

LEGEND

ABBREVIATIONS

A.	Ampere
ABN	Above And Below Normal
AFF	Above Finished Floor Or Grade
AL.	Aluminum
ASSY.	Assembly
B.K.R. or BKR	Breaker
BN	Below Normal
C.	Conduit
C.B. or CB	Circuit Breaker
CKT.	Circuit
CL	Current Limiting
CMH	Communications Manhole
CONV.	Convenience
CONT.	Continuation
C.P.B. or CPB	Concrete Pull Box
CPVC	Chlorinated Polyvinyl Chloride Conduit
CTC or C/C	Center To Center
D.P.	Differential Pressure
DTL.	Detail
EMH	Electrical Manhole
E.P. or EP	Explosion Proof
EXPAN.	Expansion
FC	Final Clarifier
FP	Field Panel
G.F.I. or GFI	Ground Fault Interrupter
GA.	Gauge
GND	Ground
G.	Ground
HP	Horsepower
HTR.	Heater
JB or J.B.	Junction Box
KVA	Kilovolt-Ampere
KW	Kilowatt
L.C.	Liquid Contactor
L.O.C.	Liquid Operations Center
LTG.	Lighting
MCB	Main Circuit Breaker
MCC. or MCC	Motor Control Center
MCP	Motor Circuit Protector
MDPT.	Midpoint
MFGRS.	Manufacturer's
MH	Manhole
MLO	Main Lugs Only
NC	Normally Closed
NO	Normally Open
P.	Pole
∅	Phase
PH	Phase
PLC	Programmable Logic Controller
PR. or PR	Paired
PS	Pressure Switch
P.S.	Pump Station
PVC	Polyvinylchloride Conduit
RECEPT.	Receptacle
ROF	Rate OF Flow
R.S. or RS	Return Sludge
S	Speaker Cable In 3/4"C.
S/N	Solid Neutral
SHLD.	Shield
SHT.	Sheet
SS,S.S. or SST	Stainless Steel
TC	Tray Cable
TRANS. or XFRMR.	Transformer
TYP.	Typical
V.	Volt
VSD	Variable Speed Drive
W or W.	With
W.P.	Weatherproof
XMTR	Transmitter

LEGEND

ELECTRICAL SYMBOLS

	Non-Fused Disconnect Switch
	Combination Motor Starter
	Single Pole Switch
	Three Way Switch
	Four Way Switch
	Single Pole Switch, Weatherproof
	Manual Motor Starter
	Duplex Receptacle, Grounded Type Panelboard Ckt.
	Weatherproof Duplex Receptacle, Grounded Type
	Weatherproof 240V. Receptacle, Grounded Type
	Thermostat
	Wiring In Or Not In Conduit Underground
	Wiring In Conduit Exposed
	Wiring In Or Not In Conduit Concealed
	Wiring In Conduit Exposed On Ceiling In Basement Below
	Conduit Turned Up
	Conduit Turned Down
	Conduit With Seal
	Conduit Drain
	Conduit Run - No. Of Wires As Indicated Hot, Neutral, Switchleg And Ground
	Lighting Fixture Fixture Type Panelboard Ckt.
	Existing Fixture As Indicated
	Fluorescent Lighting Fixture Fixture Type Panelboard Ckt.
	Emergency Battery Pack Lighting Fixture
	Twin Fixture Pole lighting Fixture
	Coordinates At Which Fixture Is Aimed (Grade Elevation If El. Is Not Noted) Pole Breakover Direction
	Single Fixture Pole lighting Fixture
	Exit Lighting Fixture (Faces Shown Darkened)
	600V, 30A Submersible Pump Receptacle
	Speaker Type Indicated A, B, C, D Or F (E.P.)
	Ceiling Speaker
	Alarm Horn
	Special Equipment As Shown On Plans
	Junction Box
	7 Wire Multiconductor
	Telephone
	Wall Telephone
	Weatherproof Wall Telephone
	Acoustical Booth Wall Telephone
	Telephone Booth
	A.C. Motor
	Ground Rod Well
	Heat Tracing

LEGEND

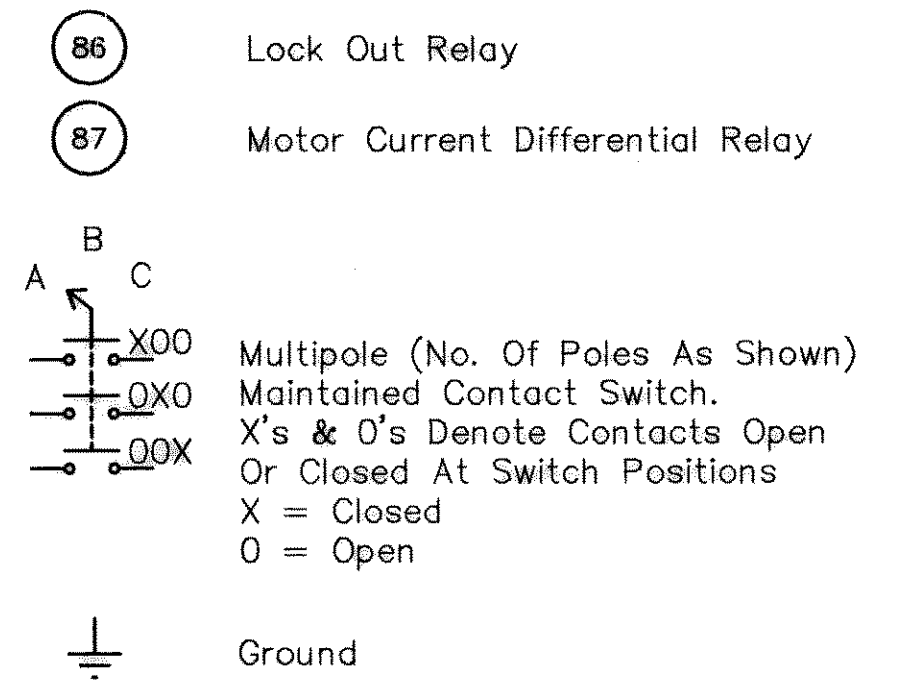
ONE LINE DIAGRAM

	Eddy Current Variable Speed Drive
	Circuit Breaker
	Squirrel Cage Induction Motor Horsepower As Indicated
	Phase Failure, Phase Reversal Relay
	Voltmeter
	Voltmeter Switch
	Ammeter
	Ammeter Switch
	Wattmeter
	Kilowatt-hour Meter
	Control Panel
	Pressure Control
	Temperature Control
	Remote Control
	Level Control
	Time Control
	Photocell Control
	Variable Speed Control
	Alternator
	Motor Torque Protection
	Motor Thermal Protection
	Motor Moisture Protection
	Vibration Switch
	HAND-OFF-AUTO Selector Switch
	ON-OFF Selector Switch
	ON-OFF REMOTE
	START-STOP Pushbutton Station
	Prewired
	UP-OFF-DOWN
	Power Transformer Potential Transformer
	Zero Sequence Current Transformer
	Main Contactor
	Stab
	Fused Contactor Drawout Type
	Drawout Circuit Breaker
	Switch
	Fused Disconnect
	Fuse
	Surge Capacitor
	Surge Arrester
	Kirk Key Interlock
	Programmable Motor Protective Device
	Under Voltage And Phase Sequence Relay
	Pressure Switch
	Time Delay Overcurrent Relay
	Time Delay Ground Fault Relay
	Motor Winding Overtemperature Relay
	Lock Out Relay
	Motor Current Differential Relay

LEGEND

CONTROL SCHEMATIC

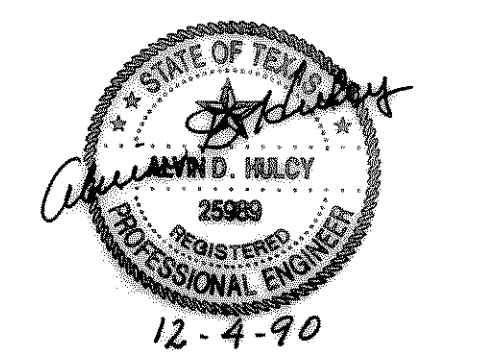
	Main contactor
	Timing Relay As Specified
	Elapsed Time Meter
	A.C. Industrial Control Relay
	D.C. Industrial Control Relay
	Photocell
	Normally Open Contact
	Normally Closed Contact
	Overload Contact
	Thermostat
	Temperature Switch
	Maintained Contact Switch
	Normally Closed, Momentary Open Switch
	Normally Open, Momentary Close Switch
	Maintain Contact Pushbutton
	Geared Limit Switch (Shown Closed)
	Contact Torque Switch (Shown Closed)
	Pressure Switch
	Liquid Level Switch (Closed On High Level)
	Time Close Contact
	Solenoid
	Resistor
	Resistor
	Mechanical Interlock
	Indicating Lamp, Color Indicated R=Red, G=Green, W=White, A=Amber, B=Blue
	Fuse
	Terminal
	Node
	Control Transformer
	HAND-OFF-AUTO Selector Switch
	Remote Control
	Level Control
	Time On Energizing
	Time To Close
	Resistance Temperature Detector
	Control Relay
	Breaker Closing Coil
	Breaker Trip Coil
	Under Voltage And Phase Sequence Relay
	Incomplete Sequence Relay
	Motor Winding Overtemperature Relay



INSTRUMENTATION

	FE Flow Sensing Element (Flow Tube)
	FT Flow Transmitter
	FY Flow Function As Designated
	FIR Flow Indicating Recorder
	FI Flow Indicator
	LIT Level Indicating Transmitter
	FQI Totalizer
	LIR Level Indicating Recorder
	Field Mounted Instrument
	Back Of Panel Mounted Instrument
	Front Of Panel Mounted Instrument
	Venturis Or Flow Tube
	Square Root Extractor
	Pump
	Water Storage Tank

RECORD DRAWING
 BASED ON INFORMATION
 SUPPLIED BY THE CONTRACTOR
 DATE: 10/5/92 BY: MAC



ACAD: Ref: 12
 User: Hugo Trevino
 ANR: 09/14/92
 DEC 23, 1992 8:34:03 A.M.
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DATE	REVISION	BY	CHECKED

DESIGNED	
DRAWN	
TRACED	
CHECKED	

JOB NO.	ROK 89005
DATE	JULY, 1990
SCALE	NO SCALE

FREES AND NICHOLS, INC.
 CONSULTING ENGINEERS
 FORT WORTH - ARLINGTON - AUSTIN, TEXAS

CITY OF ROCKWALL, TEXAS
EASTSIDE PUMP STATION

ELECTRICAL
LEGEND