORN, MAYOR PRO-TEM
BILLY MORRIS
SCOTT SELF
SAM BUFFINGTON
RON COLESON
DALE MORGAN

CITY MANAGER

JULIE COUCH

ASSISTANT CITY MANAGER

RICHARD R. CROWLEY

CITY ENGINEER

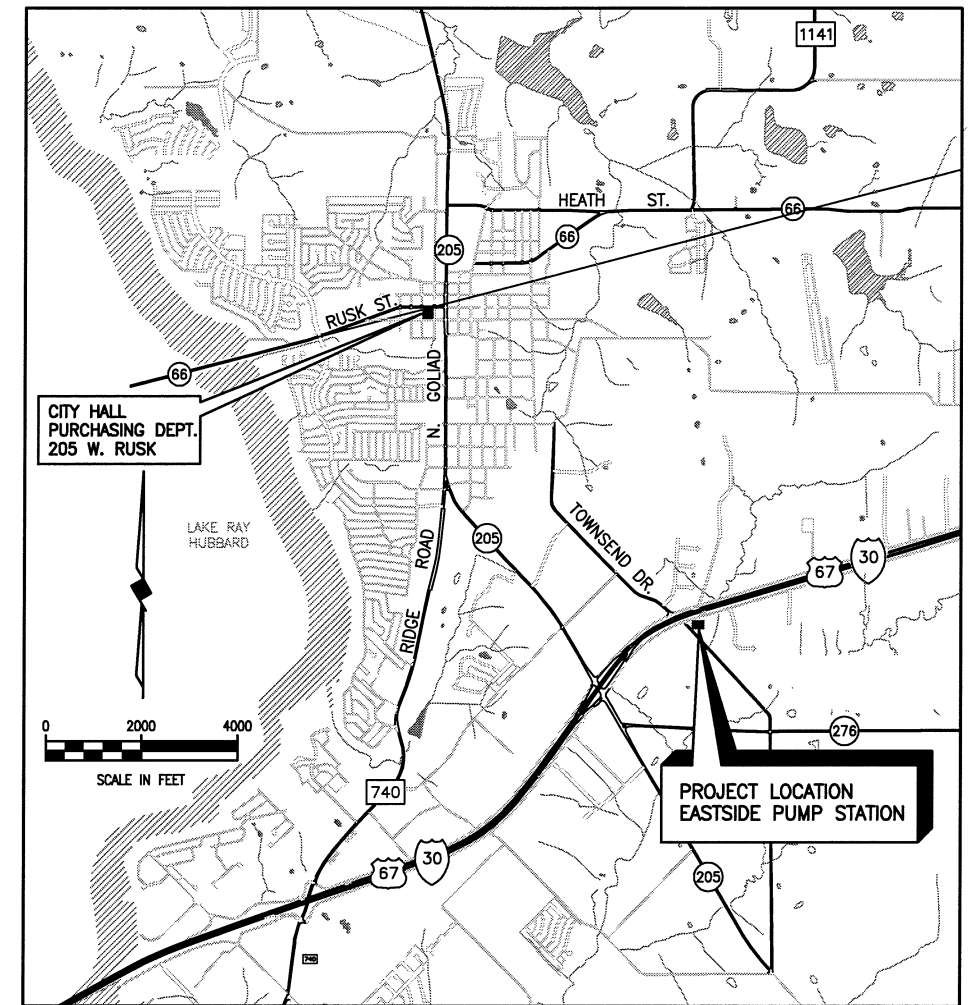
CHARLES A. TODD, P.E.

*This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Conway, L.L.P.
BY G.C.H. DATE 05/06/09*



SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

APRIL 1999



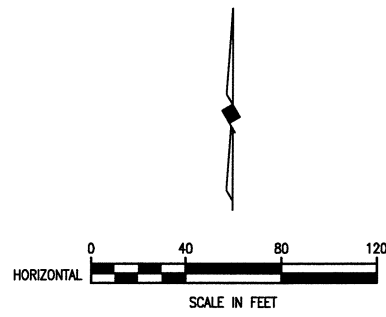
LOCATION MAP

SHEET INDEX

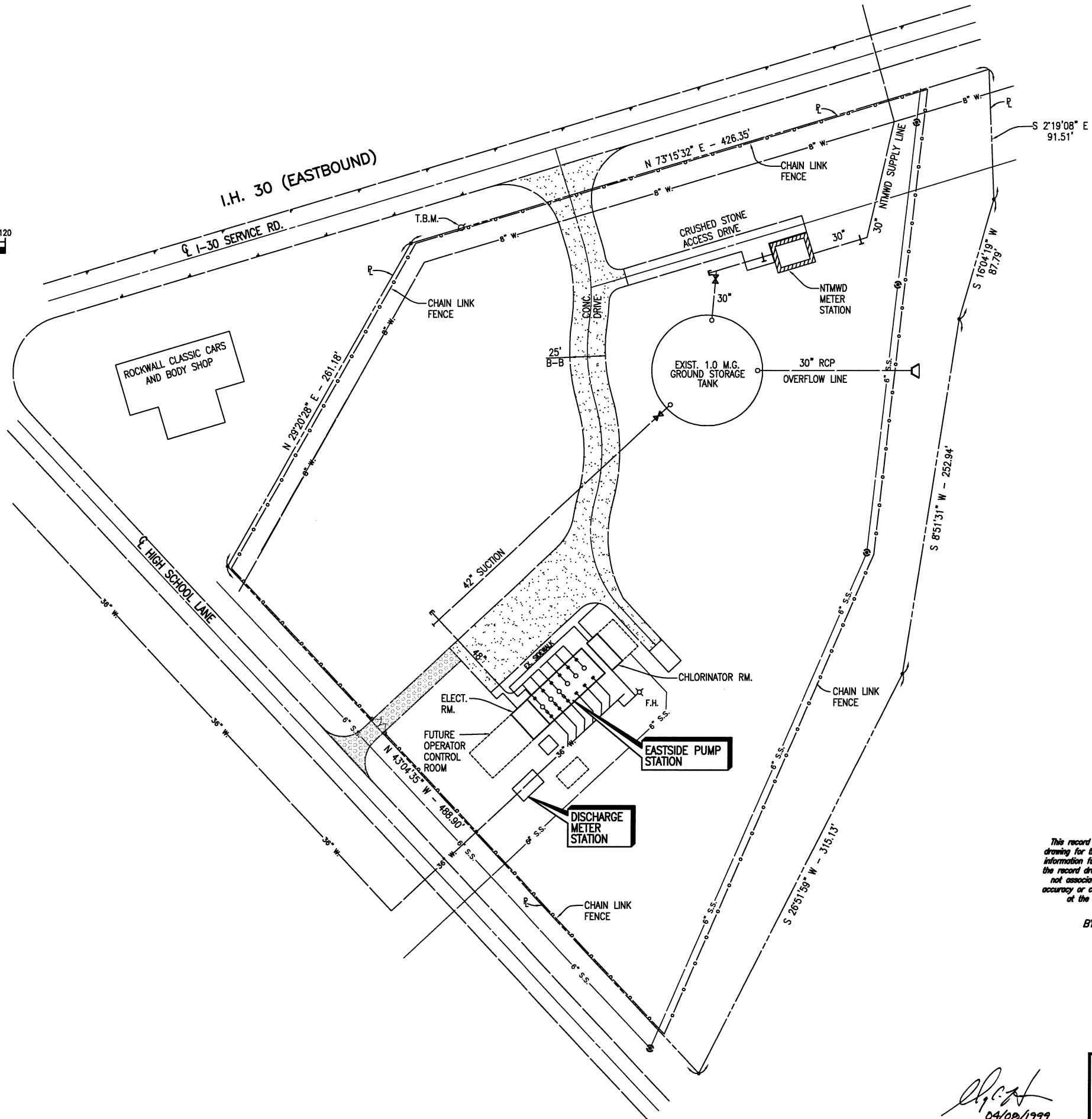
SHEET NO.	SHEET DESCRIPTION
-	COVER SHEET, LOCATION MAP AND INDEX
1	EXISTING SITE PLAN
1A	ADDENDUM NO. 1
1B	PUMP 1, 2 & 4 - PUMP MOTOR SHOP DRAWING DATA
1C	CHANGE ORDERS & FINAL PAY REQUEST
2	EXISTING PUMP STATION ROOF PLAN
3	EXISTING PIPING LAYOUT (BELOW GRADE)
4	EXISTING PUMP 1 AND 2 - SECTIONS
5	EXISTING PUMP 4 - SECTION PROPOSED PUMP 1, 2 & ALTERNATE 4 - SECTION
6	PROPOSED PUMP 1, 2 & ALTERNATE 4 - PLAN
7	E1 ONE LINE DIAGRAMS
8	E2 ELECTRICAL SITE PLAN
8A	ADDENDUM NO. 1, AIR CONDITIONER UNIT
9	E3 ELECTRICAL SECTIONAL PLAN
10	E4 SCHEMATICS
11-12	E5 & E6 ELECTRICAL DETAILS 7(E1)



G.C.H.
04/02/1999



T.B.M.:
RR SPIKE SET IN POWER POLE,
SOUTH SIDE OF I.H. 30 SERVICE
ROAD, APPROX. 80' WEST OF RAMP
STATION ENTRANCE.
ELEV. 546.80



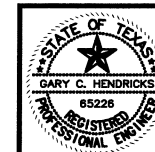
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BY G.C.H. DATE 05/06/09

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Shimek, Jacobs & Finklea.

98192-02.DWG 4/08/99 J.L.Y BLDGCKS X

G.C.H.
04/08/1999



CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION EXISTING SITE PLAN		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>G.C.H.</u>	PROJECT: <u>98192</u>	SHEET NO. <u>1</u>
DRAWN BY: <u>S.J. & F.</u>	DATE: <u>APRIL 1999</u>	OF <u>12</u> SHEETS

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
REPLACEMENT OF PUMP NOS. 1 AND 2

ADDENDUM NO. 1
April 13, 1999

Plans and specifications for the Eastside Pump Station - Replacement of Pump Nos. 1 and 2 project, for the City of Rockwall, Texas, on which bids are to be received until 10:00 a.m., April 16, 1999, are hereby modified as follows:

TECHNICAL SPECIFICATIONS:

- Refer to Section 1.01 - General, Item B. - Approval of Equipment. Add the following sentence after the 1st sentence of the 6th paragraph of this section:
"The pump suppliers proposal shall also include the necessary adapter, fittings and connectors required to properly mate the proposed pumps to the existing pump can flanges (Piping Schedule Item B, Sheet No. 5 of the Construction Plans)."
- Refer to Section 1.01 - General, Item E. - Factory Test. In order to expedite the delivery time of the pumps and motors for this project, the factory test for the pumps are hereby waived. Therefore, delete Item E, paragraph 2 in its entirety and do not replace.
- Refer to Section 1.02 - Product, Item B. - Motor, 1) - General. Add Marathon Electric to the approved motors for this project.
- Refer to Section 4.6 - Miscellaneous Electrical, page 4-22. Replace Paragraph D, and add Paragraphs J and K, as provided below:
D. Provide and install 480V-3Ø room air conditioner to replace existing window unit. Unit shall be rated at 3½ tons with 115° air on outdoor coil. Unit shall have a SEER rating of 10 or higher. York single package slab on ground with insulated and weather protected outdoor duct and distribution through existing door. Unit will be cooling only. Provide thermostat and all controls. Paint indoor duct to match. Provide York model DEB04Z or equal.
J. Upgrade PLC as required to provide all necessary input, output and control as indicated on the drawings. Replace the existing micro controller with a larger version that will accommodate the required inputs, outputs and logic. Provide services to transfer the existing PLC logic to the new PLC and to program the new PLC to accommodate the additional logic for the generator, automatic transfer switch and pumping changes. This work will include modifications to the City of Rockwall Central Monitoring Control PLC, computer programming, MMI and display pages at the Service Center located at 1600 Airport Rd. and the addition of new display pages for pump 4 (alternate) and the generator and automatic transfer switch. The existing software is Wonderware. Work shall be performed by Mid-Tex Controls, Lewisville, Texas. Contact Mr. Jerry Hawn at 972-436-9024. Contractor shall obtain pricing for this work before bid and include it in his price. No separate payment shall be made for work under this section, but all such work shall be considered incidental to the project and the payments made under specific Pay Items shall be considered as full compensation for these requirements.
K. Provide 3Ø, 480V lightning arresters for each pump motor. Provide Delta LA603.

- Refer to Section 4.7 - Emergency Generator, page 4-22. Change all references to "Emergency Generator" to "Standby Generator".
- Refer to Section 4.7 - Emergency Generator, page 4-22, Item B. Add:
13) Remote Display Unit (Remote Annunciator).
14) Remote Fault Signal Dry Contact Relay Package.
- Refer to Section 4.7 - Emergency Generator, page 4-23, Item F, second paragraph. Change "200kW" to "500kW".
- Refer to Section 4.7 - Emergency Generator, page 4-24, Item G, second paragraph, third sentence. Change "150 amp" to "250 amp".
- Refer to Section 4.7 - Emergency Generator, page 4-26, Item I. Strike the last sentence.
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-27, Item A. Add the following sentence to the second paragraph:
"Transfer switch load terminals and round terminals shall have adequate space to terminate all conductors as shown on the drawings."
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-28, Item D, third paragraph, last sentence. Replace "35000 amp" with "65000 amp".
- Refer to Section 4.8 - Automatic Transfer Switch, page 4-29, Item F.
 - 1st paragraph, 2nd sentence. Change "three steps" to "four steps"
 - 4th sentence. Change "step two and three" to "steps two through four"
 - Last sentence. Change "step two and three" to "steps two through four"
 - Last paragraph. Replace the last paragraph in its entirety.
- Refer to Section 4 - ELECTRICAL. Add the following Subsection:
4.9 LOW VOLTAGE MOTOR CONTROLLERS
A. Scope
The Contractor shall furnish and install the low-voltage motor controllers as specified herein and as shown on the contract drawings.
The motor controllers shall be designed, manufactured and tested in accordance with the latest applicable standards of NEMA, ANSI and UL.
The following information shall be submitted to the Engineer:
 - Master drawing index
 - Dimensioned outline drawings
 - Conduit entry/exit locations
 - Cable terminal sizes
 - Wiring diagrams

- Nameplate schedule
 - Ratings including:
 - Voltage
 - Horsepower and/or continuous current.
- Submit six (6) copies of the above information.
- When requested by the Engineer the following product information shall be submitted:
- Descriptive bulletins
 - Product data sheet.
- The following information shall be submitted for record purposes:
- Final as-built drawings and information for items listed in section 1.04
 - Wiring diagrams.
- Submit six (6) copies of the above information.
- B. Qualifications
For the equipment specified herein, the manufacturer shall be ISO 9000, 9001 or 9000 certified.
The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.
The motor controller shall be suitable for and certified to meet all applicable seismic requirements of Uniform Building Code (UBC) for zone 4 application. Guidelines for the installation consistent with these requirements shall be provided by the motor controller manufacturer and be based upon testing of representative equipment. The test response spectrum shall be based upon a 5% minimum damping factor, UBC: a peak of 0.75g, and a ZPA of 0.35g. The tests shall fully envelope this response spectrum for all equipment natural frequencies up to at least 35 Hz.
- C. Equipment Storage and Handling
Equipment shall be handled and stored in accordance with manufacturer's instructions. The (1) copy of these instructions shall be included with the equipment at time of shipment.
- D. Manufacturers
1) Cutler-Hammer
2) Benschaw
3) Square D
- E. Starters
1) Magnetic starters through NEMA Size 9 shall be equipped with double-break silver alloy contacts. The starter must have straight-through wiring.
2) Coils shall be of molded construction through NEMA Size 9. All coils to be color coded through size 5 and permanently marked with voltage, frequency and part number.

- Overload relays shall be an ambient compensated bimetallic type with interchangeable heater packs. Overload to have (+/-) 24% adjustability, single-phase sensitivity, an isolated alarm contact, and manual or automatic reset.
 - NEMA Size 00 through 2 starters shall be suitable for the addition of at least six (6) external auxiliary contacts of any arrangement normally open or normally closed. Size 3 through 8 starters shall be suitable for the addition of up to eight (8) external auxiliary contacts of any arrangement normally open or normally closed.
 - Each starter shall have one auxiliary contact as required by the drawings.
 - Overload relays shall be ambient compensated bimetallic-type with interchangeable heaters, calibrated for 1.0 and 1.15 service factor motors. Electrically isolated NO and NC contacts shall be provided on the relay. Visual trip indication shall be standard. A test trip feature shall be provided for ease of troubleshooting and shall be conveniently operable without removing components or the motor starter. Overload to have (+/-) 24% adjustability, single-phase sensitivity, an isolated alarm contact and manual or automatic reset.
 - Control circuit transformers, where specified, shall be encapsulated. Primary and secondary fusing shall be provided. Unless otherwise specified, the secondary shall be 120 Vac.
 - Pilot devices, where specified, shall be oiltight and mounted in the flange. Pilot lights shall be transformer-type for extended lamp life. Pilot device nameplates shall be engraved phenolic or aluminum.
 - The operating mechanism shall be mounted on the flange and shall have positive, non-teasing ON/OFF action. The handle shall be color-coded: red for ON and black for OFF.
 - The operating handle shall have a means to lock the handle in the OFF position with a minimum of three (3) standard padlocks having 1/4-inch diameter shackles.
 - Where specified, a disconnect switch with double break, rotary blades and quick-make/quick-break action shall be provided.
 - A removable line shield with test probe holes for inspection shall be provided.
 - The switch shall have readily visible blades in the open (OFF) position.
 - The fusible disconnect switch (through 100A) shall have built-in fuse pullers to make it easier to remove fuses.
 - Where specified, an adjustable instantaneous trip, magnetic-only circuit breaker shall be provided (HMCP). A manual push-to-trip button shall be provided to exercise the trip unit.
 - Combination starters with adjustable instantaneous trip, magnetic-only circuit breakers shall be UL listed for 65,000 amperes fault, through 480 volts.
- F. Reduced Voltage Bypass Motor Starter
- All solid-state reduced-voltage starters shall be UL and CUL listed and consist of an SCR based power section, logic board and paralleling bypass contactor.
 - The SCR based power section shall consist of six (6) back-to-back SCRs and shall be rated for a minimum peak inverse voltage rating of 1500 volts PIV.

- Units using triacs or SCR/diode combinations shall not be acceptable.
- Resistor/capacitor snubber networks shall be used to prevent false firing of SCRs due to dv/dt effects.
- The logic board shall be mounted for ease of testing, service and replacement. It shall have quick disconnect plug-in connectors for current transformer inputs, line and load voltage inputs and SCR gate firing output circuits.
- The logic board shall be identical through all ampere ratings and voltage classes and shall be conformably coated to protect environmental concerns.
- The paralleling bypass contactor shall energize when the motor reaches full speed and de-energize under one (1) times motor current.
- The contactor shall be fully rated for across-the-line starting duty should this be desired.
- The overload protection shall be electronic and be based on an inverse time current algorithm.
- Overload protection shall be adjusted via logic board.
- Class 10 or 20 overload characteristic shall be selectable.
- Provide class 20 bi-metal overload relays in addition to the electronic overload relay
- Over-temperature protection (on heat sink) shall be standard.
- The solid-state logic shall be phase sensitive, and shall inhibit starting on incorrect rotation.
- Improper phase rotation shall be indicated on the starter logic board.
- Starters shall protect against a phase loss/unbalance condition shutting down if a 35% current differential between any two phases is encountered.
- A normally open (NO) contact shall annunciate fault conditions, with contact ratings of 60 VA (resistive load) and 20 VA (inductive load). In addition, an LED display on the logic board shall indicate type of fault (current trip, phase loss, phase rotation).
- The following logic board adjustments are required:
 - Ramp Time; 1 to 45 seconds, on a hexadecimal switch
 - Initial Torque; 100 to 200% current, on a hexadecimal switch
 - Current limit; 100 to 500% current, on a hexadecimal switch
 - FLA of motor; 4 to 1 range of starter, on a dipswitch.
- Optional smooth stopping shall provide a linear voltage deceleration should the load require it. It is to be adjustable from 1 to 75 seconds.
- Enclosed units shall include a thermal magnetic circuit breaker or HMCP for short-circuit protection and quick disconnect means.
- Starters and breakers/HMCPs are to be rated per UL 508D for a withstand rating of 65 kAIC RMS.

- Units enclosed in motor control centers shall be of the same manufacturer as that of the motor control center for coordination and design issues.
 - The manufacturer of the solid-state starter shall employ a field-based factory service organization for the purpose of start-up and repair of units. Third party service contractors are not acceptable.
 - Maximum continuous operation shall be at 115% of continuous ampere rating.
- G. Factory Testing
The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.
- All printed circuit boards shall be functionally tested via faultfinder bench equipment prior to unit installation.
 - All final assemblies shall be load tested.
- The manufacturer shall provide three (3) certified copies of factory test reports.
- H. Installation
Provide the services of a qualified factory-trained manufacturer's representative to assist the Contractor in installation and start-up of the equipment specified under this section. The manufacturer's representative shall provide technical direction and assistance to the Contractor in general assembly of the equipment, connections and adjustments, and testing of the assembly and components contained herein.
The following minimum work shall be performed by the Contractor under the technical direction of the manufacturer's service representative.
- Inspection and final adjustments
 - Operational and functional checks of controllers/starters and spare parts.
- The Contractor shall provide three (3) copies of the manufacturer's field start-up report.
- I. Manufacturer's Certification
A qualified factory-trained manufacturer's representative shall certify in writing that the equipment has been installed, adjusted and tested in accordance with the manufacturer's recommendations.
The Contractor shall provide three (3) copies of the manufacturer's representative's certification.
- J. Training
The Contractor shall provide a training session for up to two owner's representatives for two normal workdays at a jobsite location determined by the owner.
The training representative shall be conducted by a manufacturer's qualified representative.
The training program shall consist of the following:
 - Instructions on the proper maintenance and operation of the equipment.

- DRAWINGS
- Refer to Drawing E1, Sheet 7. Revise One Line Diagram as follows:
 - Add Note 5. Provide a sign at Service Entrance Panel indicating the location of Both Sources of Power.
 - Make the A/C Unit Circuit Breaker 15 Amps.
 - Add a Heavy Duty 480 Volt, 30 Amp, Non-fused Safety switch to the A/C Unit One Line Drawing.
 - Refer to Drawing E2, Sheet 8.
 - Add the following notes to this sheet:
Note 1: Ground Generator Frame with #4/0 AWG in Duct Bank. Do not ground Generator Neutral at the Generator.
Note 2: Obtain Manufacturers drawings and accurately locate voids in generator foundation for all conduit stubups.
Note 3: Ground Rod to Generator with #4 AWG Conductor.
 - Delete A/C location on plan. Refer to attached Air Conditioning Sheets for A/C Unit Location and details.
 - Refer to Drawing E3, Sheet 9.
 - Add the Thermostat near EF-4 to control the Exhaust Fan when the motor control selector switch is in the auto position.
 - Move all three valve closed position switches (ZS P1, P2 and P3) to the pump discharge valves.
 - Add Note 2: Contractor shall demolish existing unused pump control valve wiring to Pump Nos. 1 and 2.
 - Refer to Drawing E4, Sheet 10 - Schematic C-H 125 Soft Starters. Change contact labeled "RUN" to "M".
 - Refer to Drawing E5, Sheet 11.
 - Detail 01, Note 2. Change #1/0 EGC to #4/0 EGC. Delete Note 3.
 - Add the following Notes:
Note 4: Width and Length of Slab will be "M" + 12" on each side. Slab shall be 24" thick.
Note 5: 3000 PSI Concrete Pad, Reinforced with #6 Rebars @ 12" O.C.B.W. Top and Bottom. 1" Chamfer all around Top. Exposed Concrete Surfaces shall be rubbed smooth. Compact Soil under Pad to Proctor 90.
 - Conduit & Cable Schedule:
 - Tag "E" 3#12, #12 G, ¾" C.
 - Tab "T" Add 2#14 for thermostat control conductors.
 - Tab "M" 25#14, 1" C.

- Refer to Drawing E6, Sheet 12.
 - Show Pump Control Check Valve Limit Switch on Elevation Pump No. 1.
 - RTU Schedule: Change to RTU I/O Schedule.
 - ZS-P1, P2 and P4 Field Device: Change "Dump" to "Pump".
 - P1 ON: Add a Discrete Input
 - Add four Permissive Start "Discrete Inputs" from the Automatic Transfer Switch. This tells the RTU that the load has transferred and then allows sequential re-start to the active pump motors. Four motors may run on utility power but only three are allowed on Generator Power.
 - Bidders shall acknowledge receipt of Addendum No. 1 in the space provided in the Proposal, on the outer envelope of their bid, and by faxing back the "Transmittal of Addendum Acknowledgment Sheet" to Shimek, Jacobs & Finklea, L.L.P. at (214) 361-0204.
- SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
DALLAS, TEXAS

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BY G.C.H. DATE 05/06/99

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G.C.H.
04/08/1999



CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
ADDENDUM NO. 1
SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: G.C.H.	PROJECT: 98192	SHEET NO. 1A
DRAWN BY: S.J. & F.	DATE: APRIL 1999	OF 12 SHEETS

98192-02.DWG 4/08/99 J.L.Y. BLOCKS X



7437 Tower Street
Ft. Worth, Texas 76118
Phone: (817)589-2060 Fax: (817)595-4900

TO: Successful Contractor for the Eastside P. S. Replacement of Pumps # 1 & 2

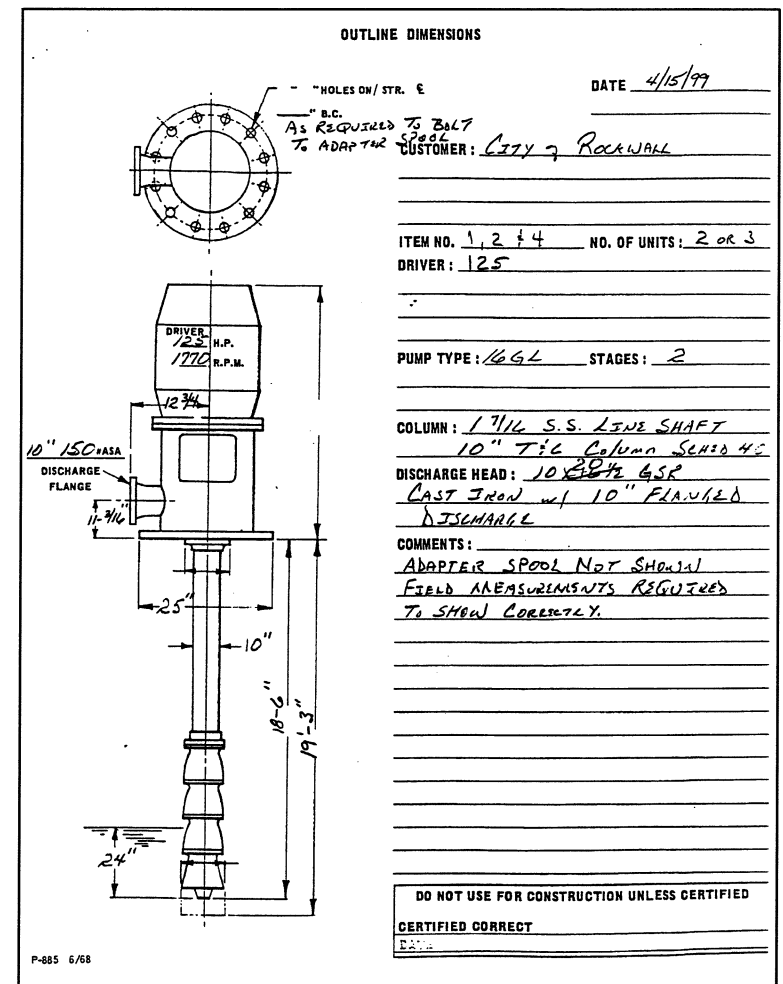
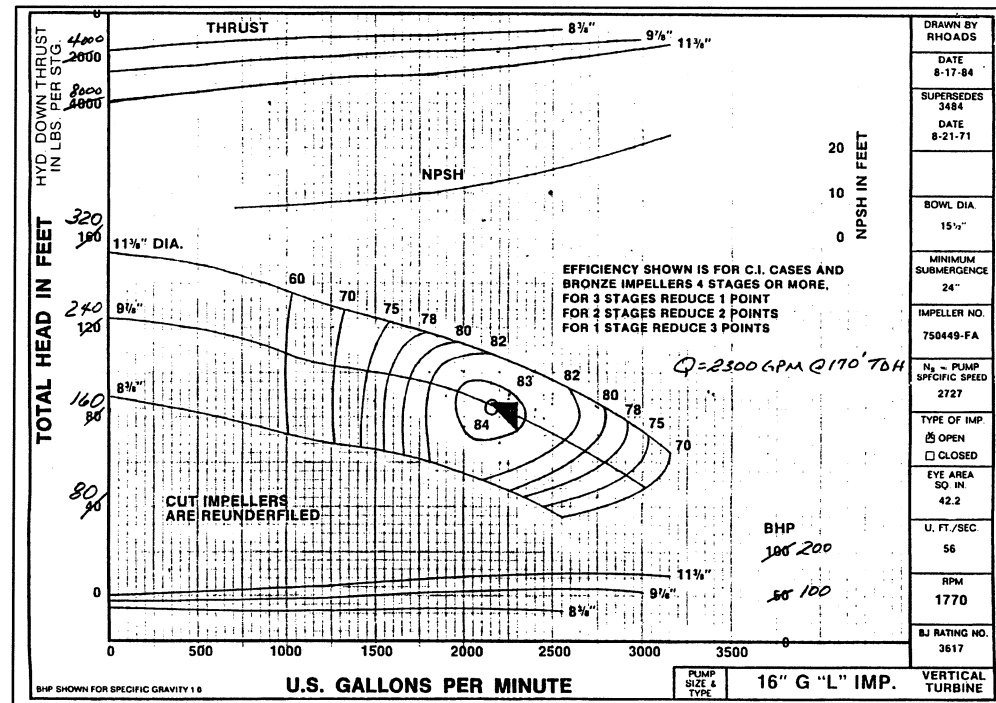
REF: City of Rockwall - Eastside P.S. Replacement of Pumps # 1 & 2
BIDS: 16-April @ 10:00 a.m.
ENG: Shimek, Jacobs & Finklea
DATE: 15-April-99

ADDENDUM #1 ACKNOWLEDGED

ATTN: Salesman: Jerry Lee Freedle PH FAX
Item No. Qty. Material Description Unit Price Total Price

Section 1 - Vertical Turbine Pumping Units
BASE BID
Q = 2300 GPM @ 170' TDH - 81% eff @ design - Pump Wt. 1944 lbs.
S = 1770 RPM Motor Wt. 1300 lbs.
N = 460V/3ph Total Wt. 3244 lbs.
P = 125 Hp
BB = 18' 6"

- Scope of equipment offered:
- Byron Jackson Model 16GL-2 Stage product lube bowl assembly w/ C.I./B.F. construction w/ impellers secured to pump shaft w/ S.S. collars
 - Items 1-7/16" X 10" T & C column pipe enough for a base to bell of 18-6"
 - 10 X 20 GSR cast iron discharge head w/ packed stuffing box and bronze split gland
 - Vertical Suppressors mounted to bottom suction bell of pump (To be shipped loose for field mounting by installing contractor)
 - Steel adapter spools for mounting discharge head to existing pump can.
 - Items Bolts and gaskets to mount head and adapter spool to pump can. (TNEPEC Series 140)
 - Coat pump, column & discharge head per specifications.
 - 125 Hp vertical hollow shaft motors w/ 120V space heaters, of ground lug in motor conduit box.
 - Items add guard screens to discharge heads
 - Item freight F.O.B. jobsite
 - Item start up supervision
- Clarifications:
Pump offered with a 2-pc S.S. head shaft in lieu of adj. couplin.
Pump offered with threaded and coupled column pipe in lieu of flanged column pipe.
Surge protection capacitor, lightning arrester and conduit box all by others.
Motor to be shipped with manufactures standard paint.
Motor offered without RTD.
- Shipment: Allow 2-3 weeks after submittal approval for pumps
Allow 4-6 weeks after submittal approval for motors 5/3/99 by GCA
- Prepared by: Jerry Lee Freedle
Pricing does not include tax.
- LOT NET TOTAL F.O.B. SHIPPING POINT WITH FREIGHT ALLOWED TO JOBSITE**



MARATHON ELECTRIC

P.O. BOX 8003
Wausau, WI 54401-8003
PH: 715 675-3311

CERTIFICATION DATA
(DATA IS BASED ON 460 VOLTS)

TO: Customer: Enclosure: WPI Model: 405VTDB7036 Serial No: MEMC Order No: Outline:

NP HP: 125.00 DESIGN: B FRAME: 405
NP VOLTS: 230/460 FREQ: 60 HZ MAX LOAD INERTIA: 540
NP AMPS: 144.00 LR CODE: G MTRWGT:
NP RPM: 1775 95% PF CORR: ROTOR INERTIA: 19.9
NP EFF: 92.4% SOUND @ 1M: 81 dBA STARTS/HOUR: 3(NEMA WK2)
NP PF: 87.5% AMBIENT: 40 C STALL TIME: 5 Seconds
GTD EFF: 91.0% SERVICE FACTOR: 1.15 INSULATION: F

EQUIVALENT WYE CKT. PARAMETERS (OHMS PER PHASE)

R1	R2	X1	X2	X3
0.043	0.023	0.163	0.272	6.515

AMPS	KW	RPM	TQ(FT-LB)	EFF (%)	PF (%)	R/R (C)
No LD	40.50	2.20	1800	91.50	88.50	62.00
1/4 LD	53.00	26.00	1795	91.50	88.50	62.00
1/2 LD	78.50	50.50	1790	183.00	93.00	80.00
3/4 LD	110.00	75.00	1785	276.00	92.40	85.00
1.0 LD	144.00	100.00	1775	369.00	92.40	87.50
1.15 LD	165.00	115.00	1770	425.00	92.40	88.00
1.25 LD	180.00	126.00	1765	465.00	91.70	88.00

MTR AMPS NEMA AMPS MTR TO NEMA TQ PF (%)

L.R.	900	907	165%	125%	37
B.D.	420		226%	201%	72

COMMENTS: VERTICAL HOLLOW SHAFT

CONNECTION #: SUBMITTED BY: RUTHANN GROUNDS REFERENCE: M405-125H4DP1

FORM 4118 6-30-96 5/24/97

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BY G.C.H. DATE 05/06/99

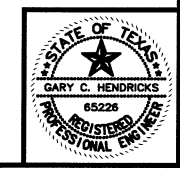
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CITY OF ROCKWALL, TEXAS

EASTSIDE PUMP STATION PUMP & MOTOR DATA

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: G.C.H. PROJECT: 98192 SHEET NO. 18
DRAWN BY: S.J. & F. DATE: APRIL 1999 OF 12 SHEETS



G.C.H.
04/08/1999

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
REPLACEMENT OF PUMP NOS. 1 AND 2
CHANGE ORDER NO. 1

A. INTENT OF CHANGE ORDER

The intent of this change order is to modify the provisions of the contract entered into between the City of Rockwall, Texas and Triple D, Inc., P. O. Box 1149, Keller, Texas 76244, for construction of the Eastside Pump Station Replacement of Pump Nos. 1 and 2, dated April 19, 1999.

B. DESCRIPTION OF CHANGE

This change covers the adjustment of the contract price, due to the difference in the amount of the successful pump and motor bid allowance included in the contractor's bid for this project. The Base Bid for construction of this project included a pump and motor allowance of \$30,000.00. The Additive Alternate Bid included a bid allowance for the pump and motor of \$15,000.00.

C. EFFECT OF CHANGE ON CONTRACT AMOUNT

Smith Pump Company of Ft. Worth, Texas submitted the successful pump and motor bid, in the amount of \$25,606.00 for the Base Bid (Pump Nos. 1 & 2); and \$12,803.00 for the Additive Alternate Bid (Pump No. 4).

Therefore, a deductive amount of \$4,394.00 for the Base Bid (Pump Nos. 1 & 2); and a deductive amount of \$2,197.00 for the Additive Alternate Bid (Pump No. 4) is to be executed with the original construction contract documents. Accordingly, the amount of the contract is to be reduced by \$6,591.00.

Original Contract Amount	\$374,000.00
Amount, Change Order No. 1	(6,591.00)
Revised Contract Amount	\$367,409.00

D. EFFECT OF CHANGE ON CONTRACT TIME

The contract time shall not be affected by this change order.

E. AGREEMENT

By the signatures below of duly authorized agents, the City of Rockwall and Triple D, Inc., do hereby agree to append this Change Order No. 1 to the original contract between themselves dated April 19, 1999.

City of Rockwall, Texas Owner	Triple D, Inc. Contractor
By: <u>John Todd</u>	By: <u>Robert A. Skinner</u>
Date: <u>4/22/99</u>	Date: <u>4/20/99</u>
Attest: <u>Chuck Todd</u>	Attest: <u>Robert A. Skinner</u>

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
REPLACEMENT OF PUMP NOS. 1 AND 2
CHANGE ORDER NO. 2

A. INTENT OF CHANGE ORDER

The intent of this change order is to modify the provisions of the contract entered into between the City of Rockwall, Texas and Triple D, Inc., P. O. Box 1149, Keller, Texas 76244, for construction of the Eastside Pump Station Replacement of Pump Nos. 1 and 2, dated April 19, 1999.

B. DESCRIPTION OF CHANGE

- In order to expedite the delivery of the pump control valves, the specification for the Tilted Disc Check Valve shall be modified to allow a bottom mounted oil dash pot in lieu of the top mounted unit. The valve with bottom mounted dash pot will be on the project site no later than May 14, 1999 and will result in a lump sum contract deduct of \$1,500.00.
- The 5'-6" x 5'-6" Model JD-AL Bilco Doors called for on Sheet No. 5 of the Construction Plans is not required. See Electrical Plan Sheet Nos. 8 and 12. This results in a lump sum deduct of \$2,000.00.

C. EFFECT OF CHANGE ON CONTRACT AMOUNT

This change order will have the following effect on the cost of this project:

Item No.	Description	Previous Quantity	Quantity This C.O.	Revised Quantity	Unit	Unit Price	Amount of Change
	Deduct for Revised Pump Control Valves	0	(1)	(1)	L.S.	\$1,500.00	(\$1,500.00)
	Deduct for Elimination of Equipment Doors	0	(1)	(1)	L.S.	\$2,000.00	(\$2,000.00)
Total:							(\$3,500.00)

Original Contract Amount	\$374,000.00
Amount, Change Order No. 1	(6,591.00)
Amount, Change Order No. 2	(3,500.00)
Revised Contract Amount	\$363,909.00

D. EFFECT OF CHANGE ON CONTRACT TIME

The contract time shall not be affected by this change order.

E. AGREEMENT

By the signatures below of duly authorized agents, the City of Rockwall and Triple D, Inc., do hereby agree to append this Change Order No. 2 to the original contract between themselves dated April 19, 1999.

City of Rockwall, Texas Owner	Triple D, Inc. Contractor
By: <u>John Todd</u>	By: <u>Robert A. Skinner</u>
Date: <u>6-17-99</u>	Date: <u>5/13/99</u>
Attest: <u>Cindy Kundra</u>	Attest: <u>Robert A. Skinner</u>

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION
REPLACEMENT OF PUMP NOS. 1 AND 2
CHANGE ORDER NO. 3

A. INTENT OF CHANGE ORDER

The intent of this change order is to modify the provisions of the contract entered into between the City of Rockwall, Texas and Triple D, Inc., P. O. Box 1149, Keller, Texas 76244, for construction of the Eastside Pump Station Replacement of Pump Nos. 1 and 2, dated April 19, 1999.

B. DESCRIPTION OF CHANGE

This change order provides for:

- The elimination-load cell requirement on the 500 kW Standby Generator.
- Due to unavoidable delays in the delivery of the Standby Generator, this change order extends the contract time for the final completion of the project to October 1, 1999.

C. EFFECT OF CHANGE ON CONTRACT AMOUNT

The elimination of the load cell on the emergency generator results in a \$6,000.00 deduct in the lump sum contract price for the pump station additions. This change will have the following effect on the cost of this project:

Item No.	Description	Previous Quantity	Quantity This C.O.	Revised Quantity	Unit	Unit Price	Amount of Change
	Deduct for Elimination of Load Cell on Emergency Generator	0	1	1	L.S.	(\$6,000)	(\$6,000.00)
Total:							(\$6,000.00)

Original Contract Amount	\$374,000.00
Amount, Change Order No. 1	(6,591.00)
Amount, Change Order No. 2	(3,500.00)
Amount, Change Order No. 3	(6,000.00)
Revised Contract Amount	\$357,909.00

D. EFFECT OF CHANGE ON CONTRACT TIME

This change order extends the contract time for the final completion of the project to October 1, 1999.

E. AGREEMENT

By the signatures below of duly authorized agents, the City of Rockwall and Triple D, Inc., do hereby agree to append this Change Order No. 3 to the original contract between themselves dated April 19, 1999.

City of Rockwall, Texas Owner	Triple D, Inc. Contractor
By: <u>John Todd</u>	By: <u>Robert A. Skinner</u>
Date: <u>8/4/99</u>	Date: <u>7/13/99</u>
Attest: <u>Chuck Todd</u>	Attest: <u>Robert A. Skinner</u>

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS

8333 Douglas Avenue, #820 Dallas, Texas 75225-5816 Fax (214) 361-0204 Phone (214) 361-7900

ROSS L. JACOBS, P.E.
RONALD V. CONWAY, P.E.
JOHN W. BIRKHOFF, P.E.
JOE B. CARTER, P.E.
GARY C. HENDRICKS, P.E.
I. C. FINKLEA, P.E.
PAUL A. CARLINE, P.E.
MATT HICKEY, P.E.

December 10, 1999

Mr. Chuck Todd, P.E.
Director of Public Works/City Engineer
City of Rockwall
108 E. Washington
Rockwall, Texas 75087

Re: Eastside Pump Station
Replacement of Pumps 1 and 2, Installation of Pump 4

Dear Mr. Todd:

We are enclosing three copies of Pay Request Number 4 and Final for work performed by Triple D, Inc. on the Eastside Pump Station Replacement of Pump Nos. 1 and 2 - Installation of Pump No. 4 through November 23, 1999, along with two signed copies of the Contractor's Affidavit of Final Payment and Waiver of Release. This project is complete and in service.

If you concur with this pay request, please have it executed for the City of Rockwall and forward one copy along with the payment due to Triple D, Inc.

Sincerely yours,
Gary C. Hendricks, P.E.

Enclosures
cc: Triple D, Inc.

MONTHLY PAY REQUEST

Page 1 of 1

Owner: City of Rockwall, Texas
Project: Eastside Pump Station Replacement of Pump Nos. 1 & 2
Installation of Pump No. 4
Contractor: Triple D, Inc.
P. O. Box 1149
Keller, Texas 76244

Pay Request No. 4 and Final
Contract Date: April 19, 1999
Original Contract Amount: \$ 367,409.00
Revised Contract Amount: \$ 357,909.00

From: 31-Jul-99 To: 23-Nov-99
Project Start Date: 28-Apr-99
Est. Completion Date: 1-Aug-99 (Oct. 1, 1999)
Allotted: 96 Used: 210

Item No.	Description	Unit	Quantity in Progress	Percent Complete	Quantity Requested	Total	Contract Price	Extended Amount
1A	2300 GPM, 170 TDH Vertical Turbine Pump & Motor	EA	2	100%	2	\$12,803.00	\$	25,606.00
2A	Installation of One Vertical Turbine Pump & Motor	L.S.	1	100%	1	\$34,000.00	\$	34,000.00
A	Bonds	L.S.	1	100%	1	\$3,500.00	\$	3,500.00
B	Mobilization	L.S.	1	100%	1	\$5,000.00	\$	5,000.00
C	Air Condition	L.S.	1	100%	1	\$5,000.00	\$	5,000.00
D	Install Pumps	EA	2	100%	2	\$5,000.00	\$	10,000.00
E	Pipe & Valves	L.S.	1	100%	1	\$60,000.00	\$	60,000.00
F	Hatches	EA	1	100%	1	\$4,000.00	\$	4,000.00
G	Generator	L.S.	1	95%	1	\$78,000.00	\$	78,000.00
H	Painting	L.S.	1	100%	1	\$10,000.00	\$	10,000.00
I	MCC	L.S.	1	100%	1	\$80,000.00	\$	80,000.00
J	Conduit & Fittings	L.S.	1	100%	1	\$3,000.00	\$	3,000.00
K	Duct Banks	L.S.	1	100%	1	\$8,500.00	\$	8,500.00
L	Wire & Cable	L.S.	1	25%	1	\$15,000.00	\$	15,000.00
M	Exhaust Fan	L.S.	1	100%	1	\$3,000.00	\$	3,000.00
N	Instrumentation	L.S.	1	100%	1	\$10,000.00	\$	10,000.00
1A	2300 GPM, 170 TDH Vertical Turbine Pump & Motor	EA	1	100%	1	\$12,803.00	\$	12,803.00
2A	Installation of One Vertical Turbine Pump & Motor	L.S.	1	100%	1	\$34,000.00	\$	34,000.00
A	Bonds	L.S.	1	100%	1	\$3,500.00	\$	3,500.00
B	Mobilization	L.S.	1	100%	1	\$5,000.00	\$	5,000.00
C	Air Condition	L.S.	1	100%	1	\$5,000.00	\$	5,000.00
D	Install Pumps	EA	1	75%	1	\$5,000.00	\$	5,000.00
E	Hatches	EA	1	100%	1	\$4,000.00	\$	4,000.00
F	Conduit & Fittings	L.S.	1	100%	1	\$3,000.00	\$	3,000.00
G	Duct Banks	L.S.	1	100%	1	\$8,500.00	\$	8,500.00
	Deduct for Revised Pump Control Valves	CO #2	0	100%	1	(\$1,500.00)	\$	(1,500.00)
	Deduct for Elimination of Equipment Doors	CO #2	0	100%	1	(\$2,000.00)	\$	(2,000.00)
	Deduct for Elimination of Load Cell on Generator	CO #3	0	100%	1	(\$6,000.00)	\$	(6,000.00)

Prepared and Submitted by: Gary C. Hendricks, P.E.
Consulting Engineers, Dallas, Texas

Total Amount \$ 357,909.00
Less Amount Retained 0% \$ -
Date: 12/8/99 Total Amount Payable \$ 357,909.00
Approved for Owner: _____ Less Previous Payments \$ 271,637.23
By: _____ Amount Due This Request \$ 86,271.77

CONTRACTOR'S AFFIDAVIT OF FINAL PAYMENT AND RELEASE

THE STATE OF TEXAS §
COUNTY OF ROCKWALL §

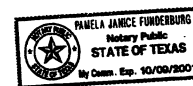
BEFORE ME, the undersigned authority, on this day personally appeared Donna Skinner (the "Affiant"), who, after being by me duly sworn, deposes and says that he is President of Triple D, Inc. (corporation, partnership, trade name) of Tarrant County, State of Texas (the "Contractor"), which said Contractor was awarded the contract dated the 19th day of April 19 99, for the construction of Eastside Pump Station Replacement of Pump Nos. 1 and 2 - Installation of Pump No. 4 in Rockwall, Texas (the "Work"), for a total consideration of Three Hundred Fifty-Seven Thousand, Nine Hundred Nine and 00/100 (\$357,909.00) Dollars to be paid to the said Contractor (the "Contractor"), and that Affiant has full power of authority to make this affidavit.

That The City of Rockwall, Texas (the "Owner") has approved the final estimate on said Work, and that the said Contractor has fully satisfied said paid any and all claims that may be covered by Chapter 53 of the Texas Property Code, and Article 5160 of the Revised Civil Statutes of the State of Texas, or any other applicable statutes or charter provisions, and that all just bills for labor and materials have been paid and discharged by said Contractor insofar as they pertain to the Work in question.

That in addition to any funds which may have been previously paid by the Owner, the Contractor hereby accepts the amount of Eighty-Six Thousand, Two Hundred Fifty-One and 77/100 (\$86,251.77) Dollars as FULL AND FINAL PAYMENT under the aforementioned contract, and hereby waives and releases any right Affiant and/or the Contractor may have to pursue claims of any nature against the Owner arising out of or in any manner connected with the performance of the Work and/or the Contract, including but not limited to claims of third parties that supplied material and/or labor for the Work for or through the Contractor ("Subcontractors"), as well as claims for delay, additional compensation or for recovery of liquidated damages which may have been withheld by the Owner. The Contractor shall defend, hold harmless and indemnify the Owner from any such claims of such Subcontractors. The Contractor further releases the Owner from any claim or liability arising from any act or neglect of the Owner related to or connected with the Contract. This affidavit is given pursuant to the final payment provisions of the Contract, and shall not be deemed to alter or modify the terms and provisions of said Contract.

By: Donna Skinner
Triple D, Inc.
(Affiant)
Donna Skinner
(Printed Name)

SUBSCRIBED AND SWORN TO BEFORE ME, this 9 day of December, A.D. 19 99.



(Notary Public, in and for the State of Texas)
Pamela Funderburg
My Commission Expires 10/9/2001

This record drawing is a compilation of the sealed engineering drawing for this project, modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Hendricks & Conroy, L.L.P.

BY G.C.H. DATE 05/06/09

These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Shimek, Jacobs & Finklea.

CITY OF ROCKWALL, TEXAS

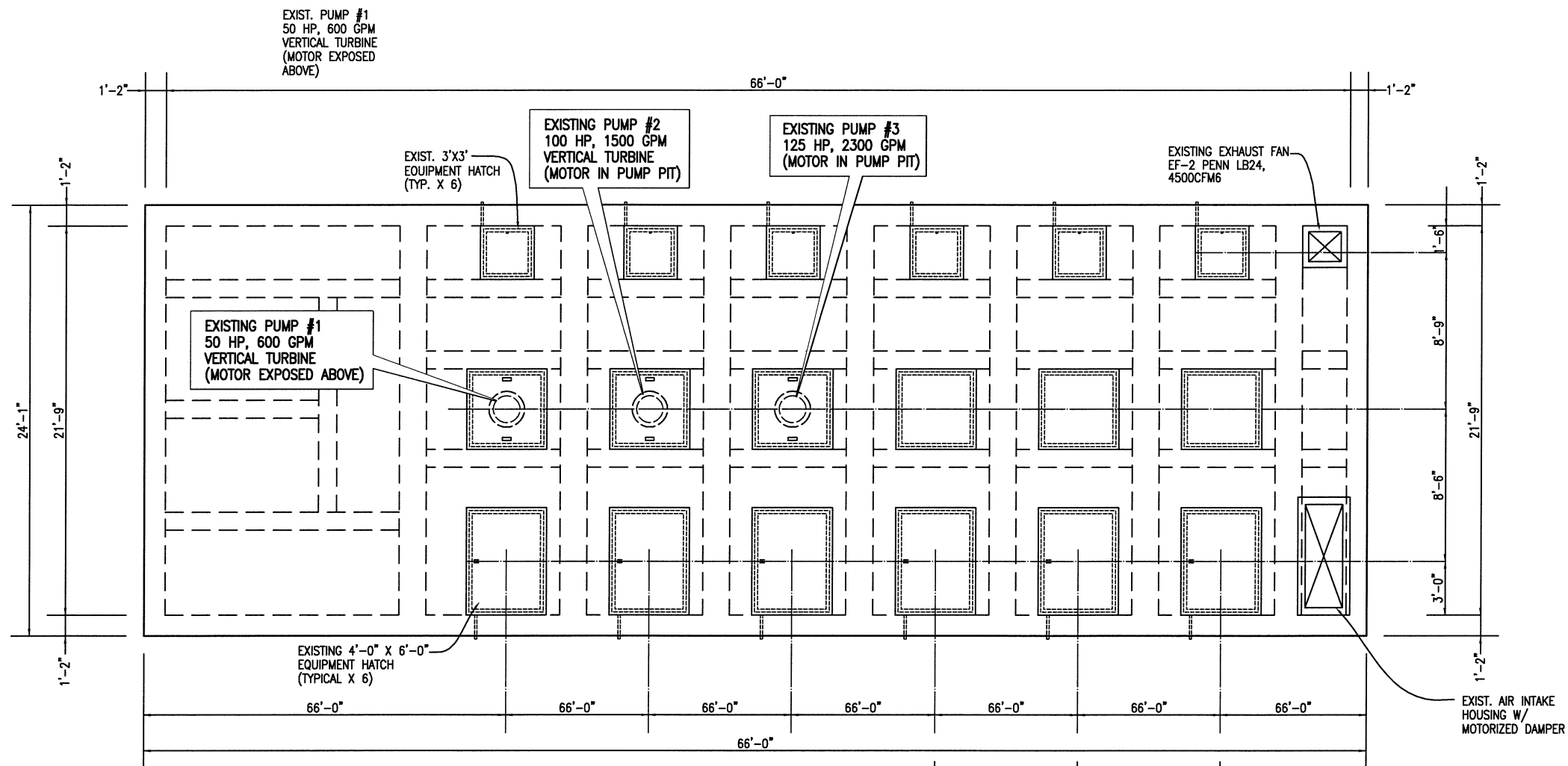
EASTSIDE PUMP STATION
CHANGE ORDER NO. 1

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: G.C.H. PROJECT: 98192 SHEET NO. 1C
DRAWN BY: S.J. & F. DATE: APRIL 1999 OF 12 SHEETS



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TOP PLAN
SCALE: 1/4"=1'-0"

FUTURE PUMP #4

FUTURE PUMP #5

FUTURE PUMP #6

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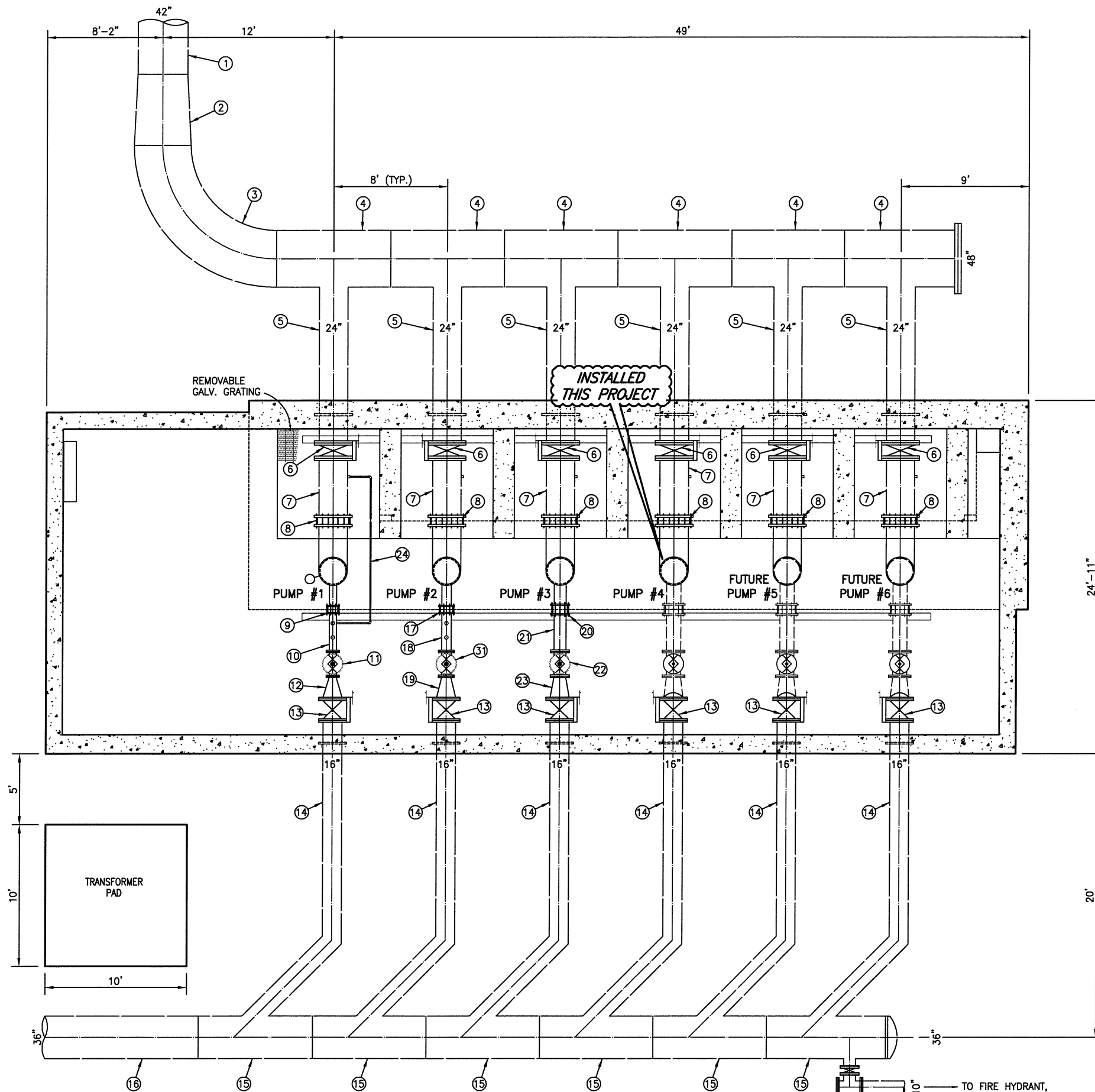
BY G.C.H. DATE 05/06/09

G.C.H.
04/08/1999



CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION EXIST. ROOF PLAN		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: G.C.H.	PROJECT: 98 192	SHEET NO. 2
DRAWN BY: S.J. & F.	DATE: APRIL 1999	OF 12 SHEETS

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SECTIONAL PLAN
SCALE: 1/4"=1'-0"

EXISTING PIPING/EQUIPMENT SCHEDULE

ITEM NO.	MATERIAL	JOINT	DESCRIPTION
①	CEMENT LINED WELDED STEEL	WELDED	42" SUCTION HEADER
②	CEMENT LINED WELDED STEEL	WELDED	48"x42" REDUCER
③	CEMENT LINED WELDED STEEL	WELDED	48" 90° FABRICATED BEND
④	CEMENT LINED WELDED STEEL	WELDED	48"x24" FABRICATED TEE
⑤	CEMENT LINED WELDED STEEL	WELDED	24" PUMP SUCTION LINE
⑥	-	FLG.	24" BUTTERFLY VALVE W/ MANUAL OPERATOR
⑦	COAL-TAR EPOXY LINED WELDED STEEL	WELDED	24" PUMP SUCTION LINE
⑧	-	-	24" DRESSER COUPLING
⑨	-	-	6" HARNESSED DRESSER COUPLING
⑩	COAL-TAR EPOXY LINED WELDED STEEL	-	6" PUMP DISCHARGE PIPING
⑪	-	FLG.	6" PUMP CONTROL VALVE
⑫	-	FLG.	16"x6" REDUCER
⑬	-	FLG.	16" BUTTERFLY VALVE
⑭	CEMENT LINED WELDED STEEL	WELDED	16" PUMP DISCHARGE LINE
⑮	CEMENT LINED WELDED STEEL	WELDED	36"x16" FABRICATED WYE
⑯	R.C.C.P.	GASKET	36" DISCHARGE HEADER
⑰	-	-	8" HARNESSED DRESSER COUPLING
⑱	COAL-TAR EPOXY LINED WELDED STEEL	-	8" PUMP DISCHARGE PIPING
⑲	-	FLG.	8"x16" REDUCER
⑳	-	-	10" HARNESSED DRESSER COUPLING
㉑	COAL-TAR EPOXY LINED WELDED STEEL	WELDED	10" PUMP DISCHARGE PIPING
㉒	-	FLG.	10" PUMP CONTROL VALVE
㉓	-	FLG.	10"x16" REDUCER
㉔	SCHEDULE 40 STEEL	THREADED	CL ₂ INJECTOR SUPPLY LINE
㉕	P.V.C.	PUSH-ON	4" P.V.C. DRAIN LINE
㉖	COAL-TAR EPOXY LINED WELDED STEEL	FLG.	2' DIAMETER PUMP CAN
㉗	-	THREADED	2" AIR & VACUUM VALVE (APCO 145C)
㉘	-	THREADED	PRESSURE GAUGE ASSEMBLY
㉙	WELDED STEEL	FLG.	24"x6" PUMP DISCHARGE HEAD ASSEMBLY
㉚	WELDED STEEL	FLG.	24" DIA. MOTOR SUPPORT
㉛	-	FLG.	8" PUMP CONTROL VALVE
㉜	WELDED STEEL	FLG.	24"x8" PUMP DISCHARGE HEAD ASSEMBLY

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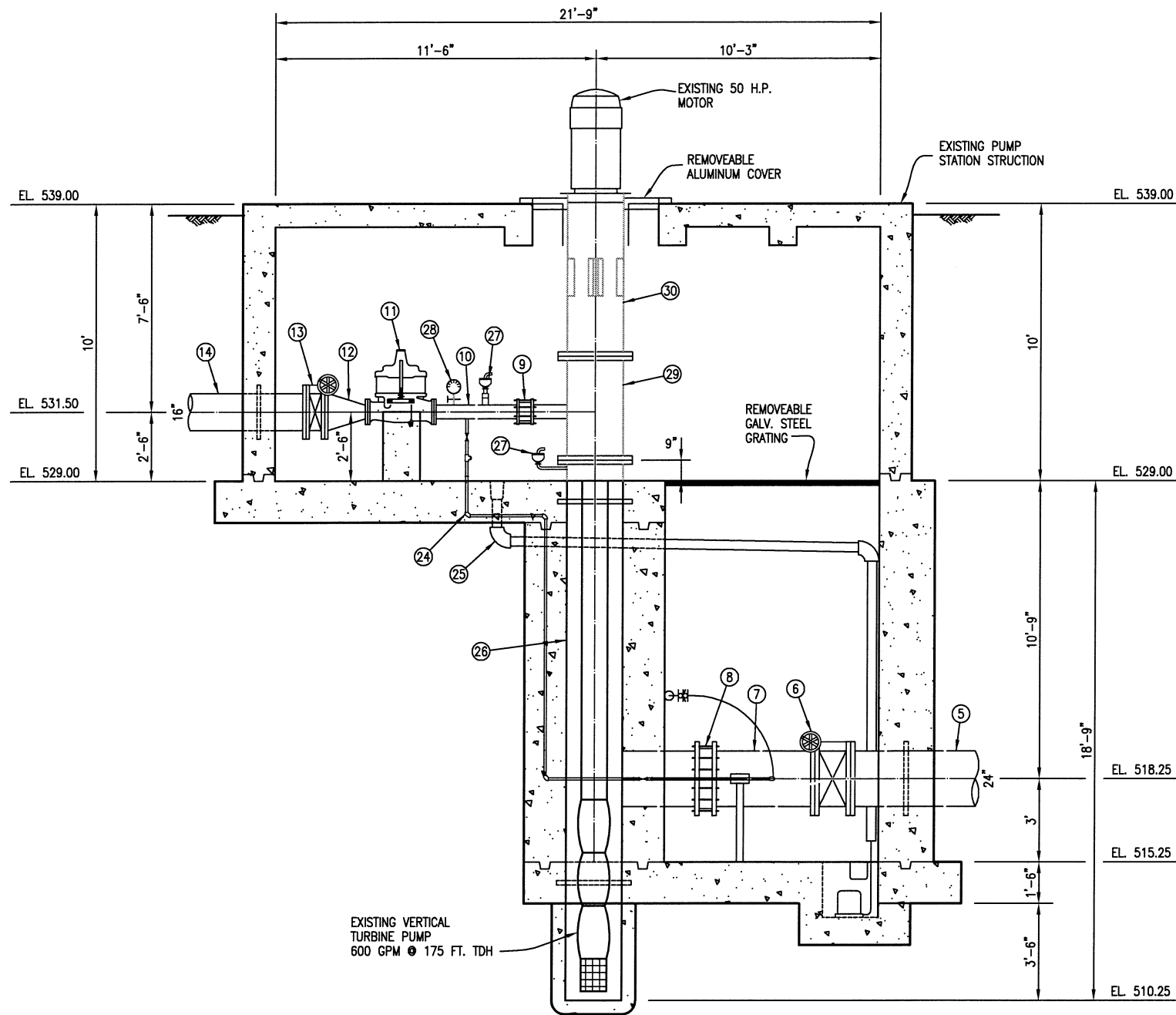
BY G.C.H. DATE 05/06/09

G.C.H.
04/08/1999

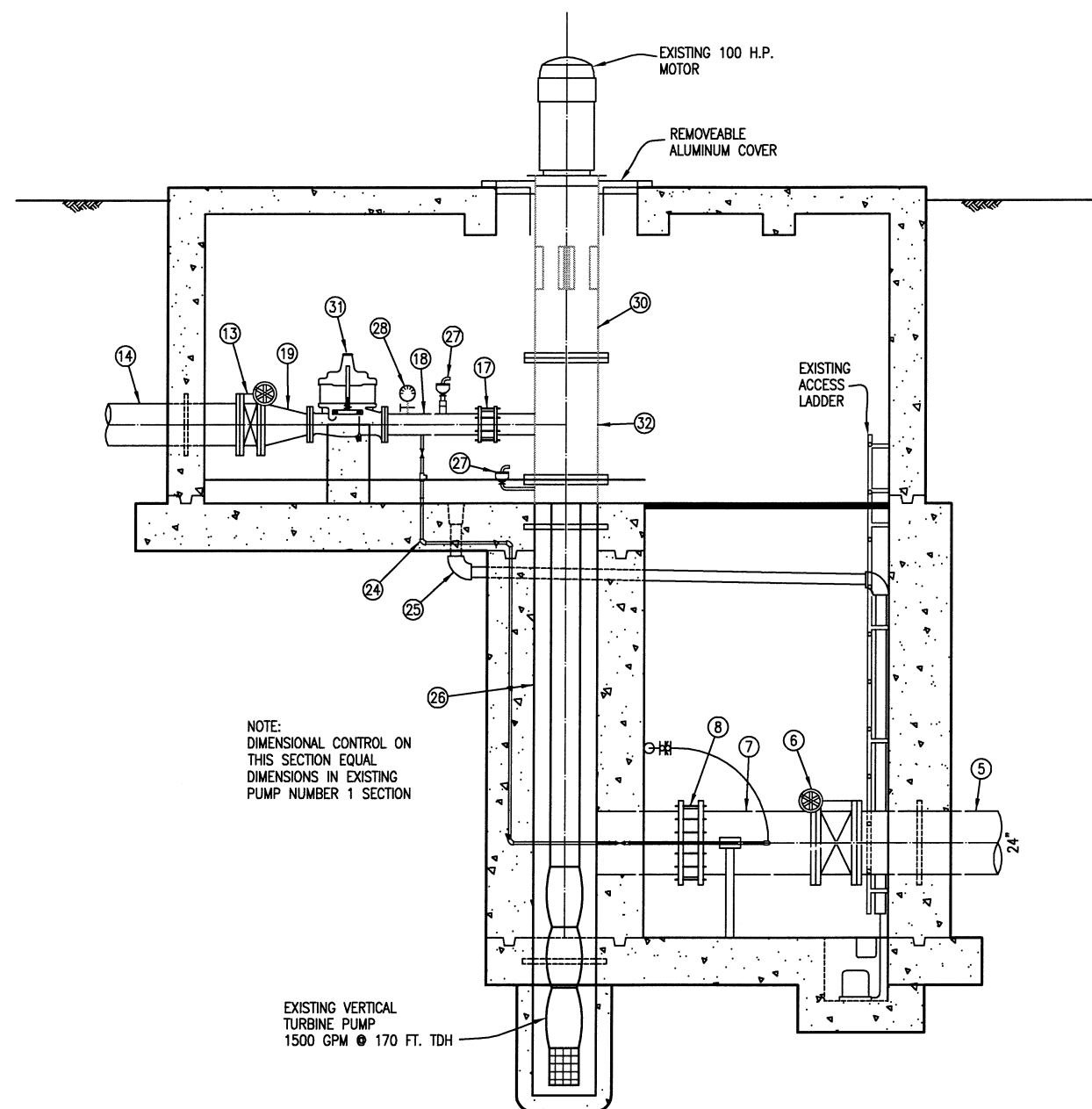


CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION EXISTING PIPING LAYOUT (BELOW GRADE)		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>G.C.H.</u>	PROJECT: <u>98 192</u>	SHEET NO. <u>3</u>
DRAWN BY: <u>S.J. & F.</u>	DATE: <u>APRIL 1999</u>	OF <u>12</u> SHEETS

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EXISTING PUMP NO. 1 SECTION
SCALE: 3/8"=1'-0"



NOTE:
DIMENSIONAL CONTROL ON
THIS SECTION EQUAL
DIMENSIONS IN EXISTING
PUMP NUMBER 1 SECTION

EXISTING PUMP NO. 2 SECTION
SCALE: 3/8"=1'-0"

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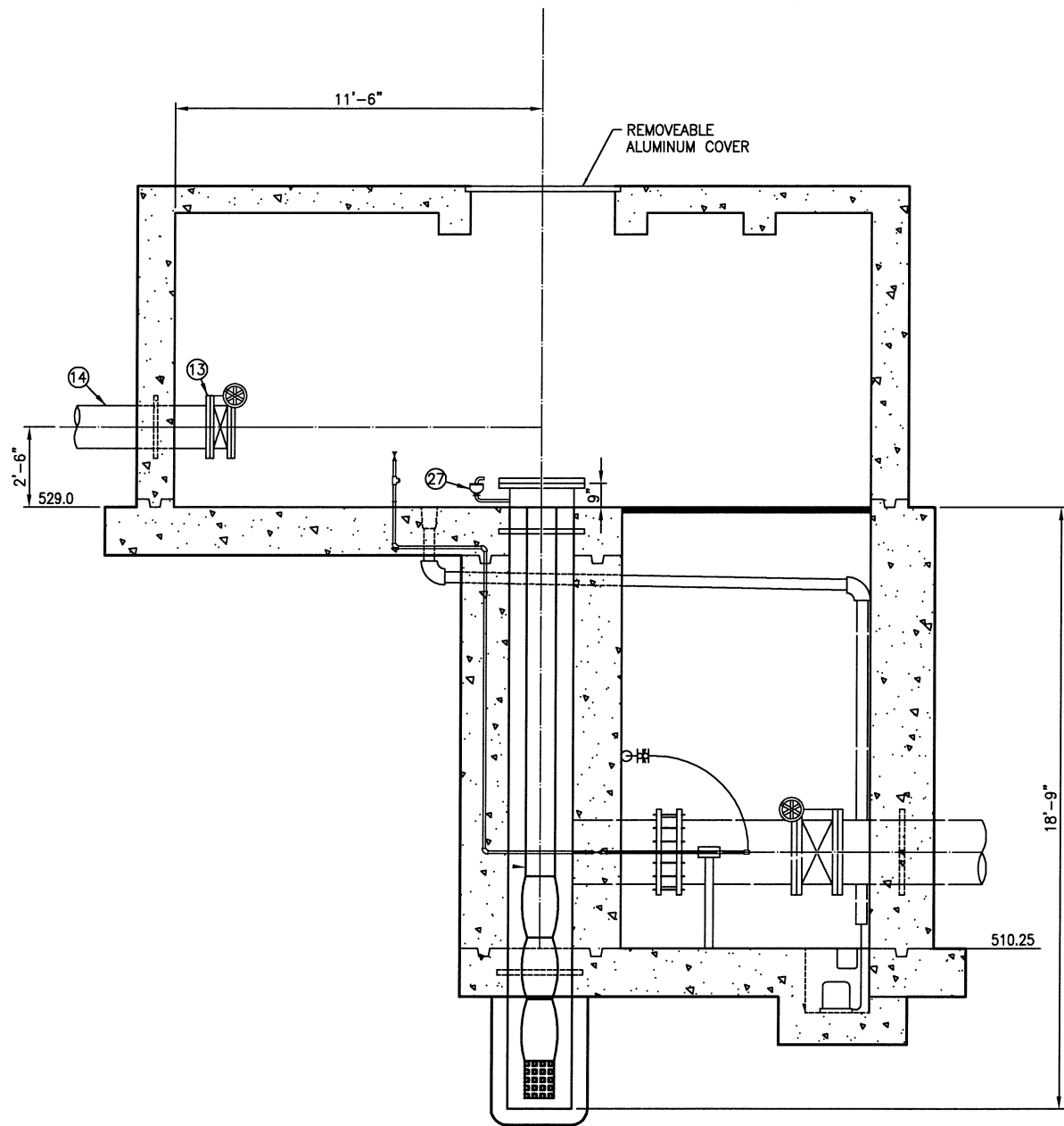
BY G.C.H. DATE 05/06/09

[Signature]
04/02/1999

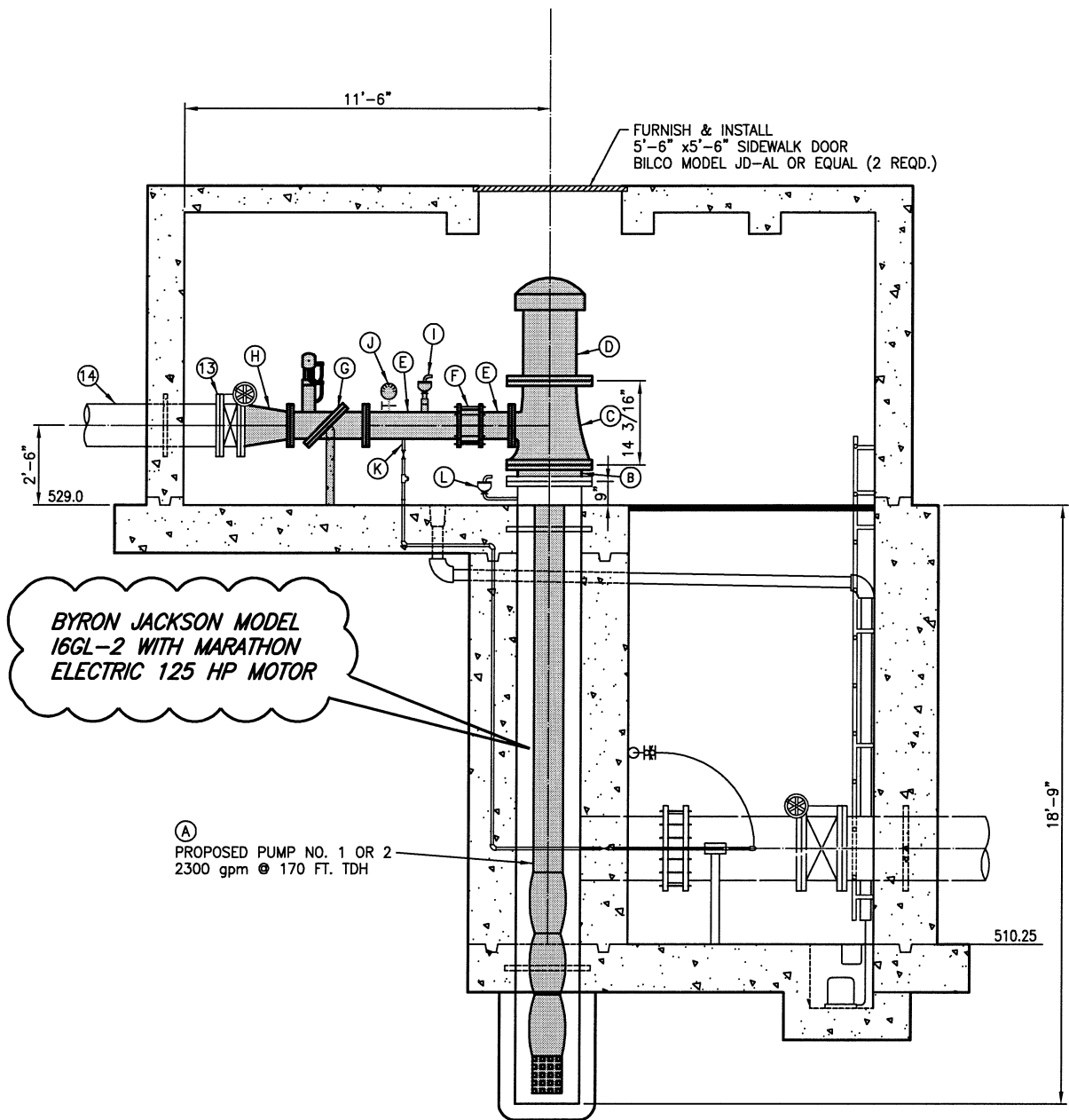


CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION EXISTING PUMP 1 AND 2 SECTIONS		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>G.C.H.</u>	PROJECT: <u>98 192</u>	SHEET NO. <u>4</u>
DRAWN BY: <u>S.J. & F.</u>	DATE: <u>APRIL 1999</u>	OF <u>12</u> SHEETS

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4/08/99 J.Y.



SECTION EXIST. PUMP 4
SCALE: 3/8"=1'-0"



SECTION PROPOSED PUMPS 1, 2 AND ALTERNATE 4
SCALE: 3/8"=1'-0"

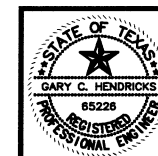
INCLUDED IN THIS PROJECT

PROPOSED PUMP ROOM PIPING AND MATERIAL LEGEND				PROPOSED PUMP ROOM PIPING AND MATERIAL LEGEND			
PIPE NO.	PIPE TYPE	JOINT	DESCRIPTION	PIPE NO.	PIPE TYPE	JOINT	DESCRIPTION
(A)	-	-	REPLACE PUMP NO. 1 & 2 WITH 2300 gpm, 170 FT. TDH VERTICAL TURBINE PUMP, 10" DISCHARGE	(I)	-	THREADED	RE-SET EXISTING 2-INCH AIR & VACUUM VALVE
(B)	COAL-TAR EPOXY LINED STEEL	FLG.	EXISTING PUMP CAN TO PROPOSED PUMP HEADER ADAPTOR CONFIGURED AS REQUIRED BY PUMP MANUFACTURER	(J)	-	THREADED	RE-SET EXISTING PRESSURE GAUGE
(C)	CAST IRON	FLG.	PUMP HEAD w/10" DISCHARGE FLG.	(K)	-	THREADED	RE-CONNECT CHEMICAL FEED SUPPLY LINE
(D)	-	-	125 HP PUMP MOTOR DIRECTLY MOUNTED TO PUMP HEAD	(L)	-	-	EXISTING 2" AIR/VACUUM VALVE TO REMAIN IN SERVICE
(E)	D.I.P.	FLG.-P.E.	10" PUMP DISCHARGE SPOOL				
(F)	-	-	10" RESTRAINED COUPLING				
(G)	-	FLG.	10" PUMP CONTROL VALVE, TILTED DISK CHECK VALVE WITH TOP MOUNTED OIL FILLED DASHPOT, VAL-MATIC 9000T OR APPROVED EQUAL				
(H)	D.I.P.	FLG.	16"x10" CONCENTRIC REDUCER				

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BY G.C.H. DATE 05/06/09

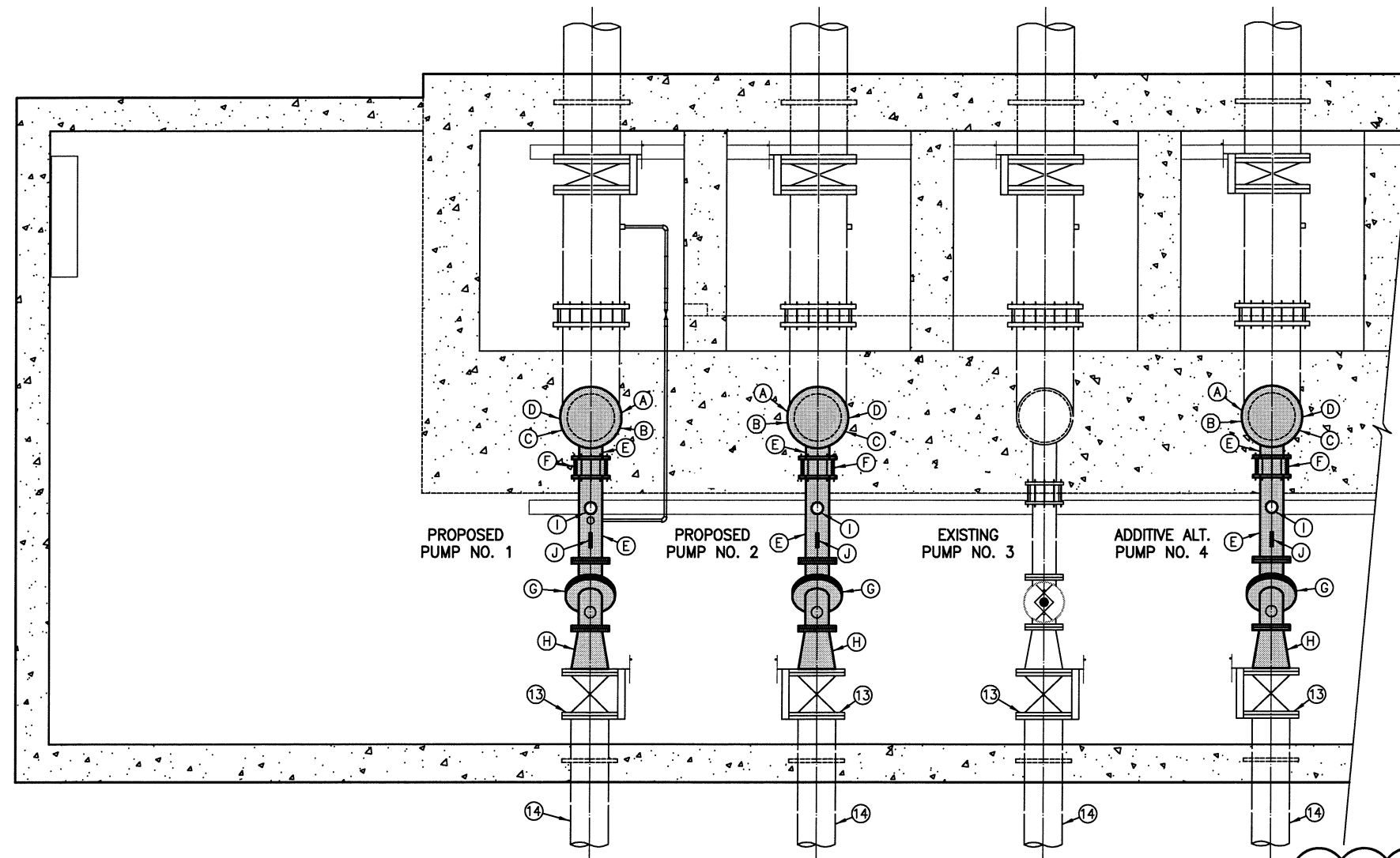
These plans and related specifications were prepared for construction of this specific project only. Reuse of these documents is not permitted without written authorization of Shimek, Jacobs & Finklea.

G.C.H.
04/02/1999



CITY OF ROCKWALL, TEXAS		
EXISTING PUMP 4 PROPOSED PUMPS 1, 2 & ALTERNATE 4 SECTION		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: G.C.H.	PROJECT: 98 192	SHEET NO. 5
DRAWN BY: S.J. & F.	DATE: APRIL 1999	OF 12 SHEETS

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INCLUDED IN THIS PROJECT

PLAN PROPOSED PUMPS 1, 2 AND ALTERNATE 4
SCALE: 3/8"=1'-0"

PROPOSED PUMP ROOM PIPING AND MATERIAL LEGEND							
PIPE NO.	PIPE TYPE	JOINT	DESCRIPTION	PIPE NO.	PIPE TYPE	JOINT	DESCRIPTION
(A)	-	-	REPLACE PUMP NO. 1 & 2 WITH 2300 gpm, 170 FT. TDH VERTICAL TURBINE PUMP, 10" DISCHARGE	(I)	-	THREADED	RE-SET EXISTING 2-INCH AIR & VACUUM VALVE
(B)	COAL-TAR EPOXY LINED STEEL	FLG.	EXISTING PUMP CAN TO PROPOSED PUMP HEADER ADAPTOR CONFIGURED AS REQUIRED BY PUMP MANUFACTURER	(J)	-	THREADED	RE-SET EXISTING PRESSURE GAUGE
(C)	CAST IRON	FLG.	PUMP HEAD w/10" DISCHARGE FLG.	(K)	-	THREADED	RE-CONNECT CHEMICAL FEED SUPPLY LINE
(D)	-	-	125 HP PUMP MOTOR DIRECTLY MOUNTED TO PUMP HEAD	(L)	-	-	EXISTING 2" AIR/VACUUM VALVE TO REMAIN IN SERVICE
(E)	D.I.P.	FLG.-P.E.	10" PUMP DISCHARGE SPOOL				
(F)	-	-	10" RESTRAINED COUPLING				
(G)	-	FLG.	10" PUMP CONTROL VALVE, TILTED DISK CHECK VALVE WITH TOP MOUNTED OIL FILLED DASHPOT, VAL-MATIC 9000T OR APPROVED EQUAL				
(H)	D.I.P.	FLG.	16"x10" CONCENTRIC REDUCER				

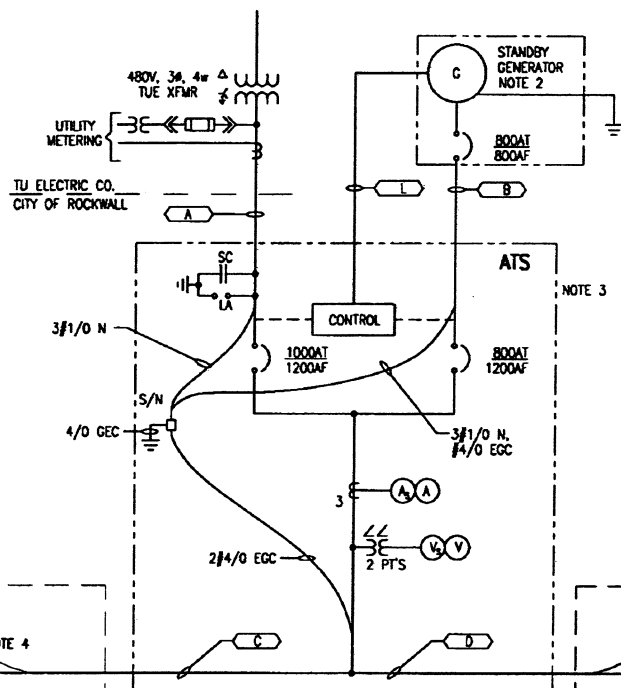
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BY G.C.H. DATE 05/08/99

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04/08/1999



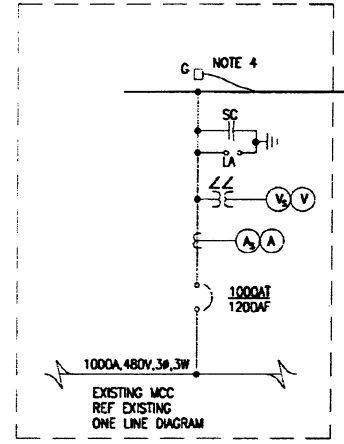
CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION		
PROPOSED PUMPS 1, 2 & ALTERNATE 4		
PLAN		
SHIMEK, JACOBS & FINKLEA, L.L.P.		
<small>CONSULTING ENGINEERS Dallas, Texas</small>		
DESIGNED BY: <u>G.C.H.</u>	PROJECT: <u>98 192</u>	SHEET NO. <u>6</u>
DRAWN BY: <u>S.J. & F.</u>	DATE: <u>APRIL 1999</u>	OF 12 SHEETS



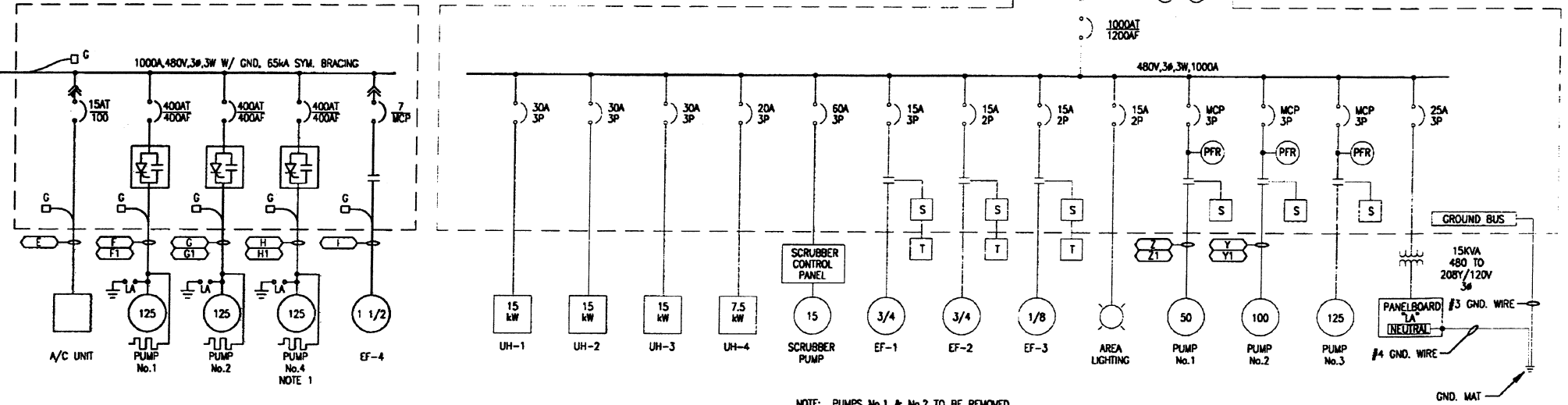
- NOTES:
- PUMP NO. 4 IS ALTERNATE
 - 500KW, 0.8 PF, 480-V-3Ø-4W Y. DO NOT GROUND GEN. NEUTRAL AT GENERATOR.
 - A.T.S. SHALL BE SERVICE ENTRANCE RATED AND HAVE 65KA SYM WITHSTAND AND INTERRUPTING RATING. LOCATE EXISTING G.E.C. AND CONNECT THERETO.
 - PROVIDE A SIGN AT SERVICE ENTRANCE PANEL INDICATING THE LOCATION OF BOTH SOURCES OF POWER.

REVISED ONE LINE DIAGRAM LEGEND

- POWER TRANSFORMER
- CONTROL POWER (CPT) OR POTENTIAL (PT) TRANSFORMER
- THERMAL MAGNETIC CIRCUIT BREAKER AF=FRAME SIZE, AT=AMP TRIP
- MAGNETIC ONLY CIRCUIT BREAKER, NUMBER INDICATES CONTINUOUS CURRENT RATING
- FUSE
- SOFT STARTER W/ SHORTING CONTACTOR
- FULL VOLTAGE, NON-REVERSING STARTER
- CONNECTION TO GROUND
- STAB-IN CONNECTION
- CURRENT TRANSFORMER
- DELTA CONNECTED TRANSFORMER WINDINGS
- WYE CONNECTED TRANSFORMER WINDINGS
- GROUNDING
- SOLID NEUTRAL
- SURGE CAPACITOR
- LIGHTING ARRESTER
- VOLTMETER SWITCH
- VOLTMETER

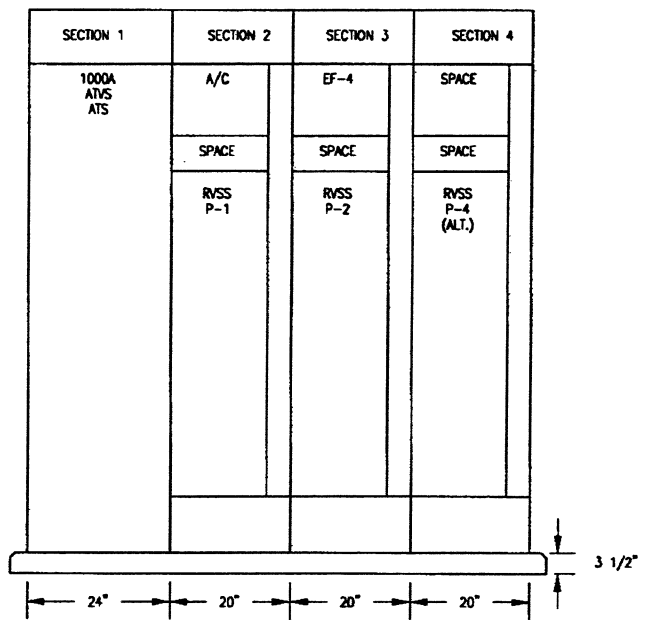


REVISED ONE LINE DIAGRAM

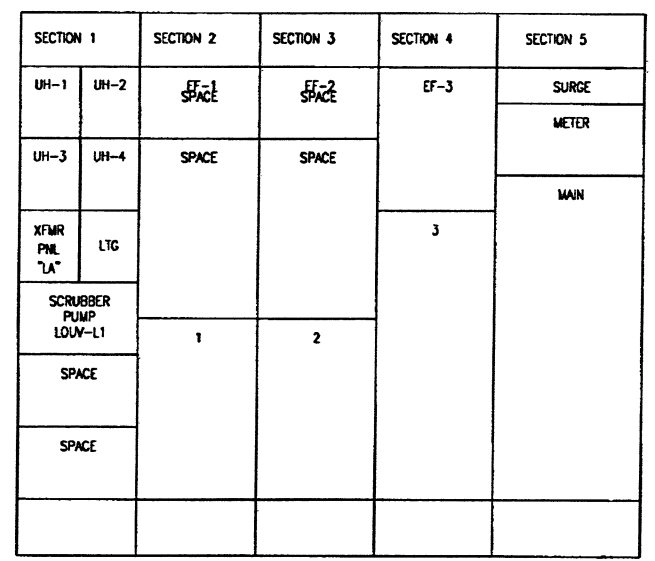


NOTE: PUMPS No.1 & No.2 TO BE REMOVED.

EXISTING ONE LINE DIAGRAM



NEW 480V MCC No.2



EXISTING 480V MCC No.1

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 BY G.C.H. DATE 05/06/09

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John A. Fry
4-8-99



CITY OF ROCKWALL, TEXAS

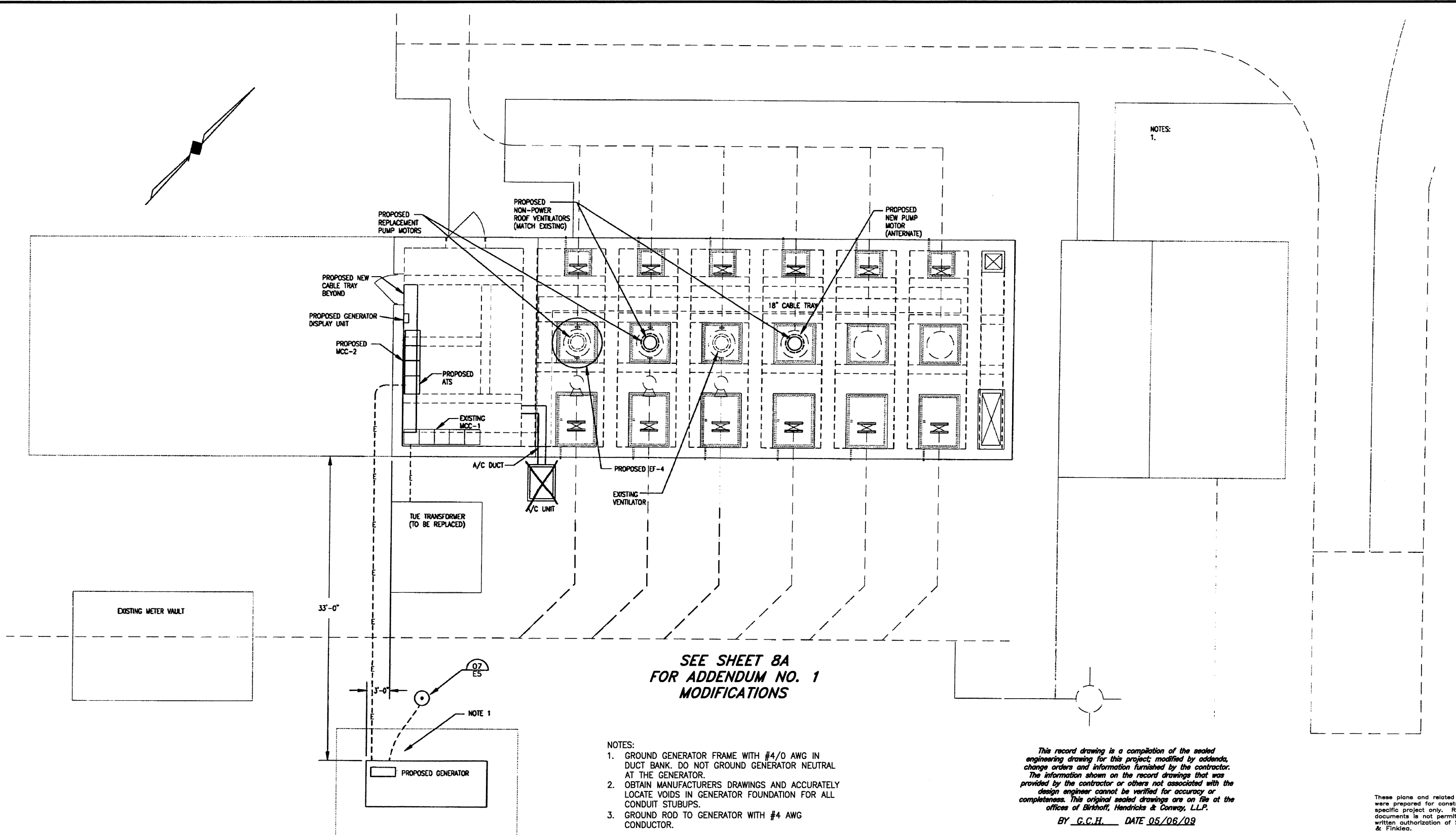
EASTSIDE PUMP STATION ONE LINE DIAGRAMS

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: J. A. FRY	PROJECT: 98 192	SHEET NO. 7
DRAWN BY: R. E. BRADY	DATE: APRIL 1999	OF 12 SHEETS

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4/08/99 JLY



SEE SHEET 8A FOR ADDENDUM NO. 1 MODIFICATIONS

NOTES:

1. GROUND GENERATOR FRAME WITH #4/0 AWG IN DUCT BANK. DO NOT GROUND GENERATOR NEUTRAL AT THE GENERATOR.
2. OBTAIN MANUFACTURERS DRAWINGS AND ACCURATELY LOCATE VOIDS IN GENERATOR FOUNDATION FOR ALL CONDUIT STUBUPS.
3. GROUND ROD TO GENERATOR WITH #4 AWG CONDUCTOR.

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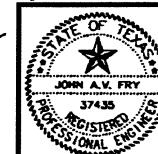
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SITE PLAN
SCALE: 3/16"=1'-0"

CITY OF ROCKWALL, TEXAS

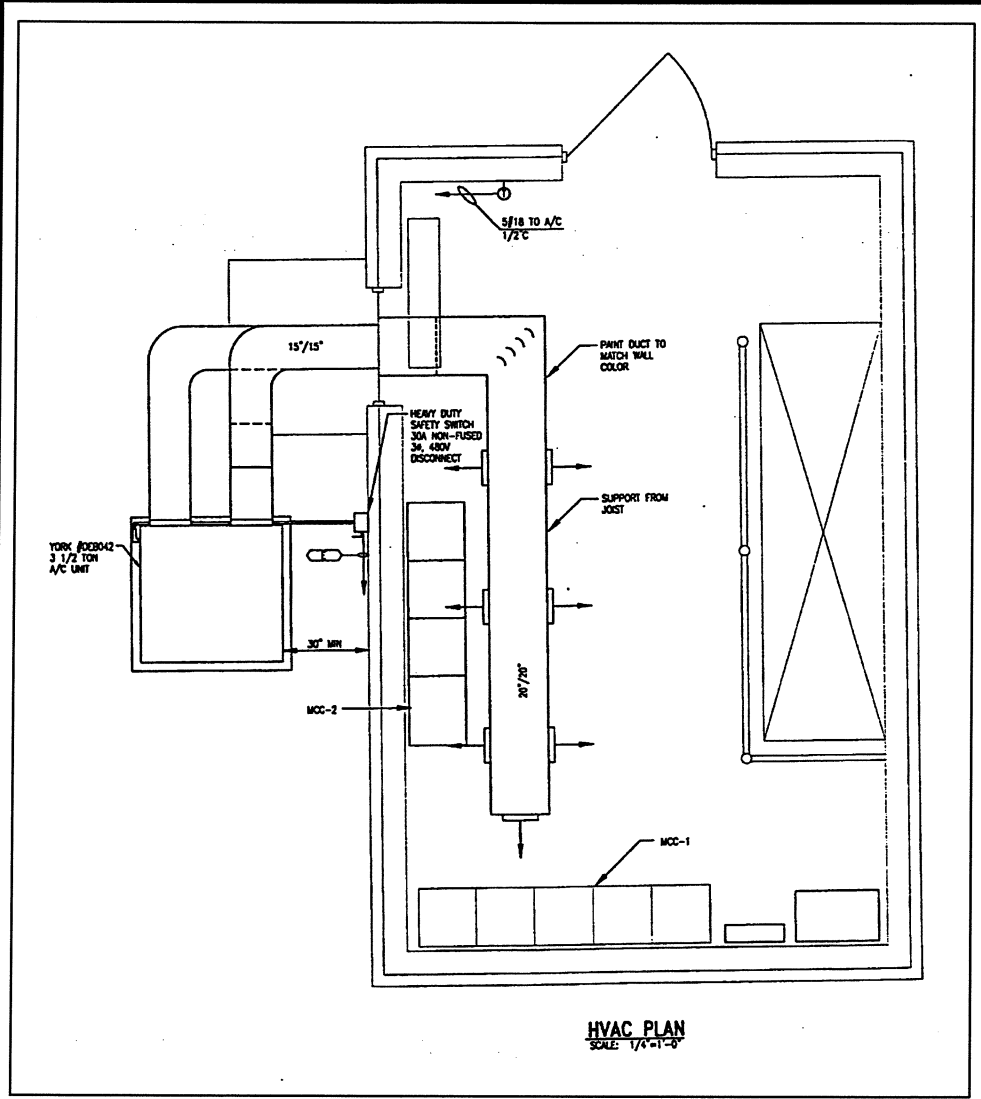
EASTSIDE PUMP STATION
ELECTRICAL SITE PLAN

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

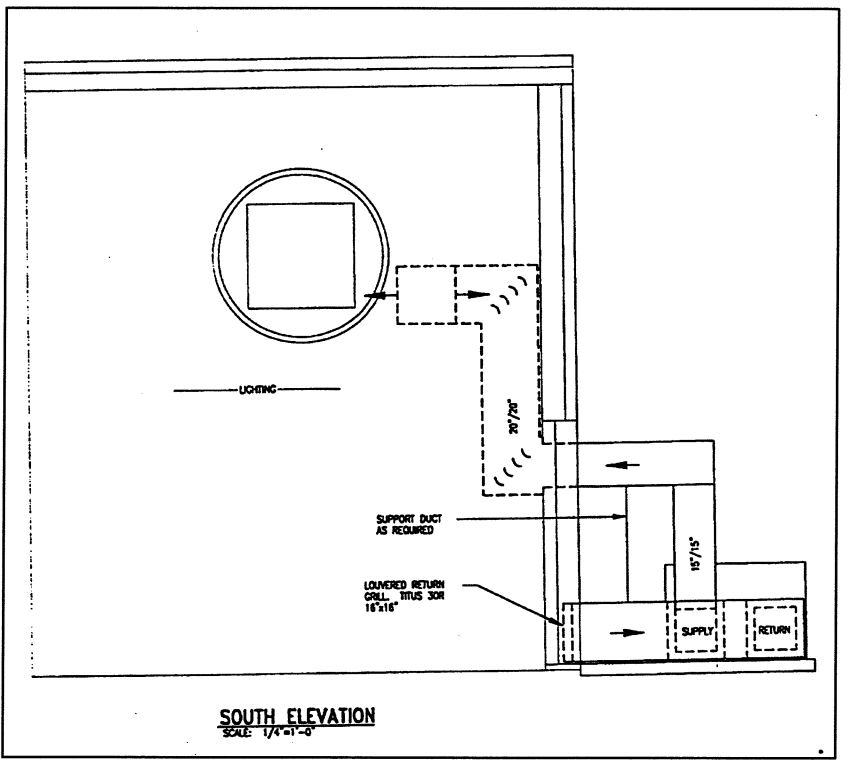


DESIGNED BY: J. A. FRY	PROJECT: 98 192	SHEET NO. 8
DRAWN BY: R. E. BRADY	DATE: APRIL 1999	OF 12 SHEETS

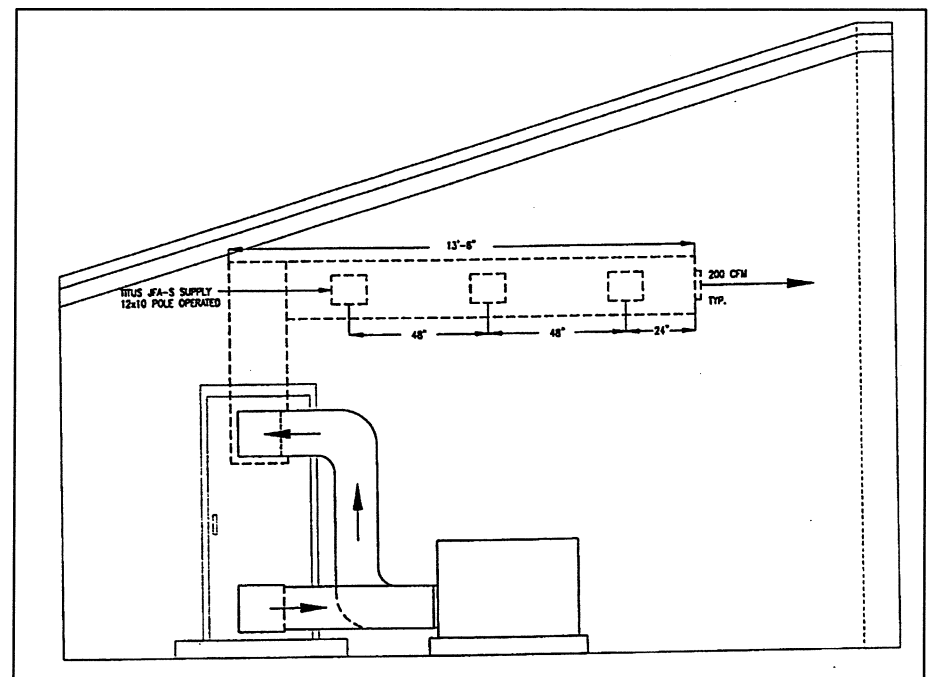
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4/06/99 J.V.



HVAC PLAN
SCALE: 1/4"=1'-0"



SOUTH ELEVATION
SCALE: 1/4"=1'-0"

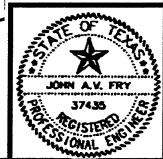


NOTES:
1. OUTDOOR DUCT - GALVANIZED, INSULATED, WEATHER PROTECTED. EPOXY PAINT TO MATCH EXISTING BRICK.
WEST ELEVATION
SCALE: 1/4"=1'-0"

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BY G.C.H. DATE 05/06/09

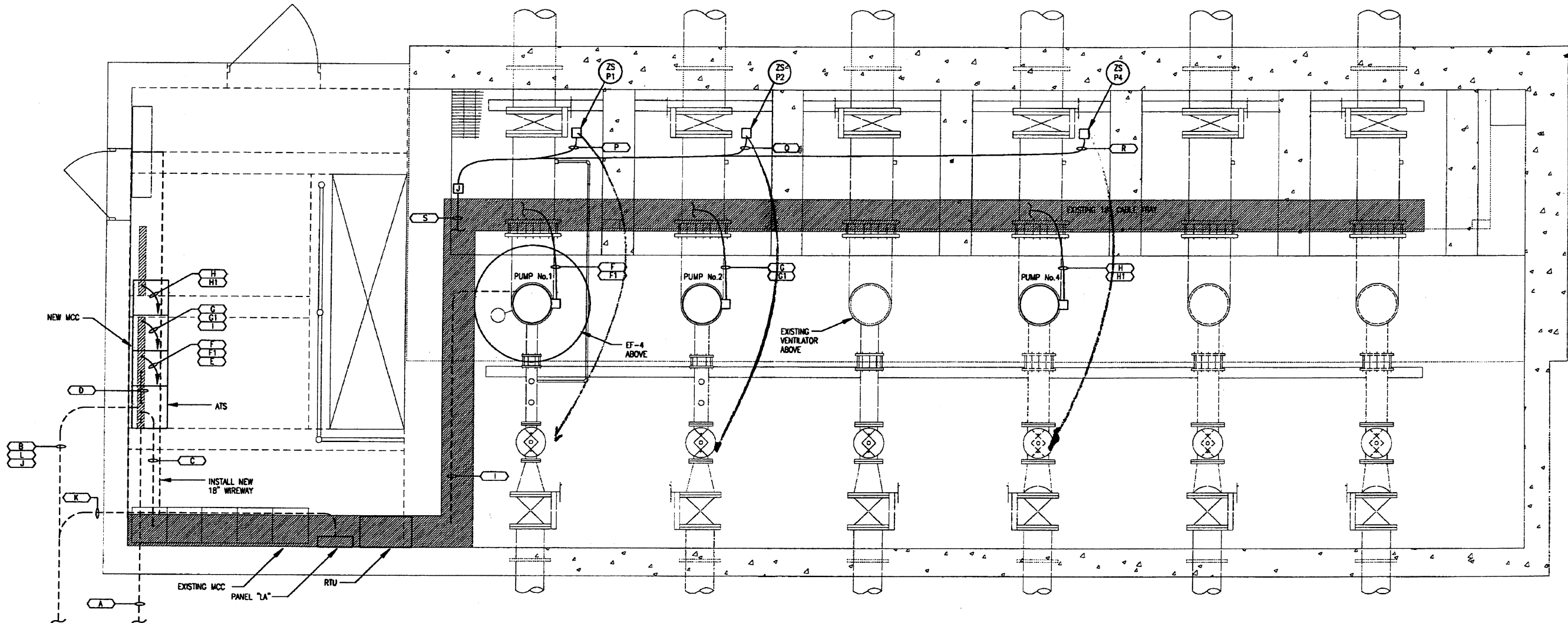
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4-8-99



CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION AIRCONDITIONING UNIT REVISIONS		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J. A. FRY</u>	PROJECT: <u>98 192</u>	SHEET NO. <u>8A</u>
DRAWN BY: <u>R. E. BRADY</u>	DATE: <u>APRIL 1999</u>	OF <u>12</u> SHEETS

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4/08/99 A.Y.



SECTIONAL PLAN
SCALE: 3/8"=1'-0"

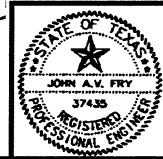
- NOTES:**
1. REFER TO BLOCK CONNECTION DIAGRAM, SHEET E6.
 2. CONTRACTOR SHALL DEMOLISH EXISTING UNUSED PUMP CONTROL VALVE WIRING TO PUMPS 1 & 2.

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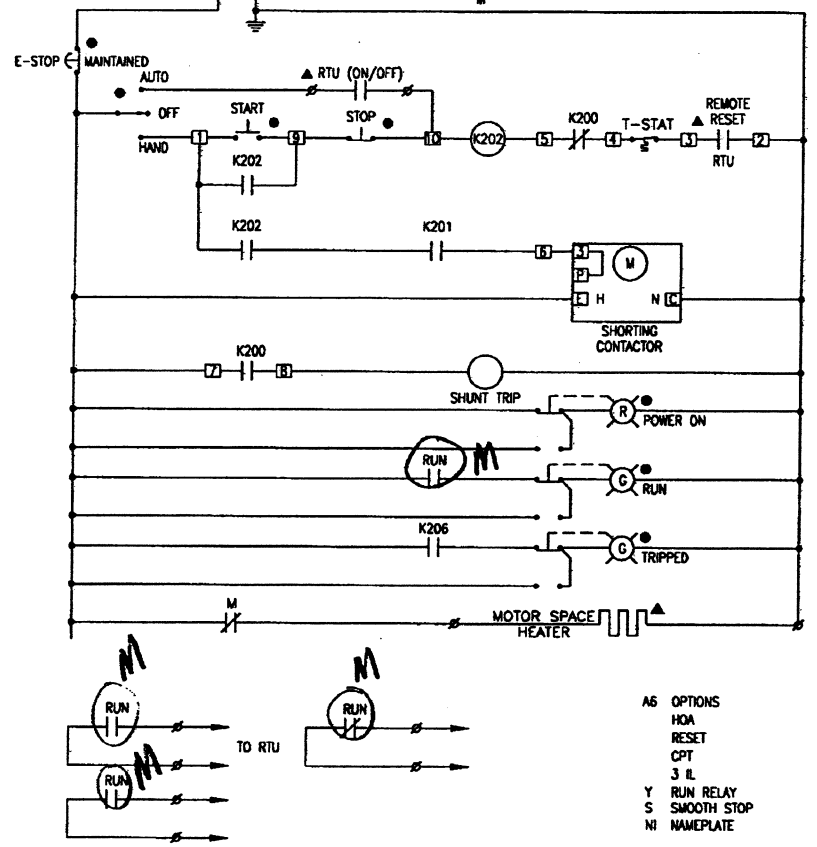
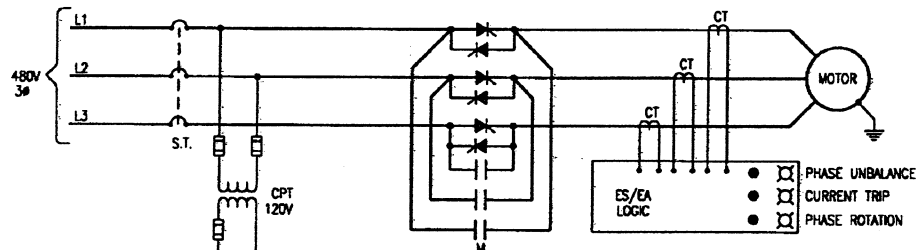
BY G.C.H. DATE 05/06/99

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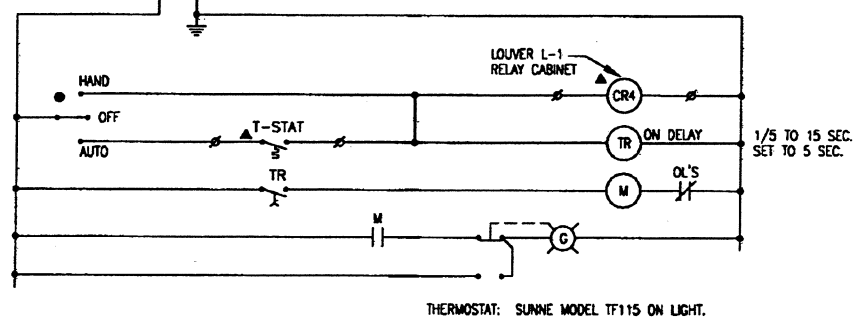
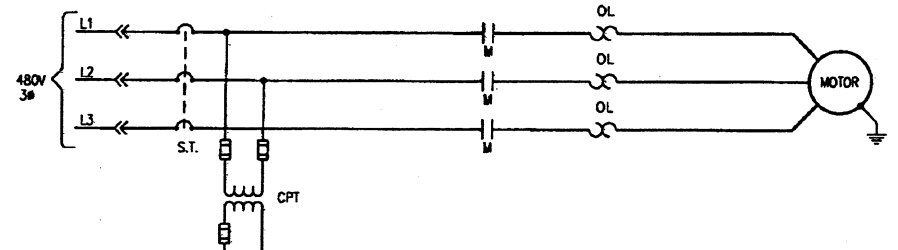


CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION AIRCONDITIONING UNIT REVISIONS		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: <u>J. A. FRY</u>	PROJECT: <u>98 192</u>	SHEET NO. <u>9</u>
DRAWN BY: <u>R. E. BRADY</u>	DATE: <u>APRIL 1999</u>	OF <u>12</u> SHEETS

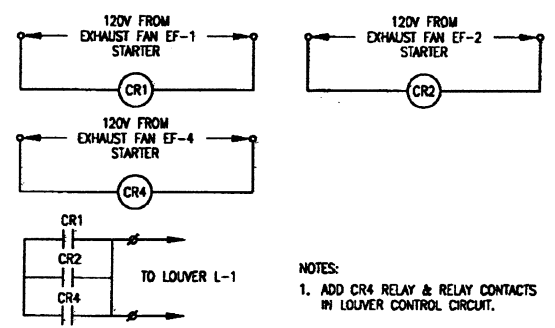


SCHEMATIC - C-H 125 H.P. SOFT STARTERS
TYPICAL FOR P-1, P-2 & P-4 (ALTERNATE)

A6 OPTIONS
HOA
RESET
CPT
3 IL
Y RUN RELAY
S SMOOTH STOP
NI NAMEPLATE



SCHEMATIC - EF-4



NOTES:
1. ADD CR4 RELAY & RELAY CONTACTS IN LOUVER CONTROL CIRCUIT.

SCHEMATIC - LOUVER L1 RELAY CABINET

- LEGEND**
- DEVICE LOCATED IN DOOR OF MCC OR PANEL
 - ▲ DEVICE LOCATED REMOTE
 - ⊞ FIELD TERMINAL
 - ⌞ NORMALLY CLOSED CONTACTS
 - ⌞ NORMALLY OPEN CONTACTS
 - ⊞ FUSE
 - ⌞ DRAW-OUT CONTACTS
 - ⊞ STOP PUSH BUTTON
 - ⊞ START PUSH BUTTON
 - CR CONTROL RELAY COIL
 - TR TIMING RELAY COIL
 - ⌞ TR1 TIMED CONTACTS
 - ⊞ ETM ELAPSED TIME METER

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BY G.C.H. DATE 05/06/09

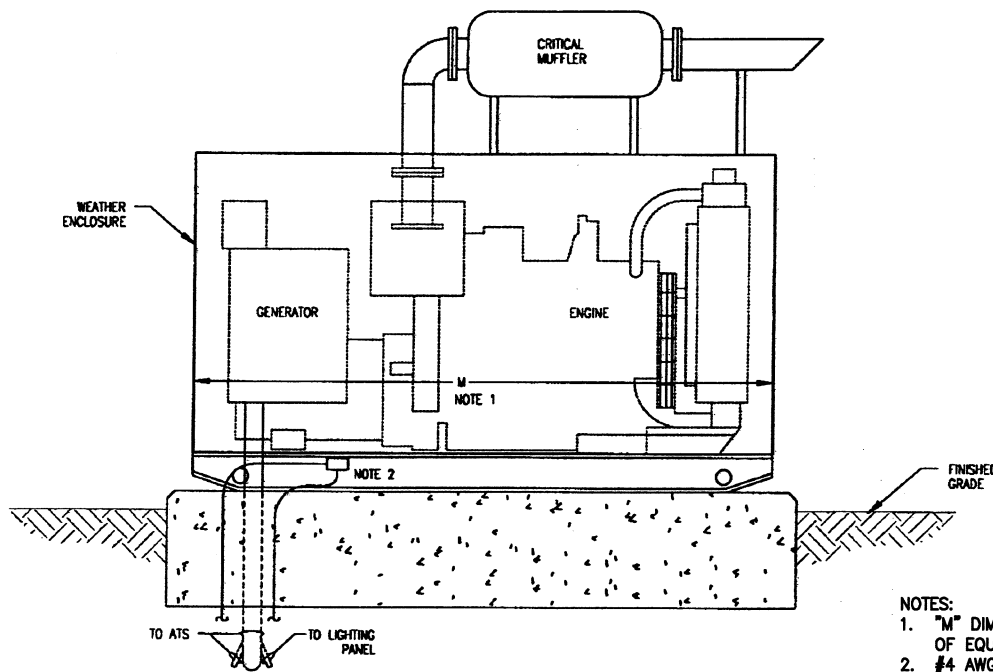
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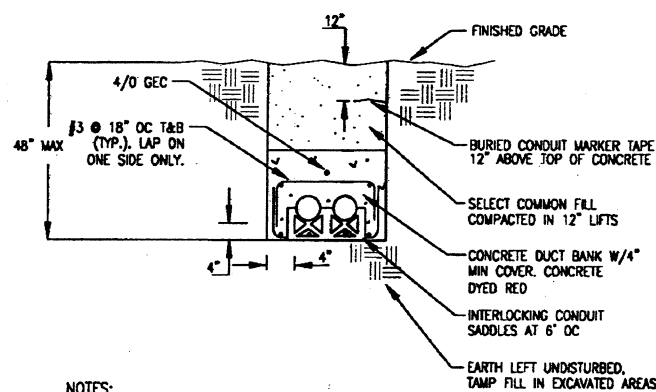
John A. Fry
4-8-99



CITY OF ROCKWALL, TEXAS		
EASTSIDE PUMP STATION ELECTRICAL SCHEMATICS		
SHIMEK, JACOBS & FINKLEA, L.L.P. CONSULTING ENGINEERS Dallas, Texas		
DESIGNED BY: J. A. FRY	PROJECT: 98 192	SHEET NO. 10
DRAWN BY: R. E. BRADY	DATE: APRIL 1999	OF 12 SHEETS

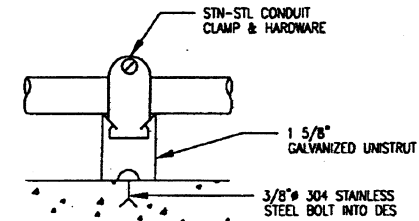


01 ELEVATION OF STANDBY GENERATOR
NOT TO SCALE



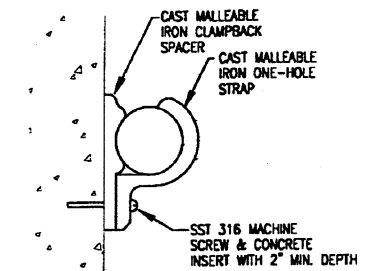
02 DETAIL - CONCRETE ENCASED UNDERGROUND DUCTBANK
NOT TO SCALE

- NOTES:
- "M" DIMENSION SHALL BE MANUFACTURER'S DIMENSION OF EQUIPMENT FURNISHED.
 - #4 AWG TO GROUND RODS AND #4/0 E.G.C. TO SERVICE ENTRANCE PANEL (ATS.)
 - WIDTH AND LENGTH OF SLAB WILL BE "M+12" ON EACH SIDE. SLAB SHALL BE 24" THICK.
 - 3000 PSI CONCRETE PAD, REINFORCED WITH #6 REBARS @ 12" O.C.B.W. TOP AND BOTTOM. 1" CHAMFER ALL AROUND TOP. EXPOSED CONCRETE SURFACES SHALL BE RUBBED SMOOTH. COMPACT SOIL UNDER PAD TO PROCTOR 90.

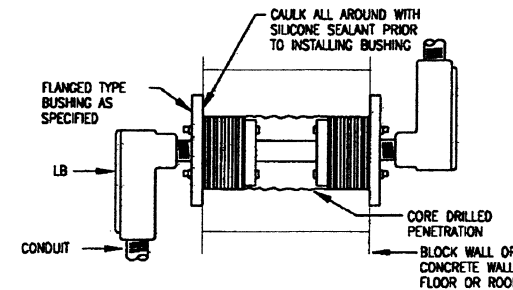


- NOTES:
- SLOTTED CHANNEL MEMBERS TO BE SOLID BODY ALUMINUM, EXCEPT AS NOTED WHERE SOLID BODY STN-STL IS SHOWN OR OTHER TYPES
 - USE 1 5/8" X 3 1/4" (OR 4") DEEP TYPES WHERE EXTRA HEIGHT OF CHANNEL MEMBER IS REQUIRED

03 TYPICAL CONDUIT SUPPORT FOR SURFACE-MTD RUNS ON CONCRETE
NOT TO SCALE

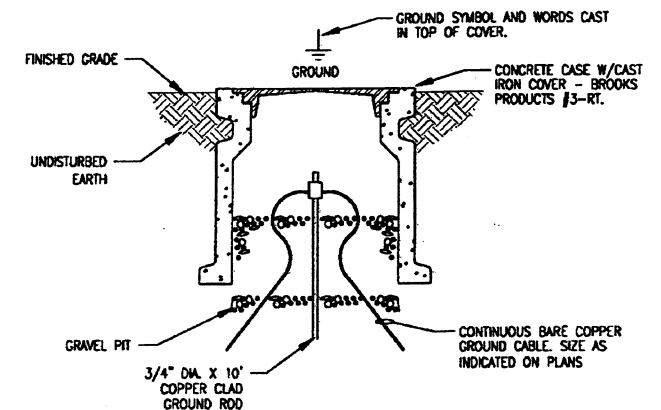


04 TYPICAL CONDUIT SUPPORT ON CONCRETE STRUCTURES FOR SINGLE CONDUIT RUNS
NOT TO SCALE



- NOTES:
- TYPICAL FOR NEW PENETRATIONS OF EXISTING WALLS, ROOFS & FLOORS.
 - REPAIR ALL DAMAGE DONE BY CORE DRILL.

05 WATERTIGHT CONDUIT PENETRATION
NOT TO SCALE



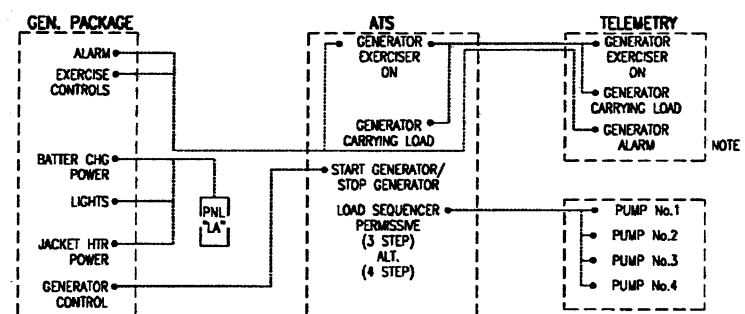
07 GROUND ROD & WELL
NOT TO SCALE

TAG	WIRING	CONDUIT	SOURCE	DESTINATION	COMMENT
A	3 SETS: 3-500KCMIL #1/0 N	3"	TUE TRANSFORMER	ATS	EXISTING CONDUITS-REQUIRES MODIFICATION
B	3 SETS: 3-500KCMIL #1/0 N	3"	GENERATOR	ATS	NOTE 1
C	3 SETS: 3-500KCMIL #4/0 EGC	T	ATS	MCC-1	EXISTING MCC-1
D	1000 BUS BAR		ATS	MCC-2	NOTE 2
E	3 #12, #12G, 2 #14	3/4"	MCC-2	AIR CONDITIONER	
F	3/4" O. #14G T.C.	T	MCC-2	PUMP No.1	
F1	2 #12, #12G T.C.	T	MCC-2	PUMP No.1	MOTOR SPACE HEATER
G	3/4" O. #14G T.C.	T	MCC-2	PUMP No.2	
G1	2 #12, #12G T.C.	T	MCC-2	PUMP No.2	
H	3/4" O. #14G T.C.	T	MCC-2	PUMP No.4 (ALTERNATE)	
H1	2 #12, #12G T.C.	T	MCC-2	PUMP No.4 (ALTERNATE)	
I	3 #12, #12G, 2 #14	3/4"	MCC-2	EF-4 EXHAUST FAN	
J	20 #14	1"	GENERATOR	DISPLAY	
K	2 #10, #12, #10G	1"	GENERATOR	PANEL "LA"	BATTERY CHARGER, HEATERS
L	4 #12, #12G	1"	GENERATOR	ATS	CONTROLS
M	2 #14, #14	1"	ATS	RTU	CONTROLS & REPORT BACK FROM ATS & PUMPS
P	2 #14, #14G	3/4"	P-1 CHECK VALVE	CHECK VALVE J-BOX	VALVE CLOSED
Q	2 #14, #14G	3/4"	P-2 CHECK VALVE	CHECK VALVE J-BOX	VALVE CLOSED
R	2 #14, #14G	3/4"	P-4 CHECK VALVE	CHECK VALVE J-BOX	VALVE CLOSED (ALTERNATE)
S	#14, #14G	3/4"	CHECK VALVE J-BOX	RTU CABINET	VALVE CLOSED SIGNALS (2 SPARE CONDUCTORS)
T	2 #14, #14G	3/4"	A/C THERMOSTAT	MCC-2	
U	2 #14, #14G	3/4"	EF-4 THERMOSTAT	MCC-2	
X	3 SETS: 3-400KCMIL #2/0C	3"	TUE TRANSFORMER	MCC-1	NOTE 3
Y	3/C-350KCMIL T.C.	T	MCC-1	PUMP No.2	NOTE 4
Y1	5 #12 T.C.	T	MCC-1	PUMP No.2	NOTE 4
Z	3/C-350KCMIL T.C.	T	MCC-1	PUMP No.1	NOTE 4
Z1	5 #12 T.C.	T	MCC-1	PUMP No.1	NOTE 4

- NOTES:
- PVC COATED R.G.S CONDUIT. GROUND TO GENERATOR FRAME AND TO ATS S/N.
 - IF ATS AND MCC-2 REQUIRE CABLE CONNECTIONS, PROVIDE TAG "D" SAME AS TAG "C".
 - REMOVE CABLE. CONDUIT IN BUILDING TO BE ROUTED TO TRAY.
 - REMOVE CABLE FROM TRAY, COIL AND TAPE ENDS. DELIVER TO OWNER.

* T = TRAY
T.C. = TRAY CABLE

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BY G.C.H. DATE 05/06/09



- NOTES:
- RUN CONDUIT AND PULL CONDUCTORS TO TELEMETRY CABINET. ALLOW ENOUGH CONDUIT TO REACH ANY LOCATION IN CABINET. CONDUCTORS TO TELEMETRY CABINET SHALL ORIGINATE AT DRY CONTACTS IN GENERATOR PACKAGE, ATS PACKAGE AND TELEMETRY.

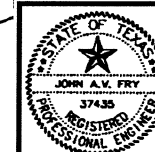
CONTROL & ALARM BLOCK DIAGRAM

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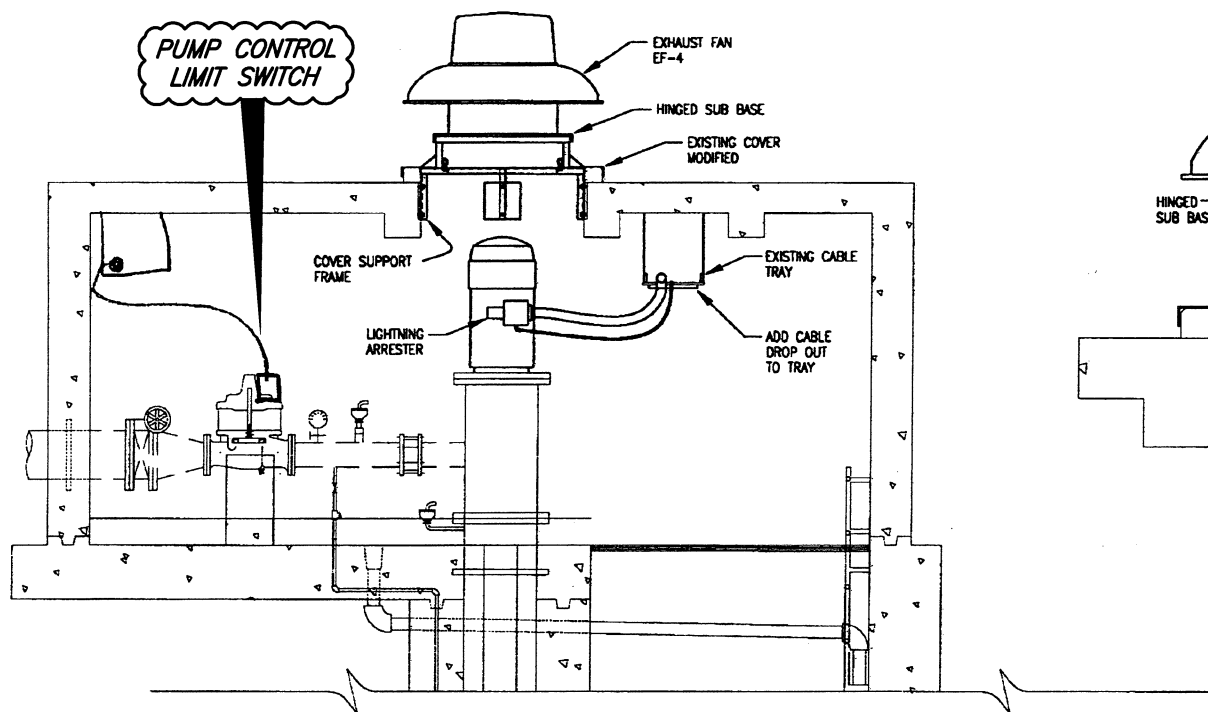
CITY OF ROCKWALL, TEXAS

EASTSIDE PUMP STATION ELECTRICAL DETAILS II

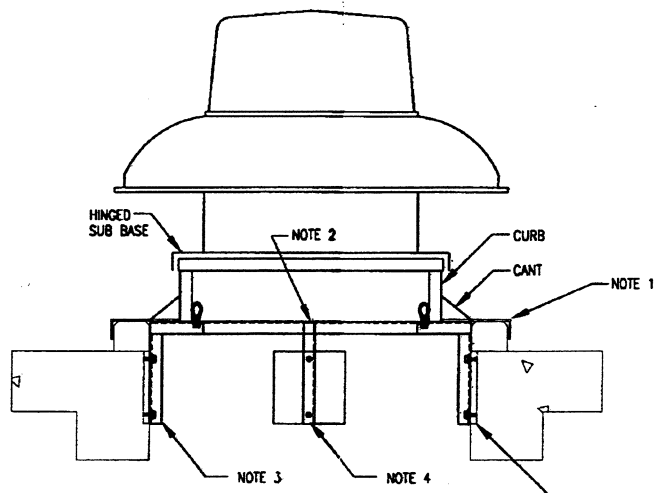
SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas



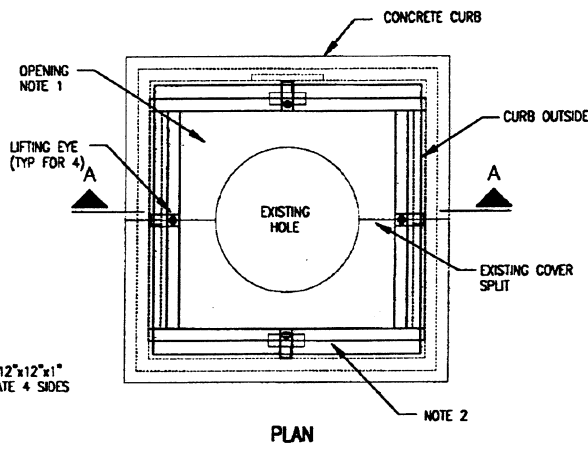
DESIGNED BY: J. A. FRY	PROJECT: 98 192	SHEET NO. 11
DRAWN BY: R. E. BRADY	DATE: APRIL 1999	OF 12 SHEETS



ELEVATION - PUMP No.1
NOT TO SCALE



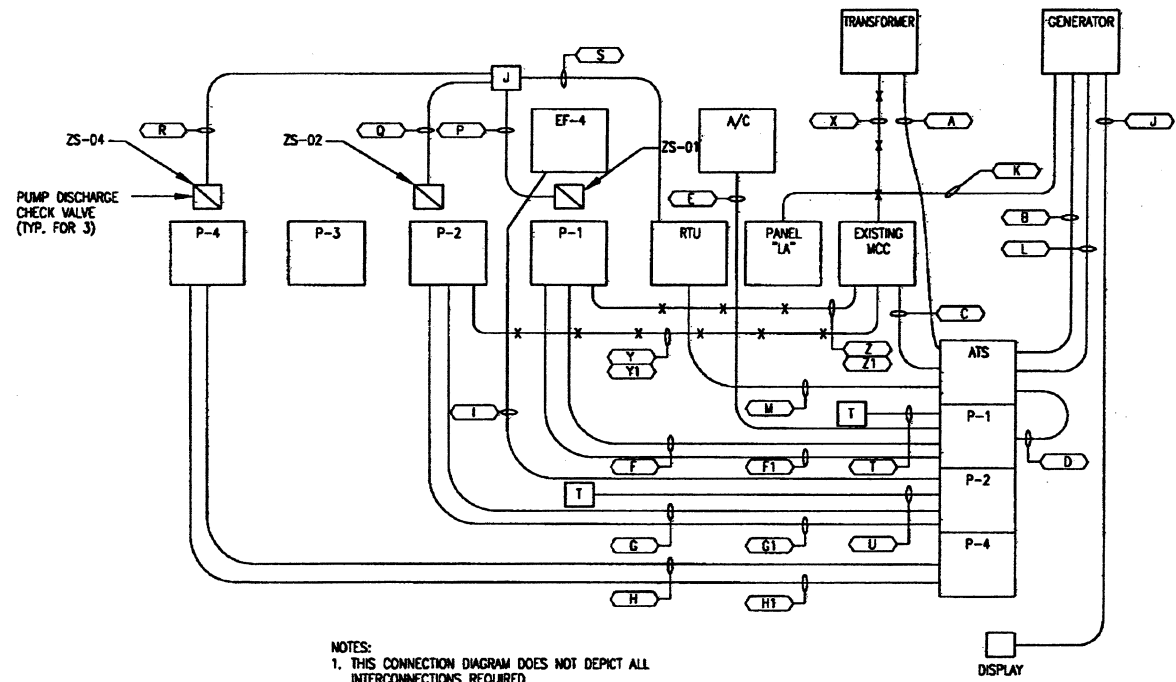
SECTION A-A



PLAN

- NOTES:**
1. UTILIZE EXISTING 3/8" COVER PLATE. CUT OUT SQUARE OPENING FOR FAN CURB. SIZE PER MANUFACTURERS REQUIREMENTS.
 2. FABRICATE COVER SUPPORT FRAME AS SHOWN. DRILL AND TAP EXISTING 1" THICK EMBEDDED BASE AND BOLT SUPPORT FRAME THERETO.
 3. 2"x2"x1/4" GALVANIZED ANGLE. TOUCH UP GALVANIZED AFTER WELDING W/ GALVOWELD OR EQUAL.
 4. BOLT TO EXISTING 1" EMBEDDED PLATE 8 PLACES WITH 3/8"x16 ALLEN HEAD H.S. STL SCREWS. DRILL AND TAP PLATE. TORQUE TO 25 FT LBS.

DETAIL - PUMP COVER SUPPORT FRAME
NOT TO SCALE



- NOTES:**
1. THIS CONNECTION DIAGRAM DOES NOT DEPICT ALL INTERCONNECTIONS REQUIRED.

BLOCK CONNECTION DIAGRAM

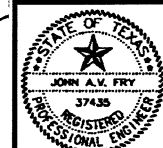
RTU I/O SCHEDULE			
TAG DESCRIPTION	DI	DO	FIELD DEVICE
ZS-P1	1		PUMP DISCHARGE CHECK VALVE
ZS-P2	1		PUMP DISCHARGE CHECK VALVE
ZS-P4	1		PUMP DISC. CHECK VALVE (ALT.)
RUN/STOP P1		1	MCC-2 P-1
RUN/STOP P2		1	MCC-2 P-2
RUN/STOP P4		1	MCC-2 P-4 (ALT)
P1 ON	1		MCC-2 P-1
P2 ON	1		MCC-2 P-2
P4 ON	1		MCC-2 P-4 (ALT)
P1 FAIL	1		MCC-2 P-1
P2 FAIL	1		MCC-2 P-2
P4 FAIL	1		MCC-2 P-4 (ALT)
GENERATOR RUN	1		EXERCISE
GENERATOR CARRYING LOAD	1		CARRYING LOAD
GENERATOR ALARM	1		COMBINATION ALARM
TOTAL	12	3	

EXISTING SQUARE D (MODICON) REQUIRES ADDITION OF EXTENDER MODULE OR REPLACEMENT OF EXISTING PLC TO PROVIDE THESE INPUTS.

This record drawing is a compilation of the sealed engineering drawing for this project; modified by addenda, change orders and information furnished by the contractor. The information shown on the record drawings that was provided by the contractor or others not associated with the design engineer cannot be verified for accuracy or completeness. This original sealed drawings are on file at the offices of Birkhoff, Handricks & Conway, L.L.P.
BY G.C.H. DATE 05/06/09

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John A. Fry
4-8-99



CITY OF ROCKWALL, TEXAS

**EASTSIDE PUMP STATION
ELECTRICAL DETAILS II**

SHIMEK, JACOBS & FINKLEA, L.L.P.
CONSULTING ENGINEERS
Dallas, Texas

DESIGNED BY: J. A. FRY PROJECT: 98 192 SHEET NO. 12
DRAWN BY: R. E. BRADY DATE: APRIL 1999 OF 12 SHEETS

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