File: 7A 13 0128 003, IID ECGS

IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P.O. BOX 937 • IMPERIAL, CALIFORNIA 92251

December 17, 2010

Mr. Doug Wylie
California Regional Water Quality Control Board
Colorado River Basin Region 7
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Subject: Cease and Desist Order No.R7-2009-0049 – Preliminary Design Submittal

Dear Mr. Wylie,

Imperial Irrigation District (IID) is submitting this final design information (attached) for deep injection well(s) as required in the provisions of Cease and Desist Order No. R7-2009-0049.

As stated in the last quarterly report, IID evaluated the long term cost of the deep injection well and wastewater treatment options. The evaluation identified the deep well option as the most cost effective solution. The injection well option would install an EPA Class I well(s) to inject plant wastewater into deep, isolated rock formations that are thousands of feet below the lower most underground source of drinking water (USDW). Station wastewater will be pumped into wells which are 2,740 to 3,660 feet deep. The IID has received permit #CA1060002 for the deep injection well from the EPA. The deep injection well will require minimal water treatment prior to injection and will produce virtually no significant solid waste as compared to the Wastewater Treatment Option.

The IID received Board approval to proceed with the Injection Well Project on November 2, 2010. At this time IID believes the project will meet the schedule as outlined in the Cease and Desist order.

If you have any questions, feel free to contact me at (760) 339-0506.

Sincerely,

Michael Taylor
General Supt., Generation Plant
Energy Production

Attachments

INSTRUMENT TERMINOLOGY

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	
D	DENSITY OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY			CONTROL STATION	
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIO-ACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI-FUNCTION		MULTI-FUNCTION	MULTI-FUNCTION	MULTI-FUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	USER'S CHOICE			RELAY OR COMPUTE	
Z	POSITION			UNCLASSIFIED FINAL CONTROL ELEMENT	

REFERENCE: REFER TO INSTRUMENT SOCIETY OF AMERICA
ISA S-5.1-1984
"INSTRUMENTATION SYMBOLS AND IDENTIFICATION"

MISCELLANEOUS INSTRUMENT SYMBOLS

DIAPHRAGM SEAL
INTERLOCK CONTACT IN A STAND ALONE RELAY.
INTERLOCK TO EMERGENCY SHUTDOWN SYSTEM
INTERLOCK FUNCTION IN THE DCS
INTERLOCK FUNCTION IN THE PLC
PILOT LIGHT (LOCAL)
PILOT LIGHT (PANEL MOUNTED)
PILOT LIGHT (LOCAL PANEL)
HAND OFF AUTO
INSTRUMENT VIBRATION
STEAM TRACED
ELECTRIC TRACED

SIGNAL LINES

PROCESS CONN. OR MISC. SUPPLY
PNEUMATIC SIGNAL
ELECTRIC SIGNAL
SOFTWARE LINK
FILLED SYSTEM
HYDRAULIC SIGNAL
ELECTROMAGNETIC OR RADIATION SIGNAL

TAG BALLOONS

LOCAL
DCS CONTROL SYSTEM (NORMALLY DISPLAYED)
DCS CONTROL SYSTEM (NOT NORMALLY DISPLAYED)
(WHERE SCP = BALANCE OF PLANT)
PROGRAMMABLE LOGIC CONTROLLER (NOT NORMALLY DISPLAYED)
PROGRAMMABLE LOGIC CONTROLLER (DISPLAYED)
ON MAIN CONTROL PANEL (FRONT--DISPLAYED)
ON MAIN CONTROL PANEL (REAR--NOT DISPLAYED)
ON LOCAL PANEL (FRONT--DISPLAYED)
ON LOCAL PANEL (REAR--NOT DISPLAYED)
IDENTIFIES WHICH LOCAL PANEL
IDENTIFIES SOFTWARE ALARMS

NOTE:
ALL INSTRUMENT TAGS ARE PREFIXED WITH AN AREA NUMBER.

VALVE ACTUATORS

DIAPHRAGM
CYLINDER
ELECTRIC MOTOR
ELECTRO-HYDRAULIC
SOLENOID
HAND WHEEL: SIDE OR TOP
POST INDICATOR
MANUAL - SPRING RETURN
RESET PUSH LATCH TYPE ACTUATOR
IDENTIFIES WHICH LOCAL PANEL WITH MOUNTED RESET

CONTROL VALVE LETTER NOTATION

FO FAIL OPEN
FC FAIL CLOSE
FI FAIL INTERMEDIATE
FL FAIL LOCKED
FAILURE OF VALVE-PORT VALVE. ASSUMED DIRECTION OF OPEN POSITION ON FAILURE.

SELF ACTUATED REGULATORS

PRESSURE REDUCING SELF CONTAINED
BACK PRESSURE SELF CONTAINED
PRESSURE REDUCING EXTERNAL TAP
BACK PRESSURE EXTERNAL TAP
TEMPERATURE CONTROL VALVE
TEMPERATURE PRESSURE (BULB) & EXTERNAL TAP

RELIEF DEVICES

PRESSURE RELIEF OR SAFETY VALVE
PRESSURE AND VACUUM RELIEF VALVE
RUPTURE DISC OR SAFETY HEAD (PRESSURE)
PRESSURE & VACUUM RELIEF RUPTURE DISC

VALVES

NORMALLY CLOSED VALVES ARE FILLED IN
GLOBE
BALL
PLUG
GATE
BUTTERFLY
CHECK
NEEDLE
DIAPHRAGM
ANGLE
NON-RETURN ANGLE
THREE-WAY
FOUR-WAY
FLOAT VALVE
EDDENS FLOW VALVE

INSULATION CODES

P	PERSONNEL BURN PROTECTION
C	COLD RETENTION (PERSONNEL)
H	HEAT CONSERVATION
HT	HEAT CONSERVATION WITH HEAT TRACE
N	NOT TRACED OR INSULATED

TRACING CODES

ET	ELECTRIC TRACED
HO	HOT OIL TRACED
SJ	STEAM JACKETED
ST	STEAM TRACED
WT	G.VOOL TRACED

PIPING SYMBOLS

REDUCER
FLARE & BLIND (OPEN PORTION)
SPADE BLIND
SPACER
WELD CAP
THREADED CAP
THREADED PLUG
BLIND FLANGE
"Y" STRAINER
HOSE FITTING OR QUICK DISCONNECT
FLEXIBLE HOSE
EXPANSION JOINT
OPEN DRAIN
BASKET STRAINER
VENT (OPEN)
INJECTION QUILL

LINES

NOMINAL PIPE DIAMETER
SYSTEM CODE
SEQUENCE NUMBER
PIPING SPECIFICATION
INSULATION CODE
12"-WWC-B01-CS150-H
PRIMARY PROCESS LINE
SECONDARY (REFERENCE) PROCESS LINE & SECONDARY (UTILITY) LINE
FUTURE OR EXISTING LINE (SCREENED)
PROCESS LINE WITH HEAT TRACING
JACKETED LINE
LINE NUMBER OR CLASS BREAK
BATTERY LIMITS OR PIPING LIMITS
CONTINUATION ARROW
CONNECT TO EXISTING
FLANGE JOINT OR CONNECTION
WELD JOINT OR CONNECTION
RE-IN CONNECTION
FREE DRAINING
SLOPE

SYSTEM CODE DESIGNATION

DWI	DEEP WELL INJECTION
WWC	WASTE WATER COLLECTION
WWS	WASTE WATER STORAGE

PIPING LETTER ABBREVIATIONS

AG	ABOVE GROUND	NO	NORMALLY OPEN
B/G	BOLT & GASKET	NC	NORMALLY CLOSED
BOP	BOTTOM OF PIPE	OD	OUTSIDE DIAMETER
CC	CORROSION COUPON	RS	REMOVABLE SPOOL
CSO	CAR SEAL OPEN	SC	SAMPLE CONNECTION
CSC	CAR SEAL CLOSED	SO	STEAM OUT
CO	CLEAN OUT	SQ	SQUARE
FP	FULL PORT	TSO	TIGHT SHUT OFF
IF	INSULATING FLANGE	UG	UNDER GROUND
LC	LOCKED CLOSED	US	UNIVERSE
LO	LOCKED OPEN	RO	RESTRICTION ORIFICE

PIPE MATERIAL DESIGNATION

MATERIAL CLASS CODE
PRESSURE CLASS CODE
CS150

PIPING SPECIFICATION

MATERIAL CLASS	CODE	PRESSURE CLASS	CODE
CARBON STEEL	CS	75	07
THIN WALL TYPE 304 STAINLESS STEEL	TW	125	12
THIN WALL TYPE 316 STAINLESS STEEL	TW	150	15
		175	17
		200	20
		250	25
		300	30
		3000	3K

PIPE SPECIALTY ITEMS

ARV	AIR RELEASE VALVE
EJ	EXPANSION JOINT
FH	FLEXIBLE HOSE
PSV	PRESSURE SAFETY VALVES
RC	RAIN CAP
RO	RESTRICTION ORIFICE
STR	STRAINERS

IN-LINE INSTRUMENTS

IN-LINE PROPELLER FLOW INSTRUMENT
IN-LINE MAGNETIC FLOW INSTRUMENT
POSITIVE DISPLACEMENT
ORIFICE PLATE & FLANGES
VORTEX FLOW INSTRUMENT
IN-LINE FLOW GLASS

INSTRUMENT TAGGING

SYSTEM IDENTIFIER
INSTRUMENT TYPE (ISA CODE)
COMPONENT SUFFIX
SEQUENCE NUMBER
(E) = EXISTING

EQUIPMENT TAGGING

EQUIPMENT IDENTIFIER
EQUIPMENT ID
SEQUENCE NUMBER

EQUIPMENT IDENTIFIER

P	PUMP
T	TANK
W	WELL

VALVE TAGGING

VALVE SIZE
SYSTEM CODE
SEQUENCE NUMBER
(E) = EXISTING

EQUIPMENT SYMBOLS

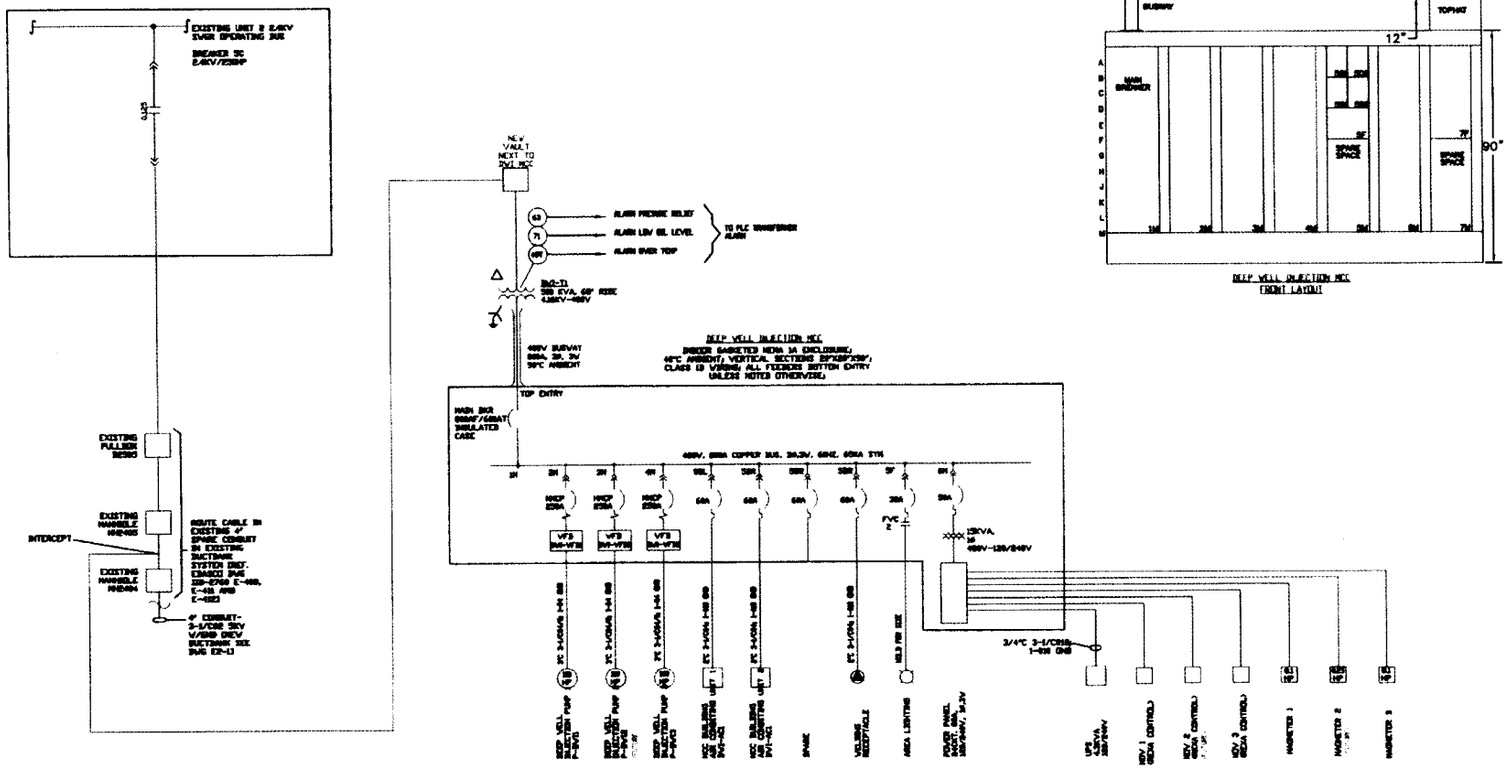
CENTRIFUGAL PUMP
VERTICAL SUMP PUMP
SUBMERSIBLE PUMP
STORAGE TANK
ELECTRIC MOTOR

THERMOCOUPLES/THERMOWELLS

3/4" NPT CONNECTION

ALL TEMPERATURE SENSING ELEMENTS WILL INCLUDE 3/4" NPT THERMOWELLS UNLESS OTHERWISE NOTED.

THESE DRAWINGS ARE FINAL DESIGN AND ARE FOR THE CONVENIENCE OF REFERENCE.



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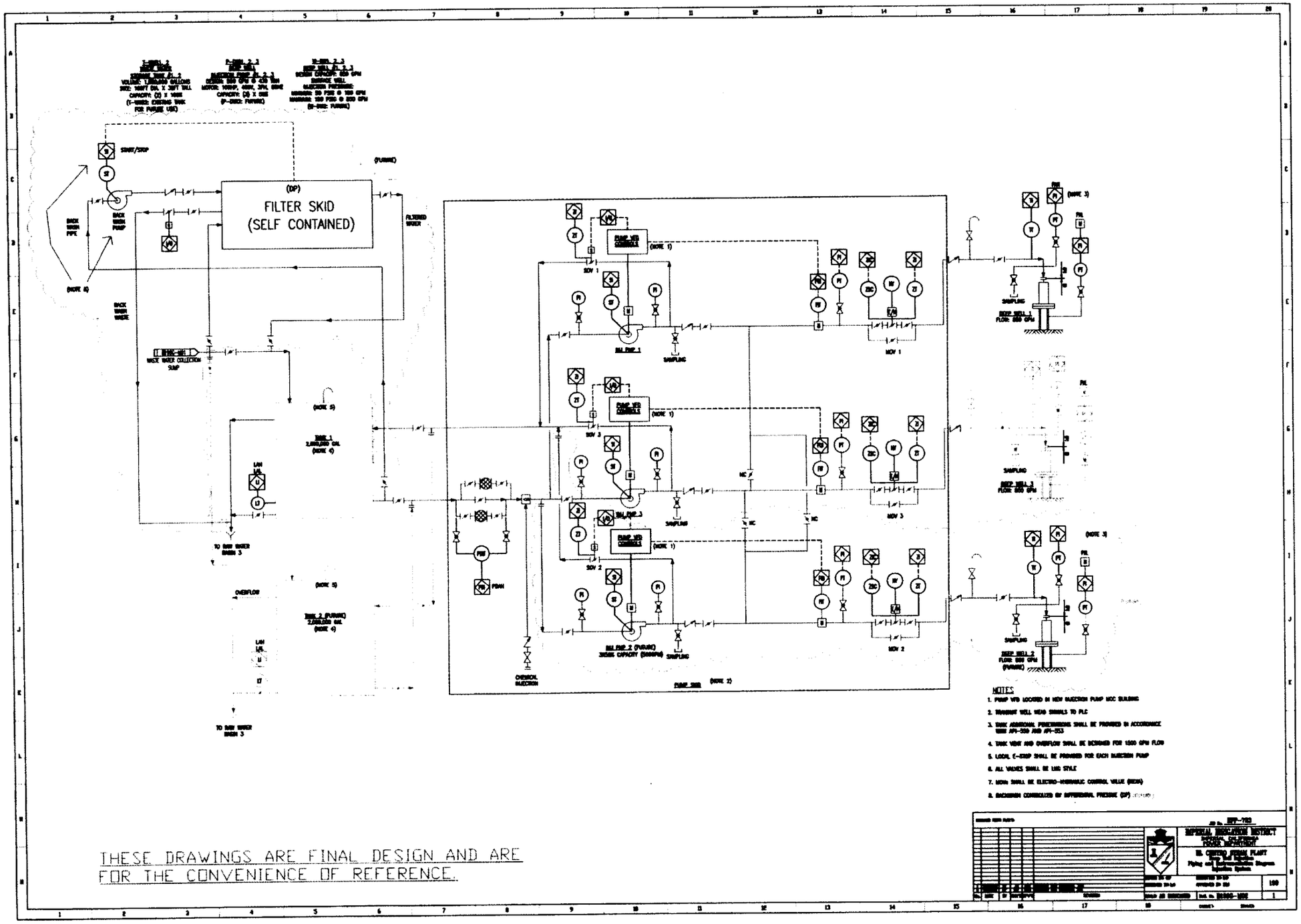

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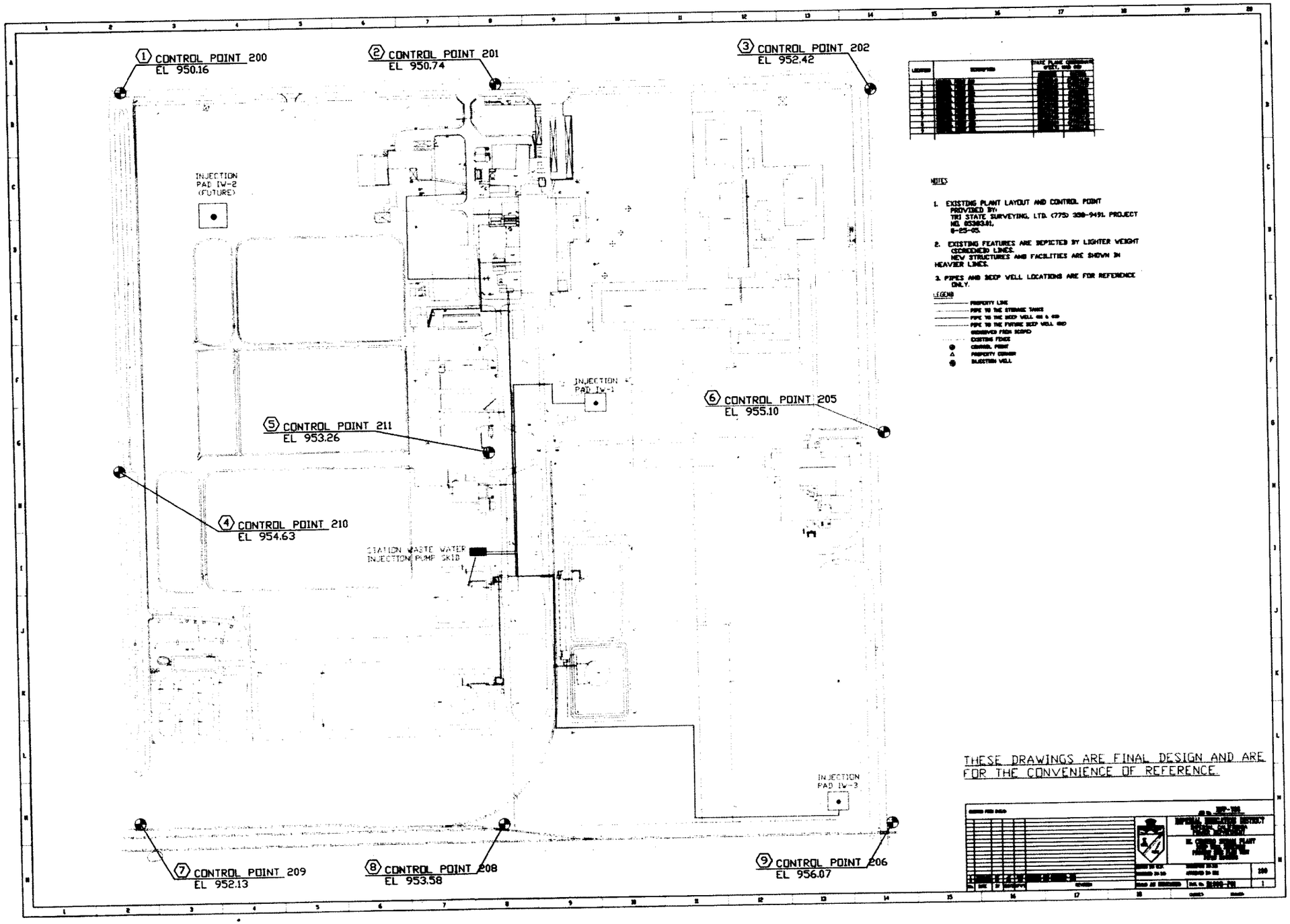
1 CONTROL POINT 200
EL 950.16
2 CONTROL POINT 201
EL 950.74
3 CONTROL POINT 202
EL 952.42
INJECTION PAD IV-2 (FUTURE)
INJECTION PAD IV-1
5 CONTROL POINT 211
EL 953.26
6 CONTROL POINT 205
EL 955.10
4 CONTROL POINT 210
EL 954.63
STATION WASTE WATER INJECTION PUMP SKID
INJECTION PAD IV-3
7 CONTROL POINT 209
EL 952.13
8 CONTROL POINT 208
EL 953.58
9 CONTROL POINT 206
EL 956.07
NOTES
1. EXISTING PLANT LAYOUT AND CONTROL POINT PROVIDED BY: TRI STATE SURVEYING, LTD. (775) 358-9491. PROJECT NO. 65383-01, 8-25-05.
2. EXISTING FEATURES ARE DEPICTED BY LIGHTER WEIGHT (SCREENED) LINES. NEW STRUCTURES AND FACILITIES ARE SHOWN IN HEAVIER LINES.
3. PIPES AND DEEP WELL LOCATIONS ARE FOR REFERENCE ONLY.
LEGEND
PROPERTY LINE
EXISTING FENCE
CONTROL POINT
PROPERTY CORNER
INJECTION WELL
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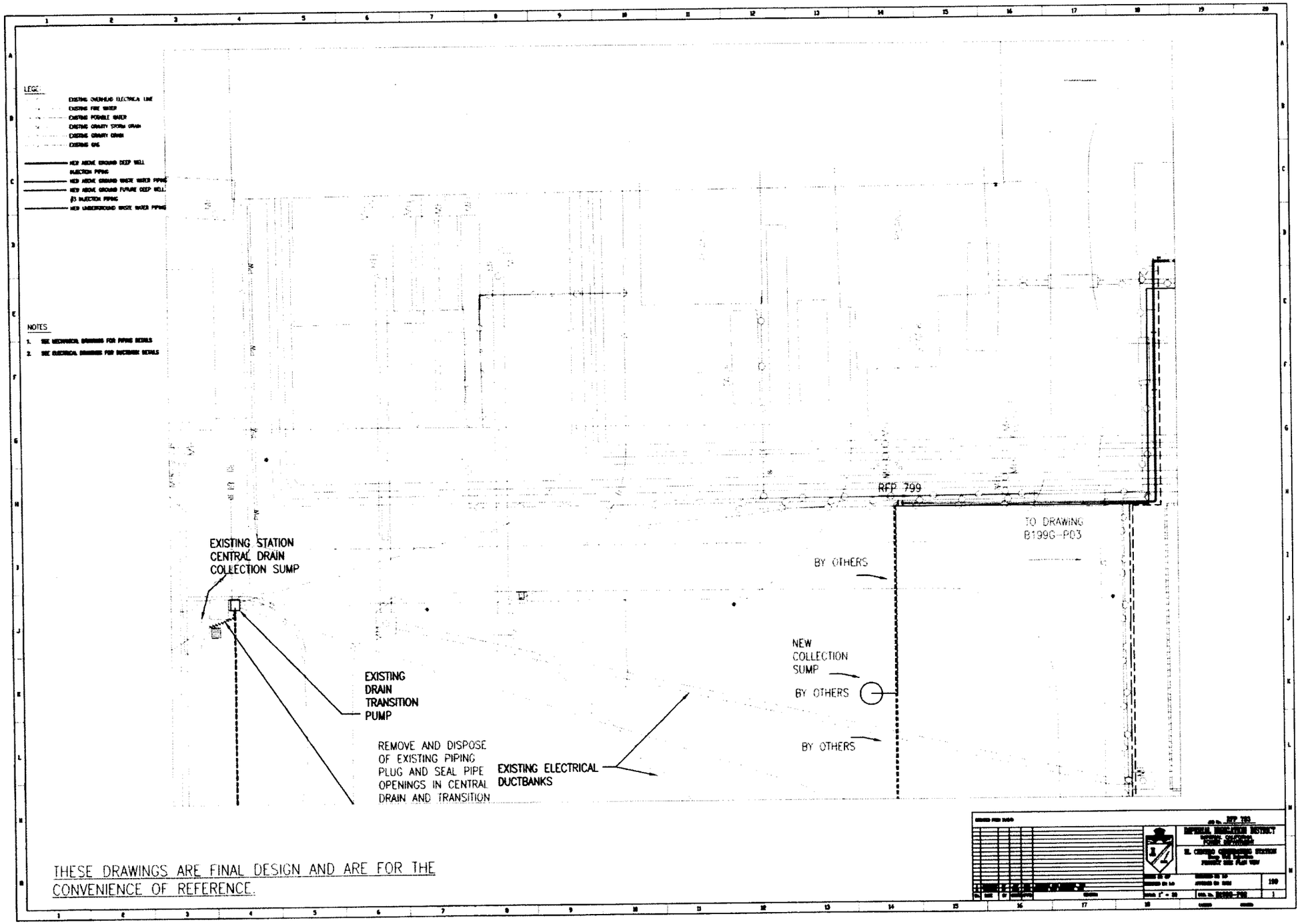

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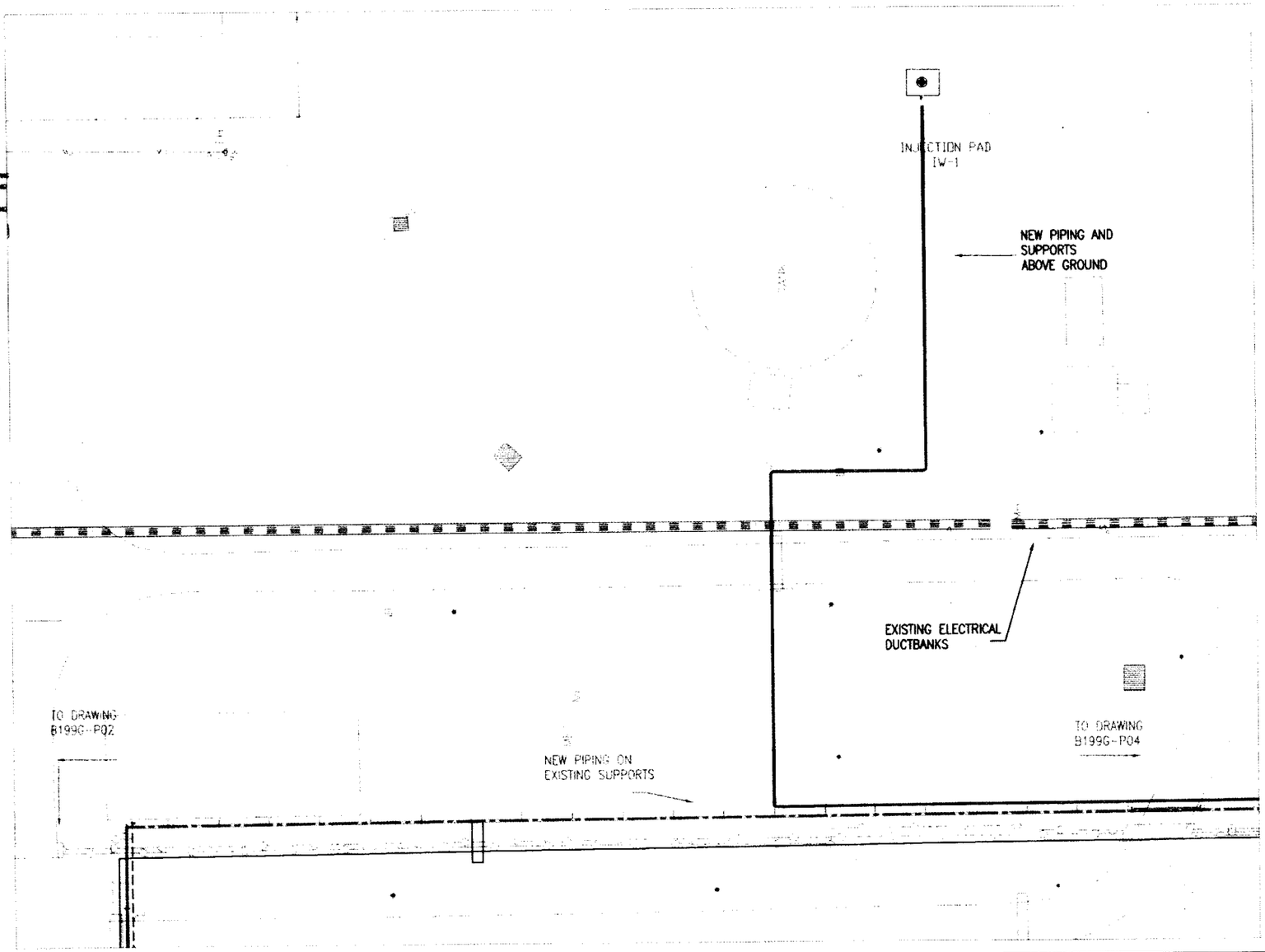

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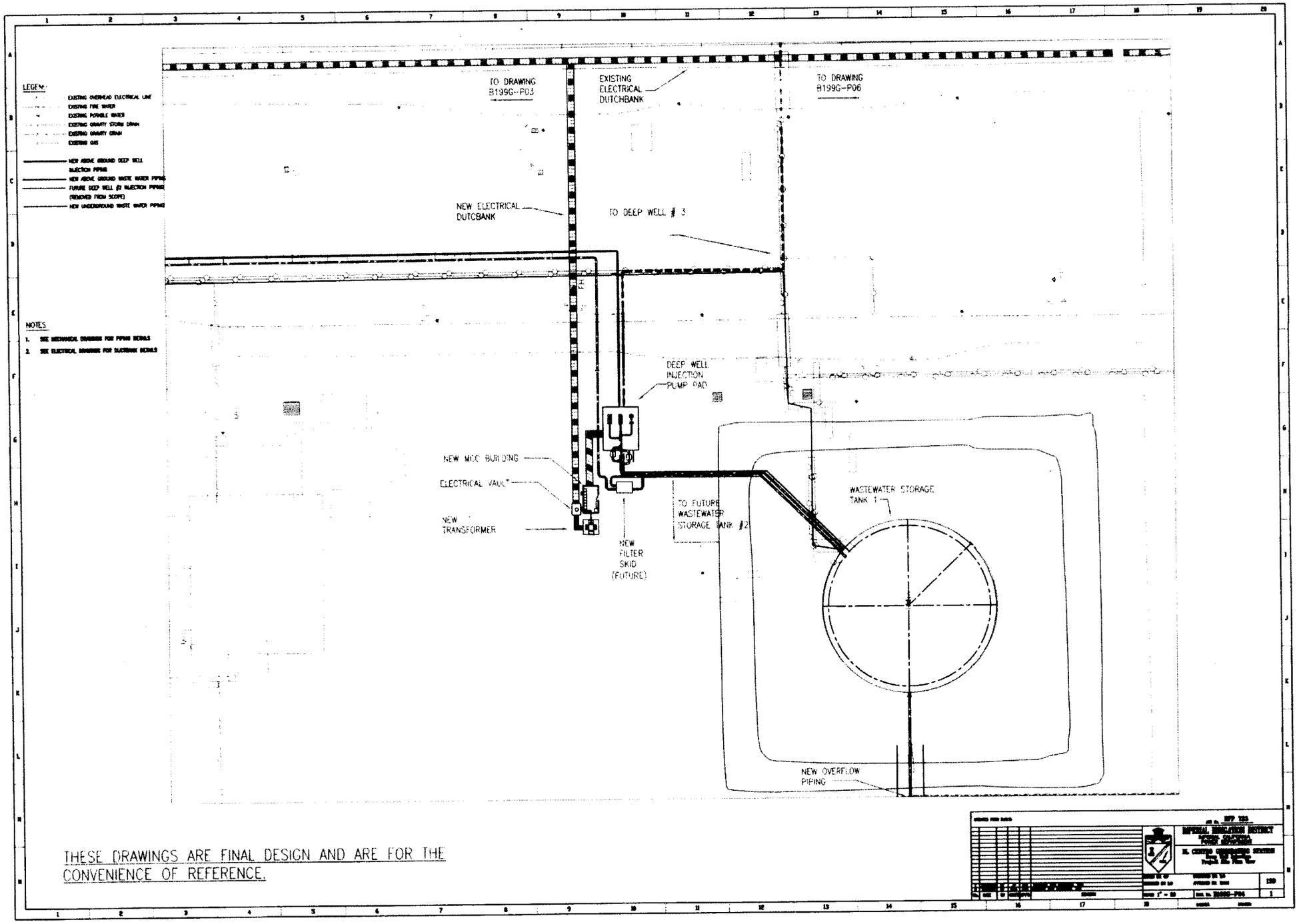

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LEGEND

- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING FIRE WATER
- EXISTING POTABLE WATER
- EXISTING GRAVITY STORM DRAIN
- EXISTING GRAVITY DRAIN
- EXISTING GAS
- NEW ABOVE GROUND DEEP WELL INJECTION PIPING
- NEW ABOVE GROUND WASTE WATER PIPING
- FUTURE DEEP WELL #2 INJECTION PIPING (REMOVE FROM SCOPE)
- NEW UNDERGROUND WASTE WATER PIPING

NOTES

1. SEE MECHANICAL DRAWINGS FOR PIPING DETAILS
2. SEE ELECTRICAL DRAWINGS FOR UNDERGROUND DETAILS

TO DRAWING
B199G-P02

INJECTION PAD
IW-2 (FUTURE)

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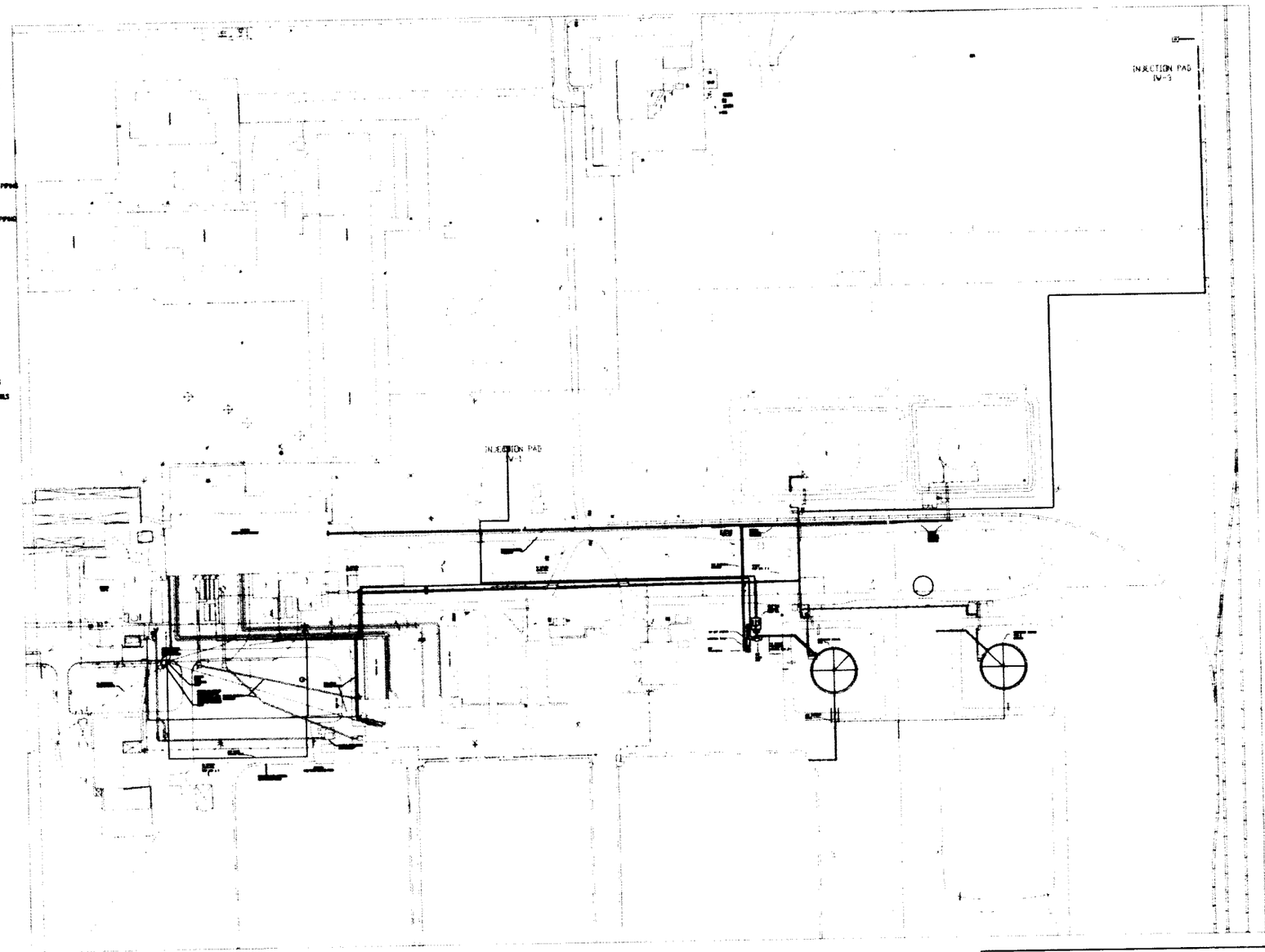
IMPERIAL IRRIGATION DISTRICT



LEGEND

- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING FIRE WATER
- EXISTING POTABLE WATER
- EXISTING GRAVITY STORM DRAIN
- EXISTING GRAVITY DRAIN
- EXISTING GAS
- NEW ABOVE GROUND DEEP WELL INJECTION PIPING
- NEW ABOVE GROUND WASTE WATER PIPING
- DEEP WELL #2 INJECTION PIPING REMOVED FROM SCOPE
- NEW UNDERGROUND WASTE WATER PIPING

NOTES

1. SEE MECHANICAL DRAWINGS FOR PIPING DETAILS
2. SEE ELECTRICAL DRAWINGS FOR ELECTRICAL DETAILS

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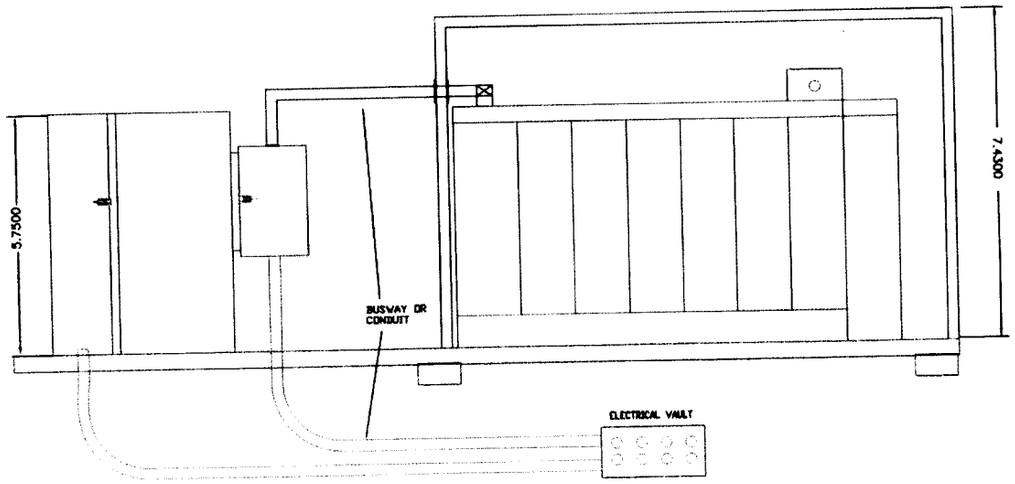
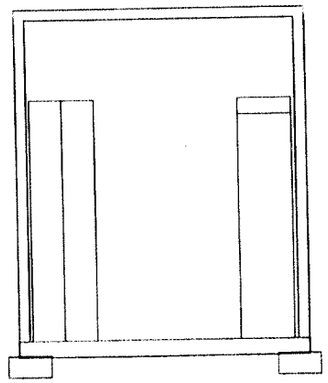
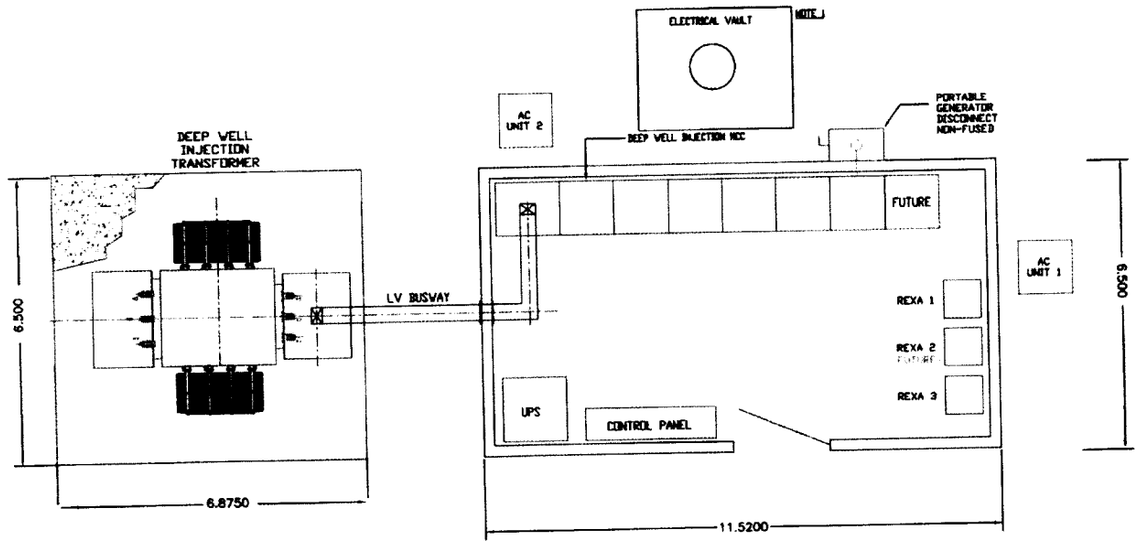
IMPERIAL IRRIGATION DISTRICT







NOTES:
1. ELECTRICAL VAULT WITH EIGHT OD CONDUITS MINIMUM

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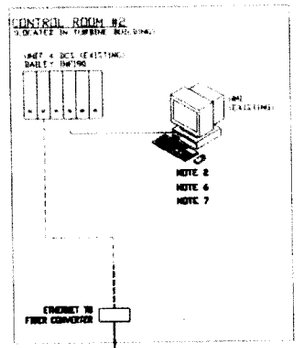

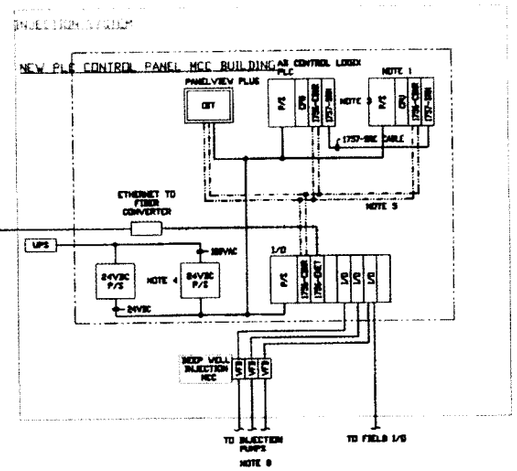

LEGEND

HARDWIRED
I/O ETHERNET
FIBER
CONTROLNET
POWER WIRING

NOTES

1. ACTUAL I/O CARD COUNTS AND LAYOUTS NOT REPRESENTED ON THIS DRAWING.
2. NOOP WELL INJECTION AND SUMP SCREENS TO BE INCORPORATED INTO EXISTING SCS CPU OTHERS.
3. REDUNDANT AB CONTROL LOGIX SYSTEM.
4. REDUNDANT 24VDC POWER SUPPLIES.
5. REDUNDANT CONTROLNET COMMUNICATION.
6. CONTRACTOR TO PROVIDE TERMINALS AND CONNECTION TO THE SCS.
7. SCS CONFIGURATION WILL BE PROVIDED BY OTHERS.
8. INJECTION PUMP 9 & 10 TO (FUTURE)