

SOUTH SUTTER WATER DISTRICT

2464 Pacific Avenue • Trowbridge, CA 95659 • Office (530) 656-2242 • FAX (530) 656-2416

Bradley J. Arnold
General Manager / Secretary
sswd@hughes.net



September 30, 2013

Robert B. Finucane
Regional Engineer
Federal Energy Regulatory Commission
100 First Street, Suite 2300
San Francisco, CA 94105-3084

Re: Camp Far West Reservoir
Project 2997-CA

Dear Mr. Finucane:

Please find enclosed three copies of the Camp Far West Dam Outlet Works Repair Project.

If you have any questions please contact me at (530) 656-2242.

Sincerely,

A handwritten signature in cursive script that reads "Brad Arnold".

Bradley J. Arnold
General Manager/Secretary



BOARD OF DIRECTORS

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Camp Far West Outlet Works Repair Project Project Scope Document Updated September, 2013

Overview: The existing 48-inch outlet works located at the base of Camp Far West Dam was installed in 1962. In May of 2010 two pinhole leaks were discovered in the piping just downstream of the butterfly isolation valve on the backside of the pipe near the flanged end. Ultrasonic testing was performed on the piping in the area of the leak which revealed reduced pipe wall thickness just downstream the butterfly valve trunnion in the horizontal plane. A Powersleeve epoxy type pipe wrap was installed as a temporary patch until a permanent repair could be made. In May 2011 leaks developed underneath the temporary pipe wrap. When the pipe wrap was removed, two additional holes were found. Additional ultrasonic testing was done to determine the area of thinning pipe wall and a metal patch was welded in place. Additional pinhole leaks were discovered in May 2012 at which time an additional welded patch was installed. In July 2013 yet another pinhole leak developed between the flange and recently installed patch. It is currently being monitored until the complete repair is made, planned for October 2013.

Scope: Project scope to repair the 48-inch outlet works pipe involves replacing the section of pipe that is damaged in its entirety. This can be accomplished by draining the penstock, removing the bad section of pipe, installing the new pipe all while maintaining fish water flows through the powerhouse.

The butterfly valve located in the valve chamber adjacent to the section to be replaced, no longer seals completely and consequently leaks a significant amount of water. The project will include evaluating the condition of the valve and confirming the work scope for repair.

In order to shut off water flow through the penstock and allow the project crew to perform work, stop logs will be lowered in place at the intake structure. A dive crew will be contracted to bring in a barge with crane to lower the stop logs into place and assist the barge crane with the stop log placement.

A contractor will be brought in specializing in pipe repair to remove the section of pipe immediately downstream of the butterfly valve in its entirety. A second contractor will be used to remove the lead based paint from the existing pipe, allowing it to be cut into sections small enough to negotiate out of the 500 foot long tunnel. A new section of pipe will be installed by bringing in short sections of pre coated pipe and joining them with couplings in place. The existing concrete pipe support will be removed and new fabricated supports will be installed to support each new section of pipe. The 4-inch bypass and



air/vacuum valve penetrations will be installed in the new pipe. See the attached drawings for details of the piping modification.

A dam will be formed upstream of the butterfly valve using sandbags and the leakage water will be pumped to the lower pipe sections so as to keep the repair area dry. Power, compressed air and ventilation will have to be routed the entire 500 foot length of the pipeline during construction activities.

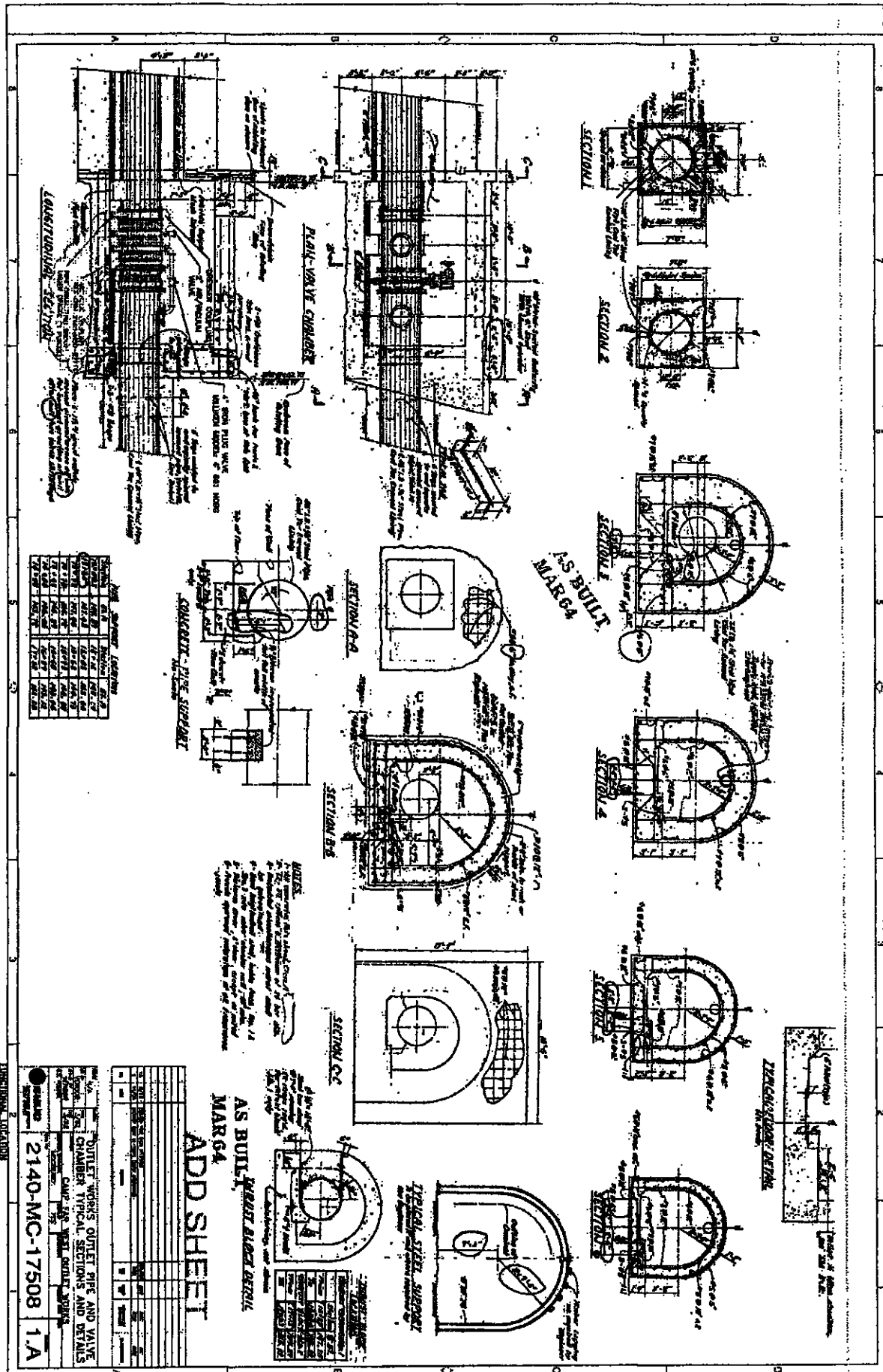
A thorough inspection of the pipe and butterfly valve will be made to evaluate the integrity of these components. The contractor has made a recommendation for repair of the valve using an epoxy product to re-build the seating surface of the valve body and disc. Although the work is planned, the actual condition of the valve is unknown and alteration to this plan may be made to attempt to improve the leakage rate.

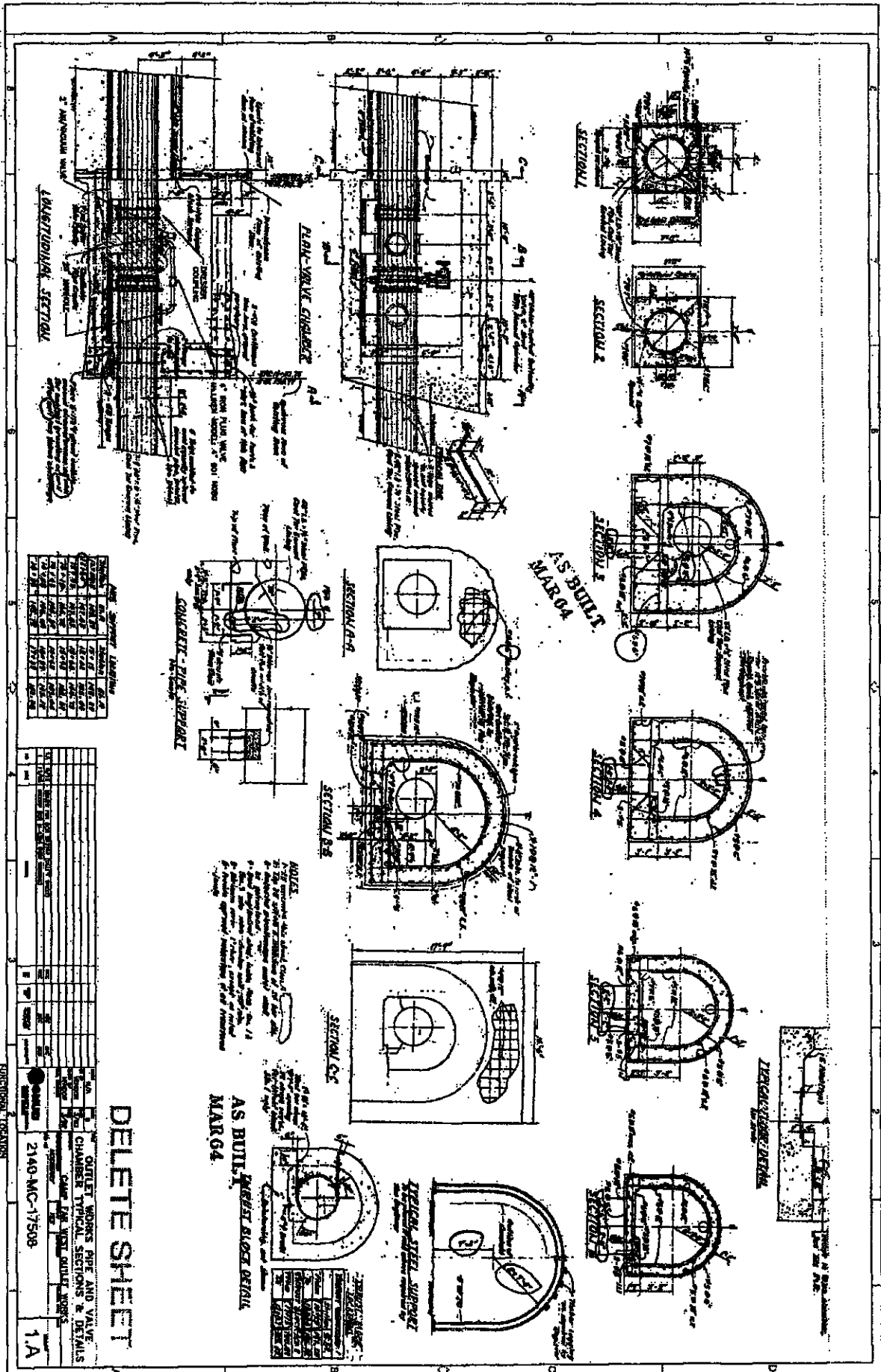
After completion of the pipe repair, the outlet works can be returned to service by using the barge and dive crew to remove stop logs as before and re-pressurize the pipeline. Minimum stream flows will be re-established through the outlet works and the powerhouse will return to its normal condition.

The reservoir elevation will be maintained above the ring gate so the powerhouse can be used to maintain minimum water flow by blocking the wicket gates open and allowing a leakage rate of 11 cfs.

Schedule: The entire project is estimated to take approximately 8 days. Work hours will be two 12-hr shifts for pipe work, Monday through Sunday. Day shift only for divers, Monday through Friday. Work will begin October 14, 2013.

Day 1:	Set up minimum req's flow through unit (11cfs). Lead abatement contractor & dive contractor mobilize.
Day 2:	Barge and dive crew on site to lower stop logs and isolate pipeline. Lead abatement work to commence.
Day 3:	TCB crews to mobilize. Lead abatement work to be completed. Divers to complete stop log installation.
Day 4-7:	TCB crews to set up leakage diversion, remove old pipe, repair valve, inspect downstream piping, install new pipe and demobilize. (24-hr, 7-day/wk schedule)
Day 8:	Barge and dive crew on site to remove stop logs.





VALVE CHAMBER MATERIALS

ITEM NO.	DESCRIPTION	QTY	UNIT
1	CAST IRON	1	CHAMBER
2	CAST IRON	1	VALVE
3	CAST IRON	1	GATE
4	CAST IRON	1	SEAT
5	CAST IRON	1	STEM
6	CAST IRON	1	ROCKERS
7	CAST IRON	1	WHEELS
8	CAST IRON	1	SCREWS
9	CAST IRON	1	NUTS
10	CAST IRON	1	KEYS
11	CAST IRON	1	BRASS
12	CAST IRON	1	STEEL
13	CAST IRON	1	COPPER
14	CAST IRON	1	ZINC
15	CAST IRON	1	PAINT
16	CAST IRON	1	WOOD
17	CAST IRON	1	GLASS
18	CAST IRON	1	LEAD
19	CAST IRON	1	ASBESTOS
20	CAST IRON	1	OTHER

VALVE CHAMBER DIMENSIONS

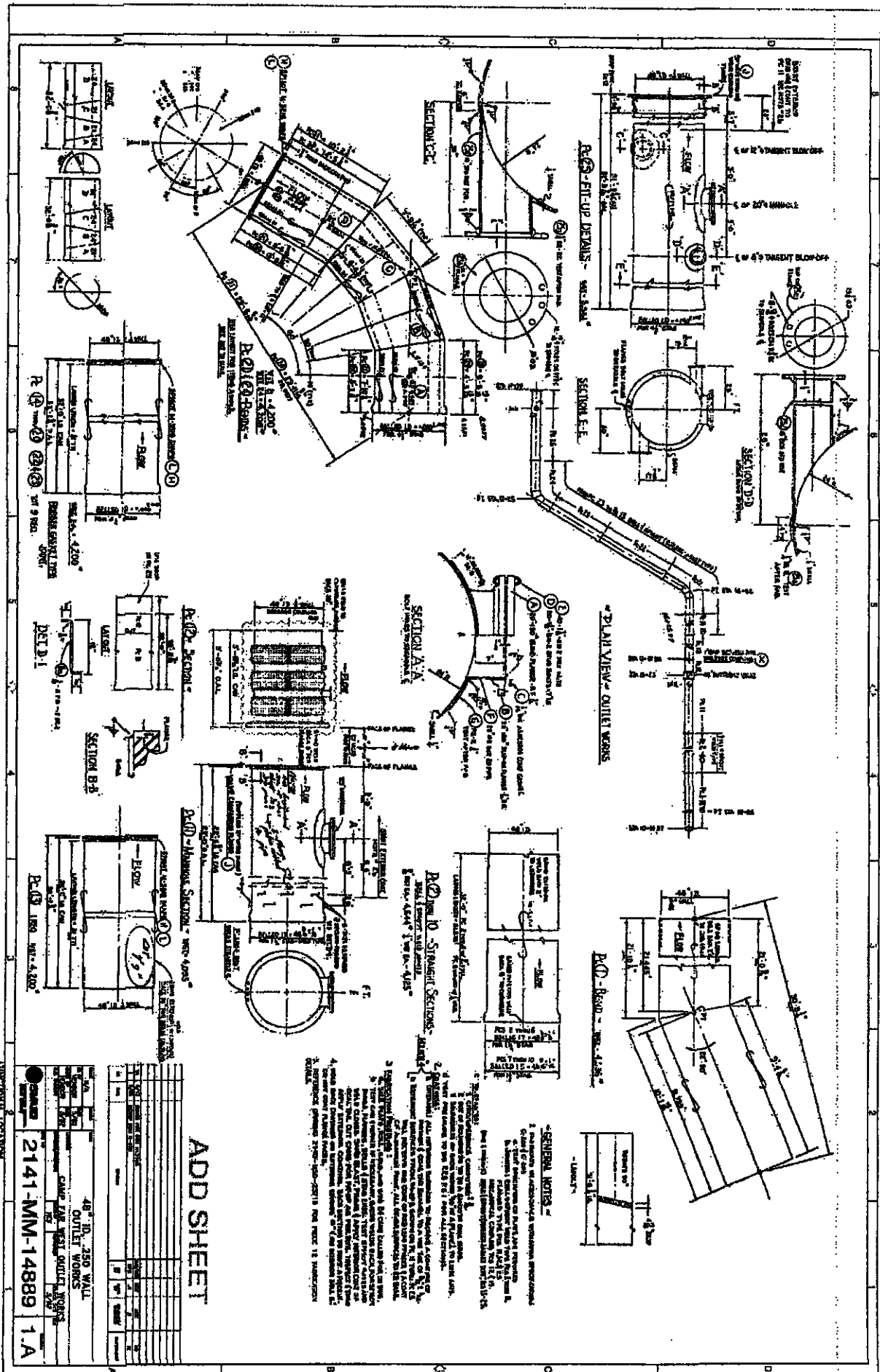
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16	CAST IRON	1	WOOD
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VALVE CHAMBER SPECIFICATIONS

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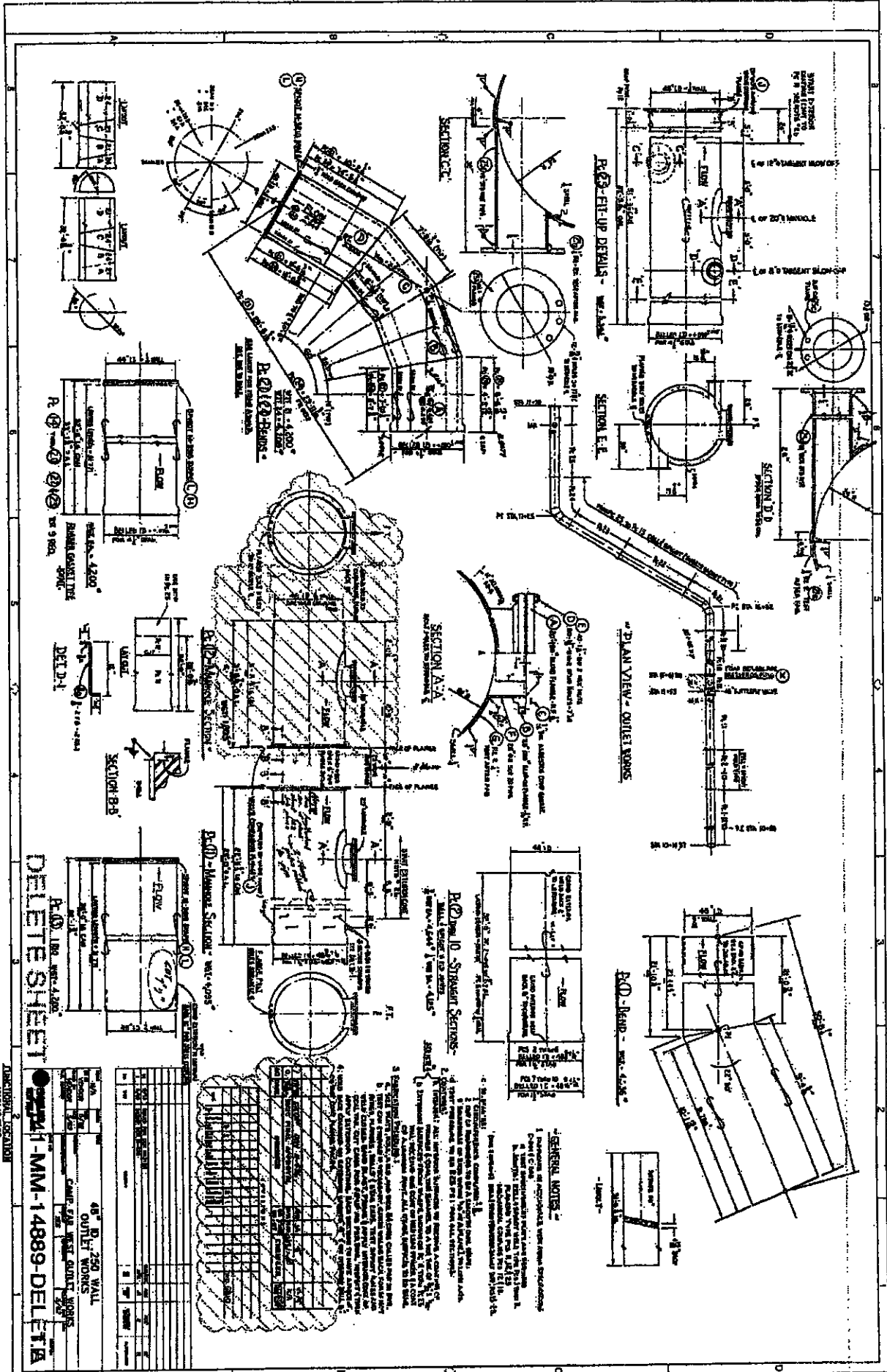
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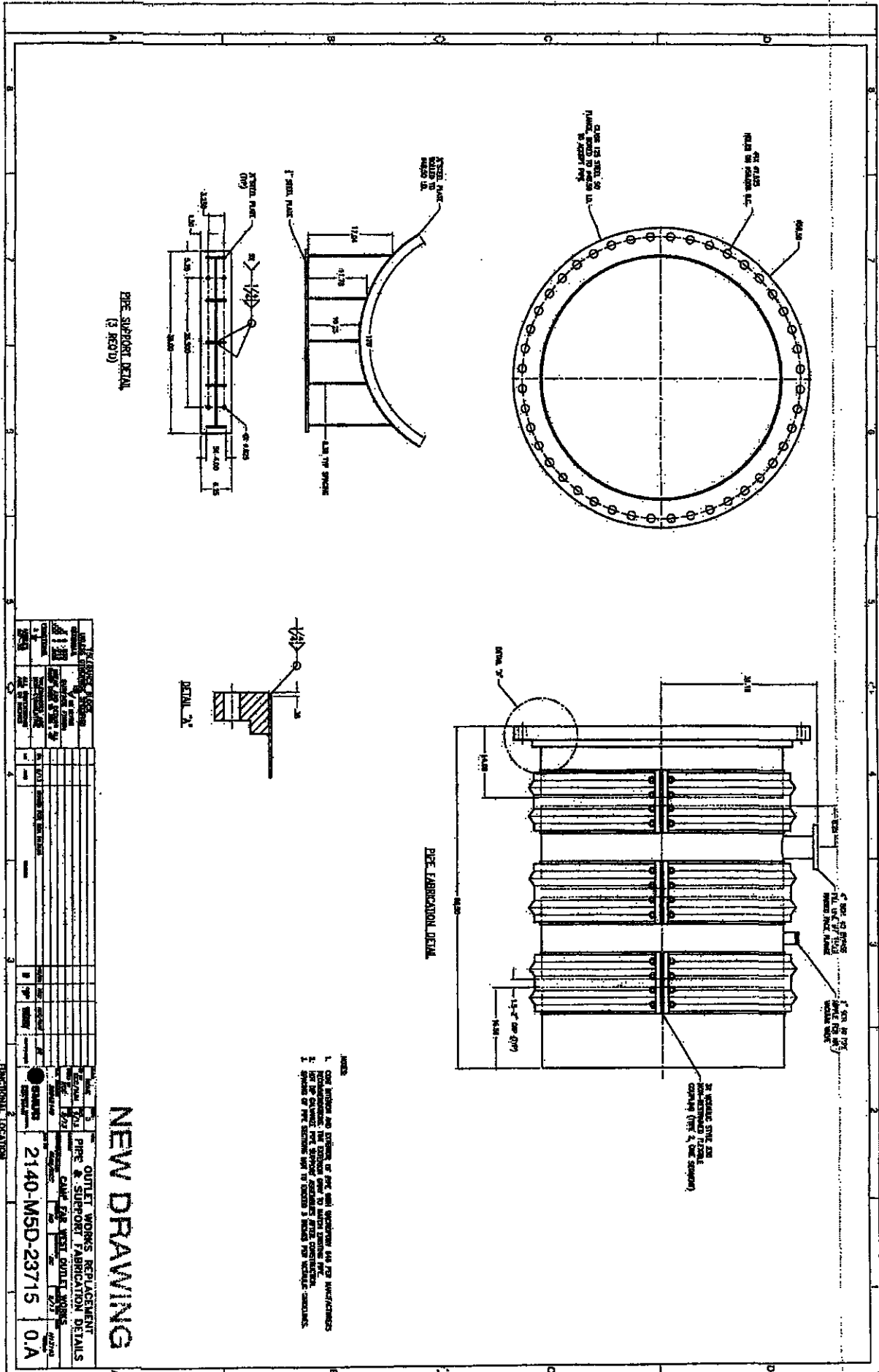
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NEW DRAWING

OUTLET WORKS REPLACEMENT
 PIPE & SUPPORT FABRICATION DETAILS
 CAMP FOR WEST OUTFLET WORKS
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Document Content(s)

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