JURUPA COMMUNITY SERVICES DISTRICT

REQUEST FOR PROPOSAL

Nitrate Removal Media

Roger Teagarden Treatment Plant

Jurupa Community Services District
11201 Harrel Street
Jurupa Valley, CA 91752

Issue Date: February 28, 2024
Due Date: March 14, 2024
Thursday, 12:00 p.m. PST

Project Manager: Bryan Smith
Phone: (951) 685-7434 Ext. 139
BSmith@jcsd.us

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1. REQUEST FOR PROPOSALS (RFP)

A. OVERVIEW

The Jurupa Community Services District (JCSD or District) is requesting proposals from qualified vendors to supply regenerable ion exchange resin or equivalent JCSD-approved media (referred to as media herein) suitable for Nitrate treatment from groundwater. The media shall be integrated into the Nitrate treatment system at the JCSD Roger Teagarden Water Treatment Plant ("RT WTP" or "Site") located in Jurupa Valley, California. Vendors shall quote the appropriate type and required quantity of media that meets the criteria outlined in this request for proposal (RFP).

B. PROPOSAL SUBMITTAL DETAILS

Proposals shall be submitted electronically in PDF format to:

Bryan Smith
Project Manager
BSmith@JCSD.US

Email subject shall read "Proposal from *Vendor's Name*: Nitrate Treatment Media – Roger Teagarden Treatment Plant."

Proposals must be sent no later than the deadline listed in the Project Schedule section of this RFP. All proposals received after this deadline will be rejected. Vendors are encouraged to send their proposals utilizing the DELIVERY and READ Receipts enabled.

The delivery receipt will be the bidder's verification that the proposal has been sent to JCSD prior to the deadline. All files must be less than 20MB as this is JCSD's limit for email submission. Multiple emails for the proposals can be sent to accommodate larger proposal files. If multiple emails are required for proposal submission, the email subject shall be suffixed with *Part [#]* of *[Total Parts].*

C. DISCLAIMER

This RFP does not commit the District to award a contract or to pay any costs incurred in the preparation of the proposal. The District reserves the right to extend the due date for the proposal, to accept or reject any or all proposals received as a result of this request, to negotiate with any qualified vendor, to cancel this request in part or in its entirety, and to procure alternate or additional services.

More than one proposal from an individual, firm, partnership, corporation, or association under the same or different names shall not be considered. JCSD shall not be liable for any pre-contractual expenses incurred by the vendor.

2. ANTICIPATED SCHEDULE

The following estimated dates have been set for this project:

RFP Advertisement	February 28, 2024
RFP Questions Due	March 6, 2024 via email only
Proposals Due	March 14, 2024, 12:00 PM PST via email
Anticipated Board Approval	April 2024
Anticipated Delivery & Commissioning Date	May – June 2024

Questions regarding the RFP shall be addressed to the Project Manager, Bryan Smith, via email at BSmith@JCSD.US. All questions must be received prior to the deadline shown in the Project Schedule above. Answers to these questions will be sent to all prospective vendors. No answers will be given on an individual basis.

3. PROPOSAL FORMAT

Vendors are requested to prepare a technical and fee proposal in response to the scope of work outlined in Section 5 in accordance with the following requirements.

A. TECHNICAL REQUIREMENTS

The proposal shall include the following technical information at a minimum:

- Product data sheet for the recommended single-use resin/media including information related to media matrix, active functional group if any, typical physical and chemical characteristics, NSF61 and other applicable certifications, principal applications, and typical packaging;
- Information demonstrating the media's applicability for Nitrate removal from Site influent: Nitrate selectivity, quantity of media, estimated/modeled breakthrough curves, and anticipated regeneration per volume of Site water treated;
- Media loading procedure, including necessary clearance, access, and utility requirements;
- Media evacuating and containment for on-site storage procedure, including necessary clearance, access, and utility requirements;
- Recommended preservation procedure for media during periods of extended shutdown (i.e., greater than 7 days);
- Media commissioning requirements (such as product soak, conditioning etc.,) and other applicable instructions; and

B. ADDITIONAL REQUIREMENTS

- Modeling information regarding media performance based on influent water quality (**Attachment B**) and effluent goals (Section 5) provided;

- Hydraulic performance metrics such as pressure drop across the media bed at the design flowrate, backwash requirements and bed expansion if any; and

C. PROJECT SCHEDULE

Vendors shall confirm availability of the required quantity of media and their ability to meet the delivery and commissioning schedule outlined in Section 2.

D. QUALIFICATIONS & PRODUCT RELIABILITY:

Vendors must provide evidence of successful use of the proposed media for similar applications and vendor's capability and experience in the key areas identified in the scope of work in Section 5. Vendors shall provide descriptions of at least five of their firm's recent record of performance on similar projects, including project completion date, media quantities supplied, and any support services offered. Vendors shall include a reference personnel from the agency/customer for each project referenced, including name and current telephone number of a person familiar with the vendor's performance.

E. CONFLICTS/CONTRACTUAL ISSUES

Vendors shall indicate if there are any personnel or organizational conflicts of interest and if there are none, provide a statement to this effect.

F. FEE ELEMENTS

Vendors are requested to provide estimated costs for the media quantity, and removal of the current media for storage on site as part of the proposal The vendor's cost estimate shall include line items listed in the fee proposal table provided in **Attachment A** and detailed below:

- Cost associated with delivery, installation, and commissioning of recommended fill of media in the Nitrate Treatment System (including freight, taxes, and other miscellaneous fees);
    - Estimated costs associated with future media changeouts on a per vessel basis (including freight, taxes, and other miscellaneous fees); Applicable discounts for contract clients (if any); and

4. SELECTION OF VENDOR

A. CRITERIA FOR SELECTION

Selection among the proposals received shall be based upon (but not necessarily in the order given) the following:

- Ability to meet the delivery schedule specified in Section 2;

- Qualifications and experience of the firm, reliability of the product based on performance on similar applications/projects;
- Media technical specifications including estimated breakthrough period for Site influent water, pressure drop and hydraulic characteristics;

Each vendor's proposal shall be evaluated and ranked based on the technical criteria listed in section 3A and 3B of this RFP. Following the ranking of the proposals, the fee for the top-ranked vendor will be opened and reviewed for its reasonableness relative to the proposed scope of work. JCSD will then negotiate the final Scope of Work and fee estimate with the top-ranked vendor. If an agreement cannot be reached with the highest-ranked vendor, negotiations will be terminated, and the vendor will be notified of termination in writing.

B. NOTIFICATION OF UNSUCCESSFUL VENDORS

Unsuccessful vendors shall be notified as soon as possible by JCSD following the determination of the recommended vendor. The determination is expected to be within 60- days after the proposal deadline. The final determination will likely require acceptance and approval by the Agency's Board of Directors.

5. SCOPE OF WORK

A. Background

JCSD was established in 1956 to provide sewer service to the Jurupa area. JCSD began providing water service in 1966 with the consolidation of the Jurupa Heights Water Company, La Bonita Mutual Water Company, and the Monte Rue Acres Mutual Water Company. JCSD expanded its service area west to an unincorporated area of the County, which is now the City of Eastvale, and expanded its scope of services to include streetlight maintenance, frontage landscape maintenance, graffiti abatement, and parks and recreation services. Today, the JCSD service area covers 40.8 square miles of northwest Riverside County and includes the city of Eastvale and a majority of the city of Jurupa Valley. JCSD serves approximately 131,000 people and is governed by five elected Board of Directors.

JCSD's water supplies have historically been sourced exclusively from the Chino Basin groundwater aquifer. The aquafer in the Chino Basin where JCSD's source water is sourced has elevated Nitrate contaminates and requires treatment for removal. The Roger Teagarden facility was constructed to treat the JCSD facilities for potable production. The treatment plant is under construction to add treatment for PFAS. The current Nitrate resin media has been exposed and is contaminated with PFAS. With the new PFAS removal process in place, there is a concern about sloughing from the old Nitrate removal media. For this JCSD is removing and disposing of the current Nitrate removal media and replacing it with new more efficient Nitrate media. This media will be loaded into the Nitrate treatment portion of Roger Teagarden and be supplied by eight groundwater wells(8, 11, 12, 14, 15, 16, 22, 25). A treatment project, which will remove PFAS from a combination of four wells (Wells 14, 15, 22, and 25) that convey water to JCSD's RT WTP, is currently in design, with construction completion expected in May 2024.

B. Project Overview & Objectives

Vendors are requested to provide a proposal for removal of current media and containment for storage onsite for disposal at a later time(disposal not included in this RFP) and new media fill for an appropriate type and quantity of media for use in the Nitrate treatment system)at the RT WTP. Design specifications of the Nitrate treatment system are summarized below:

- The goal of the Nitrate treatment system is to reduce Nitrate concentrations by treating groundwater from Wells 8, 11, 12, 14, 15, 16, 22, and 25 before entering the JCSD potable water system. Detailed design drawings for the Nitrate treatment system are provided in **Attachment C**;
- The Nitrate treatment system is designed to accept groundwater from four wells (i.e., Wells 8, 11, 12, 14, 15, 16, 22, and 25) with a design flowrate of 15,000 gallons per minute (gpm) as shown on Table 1;

Table 1: Influent Flowrates to Nitrate Treatment System

Well Name	Average Flowrate (gpm)
Well 8	850
Well 11	1100
Well 12	1100
Well 14	2,100
Well 15	530
Well 16	1,875
Well 22	3,100
Well 25	3,000
TOTAL INFLUENT	**13,655**

- The unit operations in the Nitrate treatment system include three active bag filters, followed by ten Nitrate removal Ion exchange media vessels in a parallel configuration. Note that the Site infrastructure is not currently equipped with air induction capabilities for the media vessels. Key design specifications associated with the system relevant to media selection are listed in Table 2.

Table 2: Media System - Design specifications per vessel

Treatment Flowrate (gpm) [1]	1,600
Minimum Empty Bed Contact Time (minutes)	2.2
Drain filter basket size	.229mm

[1]Vendor to propose appropriate volume of media based on design specifications.

- The treatment system is designed for continuous operation and is expected to be operational seasonally;
- A summary of relevant design parameters and operating conditions are presented in Table 3;

Table 3: Media Vessel Specifications

Specifications of Each Vessel in Media System	
Vessel Diameter	144"
Side Shell Height	96"
Overall Height (Approximate)	17'-3"
Maximum Media Fill Capacity	455 CF
Manways:	
Flanged at side shell	20"
Flanged at head	20"
Working Pressure	120 psi @ 60˚F

Specifications of Each Vessel in Media System	
Material	Steel

lbs. - pounds; ˚F - degree Fahrenheit; CF – cubic feet; psi - pounds per square inches;

- The treatment goal for the Nitrate treatment system is 35 mg/L which is 80% of the Maximum Contaminant Level (MCLs) proposed by United States Environmental Protection Agency (USEPA) for Nitrate (Table 4). Concentrations of Nitrate above the 35 mg/L which is 80% the USEPA 80% MCLs (Table 4) from the effluent media vessels will be considered breakthrough triggering a media regeneration in that vessel;
- There are currently nine vessels loaded with 454CF of media to be evacuated and packaged for on-site storage.

Table 4: Nitrate Discharge Criteria

Nitrate Constituent	USEPA MCL (mg/L)
Nitrate	45mg/L

mg/L - milligrams per liter; EPA - United States Environmental Protection Agency; MCL - Maximum Contaminant Levels

- The proposed media is expected to be compatible with existing vessel infrastructure, appropriate for influent water quality (**Attachment B**), and meet the technical requirements detailed in Section 3A and Section 3B.

Site specific information considered necessary to execute this scope of work referenced above are provided as attachments to this RFP.

6. LIST OF ATTACHMENT AND REFERENCE DOCUMENTS

The following attachments are included in the RFP:

Attachment “A” – Fee Proposal Table
Attachment “B” – Influent Water Quality to Nitrate Treatment System
Attachment “C” – Nitrate Treatment System Design Drawings
Attachment “D” - Process Controls and Operation

Attachment “A”
Fee Proposal Table

PROPOSAL FEE TABLE - PFAS TREATMENT MEDIA RFP
Roger Teagarden Treatment Plant, Jurupa Valley, CA

Name of Company:			**Date:**	
Client Manager:				
Contact Information:				
Quoted Media:				
		Qty.	**Unit Cost**	**Total Cost**
Initial Procurement & Commissioning				
Media Cost[1]	$/cuft			
Volume of Media Quoted	cuft			
Freight	ea			
Commissioning/Loading Cost	ea			
Taxes	$			
Miscellaneous charges	$			
			Total	
Media removal and storage				
Per Vessel Exacuation Cost	ea			
Mobilization	ea			
Materials	$			
Miscellaneous charges	$			
			Total	

Date	Signature

Notes:
cuft - cubic feet, ea - each; qty - quantity
[1]Vendor to provide appropriate amount of media based on design flowrates provided in Section 5 of the

Attachment "B"
Influent Water Quality to Nitrate Treatment System
(in folder as Excel file)

Attachment “C”
Nitrate Treatment System Design Drawings

CONSTRUCTION PLANS FOR:

JURUPA COMMUNITY SERVICES DISTRICT

JURUPA ION EXCHANGE WATER TREATMENT PLANT PHASE III

WORK INCLUDED IN THIS CONTRACT IS SHOWN IN BOLD
WORK TO BE DONE BY CONTRACTOR INCLUDES:
1) INSTALL IX NITRATE VESSELS G, H, J&K
2) INSTALL 2ND IX SOFTENER VESSEL - 20SVB
3) INSTALL 2ND WASTEWATER-70TKB
4) PIPING, VALVING, ELECTRICAL, AND I/C ASSOCIATED WITH 1,2, AND 3
AS SHOWN ON THE PLANS:

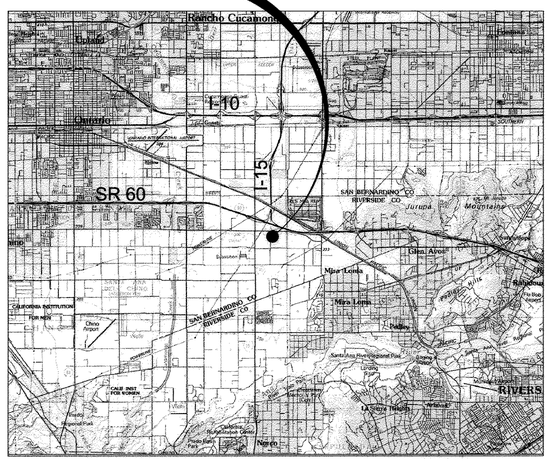
APPROVED BY:
JURUPA COMMUNITY SERVICES DISTRICT

ELDON HORST - GENERAL MANAGER DATE

ELDON HORST - GENERAL MANAGER DATE

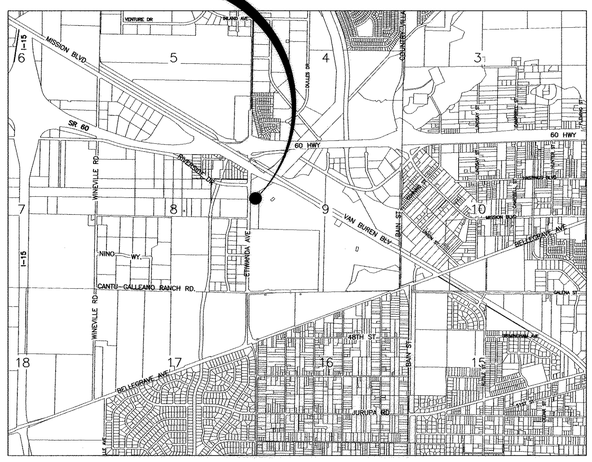
MARCH 2007

PROJECT LOCATION



VICINITY MAP

PROJECT LOCATION



LOCATION MAP

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3	P-2	PROCESS FLOW DIAGRAM 2 OF 2
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5	P-4	IX NITRATE REMOVAL VESSEL PARTIAL PLAN
6	P-5	IX NITRATE REMOVAL VESSEL SECTIONS
7	P-6	IX NITRATE REMOVAL VESSEL - INTERNAL DETAILS
8	P-7	WASTE TANK AND SOFTENER VESSELS PIPING PLAN
9	P-8	SOFTENER VESSEL PIPING SECTIONS
10	P-9	SOFTENER VESSEL SECTION AND DETAILS
11	P-10	BRINE RINSE TANKS AND PUMP STATIONS PARTIAL PLAN
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13	P-12	WASTE TANK SECTIONS AND DETAILS
14	P-13	NEW BRINE TANKS
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17	DP-1	PIPE SUPPORT DETAILS
18	DP-2	MISCELLANEOUS DETAILS
19	DP-3	MISCELLANEOUS DETAILS
20	DP-4	RAW WATER SCHEMATIC
21	DP-5	TREATED WATER SCHEMATIC
22	DP-6	AIR LINE SCHEMATIC
23	DP-7	BRINE/RINSE IN SCHEMATIC
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27	DP-12	INSTRUMENT MOUNTING DETAILS
28	E-1	ELECTRICAL SYMBOLS AND ABBREVIATIONS
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30	E-3	EQUIPMENT ELEVATIONS
31	E-4	CONDUIT SCHEDULES
32	E-5	CONDUIT SCHEDULES
33	E-6	CONDUIT SCHEDULES
34	E-7	CONDUIT SCHEDULES
35	E-8	ELECTRICAL SITE PLAN
36	E-9	SITE POWER AND CONTROL DISTRIBUTION PLAN
37	E-10	IX VESSEL PARTIAL POWER PLAN
38	E-11	ION EXCHANGE VESSEL PARTIAL POWER PLAN
39	E-12	WASTE TANKS AND SOFTENER VESSELS POWER PLAN
40	E-13	BRINE AND RINSE TANKS POWER PLAN
41	E-14	BLOWER AND BLENDING STATION POWER PLAN
42	E-15	ION EXCHANGE VESSEL PARTIAL CONTROL PLAN
43	E-16	ION EXCHANGE VESSEL PARTIAL CONTROL PLAN
44	E-17	WASTE TANKS AND SOFTENER VESSELS CONTROL PLAN
45	E-18	BRINE AND RINSE TANKS CONTROL PLAN
46	E-19	CONTROL BUILDING ELECTRICAL PLAN
47	E-20	SCHEMATIC DIAGRAMS
48	E-21	ELECTRICAL DETAILS

RECORD DRAWING
Date: 08-23-07

These record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

BOYLE ENGINEERING CORPORATION

PROJECT
JURUPA ION EXCHANGE WATER TREATMENT PLANT PHASE III

CLIENT
JURUPA COMMUNITY SERVICES DISTRICT

PROJECT MANAGER CE DATE

PROJECT ENGINEER CE DATE

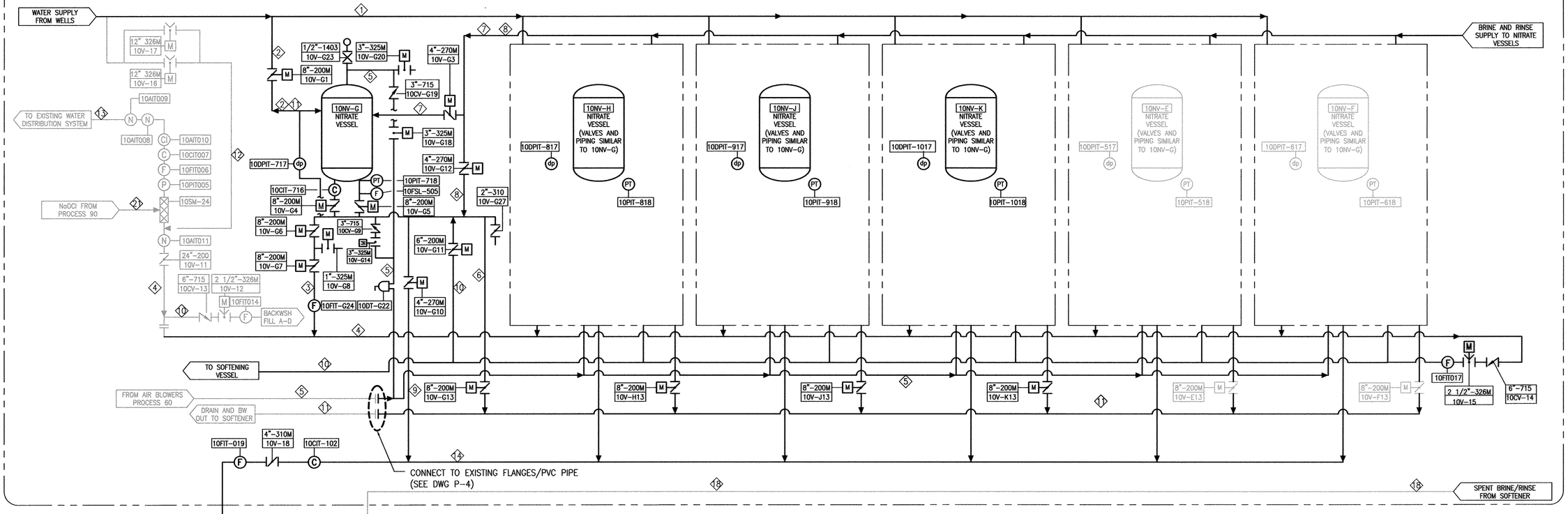
ACCOUNT NUMBER FILE NUMBER
BK-J04-100-04 S-2268

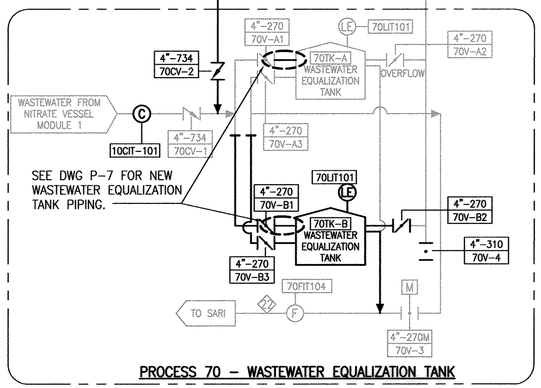
SHEET NUMBER 1 OF 48 SHEETS

BOYLE ENGINEERING CORPORATION
5001 E. COMMERCENTER DR.
Bakersfield, California 93309
661 / 325-7253

DWG: S:\JOA\100-04\CAD (phase III)\PlanSet\S2268-T1.dwg USER: kbedford
DATE: Nov 08, 2007 - 1:57pm XREFS:

PROCESS 10 – NITRATE REMOVAL VESSELS (MODULE No. 2)





PROCESS 70 – WASTEWATER EQUALIZATION TANK

NOTE:
1. COORDINATE VALVE DESIGNATIONS TO MATCH VESSEL LETTER DESIGNATION (SIMILAR TO VESSEL "10NV–E")
2. VESSELS A–D (NOT SHOWN) WERE INSTALLED DURING PHASE I.

NOTE:
ALL MANUAL VALVES ARE NORMALLY OPEN, EXCEPT AS NOTED

VALVE IDENTIFICATION
VALVE TYPE, SEE SPEC. 15100
VALVE SIZE
8"–121 10V–A1
TAG NUMBER DESCRIPTION
PROCESS
DESCRIPTION
SERIES
NUMBER

LEGEND
- (P) PRESSURE ELEMENT
- (FS) FLOW SWITCH
- (dp) DIFFERENTIAL PRESSURE ELEMENT
- (N) NITRATE ANALYZER
- (C) CONDUCTIVITY ELEMENT
- (Cl) CHLORINE ANALYZER
- (F) FLOW METER
- (LE) LEVEL ELEMENT
- CHECK VALVE
- DOUBLE SWING CHECK VALVE
- BALL VALVE
- V-PORT BALL VALVE
- 3-WAY BALL VALVE
- FLOW CONTROL VALVE
- BUTTERFLY VALVE
- (M) MOTORIZED ACTUATOR
- WYE STRAINER
- STATIC MIXER
- WATER TRAP
- HYDROPNEUMATIC TANK

NOTE:
1. 6 & 8 UNDERGROUND PIPING FUSION BONDED EPOXY LINED & COATED STEEL PIPE.
2. 4" UNDERGROUND PIPING SHALL BE SCH. 80 PVC PIPE.

EXISTING
NEW

RECORD DRAWING
Date: 08-23-07
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	NITRATE REMOVAL VESSELS										BLENDING STATION			SOFTENERS														
LINE DESIGNATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
DESCRIPTION	WELL WATER	NITRATE VESSEL FEED	TREATED WATER	TREATED WATER COLLECTOR	AIR HEADER	DRAIN TO SOFTENER	BRINE SUPPLY	RINSE SUPPLY	SPENT BRINE/RINSE TO WASTE	BACKWASH & VESSEL FILL SUPPLY	DRAIN TO SOFTENER COLLECTION	WELL WATER TO BLENDING STATION	BLENDED FINISH WATER	SPENT BRINE/RINSE (E–K)	SOFTENED WATER	REGENERANT SUPPLY	RINSE SUPPLY	SPENT BRINE/RINSE (SOFTENER)	SOFTENER BACKWASH FEED	SPENT BACKWASH	NaOCl FEED	WASTEWATER TO SARI	BRINE SUPPLY TO PUMP STATION No. 1 AND 2	DILUENT SUPPLY TO PUMP STATION No. 1 AND 2	BRINE TO NaOCl GENERATOR	SOFT WATER TO NaOCl GENERATOR	RINSE TANK DRAIN TO RAW WATER
ORIGINAL FLOW (GPM)	8820	1103	1103	8594	151 ACFM	1000	200	200	200	340	340	VARIES 0 (MIN.)	8820	280	340–1000	200	200	200	340	340	33 gph	200	80–160	120–240	0.7	2.4	200
REVISED FLOW (GPM)	12,778	1600	1600	12,778	151 ACFM	1000	200	200	200	340	340	VARIES 0 (MIN.)	12,778	280	340–1000	200	200	200	340	340	48 gph	200	80–160	120–240	0.7	2.4	200
SIZE (INCHES)	24	8	8	24	4	8	4	4	4	6	8"	24	24	4	8	4	4	4	6	8	1	4	6	6	1	1	4
MATERIAL	SCH. 10 SST	SCH. 10 SST	SCH. 10 SST	SCH. 10 SST	SCH. 10 SST	SCH. 10 SST	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 10 SST	SCH 10 SST	FEC&L	FEC&L	SCH. 80 PVC	SCH. 10 SST	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 10 SST	SCH. 10 SST	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC	SCH. 80 PVC

*DO NOT PAINT OR COAT STAINLESS STEEL PIPE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

APPROVAL: DATE:
APPROVAL: DATE:
APPROVAL: DATE:

DESIGN BY: CJM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

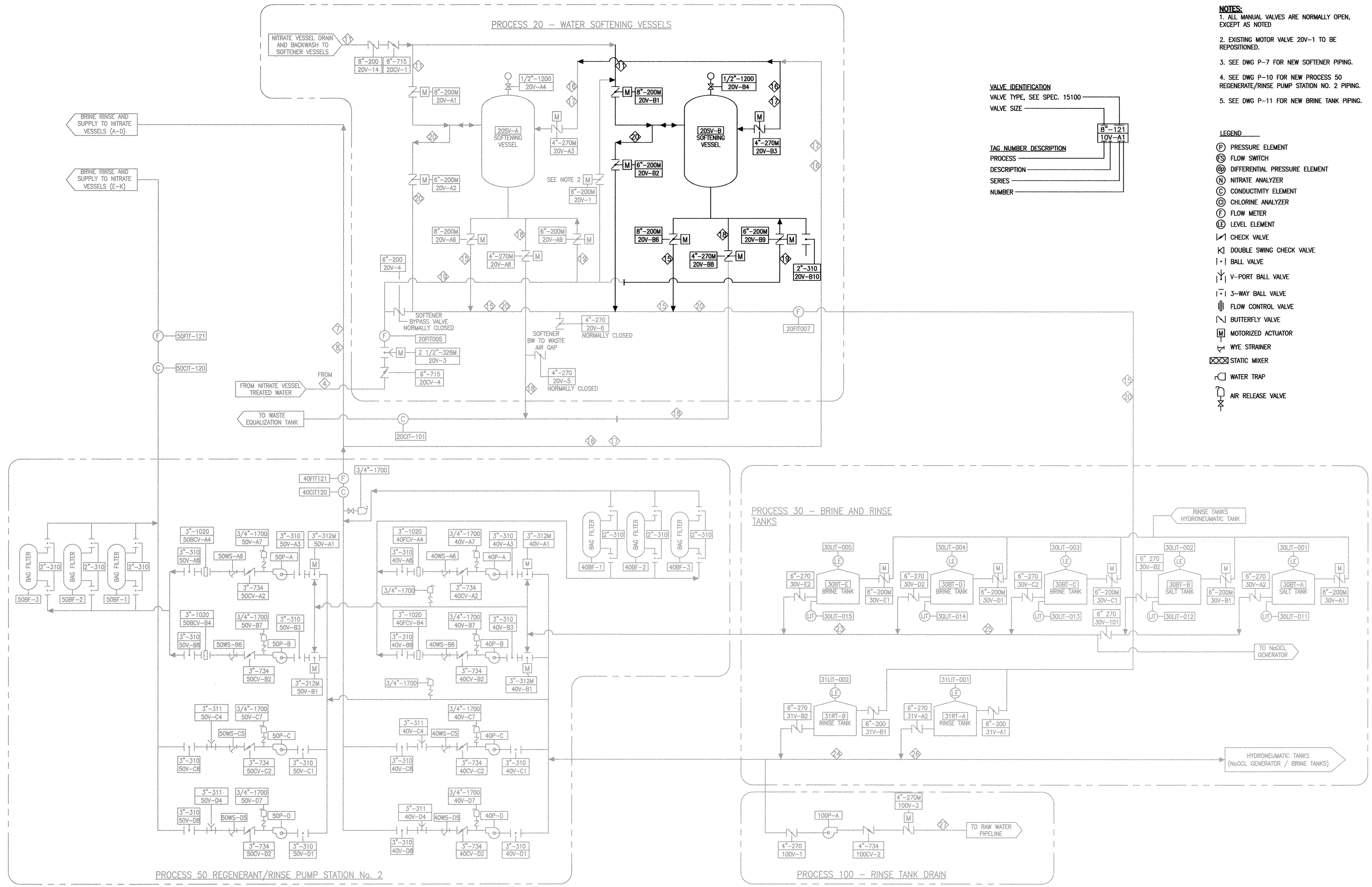
REV	DATE	DESCRIPTION	APP
1	2/27/06	ADDENDUM 2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
PROCESS FLOW DIAGRAM
1 OF 2

DRAWING NO: P-1
SHEET NO: 2 OF 48 SHEETS
FILE NO: S–2268

DWG: S:\JOA\100-04\CAD (phase III)\PlotSet\S2268-P1.dwg USER: lbedford
DATE: Nov 08, 2007 2:06pm XREFS: S2268BDR



NOTES:

1. ALL MANUAL VALVES ARE NORMALLY OPEN, EXCEPT AS NOTED
2. EXISTING MOTOR VALVE 20V-1 TO BE REPOSITIONED.
3. SEE DWG P-7 FOR NEW SOFTENER PIPING.
4. SEE DWG P-10 FOR NEW PROCESS 50 REGENERATE/RINSE PUMP STATION NO. 2 PIPING.
5. SEE DWG P-11 FOR NEW BRINE TANK PIPING.

LEGEND

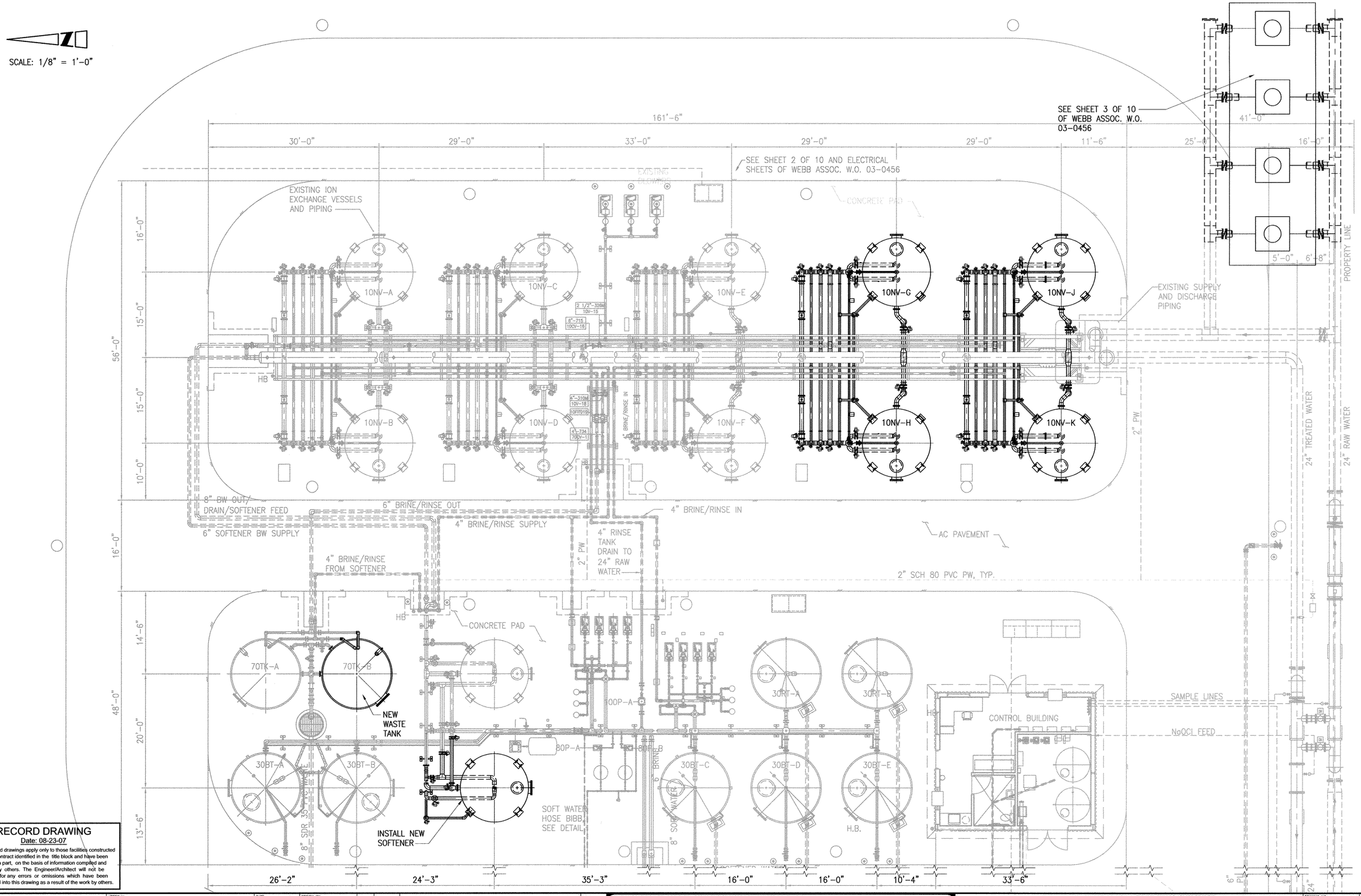
- (P) PRESSURE ELEMENT
- (FS) FLOW SWITCH
- (dp) DIFFERENTIAL PRESSURE ELEMENT
- (N) NITRATE ANALYZER
- (C) CONDUCTIVITY ELEMENT
- (Cl) CHLORINE ANALYZER
- (F) FLOW METER
- (LE) LEVEL ELEMENT
- CHECK VALVE
- DOUBLE SWING CHECK VALVE
- BALL VALVE
- V-PORT BALL VALVE
- 3-WAY BALL VALVE
- FLOW CONTROL VALVE
- BUTTERFLY VALVE
- (M) MOTORIZED ACTUATOR
- WYE STRAINER
- STATIC MIXER
- WATER TRAP
- AIR RELEASE VALVE

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 — 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	APPROVAL: / DATE:	DESIGN BY: CJM DRAWN BY: DTG CHECKED BY: DATE: AUGUST 2005	1 2/27/06 ADDENDUM 2 2 3/1/07 CHANGE ORDER 1.2 REV / DATE / DESCRIPTION / APP	BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
PROCESS FLOW DIAGRAM
2 OF 2

DRAWING NO: P-2 SHEET NO: 3 OF 48 SHEETS
FILE NO: S-2268

SCALE: 1/8" = 1'-0"



RECORD DRAWING

Date: 08-23-07

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VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 ⊢—⊣ 1

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

	APPROVAL:	DATE:
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DESIGN BY: CJM
DRAWN BY: VENE
CHECKED BY:
DATE: AUGUST 2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT

ION EXCHANGE WATER TREATMENT PLANT – PHASE III

PLANT LAYOUT

DRAWING NO: P-3
SHEET NO: 4 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-04\CAD (phase III)\PlanSet\S2268-P3.dwg USER: kbedford
DATE: Nov 08, 2007 2:07pm XREFS: S2268BDR Pintplan

EXISTING ELECTRICAL CONTROL PANEL
NOT TO SCALE
INDICATES EXISTING PIPING AND EQUIPMENT
33'-0" TO EXIST. VESSEL (10NV-C)
29'-0"
29'-0"
11'-6" TO E.P.
EXISTING BLOWERS
NOTES:
FOR CONTINUATION OF PIPING TO CONNECTION POINTS AT EXISTING PIPING, SEE DWG P-3
SAMPLE PORT. 1" WELD @ CENTERLINE OF 8" OUTLET TYP. OF VESSELS 10NV-A THROUGH F
SAMPLE PORT
10NV-E
10NV-G
10NV-J
10NV-F
10NV-H
10NV-K
8" TREATED OUT
4" RINSE IN
6" FILL IN
8" DRAIN/ TO SOFTENER
4" BRINE-RINSE OUT
3" AIR
6" BW IN
GROOVED COUPLINGS, TYP.
MOUNTING BRACKET ON VESSEL LEG FOR TYP OF 10
2" THREDOLET WITH BUSHING AS REQ'D TYP. OF 6
HOSE BIBB
CONNECT TO EXIST. BLIND FLANGE
4" AIR
6" REFILL SUPPLY
24" TREATED
24" RAW BELOW
24" TREATED ABOVE
24" RAW
4" BRINE/RINSE IN
4" BRINE/RINSE OUT
REMOVE PVC END CAPS TO CONNECT TO EXISTING PIPING. (TYP. OF 2)
ANCHOR PIPE TO SUPPORT, TYP.
WATER TRAP, TYP.
EXPANSION JOINT, TYP.
PIPE SUPPORT, TYP. SEE
1" SST WATER
EXISTING PIPE RACK
REMOVE EXISTING PVC CAP MAKE CONNECTION TO EXISTING PIPE WITH PVC COUPLING, TYP.
LOCATE TYPE 2 SAMPLE TAP (HOSE BIBB) IN EACH VERTICAL SPOOL, SEE DETAIL TYP 10 VESSELS
24" MANWAY, TYP.
ELECTRICAL CONTROL PANEL
EXISTING YARD LIGHT FOOTING, TYP.

RECORD DRAWING

Date: 08-23-07

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DATE: AUGUST 2005		

REV	DATE	DESCRIPTION
1	2/27/06	ADDENDUM 2

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT

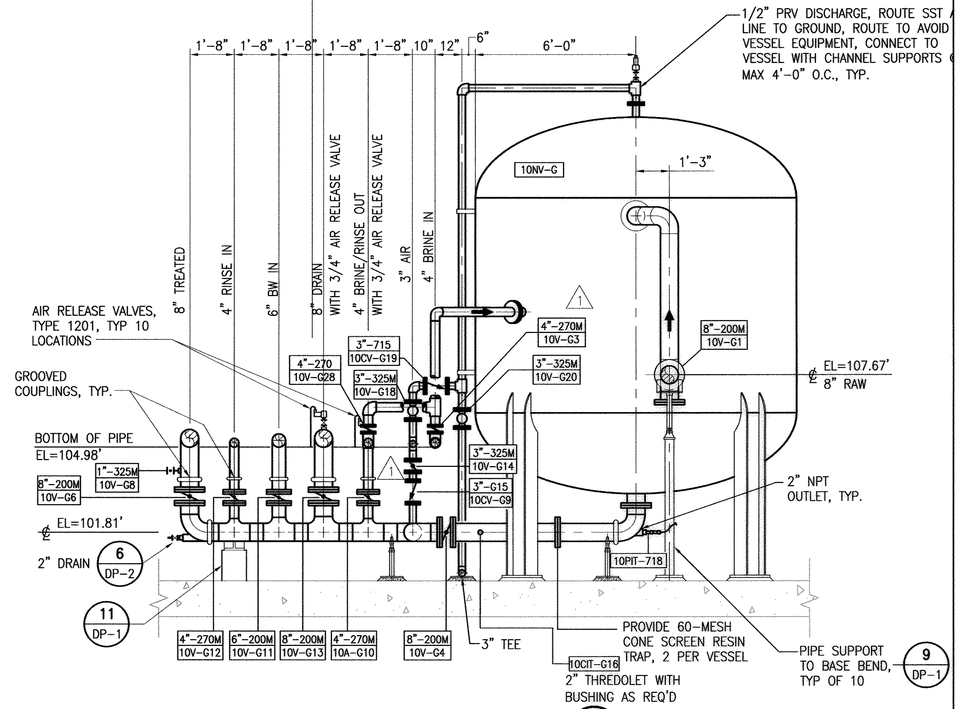
ION EXCHANGE WATER TREATMENT PLANT – PHASE III

IX NITRATE REMOVAL VESSEL PARTIAL PLAN

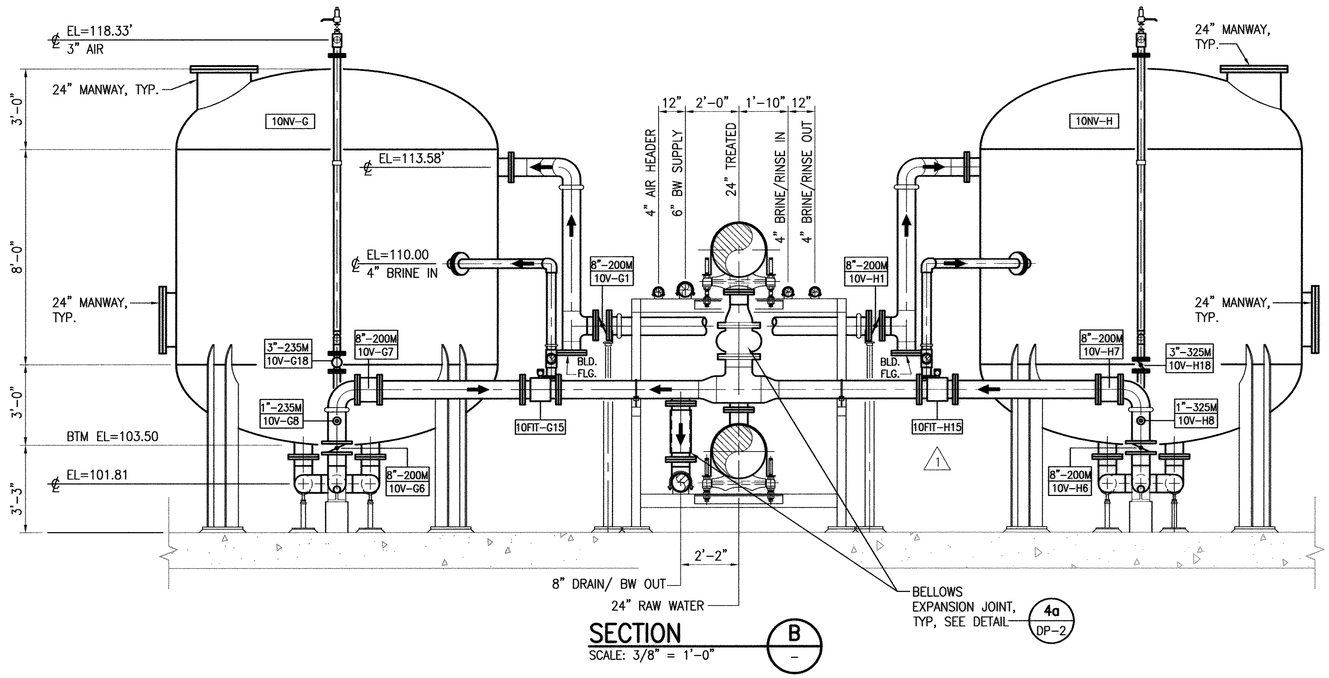
DRAWING NO: P-4

SHEET NO: 5 OF 48 SHEETS

FILE NO: S-2268



SECTION C
SCALE: 3/8" = 1'-0"



SECTION B
SCALE: 3/8" = 1'-0"

RECORD DRAWING
Date: 08-23-07

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DATE: AUGUST 2005

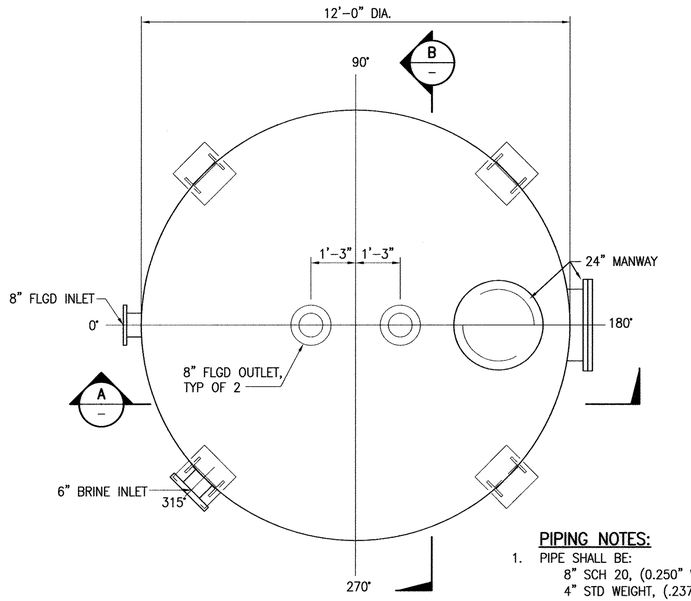
REV	DATE	DESCRIPTION	APP
1	2/27/06	ADDENDUM 2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
IX NITRATE REMOVAL
VESSEL SECTIONS

DRAWING NO: P-5
SHEET NO: 6 OF 48 SHEETS
FILE NO: S-2268

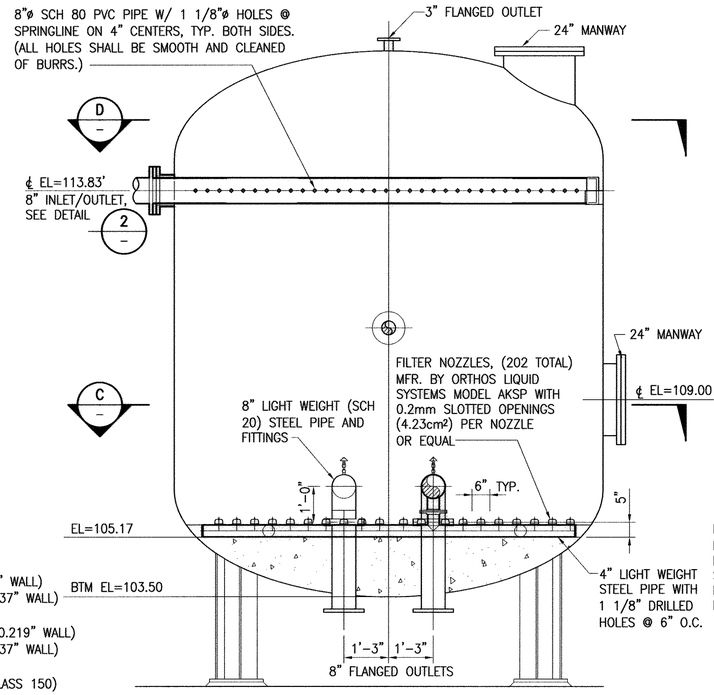
DWG: S:\JPA\100-04\CAD (phase III)\ProEe\S2268-P5.dwg USER: kbedford
DATE: Nov 08, 2007 2:10pm XREFS: S2268BDR



VESSEL PLAN (1)

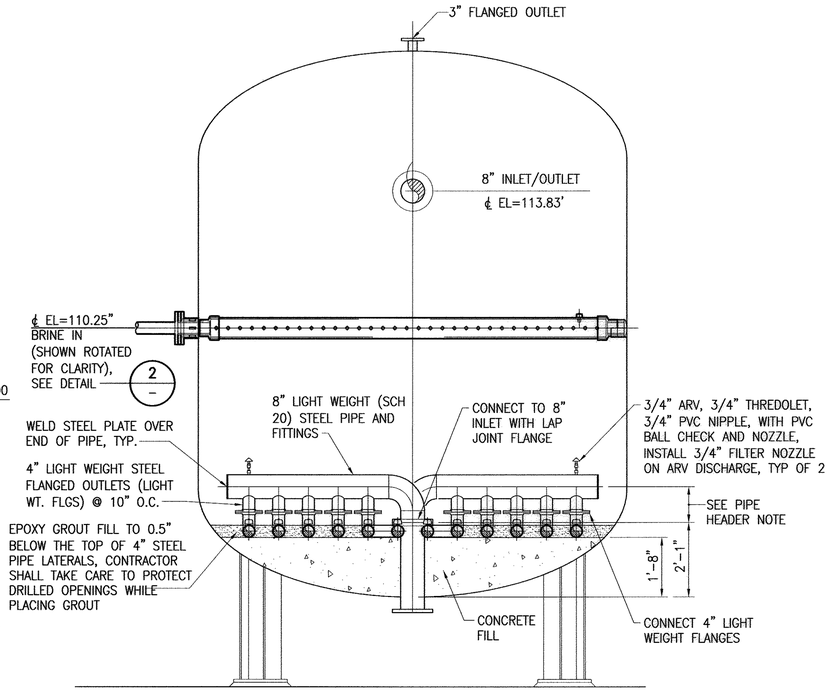
SCALE: 1/2" = 1'-0"

TYPICAL PLAN FOR VESSELS: 10NV-A,C,E,G & J,
MIRROR IMAGE FOR VESSELS: 10NV-B,D,F,H & K



VESSEL SECTION (A)

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



VESSEL SECTION (B)

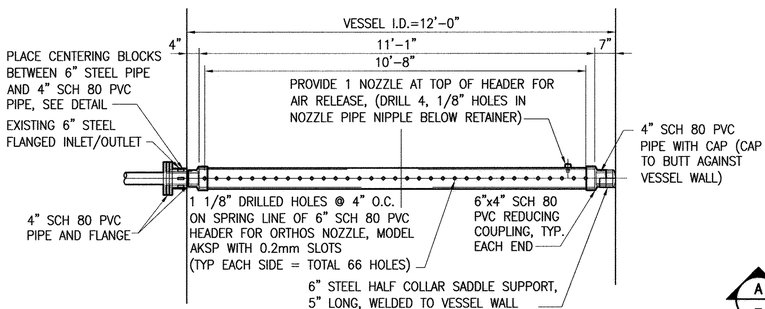
SCALE: 1/2" = 1'-0"

PIPING NOTES:

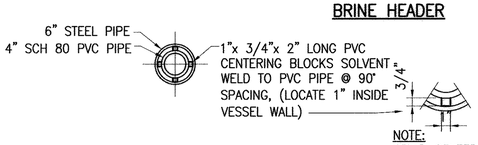
1. PIPE SHALL BE:
   8" SCH 20, (0.250" WALL)
   4" STD WEIGHT, (.237" WALL)
2. FITTINGS SHALL BE:
   8" LIGHT WEIGHT, (0.219" WALL)
   4" STD WEIGHT, (.237" WALL)
3. FLANGES SHALL BE:
   8" STD WEIGHT, (CLASS 150)
   4" LIGHT WEIGHT
4. ALL STEEL PIPE AND FITTINGS SHALL BE FUSION EPOXY LINED AND COATED. PRIOR TO INSTALLATION.
5. ALL DAMAGED AREAS OR EXPOSED METAL SHALL BE COATED WITH EPOXY PAINT AFTER INSTALLATION.

PIPE HEADER NOTE:

CONTRACTOR TO FIELD VERIFY ELEVATION OF EXISTING CONCRETE FILL AND ADJUST NEW PIPE DIMENSIONS TO ALLOW 4-INCH HEADER FLANGES TO BE LESS THEN 1/2" ABOVE EXISTING CONCRETE FILL.



BRINE HEADER



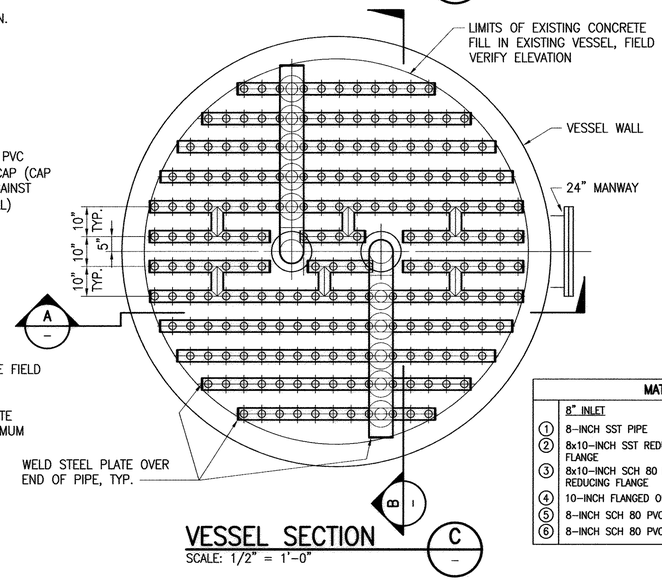
CENTERING BLOCKS

NOTE: GRIND CENTERING BLOCKS AS REQUIRED TO FIT INSIDE 6" STEEL PIPE

DETAIL (2)

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

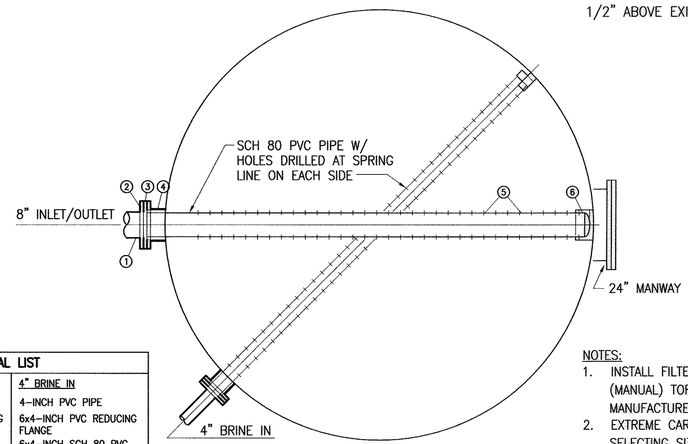
NOTE:
1. ALL DIMENSIONS SHALL BE FIELD VERIFIED.
2. 4" PVC PIPE TO PENETRATE REDUCING COUPLINGS A MINIMUM OF 2-INCHES. (DO NOT SOLVENT WELD)



VESSEL SECTION (C)

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

MATERIAL LIST		
	8" INLET	4" BRINE IN
1	8-INCH SST PIPE	4-INCH PVC PIPE
2	8x10-INCH SST REDUCING FLANGE	6x4-INCH PVC REDUCING FLANGE
3	8x10-INCH SCH 80 PVC REDUCING FLANGE	6x4-INCH SCH 80 PVC REDUCING FLANGE
4	10-INCH FLANGED OUTLET	6-INCH FLANGED INLET
5	8-INCH SCH 80 PVC PIPE	4-INCH SCH 80 PVC PIPE
6	8-INCH SCH 80 PVC CAP	4-INCH SCH 80 PVC CAP



VESSEL SECTION (D)

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

NOTES:
1. INSTALL FILTER NOZZLES USING (MANUAL) TORQUE WRENCH PER MANUFACTURER'S INSTRUCTIONS.
2. EXTREME CARE MUST BE TAKEN IN SELECTING SIZE OF "NUTS" FOR NOZZLES TO AVOID LOOSE NOZZLES.

RECORD DRAWING
Date: 08-23-07

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CHECKED BY:
DATE: AUGUST 2005

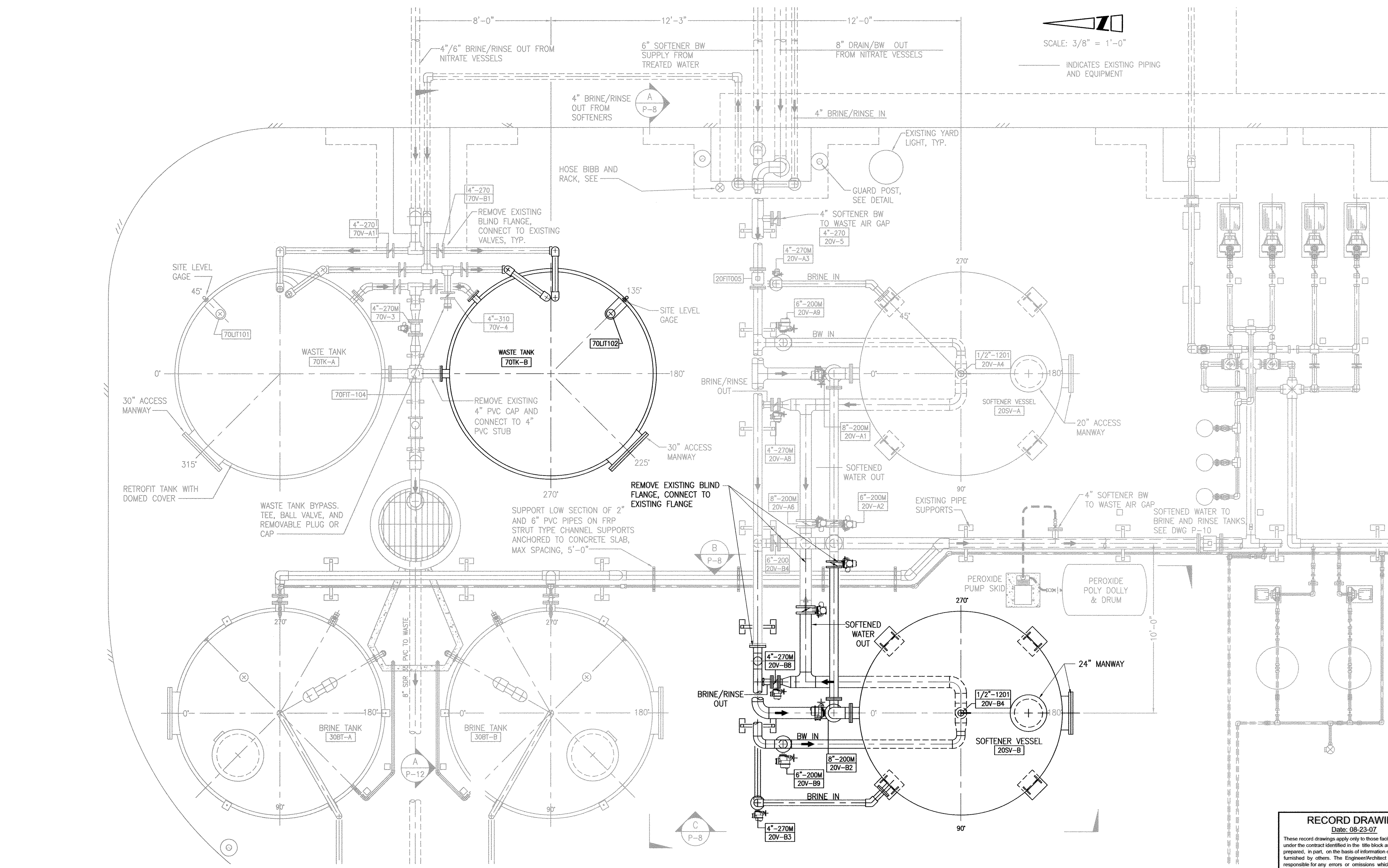
IRV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
IX NITRATE REMOVAL VESSEL INTERNAL DETAILS

DRAWING NO: P-6
SHEET NO: 7 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\IX#1\10-9A\CAD (phase III)\PlanSet\S2268-P6.dwg USER: kbedford
DATE: Nov 08, 2007 2:11pm XREFS: S2268BDR



8'-0"
12'-3"
12'-0"
4"/6" BRINE/RINSE OUT FROM NITRATE VESSELS
6" SOFTENER BW SUPPLY FROM TREATED WATER
8" DRAIN/BW OUT FROM NITRATE VESSELS
SCALE: 3/8" = 1'-0"
INDICATES EXISTING PIPING AND EQUIPMENT
4" BRINE/RINSE OUT FROM SOFTENERS
A P-8
4" BRINE/RINSE IN
EXISTING YARD LIGHT, TYP.
HOSE BIBB AND RACK, SEE
GUARD POST, SEE DETAIL
4"-270 70V-B1
REMOVE EXISTING BLIND FLANGE, CONNECT TO EXISTING VALVES, TYP.
4"-270 70V-A1
4" SOFTENER BW TO WASTE AIR GAP
4"-270 20V-5
4"-270M 20V-A3
20FIT005
BRINE IN
SITE LEVEL GAGE
45°
135°
4"-270M 70V-3
4"-310 70V-4
70LIT101
70LIT102
WASTE TANK 70TK-A
WASTE TANK 70TK-B
6"-200M 20V-A9
BW IN
270°
45°
1/2"-1201 20V-A4
0°
180°
70FIT-104
REMOVE EXISTING 4" PVC CAP AND CONNECT TO 4" PVC STUB
BRINE/RINSE OUT
SOFTENER VESSEL 20SV-A
20" ACCESS MANWAY
30" ACCESS MANWAY
8"-200M 20V-A1
4"-270M 20V-A8
315°
225°
SOFTENED WATER OUT
RETROFIT TANK WITH DOMED COVER
90°
270°
REMOVE EXISTING BLIND FLANGE, CONNECT TO EXISTING FLANGE
8"-200M 20V-A6
6"-200M 20V-A2
EXISTING PIPE SUPPORTS
4" SOFTENER BW TO WASTE AIR GAP
SOFTENED WATER TO BRINE AND RINSE TANKS, SEE DWG P-10
WASTE TANK BYPASS. TEE, BALL VALVE, AND REMOVABLE PLUG OR CAP
SUPPORT LOW SECTION OF 2" AND 6" PVC PIPES ON FRP STRUT TYPE CHANNEL SUPPORTS ANCHORED TO CONCRETE SLAB, MAX SPACING, 5'-0"
B P-8
6"-200 20V-B4
PEROXIDE PUMP SKID
PEROXIDE POLY DOLLY & DRUM
270°
10'-0"
SOFTENED WATER OUT
PVC TO WASTE
8" SDR
24" MANWAY
4"-270M 20V-B8
BRINE/RINSE OUT
1/2"-1201 20V-B4
BRINE TANK 30BT-A
BRINE TANK 30BT-B
SOFTENER VESSEL 20SV-B
BW IN
8"-200M 20V-B2
6"-200M 20V-B9
A P-12
BRINE IN
C P-8
4"-270M 20V-B3

RECORD DRAWING

Date: 08-23-07

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APPROVAL:	DATE:

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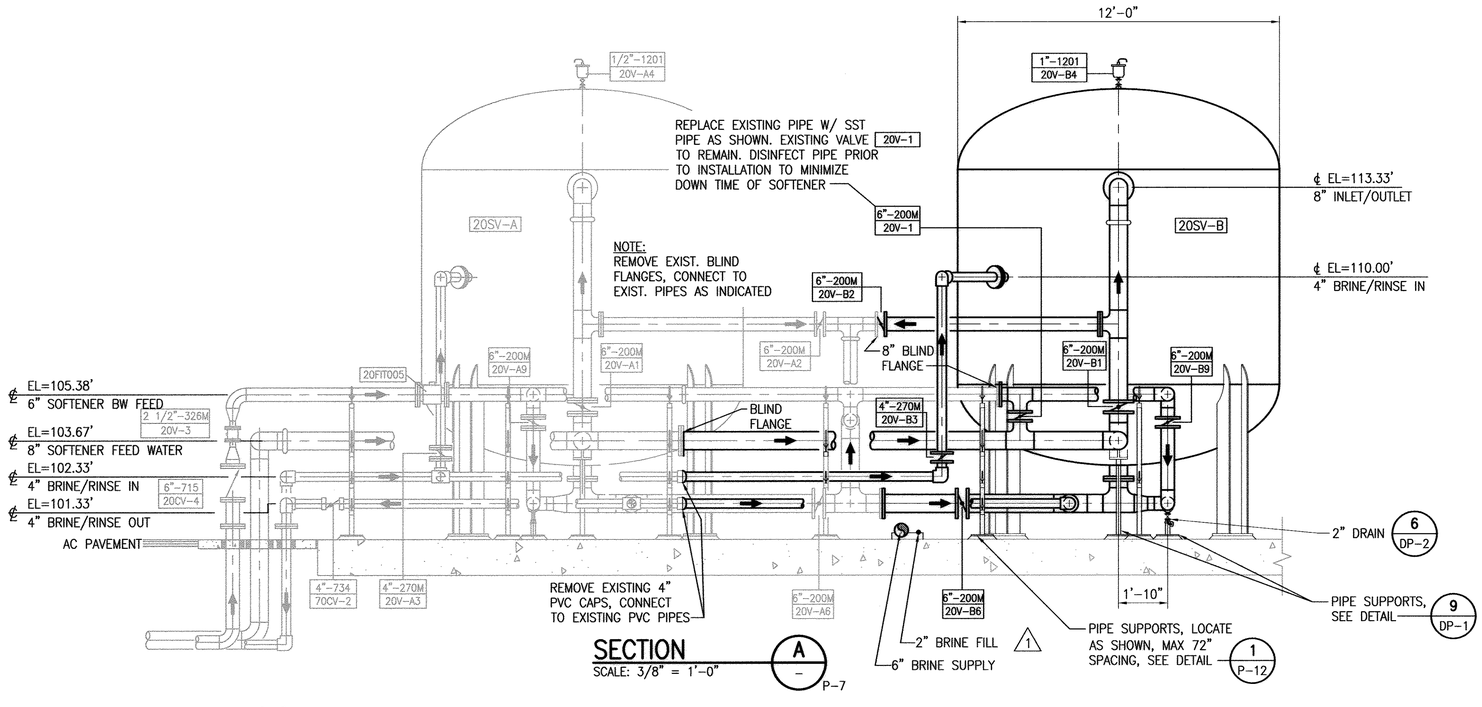
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER 1.1	
2	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
WASTE TANKS AND SOFTENER VESSELS
PIPING PLAN

DRAWING NO: P-7
SHEET NO: 8 OF 48 SHEETS
FILE NO: S-2268



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		DATE: AUGUST 2005

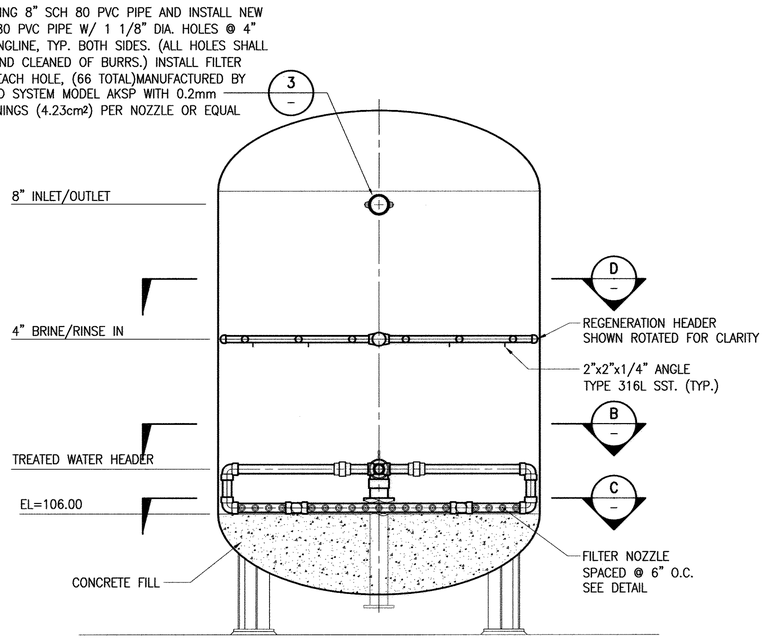
REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER 1.1	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
SOFTENER VESSEL PIPING SECTIONS

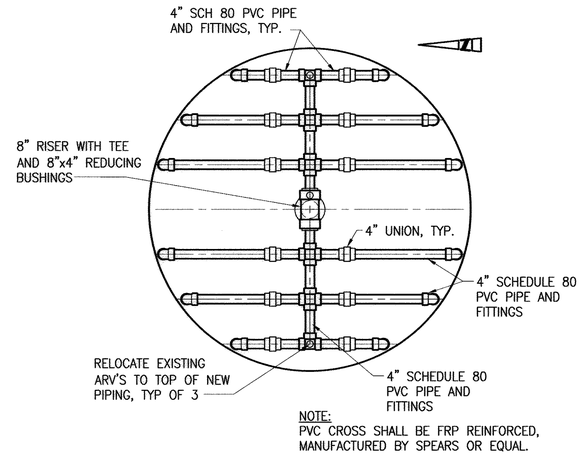
DRAWING NO: P-8
SHEET NO: 9 OF 48 SHEETS
FILE NO: S-2268

DWG: S:_UA\100-04\CAD (phase III)\PlanSet\S2268-P8.dwg USER: kbedford
DATE: Nov 08, 2007 2:13pm XREFS: S2268BDR



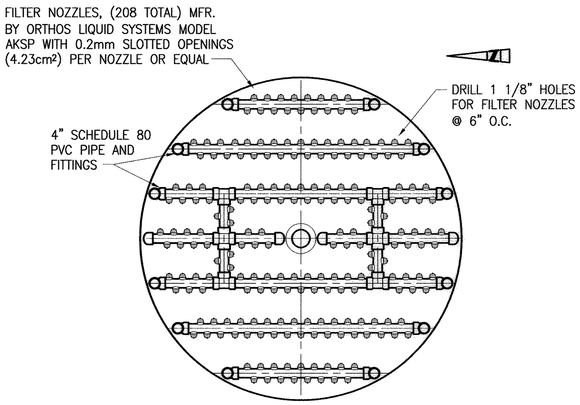
NOTE: HEADERS SHOWN ROTATED FOR CLARITY. SEE INDIVIDUAL HEADER PLANS FOR ACTUAL ORIENTATION.

TYPICAL VESSEL SECTION
SCALE: 3/8" = 1'-0"
A

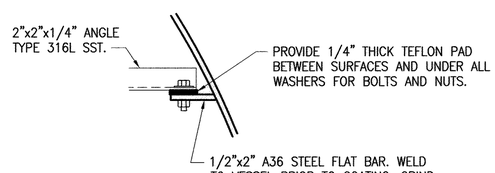


NOTE:
PVC CROSS SHALL BE FRP REINFORCED, MANUFACTURED BY SPEARS OR EQUAL.

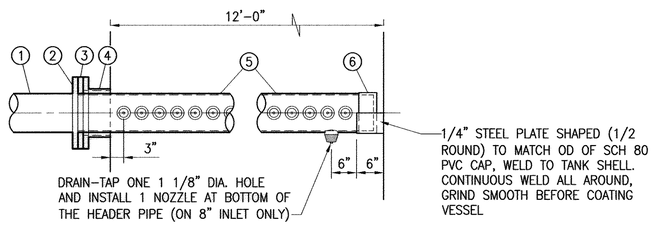
TREATED WATER HEADER
SCALE: 3/8" = 1'-0"
B



TREATED WATER HEADER
SCALE: 3/8" = 1'-0"
C

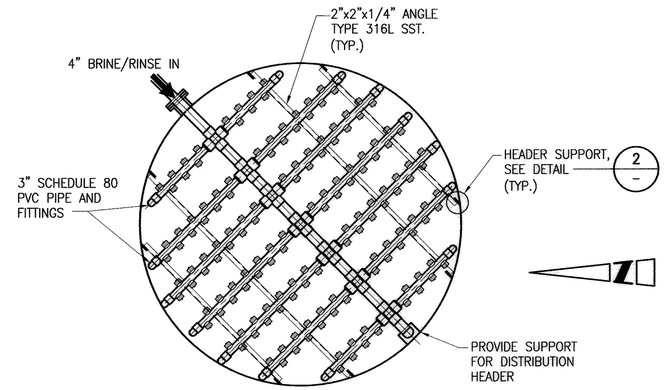


DETAIL
N.T.S.
2



INLET/OUTLET HEADER DETAIL
SCALE: 3/4" = 1'-0"
3

MATERIAL LIST
1. 8-INCH SST PIPE
2. 8x10-INCH SST REDUCING FLANGE
3. 8x10-INCH FIBERGLASS REDUCING FLANGE
4. 10-INCH FLANGED OUTLET
5. 8-INCH SCH 80 PVC PIPE
6. 8-INCH SCH 80 PVC CAP



REGENERANT HEADER
SCALE: 3/8" = 1'-0"
C

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APPROVAL:	DATE:	CHECKED BY:
		DATE: AUGUST 2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
SOFTENER VESSEL SECTION AND DETAILS

DRAWING NO: P-9
SHEET NO: 10 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-DAY\CAD (phase III)\PlanSet\S2268-P9.dwg USER: kbedford
DATE: Nov 08, 2007 2:25pm XREFS: S2268BOR

NOTE:
1. VALVES 40V-6 AND 40V-10 ARE LOCATED ON THE BAG FILTER ENFFLUENT LINE.

2. REMOVE WYE-STRAINERS AND FLOW CONTROL VALVES ON EXISTING PUMP STATION.

EXISTING HOSE BIBB AND RACK

EXISTING YARD LIGHT FOOTING

REMOVE EXISTING CAP PVC CAP IN VERTICAL RUN, CONNECT TO EXISTING 4" PVC STUB

A P-11

EXISTING ELECTRICAL PANEL

NOTE:
1. CONTRACTOR VERIFY ALL DIMENSIONS IN THE FIELD.

2. VARY LENGTH TO FIT ELECTRICAL.

40P-A 40P-B 40P-C 40P-D

40FIT121

40CIT120

BRINE-RINSE SUPPLY

4" PIPE

3/4"ARV

40V-9

3" PIPE

RINSE TANK DRAIN

50FIT121

50P-D 50P-C 50P-B 50P-A

BRINE RINSE SUPPLY

50CIT120

4"-270M 100V-3

4"-734 100CV-2

100P-A

3" PIPE

BAG FILTER

BRINE SUPPLY

RINSE SUPPLY

4" PIPE

3/4"ARV

4"-270 100V-1

BRINE SUPPLY

RINSE SUPPLY

B P-11

BAG FILTER

RETROFIT EXISTING 30" TANK MANWAYS WITH 30" HINGED COVERS. TYP 4 TANKS

SITE LEVEL

45°

0°

180°

6" VENT

3" FLG'D OUTLET 31LIT-001

EXISTING RINSE TANK 31RT-A

30" ACCESS MANWAY TYP.

SITE LEVEL

45°

0°

6" VENT

3" FLG'D OUTLET 31LIT-002

EXISTING RINSE TANK 31RT-B

PAINT NEW PVC PIPING TO MATCH COLOR OF EXISTING PIPING, TYP.

20FIT007

SEE DETAIL 1 P-14

2'-0"

6"-200 31V-A1

SOFTENED WATER SUPPLY

6"-200 31V-B1

SOFTENED WATER

1 1/2-310 80V-1

PEROXIDE PUMP SKID

PEROXIDE POLY DOLLY & DRUM

80P-A 80P-B

2"-900 30V-C1

REMOVE EXISTING VALVE, AND INSTALL BLIND FLANGE TYP.

2"-900 30V-B1

6"-200M 30V-D1

6" SDR35 PVC DRAIN

2"-900 30V-E1

6"-200M 30V-E1

6" PVC

RETROFIT EXISTING 30" TANK MANWAYS WITH 30" HINGED COVERS. TYP 4 TANKS

TYP. 4 P-12

2" FLANGED OUTLET FOR LEVEL TRANSMITTER @+4" ABOVE BOTTOM OF TANK

3" FLG'D OUTLET 30LIT-003

6" VENT

45°

BRINE TANK 30BT-C

9'-5"

45°

3" FLG'D OUTLET 30LIT004

6" VENT

3" FLG'D OUTLET 30LIT005

6" VENT

80PIT005

80PIT005

30" ACCESS MANWAY WITH HINGED COVER

0°

180°

EXISTING BRINE TANK 30BT-D

EXISTING BRINE TANK 30BT-E

HOSE BIBB AND RACK, SEE 2 DP-3

2" PVC BACK PRESSURE REGULATOR

225°

SITE LEVEL 2 P-11

SITE LEVEL 30LIT014

315°

315°

225°

30" ACCESS MANWAY TYP.

OVERFLOW TO EXISTING DRAIN, CONSTRUCT 4" HIGH CONCRETE CURB CONTAINMENT TO MATCH EXISTING

EXISTING OVERFLOW DRAIN WITH 4" HIGH CONCRETE CURB CONTAINMENT

1 1/2" SCH 80 PVC BRINE SUPPLY

1 1/2" SCH 80 PVC SOFT WATER SUPPLY

SALT FILL STATION, SEE DETAIL 2 -

6" SDR35 PVC DRAIN

EXISTING GUARD POST, TYP.

6'-6"x4' SAW CUT, REMOVE AND REPLACE W/ 4" UNREINFORCED CONCRETE FLUSH WITH SLAB SURFACE, SEE DETAIL

RECORD DRAWING
Date: 08-23-07
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PARTIAL PLAN 1 – P-2
SCALE: 3/8" = 1'-0"

INDICATES EXISTING PIPING AND EQUIPMENT

VERIFY SCALES
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APPROVAL: DATE:

DESIGN BY: LRM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

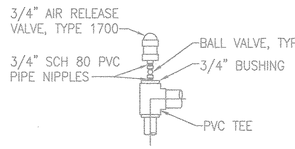
REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER 1.1	
2	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
BRINE AND RINSE TANKS AND PUMP STATIONS PARTIAL PLAN

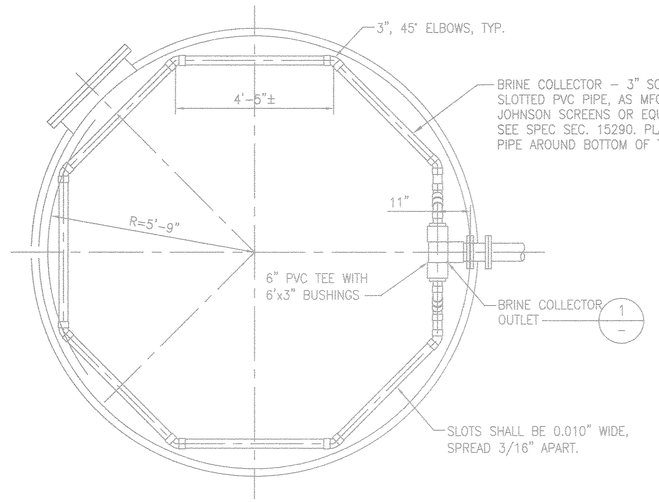
DRAWING NO: P-10
SHEET NO: 11 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\J04\100-04\CAD (phase III)\PlotSet\S2268-P10.dwg USER: kbedford
DATE: Nov 08, 2007 2:56pm XREFS: S2268BR Pinplan



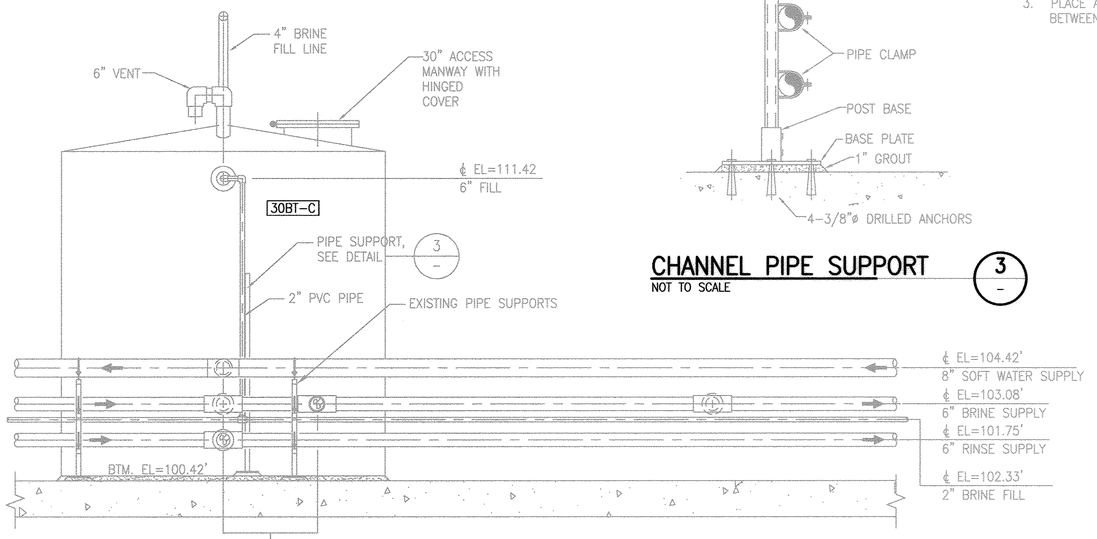
ARV
NOT TO SCALE — 2 / –

SECTION
SCALE: 3/8" = 1'-0" — A / – — P-10



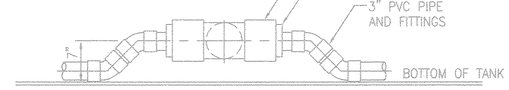
BRINE COLLECTOR PLAN
SCALE: 3/8" = 1'-0" — C / – — P-14

NOTES:
1. 2-INCH SOFT WATER SUPPLY SHALL BE SCH 80 PVC PIPE.
2. PIPE SHALL BE SUSPENDED UNDER THE SECOND CROSS MEMBER OF THE PIPE RACK. SUSPEND WITH 1/4-INCH SST U-BOLTS WITH SST NUTS AND WASHERS.
3. PLACE A 3-INCH x 6-INCH x 18 GAUGE SST PLATE SADDLE BETWEEN U-BOLT AND PIPE, SHAPE TO PIPE BARREL.

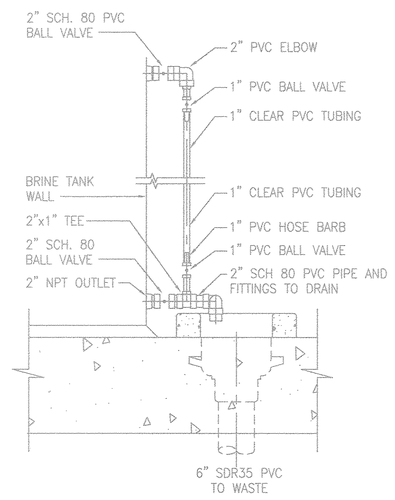


SECTION
SCALE: 3/8" = 1'-0" — B / – — P-10

CHANNEL PIPE SUPPORT
NOT TO SCALE — 3 / –



SUPPORT TEE
SCALE: 1" = 1'-0" — 1 / –



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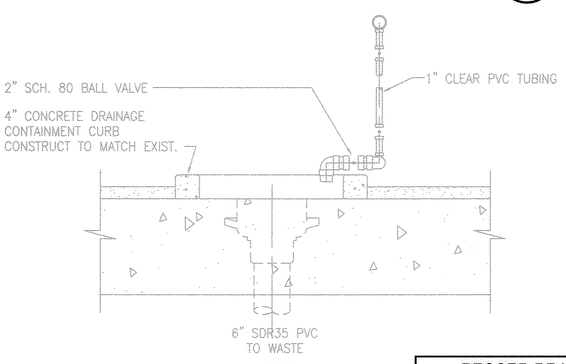

FRONT

BRINE TANK DRAIN AND SITE LEVEL
SCALE: 1" = 1'-0" — 2 / –

RECORD DRAWING
Date: 08-23-07
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DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

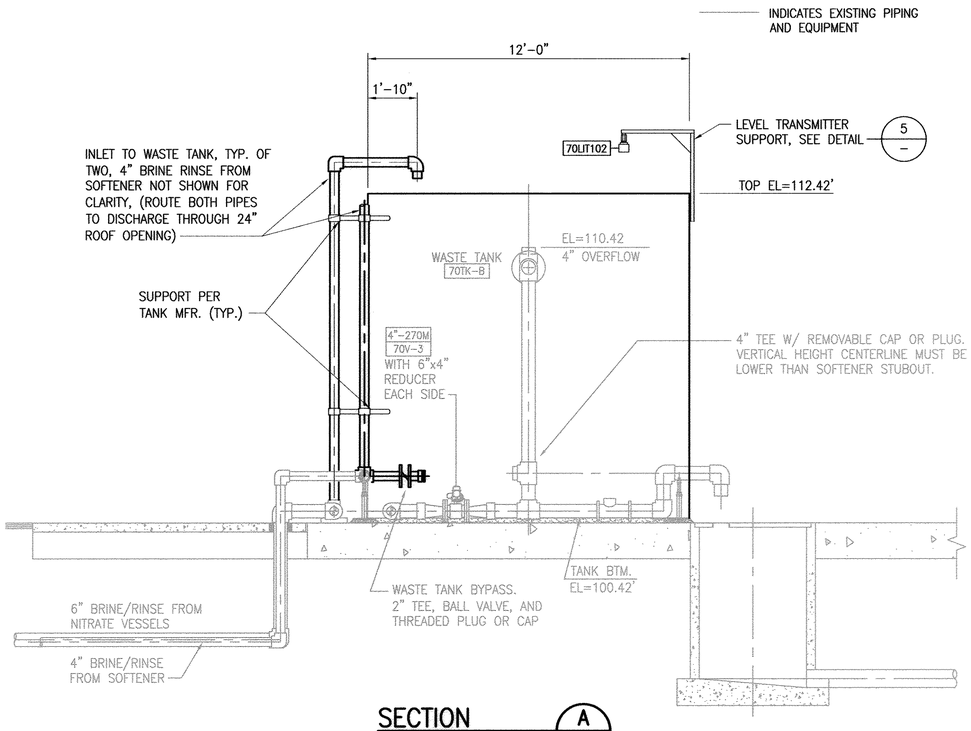
REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER 1.1	
2	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
BRINE TANK PIPING SECTIONS

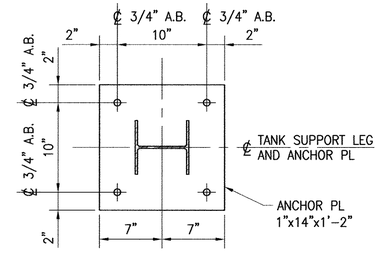
DRAWING NO: P-11
SHEET NO: 12 OF SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-04\CAD\phase III\PlanSet\S2268-P11.dwg USER: Redford
DATE: Nov 08, 2007 2:57pm XREFS: S2268BOR

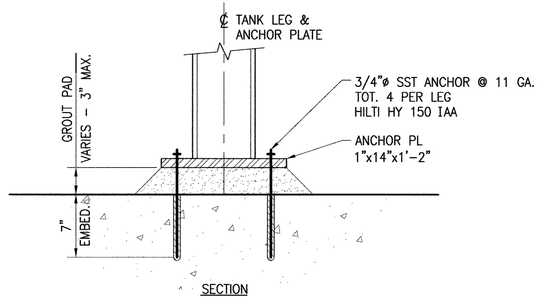


SECTION
SCALE: 3/8" = 1'-0"

A / – P-7



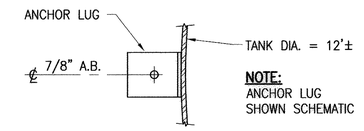
PLAN



SECTION

IX VESSEL ANCHOR TYPE 1
SCALE: 1 1/2"=1'-0"
(4 PER TANK)

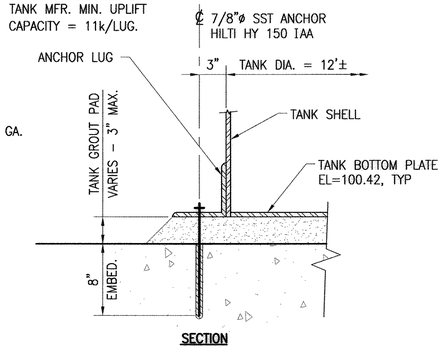
3 / –



NOTE:
ANCHOR LUG SHOWN SCHEMATIC

PLAN

NOTE:
ANCHOR LUG AND ATTACHMENT TO TANK TO BE DETERMINED BY TANK MFR. MIN. UPLIFT CAPACITY = 11k/LUG.

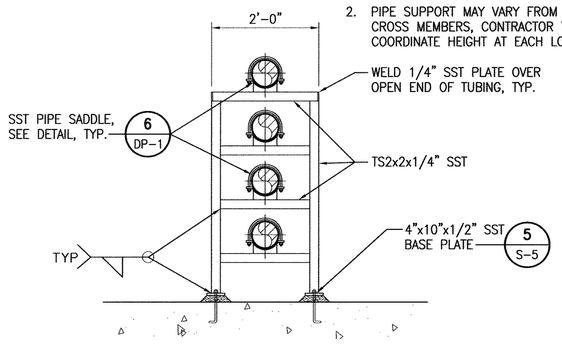


SECTION

FRP TANK ANCHOR TYPE 2
SCALE: 1 1/2"=1'-0"
(6 PER TANK) 30 BT-F&G ONLY
EXCEPT FOR 30BT-F&G, 12 PER TANK

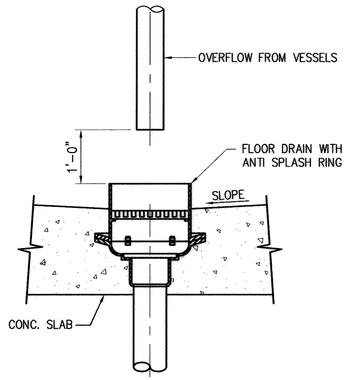
1 / – 4

NOTE:
1. SEE PLANS FOR PIPE SIZE, TYPE AND ELEVATION
2. PIPE SUPPORT MAY VARY FROM 1 TO 4 CROSS MEMBERS, CONTRACTOR TO COORDINATE HEIGHT AT EACH LOCATON.



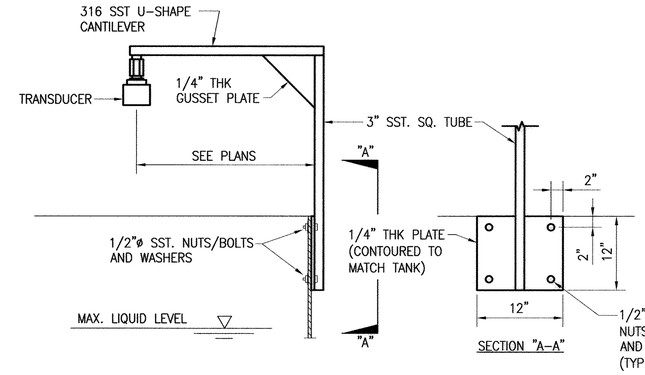
PIPE SUPPORT
SCALE: 3/4" = 1'-0"

1 / – P-7, P-8, P-9, P11, P14



FLOOR DRAIN
NOT TO SCALE

2 / –



ULTRASONIC LEVEL TRANSDUCER
NOT TO SCALE

5 / –

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DATE: AUGUST 2005

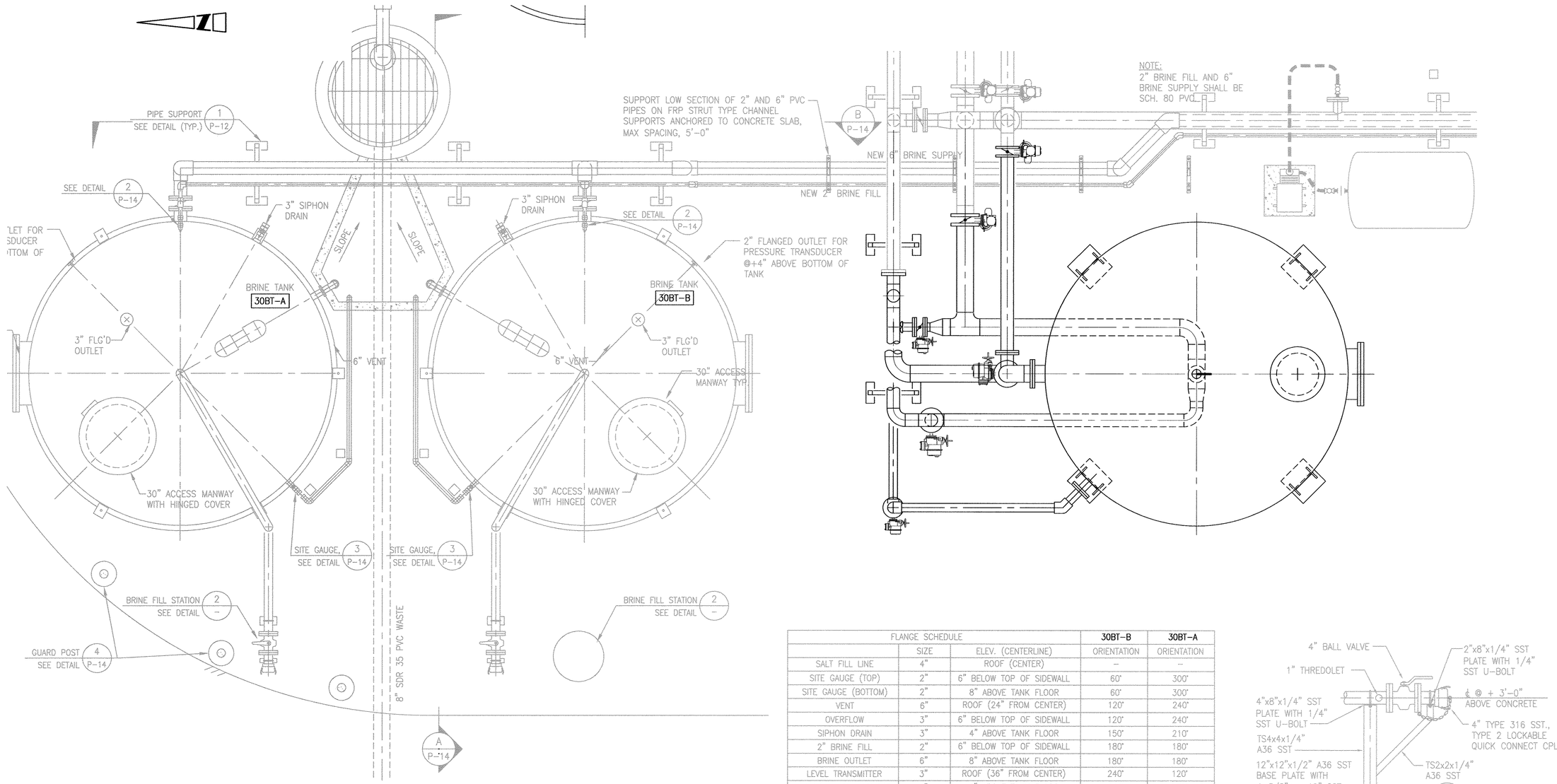
REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER	
	2/27/06	ADDENDUM 2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
WASTE TANK SECTIONS AND DETAILS

DRAWING NO: P-12
SHEET NO: 13 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JPA\100-DAI CAD (phase III)\PipeSet\S2268-P12.dwg USER: kbedford
DATE: Nov 08, 2007 2:59pm XREFS: S2268BDR



BRINE TANK PLAN

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

1 –

FLANGE SCHEDULE			30BT-B	30BT-A
	SIZE	ELEV. (CENTERLINE)	ORIENTATION	ORIENTATION
SALT FILL LINE	4"	ROOF (CENTER)	–	–
SITE GAUGE (TOP)	2"	6" BELOW TOP OF SIDEWALL	60°	300°
SITE GAUGE (BOTTOM)	2"	8" ABOVE TANK FLOOR	60°	300°
VENT	6"	ROOF (24" FROM CENTER)	120°	240°
OVERFLOW	3"	6" BELOW TOP OF SIDEWALL	120°	240°
SIPHON DRAIN	3"	4" ABOVE TANK FLOOR	150°	210°
2" BRINE FILL	2"	6" BELOW TOP OF SIDEWALL	180°	180°
BRINE OUTLET	6"	8" ABOVE TANK FLOOR	180°	180°
LEVEL TRANSMITTER	3"	ROOF (36" FROM CENTER)	240°	120°
PRESSURE TRANSDUCER	2"	4" ABOVE TANK FLOOR	240°	120°
MANWAY	30"	30" ABOVE TANK FLOOR	270°	90°
MANWAY	30"	ROOF (48" FROM CENTER)	315°	45°

* SUPPORT FOR BRINE FILL LINE SHALL SPAN NO MORE THAN 5' APART. SEE DETAIL A P-14

* INSTALL BRINE COLLECTORS WITHIN NEW BRINE TANKS. SEE DETAIL C P-11

SALT FILL STATION DETAIL

SCALE: 3/4" = 1'-0"

2 –

DWG: S:\CAD\100-CAD\CAD Iphase III\PlanSet\S2268-P13.dwg USER: kbedford
DATE: Nov 08, 2007 3:18pm XREFS: S2268BDR Pintplan

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DESIGN BY: CJM
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DATE: APRIL 2006

REV	DATE	DESCRIPTION	APP
1	5/10/06	CHANGE ORDER	
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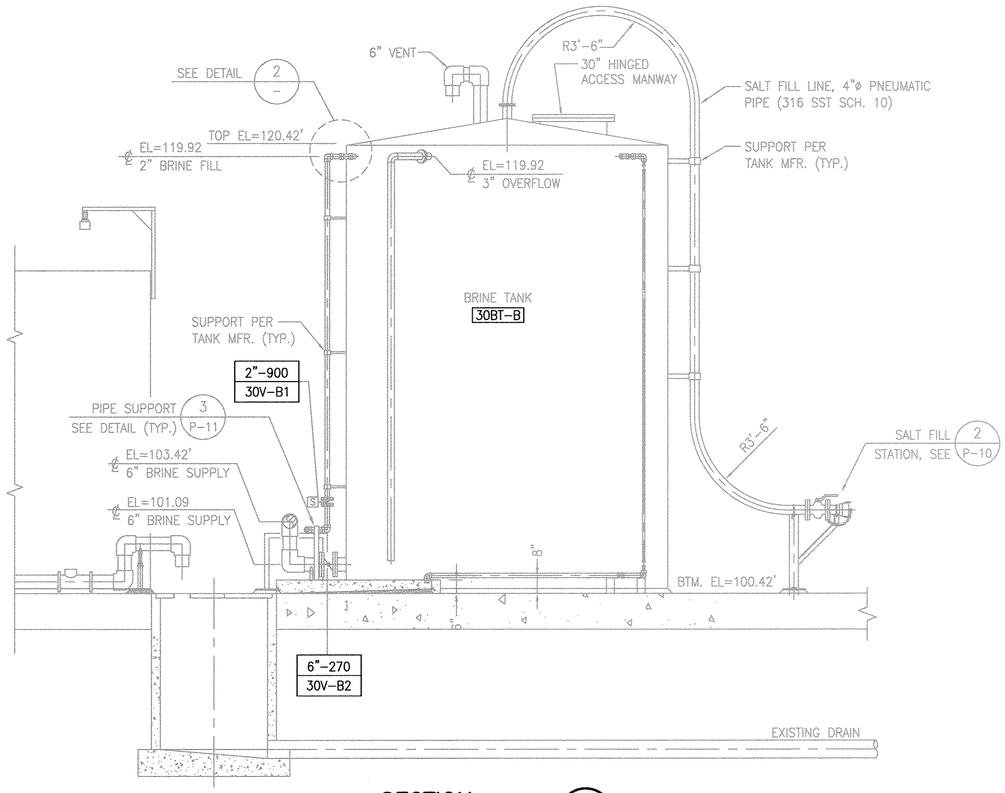
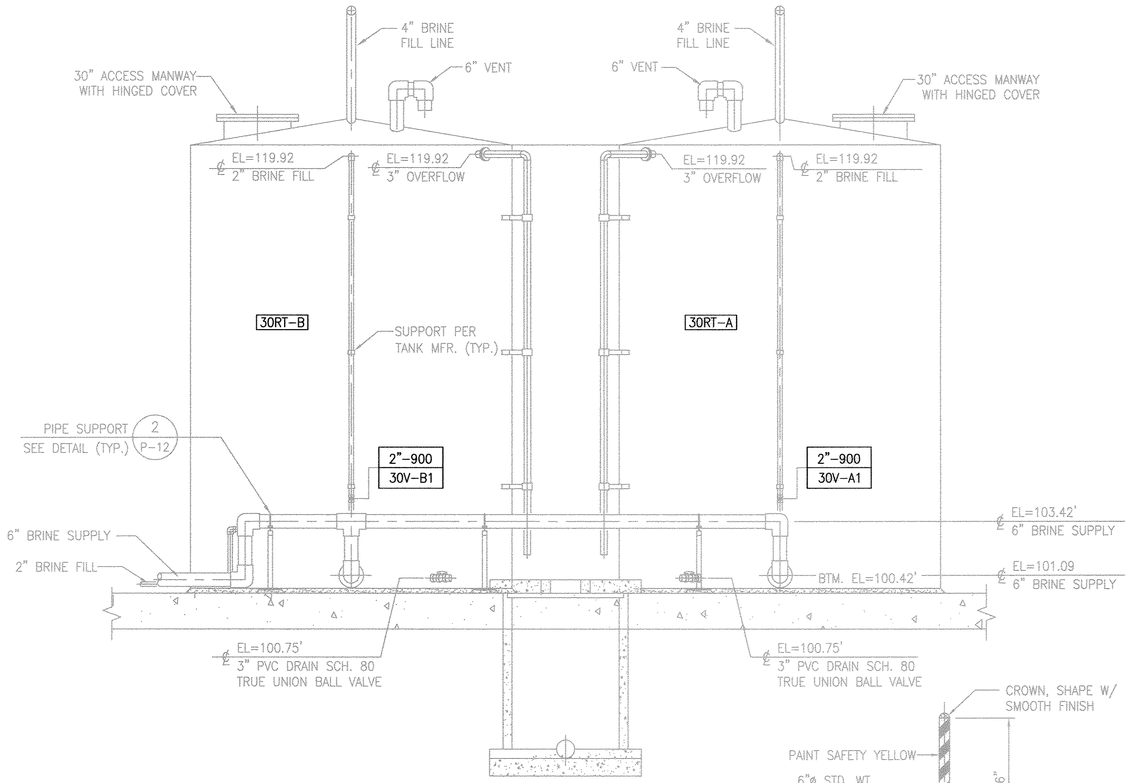
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
NEW BRINE TANKS

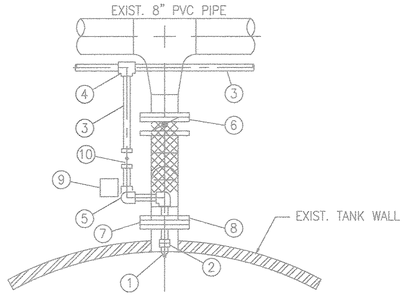
DRAWING NO: P-13
SHEET NO: 14 OF SHEETS
FILE NO: S-2268



SECTION A – P-13
SCALE: 3/8" = 1'-0"



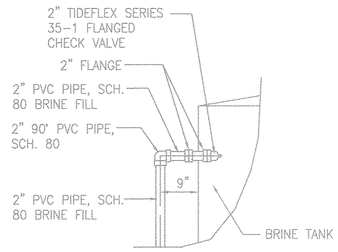
SECTION B – P-13
SCALE: 3/8" = 1'-0"



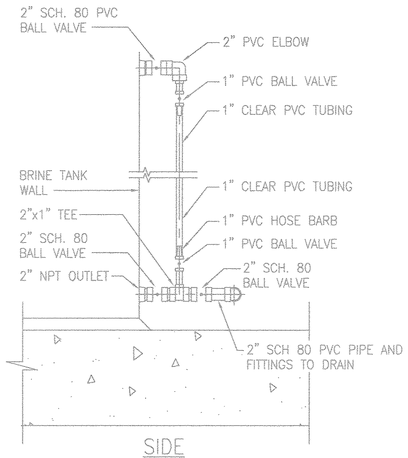
MATERIAL LIST:

1. 1 1/2" TIDEFLEX SERIES 35-1 FLANGED CHECK VALVE 1 1/2"
2. 1 1/2" FLANGE
3. 2" PVC PIPE, SCH. 80
4. 2" PVC TEE, SCH. 80
5. 2" PVC ELBOW, SCH. 80
6. 6" BLIND FLANGE
7. 6"x1 1/2" RED FLANGE
8. 6"x2" REDUCER FLANGE
9. PIPE SUPPORT UNDER VALVE SEE 3 P-11
10. 2" SOLENOID VALVE

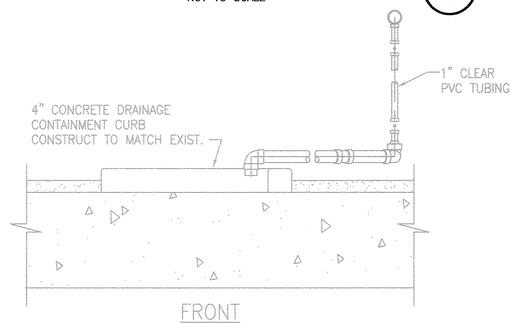
DETAIL 1 – SCALE: 3/4"-1'-0"



DETAIL 2 – SCALE: 3/4"-1'-0"

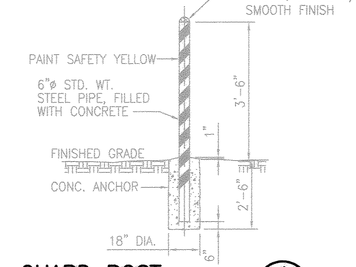


SIDE



FRONT

BRINE TANK DRAIN AND SITE LEVEL 3 –
NOT TO SCALE



GUARD POST 4 –
NOT TO SCALE

RECORD DRAWING
Date: 08-23-07

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APPROVAL: | DATE:

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DRAWN BY: ECM
CHECKED BY:
DATE: APRIL 2006

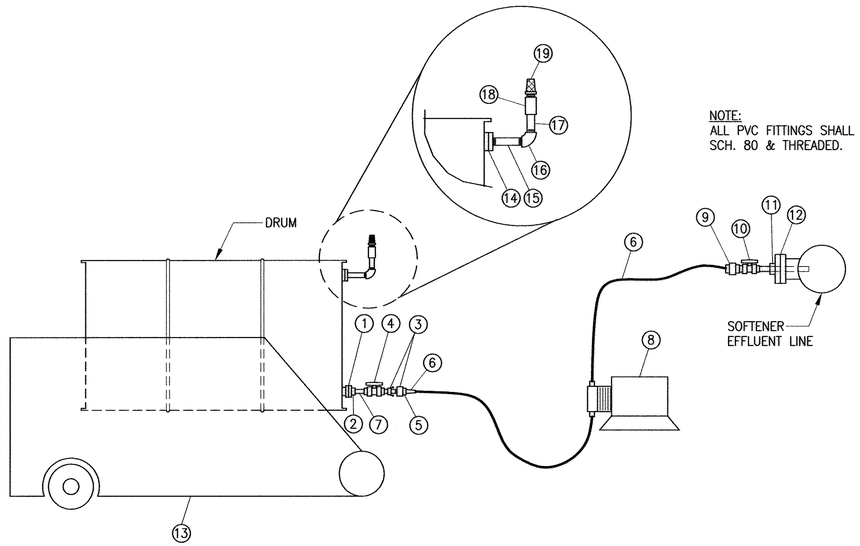
REV	DATE	DESCRIPTION	APP
2	5/10/06	CHANGE ORDER 1.1	
1	3/1/07	CHANGE ORDER 1.2	

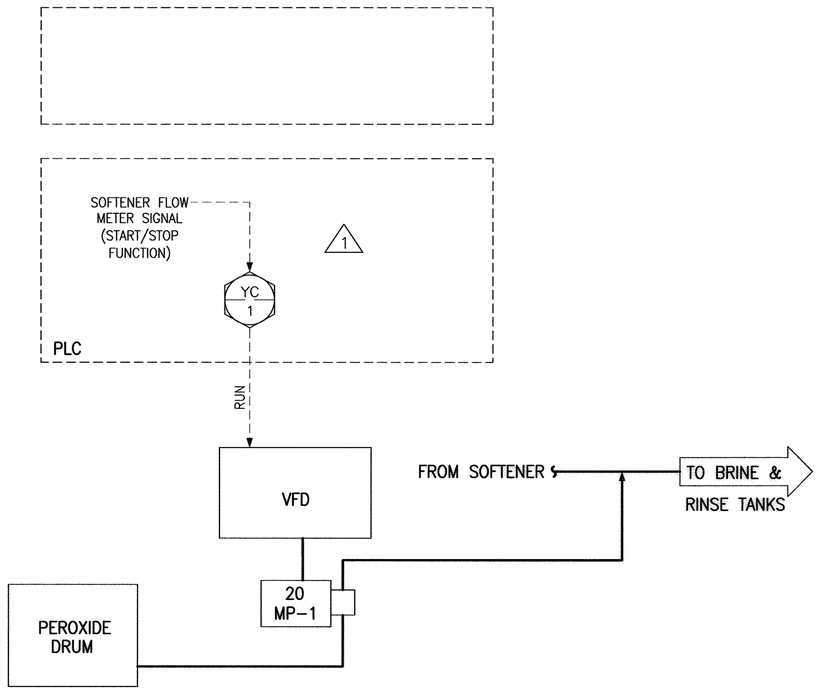
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
BRINE TANK SECTIONS AND DETAILS

DRAWING NO: P-14
SHEET NO: 15 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-04\CAD (phase III)\ParaSet\S2268-P14.dwg USER: kbedford
DATE: Nov 08, 2007 3:18pm XREFS: S2268DR





MATERIAL LIST:

1. 2" BUTTRESS TO 3/4" FPT DRUM ADAPTER
2. 3/4"x1/2" THREADED ADAPTER PVC OR POLYETHYLENE
3. 1/2" CAMLOCK COUPLING, MALE & FEMALE, PVDF
4. 1/2" PVC BALL VALVE, VENTED BALL
5. 1/2" NPT TO TUBING ADAPTER
6. 1/2" F.E.P. TUBING, BLACK
7. 1/2" PVC NIPPLE, THREADED
8. PULSAFEEDER METERING PUMP SKID, CROWLEY CO., IRWINDALE, CA. (626) 856-5656
   SKID = SP-151-211-101-100-000
   PUMP = LD03PA - V V C9-XXX
   DEGASSING HEAD = L9906901
9. 3/4" PVC INJECTOR BY SAF-T-FLO; QUILL LENGTH=12" MIN. WITH SAF-T-SEAL TIP, VERIFY IN FIELD
10. 1" SCH. 80 PVC BALL VALVE, VENTED
11. 1"x4" SCH. 80 PVC ADAPTER FITTINGS
12. 1" THREADED HOLE THROUGH CENTERS 4" VANSTONE FLANGE W/ THREADED NPT POST
13. POLY DOLLY FROM US PLASTIC CORP. TEL 1800-537-9724
14. 3/4" NPT BUSHING
15. 3/4" PVC NIPPLE, 2" LONG
16. 3/4 ELBOW
17. 3/4" PVC NIPPLE, 6" LONG
18. 3/4" THREADED COUPLING
19. PVC FOOT VALVE SCREEN

RECORD DRAWING
Date: 08-23-07

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APPROVAL:	DATE:	DRAWN BY: DTG				
APPROVAL:	DATE:	CHECKED BY:				
		DATE: AUGUST 2005	REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
HYDROGEN PEROXIDE INJECTION SYSTEM

DRAWING NO: P-15
SHEET NO. 16 OF 48 SHEETS
FILE NO: S-2268

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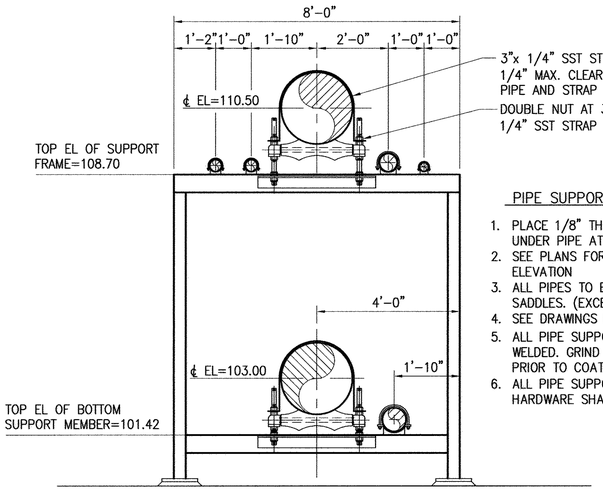
DATE: Nov 08, 2007 3:26pm XREFS: S2268BDR

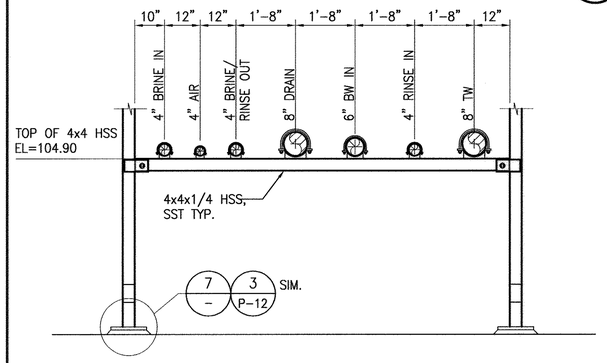


PIPE SUPPORT NOTES

1. PLACE 1/8" THICK NEOPRENE PAD UNDER PIPE AT SUPPORT. (TYP.)
2. SEE PLANS FOR PIPE SIZE, TYPE, AND ELEVATION
3. ALL PIPES TO BE SUPPORTED IN PIPE SADDLES. (EXCEPT 24" SST PIPE)
4. SEE DRAWINGS FOR PIPE SUPPORT SPACING.
5. ALL PIPE SUPPORTS TO BE CONTINUOUSLY WELDED. GRIND ALL WELDS SMOOTH PRIOR TO COATING.
6. ALL PIPE SUPPORTS, SADDLES AND HARDWARE SHALL BE STAINLESS STEEL.

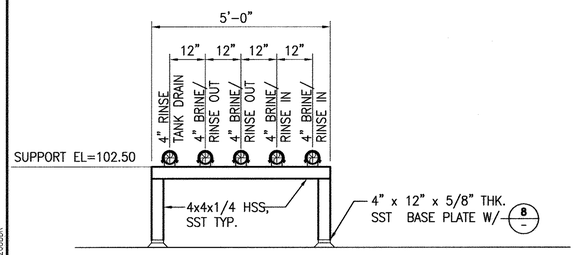
TYPE 1 PIPE SUPPORT (EXISTING) 1

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



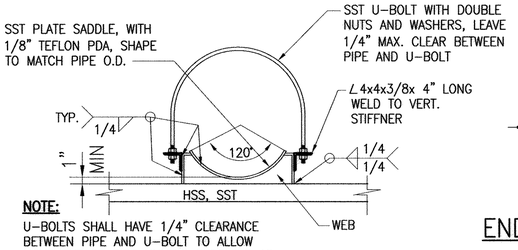
TYPE 2 PIPE SUPPORT (EXISTING) 2

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



TYPE 3 PIPE SUPPORT (EXISTING) 3

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



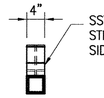
NOTE:
U-BOLTS SHALL HAVE 1/4" CLEARANCE BETWEEN PIPE AND U-BOLT TO ALLOW MOVEMENT OF PIPE UNLESS SPECIFIED AS AN ANCHOR POINT, SEE PLAN

PIPE SADDLE DETAIL 6

SCALE: 3/4"=1'-0"

SUPPORT MATERIAL

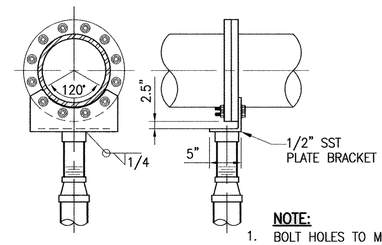
4" – 12", 1/4" SST PLATE
16" – 24", 3/8" SST PLATE



END VIEW

U-BOLT TABLE:

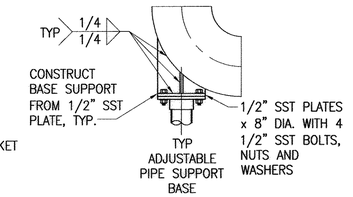
PIPE SIZE	U-BOLT
4" – 10"	3/8" DIA
12" – 16"	1/2" DIA
18" – 24"	5/8" DIA



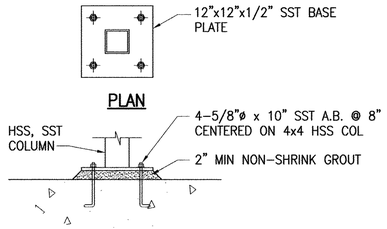
FLANGE SUPPORT

NOTE:

1. BOLT HOLES TO MATCH FLANGE
2. SEE SUPPORT DETAIL AT LEFT FOR TYPICAL DETAILS
3. ROUND ALL SHARP EDGES.
4. LOCATE BRACKET ON OPPOSITE SIDE AWAY FROM VALVE OR EQUIPMENT

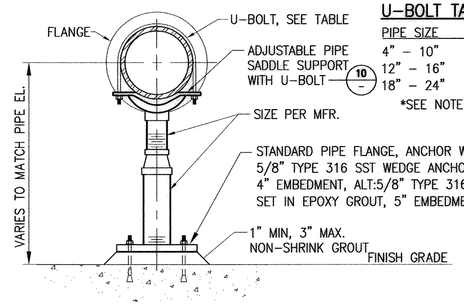


BASE BEND SUPPORT



BASE PLATE 7

SCALE: 1" = 1'-0"



U-BOLT TABLE:

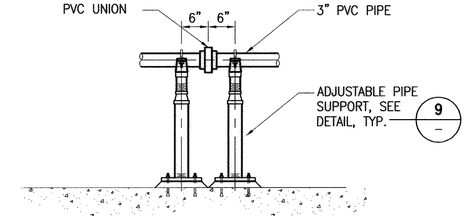
PIPE SIZE	U-BOLT
4" – 10"	3/8" DIA
12" – 16"	1/2" DIA
18" – 24"	5/8" DIA

*SEE NOTE 2

PIPE BARREL SUPPORT

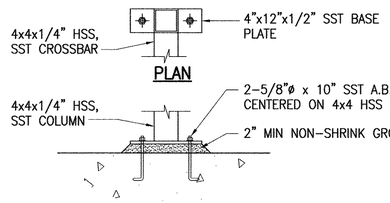
NOTE

1. ADJUSTABLE PIPE SUPPORT, GRINNELL FIGURE 264, B-LINE B3093/3089 OR EQUAL WITH A PIPE STANCHEON AND U-BOLT, GRINNELL FIGURE 259, B-LINE B3090 OR EQUAL. ALL SUPPORTS EXCEPT SST SHALL BE COATED PER SYSTEM 10, SEE SPEC SEC. 9900.
2. U-BOLTS SHALL HAVE 1/4-INCH CLEARANCE BETWEEN PIPE AND U-BOLT TO ALLOW MOVEMENT WHEN SUPPORTING EXPANSION JOINTS.



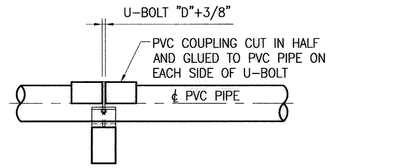
PVC UNION SUPPORT 4

SCALE: 3/4" = 1'-0"

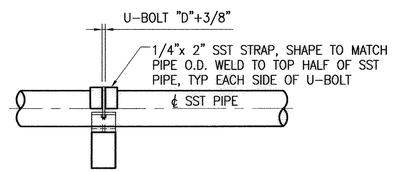


BASE PLATE 8

SCALE: 1" = 1'-0"



PVC PIPE



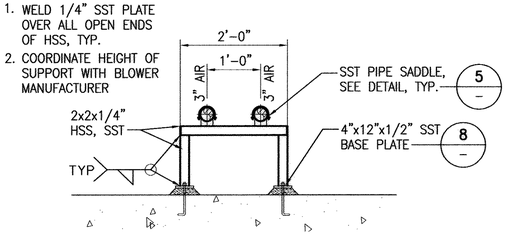
SST PIPE

ANCHOR PIPE SUPPORTS 10

NOT TO SCALE

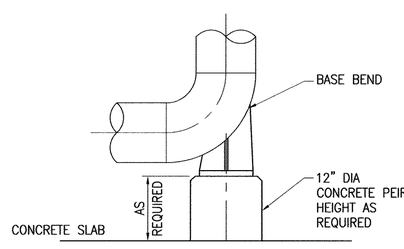
NOTE:

1. WELD 1/4" SST PLATE OVER ALL OPEN ENDS OF HSS, TYP.
2. COORDINATE HEIGHT OF SUPPORT WITH BLOWER MANUFACTURER



PIPE SUPPORT (EXISTING) 5

SCALE: 3/4" = 1'-0"



BASE BEND SUPPORT 11

SCALE: 1" = 1'-0"

VERIFY SCALES
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APPROVAL: DATE:

DESIGN BY: CJM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

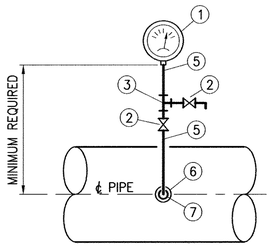
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
PIPE SUPPORT DETAILS

DRAWING NO: DP-1
SHEET NO: 17 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-04\CAD (phase I)\PlanSet\S2268-DP1.dwg USER: kbedford
DATE: Nov 08, 2007 3:29pm XREFS: S2268BR



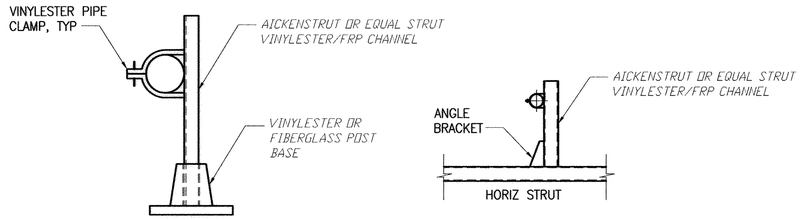
MATERIALS LIST

1. PRESSURE GAUGES SHALL BE 2 1/2" DIA. TYPE 6 UNLESS OTHERWISE NOTED ON THE DRAWINGS
2. 1/2" TYPE 320 BALL VALVE
3. 1/2" TYPE 316 SST TEE
4. 1/2" 90° TYPE 316 SST ELBOW
5. 1/2" TYPE 316 SST PIPING AND FITTINGS
6. VERIFY OUTLET SIZE AND MATERIAL
7. BUSHING TO MATCH OUTLET SIZE x 1/2"

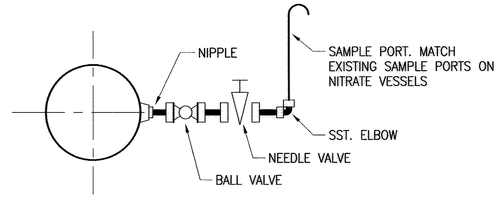
NOTES: FOR DETAIL

1. ALL PRESSURE GAUGE FITTINGS AND NIPPLES TO BE TYPE 316 SST.
2. INSTALL PRESSURE GAUGE W/ 90° ELBOW WITH SIDE MOUNT UNLESS OTHERWISE SHOWN ON THE PLANS.
3. WHEN OWNER SUPPLIES GAUGE, THE CONTRACTOR SHALL SUPPLY THE VALVES AND FITTINGS

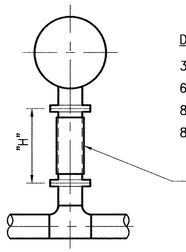
PRESSURE GAUGE — 1
NOT TO SCALE



FRP PIPE SUPPORT — 2
SCALE: N.T.S.

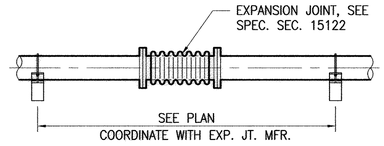


SAMPLE PORT DETAIL — 3
NOT TO SCALE



DIA.	DESC.	"H"-MIN.
3"	AIR SUPPLY LINE	16"
6"	BW SUPPLY	20"
8"	BW OUT/DRAIN	20"
8"	WELL/TREATED	25"

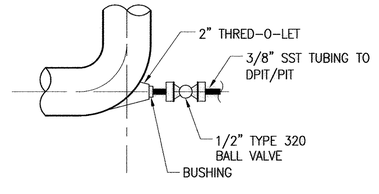
FLEXIBLE HOSE CONNECTION — 4
SCALE: 1/2"=1'-0"



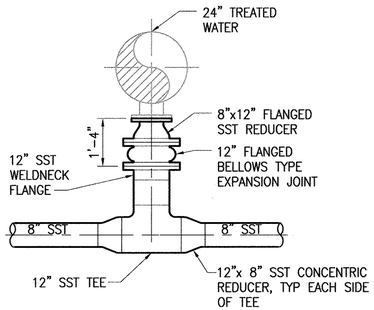
NOTES:

1. EXPANSION JOINTS INSTALLED IN PVC PIPE SHALL BE CONSTRUCTED OF PVC.
2. EXPANSION JOINTS INSTALLED IN SST PIPE SHALL BE CONSTRUCTED OF SST.

EXPANSION JOINT DETAIL — 5
SCALE: 1/2"=1'-0"

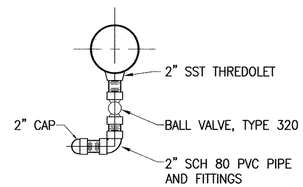


PRESSURE TAP — 7
SCALE: N.T.S.



FLEXIBLE BELLOWS TYPE CONNECTION — 4A
SCALE: 1/2"=1'-0"

NOTE:
CONNECTION FOR 24" RAW WATER TO NITRATE VESSELS IS SIMILAR.



DRAIN — 6
SCALE: 1 1/2"=1'-0"

RECORD DRAWING
Date: 08-23-07

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DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

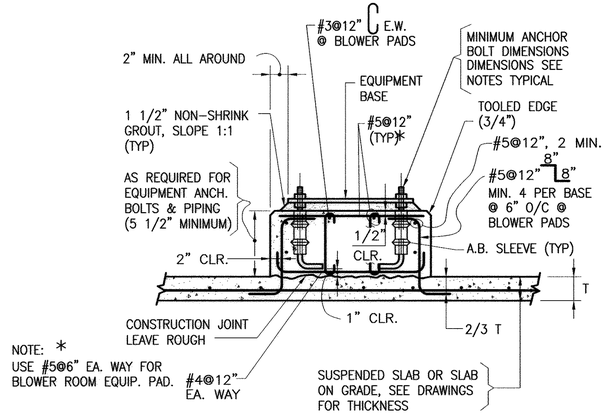
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

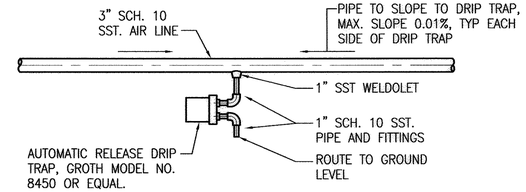
JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
MISCELLANEOUS DETAILS

DRAWING NO: DP-2
SHEET NO: 18 OF 48 SHEETS
FILE NO: S-2268

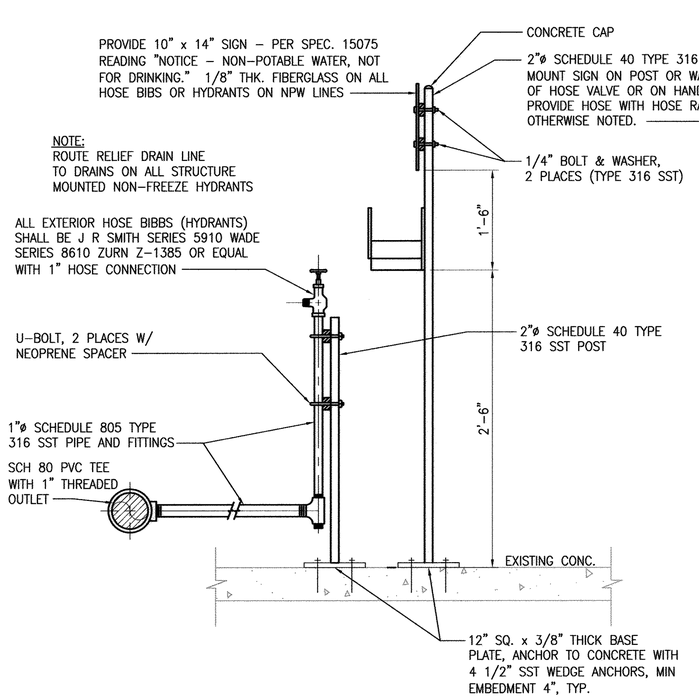
DWG: S:\JOB\100-041\CAD (phase III)\PhaseIII_S2268-DP2.dwg USER: kbedford
DATE: Nov 08, 2007 3:21pm XREFS: S2268BOR



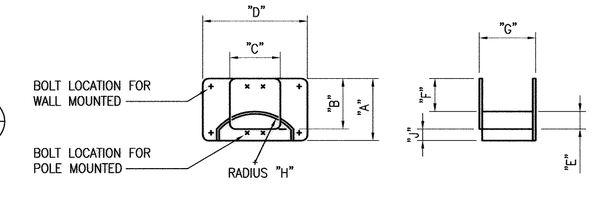
EQUIPMENT PAD DETAIL 3
NOT TO SCALE



WATER TRAP DETAIL 4
NOT TO SCALE



EXTERIOR NON-FREEZE HOSE VALVE & SIGN 2
NOT TO SCALE



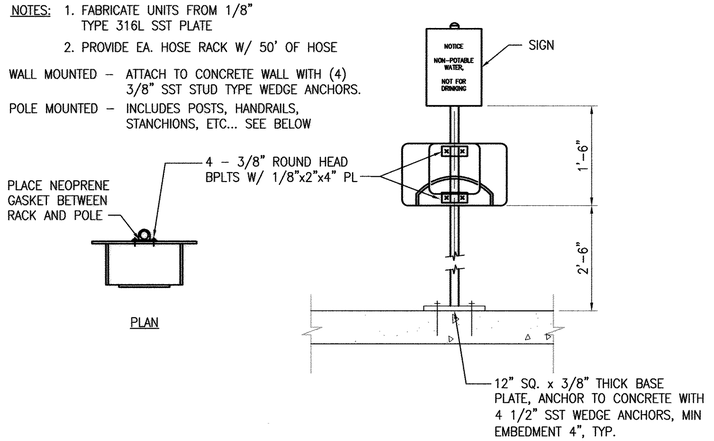
DIMENSIONS								
A	B	C	D	E	F	G	H	J
10 1/2"	9"	9"	18"	3"	6"	7 1/2"	9 3/4"	1 1/2"

NOTES: 1. FABRICATE UNITS FROM 1/8" TYPE 316L SST PLATE

2. PROVIDE EA. HOSE RACK W/ 50' OF HOSE

WALL MOUNTED – ATTACH TO CONCRETE WALL WITH (4) 3/8" SST STUD TYPE WEDGE ANCHORS.

POLE MOUNTED – INCLUDES POSTS, HANDRAILS, STANCHIONS, ETC... SEE BELOW



HOSE RACK DETAIL 6
NOT TO SCALE

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APPROVAL:	DATE:	DRAWN BY: DTG
APPROVAL:	DATE:	CHECKED BY:
		DATE: AUGUST 2005

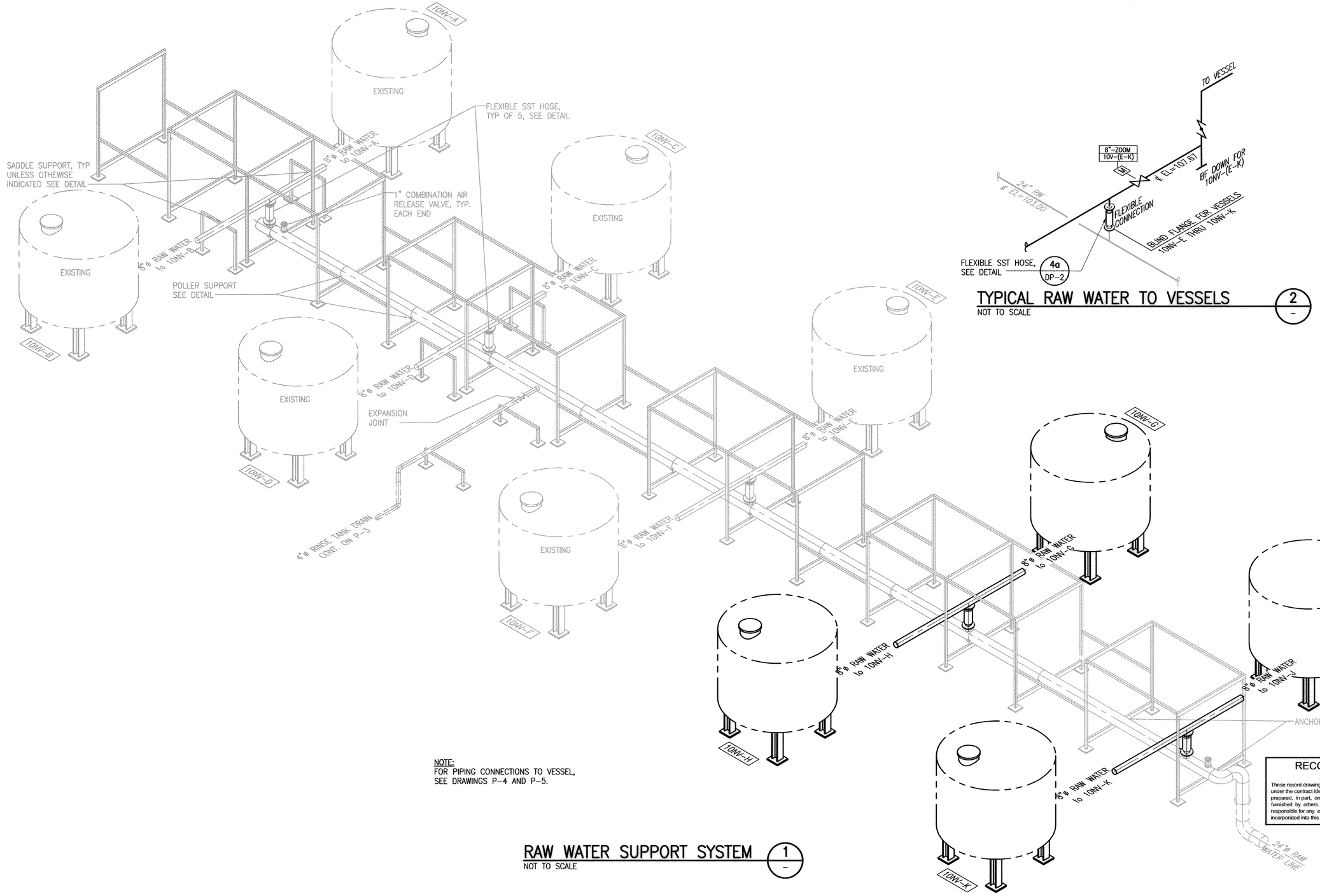
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
MISCELLANEOUS DETAIL SHEET

DRAWING NO: DP-3
SHEET NO: 19 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JPA\100-04\CAD (phase III)\PlanSet\S2268-DP3.dwg USER: kbedford
DATE: Nov 08, 2007 3:22pm XREFS: S2268BDR



NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4 AND P-5.

RAW WATER SUPPORT SYSTEM (1)
NOT TO SCALE

TYPICAL RAW WATER TO VESSELS (2)
NOT TO SCALE

RECORD DRAWING
Date: 08-23-07

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DESIGN BY: CJM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

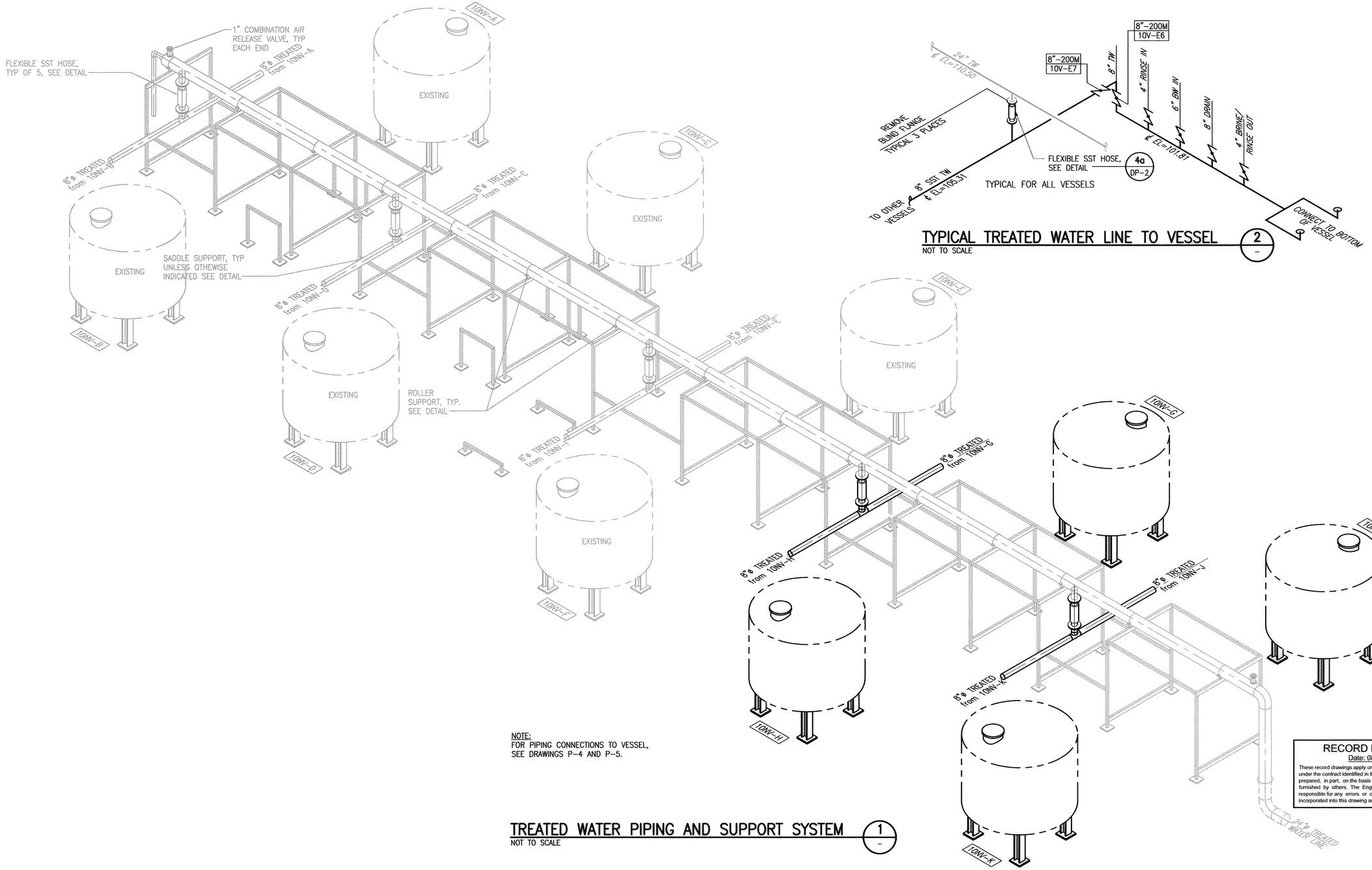
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
RAW WATER SCHEMATIC

DRAWING NO: DP-4
SHEET NO: 20 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\CAD\100-04\CAD (phase III)\PlotSet\S2268-DP4.dwg USER: kbedford
DATE: Nov 08, 2007 3:22pm XREFS: S2268BDR



NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4 AND P-5.

TREATED WATER PIPING AND SUPPORT SYSTEM

NOT TO SCALE

1

RECORD DRAWING
Date: 08-23-07

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APPROVAL: DATE:

DESIGN BY: CJM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

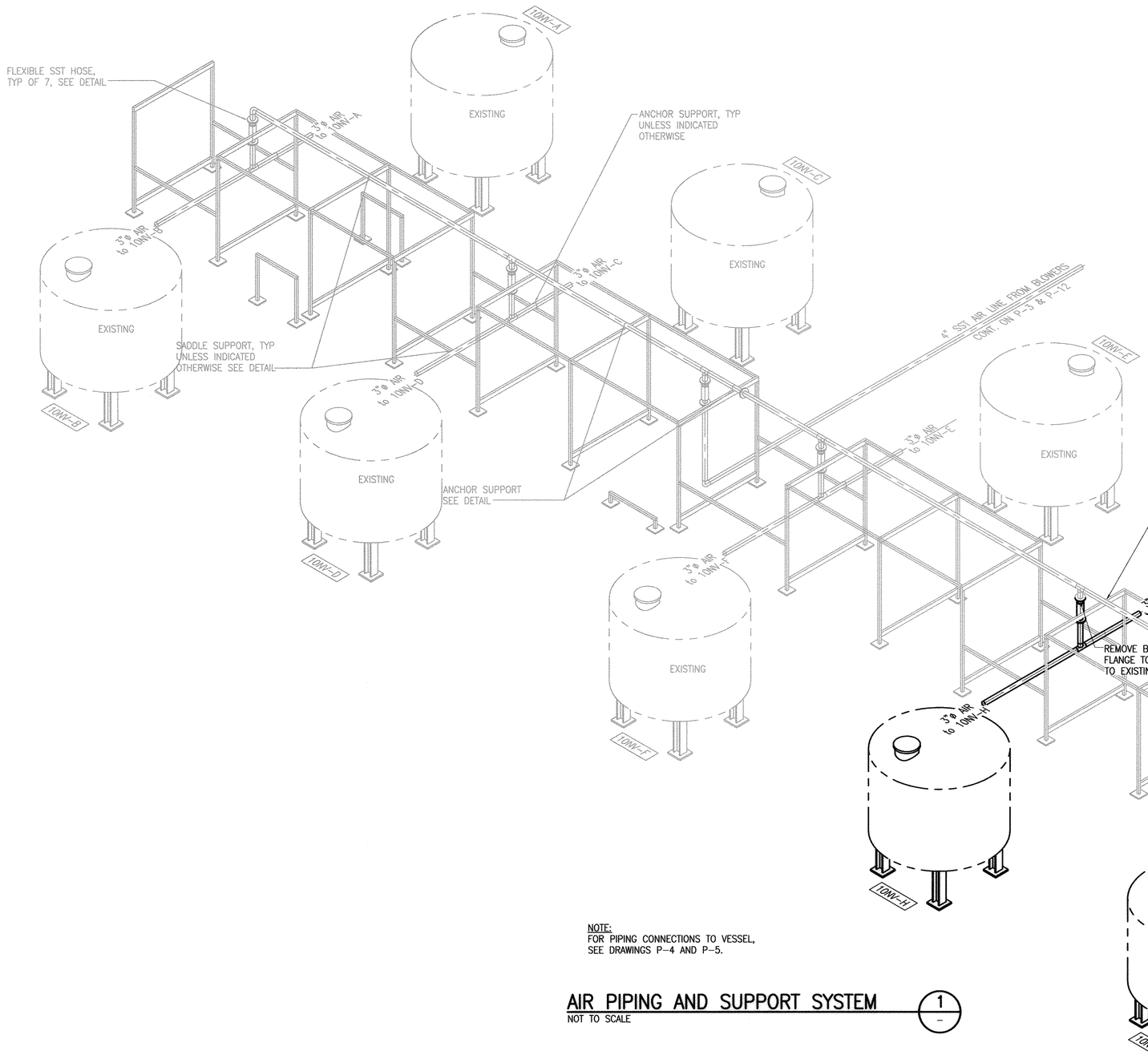
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
TREATED WATER SCHEMATIC

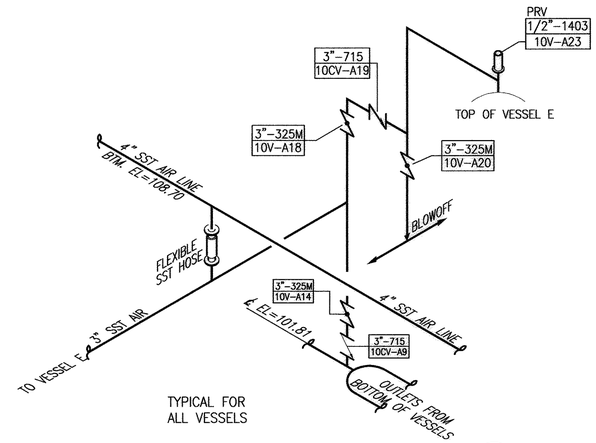
DRAWING NO: DP-5
SHEET NO: 21 OF 48 SHEETS
FILE NO: S-2268

DWG: S:_DP\ 100-DP\ CAD (phase III)\ ProSet\ S2268-DP5.dwg USER: kbedford
DATE: Nov 08, 2007 3:23pm XREFS: S2268BDR



NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4 AND P-5.

AIR PIPING AND SUPPORT SYSTEM (1)
NOT TO SCALE



TYPICAL AIR PIPING TO VESSELS (2)
NOT TO SCALE

RECORD DRAWING
Date: 08-23-07

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APPROVAL: DATE:
APPROVAL: DATE:

DESIGN BY: CJM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

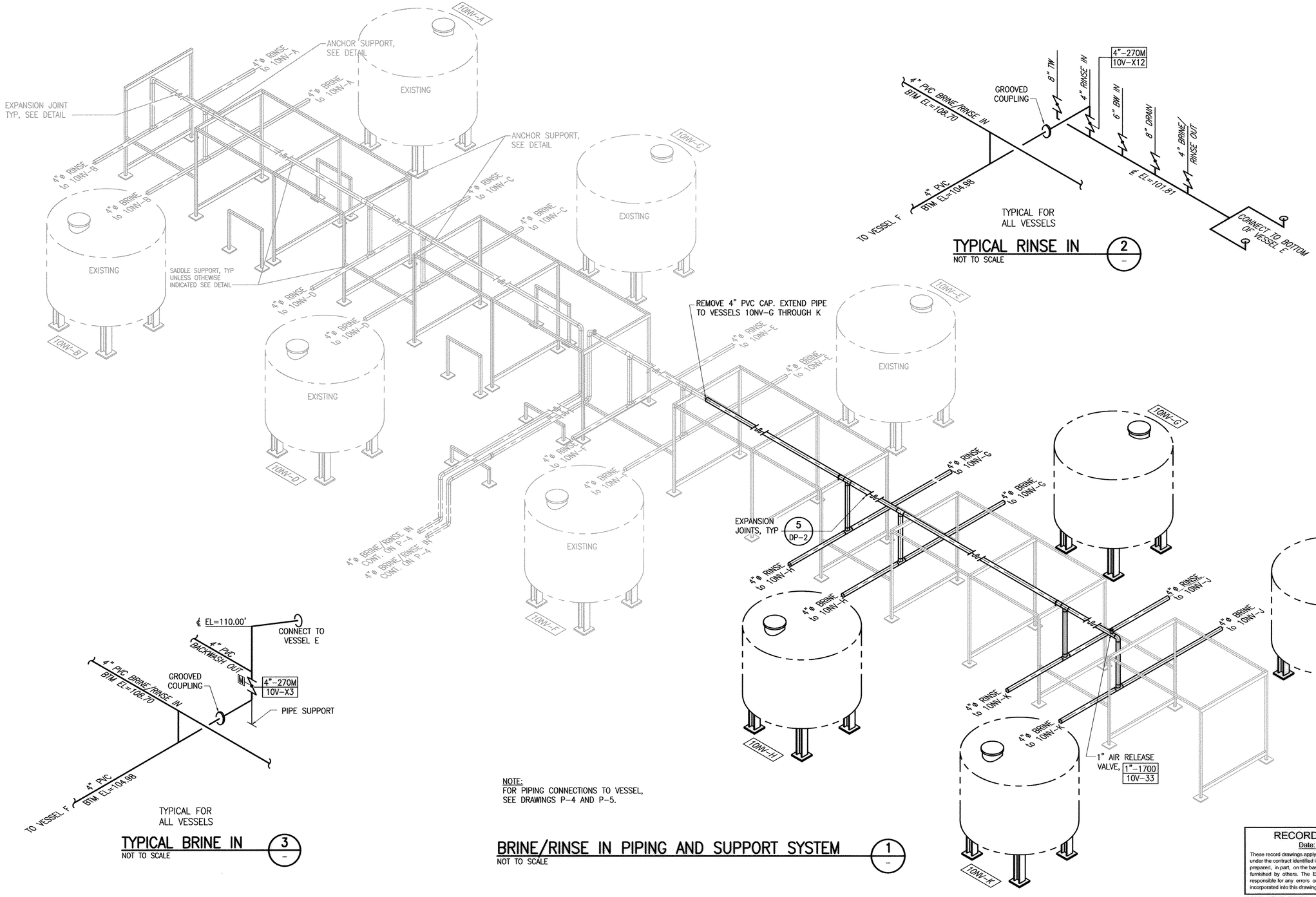
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
AIR LINE SCHEMATIC

DRAWING NO: DP-6
SHEET NO: 22 of 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\120-04\CAD (phase III)\ProSet\S2268-dp6.dwg USER: rbedford
DATE: Nov 08, 2007 12:24pm XREFS: S2268BDR



TYPICAL RINSE IN — 2

NOT TO SCALE

TYPICAL BRINE IN — 3

NOT TO SCALE

NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4 AND P-5.

BRINE/RINSE IN PIPING AND SUPPORT SYSTEM — 1

NOT TO SCALE

RECORD DRAWING
Date: 08-23-07

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VERIFY SCALES
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APPROVAL:	DATE:
APPROVAL:	DATE:
APPROVAL:	DATE:

DESIGN BY: LRM
DRAWN BY: DTG
CHECKED BY:
DATE: AUGUST 2005

REV	DATE	DESCRIPTION	APP

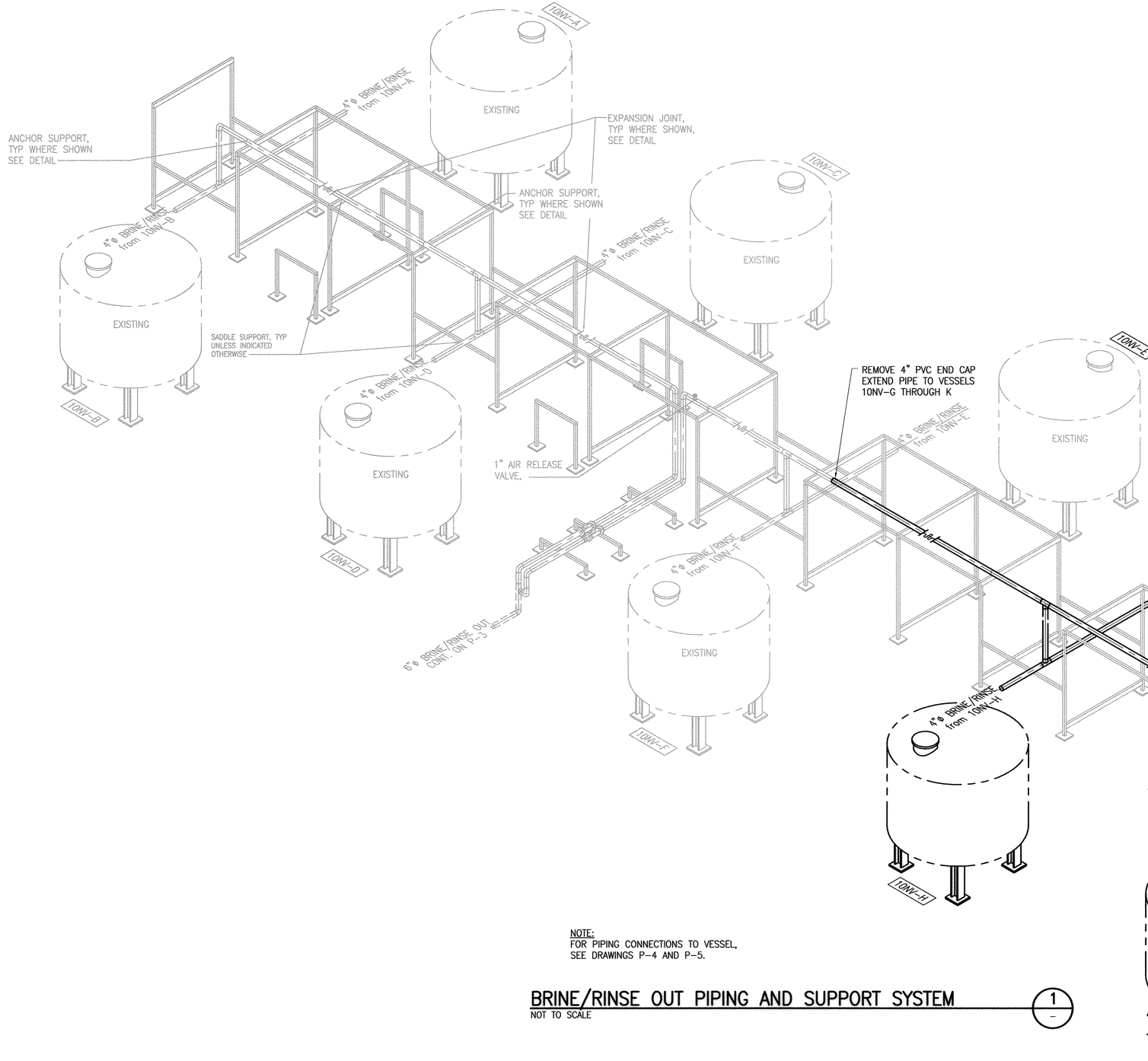
BOYLE ENGINEERING CORPORATION

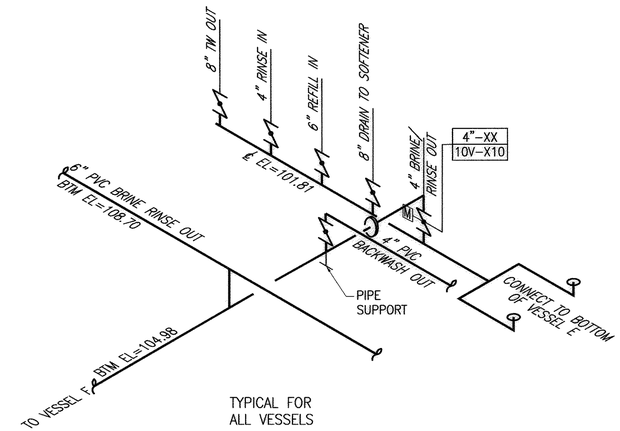
JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III

BRINE/RINSE IN SCHEMATIC

DRAWING NO: DP-7
SHEET NO: 23 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\DP\100-DP\CAD (phase III)\PlanSet\S2268-DP7.dwg USER: lbedford
DATE: Nov 08, 2007 3:25pm XREFS: S2268BR





TYPICAL FOR ALL VESSELS

TYPICAL BRINE/RINSE OUT — 2

NOT TO SCALE

NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4 AND P-5.

BRINE/RINSE OUT PIPING AND SUPPORT SYSTEM — 1

NOT TO SCALE

RECORD DRAWING
Date: 08-23-07
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VERIFY SCALES
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APPROVAL:	DATE:	DRAWN BY: DTG
APPROVAL:	DATE:	CHECKED BY:
		DATE: AUGUST 2005

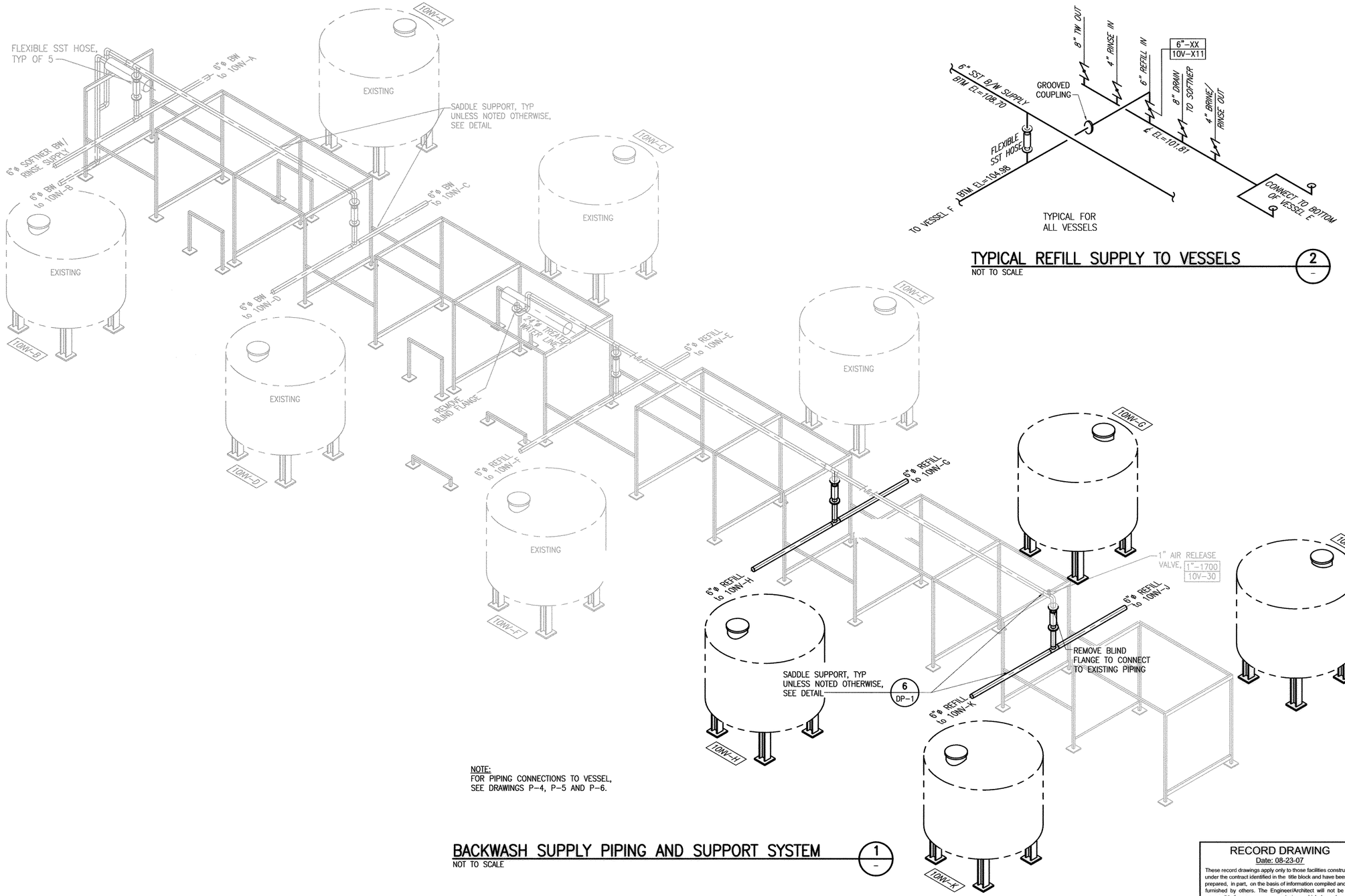
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
BRINE/RINSE OUT SCHEMATIC

DRAWING NO: DP-8
SHEET NO: 24 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JP41\100-041\CAD (phase II)\PlotSet\S2268-DP8.dwg USER: kbedford
DATE: Nov 08, 2007 - 12:26am XREFS: S2268BDR



TYPICAL REFILL SUPPLY TO VESSELS

NOT TO SCALE

2 / –

NOTE:
FOR PIPING CONNECTIONS TO VESSEL, SEE DRAWINGS P-4, P-5 AND P-6.

BACKWASH SUPPLY PIPING AND SUPPORT SYSTEM

NOT TO SCALE

1 / –

RECORD DRAWING
Date: 08-23-07

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DWG: S:\04\100-04\CAD (phase III)\PlanSet\S2268-DP9.dwg USER: kbedford
DATE: Nov 08, 2007 3:30pm XREFS: S2268BOR

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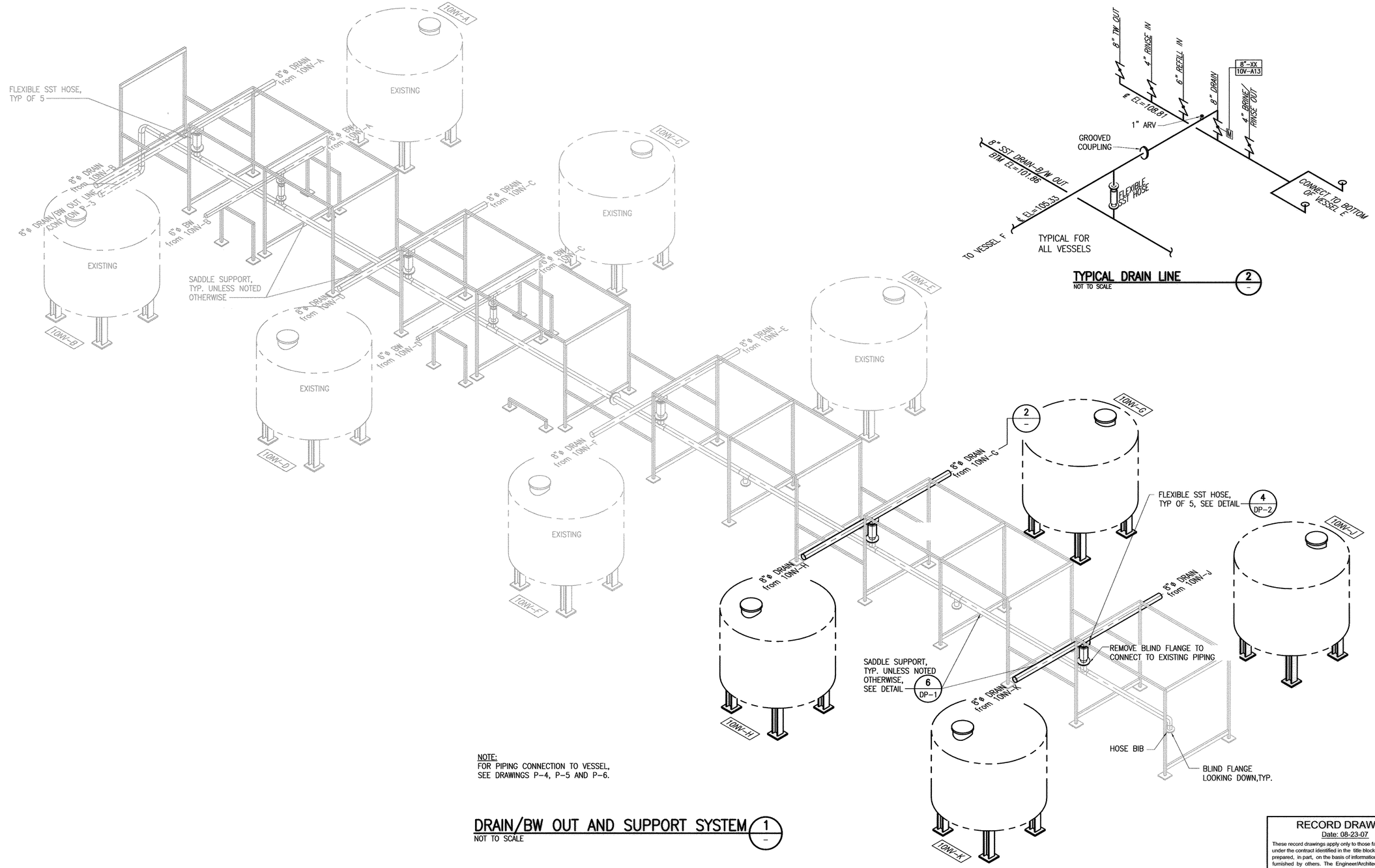
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III

REFILL SUPPLY SCHEMATIC

DRAWING NO: DP-9
SHEET NO: 25 of 48 SHEETS
FILE NO: S-2268



TYPICAL DRAIN LINE (2)
NOT TO SCALE

NOTE:
FOR PIPING CONNECTION TO VESSEL, SEE DRAWINGS P-4, P-5 AND P-6.

DRAIN/BW OUT AND SUPPORT SYSTEM (1)
NOT TO SCALE

RECORD DRAWING
Date: 08-23-07
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APPROVAL:	DATE:	DRAWN BY: DTG
APPROVAL:	DATE:	CHECKED BY:
		DATE: AUGUST 2005

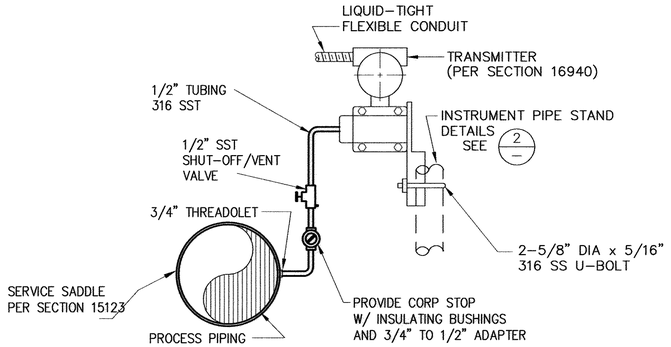
REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
DRAIN/BW OUT SCHEMATIC

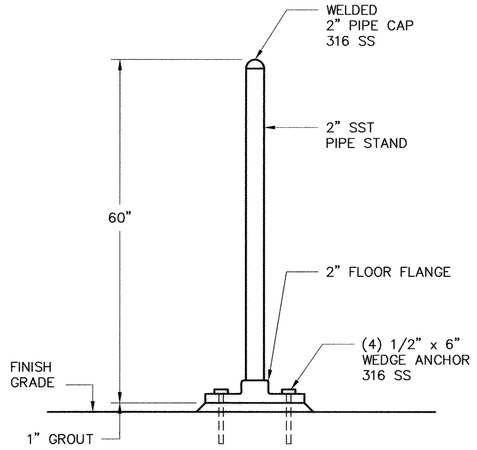
DRAWING NO: DP-10
SHEET NO: 26 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JOA\100-04\CAD (phase III)\PlanSet\S2268-DP10.dwg USER: kkesford
DATE: Nov 08, 2007 3:31pm XREFS: S2268BOR



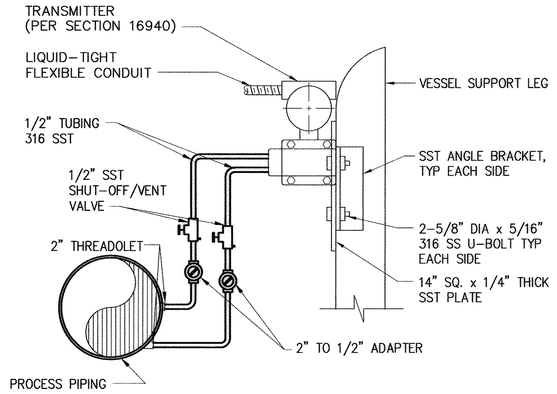
PRESSURE INDICATING TRANSMITTER 1 –

NTS



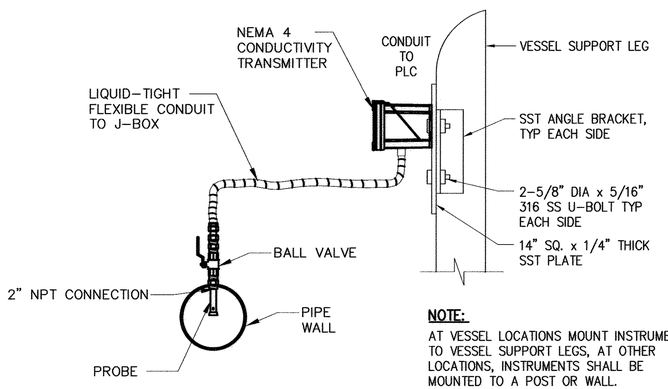
INSTRUMENT PIPE STAND 2 –

NTS



DIFFERENTIAL PRESSURE INDICATING TRANSMITTER 3 –

NTS



NOTE:

AT VESSEL LOCATIONS MOUNT INSTRUMENTS TO VESSEL SUPPORT LEGS, AT OTHER LOCATIONS, INSTRUMENTS SHALL BE MOUNTED TO A POST OR WALL.

CONDUCTIVITY SENSORS 4 –

NTS

RECORD DRAWING
Date: 08-23-07

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APPROVAL:	DATE:
APPROVAL:	DATE:

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CHECKED BY:
DATE: AUGUST 2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
ION EXCHANGE WATER TREATMENT PLANT – PHASE III
INSTRUMENT MOUNTING DETAILS

DRAWING NO: DP-12
SHEET NO: 27 OF 48 SHEETS
FILE NO: S–2268

DWG: S:\JPA\100-04\CAD (phase III)\ProSet\S2268-DP12.dwg
DATE: Nov 08, 2007 3:41pm
USER: kbedford
XREFS: S2268BDR

ELECTRICAL SYMBOLS – SINGLE LINE DIAGRAM

	POWER TRANSFORMER
100A / 3P	CIRCUIT BREAKER 100A=TRIP RATING IN AMPS 3P=NUMBER OF POLES
30A / MCP	MOTOR CIRCUIT PROTECTOR 30A=CONTINUOUS–CURRENT RATING
	FUSE
10	MOTOR, 10 HORSEPOWER
	LIGHTNING ARRESTER
	GROUND
△	DELTA CONNECTION
Y	WYE CONNECTION
1	MOTOR CONTROL CENTER CUBICLE REFERENCE

ELECTRICAL SYMBOLS – PLANS

	DUPLEX RECEPTACLE *
J	JUNCTION BOX, UON
HH	HANDHOLE, 11"x17"x12"D, UON OR AS REQUIRED BY NEC.
PB	PULLBOX, 24"X36"X30"D, UON OR AS REQUIRED BY NEC.
	NON–FUSED SWITCH, 30A, 3P U.O.N.
	[SUPPORT CHANNEL

ELECTRICAL SYMBOLS – PLANS CONT.

01	CONDUIT DESIGNATION, SEE CONDUIT SCHEDULE.
	CONDUIT CONCEALED IN WALLS OR CEILINGS
	CONDUIT IN SLAB OR UNDER GROUND
	QUANTITY #12 WIRE, 2#12 IF NO SLASHES SHOWN. UON (PROVIDE ONE GROUND CONDUCTOR OF SAME SIZE, NOT SHOWN IN COUNT.)
#10 / #10	WIRE SIZE OTHER THAN #12 (PROVIDE ONE GROUND CONDUCTOR OF SAME SIZE, NOT SHOWN IN COUNT.)
G	GROUNDING CONDUCTOR 30" BELOW GRADE
G	EXOTHERMIC WELD CONNECTION
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT STUB–OUT AND CAPPED
	FLEXIBLE CONDUIT CONNECTION
	MOTOR CONNECTION
	GROUND WELL
	PANELBOARD
	SEE NOTE INDICATED
+12"	INDICATES HEIGHT FROM FINISHED FLOOR GRADE TO CENTERLINE OF DEVICE
*	+ 12" UON
**	+ 48" UON

ELECTRICAL ABBREVIATIONS

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AMPS	AMPERES
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CB	CIRCUIT BREAKER
CEC	CALIFORNIA ELECTRICAL CODE
CKT	CIRCUIT
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
DB	DIRECT BURIED
DWG	DRAWING
ELEV	ELEVATION
ENCL	ENCLOSED
ETM	ELAPSED TIME METER
(E)	EXISTING
FLEX	FLEXIBLE
G, GND	GROUND
GFI	GROUND FAULT INTERRUPTER
HH	HANDHOLE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HZ	HERTZ
ICP	INSTRUMENT CONTROL PANEL
JB	JUNCTION BOX
KA	KILOAMPERES
KAICS	KILOAMPERES INTERRUPTING CAPACITY, SYMMETRICAL
kcmil	THOUSAND CIRCULAR MILS
KVA	KILOVOLT–AMPERE
KW	KILOWATT
LA	LIGHTNING ARRESTER
LTG	LIGHTING
LOS	LOCKOUT STOP PUSHBUTTON
LS	LIMIT SWITCH
MA	MILLIAMPERE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MIN	MINIMUM
MTD	MOUNTED
MTG	MOUNTING
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OL'S	MOTOR OVERLOAD CONTACTS
P	POLE
PB	PUSHBUTTON, PULLBOX
PH	PHASE
POC	POINT OF CONNECTION
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
REC	RECEPTACLE
REQ'D	REQUIRED
SHT	SHEET
STD	STANDARD
SW	SWITCH
TB	TERMINAL BOARD
TEMP	TEMPERATURE
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TYP	TYPICAL
UG	UNDERGROUND
UGPS	UNDERGROUND PULL SECTION
UON	UNLESS OTHERWISE NOTED
V	VOLT
W	WATT, WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
ø	PHASE

ELECTRICAL SYMBOLS – SCHEMATIC DIAGRAMS

NORMALLY OPEN	NORMALLY CLOSED	DEVICE
		CONTACT
		TIMED CONTACT CONTACT ACTION RETARDED ON ENERGIZATION
		PUSH BUTTON SINGLE CIRCUIT MOMENTARY CONTACT
		LIMIT SWITCH
		PRESSURE OR VACUUM SWITCH
HAND OFF AUTO		SELECTOR SWITCH
O/L'S		MOTOR OVERLOAD HEATER CONTACTS
		MOTOR OVERLOAD HEATER
A		PILOT LIGHT R=RED, W=WHITE, G=GREEN, A=AMBER
A		PILOT LIGHT, PUSH TO TEST R=RED, W=WHITE, G=GREEN, A=AMBER
R		RELAY
TD		TIME DELAY RELAY
M		STARTER COIL
ETM		ELAPSED TIME METER
		FUSE
		CONTROL POWER TRANSFORMER
		GROUND
		WIRING IN MOTOR STARTER
		FIELD WIRING
		WIRE TERMINAL IN MOTOR STARTER
PMR		PHASE MONITORING RELAY

CONDUIT FILL TABLE

MAXIMUM NUMBER OF CONDUCTORS IN TRADE SIZES OF CONDUIT OR TUBING

CONDUCTOR SIZE (AWG)	CONDUIT TRADE SIZE (INCHES)				
	3/4	1	1 1/4	1 1/2	2
14	15	24	42	60	99
12	12	16	32	42	78
10	8	12	24	32	56
8	4	6	12	16	24
6	–	4	7	10	16
4	–	3	5	7	12

RECORD DRAWING
Date: 08-23-07
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CHECKED BY: PT
DATE: 09/30/2005

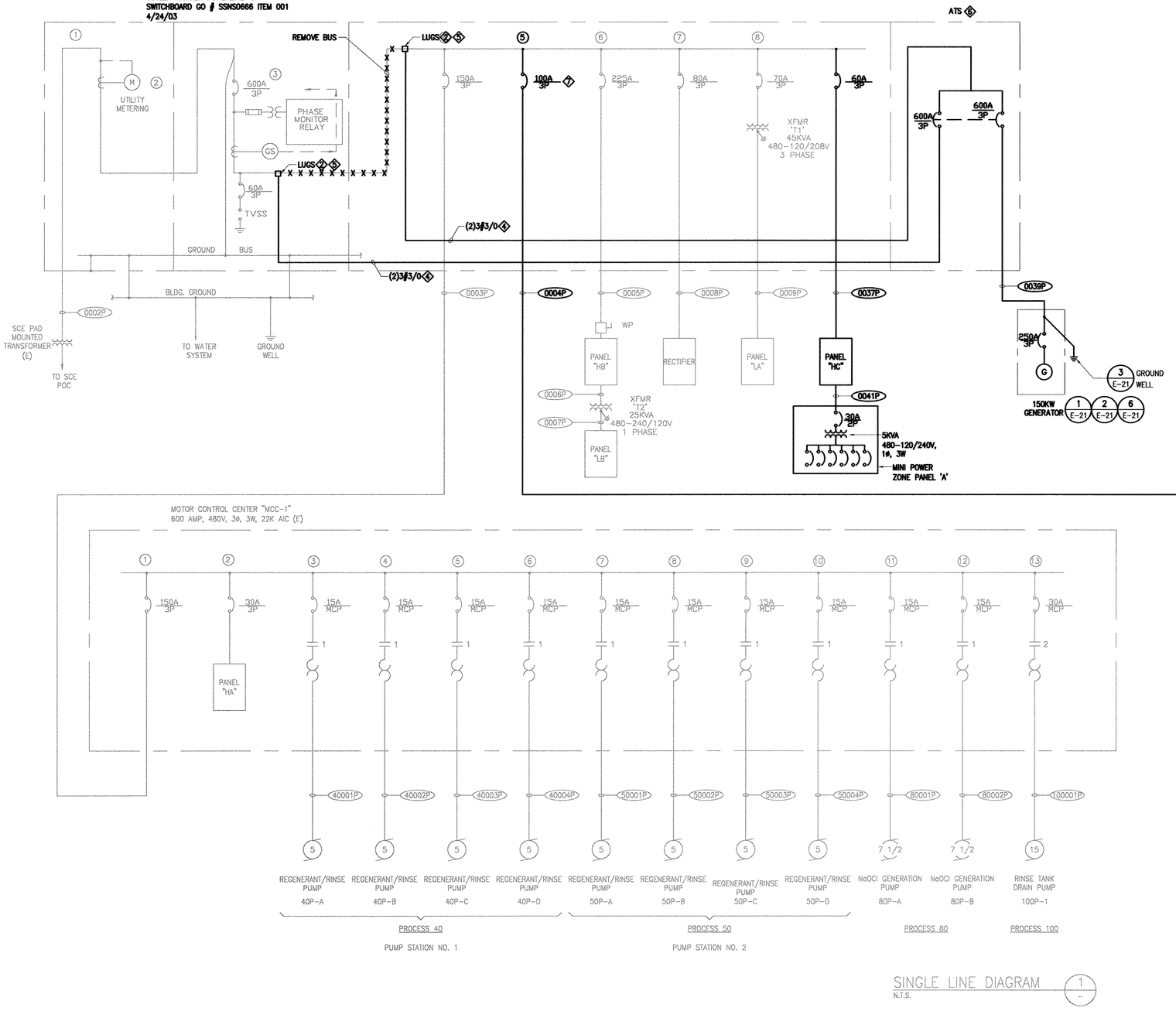
REV	DATE	DESCRIPTION	APP

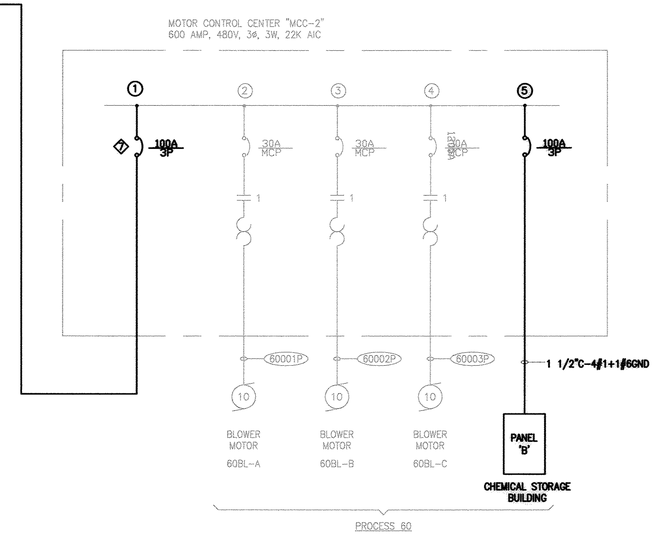
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
ELECTRICAL SYMBOLS AND ABBREVIATIONS

DRAWING NO: E–1
SHEET NO: 28 OF 48 SHEETS
FILE NO: S–2268

DWG: S:\JOA\100-04\CAD (prose II)\PlanSet\ELECTRICAL\S2268-E01.dwg USER: kbedford
DATE: Nov 08, 2007 3:45pm XREFS: BORDER





LOAD SUMMARY "MSB" (E)

LOAD	VOLTS	PHASE	CONNECTED HP	CONNECTED KVA	CONNECTED AMPS
MCC-1	460	3	.	99.2	
MCC-2	460	3	.	**59.4**	
PANEL "HB"	460	3	.	139.2	
RECTIFIER	460	3	.	44	
XFMR "T1"	460	3	.	45	
PANEL 'HC'	**460**	**3**	**.**	**18**	
TOTAL	460	3	.	**405**	**487**

LOAD SUMMARY "MCC-1" (E)

LOAD	VOLTS	PHASE	CONNECTED HP	CONNECTED KVA	CONNECTED AMPS
PANEL "HA"	460	3	.	16	
40P-A	460	3	5	6.1	
40P-B	460	3	5	6.1	
40P-C	460	3	5	6.1	
40P-D	460	3	5	6.1	
50P-A	460	3	5	6.1	
50P-B	460	3	5	6.1	
50P-C	460	3	5	6.1	
50P-D	460	3	5	6.1	
80P-A	460	3	7 1/2	8.8	
80P-B	460	3	7 1/2	8.8	
100P-A	460	3	15	16.8	
				.	
TOTAL	460	3		99.2	125

LOAD SUMMARY "MCC-2" (E)

LOAD	VOLTS	PHASE	CONNECTED HP	CONNECTED KVA	CONNECTED AMPS
60BL-A	460	3	10	11.2	
60BL-B	460	3	10	11.2	
60BL-C	460	3	*	*	
PANEL 'B'				**37**	
TOTAL	460	3	.	**59.4**	**71**

*** ONLY TWO BLOWERS CAN OPERATE SIMULTANEOUSLY. THE THIRD BLOWER IS STANDBY ONLY.**

NUMBER NOTES

1. TRANSFER SWITCH SHALL BE CIRCUIT-BREAKER TYPE AND SERVICE ENTRANCE RATED. LABEL "SERVICE DISCONNECT."
2. PROVIDE LUGS RATED FOR NEW CABLES.
3. VERIFY PAD SIZE REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
4. RUN CABLES WITHIN THE MOTOR CONTROL CENTER AND MAIN SWITCHBOARD.
5. THE REMOVAL OF THE EXISTING BUS AND INSTALLATION OF LUGS SHALL BE DONE BY AN INSTALLER THAT IS APPROVED BY THE SWITCHGEAR MANUFACTURER.
6. MOUNT ATS WITHIN EXISTING NEMA 3R ENCLOSURE.
7. REPLACE EXISTING BREAKER WITH NEW.

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

SINGLE LINE DIAGRAM
N.T.S.

1 / –

RECORD DRAWING
Date: 08-23-07

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		DATE: 09/30/2005

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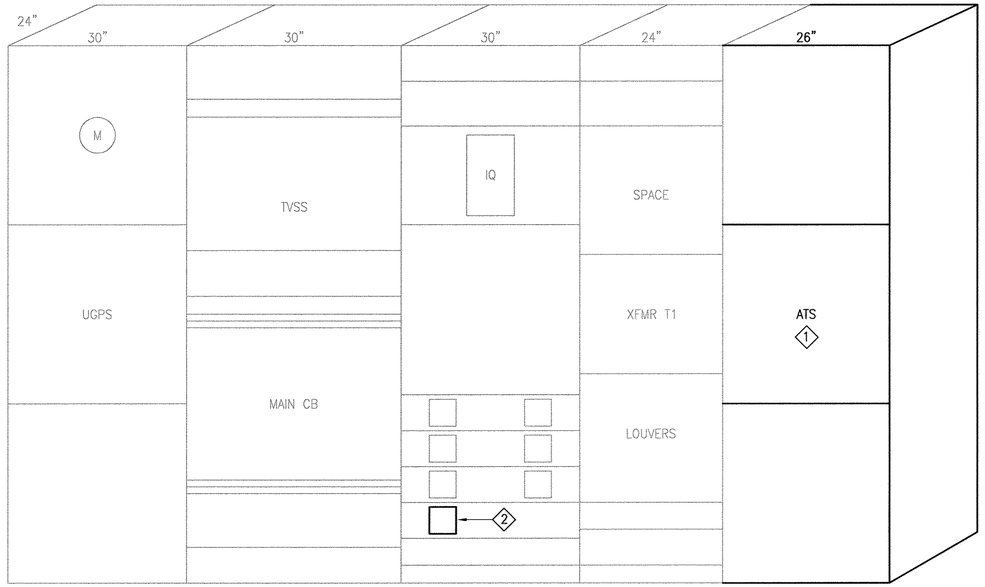
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
SINGLE LINE DIAGRAM

DRAWING NO: E-2
SHEET NO: 29 OF 48 SHEETS
FILE NO: S-2268

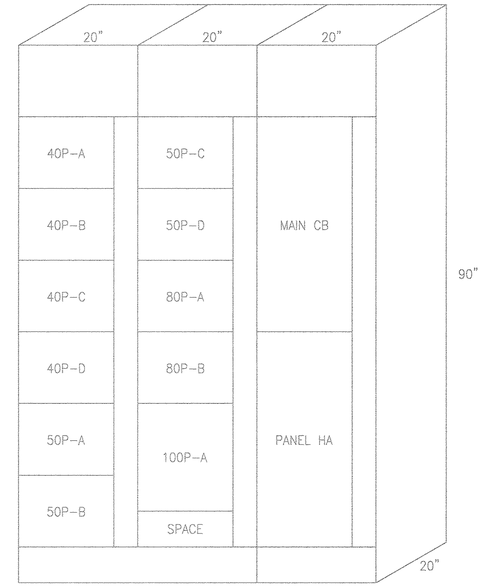
DWG: S:\JOA\100-04\CAD (phase III)\PlanSet\ELECTRICAL\S2268-E02.dwg USER: kbedford
DATE: Nov 08, 2007 3:46pm XREFS: BORDER



MAIN SWITCHBOARD "MSB" ELEVATION (E)

1

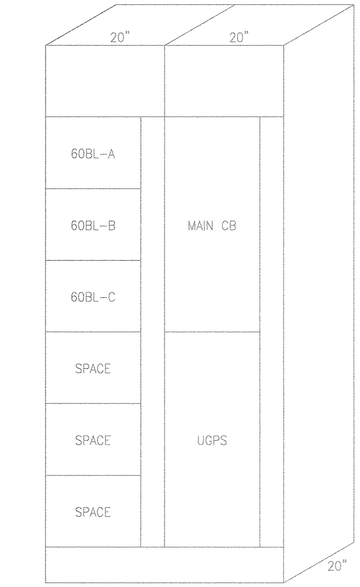
N.T.S.



MOTOR CONTROL CENTER "MCC-1" ELEVATION (E)

2

N.T.S.



MOTOR CONTROL CENTER "MCC-2" ELEVATION (E)

3

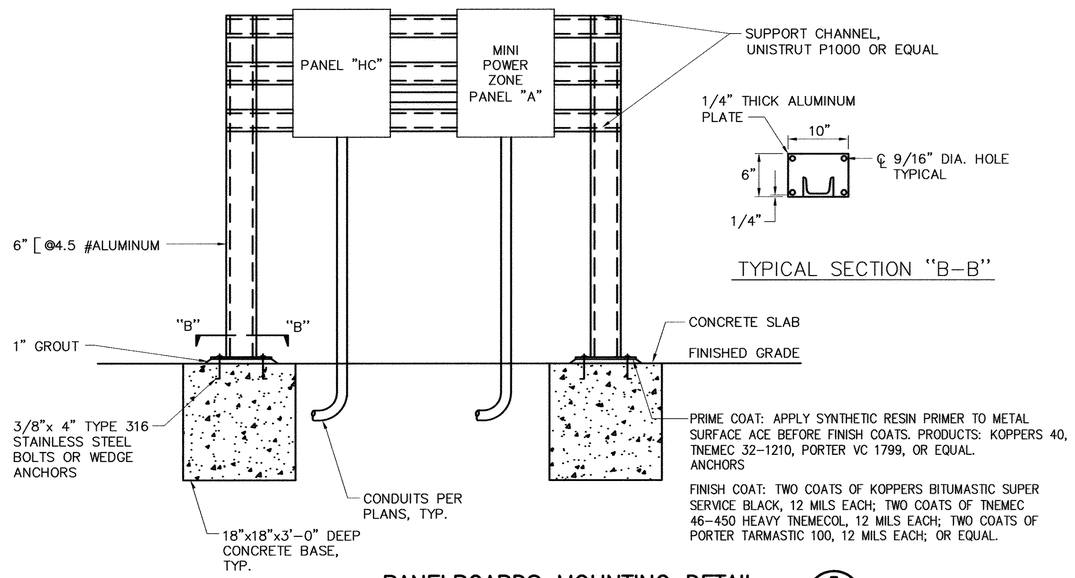
N.T.S.

NOTES:

1. MOUNT ATS IN EXISTING NEMA 3R ENCLOSURE.
2. CIRCUIT BREAKER FOR PANEL 'HC'

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT



TYPICAL SECTION "B-B"

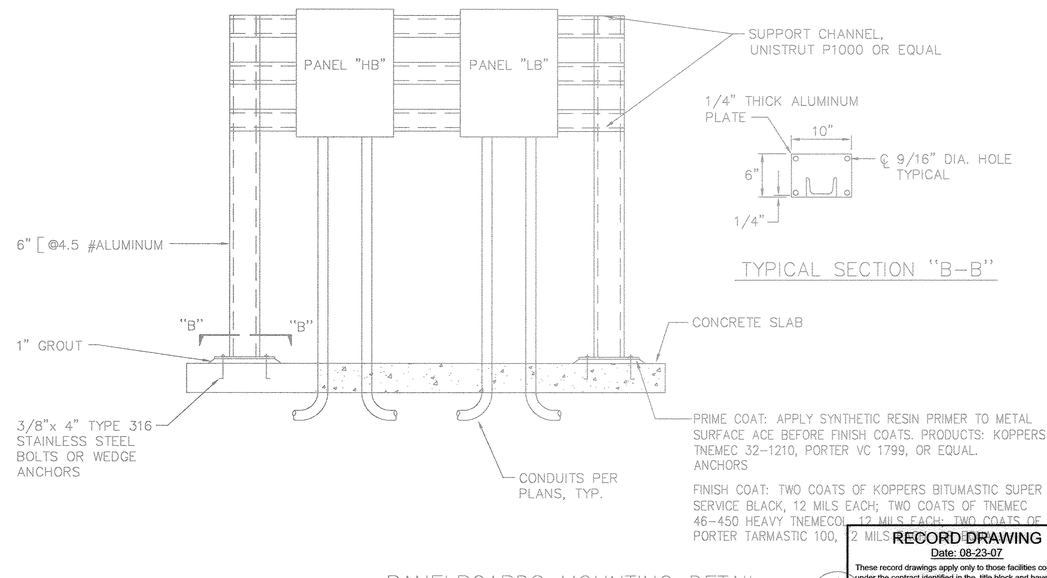
PRIME COAT: APPLY SYNTHETIC RESIN PRIMER TO METAL SURFACE ACE BEFORE FINISH COATS. PRODUCTS: KOPPERS 40, TNEMEC 32-1210, PORTER VC 1799, OR EQUAL. ANCHORS

FINISH COAT: TWO COATS OF KOPPERS BITUMASTIC SUPER SERVICE BLACK, 12 MILS EACH; TWO COATS OF TNEMEC 46-450 HEAVY TNEMECOL, 12 MILS EACH; TWO COATS OF PORTER TARMASTIC 100, 12 MILS EACH; OR EQUAL.

PANELBOARDS MOUNTING DETAIL

5

SCALE: NONE



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PANELBOARDS MOUNTING DETAIL

4

SCALE: NONE

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DESIGN BY: CU/JL
DRAWN BY: RH
CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

EQUIPMENT ELEVATIONS

DRAWING NO: E-3
SHEET NO: 30 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\CAD\100-CAD (phase #)\PondSet\ELECTRICAL\S2268-E03.dwg USER: kbedford
DATE: Nov 08, 2007 3:46pm
XREFS: BORDER

NAMEPLATE HA — MTG. IN MCC — MAIN LUGS ONLY
BUS:AMPS 225A — VOLTS 480 VOLTS, 3ø, 3W

	WATTAGE A	WATTAGE B	WATTAGE C	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 14KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	WATTAGE C	
ACTUATORS VESSEL 20SV-A	1600			.	.	6	1 2	.	.	6	1600			ACTUATORS VESSEL 20SV-B
(JB-20-P)		1600		.	.	.	3 4	.	.	.		1600		. (JB-20-P)
.			1600	.	.	.	5 6	.	.	.			1600	.
SPARE	.			.	.	.	7 8	.	.	4	1068			ACTUATOR PROCESS 100 & 30
.	.			.	.	.	9 10	.	.	.		1068		(100V-1) (30V-B1 & C1)
.		.		.	.	.	11 12	.	.	.			1068	(30V-A1)
ACTUATORS PROCESS 40	533			.	.	2	13 14	.	.	1	267			ACTUATOR PROCESS 70
(40V-A1 & B1)		533		.	.	.	15 16	.	.	.		267		(70V-3)
.			533	.	.	.	17 18	.	.	.			267	.
ACTUATORS PROCESS 50	533			.	.	2	19 20	.	.	.	.			SPARE
(50V-A1 & B1)		533		.	.	.	21 22	.	.	.		.		SPARE
.			533	.	.	.	23 24	.	.	.			.	SPARE
ACTUATOR PROCESS 20	267			.	.	1	25 26	.	.	.	.			SPARE
(20V-3)		267		.	.	.	27 28	.	.	.		.		SPARE
.			267	.	.	.	29 30	.	.	.			.	SPARE
SPACE	.			.	.	.	31 32	.	.	.	.			SPACE
SPACE		.		.	.	.	33 34	.	.	.		.		SPACE
SPACE			.	.	.	.	35 36	.	.	.			.	SPACE
SPACE	.			.	.	.	37 38	.	.	.	.			SPACE
SPACE		.		.	.	.	39 40	.	.	.		.		SPACE
SPACE			.	.	.	.	41 42	.	.	.			.	SPACE
TOTAL LOAD	3,200	3,200	3,200								2,935	2,935	2,935	TOTAL LOAD

18 KW + LCL . KW= 18 KW AT 480 VOLTS 3PH= 22 AMPS

NAMEPLATE HB — MTG. SURFACE — MAIN 225A 3P
BUS:AMPS 225A — VOLTS 480 VOLTS, 3ø, 3W

	WATTAGE A	WATTAGE B	WATTAGE C	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 14KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	WATTAGE C	
ACTUATORS VESSEL 10NV-A	4000			.	.	15	1 2	.	.	15	4000			ACTUATORS VESSEL 10NV-C
(JB-10A-P)		4000		.	.	.	3 4	.	.	.		4000		(JB-10C-P)
.			4000	.	.	.	5 6	.	.	.			4000	.
ACTUATORS VESSEL 10NV-B	4000			.	.	15	7 8	.	.	15	4000			ACTUATORS VESSEL 10NV-D
(JB-10B-P)		4000		.	.	.	9 10	.	.	.		4000		(JB-10D-P)
.			4000	.	.	.	11 12	.	.	.			4000	.
ACTUATORS VESSEL 10NV-E	3733			.	.	14	13 14	.	.	14	3733			ACTUATORS VESSEL 10NV-G
(JB-10E-P)		3733		.	.	.	15 16	.	.	.		3733		(JB-10G-P)
.			3733	.	.	.	17 18	.	.	.			3733	.
ACTUATORS VESSEL 10NV-F	3733			.	.	14	19 20	.	.	14	3733			ACTUATORS VESSEL 10NV-H
(JB-10F-P)		3733		.	.	.	21 22	.	.	.		3733		(JB-10H-P)
.			3733	.	.	.	23 24	.	.	.			3733	.
ACTUATORS VESSEL 10NV-J	3733			.	.	14	25 26	.	.	3	800			ACTUATORS PROCESS 60
(JB-10J-P)		3733		.	.	.	27 28	.	.	.		800		(60V-A1, B1 & C1)
.			3733	.	.	.	29 30	.	.	.			800	.
ACTUATORS VESSEL 10NV-K	3733			.	.	14	31 32	.	.	4	1067			ACTUATORS PROCESS 10
(JB-10K-P)		3733		.	.	.	33 34	.	.	.		1067		(10V-12, 15, 18 & 20)
.			3733	.	.	.	35 36	.	.	.			1067	.
XFMR "T2"	8500			.	.	1	37 70 38	.	.	.	.			SPARE
.		8500		.	.	.	39 40	.	.	.		.		SPARE
SPARE			.	.	.	.	41 42	.	.	.			.	SPARE
TOTAL LOAD	31,432	31,432	22,932								17333	17333	17333	TOTAL LOAD

138 KW + LCL . KW= 138 KW AT 480 VOLTS 3PH= 166 AMPS

NAMEPLATE LA — MTG. RECESSED — MAIN 125
BUS:AMPS 225A — VOLTS 120/208 VOLTS, 3ø, 4W

	WATTAGE A	WATTAGE B	WATTAGE C	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 10KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	WATTAGE C	
RECEPTACLES	900			.	5	.	1 2	9	.	.	832			INTERIOR LTG
RECEPTACLES		1080		.	6	.	3 4	4	.	.		280		EXTERIOR LTG
RECEPTACLES			720	.	4	.	5 6	6	.	.			480	INTERIOR LTG
RECEPTACLES	540			.	3	.	7 8	.	1	.	360			TEL. OUTLET
RECEPTACLES		360		.	2	.	9 10	.	.	1		500		PLC-1
RECEPTACLES			360	.	2	.	11 12	.	2	3			1200	30LIT001/002/003 PEROXIDE PUMP
CLORTEC PLC	4500			.	.	1	13 40 14	.	.	1	300			30LIT004
		4500		.	.	.	15 16	.	.	1		300		30LIT005
10AIT011			300	.	.	1	17 18	.	.	1			300	31LIT001
10AIT003	300			.	.	1	19 20	.	.	1	300			31LIT002
10AIT009		300		.	.	1	21 22	.	.	1		300		70LIT101
10AIT008			300	.	.	1	23 24	.	.	1			300	70LIT102
FUTURE	300			.	.	1	25 26	.	.	1	300			90LIT101
10AIT010		300		.	.	1	27 28	.	.	1		300		90LIT102
10CIT005			300	.	.	1	29 30	.	.	1			300	40CIT120
HP-1	3200			.	.	1	31 40* 32	.	.	1	300			50CIT120
		3200		.	.	1	33 34	.	.	1		1300		WATER HEATER
HP-2			3200	.	.	1	35 40* 36	.	.	2			600	10FIT-002/10FIT-005
	3200			.	.	.	37 38	.	.	1	500			ACTUATOR 10V-16
							39 40	.	.	1		500		ACTUATOR 10V-17
							41 42							
TOTAL LOAD	12,940	9,740	5180								2,892	3,480	3340	TOTAL LOAD

37.5 KW + LCL 1 KW= 38.5 KW AT 208 VOLTS 3PH= 112 AMPS

* PROVIDE HACR RATED CIRCUIT BREAKERS

NAMEPLATE MINI POWER ZONE 'A' (NEMA 3R) — MAIN 30A/2P
BUS:AMPS 100A — VOLTS 120/240 VOLTS, 1ø, 3W

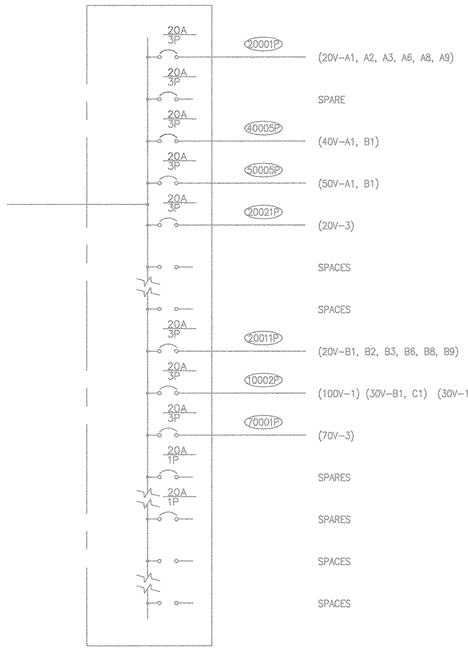
	WATTAGE A	WATTAGE B	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 10KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	
GENERATOR BATTERY CHARGER	1000		.	.	1	1 15 2	.	.	1	750		JACKET HEATER
30LIT001/30LIT002		600	.	.	2	3 4	.	.	.		750	
SPARE	.		.	.	.	5 6	.	.	.	.		SPARE
SPARE						7 8						SPARE
TOTAL LOAD	1000	600								750	750	TOTAL LOAD

3.1 KW + LCL 0 KW= 3.1 KW AT 240 VOLTS 1PH= 13 AMPS

NAMEPLATE LB — MTG. SURFACE — MAIN 100A
BUS:AMPS 225A — VOLTS 120/240 VOLTS, 1ø, 3W

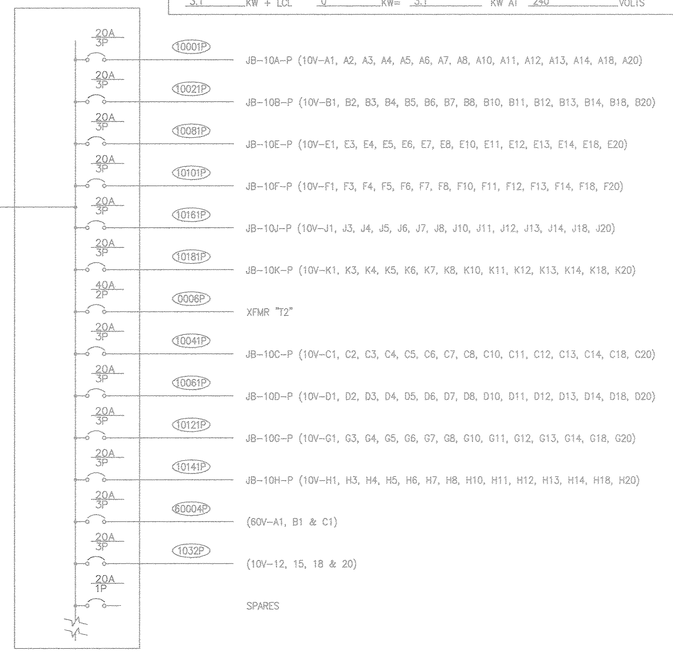
	WATTAGE A	WATTAGE B	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 10KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	
PLC-2	500		.	.	1	1 2	.	.	1	500		PLC-5
PLC-3		500	.	.	1	3 4	.	.	1		500	PLC-6
PLC-4	500		.	.	1	5 6	.	.	1	300		10CIT516
10CIT116		300	.	.	1	7 8	.	.	1		300	10CIT616
10CIT216	300		.	.	1	9 10	.	.	1	300		10CIT716
10CIT316		300	.	.	1	11 12	.	.	1		300	10CIT816
10CIT416	300		.	.	1	13 14	.	.	1	300		10CIT916
SITE LTG		500	2	.	.	15 16	.	.	1		300	10CIT1016
SITE LTG	500		2	.	.	17 18	4	.	.	1000		SITE LTG
SITE LTG		500	2	.	.	19 20	4	.	.		1000	SITE LTG
SITE LTG	1000		4	.	.	21 22	2	.	.	500		SITE LTG
SITE LTG		1000	4	.	.	23 24	.	.	5		1500	FITS
SITE LTG	500		2	.	.	25 26	.	.	5	1500		FITS
SPARE		.	.	.	.	27 28	.	.	2		600	FITS
SPARE	.		.	.	.	29 30	.	.	5	1500		FITS
SPARE		.	.	.	.	31 32	.	.	4		1100	FITS, 10CIT101/10CIT102
SPACE	.		.	.	.	33 34	.	.	.	.		SPACE
SPACE		.	.	.	.	35 36	.	.	.		.	SPACE
SPACE	.		.	.	.	37 38	.	.	.	.		SPACE
SPACE		.	.	.	.	39 40	.	.	.		.	SPACE
TOTAL LOAD	3,600	3,100								5,900	5,600	TOTAL LOAD

18 KW + LCL 1 KW= 19 KW AT 240 VOLTS 1PH= 80 AMPS



225A BUSBARS, 3ø, 3W, 480V, 14KAICS

PANEL "HA" N.T.S. 1



225A BUSBARS, 3ø, 3W, 480V, 14KAICS

PANEL "HB" N.T.S. 2

NAMEPLATE HC — ENC. NEMA 3R — MAIN 60A/3P
BUS:AMPS 100A — VOLTS 480 VOLTS, 3ø, 3W

	WATTAGE A	WATTAGE B	WATTAGE C	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	20A/1P C/B'S 14KAIC UON	OUTLETS LTG	OUTLETS REC	OUTLETS MISC	WATTAGE A	WATTAGE B	WATTAGE C	
ACTUATOR 31V-A1, 31V-B2	534			.	.	2	1 20 20 2	.	.	.	2500			MINI POWER ZONE 'A'
		534		.	.	.	3 4	.	.	.		2500		
			534	.	.	.	5 6	.	.	.			.	SPARE
SPARE	.			.	.	.	7 8	.	.	.	.			SPARE
BUSSED SPACE		.		.	.	.	9 10	.	.	.		.		BUSSED SPACE
			.	.	.	.	11 12	.	.	.			.	
	.			.	.	.	13 14	.	.	.	.			
		.		.	.	.	15 16	.	.	.		.		
			.	.	.	.	17 18	.	.	.			.	
	.			.	.	.	19 20	.	.	.	.			
TOTAL LOAD	5,000	5,000	.								2,500	2,500	.	TOTAL LOAD

5 KW + LCL 0 KW= 5 KW AT 480 VOLTS 3PH= 6 AMPS

RECORD DRAWING
Date: 08-23-07
These record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

DWG: S:\JOA\100-CA\CAD (phase III)\PureSoft ELECTRICAL\S2268-E04.dwg USER: kbedford
DATE: Nov 08, 2007 3:47pm XREFS: BORDER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

APPROVAL: DATE:
APPROVAL: DATE:
APPROVAL: DATE:

DESIGN BY: CU/JL
DRAWN BY: DD
CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP
1	2/27/06	ADDENDUM 2	
2	8/31/06	CHANGE ORDER 1.1	
3	3/01/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
CONDUIT SCHEDULES

DRAWING NO. E-4 — SHEET NO. 31 OF 48 SHEETS
FILE NO: S-2268

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
0001P	4"	CO	.	SCE POC	SCE TRANSFORMER	CONDUCTORS BY SCE
0002P	(2) 5"	CO	.	SCE TRANSFORMER	"MSB"	CONDUCTORS BY SCE
0003P	2"	3#1/0+1#6 GND	.	"MSB"	MCC-1	
0004P	**1 1/4"**	**3#1+1#6 GND**	**.**	**"MSB"**	**MCC-2**	**REUSE EXISTING CONDUIT. PULL OUT EXISTING WIRE AND PULL NEW WIRE.**
0005P	2 1/2"	3#4/0+1#4 GND	.	"MSB"	PANEL "HB"	
0006P	1 1/4"	2#4	.	PANEL "HB"	XFMR "T2"	
0007P	2"	3#1/0+1#6 GND	.	XFMR "T2"	PANEL "LB"	
0008P	1 1/2"	3#2+1#8 GND	.	"MSB"	RECTIFIER	
0009P	2"	4#1/0+1#6 GND	.	"MSB"	PANEL "LA"	
0010	2"	.	.	PULL BOX	TELEPHONE CABINET	PACBELL
0011	2"	.	.	ANTENNA	PLC	
0021	2"	.	CO	PLC-1	PLC-6	
0022	2"	.	CO	PLC-2	PLC-3	
0023	2"	.	CO	PLC-3	PLC-4	
0024	2"	.	CO	PLC-4	PLC-5	
0025	2"	.	CO	PLC-5	PLC-6	
0026	1 1/2"C	.	4B#14	PLC-1	MCC-1	
0027	1 1/2"C	.	34#14	PLC-1	MCC-1	
0028	1"C	.	18#14	PLC-1	MCC-2	
0029	2"C	.	CO	PLC-1	CLORTEC PLC	
0031P	3/4"	2#12+1#12 GND		PANEL "LA"	PLC-1	
0032P	3/4"	2#12+1#12 GND		PANEL "LB"	PLC-2	
0033P	3/4"	2#12+1#12 GND		PANEL "LB"	PLC-3	
0034P	3/4"	2#12+1#12 GND		PANEL "LB"	PLC-4	
0035P	**3/4"**	**2#12+1#12 GND**		**PANEL "LB"**	**PLC-5**	**CONDUIT IS EXISTING**
0036P	**3/4"**	**2#12+1#12 GND**		**PANEL "LB"**	**PLC-6**	**CONDUIT IS EXISTING**
0037P	**1"**	**4#4+1#6 GND**		**"MSB"**	**PANEL "HC"**	**INTERCEPT EXISTING CONDUIT**
0038D	**1"**	**.**	**8#14**	**"ATS"**	**GENERATOR**	**START/STOP SIGNAL (6#14 ARE SPARES) INTERCEPT EXISTING CONDUIT**
0039P	**3"**	**3#350KCMIL+1#1 GND**	**.**	**"ATS"**	**GENERATOR**	**INTERCEPT EXISTING CONDUIT**
0040P	**3/4"**	**4#12+1#12 GND**	**.**	**MINI POWER ZONE**	**GENERATOR**	**BATTERY CHARGER, JACKET HEATER**
0041P	**3/4"**	**2#10+1#10 GND**	**.**	**PANEL "HC"**	**MINI POWER ZONE**	
1001A	3/4"		1#18TSP	PLC-1	10AIT011	
1002D	3/4"		2#14	PLC-1	10AIT011	
1003A	3/4"		1#18TSP	PLC-1	10AIT003	
1004D	3/4"		2#14	PLC-1	10AIT003	
1005A	3/4"		1#18TSP	PLC-1	10AIT009	
1006D	3/4"		2#14	PLC-1	10AIT009	
1007A	3/4"		1#18TSP	PLC-1	10AIT008	
1008D	3/4"		2#14	PLC-1	10AIT008	
1011A	3/4"		1#18TSP	PLC-1	10AIT010	
1012D	3/4"		2#14	PLC-1	10AIT010	
1031P	3/4"	4#12+1#12 GND		PANEL "LA"	10V-16, 10V-17	
1031A	3/4"	.	2#18TSP	PLC-1	10FIT002/10PIT004	
1032P	3/4"	3#12+1#12 GND		PANEL "HB"	10V-12, 10V-15, 10V-18, 10V-20	
1032D	3/4"	.	4#14	PLC-1	10FIT002/10CIT005	

GENERAL NOTES

1. **LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT**
2. **HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT**

* **PROVIDE WIRE ONLY, USE EXISTING CONDUIT. PROVIDE FLEX CONDUIT TO EQUIPMENT WHERE APPLICABLE.**

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
1033A	3/4"	.	2#18TSP	PLC-1	10PIT005/10FIT006	
1034D	3/4"	.	4#14	PLC-1	10FIT006/10CIT007	
1035A	1 1/4"	.	4#18TSP	PLC-1	10HS016A/10ZIT016-10HS017A/10ZIT017	10V-16, 10V-17
1036D	1"	.	14#14	PLC-1	10HS016A/10ZIT016-10HS017A/10ZIT017	10V-16, 10v-17 (4#14 SPARES)
1037A	1"	.	3#18TSP	PLC-1	10HS012A/10ZS012-10FIT014	10V-12
1038D	3/4"	.	12#14	PLC-1	10HS012A/10ZS012-10FIT014	10V-12 (4#14 SPARES)
1039A	3/4"	.	3#18TSP	PLC-1	10HS015A/10ZS015-10FIT017, 10CIT102	10V-15 *
1040D	3/4"	.	13#14	PLC-1	10HS015A/10ZS015-10FIT017, 10CIT102	10V-15 *
1041A	1 1/4"	.	4#18TSP	PLC-1	10HS018A/10ZIT018-10HS020A/10ZIT020-10FIT019-10FIT021	10V-18, 10V-20
1042D	1"	.	24#14	PLC-1	10HS018A/10ZS018-10HS020A/10ZS020-10FIT019-10FIT021	10V-18, 10V-20
1043A	1"		1#18TSP	PLC-1	10CIT005	
1044A	1"		1#18TSP	PLC	10CIT007	
1045A	1"	.	1#18TSP	PLC-1	10CIT102	
1040D	1"	.	2#14	PLC-1	10CIT102	
10001P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10A-P	10V-A1,A2
10001S	1"	CO		PANEL "HB"	JB-10A-P	SPARE
10001D	1"	.	20#14	PLC-2	10HS101A/10ZS101-10HS102A/10ZS102	10V-A1,10V-A2
10002P	3/4"	3#12+1#12 GND		JB-10A-P	JB'S	10V-A3, A4, A5, A6, A7, A8, A10, A11, A12, A13, A14, A18, A20
10002D	3/4"	.	10#14	PLC-2	10HS103A/10ZS103	10V-A3
10003P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT116	
10003D	3/4"	.	10#14	PLC-2	10HS104A/10ZS104	10V-A4
10004D	3/4"	.	10#14	PLC-2	10HS105A/10ZS105	10V-A5
10005D	1 1/4"	.	30#14	PLC-2	10HS106A/10ZS106 10HS111A/10ZS111-10HS112A/10ZS112	10V-A6, 10V-A11, 10V-A12
10006A	3/4"	.	2#18TSP	PLC-2	10HS107A/10ZIT107	10V-A7
10007D	1"	.	20#14	PLC-2	10HS107A/10ZS107-10HS108A/10ZS108	10V-A7, 10V-A8 (4#14 SPARES)
10008D	1 1/4"	.	30#14	PLC-2	10HS110A/10ZS110 10HS113A/10ZS113-10HS114A/10ZS114	10V-A10, 10V-A13, 10V-A14
10009D	1"	.	20#14	PLC-2	10HS118A/10ZS118-10HS120A/10ZS120	10V-A18, 10V-A20
10010A	3/4"	.	1#18TSP	PLC-2	10PIT118	
10011A	3/4"	.	2#18TSP	PLC-2	10CIT116-10DPIT117	
10012D	3/4"	.	2#14	PLC-2	10CIT116	
10013A	3/4"	.	1#18TSP	PLC-2	10FIT115	
10014D	3/4"	.	2#14	PLC-2	10FIT115	
10015	3/4"	.	CO	10CIT116	SENSOR	
10021P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10B-P	10V-B1,B2
10021S	1"	CO		PANEL "HB"	JB-10B-P	SPARE
10021D	1"	.	20#14	PLC-2	10HS201A/10ZS201-10HS202A/10ZS202	10V-B1,10V-B2
10022P	3/4"	3#12+1#12 GND		JB-10B-P	JB'S	10V-B3, B4, B5, B6, B7, B8, B10, B11, B12, B13, B14, B18, B20
10022D	3/4"	.	10#14	PLC-2	10HS203A/10ZS203	10V-B3
10023P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT216	
10023D	3/4"	.	10#14	PLC-2	10HS204A/10ZS204	10V-B4
10024D	3/4"	.	10#14	PLC-2	10HS205A/10ZS205	10V-B5
10025D	1 1/4"	.	30#14	PLC-2	10HS206A/10ZS206 10HS211A/10ZS211-10HS212A/10ZS212	10V-B6, 10V-B11, 10V-B12
10026A	3/4"	.	2#18TSP	PLC-2	10HS207A/10ZIT207	10V-B7

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
10027D	1"	.	20#14	PLC-2	10HS207A/10ZS207-10HS208A/10ZS208	10V-B7, 10V-B8 (4#14 SPARES)
10028D	1 1/4"	.	30#14	PLC-2	10HS210A/10ZS210 10HS213A/10ZS213-10HS214A/10ZS214	10V-B10, 10V-B13, 10V-B14
10029D	1"	.	20#14	PLC-2	10HS218A/10ZS218-10HS220A/10ZS220	10V-B18, 10V-B20
10030A	3/4"	.	1#18TSP	PLC-2	10PIT218	
10031A	3/4"	.	2#18TSP	PLC-2	10CIT216-10DPIT217	
10032D	3/4"	.	2#14	PLC-2	10CIT216	
10033A	3/4"	.	1#18TSP	PLC-2	10FIT215	
10034D	3/4"	.	2#14	PLC-2	10FIT215	
10035	3/4"	.	CO	10CIT216	SENSOR	
10041P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10C-P	10V-C1,C2
10041S	1"	CO		PANEL "HB"	JB-10C-P	SPARE
10041D	1"	.	20#14	PLC-3	10HS301A/10ZS301-10HS302A/10ZS302	10V-C1,10V-C2
10042P	3/4"	3#12+1#12 GND		JB-10C-P	JB'S	10V-C3, C4, C5, C6, C7, C8, C10, C11, C12, C13, C14, C18, C20
10042D	3/4"	.	10#14	PLC-3	10HS303A/10ZS303	10V-C3
10043P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT316	
10043D	3/4"	.	10#14	PLC-3	10HS304A/10ZS304	10V-C4
10044D	3/4"	.	10#14	PLC-3	10HS305A/10ZS305	10V-C5
10045D	1 1/4"	.	30#14	PLC-3	10HS406A/10ZS406 10HS411A/10ZS411-10HS412A/10ZS412	10V-C6, 10V-C11, 10V-C12
10046A	3/4"	.	2#18TSP	PLC-3	10HS307A/10ZIT307	10V-C7
10047D	1"	.	20#14	PLC-3	10HS307A/10ZS307-10HS308A/10ZS308	10V-C7, 10V-C8 (4#14 SPARES)
10048D	1 1/4"	.	30#14	PLC-3	10HS310A/10ZS310 10HS313A/10ZS313-10HS314A/10ZS314	10V-C10, 10V-C13, 10V-C14
10049D	1"	.	20#14	PLC-3	10HS318A/10ZS318-10HS320A/10ZS320	10V-C18, 10V-C20
10050A	3/4"	.	1#18TSP	PLC-3	10PIT318	
10051A	3/4"	.	2#18TSP	PLC-3	10CIT316-10DPIT317	
10052D	3/4"	.	2#14	PLC-2	10CIT316	
10053A	3/4"	.	1#18TSP	PLC-3	10FIT315	
10054D	3/4"	.	2#14	PLC-3	10FIT315	
10055	3/4"	.	CO	10CIT316	SENSOR	
10061P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10D-P	10V-D1,D2
10061S	1"	CO		PANEL "HB"	JB-10D-P	SPARE
10061D	1"	.	20#14	PLC-3	10HS401A/10ZS401-10HS402A/10ZS402	10V-D1,10V-D2
10062P	3/4"	3#12+1#12 GND		JB-10D-P	JB'S	10V-D3, D4, D5, D6, D7, D8, D10, D11, D12, D13, D14, D18, D20
10062D	3/4"	.	10#14	PLC-3	10HS403A/10ZS403	10V-D3
10063P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT416	
10063D	3/4"	.	10#14	PLC-3	10HS404A/10ZS404	10V-D4
10064D	3/4"	.	10#14	PLC-3	10HS405A/10ZS405	10V-D5
10065D	1 1/4"	.	30#14	PLC-3	10HS406A/10ZS406 10HS411A/10ZS411-10HS412A/10ZS412	10V-D6, 10V-D11, 10V-D12
10066A	3/4"	.	2#18TSP	PLC-3	10HS407A/10ZIT407	10V-D7
10067D	1"	.	20#14	PLC-3	10HS407A/10ZS407-10HS408A/10ZS408	10V-D7, 10V-D8 (4#14 SPARES)
10068D	1 1/4"	.	30#14	PLC-3	10HS410A/10ZS410 10HS413A/10ZS413-10HS414A/10ZS414	10V-D10, 10V-D13, 10V-D14
10069D	1"	.	20#14	PLC-3	10HS418A/10ZS418-10HS420A/10ZS420	10V-D18, 10V-D20
10070A	3/4"	.	1#18TSP	PLC-3	10PIT418	
10071A	3/4"	.	2#18TSP	PLC-3	10CIT416-10DPIT417	

RECORD DRAWING
Date: 08-23-07

These record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

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DATE: 09/30/2005

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BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
CONDUIT SCHEDULE

DRAWING NO: E-5
SHEET NO: 32 of 48 SHEETS
FILE NO: S-2268

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
10072D	3/4"	.	2#14	PLC-2	10CIT416	
10073A	3/4"	.	1#18TSP	PLC-3	10FIT415	
10074D	3/4"	.	2#14	PLC-3	10FIT415	
10075	3/4"	.	CO	10CIT416	SENSOR	
10081P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10E-P	10V-E1
10081S	1"	CO		PANEL "HB"	JB-10E-P	SPARE
10081D	1"	.	10#14	PLC-4	10HS501A/10ZS501	10V-E1
10082P	3/4"	3#12+1#12 GND		JB-10E-P	JB'S	10V-E3, E4, E5, E6, E7, E8, E10, E11, E12, E13, E14, E18, E20
10082D	3/4"	.	10#14	PLC-4	10HS503A/10ZS503	10V-E3
10083P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT516	
10083D	3/4"	.	10#14	PLC-4	10HS504A/10ZS504	10V-E4
10084D	3/4"	.	10#14	PLC-4	10HS505A/10ZS505	10V-E5
10085D	1 1/4"	.	30#14	PLC-4	10HS506A/10ZS506 10HS511A/10ZS511-10HS512A/10ZS512	10V-E6, 10V-E11, 10V-E12
10086A	3/4"	.	2#18TSP	PLC-4	10HS507A/10ZIT507	10V-E7
10087D	1"	.	20#14	PLC-4	10HS507A/10ZS507-10HS508A/10ZS508	10V-E7, 10V-E8 (4#14 SPARES)
10088D	1 1/4"	.	30#14	PLC-4	10HS510A/10ZS510 10HS513A/10ZS513-10HS514A/10ZS514	10V-E10, 10V-E13, 10V-E14
10089D	1"	.	20#14	PLC-4	10HS518A/10ZS518-10HS520A/10ZS520	10V-E18, 10V-E20
10090A	3/4"	.	1#18TSP	PLC-4	10PIT518	
10091A	3/4"	.	2#18TSP	PLC-4	10CIT516-10DPIT517	
10092D	3/4"	.	2#14	PLC-4	10CIT516	
10093A	3/4"	.	1#18TSP	PLC-4	10FIT515	
10094D	3/4"	.	2#14	PLC-4	10FIT515	
10095	3/4"	.	CO	10CIT516	SENSOR	
10101P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10F-P	10V-F1
10101S	1"	CO		PANEL "HB"	JB-10F-P	SPARE
10101D	1"	.	10#14	PLC-4	10HS601A/10ZS601	10V-F1
10102P	3/4"	3#12+1#12 GND		JB-10F-P	JB'S	10V-F3, F4, F5, F6, F7, F8, F10, F11, F12, F13, F14, F18, F20
10102D	3/4"	.	10#14	PLC-4	10HS603A/10ZS603	10V-F3
10103P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT616	
10103D	3/4"	.	10#14	PLC-4	10HS604A/10ZS604	10V-F4
10104D	3/4"	.	10#14	PLC-4	10HS605A/10ZS605	10V-F5
10105D	1 1/4"	.	30#14	PLC-4	10HS606A/10ZS606 10HS611A/10ZS611-10HS612A/10ZS612	10V-F6, 10V-F11, 10V-F12
10106A	3/4"	.	2#18TSP	PLC-4	10HS607A/10ZIT607	10V-F7
10107D	1"	.	20#14	PLC-4	10HS607A/10ZS607-10HS608A/10ZS608	10V-F7, 10V-F8 (4#14 SPARES)
10108D	1 1/4"	.	30#14	PLC-4	10HS610A/10ZS610 10HS613A/10ZS613-10HS614A/10ZS614	10V-F10, 10V-F13, 10V-F14
10109D	1"	.	20#14	PLC-4	10HS618A/10ZS618-10HS620A/10ZS620	10V-F18, 10V-F20
10110A	3/4"	.	1#18TSP	PLC-4	10PIT618	
10111A	3/4"	.	2#18TSP	PLC-4	10CIT616-10DPIT617	
10112D	3/4"	.	2#14	PLC-4	10CIT616	
10113A	3/4"	.	1#18TSP	PLC-4	10FIT615	
10114D	3/4"	.	2#14	PLC-4	10FIT615	
10115	3/4"	.	CO	10CIT616	SENSOR	

GENERAL NOTES

1. **LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT**
2. **HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT**

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
10121S	1"	CO		PANEL "HB"	JB-10G-P	SPARE
10121P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10G-P	10V-G1 *
10121D	1"	.	10#14	PLC-5	10HS701A/10ZS701	10V-G1 *
10122P	3/4"	3#12+1#12 GND		JB-10G-P	JB'S	10V-G3, G4, G5, G6, G7, G8, G10, G11, G12, G13, G14, G18, G20 *
10122D	3/4"	.	10#14	PLC-5	10HS703A/10ZS703	10V-G3 *
10123P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT716	*
10123D	3/4"	.	10#14	PLC-5	10HS704A/10ZS704	10V-G4 *
10124D	3/4"	.	10#14	PLC-5	10HS705A/10ZS705	10V-G5 *
10125D	1 1/4"	.	30#14	PLC-5	10HS706A/10ZS706 10HS711A/10ZS711-10HS712A/10ZS712	10V-G6, 10V-G11, 10V-G12 *
10126A	3/4"	.	2#18TSP	PLC-5	10HS707A/10ZIT707	10V-G7 *
10127D	1"	.	20#14	PLC-5	10HS707A/10ZS707-10HS708A/10ZS708	10V-G7, 10V-G8 (4#14 SPARES) *
10128D	1 1/4"	.	30#14	PLC-5	10HS710A/10ZS710 10HS713A/10ZS713-10HS714A/10ZS714	10V-G10, 10V-G13, 10V-G14 *
10129D	1"	.	20#14	PLC-5	10HS718A/10ZS718-10HS720A/10ZS720	10V-G18, 10V-G20 *
10130A	3/4"	.	1#18TSP	PLC-5	10PIT718	*
10131A	3/4"	.	2#18TSP	PLC-5	10CIT716-10DPIT717	*
10132D	3/4"	.	2#14	PLC-5	10CIT716	*
10133A	3/4"	.	1#18TSP	PLC-5	10FIT715	*
10134D	3/4"	.	2#14	PLC-5	10FIT715	*
10135	3/4"	.	CO	10CIT716	SENSOR	
10141P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10H-P	10V-H1 *
10141S	1"	CO		PANEL "HB"	JB-10H-P	SPARE
10141D	1"	.	10#14	PLC-5	10HS801A/10ZS801	10V-H1 *
10142P	3/4"	3#12+1#12 GND		JB-10H-P	JB'S	10V-H3, H4, H5, H6, H7, H8, H10, H11, H12, H13, H14, H18, H20 *
10142D	3/4"	.	10#14	PLC-5	10HS803A/10ZS803	10V-H3 *
10143P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT816	*
10143D	3/4"	.	10#14	PLC-5	10HS804A/10ZS804	10V-H4 *
10144D	3/4"	.	10#14	PLC-5	10HS805A/10ZS805	10V-H5 *
10145D	1 1/4"	.	30#14	PLC-5	10HS806A/10ZS806 10HS811A/10ZS811-10HS812A/10ZS812	10V-H6, 10V-H11, 10V-H12 *
10146A	3/4"	.	2#18TSP	PLC-5	10HS807A/10ZIT807	10V-H7 *
10147D	1"	.	20#14	PLC-5	10HS807A/10ZS807-10HS808A/10ZS808	10V-H7, 10V-H8 (4#14 SPARES) *
10148D	1 1/4"	.	30#14	PLC-5	10HS810A/10ZS810 10HS813A/10ZS813-10HS814A/10ZS814	10V-H10, 10V-H13, 10V-H14 *
10149D	1"	.	20#14	PLC-5	10HS818A/10ZS818-10HS820A/10ZS820	10V-H18, 10V-H20 *
10150A	3/4"	.	1#18TSP	PLC-5	10PIT818	*
10151A	3/4"	.	2#18TSP	PLC-5	10CIT816-10DPIT817	*
10152D	3/4"	.	2#14	PLC-5	10CIT816	*
10153A	3/4"	.	1#18TSP	PLC-5	10FIT815	*
10154D	3/4"	.	2#14	PLC-5	10FIT815	*
10155	3/4"	.	CO	10CIT816	SENSOR	
10161P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10J-P	10V-J1 *
10161S	1"	CO		PANEL "HB"	JB-10J-P	SPARE
10161D	1"	.	10#14	PLC-6	10HS901A/10ZS901	10V-J1 *
10162P	3/4"	3#12+1#12 GND		JB-10J-P	JB'S	10V-J3, J4, J5, J6, J7, J8, J10, J11, J12, J13, J14, J18, J20 *

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS POWER	CONDUCTORS CONTROL	FROM	TO	REMARKS
10162D	3/4"	.	10#14	PLC-6	10HS903A/10ZS903	10V-J3 *
10163P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT916	
10163D	3/4"	.	10#14	PLC-6	10HS904A/10ZS904	10V-J4 *
10164D	3/4"	.	10#14	PLC-6	10HS905A/10ZS905	10V-J5 *
10165D	1 1/4"	.	30#14	PLC-6	10HS906A/10ZS906 10HS911A/10ZS911-10HS912A/10ZS912	10V-J6, 10V-J11, 10V-J12 *
10166A	3/4"	.	2#18TSP	PLC-6	10HS907A/10ZIT907	10V-J7 *
10167D	1"	.	20#14	PLC-6	10HS907A/10ZS907-10HS908A/10ZS908	10V-J7, 10V-J8 (4#14 SPARES) *
10168D	1 1/4"	.	30#14	PLC-6	10HS910A/10ZS910 10HS913A/10ZS913-10HS914A/10ZS914	10V-J10, 10V-J13, 10V-J14 *
10169D	1"	.	20#14	PLC-6	10HS918A/10ZS918-10HS920A/10ZS920	10V-J18, 10V-J20 *
10170A	3/4"	.	1#18TSP	PLC-6	10PIT918	*
10171A	3/4"	.	2#18TSP	PLC-6	10CIT916-10DPIT917	*
10172D	3/4"	.	2#14	PLC-6	10CIT916	*
10173A	3/4"	.	1#18TSP	PLC-6	10FIT915	*
10174D	3/4"	.	2#14	PLC-6	10FIT915	*
10175	3/4"	.	CO	10CIT916	SENSOR	
10181P	3/4"	3#12+1#12 GND		PANEL "HB"	JB-10K-P	10V-K1 *
10181S	1"	CO		PANEL "HB"	JB-10K-P	SPARE
10181D	1"	.	10#14	PLC-6	10HS1001A/10ZS1001	10V-K1 *
10182P	3/4"	3#12+1#12 GND		JB-10K-P	JB'S	10V-K3, K4, K5, K6, K7, K8, K10, K11, K12, K13, K14, K18, K20
10182D	3/4"	.	10#14	PLC-6	10HS1003A/10ZS1003	10V-K3 *
10183P	3/4"	2#12+1#12 GND		PANEL "LB"	10CIT1016	*
10183D	3/4"	.	10#14	PLC-6	10HS1004A/10ZS1004	10V-K4 *
10184D	3/4"	.	10#14	PLC-6	10HS1005A/10ZS1005	10V-K5 *
10185D	1 1/4"	.	30#14	PLC-6	10HS1006A/10ZS1006 10HS1011A/10ZS1011-10HS1012A/10ZS1012	10V-K6, 10V-K11, 10V-K12 *
10186A	3/4"	.	2#18TSP	PLC-6	10HS1007A/10ZIT1007	10V-K7 *
10187D	1"	.	20#14	PLC-6	10HS1007A/10ZS1007-10HS1008A/10ZS1008	10V-K7, 10V-K8 (4#14 SPARES) *
10188D	1 1/4"	.	30#14	PLC-6	10HS1010A/10ZS1010 10HS1013A/10ZS1013-10HS1014A/10ZS1014	10V-K10, 10V-K13, 10V-K14 *
10189D	1"	.	20#14	PLC-6	10HS1018A/10ZS1018-10HS1020A/10ZS1020	10V-K18, 10V-K20 *
10190A	3/4"	.	1#18TSP	PLC-6	10PIT1018	*
10191A	3/4"	.	2#18TSP	PLC-6	10CIT1016-10DPIT1017	*
10192D	3/4"	.	2#14	PLC-6	10CIT1016	*
10193A	3/4"	.	1#18TSP	PLC-6	10FIT1015	*
10194D	3/4"	.	2#14	PLC-6	10FIT1015	*
10195	3/4"	.	CO	10CIT1016	SENSOR	
20001P	3/4"	3#12+1#12 GND	.	PANEL "HA"	JB-20-P	20V-A2, A6
20001D	3/4"	.	10#14	PLC-1	20HS101A/20ZS101	20V-A1
20002P	3/4"	3#12+1#12 GND	.	JB-20A-P	JB'S	20V-A1, A3, A8, A9
20002D	3/4"	.	10#14	PLC-1	20HS102A/20ZS102	20V-A2
20003D	3/4"	.	10#14	PLC-1	20HS103A/20ZS103	20V-A3
20004D	3/4"	.	10#14	PLC-1	20HS106A/20ZS106	20V-A6
20005D	3/4"	.	10#14	PLC-1	20HS108A/20ZS108	20V-A8
20006D	3/4"	.	10#14	PLC-1	20HS109A/20ZS109	20V-A9

* **PROVIDE WIRE ONLY, USE EXISTING CONDUIT. PROVIDE FLEX CONDUIT TO EQUIPMENT WHERE APPLICABLE.**

RECORD DRAWING
Date: 08-23-07
This record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

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BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

CONDUIT SCHEDULE

DRAWING NO: E-6
SHEET NO: 33 OF 48 SHEETS
FILE NO: S-2268

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS		FROM	TO	REMARKS
		POWER	CONTROL			
20011P	3/4"	3#12+1#12 GND	.	PANEL "HA"	JB-20-P	20V-B2, B6 *
20011D	3/4"	.	10#14	PLC-1	20HS201A/20ZS201	20V-B1 *
20012P	3/4"	3#12+1#12 GND	.	JB-20B-P	JB'S	20V-B1, B3, B8, B9 *
20012D	3/4"	.	10#14	PLC-1	20HS202A/20ZS202	20V-B2 *
20013D	3/4"	.	10#14	PLC-1	20HS203A/20ZS203	20V-B3 *
20014D	3/4"	.	10#14	PLC-1	20HS206A/20ZS206	20V-B6 *
20015D	3/4"	.	10#14	PLC-1	20HS208A/20ZS208	20V-B8 *
20016D	3/4"	.	10#14	PLC-1	20HS209A/20ZS209	20V-B9 *
20021P	3/4"	3#12+1#12 GND	.	PANEL "HA"	20V-3	
20021A	3/4"	.	2#18TSP	PLC-1	20HS003A/20ZIT003C	20V-3
20022D	3/4"	.	10#14	PLC-1	20HS003A/20ZS003	20V-3 (4#14 SPARES)
20031A	3/4"	.	1#18TSP	PLC-1	20FIT005	
20032D	3/4"	.	2#14	PLC-1	20FIT005	
20033A	3/4"	.	1#18TSP	PLC-1	20FIT007	
20035P	**3/4"**	**2#12+1#12 GND**	**.**	**20FIT007**	**PEROXIDE PUMP RECEPTACLE**	
20035D	**3/4"**	**.**	**2#14.**	**20FIT007**	**PEROXIDE PUMP**	
30001P	3/4"	6#12+1#12 GND	.	PANEL "LA"	**30LIT003**	USE 3 SEPARATE EXISTING SPARE 20A/1P CIRCUIT BREAKERS IN EXISTING PANEL 'LA'
30001A	3/4"	.	3#18TSP	PLC-1	**30LIT003/30LIT013**	
30002P	3/4"	2#12+1#12 GND	.	PANEL "LA"	**30LIT004**	
30002D	3/4"	.	10#14	PLC-1	**30LIT003/30LIT013**	
30003P	3/4"	2#12+1#12 GND	.	PANEL "LA"	**30LIT005**	
30003	3/4"	.	CO	**30LIT003**	LEVEL TRASDUCER	
30004P	3/4"	2#12+1#12 GND	.	PANEL "LA"	**31LIT001**	
3004A	3/4"	.	1#18TSP	PLC-1	**30LIT004**	
30005P	3/4"	2#12+1#12 GND	.	PANEL "LA"	**31LIT002**	
3005D	3/4"	.	2#14	PLC-1	**30LIT004**	
30006	3/4"	.	CO	**30LIT004**	LEVEL TRASDUCER	
30007A	3/4"	.	1#18TSP	PLC-1	**30LIT005**	
30008D	3/4"	.	2#14	PLC-1	**30LIT005**	
30009	3/4"	.	CO	**31LIT005**	LEVEL TRASDUCER	
30010A	3/4"	.	1#18TSP	PLC-1	**31LIT001**	
30011D	3/4"	.	2#14	PLC-1	**31LIT001**	
30012	3/4"	.	CO	**31LIT001**	LEVEL TRASDUCER	
30013A	3/4"	.	1#18TSP	PLC-1	**31LIT002**	
30014D	3/4"	.	2#14	PLC-1	**31LIT002**	
30015	3/4"	.	CO	**31LIT002**	LEVEL TRASDUCER	
20035P	**3/4"**	**4#12+1#12 GND**	**.**	**30LIT003**	**30LIT002**	
20035D	**3/4"**	**2#12+1#12GND**	**.**	**30LIT002**	**30LIT001**	
30021	1"	.	CO	30LIT007	LEVEL TRASDUCER	
30022	1"	.	CO	30LIT006	LEVEL TRASDUCER	

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS		FROM	TO	REMARKS
		POWER	CONTROL			
30023D	1"	.	10#14	JB	**30HS212A/30ZS212**	
30024D	1"	.	10#14	JB	**30HS111A/30ZS111**	
40001P	3/4"	3#12+1#12 GND	.	MCC-1	40P-A	
40001D	1"	.	20#14	PLC-1	40HS101A/40ZS101-40HS102A/40ZS102	40V-A1, 40V-B1
40002P	3/4"	3#12+1#12 GND	.	MCC-1	40P-B	
40003P	3/4"	3#12+1#12 GND	.	MCC-1	40P-C	
40004P	3/4"	3#12+1#12 GND	.	MCC-1	40P-D	
40004	3/4"	.	4#14	MCC-1	40FSL110/40FSL111	
40005P	3/4"	3#12+1#12 GND	.	PANEL "HA"	40V-A1, 40V-B2, 40V-4	
40005	3/4"	.	4#14	MCC-1	40FSL112/40FSL113	
40006P	3/4"	2#12+1#12 GND	.	PANEL "LA"	40CIT120	
40006A	3/4"	.	2#18TSP	PLC-1	40CIT120/40FIT121	
40007D	3/4"	.	4#14	PLC-1	40CIT120/40FIT121	
50001P	3/4"	3#12+1#12 GND	.	MCC-1	50P-A	*
50001D	1"	.	20#14	PLC-1	50HS101A/50ZS101-50HS102A/50ZS102	50V-A1, 50V-B1 *
50002P	3/4"	3#12+1#12 GND	.	MCC-1	50P-B	*
50003P	3/4"	3#12+1#12 GND	.	MCC-1	50P-C	*
50004P	3/4"	3#12+1#12 GND	.	MCC-1	50P-D	*
50004	3/4"	.	4#14	MCC-1	50FSL110/50FSL111	*
50005P	3/4"	3#12+1#12 GND	.	PANEL "HA"	50V-A1, 50V-B1	*
50005	3/4"	.	4#14	MCC-1	50FSL112/50FSL113	*
50006P	3/4"	2#12+1#12 GND	.	PANEL "LA"	50CIT120	*
50006A	3/4"	.	2#18TSP	PLC-1	50CIT120/50FIT121	*
50007D	3/4"	.	6#14	PLC-1	50CIT120/50FIT121	2#14 SPARE *
60001P	3/4"	3#12+1#12 GND		MCC-2	60BL-A	
60001A	3/4"	3#12+1#12 GND	1#18TSP	PLC-1	60PIT001	
60002D	3/4"	.	8#14	PLC-1	60HS101A/60ZS101-60HS111A/60ZS111	60V-A1-60V-B1
60002P	3/4"	3#12+1#12 GND		MCC-2	60BL-B	
60003D	3/4"		8#14	PLC-1	60HS121A/60ZS121-60HS131A/60ZS131	60V-C1-60V-D1
60003P	3/4"	3#12+1#12 GND		MCC-2	60BL-C	
60004P	3/4"	3#12+1#12 GND		PANEL "HB"	JB	60V-A1, 60V-B1
60005P	3/4"	3#12+1#12 GND		JB	JB	60V-C1

CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUCTORS		FROM	TO	REMARKS
		POWER	CONTROL			
70001P	3/4"	3#12+1#12 GND		PANEL "HA"	70V-3	
70001A	3/4"	.	1#18TSP	PLC-1	70LIT101	
70002P	3/4"	2#12+1#12 GND	.	PANEL "LA"	70LIT101	
70002D	3/4"	.	2#14	PLC-1	70LIT101	
70003P	3/4"	2#12+1#12 GND	.	PANEL "LA"	70LIT102	*
70003	3/4"	.	CO	70LIT101	LEVEL TRANSDUCER	
70004A	3/4"	.	1#18TSP	PLC-1	70LIT102	*
70005D	3/4"	.	2#14	PLC-1	70LIT102	*
70006	3/4"	.	CO	70LIT102	LEVEL TRANSDUCER	
70007A	3/4"	.	2#18TSP	PLC-1	70HS103A/70ZIT103	70V-3
70008D	3/4"	.	10#14	PLC-1	70HS103A/70ZS103	70V-3 (4#14 SPARES)
70009A	3/4"	.	1#18TSP	PLC-1	70FIT104	
70010D	3/4"	.	2#14	PLC-1	70FIT104	
80001P	3/4"	3#12+1#12 GND	.	MCC-1	80P-A	
80001D	3/4"	.	4#14	PLC-1	80PIT005-80PIT011	
80002P	3/4"	3#12+1#12 GND	.	MCC-1	80P-B	
90001P	3/4"	2#12+1#12 GND	.	PANEL "LA"	90LIT101	
90001A	1"	.	4#18TSP	PLC-1	CLORTEC PLC	
90002P	3/4"	2#12+1#12 GND	.	PANEL "LA"	90LIT102	
90002D	1"	.	16#14	PLC-1	CLORTEC PLC	
90003A	3/4"	.	2#18TSP	PLC-1	90LIT101-90LIT102	
90004D	3/4"	.	4#14	PLC-1	90LIT101-90LIT102	
90005	3/4"	.	CO	90LIT101	LEVEL TRANSDUCER	
90006	3/4"	.	CO	90LIT102	LEVEL TRANSDUCER	
100001P	3/4"	3#10+1#10 GND	.	MCC-1	100P-A	
100001D	3/4"	.	10#14	PLC-1	100HS001A/100ZS001	100V-1
100002P	3/4"	3#12+1#12 GND	.	PANEL "HA"	100V-1	

* PROVIDE WIRE ONLY, USE EXISTING CONDUIT. PROVIDE FLEX CONNECTION TO EQUIPMENT WHERE APPLICABLE.

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

NOTES:

(1) PULL OUT TH[E] ... AND PROVIDE ... EXISTING CON[DUIT]

RECORD DRAWING
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REV	DATE	DESCRIPTION	APP
2	8/31/06	CHANGE ORDER 1.1	
3	3/1/07	CHANGE ORDER 1.2	

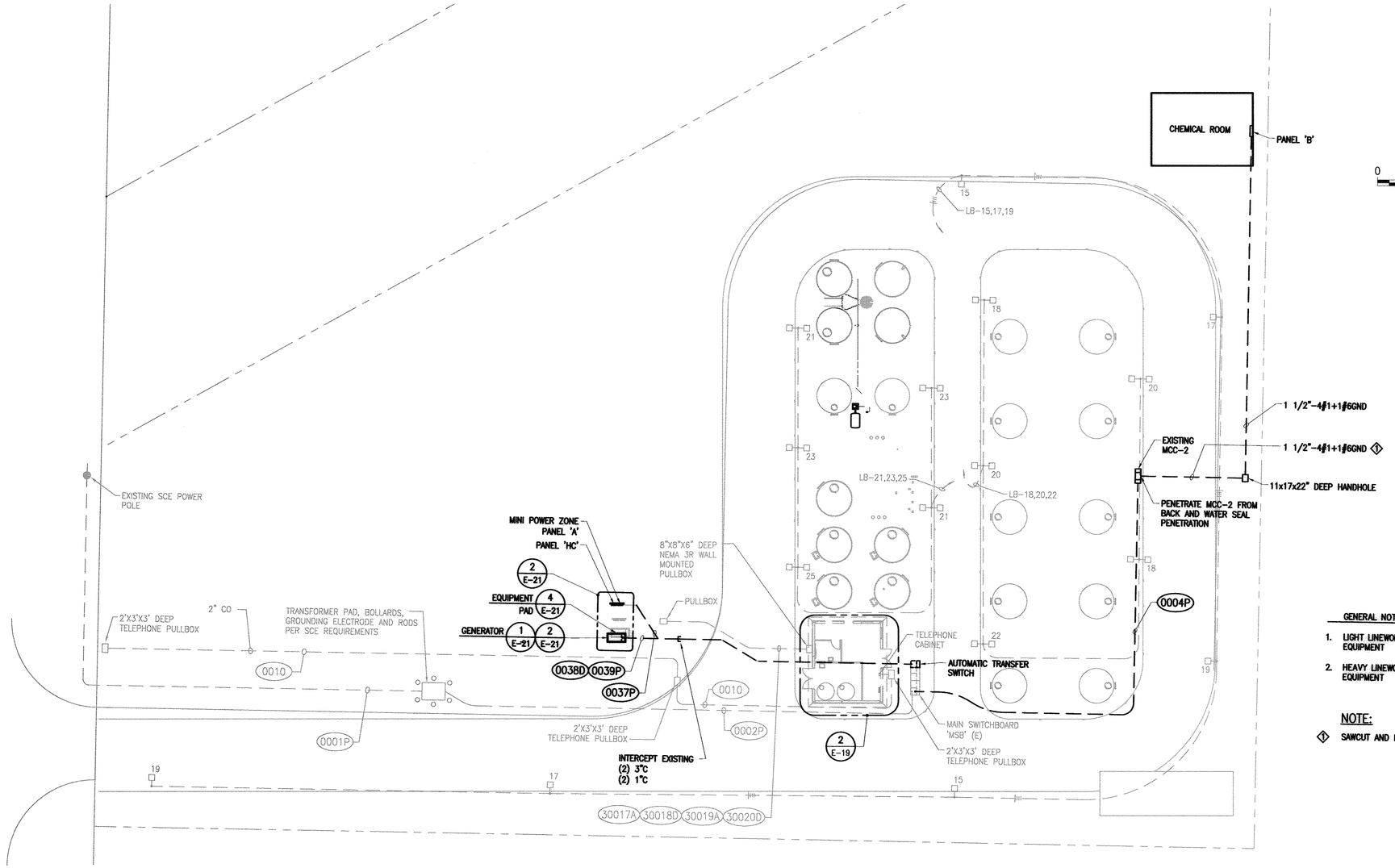
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

CONDUIT SCHEDULE

DRAWING NO: E-7
SHEET NO: 34 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\J04\100-04\CAD (phase III)\PlanSet\ELECTRICAL\S2268-E07.dwg USER: kbedford
DATE: Nov 08, 2007 3:49pm XREFS: BORDER



GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

NOTE:

1 SAWCUT AND PATCH EXISTING CONCRETE.

RECORD DRAWING
Date: 08-23-07

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DATE: Nov 08, 2007 XREFS: Mapson BORDER 3.5).prn

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APPROVAL:	DATE:

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DRAWN BY: RH
CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

ELECTRICAL SITE PLAN

DRAWING NO: E-8
SHEET NO: 35 OF 48 SHEETS
FILE NO: S-2268

BLOWERS PARTIAL PLAN 1/E-14 2/E-14

MOTOR CONTROL CENTER "MCC-2"

1/E-11 1/E-16 ION EXCHANGE VESSEL PARTIAL PLAN

SCALE: 1/8" = 1'-0"

PROPERTY LINE

ION EXCHANGE VESSEL PARTIAL PLAN 1/E-10 1/E-15

0028 0004P

CONCRETE PAD

10NV-A 10NV-C 10NV-E 10NV-G 10NV-J

JB-10A-P JB-10C-P JB-10E-P JB-10G-P JB-10J-P

10001P 10001S 10041P 10041S 10081P 10081S 10121P 10121S 10161P 10161S

10021P 10021S 10061P 10061S 10101P 10101S 10141P 10141S 10181P 10181S

JB-10B-P JB-10D-P JB-10F-P JB-10H-P JB-10K-P

10NV-B 10NV-D 10NV-F 10NV-H 10NV-K

LB-2

XMFR "T2"

PLC-2 0022 PLC-3 0023 PLC-4 0024 PLC-5 0025 PLC-6

PANEL "LB"

PANEL "HB"

MOTOR CONTROL CENTER "MCC-1"

AC PAVEMENT

0005P

1/E-3 AUTOMATIC TRANSFER SWITCH

0021

0003P

MAIN SWITCHBOARD "MSB"

0026 0027

0009P 0008P

PANEL "LA"

CONCRETE PAD

20SV-A

70TK-A 70TK-B

100P-A

31RT-A 31RT-B

WASTE TANK AND SOFTENER VESSELS PARTIAL PLAN 1/E-12 1/E-17

80P-A 80P-B

30BT-A 30BT-B 30BT-C 30BT-D 30BT-E

0037P 0038D 0039P

0002P

0011

PLC-1

ANTENNA TOWER

SEE DRAWING E-8 FOR CONTINUATION

SEE DRAWING E-8 FOR CONTINUATION

AC PAVEMENT

MH-2

BLENDING STATION

BRINE AND RINSE TANKS PARTIAL PLAN 1/E-13 1/E-18

CONTROL BUILDING PLAN 1/E-19 2/E-19

GENERAL NOTES

1. LIGHT LINEWORK (———) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (———) DENOTES NEW EQUIPMENT

NOTES:
1. PROVIDE CONDUIT ONLY TO FUTURE EQUIPMENT, INCLUDE JUNCTION BOXES AND 'C' CHANNELS.

RECORD DRAWING
Date: 08-23-07
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CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP
1	2/27/06	ADDENDUM 2	
2	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

SITE POWER & CONTROL DISTRIBUTION PLAN

DRAWING NO: E-9
SHEET NO: 36 OF 48 SHEETS
FILE NO: S-2268

THIS SHEET IS PROVIDED FOR INFORMATION PURPOSES ONLY

10V-A11 10V-A12 10V-A6 10V-A8 10V-A7 10V-A13 10V-A10 10FIT115 10V-A18 10V-A5 10V-A20 10V-A23 10FS105 10V-A4 10V-A14 10CIT116 10NV-A 10V-A3 10V-A2 10V-A1 TYP. 10002P 10001P 10001S SEE DWG E-9 FOR CONTINUATION 10003P 1032P

10V-C11 10V-C12 10V-C6 10V-C8 10V-C7 10V-C13 10V-C10 10FIT315 10V-C18 10V-C5 10V-C20 10V-C23 10FS305 10V-C4 10V-C14 10CIT316 10NV-C 10V-C3 10V-C2 10V-C1 10042P TYP. 10041P 10041S SEE DWG E-9 FOR CONTINUATION 10043P

10V-15 10FIT017 10CV-13 10V-12 10FIT014 JB-10A-P JB-10C-P 10061P 10061S 10CV-16

JB-10B-P SEE DWG E-9 FOR CONTINUATION 10021P 10021S 10V-B3 10V-B2 10V-B1 10022P TYP. 10FIT215 10V-B10 10V-B13 10V-B7 10V-B14 10CIT216 10NV-B 10V-B4 10FS205 10023P 10V-B19 10V-B23 10V-B20 10V-B5 10V-B8 10V-B6 10V-B12 10V-B11 FRONT 10V-B18 0032P PLC-2

JB-10D-P 10CIT102 10CIT101 10V-20 1032P 10V-18 10FIT021 10CIT416 10FIT019 70CV-1 70CV-2 LB-32

LB-24 10FIT415 10V-D10 10V-D13 10V-D7 10V-D8 10V-D6 10V-D12 10V-D11 FRONT 0033P PLC-3 10V-D3 10V-D2 10V-D1 10062P TYP. 10V-D14 10NV-D 10V-D4 10FS405 10063P 10V-D19 10V-D23 10V-D20 10V-D5 10V-D18

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

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

RECORD DRAWING
Date: 08-23-07
SEE DRAWING
These record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information completed and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

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BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
ION EXCHANGE VESSEL PARTIAL POWER PLAN

DRAWING NO: E-10
SHEET NO: 37 OF 48 SHEETS
FILE NO: S-2268

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

NOTES

1. LIGHT LINEWORK (———) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (———) DENOTES NEW EQUIPMENT
3. CONDUIT IS EXISTING

RECORD DRAWING
Date: 08-23-07
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			DATE: 09/30/2005	REV	DATE	DESCRIPTION	APP

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JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

ION EXCHANGE VESSEL PARTIAL POWER PLAN

DRAWING NO: E-11
SHEET NO: 38 OF 48 SHEETS
FILE NO: S-2268

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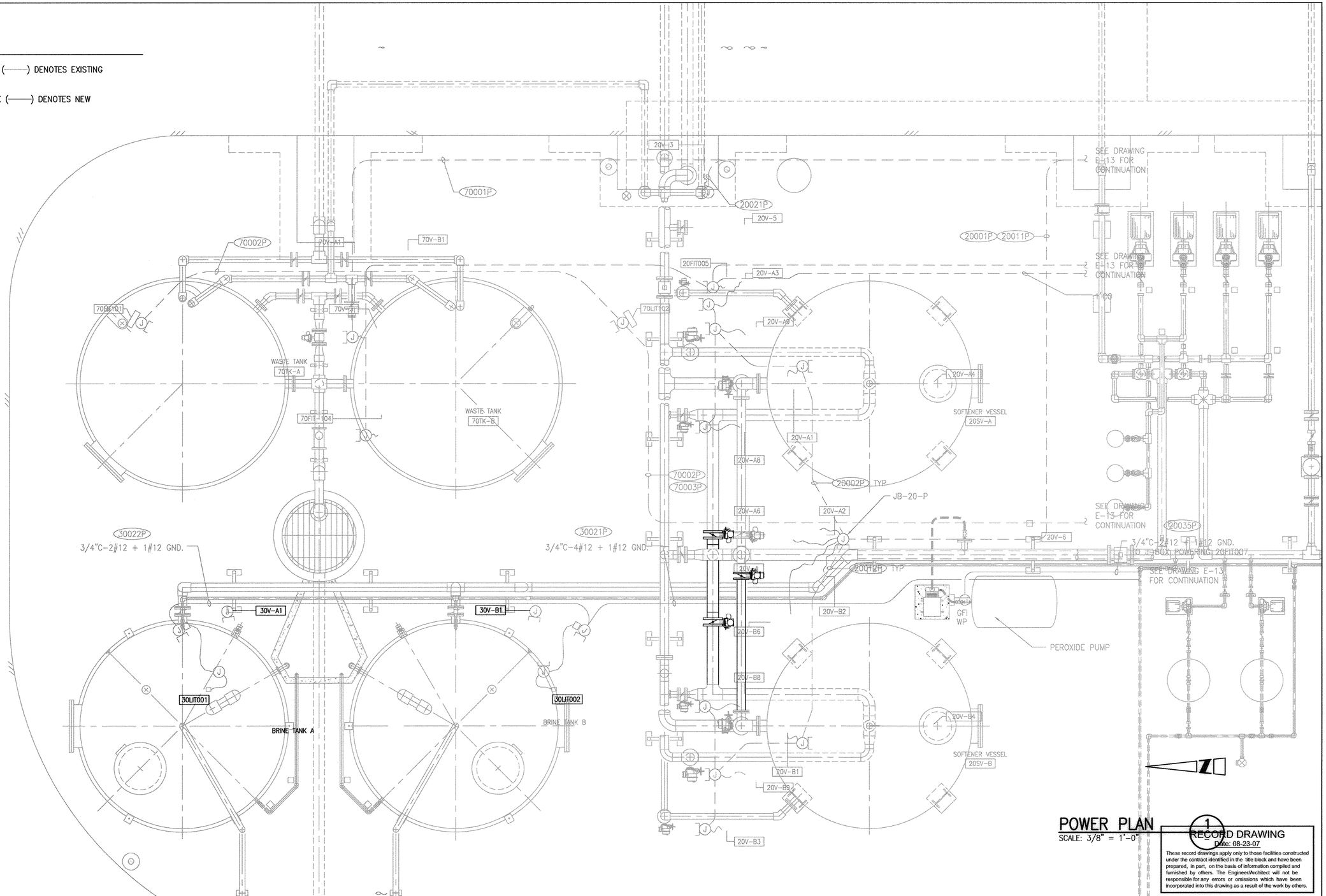
GENERAL NOTES

1. LIGHT LINEWORK (———) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (———) DENOTES NEW EQUIPMENT



POWER PLAN

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

1

RECORD DRAWING
Date: 08-23-07

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DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP
2	8/29/06	CHANGE ORDER 1.1	CU
3	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
WASTE TANKS AND SOFTENER VESSELS
POWER PLAN

DRAWING NO: E-12
SHEET NO: 39 OF 48 SHEETS
FILE NO: S-2268

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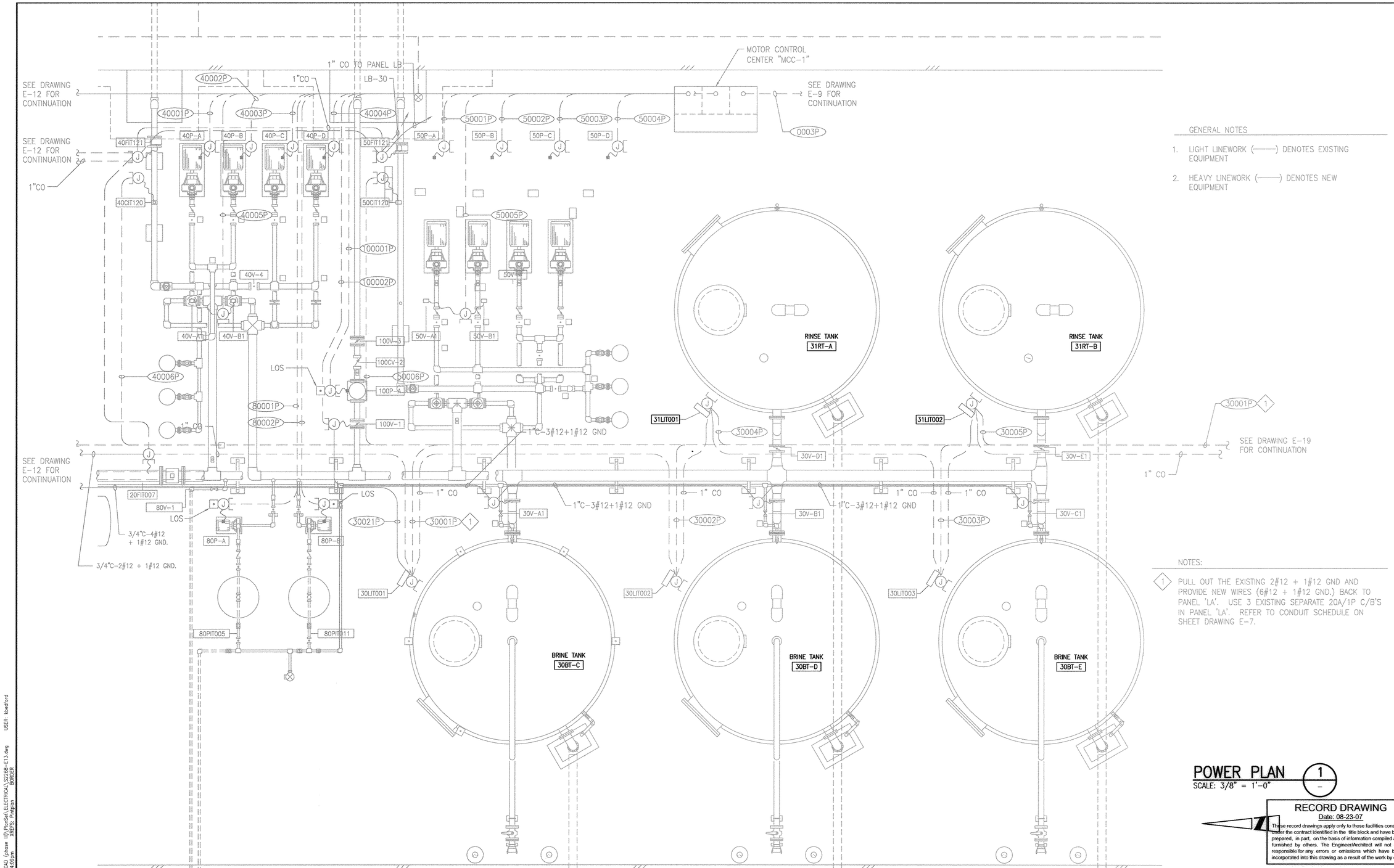

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

NOTES:

1. PULL OUT THE EXISTING 2#12 + 1#12 GND AND PROVIDE NEW WIRES (6#12 + 1#12 GND.) BACK TO PANEL 'LA'. USE 3 EXISTING SEPARATE 20A/1P C/B'S IN PANEL 'LA'. REFER TO CONDUIT SCHEDULE ON SHEET DRAWING E-7.

POWER PLAN 1

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

RECORD DRAWING
Date: 08-23-07

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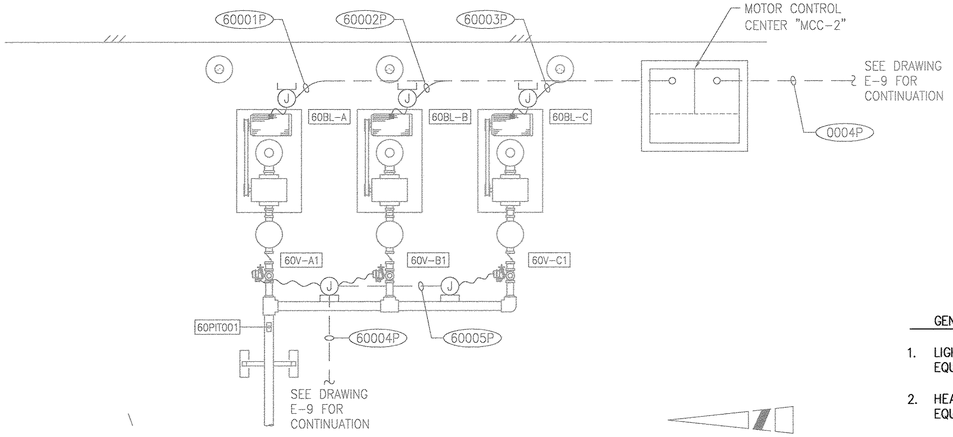
REV	DATE	DESCRIPTION	APP
2	8/29/06	CHANGE ORDER 1.1	CU
3	3/1/07	CHANGE ORDER 1.2	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
BRINE AND RINSE TANKS
POWER PLAN

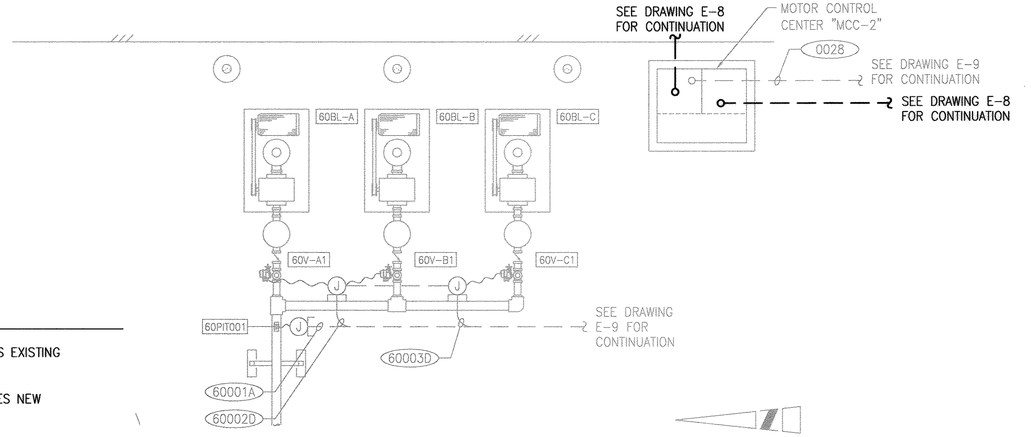
DRAWING NO: E-13
SHEET NO: 40 OF 48 SHEETS
FILE NO: S-2268



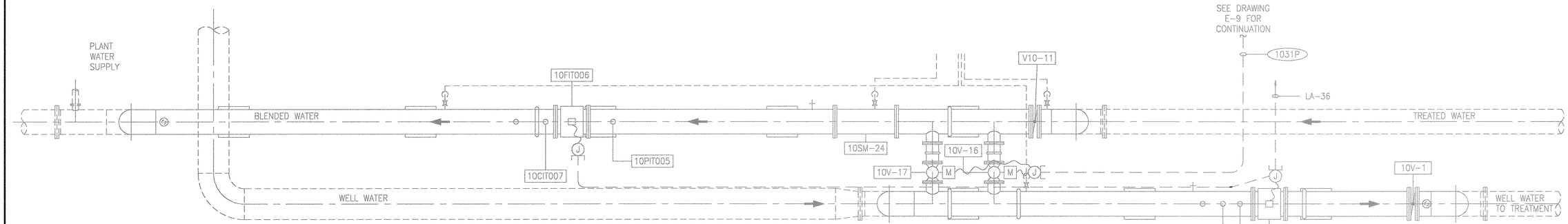
BLOWER POWER PLAN (1)
SCALE: 3/8" = 1'-0"

GENERAL NOTES

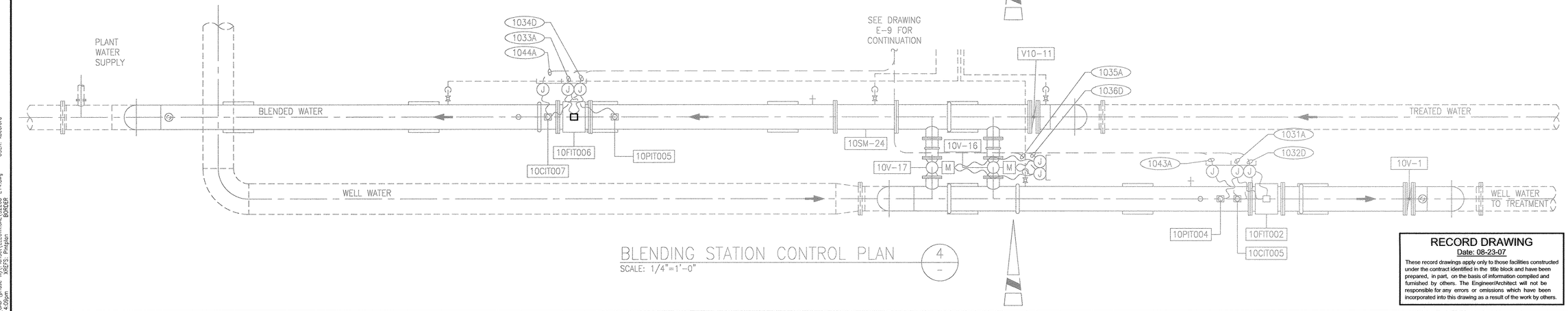
1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT



BLOWER CONTROL PLAN (2)
SCALE: 3/8" = 1'-0"



BLENDING STATION POWER PLAN (3)
SCALE: 1/4"=1'-0"



BLENDING STATION CONTROL PLAN (4)
SCALE: 1/4"=1'-0"

RECORD DRAWING
Date: 08-23-07

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APPROVAL:	DATE:	CHECKED BY: PT
		DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
BLOWER AND BLENDING STATION POWER AND CONTROL PLANS

DRAWING NO: E-14
SHEET NO: 41 OF 48 SHEETS
FILE NO: S-2268

DWG: S:_DA\100-DA CAD (phase III)\ PondA\ELECTRICAL\S2268-E14.dwg
DATE: Nov 08, 2007 4:09pm
USER: kbedford
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10V-A11 10V-A12 10V-A6 10V-A8 10007D 10006A 10005D 10V-A7 10V-A13 10V-A10 10013A 10014D 10HIT115 10004D 10008D 10V-A18 10V-A5 10V-A20 10NV-A 10V-A23 10PIT118 10CV-A19 10V-A4 10010A 10V-A14 10009D 10003D 10011A 10012D 10CIT116 10DPIT117 10053A 10054D 10FIT315 10002D 10V-A3 10V-A2 10V-A1 10001D 10015

10V-C11 10V-C12 10V-C6 10V-C8 10047D 10046A 10045D 10V-C7 10V-C13 10V-C10 10044D 10048D 10V-C18 10V-C5 10V-C20 10NV-C 10V-C23 10PIT318 10CV-C19 10V-C4 10050A 10V-C14 10049D 10043D 10051A 10052D 10CIT316 10DPIT317 10V-C3 10042D 10V-C2 10V-C1 10041D 10055 1046D

10CV-13 10V-12 10FIT014 1037A 1038D 10CV-16 10V-15 10FIT017 1039A 1040D 3/4"C-1#18TSP & 3/4"C-2#14

SEE DRAWING E-16 FOR CONTINUATION

1" CO

10034D 10033A 10FIT215 10V-B10 10V-B13 10V-B7 10026A 10027D 10V-B8 10V-B6 10V-B12 10V-B11 10021D 10022D 10V-B3 10V-B2 10V-B1 10035 10032D 10031A 10NV-B 10023D 10V-B14 10V-B4 10PIT218 10CV-B19 10030A 10V-B23 10V-B20 10V-B5 10024D 10V-B18 10029D 10025D 10028D

10073A 10074D 10FIT415 10V-D10 10V-D13 10V-D7 10066A 10067D 10V-D8 10V-D6 10V-D12 10V-D11 10061D 10062D 10V-D3 10V-D2 10V-D1 10075 10072D 10063D 10V-D14 10071A 10NV-D 10V-D4 10PIT418 10CV-D19 10070A 10V-D23 10V-D20 10V-D5 10064D 10V-D18 10069D 10065D 10068D

10CIT102 10CIT101 10V-20 10V-18 10DPIT417 10CIT416 10FIT021 10FIT019 70CV-2 70CV-1 1045A 1046D 1041A 1042D

PLC-2 PLC-3

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

RECORD DRAWING
Date: 08-23-07
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BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
ION EXCHANGE VESSEL PARTIAL CONTROL PLAN

DRAWING NO: E-15
SHEET NO: 42 OF 48 SHEETS
FILE NO: S-2268

DWG: S:\JMA\100-04\CAD (phase II)\FlexSet\ELECTRICAL\S2268-E15.dwg USER: kbedford
DATE: Nov 08, 2007 4:13pm XREFS: thopson BORDER

SEE DRAWING E-9 FOR CONTINUATION

0028

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

10V-E11 10V-E12 10V-E6 10V-E8 10V-E7 10V-E13 10V-E10 10V-E18 10V-E5 10V-E20 10V-E19 10V-E4 10V-E14 10V-E3 10V-E1 10V-E23 10NV-E 10PIT518 10084D 10088D 10085D 10087D 10086A 10093A 10094D 10089D 10083D 10082D 10081D 10090A 10095 10091A 10092D 10FIT515 1" CO 3/4" CO

10V-G11 10V-G12 10V-G6 10V-G8 10V-G7 10V-G13 10V-G10 10V-G18 10V-G5 10V-G20 10V-G19 10V-G4 10V-G14 10V-G3 10V-G1 10V-G23 10NV-G 10PIT718 10124D 10128D 10127D 10126A 10125D 10CIT516 10DPIT517 10FIT715 10133A 10134D 10129D 10123D 10131A 10132D 10135 10130A 10122D 10121D

10V-J11 10V-J12 10V-J6 10V-J8 10V-J7 10V-J13 10V-J10 10V-J18 10V-J5 10V-J20 10V-J19 10V-J4 10V-J14 10V-J3 10V-J1 10V-J23 10NV-J 10PIT918 10CIT916 10164D 10168D 10167D 10166A 10165D 10CIT716 10DPIT717 10FIT915 10173A 10174D 10169D 10163D 10171A 10172D 10170A 10175 10162D 10161D 10DPIT917

SEE DRAWING E-15 FOR CONTINUATION

17"x30"X30"D (ANALOG)

17"x30"X30"D (DISCRETE)

10FIT815 10V-F3 10V-F1 10V-F10 10V-F13 10V-F14 10V-F4 10V-F7 10V-F8 10V-F6 10V-F12 10V-F11 10V-F18 10V-F20 10V-F5 10V-F23 10101D 10102D 10113A 10114D 10106A 10107D 10112D 10111A 10103D 10115 10NV-F 10110A 10104D 10105D 10108D 10109D 10DPIT617 10CIT616 10PIT618

10153A 10154D 10146A 10147D 10V-H3 10V-H1 10V-H10 10V-H13 10V-H7 10V-H14 10V-H4 10V-H8 10V-H6 10V-H12 10V-H11 10V-H18 10V-H20 10V-H5 10V-H23 10141D 10142D 10143D 10155 10NV-H 10150A 10144D 10145D 10148D 10149D 10DPIT817 10CIT816 10PIT818 10152D 10151A

10193A 10194D 10V-K3 10V-K1 10V-K10 10V-K13 10V-K7 10V-K14 10V-K4 10V-K20 10V-K19 10V-K5 10V-K23 10V-K8 10V-K6 10V-K12 10V-K11 10181D 10182D 10183D 10195 10NV-K 10190A 10184D 10185D 10188D 10189D 10DPIT1017 10CIT1016 10PIT1018 10192D 10191A 10186A 10187D

PLC-4 PLC-5 PLC-6

SEE DRAWING E-9 FOR CONTINUATION

CONTROL PLAN 1

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

RECORD DRAWING
Date: 08-23-07

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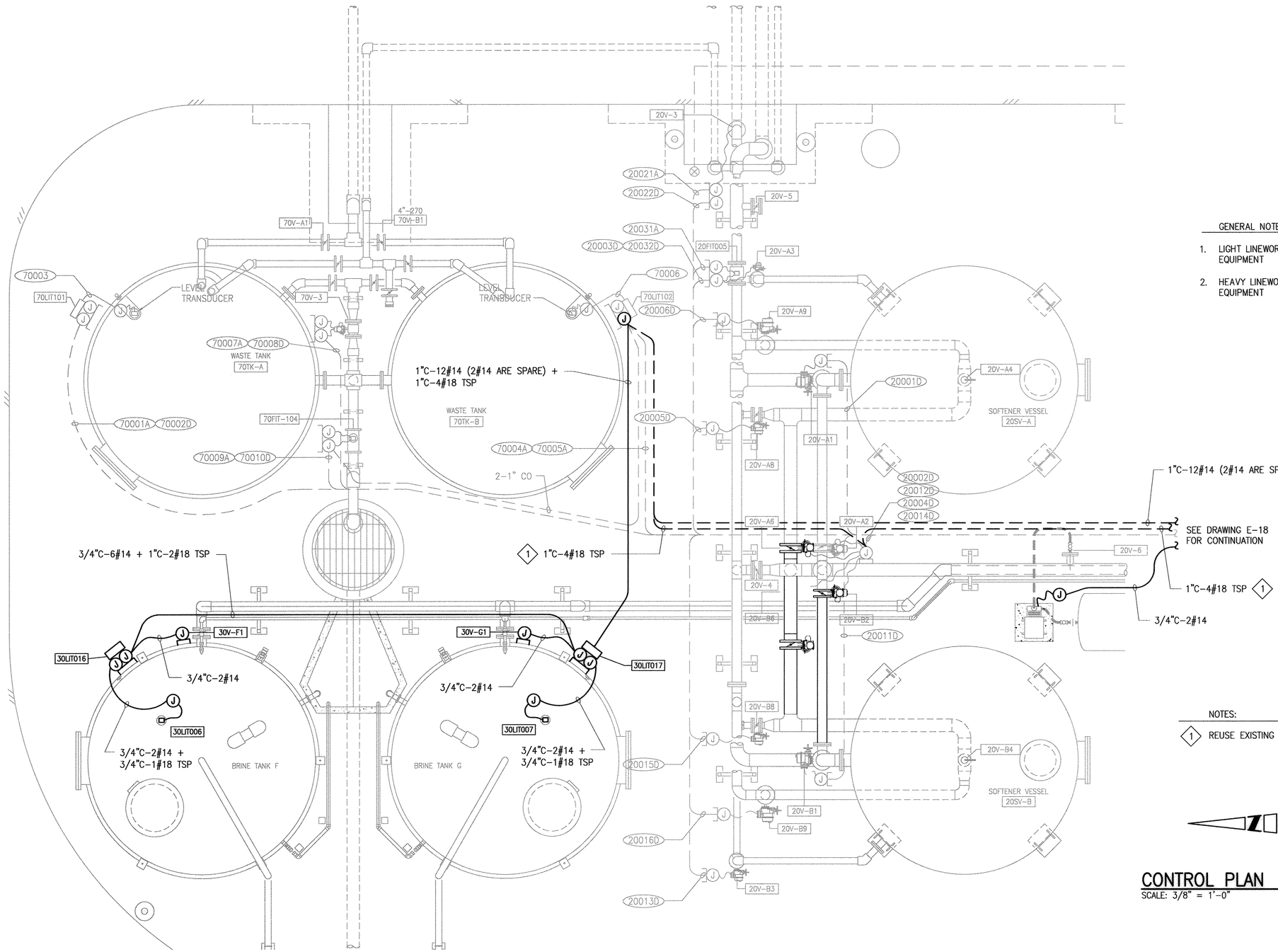
BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
ION EXCHANGE VESSEL PARTIAL CONTROL PLAN

DRAWING NO: E-16
SHEET NO: 43 OF 48 SHEETS
FILE NO: S-2268



GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

NOTES:

1. REUSE EXISTING CONDUIT.

CONTROL PLAN 1

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

RECORD DRAWING
Date: 08-23-07

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APPROVAL: DATE:

DESIGN BY: CU/JL
DRAWN BY: DD
CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP
2	8/29/06	CHANGE ORDER 1.1	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
WASTE TANKS AND SOFTENER VESSELS
CONTROL PLAN

DRAWING NO: E-17
SHEET NO: 44 of 48 SHEETS
FILE NO: S-2268

MOTOR CONTROL CENTER "MCC-1"

SEE DRAWING E-9 FOR CONTINUATION

0026 0027

40004 40005 50006A 50007D

40P-A 40P-B 40P-C 40P-D

40FIT121 40006A 40007D 40CIT120 40FSL110 40FSL111 40FSL112 40FSL113

50FIT121 50CIT120 50004 50004

50P-A 50P-B 50P-C 50P-D LOS LOS

50FSL110 50FSL111 50FSL112 50FSL113

1"C-12#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

1"C-14#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

1"C-16#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

40V-A1 40V-B1 40001D 2-1" CO

100V-3 100CV-2 100P-A 100V-1 100001D 50001D

50V-A1 50V-B1 2-1" CO

30010A 30011D 30LIT004

RINSE TANK 30RT-D 30012

30LIT005 30013A 30014D

RINSE TANK 30RT-E 30015

30V-D1 30V-E1

SEE DRAWING E-18 FOR CONTINUATION

1"C-18#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

SEE DRAWING E-17 FOR CONTINUATION

20033A 20034D 20FIT007 80V-1

80P-A 80P-B 2-1" CO

30V-A1 30V-B1 30V-C1

3/4"C-2#14

30001A 30002D 30003 30004A 30005D 30006 30007A 30008D 30009

1"C-18#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

80001D

3/4"C-2#14 3/4"C-2#14 3/4"C-2#14

1"C-16#14 (2#14 ARE SPARE) + 1"C-4#18 TSP (1)

30LIT001 30LIT002 30LIT003

30LIT011

80PIT005 80PIT011

BRINE TANK 30BT-A

BRINE TANK 30BT-B

BRINE TANK 30BT-C

30LIT012 30LIT013

1"C-12#14 (4#14 ARE SPARE) (1)

1"C-4#18 TSP (1)

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

NOTES:

(1) REUSE EXISTING CONDUIT.

(2)

CONTROL PLAN (1)
SCALE: 3/8" = 1'-0"

RECORD DRAWING
Date: 08-23-07

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DATE: 09/30/2005

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1	2/27/06	ADDENDUM 2	
2	8/31/06	CHANGE ORDER 1.1	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
BRINE AND RINSE TANKS CONTROL PLAN

DRAWING NO: E-18
SHEET NO: 45 OF SHEETS
FILE NO: S-2268

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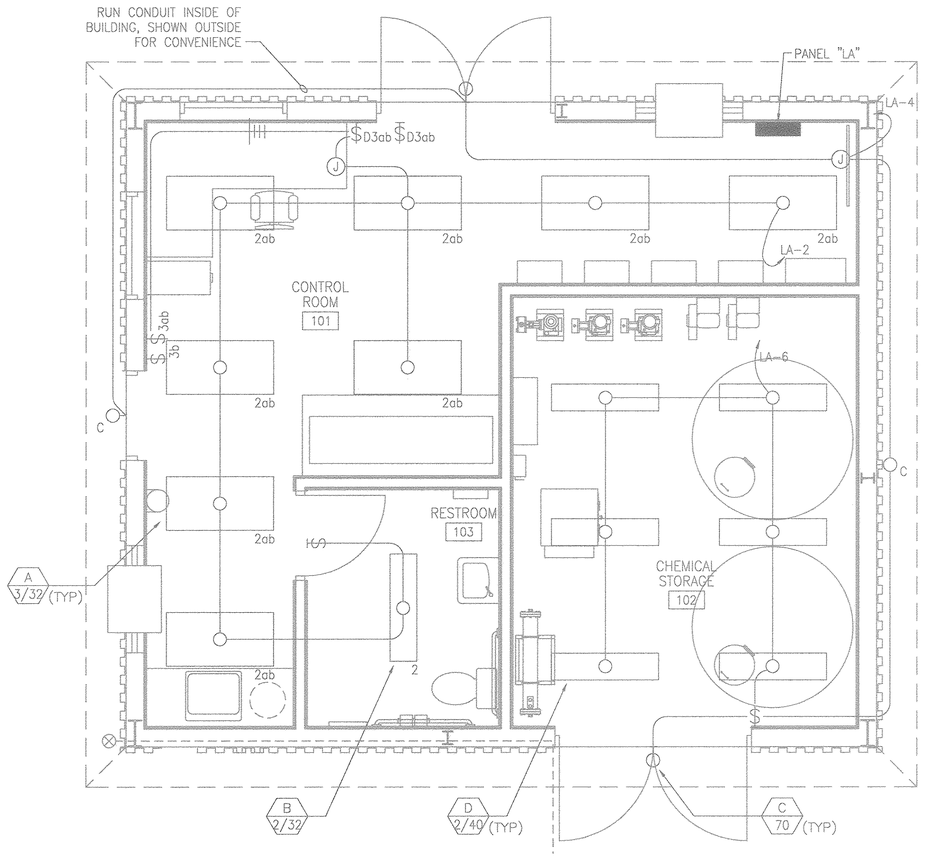
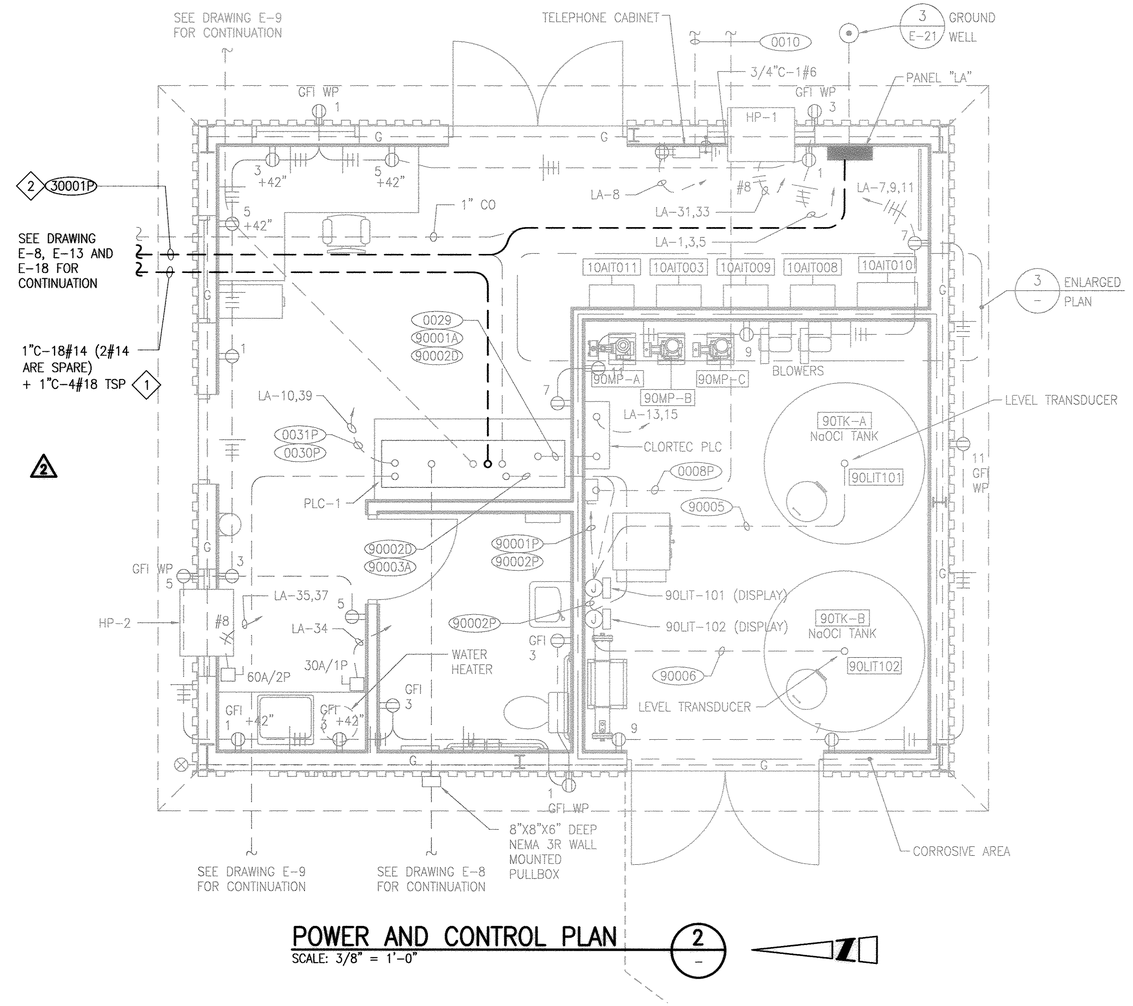


LIGHTING PLAN 1
SCALE: 3/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	VOLTS	WATTS	LAMPS
A 3/32	FLUORESCENT 2'X4' DIE FORMED STEEL HOUSING, WHITE BAKED ENAMEL FINISH, WITH DIMMING BALLAST. UL LISTED, PRUDENTIAL P-2000 OR EQUAL	RECESSED	120V	120V	FLUOR.
B 2/32	FLUORESCENT - 4' WRAP AROUND PRUDENTIAL P-1600 OR EQUAL.	SURFACE	120V	80W	FLUOR.
C 70	WALLIGHTER, COMPACT ONE PIECE MEDIUM BASE SOCKET WITH COATED LAMP WITH INTERNAL PHOTO CELL CONTROL FUNCTIONS. MANUFACTURER SHALL BE GE CAT. NO. WM7S07S SERIES OR EQUAL.	WALL	120V	70W	HPS
D 2/40	FLUORESCENT-THERMOPLASTIC HOUSING, HIGH IMPACT ACRYLIC DIFFUSER, GASKETED, 130°F RATED. UL LISTED FOR WET LOCATIONS, 1 PHASE ELECTRONIC BALLAST, MANUFACTURER SHALL BE DAY-BRITE CAT. NO. VD248 SERIES OR EQUAL.	SURFACE	120V	80W	FLUOR.
E 2/250	20 FEET STEEL POLE WITH 6 FOOT ARM GENERAL ELECTRIC #RRTS20 SERIES WITH 250 WATT HPS HEADS #M4AR SERIES.	POLE	120V	250W	HPS



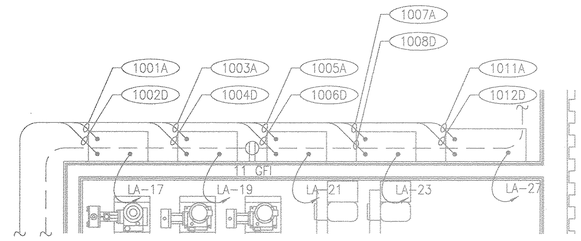
POWER AND CONTROL PLAN 2
SCALE: 3/8" = 1'-0"

NOTES:

1. REUSE EXISTING CONDUIT.
2. PULL OUT THE EXISTING 2#12 + 1#12 GND AND PROVIDE NEW WIRES (6#12 + 1#12 GND.) BACK TO PANEL 'LA'. USE 3 EXISTING SEPARATE 20A/1P C/B'S IN PANEL 'LA'. REFER TO CONDUIT SCHEDULE ON SHEET DRAWING E-7.

GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT



POWER AND CONTROL ENLARGED PLAN 3
SCALE: 1/2" = 1'-0"

RECORD DRAWING
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DATE: 09/30/2005

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2	8/31/06	CHANGE ORDER 1.1	

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT - PHASE III
CONTROL BUILDING ELECTRICAL PLANS

DRAWING NO: E-19
SHEET NO: 46 of 48 SHEETS
FILE NO: S-2268

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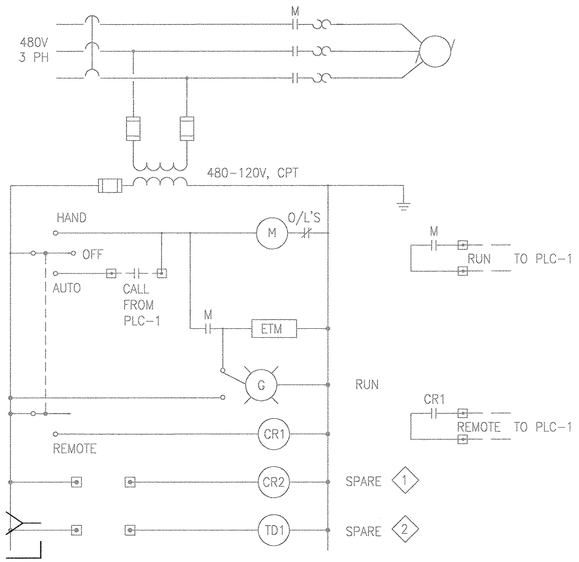
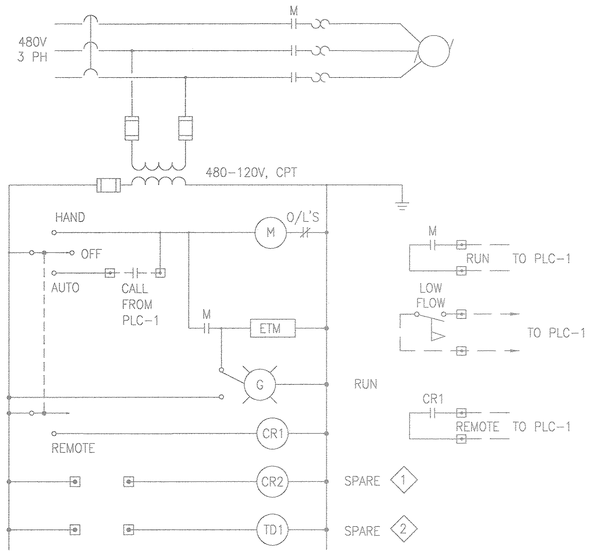


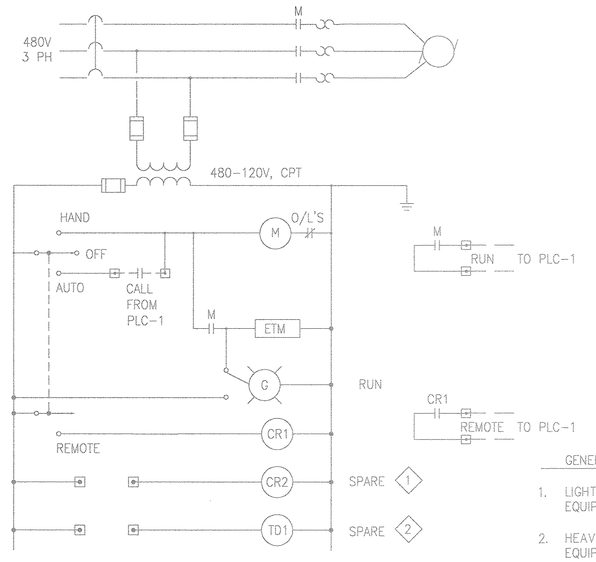
REGENERANT/RINSE PUMP 40P-A CONTROL SCHEMATIC (1)

TYPICAL FOR PUMPS 40P-B, 40P-C AND 40P-D



REGENERANT/RINSE PUMP 50P-A CONTROL SCHEMATIC (2)

TYPICAL FOR PUMPS 50P-B, 50P-C AND 50P-D



BLOWER 60BL-A CONTROL SCHEMATIC (3)

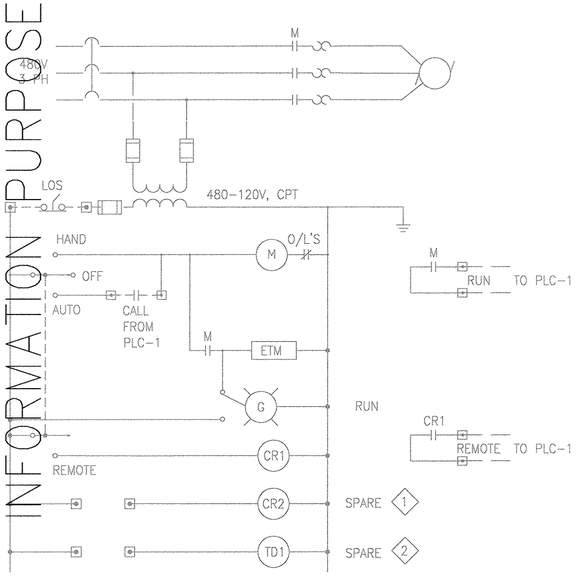
TYPICAL FOR PUMPS 60BL-B AND 60BL-C

NOTES:

1. SPARE RELAYS TO HAVE 2 NC AND 2 NO CONTACTS. ALL CONTACTS SHALL BE WIRED TO TERMINALS.
2. SPARE RELAYS TO HAVE 1 NC AND 1 NO CONTACT. ALL CONTACTS SHALL BE WIRED TO TERMINALS

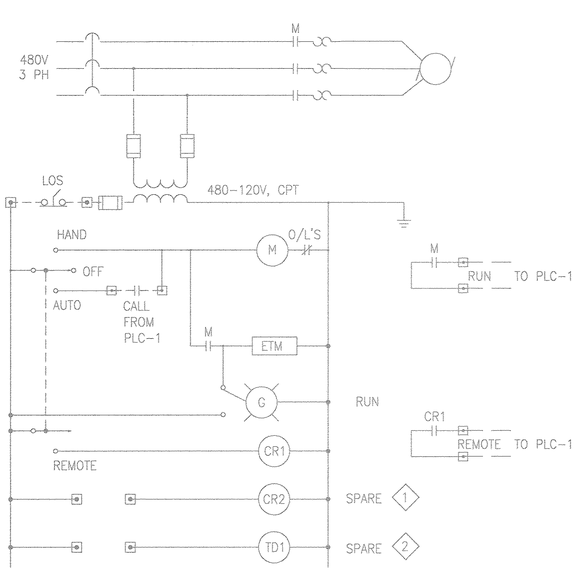
GENERAL NOTES

1. LIGHT LINEWORK (——) DENOTES EXISTING EQUIPMENT
2. HEAVY LINEWORK (——) DENOTES NEW EQUIPMENT

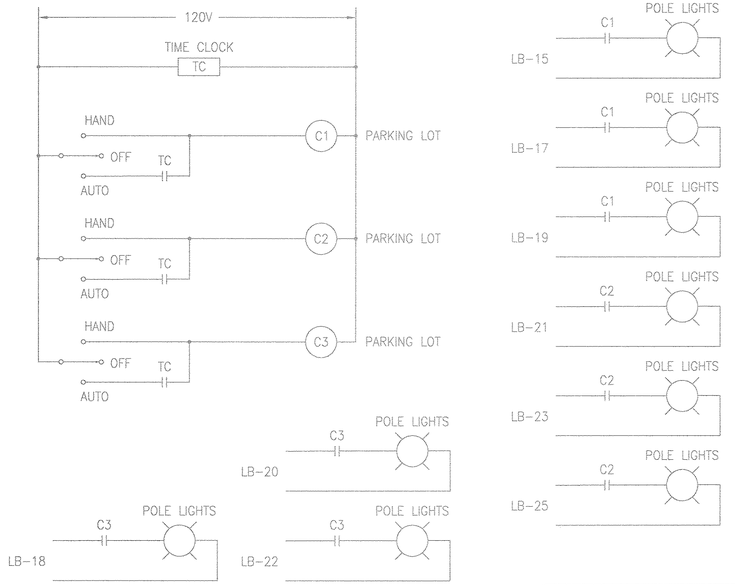


NaOCl GENERATION PUMP 80P-A (4)

TYPICAL FOR PUMP 80P-B



RINSE TANK DRAIN PUMP 100P-A CONTROL SCHEMATIC (5)



SITE CONTROL TIME CLOCK

MOUNT CONTROLS AND TIME CLOCK IN NEMA 3R ENCLOSURE ADJACENT TO PANEL 'B'

RECORD DRAWING
Date: 08-23-07

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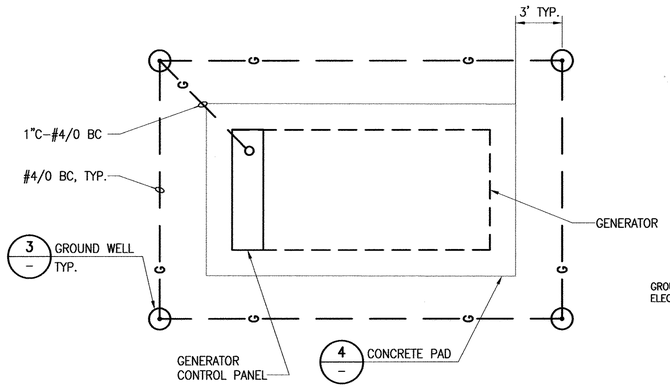
BOYLE ENGINEERING CORPORATION

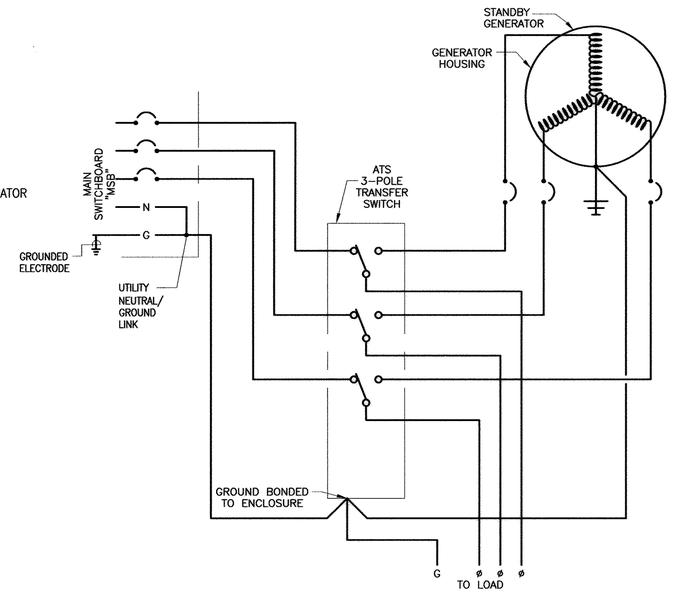
JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III

SCHEMATIC DIAGRAMS

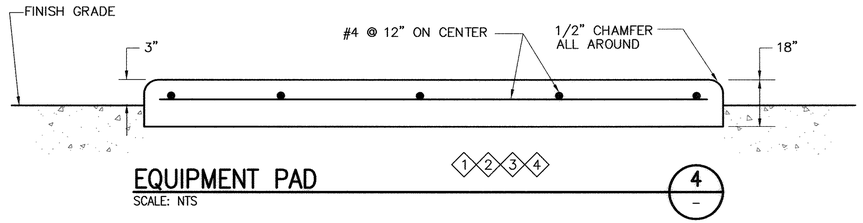
DRAWING NO: E-20
SHEET NO: 47 OF 48 SHEETS
FILE NO: S-2268



GENERATOR GROUNDING DETAIL 1
SCALE: NTS



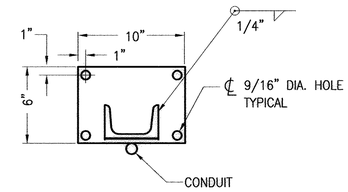
STANDBY SYSTEM WIRING THREE LINE DIAGRAM 6
SCALE: NTS



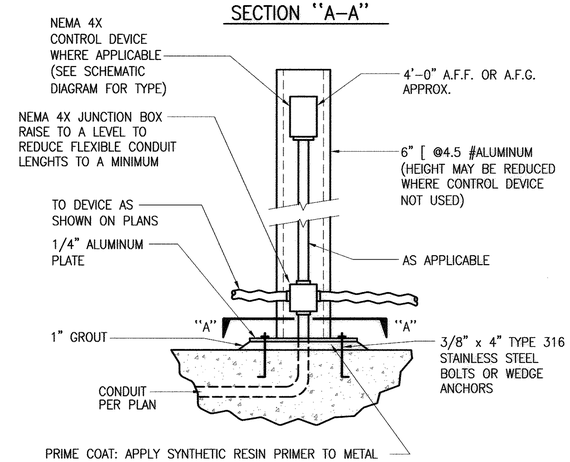
EQUIPMENT PAD 4
SCALE: NTS

NOTES:

1. COORDINATE PAD SIZE WITH SHOP DRAWINGS.
2. CONCRETE SHALL BE CLASS 'A'.
3. REINFORCING STEEL SHALL BE GRADE 60 ASTM A615. ALL APPLICABLE REINFORCEMENT SHALL BE IN PLACE AT THE TIME OF INSPECTION.
4. PAD SHALL EXTEND 12" ALL AROUND FOOTPRINT OF GENERATOR ENCLOSURE

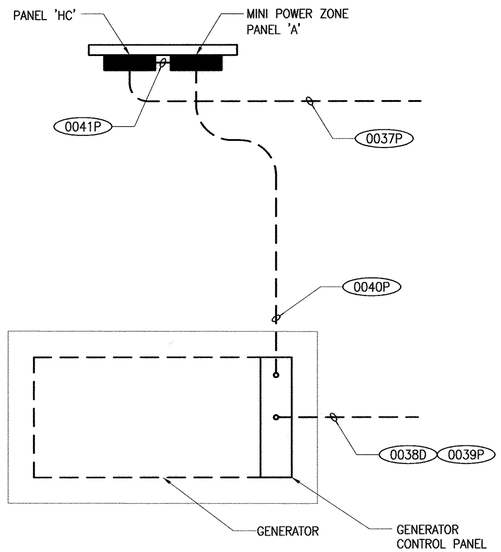


SECTION "A-A"

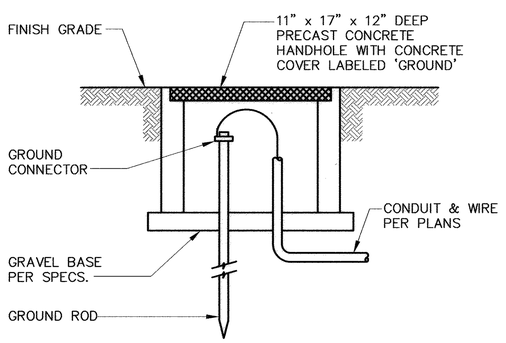


PRIME COAT: APPLY SYNTHETIC RESIN PRIMER TO METAL SURFACE BEFORE FINISH COATS. PRODUCTS: KOPPERS 40, TNEMEC 32-1210, PORTER VC 1799, OR EQUAL.

FINISH COAT: TWO COATS OF KOPPERS BITUMASTIC SUPER SERVICE BLACK, 12 MILS EACH; TWO COATS OF TNEMEC 46-450 HEAVY TNEMECOL, 12 MILS EACH; TWO COATS OF PORTER TARMASTIC 100, 12 MILS EACH; OR EQUAL.



GENERATOR DETAIL 2
SCALE: NTS



GROUND WELL DETAIL 3
SCALE: NTS

CONTROL STATION OR JBOX MOUNTING DETAIL 5
NONE

RECORD DRAWING
Date: 08-23-07
These record drawings apply only to those facilities constructed under the contract identified in the title block and have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer/Architect will not be responsible for any errors or omissions which have been incorporated into this drawing as a result of the work by others.

DWG: S:\JOA1\100-04\CAD (phase III)\PrintSet\ELECTRICAL\S2268-E21.dwg USER: kbedford
DATE: Nov 08, 2007 4:18pm XREFS: BORDER

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

APPROVAL: DATE:
APPROVAL: DATE:
APPROVAL: DATE:

DESIGN BY: CU/JL
DRAWN BY: RH
CHECKED BY: PT
DATE: 09/30/2005

REV	DATE	DESCRIPTION	APP

BOYLE ENGINEERING CORPORATION

JURUPA COMMUNITY SERVICES DISTRICT
JURUPA ION EXCHANGE TREATMENT PLANT – PHASE III
ELECTRICAL DETAIL

DRAWING NO: E-21
SHEET NO: 48 OF 48 SHEETS
FILE NO: S-2268

Attachment “D”
Process Controls and Operation

Nitrate Vessel Regeneration Cycle

	Volume (Gal.)	Flow Rate (GPM)	Source	Discharge To	Duration (min.)
Drain Vessel	7,100	250-350	N/A	Softener	25
Brine (down flow)	7,500	200	B/R Pumps	Waste Tank	37.5
Rinse #1 (down flow)	10,000	250	B/R Pumps	Waste Tank	40
Rinse #2	750	150	B/R Pumps	Waste Tank	5
Rinse #3	5,500	275	Raw Water	Waste Tank	20
Purge	800	165	Treated Water	Waste Tank	5
Standby	N/A	N/A	Raw Water	N/A	10