

FEASIBILITY REPORT

PHASE 1 - SANTA MARIA REHABILITATION INITIATIVE

SANTA MARIA SIPHON SUPPORT SYSTEM STABILIZATION AND SANTA MARIA CANAL IMPROVEMENTS

HINSDALE COUNTY, COLORADO

Prepared for

Santa Maria Reservoir Company
P.O. Box 288
Monte Vista, Colorado 81144

January 30, 2013

Prepared By:

URS

8181 East Tufts Avenue
Denver, Colorado 80237

Project No. 22241428

FEASIBILITY STUDY APPROVAL
Pursuant to Colorado Revised Statutes 37-60-121 & 122, and
in accordance with policies adopted by the Board, the
CWCB staff has determined this Feasibility Study meets all
applicable requirements for approval.

Signed

Date

3/19/2013



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January 30, 2013

Mr. Jay Yeager, Manager
Santa Maria Reservoir Company
147 Washington Street
Monte Vista, Colorado 81144

Subject: Santa Maria CWCB Feasibility Report

Dear Mr. Yeager:

Pursuant to your request, URS Corporation (URS) is pleased to submit the enclosed feasibility report for Phase 1 of the Santa Maria Rehabilitation Initiative. This report was developed in conformance with the Colorado Water Conservation Board (CWCB) Water Project Loan Program Guidelines, dated January 2006.

This study examines the feasibility of various measures to rehabilitate the Santa Maria Siphon and Canal for the Santa Maria Reservoir Company (SMRC). The objective of the Santa Maria Siphon Support System Stabilization and Santa Maria Canal Improvements Project (Project) is to improve the capability of SMRC to continue providing irrigation water to shareholders. This will be accomplished by rehabilitating and making critical repairs to the Santa Maria Siphon and the Santa Maria Canal, which constitute the main structural elements of the conveyance system between the Continental Reservoir and the Santa Maria Reservoir. The goals of the Project are to mitigate current water management inefficiencies, reduce high maintenance, prevent continued deterioration, and avoid the potential failure of this delivery system.

Please let me know if you need additional information related to the enclosed report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ed A. Toms", is written over a light blue horizontal line.

Ed A. Toms, PE, Vice President
Project Manager

Enclosure

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OVERVIEW

This study examined the feasibility of various measures to rehabilitate the Santa Maria Siphon and Canal for the Santa Maria Reservoir Company (SMRC). The objective of the Santa Maria Siphon Support System Stabilization and Santa Maria Canal Improvements Project (Project) is to improve the capability of SMRC to continue providing irrigation water to shareholders. This will be accomplished by rehabilitating and making critical repairs to the Santa Maria Siphon and the Santa Maria Canal, which constitute the main structural elements of the conveyance system between the Continental Reservoir and the Santa Maria Reservoir. The goals of the Project are to mitigate current water management inefficiencies, reduce high maintenance, prevent continued deterioration, and avoid the potential failure of this delivery system.

The Project constitutes the first phase of SMRC's multi-phase Santa Maria Rehabilitation Initiative (referred to here as the SMRC Rehab Initiative), which is implementing recommendations presented in this report. This Project and all future phases of the SMRC Rehab Initiative have the ultimate objective of lifting the State-imposed storage limitations at Continental Reservoir and mitigating or eliminating the many problems created by the deterioration of a century-old system that will otherwise soon reach the end of its useful life.

The Project will complete the first phase of the SMRC Rehab Initiative, improving and increasing the capacity of the conveyance system between Continental Reservoir and Santa Maria Reservoir and establishing the critical elements required to proceed with future improvements at Continental Reservoir. By implementing the preferred alternatives presented in this report, the Project will accomplish multiple consumptive and nonconsumptive purposes, greatly improving SMRC's ability to (1) meet the agricultural needs of irrigators in 70,000 acres of the San Luis Valley and (2) establishing significant improvements in the efficient management of Colorado's Rio Grande Compact water.

This study was prepared in conformance with the Colorado Water Conservation Board's (CWCB) requirements for funding. This study examined the feasibility of non-structural and structural alternatives; and demonstrates the technical, financial, environmental, and institutional feasibility of rehabilitating the siphon and canal system.

RECOMMENDED ALTERNATIVES

The following are the recommended alternatives:

1. **Siphon Preferred Alternative (S3)** - Rehabilitate and reinforce the existing supports in place. This alternative includes repairing the existing supports with reinforced concrete in place. It would involve selective demolition of the thrust blocks and intermediate supports and then using reinforcement overlays for the blocks and supports to reestablish their structural integrity. The steel bearing plates that support the siphon pipe on the intermediate supports will be placed with new plates. This alternative was selected as the preferred alternative based on technical and cost merits. The siphon pipe has been in place since 1934 and it was decided that the rehabilitation of the existing support system would last the same length of time with minimal risk of failure.
2. **Canal Preferred Alternative (C3)** - Improve the flow hydraulics through canal improvements. This alternative includes removing the existing drop structures and the concrete lining of the canal to improve the flow hydraulics so the canal can convey additional flow. A hydraulic model was used to evaluate the appropriate cross section for the canal. It was decided that it was important to remain within the existing footprint of the canal to minimize the potential for extensive environmental and special use permitting issues. This alternative was selected as the preferred alternative based on technical and cost merits.

FINANCIAL PROGRAM

Total capital expenses for the recommended Project alternatives, including construction and construction contingency, construction engineering, SMRC's administration and legal support, and environmental permitting support is \$1,855,000 (rounded). SMRC is anticipating receiving 25 percent grant support from the Basin and Statewide accounts of the Water Supply Reserve Account (WSRA). The anticipated grant support from Basin and Statewide accounts is \$23,000 and \$440,750, respectively, totaling \$463,750. SMRC's financial obligation would reduce from \$1,855,000 to \$1,391,250 due to the WSRA grants. SMRC is applying for the remaining construction cost, totaling \$1,391,250, which includes their match amount of

\$139,125, through the CWCB Small Project Loan Program. SMRC's CWCB loan request, with the CWCB 1 percent service fee, totaling \$13,913, is for the amount of \$1,405,163. **Table ES.1** presents a summary of the requested Project loan.

Table ES.1
Project Loan Summary

Total Project Cost (rounded)	\$1,855,000
Total Project Amount after Anticipated WSRA Grant (25%)	\$1,391,250
CWCB Loan (Including 1% Service Fee)	\$1,405,163
CWCB Annual Loan Payment	\$60,604
Number of Shares	5,400
Annual Cost Per Share for Loan	\$15.00
Current Assessment per Share	\$28.00
New Assessment per Share	\$43.00

SCHEDULE

The designs have been completed and are ready for bidding. The SMRC is presently obtaining the required environmental permits for the Project and it is anticipated that construction will start after the permits are obtained. Construction is scheduled, dependent on obtaining the required permits, to begin in July 2013 with the completion date in December 2013.

1.1 PROJECT PURPOSE

The objective of the Santa Maria Siphon Support System Stabilization and Santa Maria Canal Improvements Project is to improve the capability of SMRC to continue providing irrigation water to shareholders. This will be accomplished by rehabilitating and making critical repairs to the Santa Maria Siphon and the Santa Maria Canal, which constitute the main structural elements of the conveyance system between the Continental Reservoir and the Santa Maria Reservoir. The goals of the Project are to mitigate current water management inefficiencies, reduce high maintenance, prevent continued deterioration, and avoid the potential failure of this delivery system.

The Project constitutes the first phase of SMRC's multi-phase Santa Maria Rehabilitation Initiative (referred to here as the SMRC Rehab Initiative), which is implementing recommendations presented in this report. This Project and all future phases of the SMRC Rehab Initiative have the ultimate objective of lifting the State-imposed storage limitations at Continental Reservoir and mitigating or eliminating the many problems created by the deterioration of a century-old system that will otherwise soon reach the end of its useful life.

The Project will complete the first phase of the SMRC Rehab Initiative, improving and increasing the capacity of the conveyance system between Continental Reservoir and Santa Maria Reservoir and established the critical elements required to proceed with future improvements at Continental Reservoir. By implementing the preferred alternatives presented in this report, the Project will accomplish multiple consumptive and nonconsumptive purposes, greatly improving SMRC's ability to (1) meet the agricultural needs of irrigators in 70,000 acres of the San Luis Valley and (2) establishing significant improvements in the efficient management of Colorado's Rio Grande Compact water.

1.2 SCOPE OF WORK

This report summarizes the two designs that were completed for this phase of the Project. These designs included the Santa Maria Siphon Support System Stabilization and Santa Maria Canal Improvements. The general scope of work included performing field surveys, engineering analyses and design, alternatives development and evaluation, and preparing construction

documentation for the Project. The Project has been finalized and approved by SMRC. The bid documents will need to be prepared prior to soliciting bids for the Project.

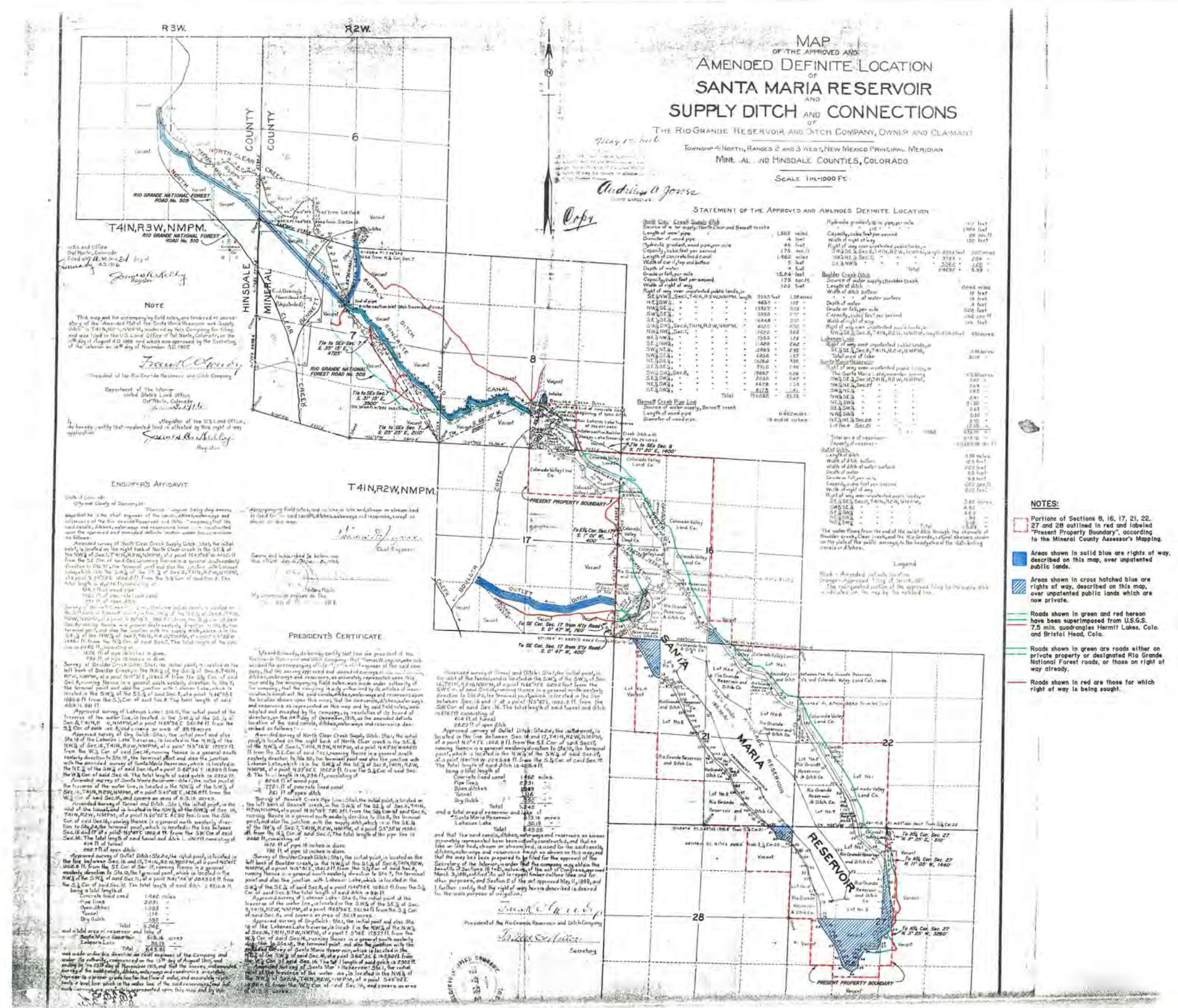
The SMRC, a non-profit corporation and Mutual Reservoir Company, was incorporated in the State of Colorado in April 1931. Articles of Incorporation and Bylaws are included in **Appendix A**.

SMRC owns and operates the Continental Reservoir, located in Hinsdale County, Colorado and the Santa Maria Reservoir, located in Mineral County, Colorado, as well as the pipeline, siphon and open ditch used for water conveyance between the reservoirs. The historical system map **Figure 2.1** shows both reservoirs and the connecting conveyance system.

North Clear Creek is SMRC's primary water source. Ninety percent of the water managed by SMRC goes through the Rio Grande Canal, serving some of the best water rights in the San Luis Valley, therefore all of SMRC's storage and release operations, curtailments and such, are governed by the Rio Grande Compact. The remaining 10 percent of SMRC water goes through the Monte Vista Canal.

SMRC has 5,400 shares of outstanding stock, mostly split in groups of 10 shares, with 225 stockholders. The company's annual budget in 2010 was \$135,000. SMRC's five-member Board, composed of farmers and ranchers, employs three full-time employees. Financial statements for 2009 through 2011 are provided in **Appendix B**.

Figure 2.1 System Map



3.1 PROJECT HISTORY

The project history is documented in “The San Luis Valley Historian - Reservoirs of the San Luis Valley, Volume XXXVIII Number 2, 2006”. A copy of this document is presented under **Appendix C**. This feasibility study addresses the repairs to the Santa Maria Siphon and the Santa Maria Canal as discussed in the following sections.

3.1.1 Santa Maria Siphon

The siphon is owned and operated by the Santa Maria Reservoir Company. The 8,070-foot long, 7-foot diameter welded steel plate siphon pipe conveys water from North Clear Creek and then discharges into a rock/concrete-lined canal that flows into Lakeman Lakes. The original pipe was a 4-foot diameter wood stave pipe that was replaced by the present welded steel plate pipe in 1934. The first 690 feet of the siphon is above ground, and then continues below grade to the canal. The above ground portion of the siphon is supported by stiffeners and roller supports on concrete supports. Historical drawings are presented in **Appendix C**.

The upstream portion of the siphon is founded along a glacial till slope. For years the slope has been experiencing active sliding, which has shifted some of the smaller intermediate supports downslope several inches to more than a foot, resulting in loss of support of the siphon pipe. Shims have been employed in an attempt to maintain support for the pipe. A portion of the siphon pipe, when empty, spans the thrust blocks, with gaps between the pipe bearing plates and the concrete supports. When the siphon fills with water, the pipe deflects down until it rests on the shims. The concrete supports and thrust blocks have experienced freeze-thaw damage of varying degrees of severity. An access road was installed adjacent to the siphon several years ago. It is adequate for small vehicles, but heavy equipment such as concrete trucks may experience difficulty.

Appendix C presents photos, along with historical drawings for the siphon.

3.1.2 Santa Maria Canal

The existing canal is approximately 7,200 feet long and between three and eight feet deep. The bottom width of the canal varies, but is generally approximately 20 to 25 feet wide.

The canal was constructed as a benched channel, with a cut-slope on the left side (looking downstream) and a maintenance road and fill slope located on the right side (looking downstream). The existing maintenance road is approximately 10 to 12 feet wide. The side slopes are generally approximately 1.5H:1V. The canal appears to be cut into glacial deposits, consisting of sands and cobbles, with few fines. Generally, the canal consists of an earthen canal with a concrete-lined right bank through the majority of the canal. Approximately 470 feet segment of the canal is fully concrete-lined. There are approximately 17 existing concrete control structures located along the length of the canal.

A 4-foot by 6-foot cast-in-place concrete box culvert is located along the entire length of the canal, at approximately the right (looking downstream) inside toe of the canal. The top of the box culvert is approximately located at the invert elevation of the canal. There is some local scour in earthen fill adjacent to the top of the box culvert; however, the scour appears to have been repaired with riprap in some areas. The box culvert is approximately 5-foot wide and 4-foot deep (inside dimensions). During winter discharges, a bulkhead is placed at the outlet of the 7-foot diameter siphon, which forces all winter flows through the box culvert. The box culvert also operates in the summer while canal is in operation.

Approximately 4,800 feet of the box culvert was rehabilitated in 1974. Generally, rehabilitation consisted of placing a 48-inch corrugated metal pipe (CMP) within the box and encasing the CMP in concrete.

Appendix C presents photos along with historical drawings for the canal.

3.2 STUDY AREA AND EXISTING FACILITIES DESCRIPTION

3.2.1 Project Service Area

The Project lies within both Hinsdale and Mineral Counties in Colorado, about 23 miles southwest of the Town of Creede. The inlet ditch to Santa Maria Reservoir from North Clear Creek diverts from North Clear Creek about 5,398 feet from the SE quarter of Section 1, Township 41 North, Range 3 West, N.M.P.M. Continental Reservoir is located in Sections 21, 28, and 29 of Township 42 North, Range 3 West N.M.P.M. in Hinsdale County at a point where the SW corner of Section 21 bears approximately South 84° West at a distance of 1,500 feet.

The service area for SMRC is approximately 70,000 acres. Operating in tandem, the Continental and Santa Maria Reservoirs irrigate a vast five-county area of the San Luis Valley.

3.3 WATER DEMANDS AND YIELD ANALYSIS

3.3.1 Water Demands

The scope of this Project is strictly limited as defined under Section 1.2 of this report. No new downstream stream deletions will occur due to the proposed Project elements. No additional water supplies will be developed in connection with the Project. No new or increased diversions will be made and no additional storage capacity will be created at the reservoir. This Project will not increase SMRC irrigation water supply.

3.3.2 Water Rights

SMRC has the water rights established for the Project. No new rights will be required. **Table 3.1** presents a summary of SMRC's storage water rights. **Table 3.2** presents a summary of SMRC's diversion rights from North Clear Creek, Bennett Creek, and Boulder Creek. Water resulting from these diversion rights is stored in the Santa Maria Reservoir.

3.4 PROJECT LANDS

This Project will not broaden the SMRC service area and will not provide for irrigation of any new lands. The present lands irrigated are 70,000 acres, as aforementioned.

3.5 WATER QUALITY

There will be no water quality impacts as a result of this Project, nor will there be any new water supplies developed as a part of this Project, for which water quality will need to be addressed. Construction dewatering, process waters, and diversions will be performed in accordance with required federal, state, and local permit conditions.

Table 3.1
Summary of Storage Water Rights

Appropriation No.	Adjudication Date	Appropriation Date	Amount (ac-ft)
Santa Maria Reservoir			
1916-81A 1916-2 (Reservoir)	September 13, 1916 ¹	August 11, 1986	15,871.21
1916-81A 1916-4 (Reservoir)	September 13, 1916 ¹	September 22, 1902	21,652.79 ²
Total Storage Right Santa Maria Reservoir			37,524.00
Continental Reservoir			
1934-1	December 15, 1934	June 1, 1901	8,832.00
1934-3	December 15, 1934	May 4, 1907	2,557.00
1934-4	December 15, 1934	May 4, 1907	15,327.00 ³
Total Storage Right Continental Reservoir			26,716.00
Total System Storage Right			64,240.00
¹ Original decree amended on remitter June 26, 1924.			
² Originally 28,014.85 ac-ft; 6,302.06 ac-ft conditional not made absolute.			
³ Originally 19,361 ac-ft; 4,034 ac-ft conditional not made absolute.			

Table 3.2
Summary of Diversion Water Rights

Diversion Point	Amount (cfs)
Santa Maria Supply Ditch – North Clear Creek	150
Santa Maria Supply Ditch – Bennett Creek	25
Santa Maria Supply Ditch – Boulder Creek	100
Total	275

3.6 ENGINEERING INVESTIGATIONS AND DESIGNS

The Project has been finalized and the SMRC has approved the designs. Bid documents will need to be developed for the Project prior to soliciting bids.

Preliminary and final hydraulic and structural design analyses were performed for the Project. A Project topographic survey completed by URS in 2011 was used to design the Project components.

4.1 OVERVIEW

Several alternatives were considered for the siphon and canal components that would meet the Project's needs. These alternatives also included a No Action alternative. The No Action alternative for the Project elements was deemed not viable due to the loss of the system operation.

4.2 NO ACTION

Potential failure of the siphon support system could occur in the future due to the present condition of the concrete supports and bearing plates as aforementioned. If the siphon support system fails, the siphon pipe will fail and the irrigation water will not be delivered to the canal and then to the shareholders.

The Santa Maria Siphon and canal system conveys water to the Santa Maria Reservoir. Santa Maria Reservoir stores irrigation water and also stores water for the Rio Grande Compact, the San Luis Valley Water Conservancy District, Colorado Division of Wildlife (CDOW) a.k.a. Colorado Parks and Wildlife, and Trans-Mountain diversion. If the siphon and canal system fails, these water deliveries will be disrupted and could become a legal issue. The No Action alternative was not judged to be a viable alternative and was not considered further.

4.3 SIPHON SUPPORT SYSTEM

The siphon support system is failing due to the foundation failures of the intermediate supports between the thrust blocks along the siphon pipe. The foundation is failing due to a deep-seated slide area on which the original pipe was constructed. **Appendix C** presents photographs of the siphon pipe and the areas of concern. The goal of the Project is to cost effectively stabilize or replace the siphon pipe with a long-term repair so that service will not be disturbed for short or long time periods.

Three alternatives were considered that included the following:

1. **Alternative S1** - Reduce land slide lateral pressure by removing the land slide material.

This alternative involves removing the slide area and reconstructing the siphon pipe through the failed section. The slide area is a large deep-seated slide that is caused by the

underlining foundation materials that support the slide area. The general impression of the overall costs and potential disruption to the delivery system during construction were too great, so this alternative was deemed not viable and was not considered further.

2. **Alternative S2** – Replace the support system with a similar system along with benching the slide area. This alternative considers constructing a new support system under the existing siphon pipe and also benching the land slide area to reduce lateral forces on the support system and siphon pipe. The new support system would be constructed with the siphon pipe in place by offsetting the new supports from the existing supports. The upslope slide area from the siphon pipe would be benched, thereby reducing the lateral load on the siphon pipe and supports. The bench face would require stabilization through a wall system or wall anchor system. The general impression of the overall costs and potential disruption to the delivery system were considered too great so this alternative was judged to be not viable and was not considered further.
3. **Alternative S3** - Rehabilitate and reinforce the existing supports in place. This alternative includes repairing the existing supports with reinforced concrete in place. It would involve selective demolition of the thrust blocks and intermediate supports and then using reinforcement overlays for the blocks and supports to reestablish their structural integrity. The steel bearing plates that support the siphon pipe on the intermediate supports will be placed with new plates. This alternative was selected as the preferred alternative based on technical and cost merits. The siphon pipe has been in place since 1934 and it was decided that the replacement for the existing support system would last the same length of time with minimal risk of failure.

Design drawings and a detailed construction cost estimate are presented in **Appendix D**.

4.4 CANAL IMPROVEMENTS

The canal needs to be rehabilitated to convey the appropriate flow based on the capacity of the siphon and to reduce seepage within select areas of the canal. There are several areas where the canal was constructed on highly fractured rock. Since its construction, the canal has failed several times within these areas of fractured rock. **Appendix C** presents photographs of the canal and the areas of concern. One goal of this Project is to increase the capacity of the

canal to match the capacity of the siphon discharge under full operation head and to reduce seepage throughout the canal system.

The three alternatives for canal improvements that were considered included the following:

1. **Alternative C1** - Line the canal with a 6-foot high by 10-foot wide concrete box. This alternative includes cleaning the canal and removing the existing 4-foot by 6-foot pipe under the canal, backfilling the pipe void with flowfill, and then constructing a new 6-foot high by 10-foot wide concrete box with the required capacity and backfilling with select fill. This approach would simplify the operation of the canal and would protect the winter flows from freezing. The general impression of the overall costs was considered too great, so this alternative was deemed not viable and was not considered further.
2. **Alternative C2** - Line the canal with three, 60-inch high-density polyethylene (HDPE) pipes. This alternative is similar to the first alternative with the exception that the pipe material would be HDPE rather than concrete. The same construction process would be followed as the concrete box - cleaning the canal, removing the existing 4-foot by 6-foot concrete box under the canal, backfilling the pipe void with flowfill, and then installing three, 60-inch HDPE pipes. The general impression of the overall costs was considered too great so this alternative was not considered viable and was not considered further.
3. **Alternative C3** - Improve the flow hydraulics through canal improvements. This alternative includes removing the existing drop structures and the concrete lining of the canal to improve the flow hydraulics so the canal can convey additional flow. A hydraulic model was used to evaluate the appropriate cross section for the canal. It was decided that it was important to remain within the existing footprint of the canal to minimize the potential for extensive environmental and special use permitting issues. This alternative was selected as the preferred alternative based on technical and cost merits.

Design drawings and a detailed construction cost estimate are presented in **Appendix D**.

5.1 ALTERNATIVE SELECTION

Alternatives S3 and C3 were selected as the preferred alternatives for the siphon and canal Project components, respectively. The preferred alternatives were selected based on constructability, costs, reliability, reduced impact to the environment, and provision for the continued use of the asset (historic water yield).

5.2 LAND AND RIGHT-OF-WAY REQUIREMENTS

The construction of the Project will be performed on the lands owned by the United States Forest Service (USFS) as discussed in Ms. Hammond's, with Carlson, Hammond & Paddock, L.L.C., letter dated January 29, 2013 (see **Appendix C**).

The Project is located on a Right of Way in the Rio Grande National Forest (Del Norte 03165) that was approved on May 12, 1916 pursuant to the Act of March 3, 1891 (43 USC 946-949) as amended by the Act of May 11, 1898 (43 USC 510). The SMRC has the right to maintain, repair, and rehabilitate its facilities located on the Right of Way. However, these activities are subject to reasonable regulation by the USFS. The SMRC are activity working with the USFS to gain the appropriate permit to construction the project.

5.3 PROJECT IMPLEMENTATION SCHEDULE

The Project will be constructed during July through December 2013. **Table 5.1** is the schedule for implementing this Project.

Table 5.1
Project Implementation Schedule

Date	Action
February 2013	Submit CWCB Application and Feasibility Report
March 2013	CWCB Board Meeting
June 2013	Advertise and Bid
July 2013	Begin Construction
November 2013	Complete Construction
December 2013	Project Close Out

5.4 COST ESTIMATE

Appendix D presents an estimate of the construction and construction engineering costs associated with the selected alternatives. **Table 5.2** summarizes the costs estimated for this Project.

Table 5.2
Summary of Project Costs¹

Item	Description	Cost
1	Santa Maria Canal Improvement Project	\$1,310,000
2	Santa Maria Siphon Support System Project	\$140,000
	Subtotal	\$1,450,000
4	Construction Contingency (12%)	\$174,000
	Total Construction Cost	\$1,624,000
5	Construction Engineering Support (10%)	\$162,400
	Subtotal	\$1,786,400
6	Admin and Legal (1%)	\$17,864
7	Environmental Permitting	\$50,000
	TOTAL PROJECT COST	\$1,854,264
	TOTAL PROJECT COST (ROUNDED)	\$1,855,000
¹ Project costs are based on 2012 dollars and costs should be reevaluated if the Project is bid after 2013.		

5.5 FINANCIAL PROGRAM

SMRC does not have any outstanding loans (long-term debt) with the CWCB. Total capital expenses for the recommended Project alternatives, including construction and construction contingency, construction engineering, SMRC's administration and legal support, and environmental permitting support is \$1,855,000 (rounded).

SMRC is anticipating receiving 25 percent grant support from the Basin and Statewide accounts of the Water Supply Reserve Account (WSRA). The anticipated grant support from Basin and Statewide accounts is \$23,000 and \$440,750, respectively, totaling \$463,750. SMRC's financial obligation would reduce from \$1,855,000 to \$1,391,250 due to the WSRA grant. SMRC match amount has been defined to be \$139,125 which is 10 percent of SMRC's financial obligation.

SMRC is applying for the remaining construction cost, totaling \$1,391,250, which includes their match amount of \$139,125, through the CWCB Small Project Loan Program. SMRC's CWCB loan request, with the CWCB 1 percent service fee, totaling \$13,913, is for the amount of \$1,405,163. The aforementioned grant and loan details are presented in **Table 5.3**.

Table 5.3
Summary of CWCB Loan Request Amount

Item	Description	Amount
1	Total Project Cost ¹ (rounded)	\$1,855,000
Water Supply Reserve Account (WSRA) Request		
2	<i>Basin Request</i>	\$23,000
3	<i>Statewide Request</i>	\$440,750
4	Total WSRA Request 25% of the Total Project Cost	\$463,750
CWCB Small Project Loan Program Request		
5	CWCB Loan Request ²	\$1,391,250
6	CWCB Loan w/1% Service Fee	\$1,405,163
¹ Project costs are based on 2012 dollars and costs should be reevaluated if the Project is bid after 2013. ² CWCB Loan Request includes SMRC's required WSRA Match Amount of \$139,125.		

During the annual stockholders' meeting held on December 4, 2012 the stockholders approved the repayment of the loan and also committed to increased assessments to pay for the 10 percent Project balance through a motion as presented in the meeting minutes. A copy of the stockholders approval acknowledgement letter prepared by SMRC's legal counsel, Mr. William A. Paddock, is presented in **Appendix A**.

SMRC is applying for a 30-year loan. CWCB 30-year loan interest rate for agricultural use is 1.75 percent. As previously stated, SMRC has 5,400 shares that are presently owned by 250 shareholders.

Revenue for operations and payment of loans was derived from assessments on 5,400 shares of outstanding stock. The assessments for 2012 were \$28.00 per share. The assessment per share, for the new loan, will range from \$15.00 for the first year of the loan down to \$14.00 for the eleventh year of the loan, and then remaining at this level for the term of the loan. The change in the assessment is due to the loan reserve fund required by CWCB. The new

assessment includes the cost for the loan and the CWCB 1 percent loan service fee, but also and an estimated annual operating expense for the reservoir facility. The annual operating expense is estimated at 0.5 percent of estimated first year cost of \$10,000. The new assessment also includes a credit back from the interest on the loan reserve fund at a rate of 3 percent annually. The total annual assessment including the new loan will range from \$43.00 for the first year of the loan to \$42.00 for the eleventh year of the loan, and then remaining at this level for the term of the loan. **Table 5.4** presents the schedule of revenue and expenditures assuming a 30-year loan at an interest rate of 1.75 percent.

5.5.1 Collateral

SMRC can offer real estate of the amount of 1,400 acres owned around the Santa Maria Reservoir.

5.6 INSTITUTIONAL CONSIDERATIONS

5.6.1 Social, Economic, and Physical Impacts

The Project will have no social impacts because its use as an irrigation facility will remain the same. The Project will have a positive economic impact by assisting SMRC to more efficiently provide irrigation water to more than 70,000 acres of irrigated farm land. The Project will have no significant physical impacts except in the immediate vicinity of the construction. These impacts will be minor in nature and will affect an area of less than 5 acres.

Table 5.4
Schedule of Revenue and Expenditures

Assumptions			Financing					
Loan Amount	\$1,405,163		Source	Share	Principal	Rate	Years	Payment
Number of Shares	5,400		2013 Loan	100.0%	\$1,405,163	1.75%	30	\$60,604.34
Annual Operating Expenses	1.0%							
Interest on Reserves	3%							

Year of Operation	Annual Revenues			Annual Expenditures						
	Year	Total Assessments Required	Assessments Per Share Required	Annual Operating Expenses	Loan Reserve Fund Annual	Summation	Payments on CWCBC Loan	CWCBC Interest on Reserve Funds	Total Expenditures	Debt Service Coverage Ratio
1	2014	\$83,131	\$15	\$10,000	\$6,060	\$6,060	\$60,604	\$182	\$76,483	1.10
2	2015	\$83,031	\$15	\$10,100	\$6,060	\$12,121	\$60,604	\$364	\$76,401	1.10
3	2016	\$82,932	\$15	\$10,201	\$6,060	\$18,181	\$60,604	\$545	\$76,320	1.10
4	2017	\$82,834	\$15	\$10,303	\$6,060	\$24,242	\$60,604	\$727	\$76,241	1.10
5	2018	\$82,737	\$15	\$10,406	\$6,060	\$30,302	\$60,604	\$909	\$76,162	1.10
6	2019	\$82,641	\$15	\$10,510	\$6,060	\$36,363	\$60,604	\$1,091	\$76,084	1.10
7	2020	\$82,546	\$15	\$10,615	\$6,060	\$42,423	\$60,604	\$1,273	\$76,007	1.10
8	2021	\$82,453	\$15	\$10,721	\$6,060	\$48,483	\$60,604	\$1,455	\$75,932	1.10
9	2022	\$82,360	\$15	\$10,829	\$6,060	\$54,544	\$60,604	\$1,636	\$75,857	1.10
10	2023	\$82,268	\$15	\$10,937	\$6,060	\$60,604	\$60,604	\$1,818	\$75,783	1.10
11	2024	\$75,711	\$14	\$11,046		\$60,604	\$60,604	\$1,818	\$69,832	1.10
12	2025	\$75,822	\$14	\$11,157		\$60,604	\$60,604	\$1,818	\$69,943	1.10
13	2026	\$75,933	\$14	\$11,268		\$60,604	\$60,604	\$1,818	\$70,054	1.10
14	2027	\$76,046	\$14	\$11,381		\$60,604	\$60,604	\$1,818	\$70,167	1.10
15	2028	\$76,160	\$14	\$11,495		\$60,604	\$60,604	\$1,818	\$70,281	1.10
16	2029	\$76,275	\$14	\$11,610		\$60,604	\$60,604	\$1,818	\$70,396	1.10
17	2030	\$76,391	\$14	\$11,726		\$60,604	\$60,604	\$1,818	\$70,512	1.10
18	2031	\$76,508	\$14	\$11,843		\$60,604	\$60,604	\$1,818	\$70,629	1.10
19	2032	\$76,626	\$14	\$11,961		\$60,604	\$60,604	\$1,818	\$70,748	1.10
20	2033	\$76,746	\$14	\$12,081		\$60,604	\$60,604	\$1,818	\$70,867	1.10
21	2034	\$76,867	\$14	\$12,202		\$60,604	\$60,604	\$1,818	\$70,988	1.10
22	2035	\$76,989	\$14	\$12,324		\$60,604	\$60,604	\$1,818	\$71,110	1.10
23	2036	\$77,112	\$14	\$12,447		\$60,604	\$60,604	\$1,818	\$71,233	1.10
24	2037	\$77,236	\$14	\$12,572		\$60,604	\$60,604	\$1,818	\$71,358	1.10
25	2038	\$77,362	\$14	\$12,697		\$60,604	\$60,604	\$1,818	\$71,484	1.10
26	2039	\$77,489	\$14	\$12,824		\$60,604	\$60,604	\$1,818	\$71,611	1.10
27	2040	\$77,617	\$14	\$12,953		\$60,604	\$60,604	\$1,818	\$71,739	1.10
28	2041	\$77,747	\$14	\$13,082		\$60,604	\$60,604	\$1,818	\$71,868	1.10
29	2042	\$77,878	\$14	\$13,213		\$60,604	\$60,604	\$1,818	\$71,999	1.10
30	2043	\$13,345	\$2	\$13,345	(\$60,604)	\$0	\$60,604	\$0	\$13,345	1.10
Totals		\$2,298,793		\$347,849	\$0	\$1,484,806	\$1,818,130	\$44,544	\$2,121,435	

5.6.2 Permitting

SMRC has contacted the United States Army Corps of Engineers (USACE) and the USFS related to environmental and special use permit requirements. The USACE and USFS are presently reviewing the permit requirements for the Project.

5.7 BENEFITS

The Project will complete the first phase of the SMRC Rehab Initiative, improving and increasing the capacity of the conveyance system between Continental Reservoir and Santa Maria Reservoir and establishing the critical elements required to proceed with future improvements at Continental Reservoir. By implementing the preferred alternatives presented in this report, the Project will accomplish multiple consumptive and nonconsumptive purposes, greatly improving SMRC's ability to (1) meet the agricultural needs of irrigators in 70,000 acres of the San Luis Valley and (2) establishing significant improvements in the efficient management of Colorado's Rio Grande Compact water.

Appendix A
Articles of Incorporation and Bylaws, and
Stockholder Acknowledgement Letter

Articles of Incorporation and Bylaws



Colorado Secretary of State
Date and Time: 04/04/2011 09:12 AM
ID Number: 19871093437
Document number: 20111199552
Amount Paid: \$25.00

Document must be filed electronically.
Paper documents will not be accepted
Document processing fee
Fees & forms/cover sheets
are subject to change.
To access other information or print
copies of filed documents,
visit www.sos.state.co.us and
select Business.

\$25.00

Document number: 20111199552
Amount Paid: \$25.00

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Amendment

filed pursuant to §7-90-301, et seq. and §7-130-105 of the Colorado Revised Statutes (C.R.S.)

ID number

19871093437

1. Entity name

SANTA MARIA RESERVOIR COMPANY

(If changing the name of the corporation, indicate name BEFORE the name change)

2. New Entity name
(if applicable)

3. (If the following statement applies, adopt the statement by marking the box and include an attachment.)
☒ Other amendments are attached.

4. If the nonprofit corporation's period of duration as amended is less than perpetual, state the date on which the period of duration expires

(mm/dd/yyyy)

OR

If the nonprofit corporation's period of duration as amended is perpetual, mark this box ☒

5. (Optional) Delayed effective date

(mm/dd/yyyy)

6. Additional information may be included pursuant to other organic statutes such as title 12, C.R.S. If applicable, mark this box ☐ and include an attachment stating the additional information.

Notice:

Causing this document to be delivered to the secretary of state for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes.

This perjury notice applies to each individual who causes this document to be delivered to the secretary of state, whether or not such individual is named in the document as one who has caused it to be delivered.

7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing

Paddock	William	A	
(Last)	(First)	(Middle)	(Suffix)
1700 Lincoln, #3900			
(Street name and number or Post Office Box information)			
Denver	CO	80203	
(City)	(State)	(Postal/Zip Code)	
	United States		
(Province – if applicable)	(Country – if not US)		

(The document need not state the true name and address of more than one individual. However, if you wish to state the name and address of any additional individuals causing the document to be delivered for filing, mark this box ☐ and include an attachment stating the name and address of such individuals.)

Disclaimer:

This form, and any related instructions, are not intended to provide legal, business or tax advice, and are offered as a public service without representation or warranty. While this form is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form. Questions should be addressed to the user’s attorney.

ARTICLES OF INCORPORATION
OF
THE SANTA MARIA RESERVOIR COMPANY.
A Mutual Reservoir Company.

- - - - -

KNOW ALL MEN BY THESE PRESENTS, That we, A. E. HEADLEE, OSCAR LINDSTROM, JOHN DRAKE, JAMES LINCOLN, and CLIFFORD B. WEST, all residents of the San Luis Valley, in the State of Colorado, have associated ourselves together as a Corporation, under the name and title of "THE SANTA MARIA RESERVOIR COMPANY," for the purpose of becoming a body corporate and politic under and by virtue of the Laws of the State of Colorado, and in compliance with the provisions of the Statutes in such case made and provided, we do make, execute and acknowledge in sextuplicate, these certificates in writing of our intention to become a body corporate and politic, not for pecuniary profit, under and by virtue of said laws.

ARTICLE I.

NAME. The corporate name of our said Company shall be, "THE SANTA MARIA RESERVOIR COMPANY."

ARTICLE II.

OBJECTS. The objects for which said corporation is formed and incorporated, are:

(a) To safeguard and protect the rights of all water users and consumers of water under what is commonly known as The Santa Maria Reservoir, located in Mineral County, Colorado, and storing water for use in connection with The Rio Grande Canal and The Monte Vista Canal, supplying water for irrigation in the Counties of Rio Grande, Saguache, Conejos and Alamosa, in the State of Colorado, all in Water District No. 20, Irrigation Division No. 3 of the State of Colorado.

(b) For the purpose of acquiring title, holding, maintaining and operating The Santa Maria Reservoir, the storage of water therein, the distribution of water therefrom, together with all extensions thereof or thereto, the inlet works, outlet works, settling ponds, and maintaining the same for use in connection therewith, and the protection of said reservoir, hydro-electric plants operated in connection therewith and all water rights, appropriations, franchises, privileges and appurtenances heretofore used and enjoyed in connection therewith, including all water rights decreed in The Santa Maria Reservoir, The Rio Grande Reservoir and Ditch Company, or otherwise, or in anywise thereunto appertaining or heretofore used in connection therewith.

(c) For the purpose of acquiring all franchises and appropriations of The Rio Grande Reservoir and Ditch Company and its predecessors in interest therein and to maintain the same for the use of the consumers, contract holders and grantees of The Rio Grande Reservoir and Ditch Company and for the use of the water users under the Santa Maria Reservoir; to construct and maintain additional inlet works and outlet works for said reservoir, and all ditches, canals and laterals necessary or desirable for use in connection with the distribution of water therefrom and all franchises for the development, operation and distribution of power, electric current, hydro-electric plants and equipment, and to build and construct such other ditches and reservoirs for the purpose of storing, distributing and otherwise using water for irrigation, power and other beneficial uses, and to acquire, build and construct all such other reservoirs as may be convenient and desirable and to use and operate the same and to enlarge the present reservoir and the inlet works and outlet works therefrom; to acquire other reservoirs by purchase, or otherwise and the water rights and priorities of rights to the use of water in connection therewith and the necessary lands, sites, rights of way and franchises therefor, and to dispose of rights of carriage, storage and distribution of water for irrigation and other beneficial uses therefrom to said company's respective stockholders, and to otherwise sell and dispose of water rights, rights of carriage and storage, power or electric current in accordance with and as may be permitted by the Laws of the State of Colorado in such case made and provided.

(d) To levy assessments pro rata upon the stock of the stockholders of said corporation for the operation and maintenance of the same; to borrow money and convey said property or any part thereof in Trust as security therefor, and to sell and convey any part or parcel of such property for the uses and purposes herein set forth or as may seem best for the general interest of all concerned.

(c) Each stockholder shall be entitled during the irrigation season to the distribution of acre feet of water from the total capacity of The Santa Maria Reservoir in the same proportion as his stock bears to the total number of shares then issued and outstanding.

ARTICLE III.

CAPITAL STOCK. The Capital Stock of our said Company shall be Five Hundred Fifty Thousand (\$550,000.00) Dollars, to be divided into fifty-five hundred shares of the par value of One Hundred (\$100.00) Dollars each.

ARTICLE IV

TERM OF EXISTENCE. The term of existence of this Corporation shall be in perpetuity.

ARTICLE V.

DIRECTORS. The number of directors of said Company shall be five (5) and the names of those who shall be directors of said Company for the first year of its existence shall be, A. E. HEADLEE, OSCAR LINDSTROM, JOHN DRAKE, JAMES LINCOLN and CLIFFORD B. WEST.

ARTICLE VI.

OFFICE. The principal office of said Company shall be kept in the City of Monte Vista, in the County of Rio Grande and State of Colorado, and the principal business of said Company shall be carried on in the Counties of Rio Grande, Saguache, Conejos, Alamosa and Mineral.

ARTICLE VII.

VOTING. Cumulative voting will not be allowed.

ARTICLE VIII.

BY-LAWS. The Board of Directors shall have the power to make such prudential By-Laws as they may deem proper for the management of the affairs of the said Company, and such rules and regulations for the maintenance and operation of said reservoir and the distribution of water therefrom as may be deemed necessary for the purpose of carrying on all kinds of business within the objects and purposes of said company.

IN WITNESS WHEREOF, the said Incorporators have hereunto set their hands and seals this 8th day of April, A. D. 1931.

A. E. Headlee (SEAL)

Oscar Lindstrom (SEAL)

John Drake (SEAL)

James Lincoln (SEAL)

Clifford B. West (SEAL)

STATE OF COLORADO,

CITY AND COUNTY OF DENVER. }

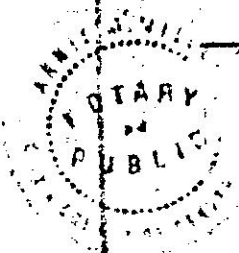
SS.

I, Annie M. Miller, a Notary Public in and for said County of Denver, and State aforesaid, do hereby certify that A. E. HEADLEE, to me personally known to be the person whose name is subscribed to the foregoing Articles of Incorporation, appeared before me this day in person and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act and deed, for the uses and purposes therein set forth.

Given under my hand and Notarial seal, this 2 day of April, A. D. 1931.

My Commission expires Aug 6 - 1934.

Annie M. Miller
Notary Public.



the Santa Maria
the wine lamp

CONFIDENTIAL

THE UNIVERSITY OF CHICAGO

THE UNIVERSITY OF CHICAGO

10

This document has been inspected and properly indexed on the R-100 by the FBI Department.

100-443886-100

THE
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A-8

STATE OF COLORADO,

CITY AND COUNTY OF DENVER. }

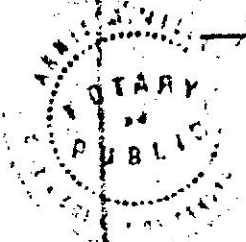
SS.

I, Amie M. Miller, a Notary Public in and for said County of Denver, and State aforesaid, do hereby certify that A. E. HEADLEE, to me personally known to be the person whose name is subscribed to the foregoing Articles of Incorporation, appeared before me this day in person and acknowledged that he signed, sealed and delivered the said instrument of writing as his free and voluntary act and deed, for the uses and purposes therein set forth.

Given under my hand and Notarial seal, this 2 day of April, A. D. 1931.

My Commission expires Aug 6 - 1934.

Amie M. Miller
Notary Public.



Certificate of Incorporation

*The Santa Maria
The Santa Maria Company*

DOMESTIC

RECORDED

BOOK 330

PAGE 36

This document has been inspected
and properly entered on the Re-
cord of the Flat Tax Department

OK'd
JAN 14 1922

AMENDMENT
OF THE
ARTICLES OF INCORPORATION OF
THE SANTA MARIA RESERVOIR COMPANY

Pursuant to the provisions of Colorado law, The Santa Maria Reservoir Company adopts the following Amendment of the Articles of Incorporation of The Santa Maria Reservoir Company:

FIRST: The name of the corporation is The Santa Maria Reservoir Company.

SECOND: The following amendment to the Articles of Incorporation was duly adopted by the stockholders of The Santa Maria Reservoir Company on March 22, 2011, in the manner prescribed by Colorado law:

Article II

OBJECTS. The objects for which said corporation is formed and incorporated, are:

(a) To safeguard and protect all rights of water users and consumers of water under what is commonly known as The Santa Maria Reservoir, located in Mineral County, Colorado, to store water for use in connection with The Rio Grande Canal and the Monte Vista Canal, supplying water for irrigation in the Counties of Rio Grande, Saguache, Conejos, and Alamosa, in the State of Colorado, to store and release any water owned by the Company for such other beneficial uses in Water Division No. 3 as are authorized, from time to time, by the bylaws of the Company, including replacement of depletions to surface streams caused by the operation of wells, all in Water Division No. 3 of the State of Colorado.

THIRD: The number of shares of The Santa Maria Reservoir Company outstanding at the time of such adoption was 5,400; and the number of shares entitled to vote thereon was 5,400.

FOURTH: The number of shares voted for such resolution, amendment was 3,595.8; and the number of shares voted against such resolution, amendment was 500.

FIFTH: The manner, if not set forth in such amendment, in which any exchange, reclassification, or cancellation of issued shares provided for in the amendment shall be effected, is as follows: No change.

THE SANTA MARIA RESERVOIR COMPANY

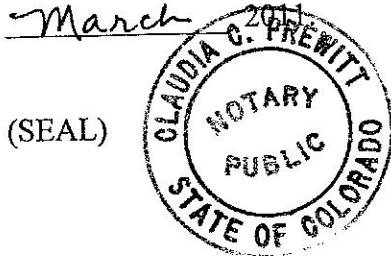
By Ronald Peterson
Ronald Peterson, President

and Richard McNitt
Richard McNitt, Secretary

STATE OF COLORADO)
) ss.
COUNTY OF RIO GRANDE)

Before me, CLAUDIA C. PREWITT, a Notary Public in and for the said County and State, personally appeared Ronald Peterson, who acknowledged before me that he is the President of The Santa Maria Reservoir Company, a Colorado corporation, and that he signed the foregoing Amendment of the Articles of Incorporation as his free and voluntary act, and that the facts contained therein are true.

In witness whereof, I have hereunto set my hand and seal this 29th day of March 2011.

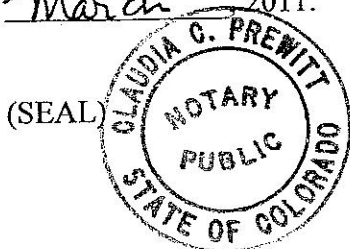


Claudia C. Prewitt
Notary Public
My commission expires: 4/21/2014

STATE OF COLORADO)
) ss.
COUNTY OF RIO GRANDE)

Before me, CLAUDIA C. PREWITT, a Notary Public in and for the said County and State, personally appeared Richard McNitt, who acknowledged before me that he is the Secretary of The Santa Maria Reservoir Company, a Colorado corporation, and that he signed the foregoing Amendment of the Articles of Incorporation as his free and voluntary act, and that the facts contained therein are true.

In witness whereof, I have hereunto set my hand and seal this 29th day of March 2011.



Claudia C. Prewitt
Notary Public
My commission expires: 4/21/2014

BY LAWS
THE SANTA MARIA RESERVOIR COMPANY
A Mutual Reservoir Company

As amended through March 22, 2011

BY LAWS
OF
THE SANTA MARIA RESERVOIR COMPANY
A Mutual Reservoir Company

ARTICLE I.
INCORPORATION

This Company shall be known as "THE SANTA MARIA RESERVOIR COMPANY," a Mutual Reservoir Company, incorporated April 10th, A.D., 1931.

ARTICLE II.
SEAL

The Seal of this Company shall contain the word "SEAL" in the center thereof, with the words, "THE SANTA MARIA RESERVOIR COMPANY," in the form of a circle around the same.

ARTICLE III.
OFFICERS

The officers of this Corporation shall consist of a President and a Vice-President, who shall be chosen from the members of the Board; and a Secretary and Treasurer who may or may not be chosen from the members of the Board, at the first meeting of the Board of Directors after the annual meeting of the stockholders each year.

ARTICLE IV.
DIRECTORS

The Board of Directors shall consist of five members, and vacancies in the Board shall be filled by the remaining members of the Board at the first meeting of the Board of Directors after such vacancy shall occur, to serve until the next annual stockholders meeting, or until their successors are elected. At the annual meeting, December 1, 1942, on the expiration of the term of office of the present Board of Directors of the Company, five directors shall be elected, one member to serve for the term of one year; two members for the term of two years, and two members for the term of three years, and that the term of office of the five directors so elected be determined by lot by the five members so selected, and at the annual meeting in each succeeding year, directors shall be elected to fill the vacancies caused by the expiration of the term of office of any of the directors so selected for a term of three years as well as to fill vacancies caused by the death or removal of any director during his term of office. All members of the Board shall serve for the term for which elected, or until their successors are elected and qualified. Any stockholder or duly appointed representative may serve as a director.

ARTICLE V.
DUTIES OF OFFICERS

Section 1. President: The President shall preside at all meetings of the Directors and Stockholders. He shall sign, as President, all certificates of stock, all notes and obligations, and all contracts, conveyances or other papers requiring the corporate seal, and shall in general be the chief executive officer of the Company. He shall present a report of the general condition and transactions of the Company at the Annual Stockholders' Meeting.

Section 2. Vice-President: The Vice-President shall act at all Directors' meetings in the absence of the President, and shall perform all executive acts required of the President when the President is absent or unable to act.

Section 3. Secretary: It shall be the duty of the Secretary to keep the minutes of the meetings of the Board of Directors and Stockholders; to keep custody of the corporate seal and affix the same to all certificates of stock and contracts or conveyances requiring the same; to carry on all correspondence of the Company and to keep a record of the name and post-office address of each stockholder, and a correct record of all the transactions of the Company in proper books of record; to collect all assessments and other moneys due the Company and turn them over to the Treasurer, taking his receipt therefor, and to make written report at the Annual Meeting of Stockholders, and shall give such Bond as the Board of Directors may require.

Section 4. Treasurer: The Treasurer shall have charge of the funds of the Company, after filing such Bond as the Board of Directors shall require, and shall pay out the same only on vouchers signed by the Secretary or Assistant Secretary, countersigned by the Treasurer or President or such other officer as the Board of Directors may direct, from time to time. He is required to keep written books of account showing all receipts and expenditures and shall deposit in such Bank as the Board of Directors may by Resolution select. He shall render an account to the stockholders at their annual meeting and to the Board of Directors whenever by Resolution he may be required so to do, and his books shall be open at all times to the inspection of any of the officers of the Company.

ARTICLE VI.
MEETINGS

Section 1. Annual Stockholders' Meeting: The annual meeting of the stockholders for the election of Directors and transaction of other business shall be held on the first Tuesday in December in each year, at such place and commencing at such hour as may be designated in the notice of the annual meeting, on notice as required by law, and stockholders in person or by their duly attested proxies shall vote upon matters relating to the Company. All candidates for election as Directors of the Company shall be placed in nomination by some stockholder present, and the voting for Directors shall be by ballot, and the nominees receiving the highest vote shall be declared elected. Cumulative voting shall not be allowed.

Section 2. Special Stockholders' Meetings: A special meeting of the stockholders may be called at any time, on such Notice as is provided by law for the consideration of any matters requiring the action of the stockholders.

Section 3. Directors' Meetings: Meetings of the Board of Directors may be called at any time by the President or any two Directors, by giving at least twenty-four (24) hours' notice to the other Directors, of the time, place and purpose of the meeting. Regular meetings of the Board shall be had on the First Wednesday of each month during the irrigation season, or as soon thereafter as a quorum may be had.

ARTICLE VII. QUORUM

A majority of the stock of the Company represented either in person or by duly authenticated proxies shall constitute a quorum of stockholders.

Three (3) Directors shall constitute a quorum of the Board of Directors.

ARTICLE VIII. CERTIFICATES OF STOCK

Section 1. Certificates of Stock shall be issued to every water user entitled to draw Reservoir water from The Santa Maria Reservoir, in the proportion of Ten (10) shares of capital stock of this Company for each Reservoir Right heretofore issued by the Rio Grande Reservoir and Ditch Company, and now in good faith outstanding, owned by the water users under deed or contract from The Rio Grande Reservoir and Ditch Company, and on payment of such assessments as may then be outstanding against such water right, or certificates of stock. No person is entitled to become a stockholder unless he is the owner of stock in the Rio Grande Canal Water Users Association (for reservoir stock allocated to delivery through the Rio Grande Canal) or the Monte Vista Water Users Association (for reservoir stock allocated to delivery through the Monte Vista Canal). No person shall be entitled to retain stock in the Company if said person no longer owns (1) stock in Rio Grande Canal Water Users Association (for reservoir stock allocated to delivery through the Rio Grande Canal) or the Monte Vista Water Users Association (for reservoir stock allocated to delivery through the Monte Vista Canal), and (2) irrigated lands under the canal to which the reservoir stock is allocated. The rights of a person retaining shares in violation of this bylaw shall be limited to the right to sell or transfer the shares to persons who meet the requirements for ownership of shares in the Company.

Section 2. Each Certificate of Stock in this Company shall entitle the holder thereof to draw from the Reservoir or Reservoirs of the Company, an amount of water for irrigation use only, as provided in Article XII hereafter, in the same ratio as one share of stock bears to the total number of shares of stock then issued and outstanding by the Company, as the total number of shares of

stock then issued by the Company and in good faith outstanding, bears to the total amount of water stored in the Reservoir or Reservoirs of the Company. Water delivery shall be made only as provided in Article X, hereafter.

Section 3. Certificates of stock shall be signed by the President and Secretary and each certificate shall express on its face the date of issue and the number of shares for which said certificate is issued, and the person or persons to whom the same is issued. Several certificates may be issued to the same person or persons, provided that, in the aggregate, the number of shares so issued shall not exceed the number of shares so belonging to such person or persons.

Section 4. The Secretary shall keep a stock ledger and true account of all shares issued and received by the Company in accordance with the provisions of the Statutes of the State of Colorado.

Section 5. Transfers: Transfers of stock to entitle the holder to vote must be made and registered at least ten (10) days prior to the time of any meeting, at which time such vote is tendered, and all stock shall be transferred on the books of this Company by assignment either in person or by Attorney.

No transfers of stock shall be made except upon the surrender of the original certificate for cancellation and no transfer shall be made upon which assessments are due or unpaid, or while the holder is indebted to the Company on any account whatever, except in the case of lost certificates, in which case, duplicate certificates may be issued in lieu thereof upon compliance with the requirements for cancellation of lost certificates and issuance of replacement certificates as described in Colorado Revised Statutes §§ 7-42-113 to 7-42-117, as amended. (Added November 5, 2007, approved by stockholders December 4, 2007.)

From and after May 19, 2006, no stockholder may transfer his/her stock on the books of the Company if such transfer will result in a stockholder owning fewer than ten shares in the Company. This limitation shall not apply to transfers of stock to a surviving joint-tenant, by foreclosure, or by operation of law. Subject to the foregoing, from and after May 19, 2006, no stockholder owning fewer than ten shares in the Company may transfer on the books of the Company fewer than all of the shares owned by the stockholder. (Added May 19, 2006, approved by stockholders December 5, 2006).

Section 6. The shares of the Company when issued, shall be issued as fully paid stock of the par value of One Hundred (\$100.00) Dollars per share.

ARTICLE IX. ASSESSMENTS

Section 1. The stockholders of this Company shall have the power to levy assessments for all lawful purposes, and in case said stockholders fail to hold a meeting, or fail to make or

authorize such assessments as may be necessary to raise funds to keep the ditches, canals and reservoirs and appurtenant works in good repair, or to raise funds to pay any indebtedness contracted by the Company, or interest thereon, by the 1st of April in any year, then the Directors of the Company shall have power to make any such assessments at any regular or special meeting called therefor for such year. In case of making any such assessment or levy, the stockholder of record on the books of the Company shall be entitled to 10 days previous notice of the levy of any assessment to be given prior to the payment of such assessment, by mail. Such notice shall be addressed to such stockholder at the place of residence as evidenced by the stock record of this Company. Said notice shall be in writing and shall state the total amount of the assessment and also the pro rata share or per centum thereof to be paid by the stockholders thus notified, and shall also state the time or times required for the payment thereof and in default of the payment of such assessment, notice whereof shall be given in the manner herein provided, such stock may be sold in the manner provided by law, for the payment of such assessment. All delinquent assessments for maintenance shall bear interest at the rate of seven per cent (7%) per annum, and all delinquent assessments and interest charges on the obligations of the Company shall bear interest at the rate of one per cent (1%) per month.

Section 2. Assessments levied as aforesaid shall be levied on all shares of the Company alike for the purpose of keeping the property of this Company in good repair, for the proper maintenance of the reservoir system of the Company and the proper operation thereof, as well as for the purpose of paying any claim or indebtedness theretofore contracted by the Company not otherwise provided for.

Section 3. No assessment shall be made unless the question of making such assessments shall have been voted upon by the stockholders of said Company at any annual meeting or special meeting called for that purpose, and a majority of the stock either in person or by proxy, voting thereon shall vote in favor of making such assessments.

Provided, however, that if the stockholders fail to hold a meeting or levy an assessment before the 1st day of April of any year, the Board of Directors then acting are empowered to levy and collect an assessment adequate to provide for the maintenance and operation of the Company for that year, and to pay any claim or indebtedness against this Company theretofore contracted or the interest thereon, not otherwise provided for.

ARTICLE X. DELIVERY OF WATER

The Company maintains a Reservoir for the storage of irrigation water for use under the Rio Grande Canal and The Monte Vista Canal, respectively, in Water District No. 20, Water Division No. 3 of the State of Colorado, and does not maintain any distribution works for the delivery of water, other than its outlet or outlets into the Rio Grande. Ninety percent (90%) of the Company's reservoir water and stock has been allocated for delivery under the Rio Grande Canal, and ten percent (10%) for delivery under the Monte Vista Canal. The Company will

deliver water to any stockholder in the Reservoir or Reservoirs, and the stockholders so demanding water shall provide for the delivery thereof through the proper water officers in said Water District No. 20 to the Rio Grande Canal or The Monte Vista Canal, as the case may be. The Company has arranged, by agreement with the Rio Grande Canal Water Users Association and the Monte Vista Water Users Association, for delivery of the reservoir water to stockholders through those Canals. Reasonable transit losses on such delivery may be assessed.

No reservoir water or stock allocated for delivery under the Rio Grande Canal shall be released or delivered through the Monte Vista Canal, and no reservoir water allocated for delivery under the Monte Vista Canal shall be released or delivered through the Rio Grande Canal. However, reservoir water and stock allocated for delivery under the Rio Grande Canal may be freely transferred among stockholders in the Rio Grande Canal Water Users Association for irrigation use as provided in Article XII hereafter on lands served by the Rio Grande Canal Water Users Association; and reservoir water and stock allocated for delivery through the Monte Vista Canal may be freely transferred among stockholders of the Monte Vista Water Users Association for irrigation use as provided in Article XII hereafter on lands served by the Monte Vista Water Users Association. In addition, a stockholder may lease its pro rata share of reservoir water to a groundwater management subdistrict for use to replace stream depletions caused by wells applying water to beneficial use in former Water Districts No. 20, 21, 22, 26, and 27; in such case, the use and delivery location restrictions set forth above will do not apply.

No stockholder shall be entitled to demand or receive water from the Reservoirs of the Company until he shall have paid all assessments due on the stock of the Company upon which the demand is made.

ARTICLE XI.

No debt shall be contracted against this Corporation, except by order of the Board of Directors, provided, however, the Board is authorized to incur such indebtedness as it may deem necessary for the carrying out the objects and purposes of this Company, and may authorize the President and Secretary to make note of the Company with which to pay the indebtedness so incurred, provided always, that no mortgage or Trust Deed shall be placed upon the property of this Company of any part thereof, until authorized by a two-thirds vote of the stockholders of the Company.

ARTICLE XII. USE OF WATER

Section 1. Each share of stock of this corporation shall entitle its holder of record on the books of the corporation to use each year its pro rata share of all water stored in the reservoir or Reservoirs of the Company to which this corporation is entitled, as herein already provided. The Board of Directors may establish a separate storage account in each of the Company's reservoirs for the purpose of allowing the carry over, from year to year, of Company water that has been

leased to, but not yet used by, a groundwater management subdistrict for the purpose of replacing stream depletions caused by wells applying water to beneficial use in former Water Districts No. 20, 21, 22, 26, and 27. Water carried over in any such account will not be available for allocation to the remaining stockholders in the Company in the ensuing year. In the event that there is insufficient storage capacity to store the water available in priority to the water rights of the Company, or it is necessary to release water for emergency purposes, then the water in such carry-over account will be spilled before any water allocated to the stockholders is spilled.

Section 2. Water may be used for irrigation purposes only, and to the extent applied directly for irrigation (or for aquifer recharge), only on lands served by the Rio Grande Canal Water Users Association (for reservoir stock allocated for delivery through the Rio Grande Canal) or the Monte Vista Water Users Association (for reservoir stock allocated for delivery through the Monte Vista Canal). Irrigation use includes recharge of groundwater aquifers supplying water to the lands served by the reservoir water, under recharge programs approved by the Board of Directors. Water may also be used pursuant to lease by a groundwater management subdistrict to replace stream depletions caused by wells supplying water for beneficial use in Water Districts No. 20, 21, 22, 26, and 27, and that use is not subject to the foregoing use and delivery restrictions.

Section 3. No conservation easement can be placed on water rights represented by shares of stock in the Company without the consent of the Board of Directors. Any stockholder desiring to place a conservation easement on water rights represented by shares of stock in the Company shall first make written request therefor to the Board of Directors. If, in the opinion of the Board, such a conservation easement may be made without injury to the Santa Maria Reservoir, the Continental Reservoir, the Rio Grande Canal, the Monte Vista Canal, the Company, or its stockholders, upon written order of the Board of Directors, such conservation easement will be allowed, unless, however, such conservation easement would contravene the laws of the State of Colorado.

Whenever such a request has been filed with the Board of Directors, the Board shall notify in writing all other stockholders who are entitled to delivery of water through the same lateral or canal headgate where the conservation easement is to be established.

In the event that the Board, in considering and acting upon the request, deems it advisable to obtain legal and/or engineering services for the purpose of making its determination, the cost of all such legal and engineering services, together with any other out-of-pocket expenses incurred by the Company, shall be paid by the stockholder making the request. The Board may require that the estimated costs associated with making the determination be paid to the Company prior to engaging such services by the Board. If the Board so requires payment of estimated costs, the Board may, without penalty or liability, defer any determination until such payment has been made. In any event, the Board shall not deliver any water to the stockholder making the request until all actual costs have been paid to the Company in full.

In considering the request, and in addition to any other consideration that may apply to a particular circumstance before it, the Board shall always take all appropriate steps to ensure that the stock for which a determination is made shall continue to be liable for payment of duly levied assessments of the Company, and to the other provisions of the Articles of Incorporation, the Bylaws, and the Rules and Regulations of the Company. The determination of the Board shall be final. (Section 3 approved by stockholders on December 5, 2006)

ARTICLE XIII. BOARD OF DIRECTORS

Powers: The Board of Directors shall have power:

Section 1. To appoint a Superintendent to whom may be delegated such of the powers relative to the distribution of water and the maintenance of the Reservoir system as the Board of Directors may by resolution direct;

Section 2. To appoint and remove at pleasure all employees and agents of the Company; prescribe their duties, fix their compensation and require of them such security for the faithful performance of their duties as they may deem best;

Section 3. To make rules and regulations not inconsistent with the statutes of the state of Colorado, the Articles of Incorporation or Bylaws, for the guidance of the officers and employees in the management of the Company, and prescribe such rules as may be necessary from time to time for distribution of water from the reservoirs of the Company;

Section 4. The Board shall, in addition, have all such other powers as are usually exercised by boards of directors in companies of like character.

ARTICLE XIV. ANNUAL REPORT

The Board of Directors shall cause a report in writing to be made to the Annual Stockholders' Meeting each year, of the following items:

(a) The amount spent by the Company during the preceding year and generally the purpose for which such money was expended.

(b) The amount of money due the Company and generally the source from which such money is due.

(c) The amount of obligations of the Company at that time.

(d) Repairs and extensions needed for the ensuing year, and the probable cost thereof.

(e) The amount of money necessary to cover the maintenance and operation of the Company's reservoir system for the ensuing year.

(f) A recommendation as to the amount of money necessary to be raised for the purpose aforesaid by assessment for the ensuing year.

ARTICLE XV. SUPERINTENDENT

Section 1. A Superintendent shall be appointed by the Board of Directors, who shall have the direct management of the irrigation system of the Company and his compensation fixed at such reasonable amount as the Board may agree upon. He shall direct the division of the water stored in the Reservoirs of the Company pro rata on all shares issued and entitled to be issued, and make correct return to the Board of Directors of all persons hired and employed on the Reservoir or elsewhere, in the interest and on behalf of the Company, with a statement of their wages; and shall perform such other duties as the Board of Directors may direct.

ARTICLE XVI. SALARIES

Section 1. The Superintendent of the Company, caretaker and other employees shall receive such compensation as may be determined upon by the Board of Directors.

Section 2. The Board of Directors shall receive as compensation for their services, \$5.00 per day for attendance at each meeting of the Board and for each day actually employed in the management of the affairs of the Company, and their reasonable and actual traveling expenses when actually engaged in the business of the Company, to be audited and allowed as in other cases of demand against the Company.

ARTICLE XVII. WASTAGE

Any stockholder allowing water to go to waste shall not be permitted to withdraw further water from the Reservoirs of the Company, until he shall satisfy the Board that he is able to care for and apply such water.

ARTICLE XVIII. COMPLAINTS

Section 1. In case any stockholder shall have any complaint to make on account of the distribution of water by the Company or an account of the conduct of the water officers of the Company, or for any other reason, he shall make complaint in writing to the Superintendent, who

shall take such action as shall be just and right to adjust the matter; provided, however, if the decision of the Superintendent does not satisfy the objections of the stockholders, he may appeal to the Board, who shall make full investigation of the matter and of the complaint, and such stockholder or stockholders may appear and offer such evidence as he or they may see fit and the Board shall use all proper efforts to correct the evils complained of. The final determination of the Board, however, shall be final and binding upon all parties concerned.

ARTICLE XIX. AMENDMENTS

The above Bylaws are subject to amendment by action of the Board of Directors; provided, however, that any such amendment shall be submitted to the stockholders for repeal or change at the next annual meeting of the stockholders after adoption of such amendment by the Board of Directors. Amendments adopted by the Board of Directors shall be in full force and effect pending submission to the stockholders.

Stockholder Acknowledgement Letter

CARLSON, HAMMOND & PADDOCK, L.L.C.
ATTORNEYS AT LAW

MARY MEAD HAMMOND
WILLIAM A. PADDOCK
LEE H. JOHNSON
KARL D. OHLSEN
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1900 GRANT STREET, SUITE 1200
DENVER, COLORADO 80203

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JOHN UNDEM CARLSON
(1940-1992)

e-mail: chp@chp-law.com
website: www.chp-law.com

bpaddock@chp-law.com

December 26, 2012

Ms. Jennifer Gimbel, Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Re: Santa Maria Reservoir Company Grant/Loan Application

Dear Jennifer:

I am writing to you on behalf of the Santa Maria Reservoir Company to report on the action taken at the annual meeting of the stockholders held on December 4, 2012, concerning the Company's application for a grant/loan for rehabilitation work at Santa Maria Reservoir and Continental Reservoir. Notice of the annual meeting of the stockholders was given in writing to the stockholders of the Company in compliance with the Company's bylaws. The notice of the annual meeting advised the stockholders that the action to be taken at the meeting included the authorizing of certain renovations and repairs to the diversion and carriage facilities for Santa Maria Reservoir and certain renovations and repairs to Continental Reservoir, and the means of financing the Company's payment for the same. A copy of the notice is attached to this letter. The President of the Company declared a quorum of the shareholders necessary for transaction of business at the annual meeting was present, either in person or by proxy.

At the annual meeting the Company's president, Ron Peterson, went through a slide presentation that described the proposed renovations and repairs to the diversion and carriage facilities for Santa Maria Reservoir and the proposed renovations and repairs to Continental Reservoir, the anticipated costs for the work, and the estimated amount of the annual assessment on shares in the Company that would be necessary to pay for this work. Paper copies of the slide presentation were made available to all stockholders when they entered the annual meeting. After the presentation there were a number of questions by the stockholders. After the discussion was concluded, a motion was made and seconded to authorize the Company to undertake the proposed renovations and repairs to the diversion and carriage facilities for Santa Maria Reservoir and the proposed renovations and repairs to Continental Reservoir, and to seek a combination of a grant and loan to finance the cost of the work. The question was called and the motion passed.

If you need any further information on the action of the stockholders of the Company, at the December 4, 2012 annual meeting, please let me know.

CARLSON, HAMMOND & PADDOCK, L.L.C.

Ms. Jennifer Gimbel
December 26, 2012
Page 2

Yours very truly,

A handwritten signature in black ink that reads "Bill Paddock". The signature is written in a cursive, slightly slanted style.

William A. Paddock

Enclosure

Copy: Keith Holland, President
Connie Pleasant
Jay Yeager
Ed Toms, URS Corp.

The Santa Maria Reservoir Co.

P.O. Box 288

Monte Vista, CO 81144

*Telephone # 719-852-3556 * FAX # 719-852-5958*

NOTICE OF ANNUAL STOCKHOLDER'S MEETING

The Annual Meeting of the Stockholders of the Santa Maria Reservoir Company will be held at the Monte Vista Coop Hospitality Room, 1901 East Hwy. 160, Monte Vista, Colorado, on Tuesday, the 4th day of December, 2012 at 1:30 P.M., for the following purposes:

1. The election of one member to the Board of Directors for a term of three years, to fill the vacancy on said Board of Directors caused by the expiration of the terms of office of Ron Peterson.
2. To levy an assessment for the operation, maintenance and current expenses of the company for the ensuing year.
3. To authorize certain renovations and repairs to the diversion and carriage facilities for Santa Maria Reservoir and certain renovations and repairs to Continental Reservoir, and the means of financing the Company's payment for the same.
4. The transaction of such other business as may properly come before the meeting.

Dated at Monte Vista, Colorado this 4th day of November, 2012

Dick McNitt, Secretary

Appendix B
Financial Statements

**SANTA MARIA RESERVOIR COMPANY
MONTE VISTA, COLORADO**

**FINANCIAL STATEMENTS
AND
COMPILATION REPORT
For The Twelve Months Ended October 31, 2009**

**A.B. BOOKKEEPING SERVICE, INC
Colorado Springs, Colorado**

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

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Exhibit C	STATEMENT OF STOCKHOLDERS' EQUITY - INCOME TAX BASIS	4

*A.B. BOOKKEEPING SERVICE, INC.
819 North Institute St.
Colorado Springs, CO 80903
Phone 719-635-3594, Fax 719-635-0703*

Board of Directors
Santa Maria Reservoir Company
Monte Vista, Colorado

We have compiled the accompanying statement of assets, liabilities and capital – income tax basis of Santa Maria Reservoir Company (a nonprofit), as of October 31, 2009, and the related statement of revenue, expenses and stockholder's capital – income tax basis for the year then ended, in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. The financial statements have been prepared on the income tax basis of accounting, which is comprehensive basis of accounting other than generally accepted accounting principles.

A compilation is limited to presenting in the form of financial statements information that is the representation of the company. We have not audited or reviewed the accompanying financial statements and, accordingly, do not express an opinion or any other form of assurance on them.

The stockholder's have elected to omit substantially all of the disclosures ordinarily included in financial statements prepared on the income tax basis of accounting. If the omitted disclosures were included in the financial statements, they might influence the user's conclusions about the Company's assets, liabilities, capital, revenues, and expenses. Accordingly, these financial statements are not designed for those who are not informed about such matters.

Respectfully submitted,



October 24, 2012
Colorado Springs, Colorado

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

STATEMENT OF ASSETS, LIABILITIES AND EQUITY - INCOME TAX BASIS
October 31, 2009

ASSETS

Current Assets	
Cash - Checking accounts	\$ 13,038
Money Market accounts	53,129
Certificate of Deposit accounts	274,481
Accounts receivable	480
Total Current Assets	<u>341,128</u>
 Property, Plant and Equipment, at cost	
Buildings, improvements, and equipment	197,343
RGWBA stock	2,000
Water, storage, rights and reservior	<u>1,771,688</u>
	1,971,031
 Accumulated depreciation	<u>(1,024,559)</u>
Total Property, Plant and Equipment	<u>946,472</u>
 Investments and Other Assets	
Monte Vista Equities	<u>428</u>
Total Investments and Other Assets	<u>428</u>
 Totals	<u><u>\$ 1,288,028</u></u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Page 1 to be
placed side by side
with Assets on left
& liabilities on Right
of page 2

LIABILITIES AND STOCKHOLDERS' EQUITY

Current Liabilities	
Payroll Liabilities	\$ 748

Stockholders' Equity	
Capital stock	540,000
Surplus DRPEA	125,506
Retained Earnings	621,774
Total Stockholders' Equity	<u>1,287,280</u>
Totals	<u>\$ 1,288,028</u>

Page 2

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Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit B

STATEMENT OF REVENUES AND EXPENSES - INCOME TAX BASIS
Twelve Months Ended October 31, 2009

Revenues	
Operating	
Assessments,	<u>\$ 243,811</u>
Investments	
Interest Income	<u>5,515</u>
Fishing Rights	
Trout club	<u>5,000</u>
Total Revenues	<u>254,326</u>
Operating Expenses	
Assessments	19,568
Directors expense	1,034
Employee benefits	111,891
Insurance	16,997
Legal and accounting	12,869
Miscellaneous	599
Payroll	49,995
Repairs and maintenance	2,721
Supplies	2,478
Taxes, licenses and permits	1,472
Telephone	1,781
Utilities	2,781
Vehicle expense	4,783
Depreciation	34,029
Total Operating Expenses	<u>262,998</u>
Net Income	<u>\$ 91,328</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit C

STATEMENT OF STOCKHOLDERS' EQUITY
Twelve Months Ended October 31, 2009

	<u>Capital Stock</u>	<u>Surplus DRPEA</u>	<u>Retained Earnings</u>	<u>Totals</u>
Balance, October 31, 2008	\$ 540,000	\$ 125,506	\$ 630,446	\$ 1,295,952
Net Income	<u>-</u>	<u>-</u>	<u>(8,672)</u>	<u>(8,672)</u>
Balance, October 31, 2009	<u>\$ 540,000</u>	<u>\$ 125,506</u>	<u>\$ 621,774</u>	<u>\$ 1,287,280</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

**SANTA MARIA RESERVOIR COMPANY
MONTE VISTA, COLORADO**

**FINANCIAL STATEMENTS
AND
COMPILATION REPORT
For The Twelve Months Ended October 31, 2010**

A.B. BOOKKEEPING SERVICE, INC
Colorado Springs, Colorado

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

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*A.B. BOOKKEEPING SERVICE, INC.
819 North Institute St.
Colorado Springs, CO 80903
Phone 719-635-3594, Fax 719-635-0703*

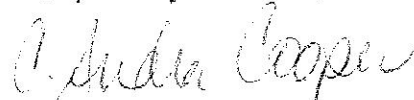
Board of Directors
Santa Maria Reservoir Company
Monte Vista, Colorado

We have compiled the accompanying statement of assets, liabilities and capital – income tax basis of Santa Maria Reservoir Company (a nonprofit), as of October 31, 2010, and the related statement of revenue, expenses and stockholder's capital – income tax basis for the year then ended, in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. The financial statements have been prepared on the income tax basis of accounting, which is comprehensive basis of accounting other than generally accepted accounting principles.

A compilation is limited to presenting in the form of financial statements information that is the representation of the company. We have not audited or reviewed the accompanying financial statements and, accordingly, do not express an opinion or any other form of assurance on them.

The stockholder's have elected to omit substantially all of the disclosures ordinarily included in financial statements prepared on the income tax basis of accounting. If the omitted disclosures were included in the financial statements, they might influence the user's conclusions about the Company's assets, liabilities, capital, revenues, and expenses. Accordingly, these financial statements are not designed for those who are not informed about such matters.

Respectfully submitted,



October 24, 2012
Colorado Springs, Colorado

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

STATEMENT OF ASSETS, LIABILITIES AND EQUITY - INCOME TAX BASIS
October 31, 2010

ASSETS

Current Assets	
Cash - Checking accounts	\$ 8,631
Money Market accounts	89,281
Certificate of Deposit accounts	295,696
Accounts receivable	250
Total Current Assets	<u>393,858</u>
 Property, Plant and Equipment, at cost	
Buildings, improvements, and equipment	1,313,031
RGWBA stock	2,000
Water, storage, rights and reservior	656,000
	<u>1,971,031</u>
 Accumulated depreciation	<u>(1,058,587)</u>
Total Property, Plant and Equipment	<u>912,444</u>
 Investments and Other Assets	
Monte Vista Equities	428
Total Investments and Other Assets	<u>428</u>
 Totals	<u><u>\$ 1,306,730</u></u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Page 1 to be
placed side
by side with
Assets on left
& Liabilities on right
page 2.

LIABILITIES AND STOCKHOLDERS' EQUITY

Current Liabilities	
Payroll Liabilities	\$ 808
Stockholders' Equity	
Capital stock	540,000
Surplus DRPEA	125,506
Retained Earnings	640,416
Total Stockholders' Equity	<u>1,305,922</u>
Totals	<u>\$ 1,306,730</u>

Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit B

STATEMENT OF REVENUES AND EXPENSES - INCOME TAX BASIS
Twelve Months Ended October 31, 2010

Revenues	
Operating	
Assessments,	<u>\$ 184,351</u>
Investments	
Interest Income	<u>7,124</u>
Fishing Rights	
Trout club	<u>5,000</u>
Total Revenues	<u>196,475</u>
Operating Expenses	
Assessments	18,431
Directors expense	1,034
Employee benefits	9,419
Engineer	18,216
Insurance	15,220
Legal and accounting	527
Miscellaneous	37
Payroll	51,993
Repairs and maintenance	5,133
Supplies	11,684
Taxes, licenses and permits	1,575
Telephone	1,643
Utilities	2,387
Vehicle expense	6,506
Depreciation	34,028
Total Operating Expenses	<u>177,833</u>
Net Income	<u><u>\$ 18,642</u></u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit C

STATEMENT OF STOCKHOLDERS' EQUITY
Twelve Months Ended October 31, 2010

	<u>Capital Stock</u>	<u>Surplus DRPEA</u>	<u>Retained Earnings</u>	<u>Totals</u>
Balance, October 31, 2009	\$ 540,000	\$ 125,506	\$ 621,774	\$ 1,287,280
Net Income	<u>-</u>	<u>-</u>	<u>18,642</u>	<u>18,642</u>
Balance, October 31, 2010	<u>\$ 540,000</u>	<u>\$ 125,506</u>	<u>\$ 640,416</u>	<u>\$ 1,305,922</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

**SANTA MARIA RESERVOIR COMPANY
MONTE VISTA, COLORADO**

**FINANCIAL STATEMENTS
AND
COMPILATION REPORT
For The Twelve Months Ended October 31, 2011**

A.B. BOOKKEEPING SERVICE, INC
Colorado Springs, Colorado

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

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*A.B. BOOKKEEPING SERVICE, INC.
819 North Institute St.
Colorado Springs, CO 80903
Phone 719-635-3594, Fax 719-635-0703*

Board of Directors
Santa Maria Reservoir Company
Monte Vista, Colorado

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Respectfully submitted,



October 24, 2012
Colorado Springs, Colorado

SANTA MARIA RESERVOIR COMPANY
Monte Vista, Colorado

STATEMENT OF ASSETS, LIABILITIES AND EQUITY - INCOME TAX BASIS
October 31, 2011

ASSETS

Current Assets	
Cash - Checking accounts	\$ 28,630
Money Market accounts	149,132
Certificate of Deposit accounts	238,117
Accounts receivable	750
Total Current Assets	<u>416,629</u>
Property, Plant and Equipment, at cost	
Buildings, improvements, and equipment	1,318,281
RGWBA stock	2,000
Water, storage, rights and reservior	656,000
	<u>1,976,281</u>
Accumulated depreciation	(1,095,552)
Total Property, Plant and Equipment	<u>880,729</u>
Investments and Other Assets	
Monte Vista Equities	428
Total Investments and Other Assets	<u>428</u>
Totals	<u>\$ 1,297,786</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Page 1 to be
placed side by
side with Assets
on left + Liabilities
on right of
Page 2

LIABILITIES AND STOCKHOLDERS' EQUITY

Current Liabilities		
Payroll Liabilities	\$	861

Stockholders' Equity	540,000
Capital stock	125,506
Surplus DRPEA	631,419
Retained Earnings	<u>1,296,925</u>
Total Stockholders' Equity	<u>1,296,925</u>
Totals	\$ 1,297,786

Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit B

STATEMENT OF REVENUES AND EXPENSES - INCOME TAX BASIS
Twelve Months Ended October 31, 2011

Revenues	
Operating	
Assessments,	<u>\$ 167,056</u>
Investments	
Interest Income	<u>3,173</u>
Fishing Rights	
Trout club	<u>5,000</u>
Total Revenues	<u>175,229</u>
Operating Expenses	
Assessments	18,931
Directors expense	619
Employee benefits	11,281
Engineer	1,683
Insurance	15,616
Legal and accounting	15,971
Payroll	65,868
Repairs and maintenance	1,078
Supplies	4,835
Taxes, licenses and permits	1,600
Telephone	1,498
Utilities	2,490
Vehicle expense	5,792
Depreciation	<u>36,964</u>
Total Operating Expenses	<u>184,226</u>
Net Income	<u>\$ (8,997)</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Santa Maria Reservoir Company
Monte Vista, Colorado

Exhibit C

STATEMENT OF STOCKHOLDERS' EQUITY
Twelve Months Ended October 31, 2011

	<u>Capital Stock</u>	<u>Surplus DRPEA</u>	<u>Retained Earnings</u>	<u>Totals</u>
Balance, October 31, 2010	\$ 540,000	\$ 125,506	\$ 640,416	\$ 1,305,922
Net Income	<u>-</u>	<u></u>	<u>(8,997)</u>	<u>(8,997)</u>
Balance, October 31, 2011	<u>\$ 540,000</u>	<u>\$ 125,506</u>	<u>\$ 631,419</u>	<u>\$ 1,296,925</u>

SEE ACCOUNTANTS' COMPILATION REPORT.

Appendix C
Project Photos, Historical Drawings, and Project History

Santa Maria Siphon Photographs



1. Cross valley view of the upper portion of the siphon from the river intake to where the siphon goes under ground. The slide area can be observed upslope from the siphon pipe.



2. Cross valley view of the river intake along upper portion of the above ground siphon.



3. Lower portion of the above ground siphon where the siphon goes underground. The metal structure stores the original narrow gauge train that was used to construct the present siphon.



4. Looking downstream along the siphon to where the siphon goes underground.



5. Next pipe segment upstream of last photo looking downstream along the siphon from the second of six thrust blocks.



6. Looking downstream along the siphon, just upstream of the second thrust block. First pier support in foreground.



7. Looking downstream along the siphon, just upstream of the second thrust block. First pier support in foreground.



8. Looking downstream along the siphon, just upstream of the second thrust block. Second pier support in foreground.



9. Looking downstream along the siphon, just upstream of the second thrust block. First pier support in foreground.



10. Looking downstream along the siphon, just upstream of the second thrust block. Second pier support in foreground.



11. Looking downstream along the siphon, just upstream of the second thrust block. Third pier support in foreground. Rocker pad is lifted above pier due to foundation slide area.



12. Looking downstream along the siphon, just upstream of the second thrust block. Fourth pier support in foreground. Rocker pad is lifted above pier due to foundation slide.



13. Looking downstream along the siphon, just upstream of the second thrust block. Fifth pier support in foreground. Rocker pad is lifted above pier due to foundation slide.



14. Looking downstream along the siphon, just upstream of the second thrust block. Sixth pier support in foreground. Rocker pad is lifted above pier due to foundation slide.



15. Looking downstream along the siphon, just upstream of the second thrust block. Seven pier support in foreground. The pier is outside of the slide area.



16. Looking downstream along the siphon through the slide area that is impacted the piers.



17. Looking upstream along the siphon up to the intake structure. The siphon supports are not impacted by the slide area. The supports were modified in the past.

Santa Maria Canal Photographs



1. Siphon outlet into canal.



2. Inside of the discharge side of the siphon pipe.



3. Inlet, from the siphon, into the pipe under the canal invert to convey winter flows between Continental Reservoir to Santa Maria Reservoir.



4. Looking upstream along the canal towards the siphon outlet into the canal.



5. Control structure just downstream of the siphon outlet structure.



6. Looking downstream, along the canal, from the siphon outlet – control structure is shown which connects round pipe to box culvert under canal section.



7. Typical canal section – natural ground along left side (looking downstream) with placed fill along right side of canal. Photo taken during winter.



8. Canal section looking downstream of the siphon outlet with the round pipe that discharges into the box culvert under the canal invert. Photo taken in during summer.



9. Top of box culvert located along the canal invert. Bridge section defines downstream project limits for the canal improvements.

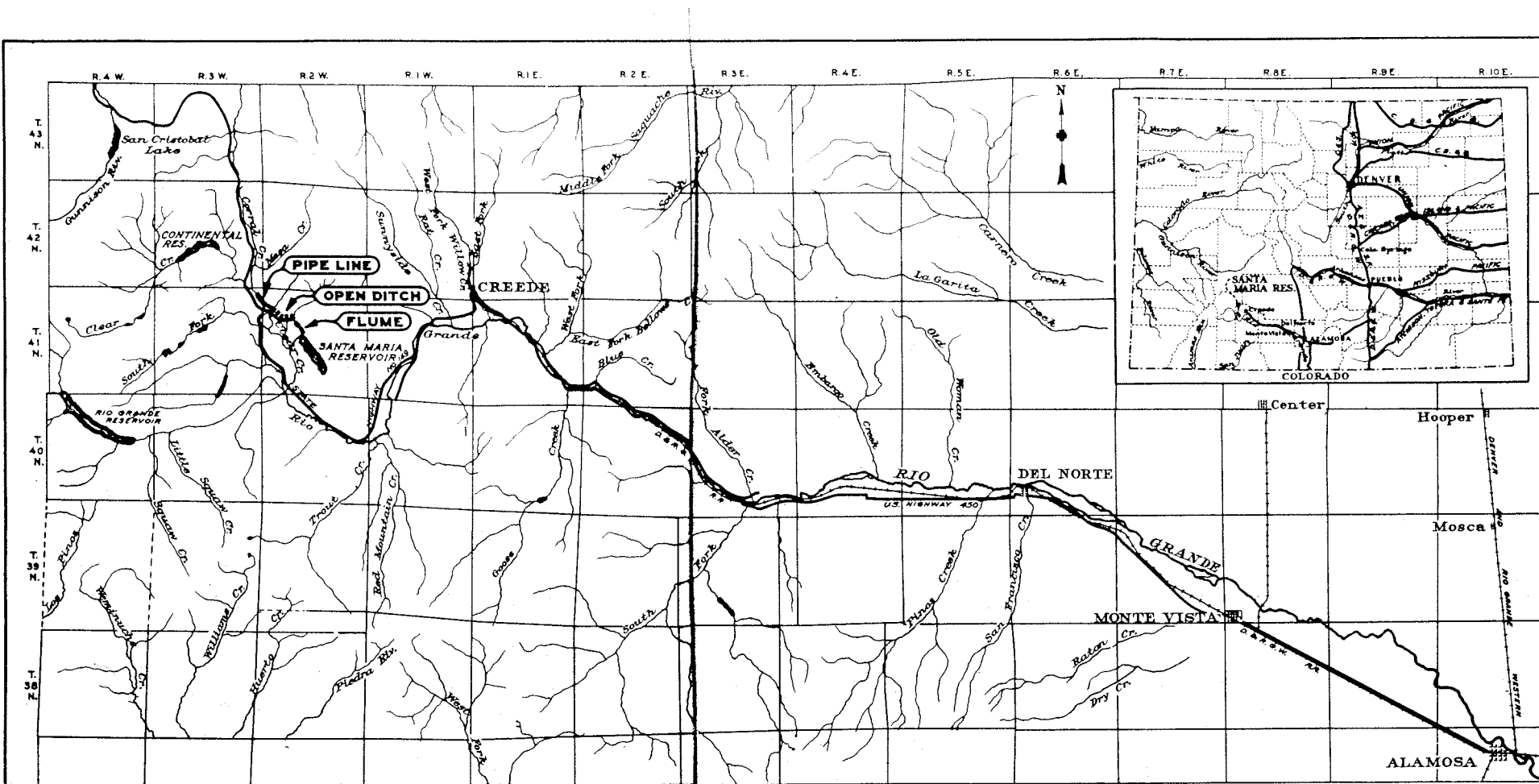


10. Looking upstream along the canal section with the box culvert that conveys winter flow. Slide area in background has caused high seepage rates through the canal section.

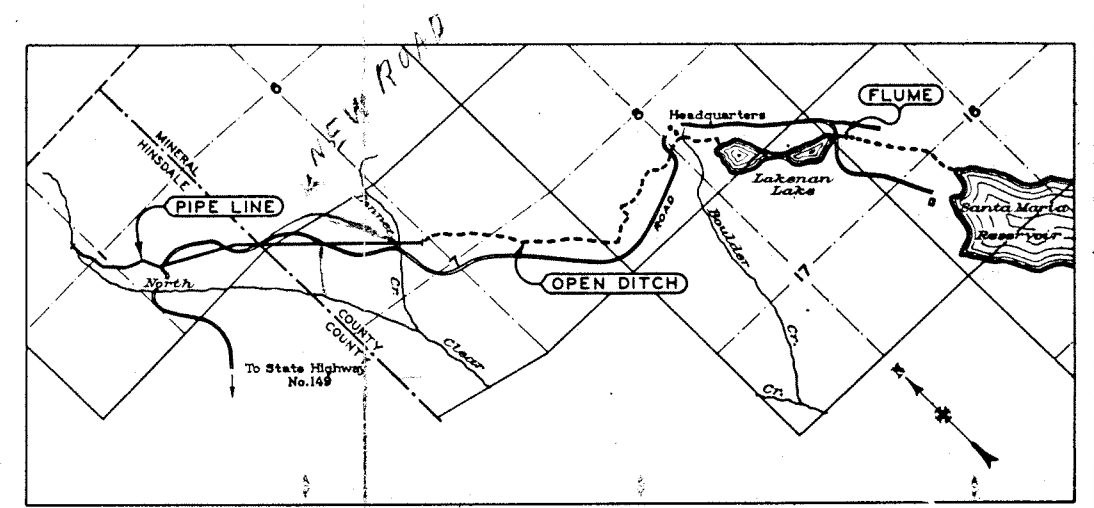


11. Looking upstream along the canal with the slide area in background. The canal was construction on top of the slide area. The canal is seeping along this area.

Santa Maria Siphon and Canal Historical Drawings

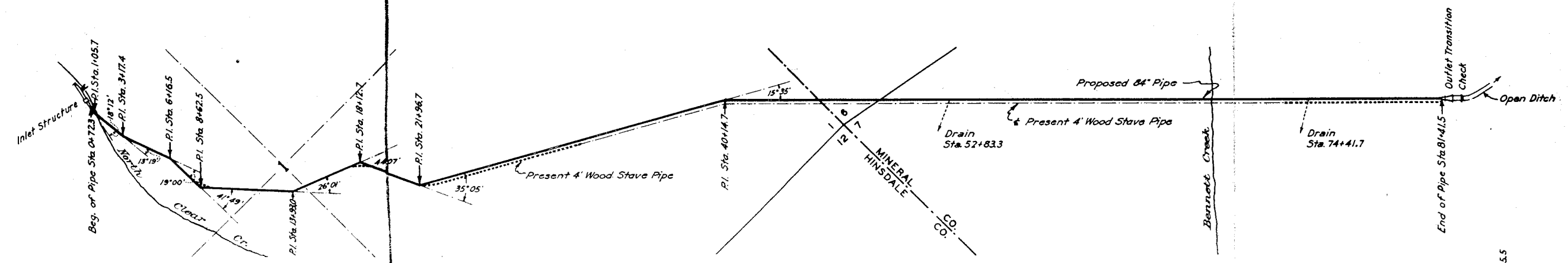


LOCATION MAP

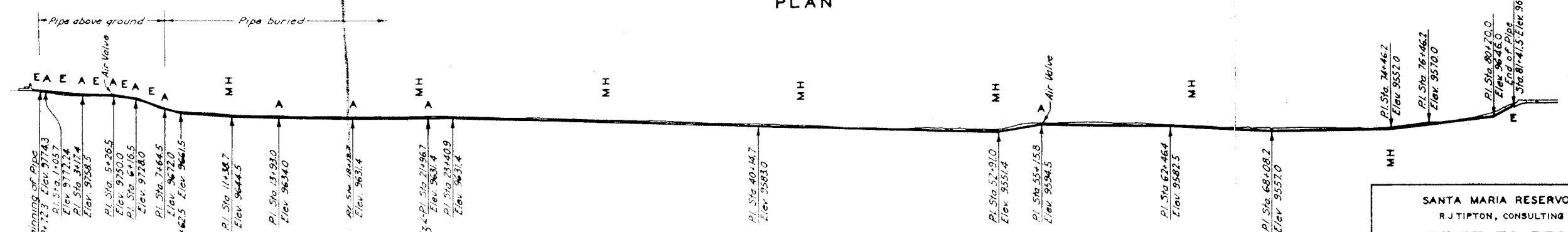


GENERAL PLAN

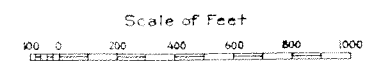
Note:
 Stations and Elevations on Plan and Profile refer to $\frac{1}{2}$ of Pipe.
 A - Indicates Anchor
 E - Indicates Expansion Joint
 MH - Indicates Manhole



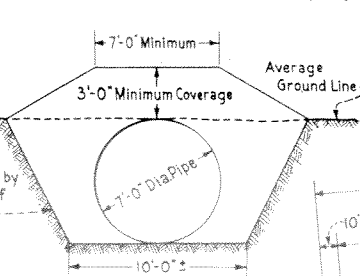
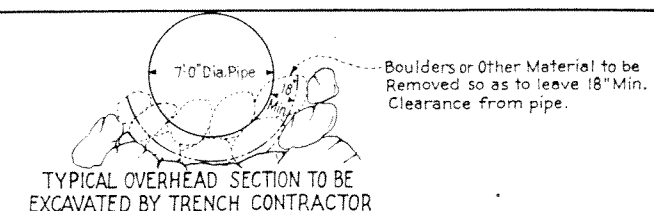
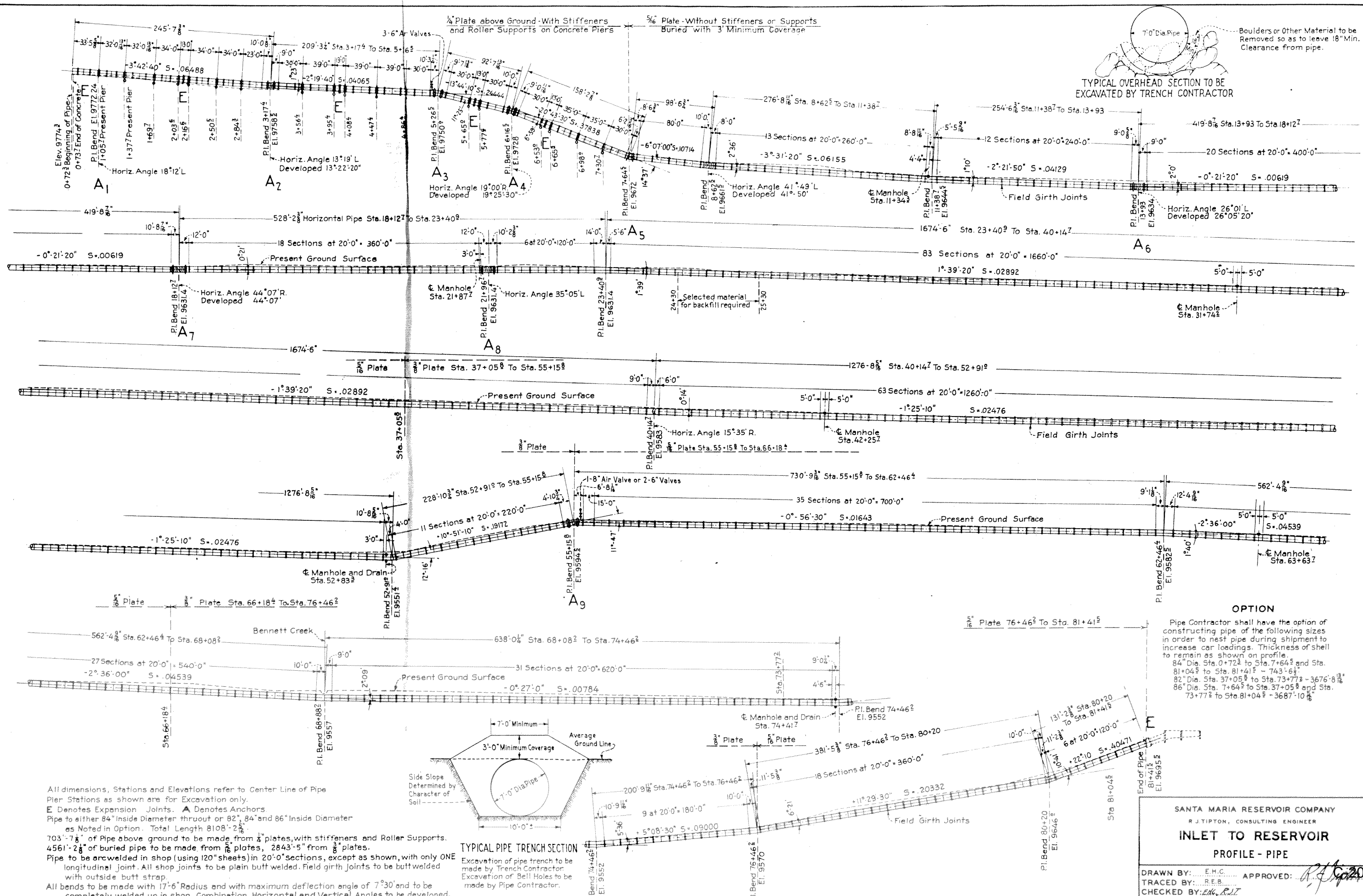
PLAN



PROFILE



SANTA MARIA RESERVOIR COMPANY
 R. J. TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
 GENERAL AND LOCATION MAP
 DRAWN BY C.R.R. TRACED BY C.R.R. CHECKED BY R.H.S., R.J.T.
 APPROVED: *[Signature]*



OPTION

Pipe Contractor shall have the option of constructing pipe of the following sizes in order to nest pipe during shipment to increase car loadings. Thickness of shell to remain as shown on profile.

84" Dia. Sta. 0+72.3 to Sta. 7+64.5 and Sta. 81+04.5 to Sta. 81+41.5 = 743'-6 1/2"

82" Dia. Sta. 37+05.5 to Sta. 73+77.2 = 367'-6 1/2"

86" Dia. Sta. 7+64.5 to Sta. 37+05.5 and Sta. 73+77.2 to Sta. 81+04.5 = 368'-10 1/2"

All dimensions, Stations and Elevations refer to Center Line of Pipe. Pier Stations as shown are for Excavation only.

E Denotes Expansion Joints. A Denotes Anchors.

Pipe to either 84" Inside Diameter thruout or 82" 84" and 86" Inside Diameter as Noted in Option. Total Length 8108'-2 1/2".

703'-7 1/2" of Pipe above ground to be made from 1/4" plates, with stiffeners and Roller Supports.

4561'-2 1/2" of buried pipe to be made from 5/8" plates, 2843'-5" from 3/8" plates.

Pipe to be arcwelded in shop (using 120" sheets) in 20'-0" sections, except as shown, with only ONE longitudinal joint. All shop joints to be plain butt welded. Field girth joints to be butt welded with outside butt strap.

All bends to be made with 17'-6" Radius and with maximum deflection angle of 7°30' and to be completely welded up in shop. Combination Horizontal and Vertical Angles to be developed.

TYPICAL PIPE TRENCH SECTION

Excavation of pipe trench to be made by Trench Contractor.

Excavation of Bell Holes to be made by Pipe Contractor.

SANTA MARIA RESERVOIR COMPANY

R. J. TIPTON, CONSULTING ENGINEER

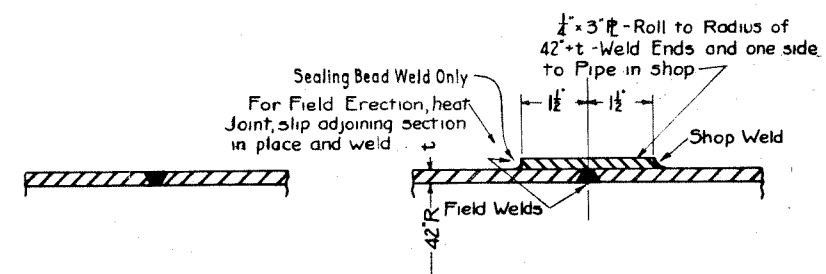
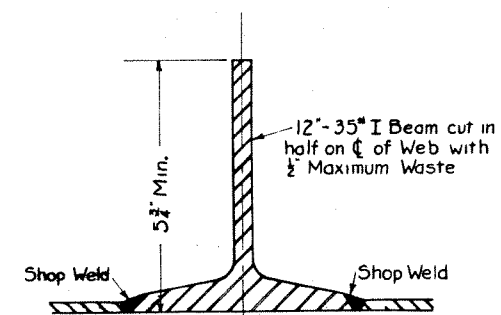
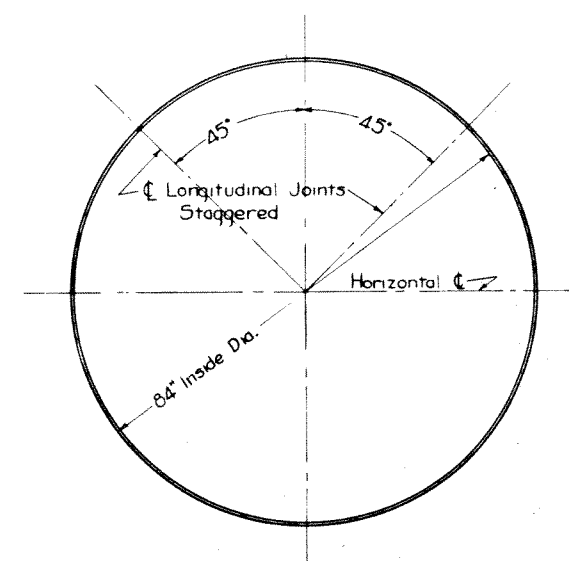
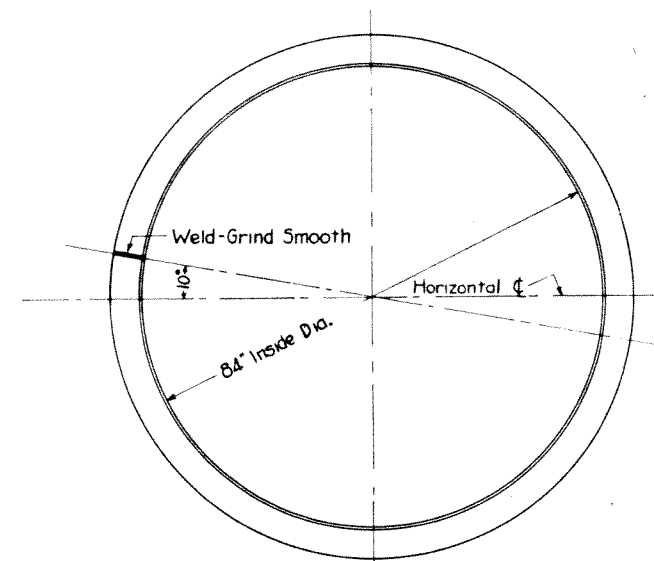
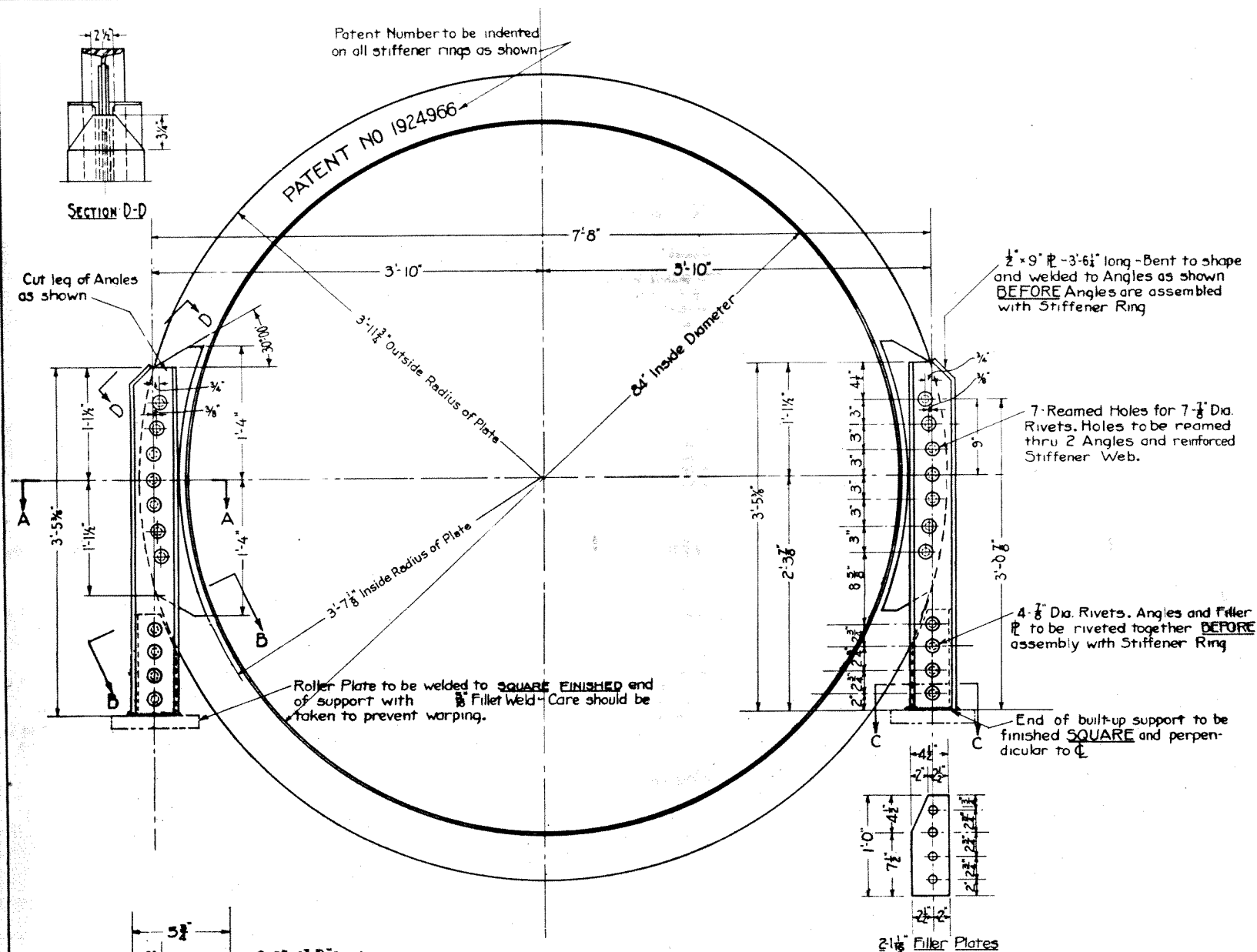
INLET TO RESERVOIR

PROFILE - PIPE

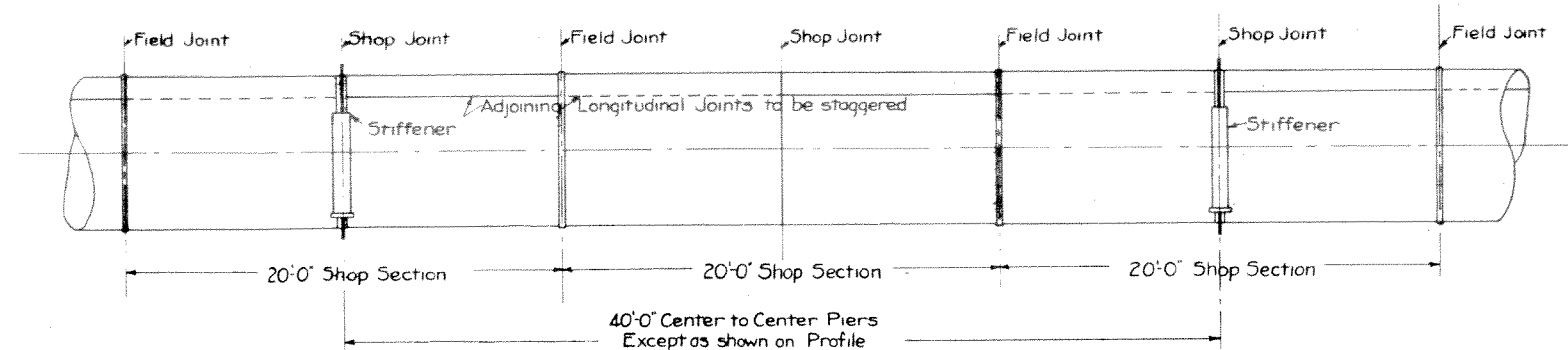
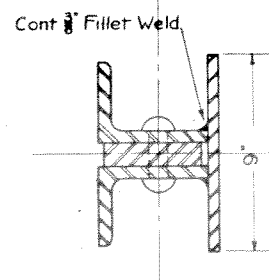
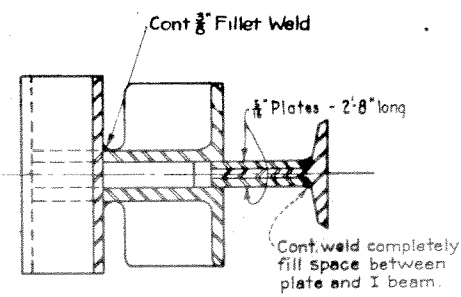
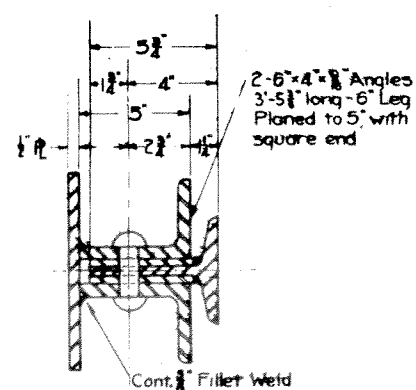
DRAWN BY: E.H.C. APPROVED: R.J.T.

TRACED BY: R.E.B.

CHECKED BY: E.H.C., R.J.T.



MAXIMUM OFFSET OF INTERIOR SURFACE FOR ALL GIRTH JOINTS MUST NOT EXCEED $\frac{1}{8}$ " AFTER WELDING



NOTES

Pipe to be fabricated in shop in shipping lengths of 20'-0" except as noted on profile, from $\frac{1}{4}$ " and $\frac{5}{16}$ " plates, using 120" sheets with one longitudinal and one girth joint.

Welding shall be "CLASS 2" in accordance with A.S.M.E Code for Unfired Pressure Vessels.
See Profile and Bend Detail Sheets for number and location of Stiffener Rings without Brackets.

SANTA MARIA RESERVOIR COMPANY
R.J. TIPTON, CONSULTING ENGINEER

R.J. TIPTON, CONSULTING ENGINEER

INLET TO RESERVOIR
STIFFENERS - JOINTS - SUPPORTING BRACKETS

STIFFENERS - JOINTS - SUPPORTING BRACKETS

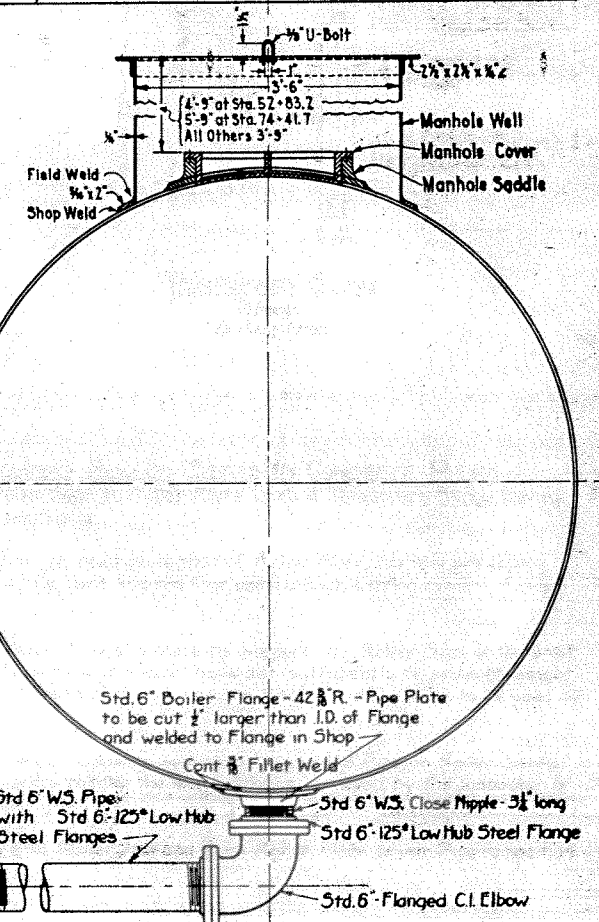
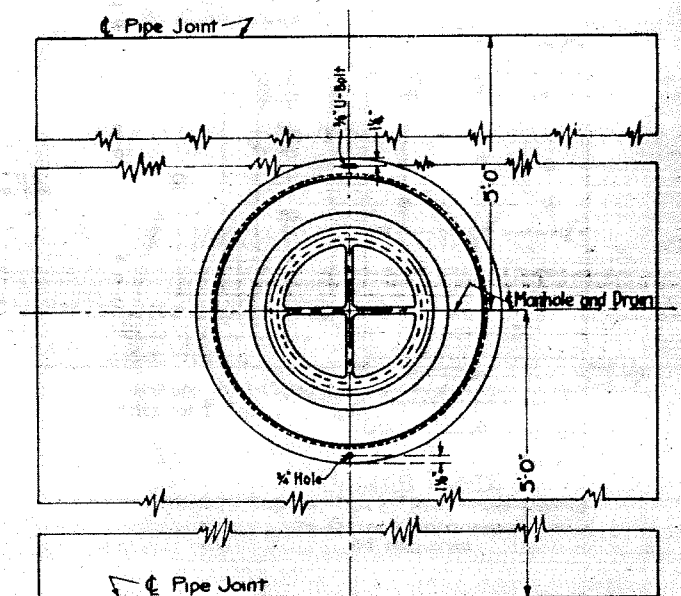
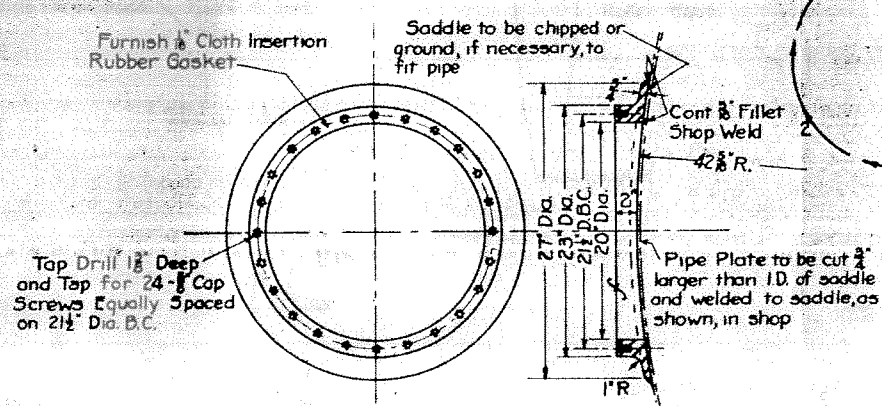
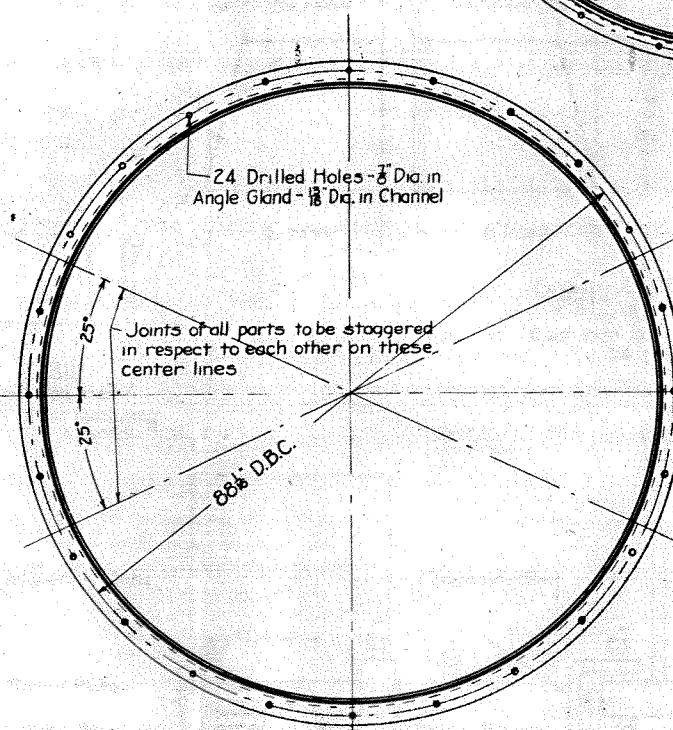
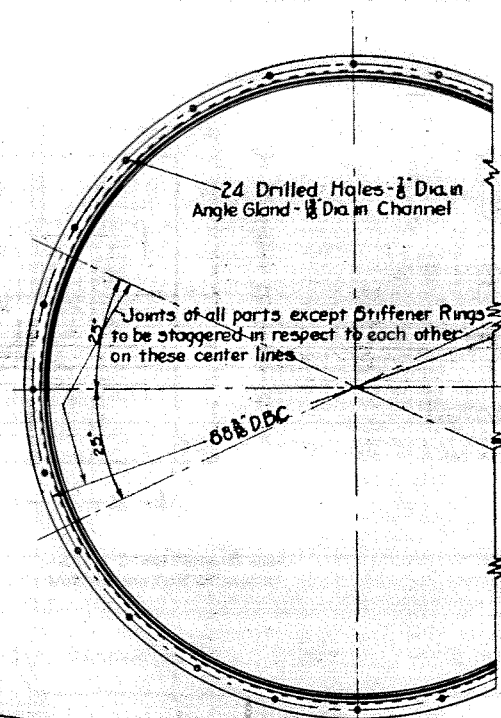
DRAWN BY: E.H.C.-J.W.M.^{MS} APPROVED: *R. A. Jipter*
 TRACED BY: E.H.C.
 CHECKED BY: E.H.C.-J.W.M.^{MS}-R.J.T. C-2

TRACED BY: E.H.C.

CHECKED BY: E.H.C.-J.W.M.-R.J.

C-2

DENVER, COLO., JAN. 1934	SM-3
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Make all fillet welds flat or concave, thus, and not convex

Sequence of Welding to be used in welding saddles and flanges to pipe. Stress relieve with Air Hammer after each rod.

Expansion Joints to be fabricated accurately to dimensions and within tolerances given above for Outside Sleeves and Inner Pipe Sections.

All Manhole Saddles and Boiler Plunges to be welded to pipe in Shop as shown, and finished surfaces and threads to be protected for shipping.

See Profile Dwg. for locations of Manholes and Drains.

All packing and Cloth Insertion Rubber Gaskets to be furnished by Pipe Contractor.

Boiler Type Manhole and Saddle may be used in place of type shown if so desired by Contractor.

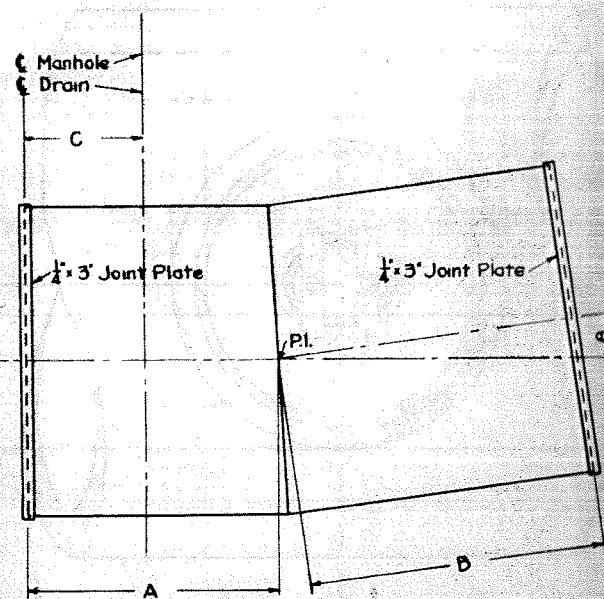
See Dwg. SM-9 for
detail of drain
valve and well —

SANTA MARIA RESERVOIR COMPANY
R.J.TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
EXPANSION JOINTS - MANHOLES - DRAINS

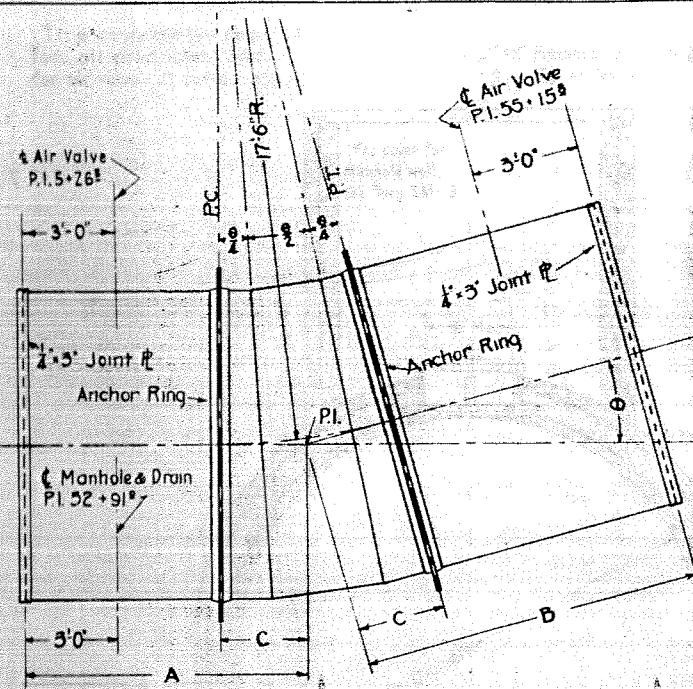
DRAWN BY: E.H.C. APPROVED: *[Signature]*
TRACED BY: E.H.C. C-22
CHECKED BY: E.H.C.-RJT

DENVER, COLO., JAN. 1934	SM-4
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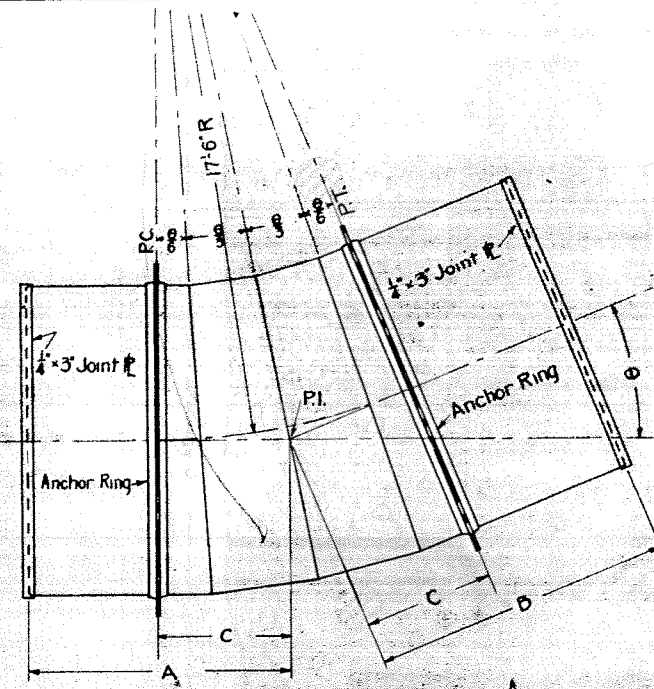
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 TRACED BY: E.H.C.
 CHECKED BY: E.H.C.-RJT



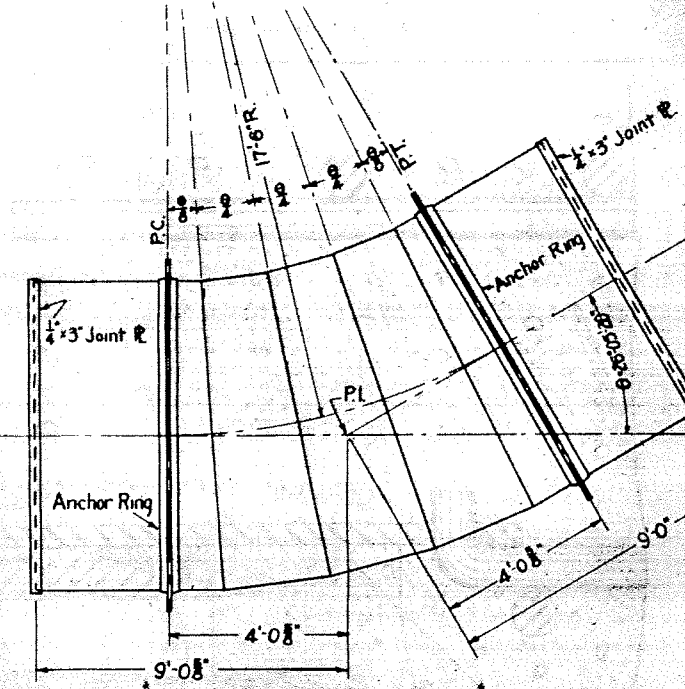
P.I. Sta.	Angle θ	A	B	C	
11+38.2	1°-10'	8'-8"	5'-5"	4'-4"	Manhole
23+40.2	1°-39'	14'-0"	5'-6"		
62+46.2	1°-40'	9'-18"	12'-4"		
68+08.2	2°-09'	10'-0"	9'-0"		
74+46.2	5°-36'	9'-0"	10'-9"	4'-6"	Manhole and Drain
76+46.2	6°-21'	10'-0"	11'-5"		



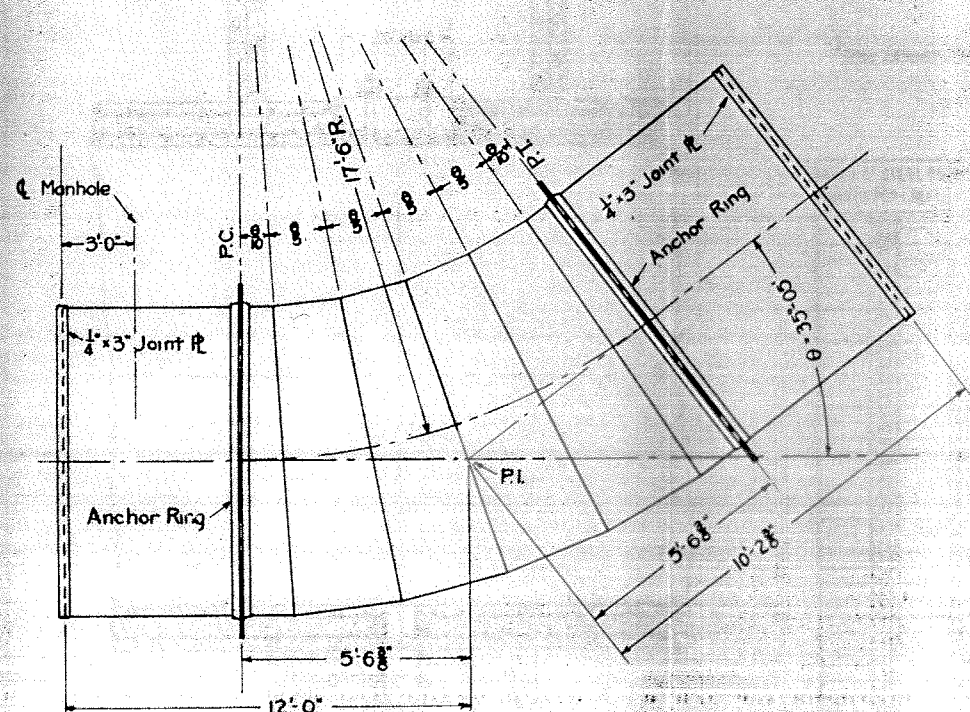
P.I. Sta.	Angle θ	A	B	C	
5+17.2	13°-22'-20"	10'-0"	9'-0"	2'-0"	Anchor ₂
5+26.2	11°-25'	10'-3"	9'-7"	1'-9"	Anchor ₂ - Air Valve
7+64.2	14°-37'	6'-2"	8'-6"	2'-2"	Anchor ₂
52+91.2	12°-16'	10'-8"	4'-0"		Manhole and Drain
55+15.2	11°-47'	4'-10"	6'-8"	1'-9"	Anchor ₂ - Air Valve
80+20.2	10°-41'	10'-0"	11'-2"		



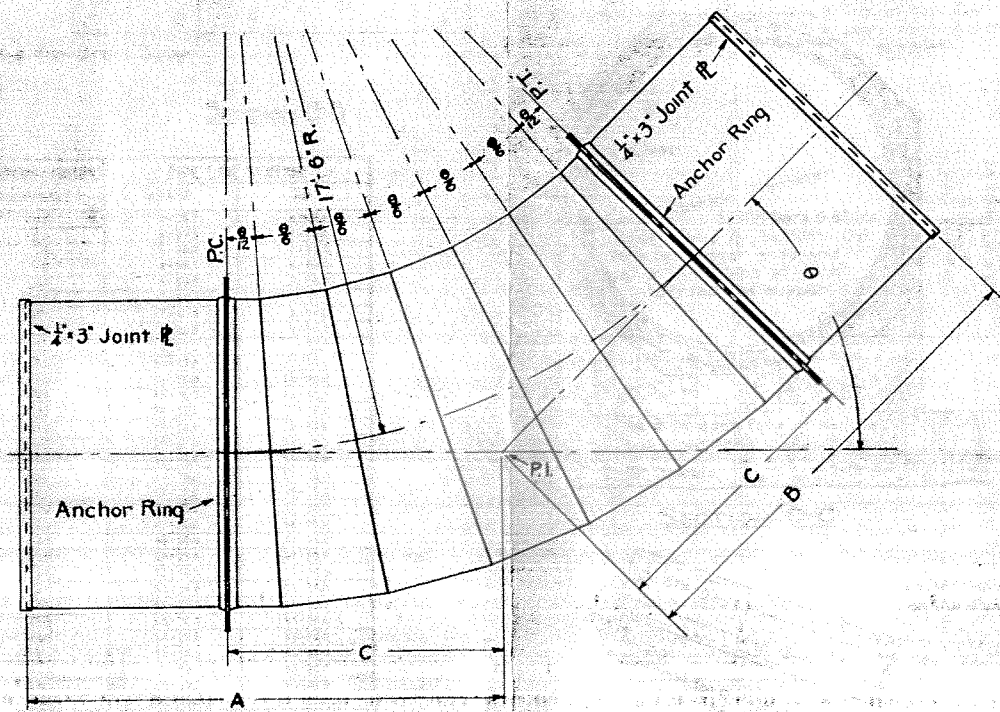
P.I. Sta.	Angle θ	A	B	C	
6+16.2	19°-25'-30"	10'-0"	9'-0"	2'-11"	Anchor ₂
40+14.2	15°-35'	9'-0"	6'-0"		
1+05.2	18°-12'	6'-5"	6'-0"	2'-9"	Anchor ₁



P.I. Sta. 13+93.2
 Horiz. 26°-01' Verr. 2°-00'
 Anchor₂



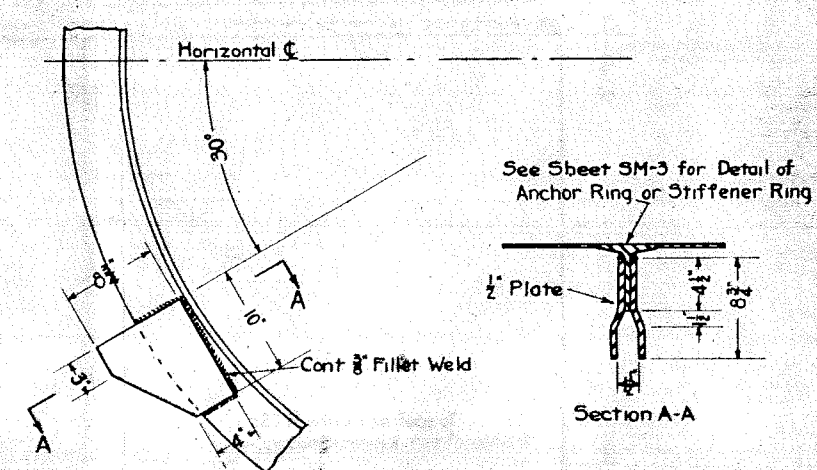
P.I. Sta. 21+96.2
 Anchor
 Manhole



P.I. Sta.	Angle θ	A	B	C	
8+62.2	41°-50'	10'-0"	8'-0"		
18+12.2	44°-07'	10'-8"	12'-0"	7'-18"	Anchor ₂

NOTES

Bends as shown are developed for combination horizontal and vertical angles. Anchor Rings to be used only on those Bends at Anchor points as called for. All other Bends to be fabricated without Rings. All Bends to be fabricated with 1/2" x 3" Joint Plates both ends. Bends to be completely welded up in shop and fitted to adjoining pipe sections.

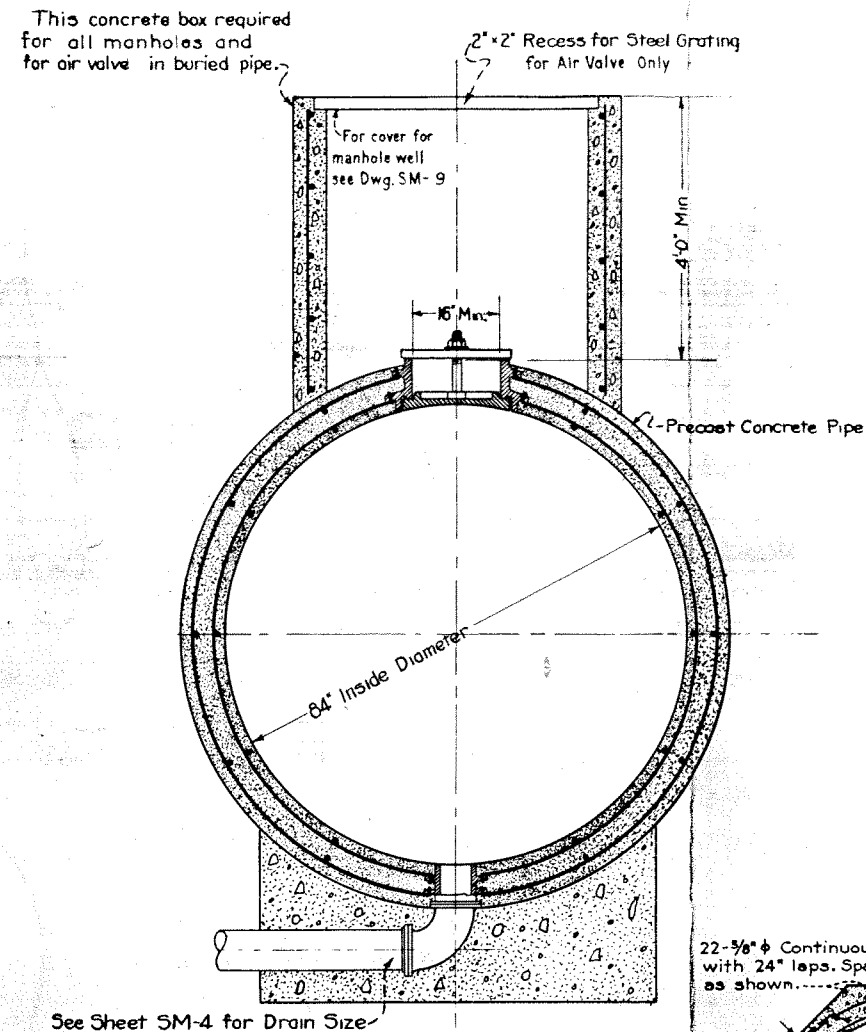
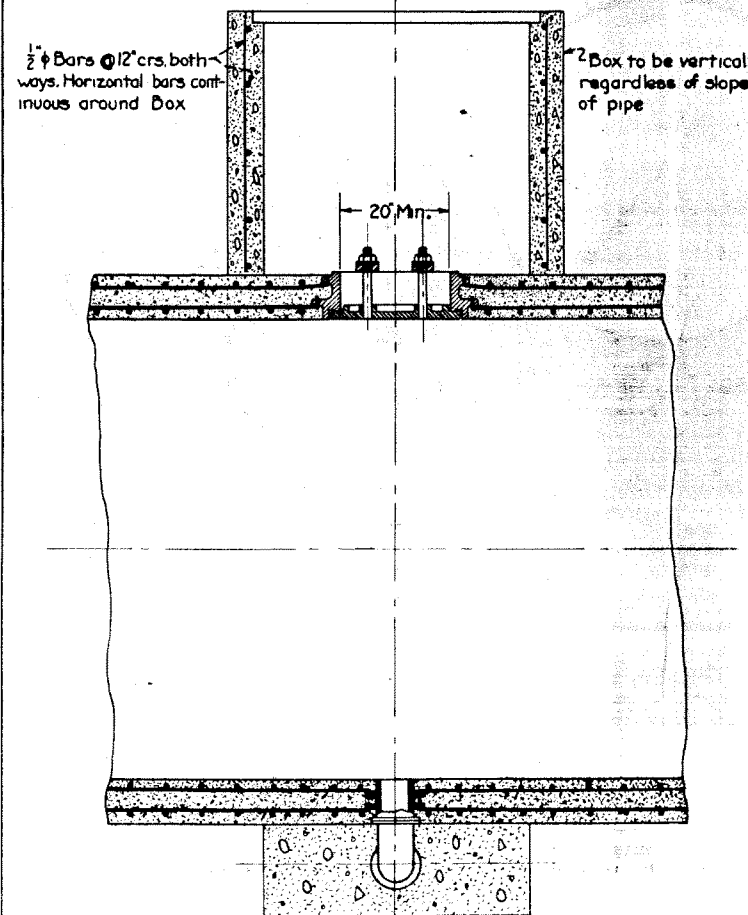
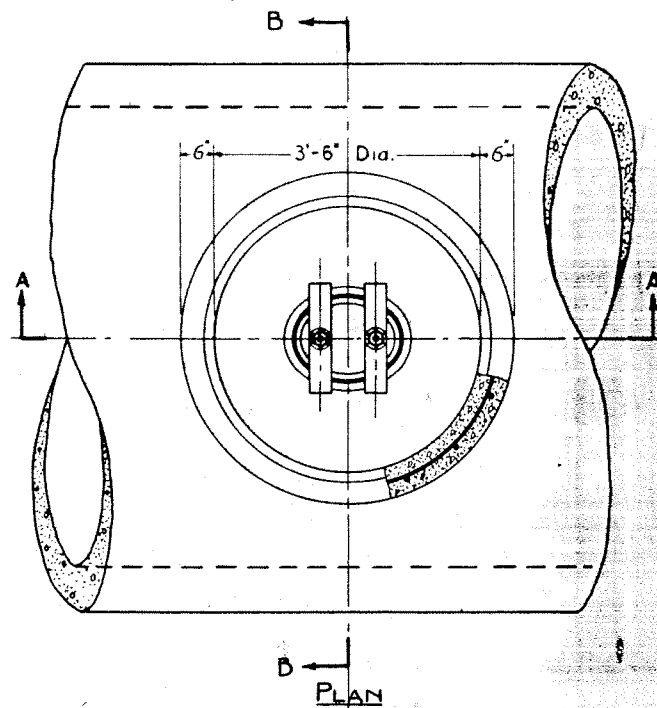


ANCHOR CLIP
 For Anchor 3
 All other Anchors furnished with plain rings

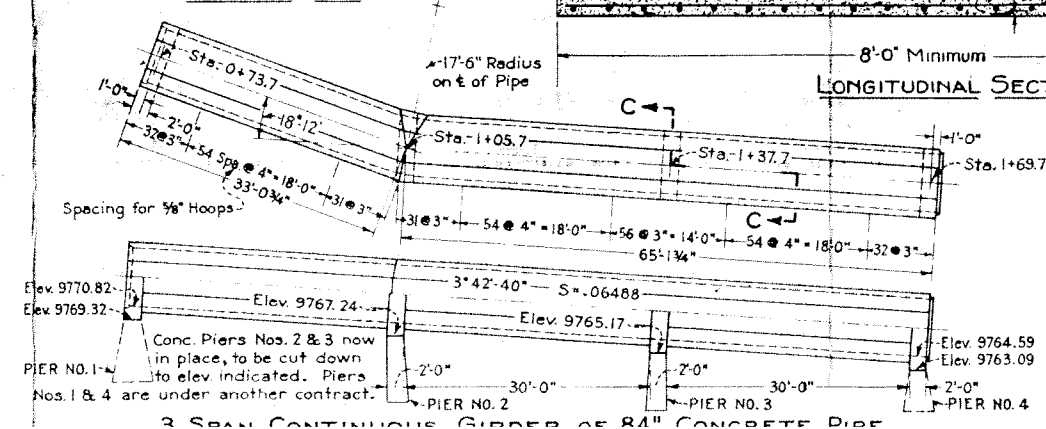
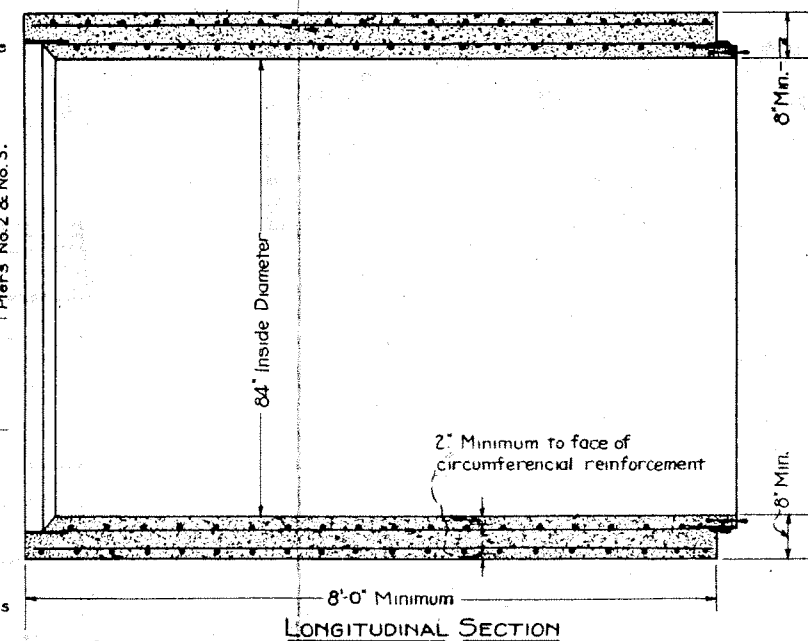
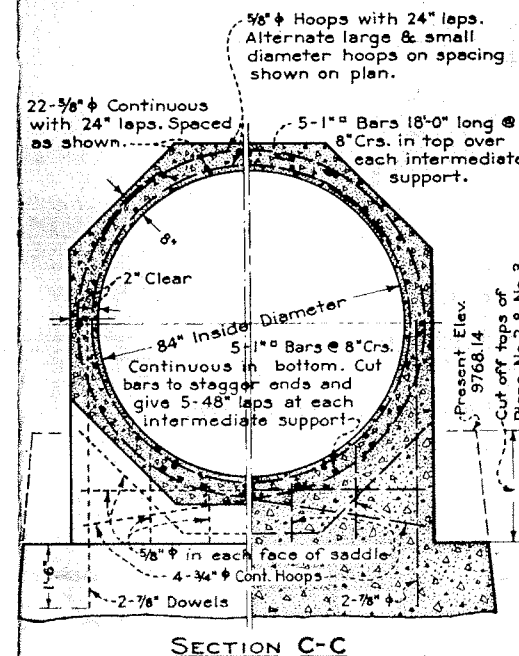
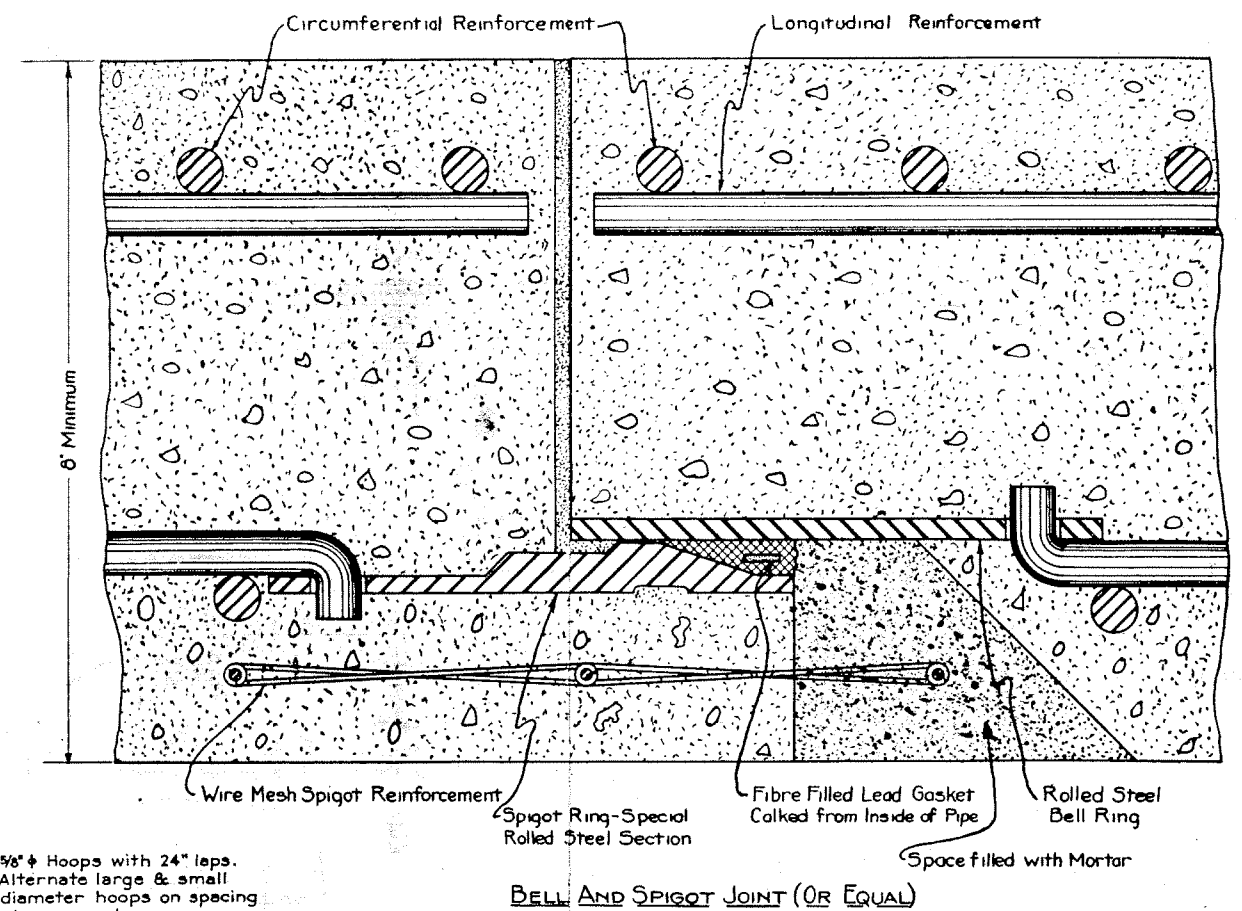
SANTA MARIA RESERVOIR COMPANY
 R.J. TIPTON, CONSULTING ENGINEER

INLET TO RESERVOIR BENDS

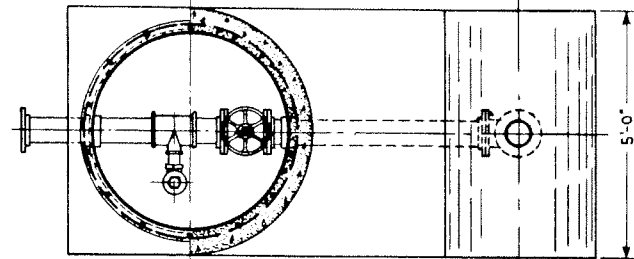
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 TRACED BY: E.H.C.
 CHECKED BY: E.H.C.-R.A.T.



AREA OF STEEL REQUIRED PER LIN. FT.	HEAD IN FEET	PIPE LINE STATION FROM	PIPE LINE STATION TO
0.910	50	0+73.7	0+77.8
1.092	60	0+77.8	0+80.0
1.274	70	0+80.0	0+86.5
1.456	80	0+86.5	0+93.0
1.638	90	0+93.0	7+70.0
1.820	100	7+70.0	7+47.0
2.002	110	7+47.0	8+00.0
2.184	120	8+00.0	9+37.0
2.367	130	9+37.0	11+27.0
2.549	140	11+27.0	12+75.0
2.731	150	12+75.0	24+55.0
2.913	160	24+55.0	27+10.0
3.095	170	27+10.0	29+65.0
3.277	180	29+65.0	31+15.0
3.459	190	31+15.0	34+70.0
3.641	200	34+70.0	37+20.0
3.823	210	37+20.0	39+75.0
4.005	220	39+75.0	42+00.0
4.187	230	42+00.0	44+05.0
4.369	240	44+05.0	49+35.0
4.551	250	49+35.0	52+50.0
4.733	260	52+50.0	53+94.0
4.915	270	53+94.0	54+70.0
5.097	280	54+70.0	63+00.0
5.279	290	63+00.0	65+00.0
5.461	300	65+00.0	66+40.0
5.643	310	66+40.0	67+75.0
5.825	320	67+75.0	74+50.0
6.007	330	74+50.0	75+00.0
6.189	340	75+00.0	76+00.0
6.371	350	76+00.0	76+75.0
6.553	360	76+75.0	77+20.0
6.735	370	77+20.0	77+65.0
6.917	380	77+65.0	78+10.0
7.099	390	78+10.0	78+60.0
7.281	400	78+60.0	79+05.0
7.463	410	79+05.0	79+55.0
7.645	420	79+55.0	80+00.0
7.827	430	80+00.0	80+35.0
8.009	440	80+35.0	80+55.0
8.191	450	80+55.0	81+15.0

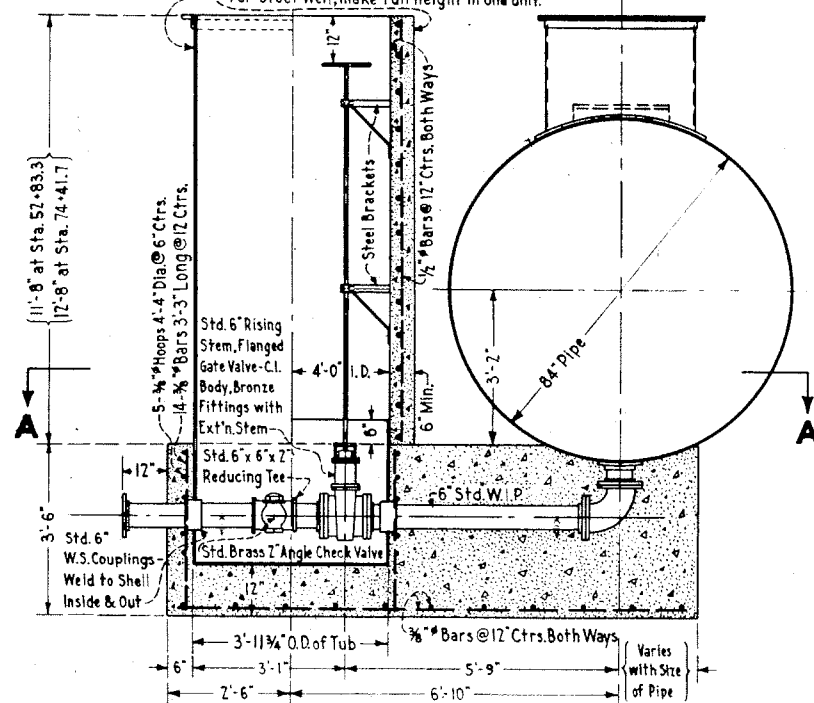


SANTA MARIA RESERVOIR COMPANY
R.J. TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
8" PRECAST CONCRETE PIPE
MANHOLES-DRAINS-JOINTS- SCHEDULE OF HEADS
DRAWN BY: E.H.C. APPROVED: [Signature]
TRACED BY: E.H.C.
CHECKED BY: E.H.C. & J.T.
DENVER, CO. JAN. 1934 SM-7



SECTION A-A

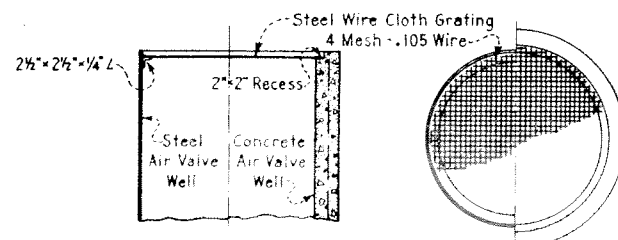
For Concrete Well, make steel tub 3'-11 3/4" O.D. x 3'-0" high of 1/4" plate. Weld seam and weld bottom in.
For Steel Well, make full height in one unit.



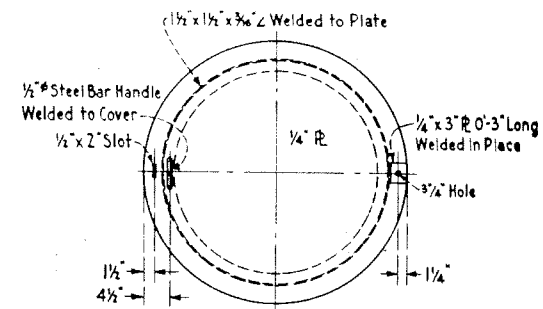
DRAINAGE WELL

NOTE:-

It shall be optional to construct Drainage Wells completely of steel or install a steel tub with concrete above.
The Concrete section may be either pre-cast or monolithic.

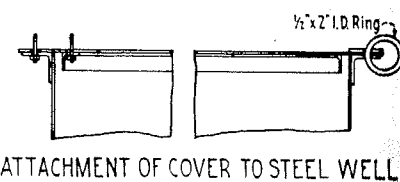


GRATING FOR AIR VALVE WELL

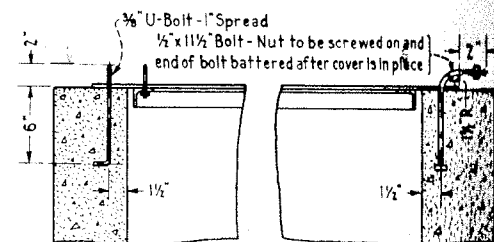


WELL COVER

7 COVERS 4'-0" O.D. REQUIRED FOR MANHOLE WELLS
2 COVERS 4'-6" O.D. REQUIRED FOR DRAINAGE WELLS



ATTACHMENT OF COVER TO STEEL WELL



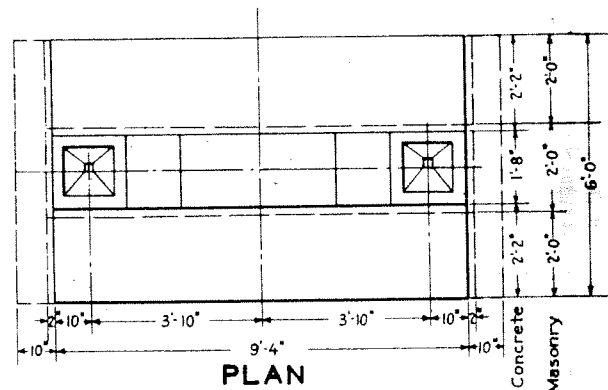
ATTACHMENT OF COVER TO CONCRETE WELL

SANTA MARIA RESERVOIR COMPANY
R.J. TIPTON, CONSULTING ENGINEER

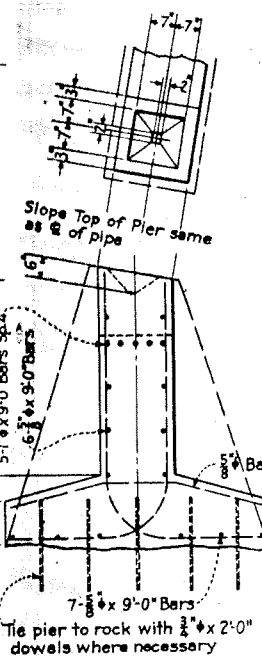
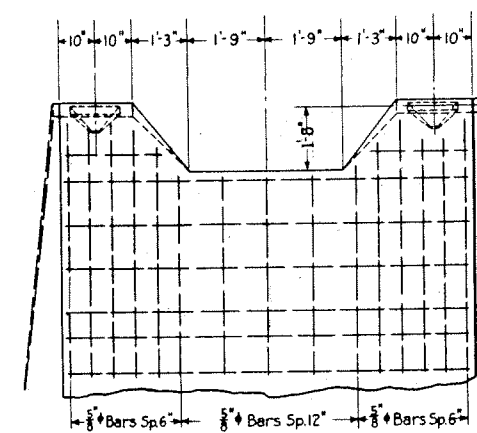
INLET TO RESERVOIR
VALVE WELLS

DRAWN BY: C.E.L. APPROVED: *R.J. Tipton*
TRACED BY: V.F.W.
CHECKED BY: E.H.S.R.J.T.

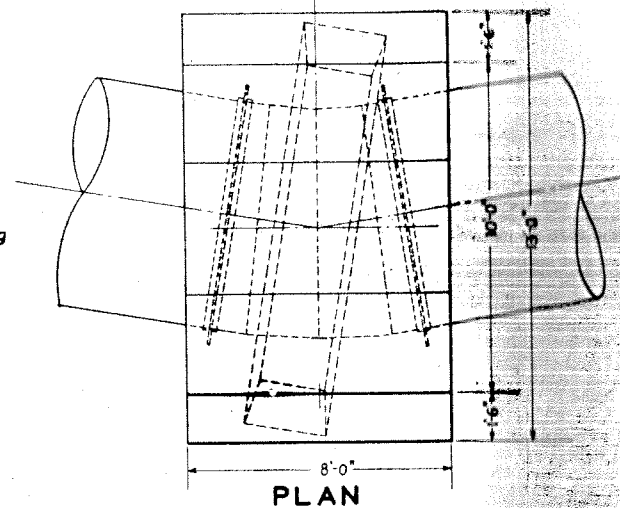
DENVER, COLO., MAR. 1934 SM-9



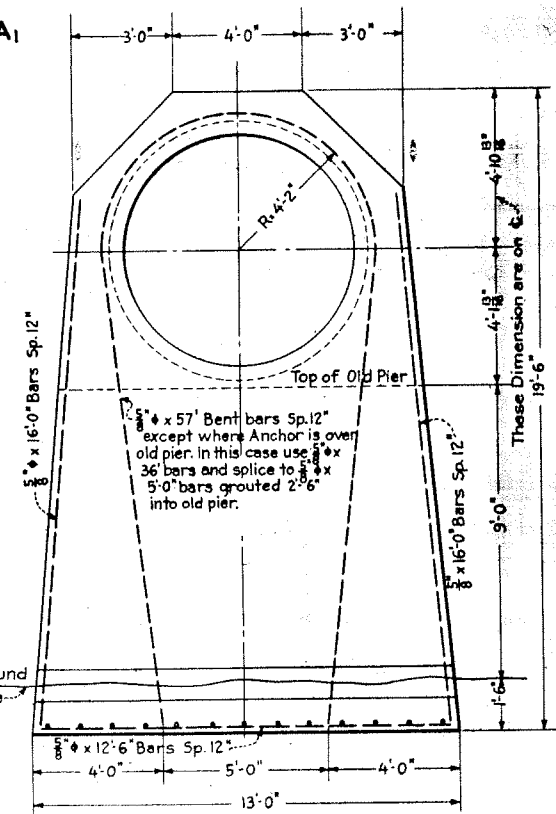
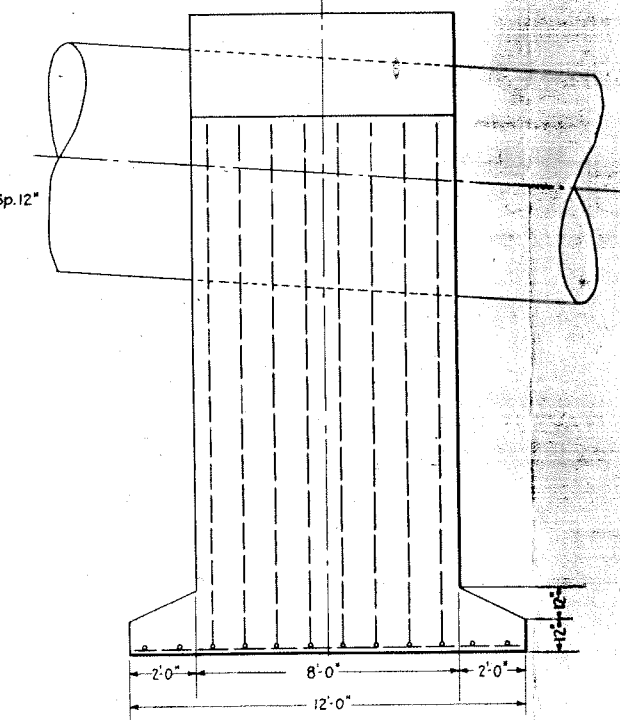
NOTES:
The Outline shown by dashed lines indicates the shape of Footing if Masonry is used instead of Concrete.
If Masonry is used, omit reinforcing.



TYPICAL PIER

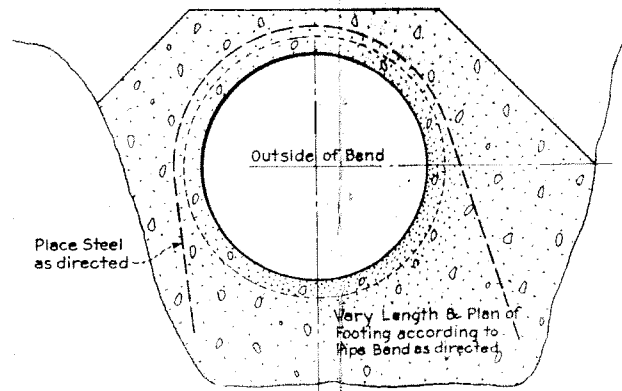


ANCHOR A1

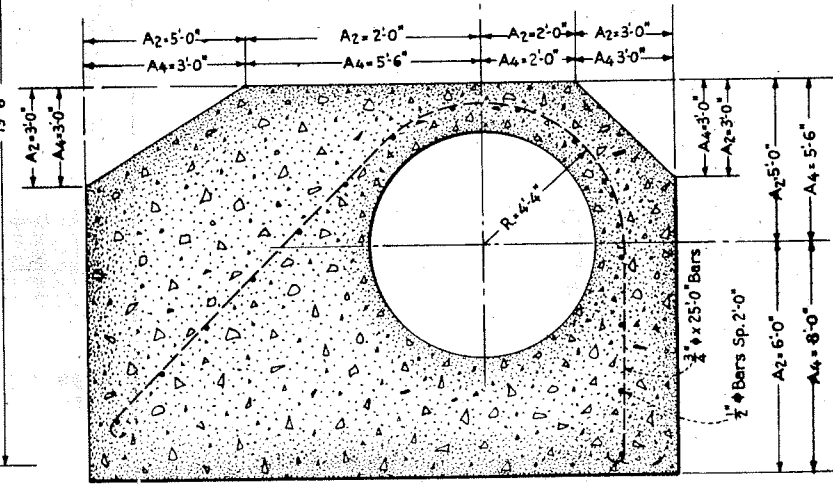
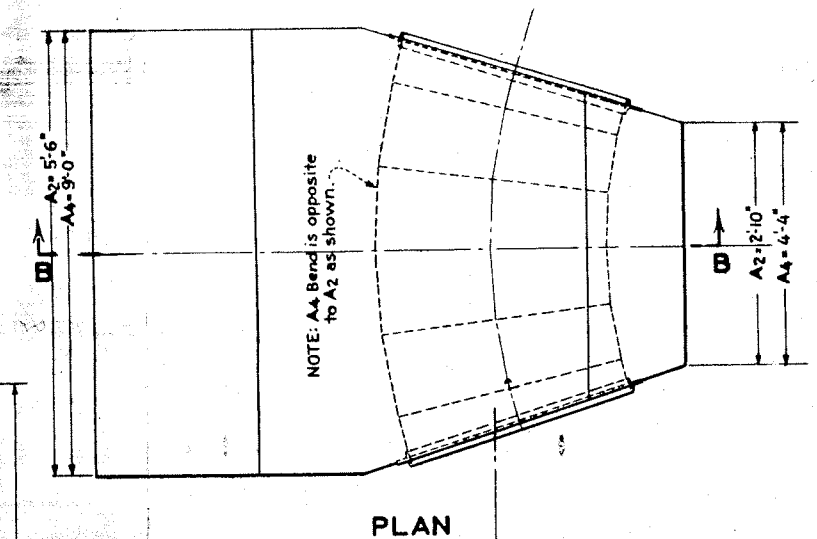


SIDE VIEW

END VIEW

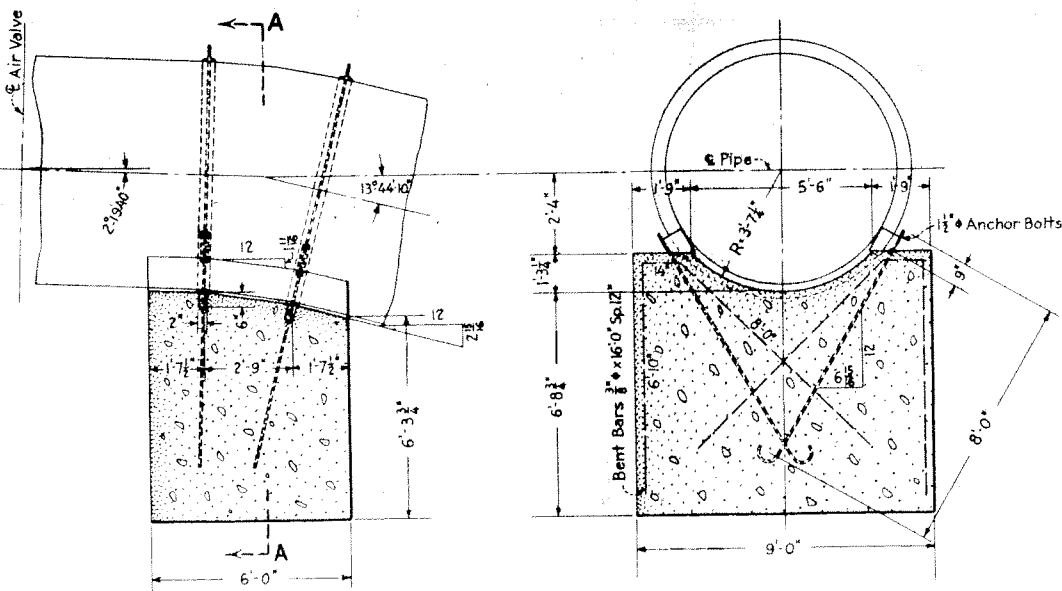


TYPICAL UNDERGROUND ANCHOR FOR ANCHORS A5, A6, A7, A8, A9.



SECTION B-B

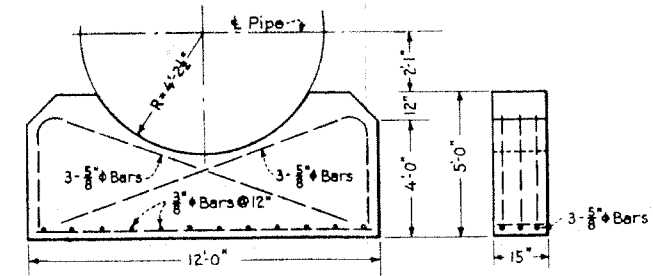
TYPICAL ANCHOR FOR A2, A4.



SECTION ON CENTER LINE

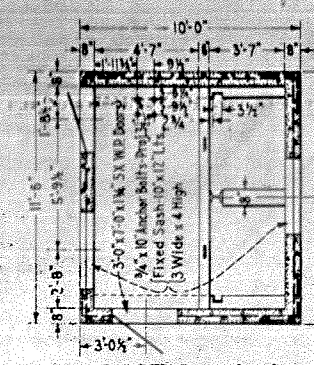
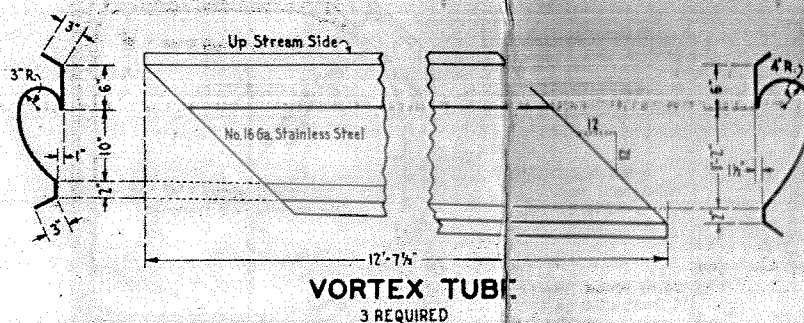
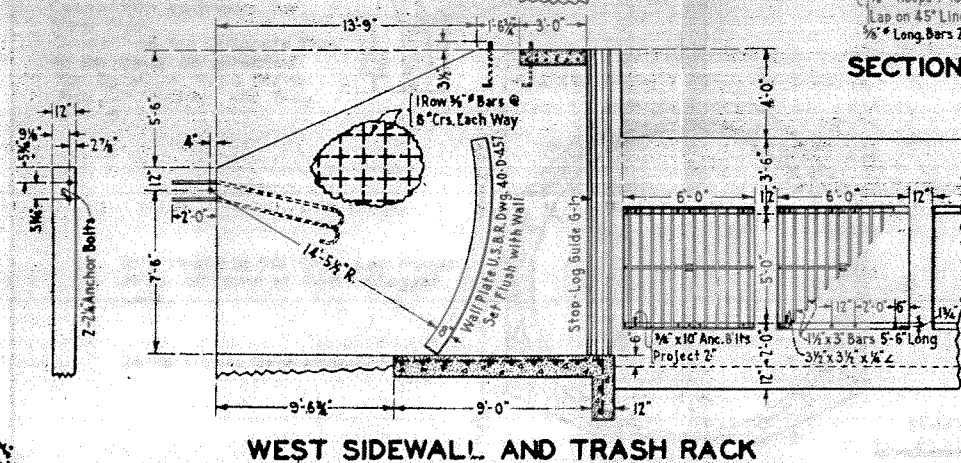
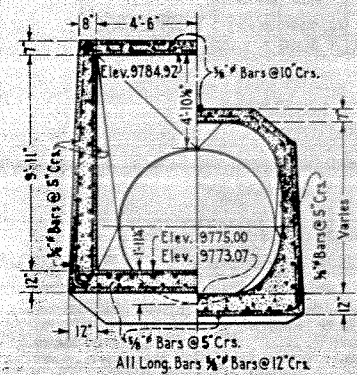
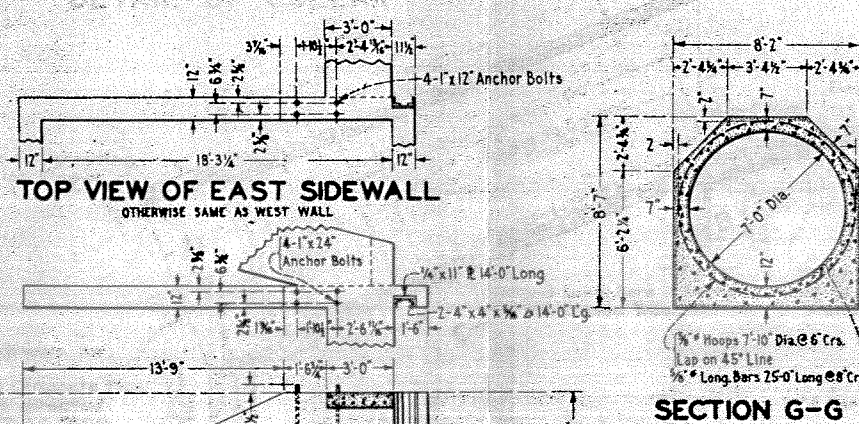
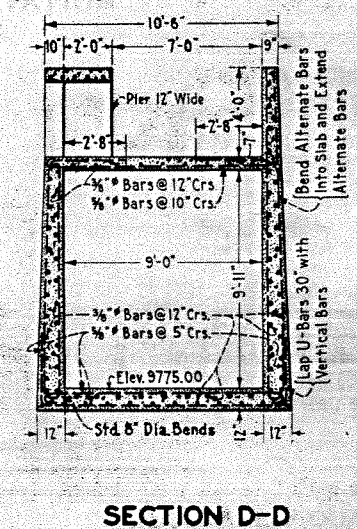
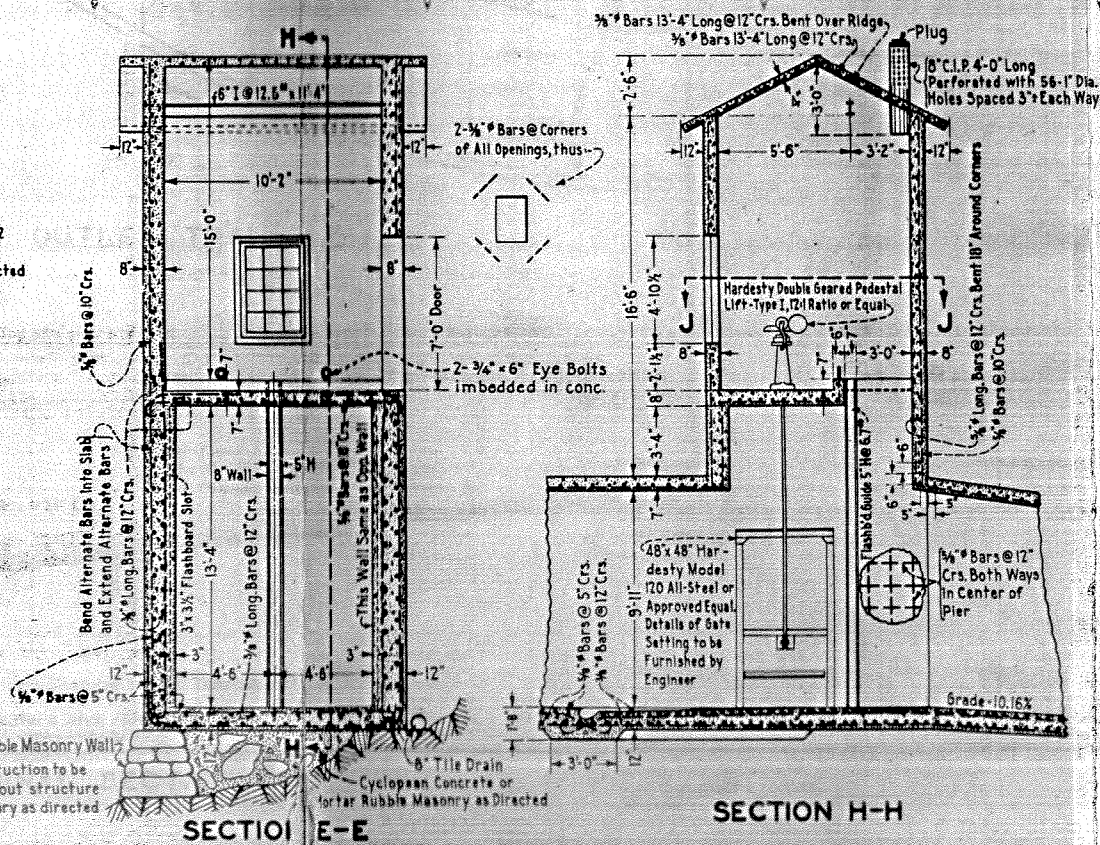
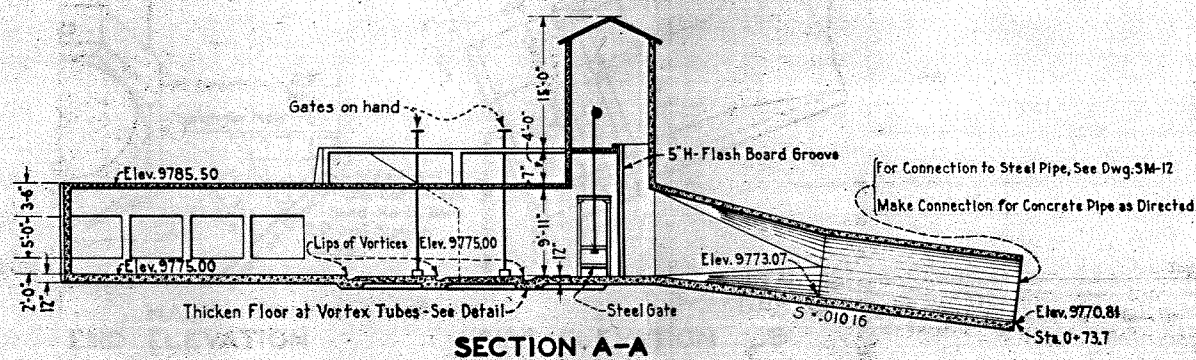
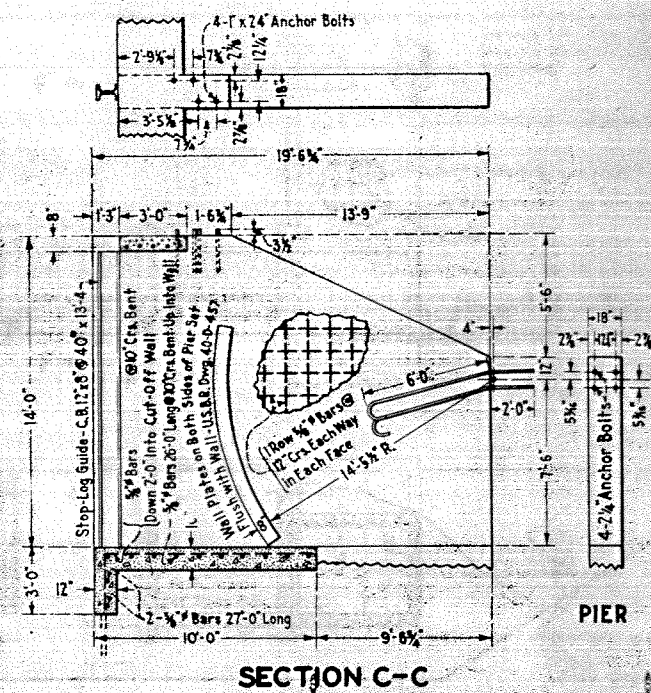
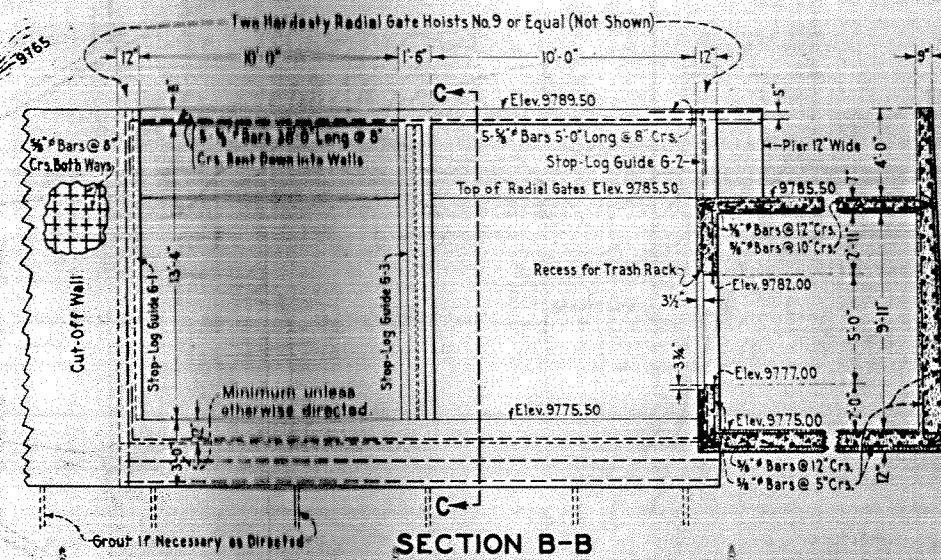
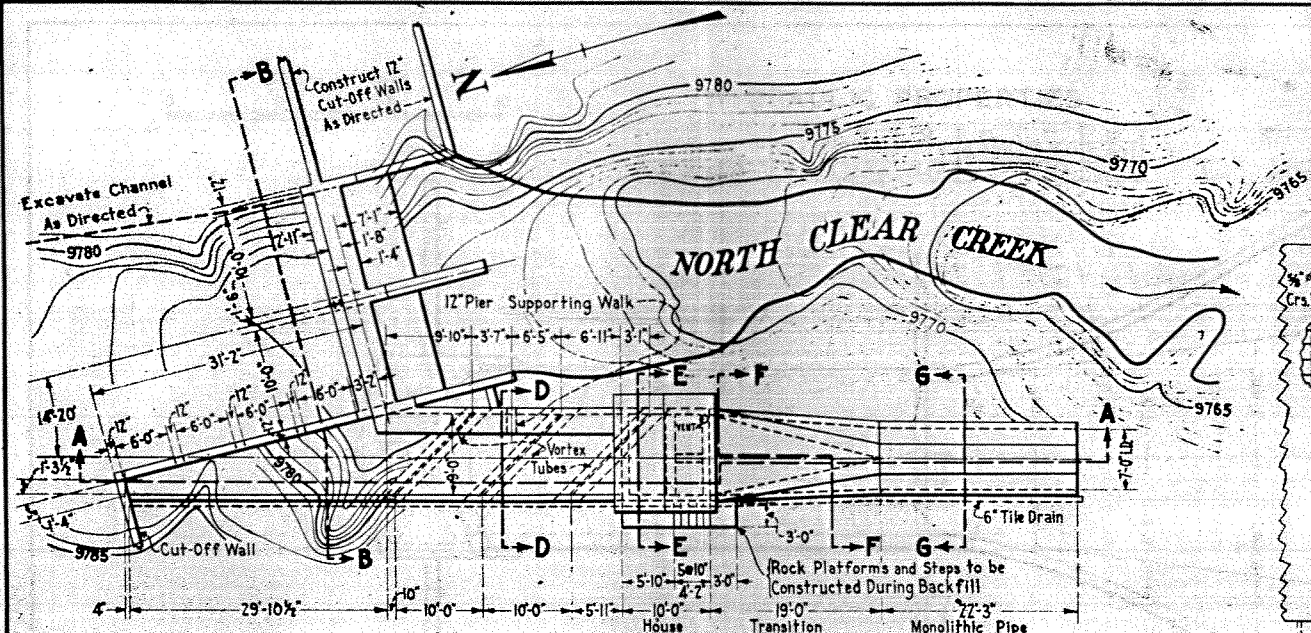
SECTION A-A

ANCHOR A3 AT STA. 5+26.5



TYPICAL SADDLE FOR CONCRETE PIPE

SANTA MARIA RESERVOIR COMPANY
R. L. TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
ANCHORS-PIERS-SADDLES
DRAWN BY: C.E.L. APPROVED: R.L.T.
TRACED BY: R.E.B. CHECKED BY: E.H.C.R.T.



NOTES

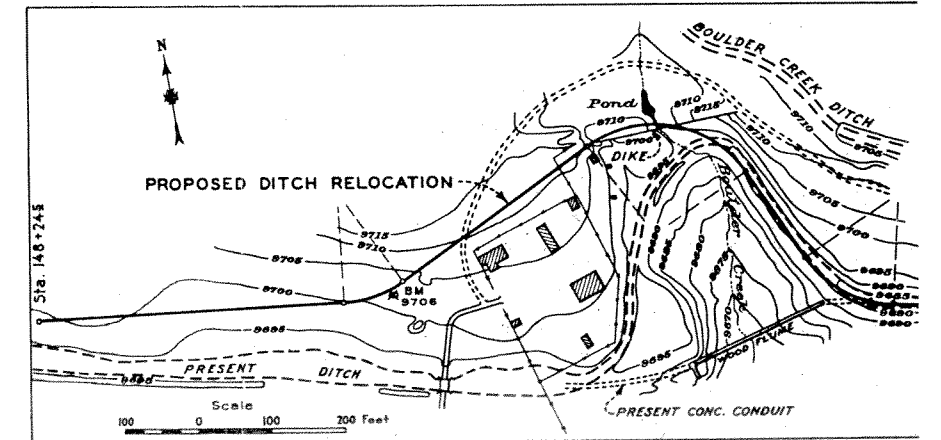
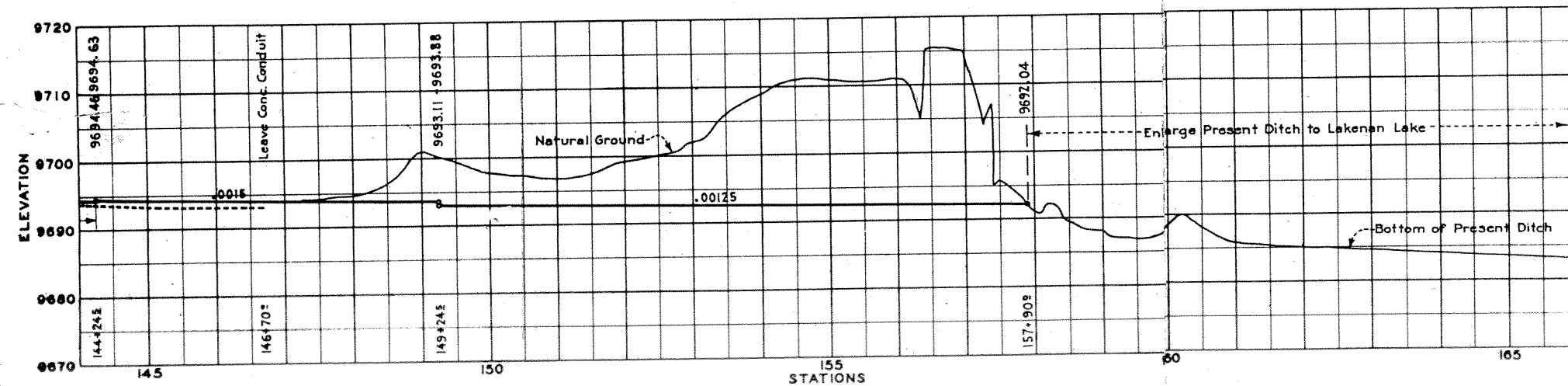
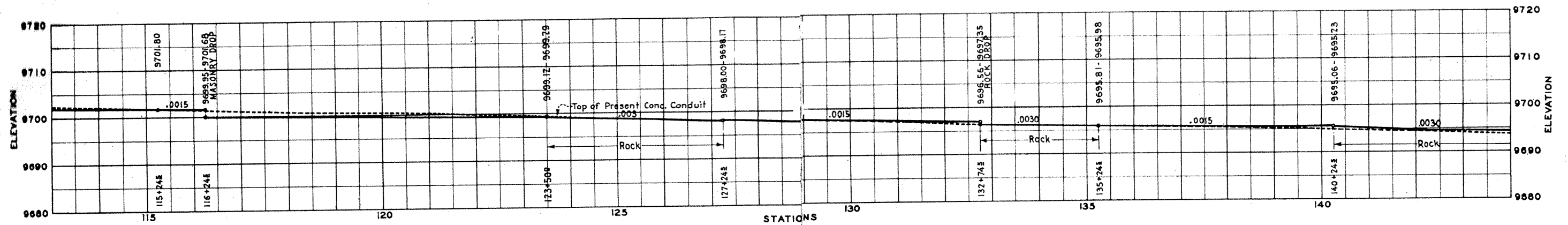
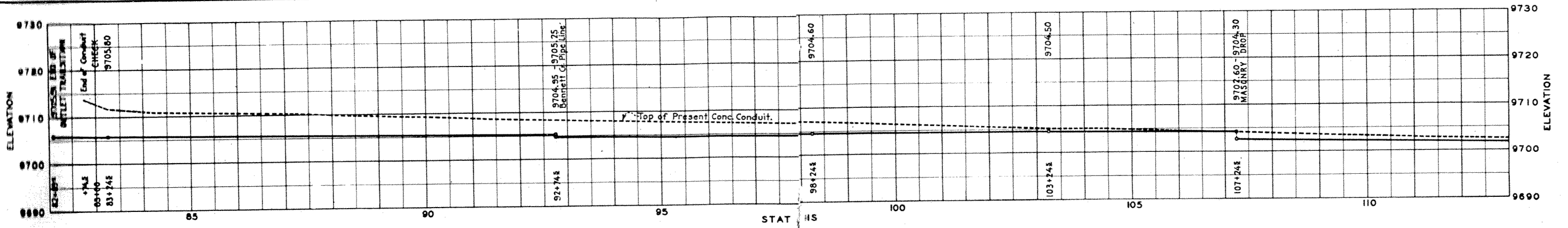
Radial gates and parts shall be according to standard design of the United States Bureau of Reclamation or equal. Details of design are shown on the following U.S.B.R. drawings, copies of which will be furnished on request:

Gate Dwg. No. 40-D-457
Pin Bearings Dwg. No. 100-C-196

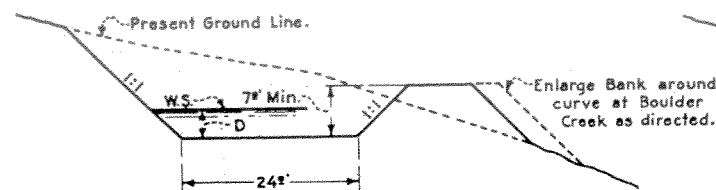
Contractor to furnish for each Pin Bearing Bolt, One 2 1/2" D. x 3 1/2" O.D. four coil spring having 8" free length.

Construct and furnish flash board cages, details of which will be furnished.

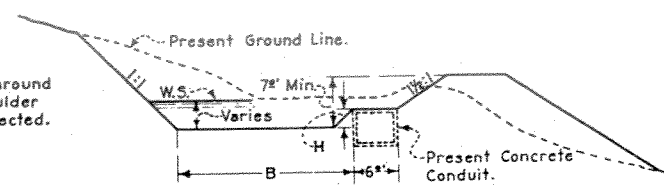
SANTA MARIA RESERVOIR COMPANY
R.J. TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
INTAKE STRUCTURE
DRAWN BY: C.E. R.J.T. APPROVED: R.J.T. 10-29-77
TRACED BY: Y.F.W.
CHECKED BY: R.J.T. E.M.C.



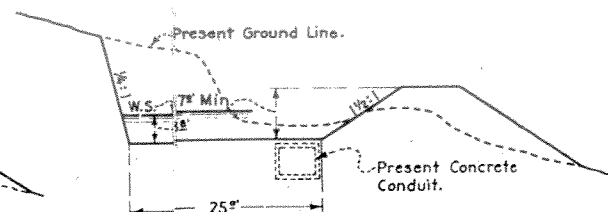
EARTH SECTION



EARTH SECTION



ROCK SECTION



STATION	A	V	Q	D	r	s
82+09.0 to 83+00	141.6	4.55	644	4.9	3.74	.001
149+24.5 to 158+00	125.0	4.79	600	4.4	3.43	.0015

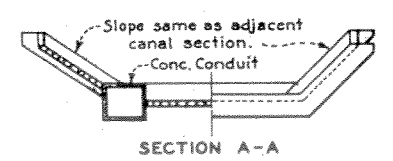
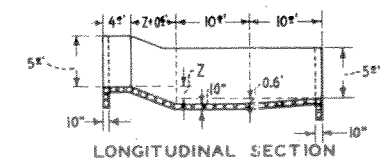
n=.025

STATION	B	H	s
83+24.5 to 92+74.5	22.0' to 24.0'	4.50' to 3.20'	.001
92+74.5 to 107+24.5	24.0'	3.33' to 0	.001
107+24.5 to 116+24.5	24.0'	1.52' to 0	.0015
116+24.5 to 123+50.0	24.0'	1.52' to 0	.0015
123+50.0 to 132+74.5	24.0'	0.59' to 0	.0015
132+74.5 to 135+24.5	24.0'	0	.0015
135+24.5 to 140+24.5	24.0'	0	.0015
140+24.5 to 149+24.5	24.0'	0	.0015

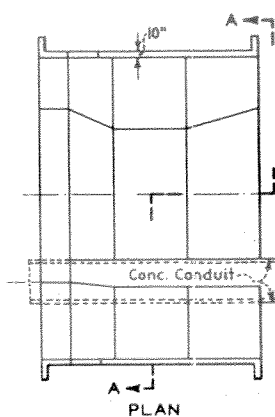
Note: Total width of canal when H=0 is B+6 ft.

STATION	A	V	Q	r	s
123+50.0 to 127+24.5	107.6	5.62	600	3.0	.0030
132+74.5 to 135+24.5	107.6	5.62	600	3.0	.0030
140+24.5 to 144+24.5	107.6	5.62	600	3.0	.0030

n=.030



MASONRY DROP
Detailed Plans to be furnished by Engineer.



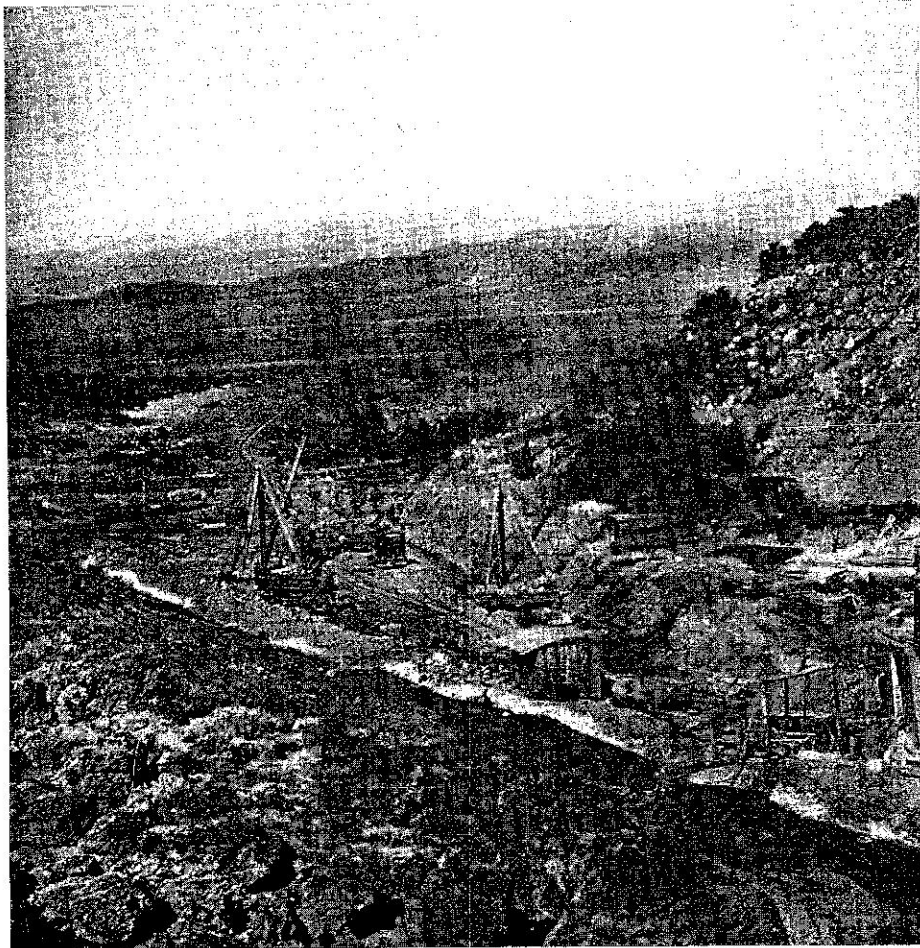
SANTA MARIA RESERVOIR COMPANY
R.J. TIPTON, CONSULTING ENGINEER
INLET TO RESERVOIR
PROFILE AND SECTIONS - OPEN DITCH
DRAWN BY: G.R.B. APPROVED: R.J. Tipton
TRACED BY: G.R.B.
CHECKED BY: _____
DENVER, COLO., JAN 1934 SM-13

Santa Maria Project History

**The San Luis Valley Historian - Reservoirs of the San Luis Valley, Volume XXXVIII
Number 2, 2006**

THE SAN LUIS VALLEY HISTORIAN

Volume XXXVIII NUMBER 2, 2006



RESERVOIRS OF THE SAN LUIS VALLEY

THE
SAN LUIS VALLEY
HISTORIAN
VOLUME XXXVIII NUMBER 2, 2006

Published by
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Santa Maria

Building the Santa Maria Reservoir was a tremendous enterprise even though the site incorporated a natural lake, Mirror Lake. Actual construction began in 1910 by the Rio Grande Reservoir and Ditch Company, which had been organized under the auspices of the Travelers Insurance Company. After Travelers obtained control of canals built by T.C. Henry, there was a need for supplemental water to use on the lands under these systems. They obtained the water rights and claim on the Santa Maria site when the Farmers Union Irrigation Company abandoned those claims and decided on their present location.⁴¹

Hard feelings existed among valley residents for some time regarding the disputes over reservoir sites and priority dates. A brief written by attorneys Corlett and Corlett entitled "Brief of the San Luis Valley Irrigation District on Exceptions of Rio Grande Reservoir and Ditch Company to Findings and Recommended Decree of J. D. Pilcher, Referee," date unknown but probably around 1916, reviews the history of some of these controversies. The observations are certainly prejudiced in favor of the Farmers Union/San Luis Valley Irrigation District, but the document provides an intimate look at problems of the time.⁴² The continued use by some local residents of the name "Farmers Union Reservoir," rather than the official name "Rio Grande Reservoir," may be attributed to the fact that Santa Maria Reservoir was built by the 'Rio Grande Reservoir and Ditch Company.'

When Mr. Jaycox, the engineer, started work on Santa Maria in 1910 with the diversion of North Clear Creek, he also included plans for a pipeline from Bennett Creek, and a structure to reroute water from nearby Boulder Creek. The Bennett Creek pipeline diverted water from the creek that drains Bristol Head, high to the north of the reservoir. Installing this

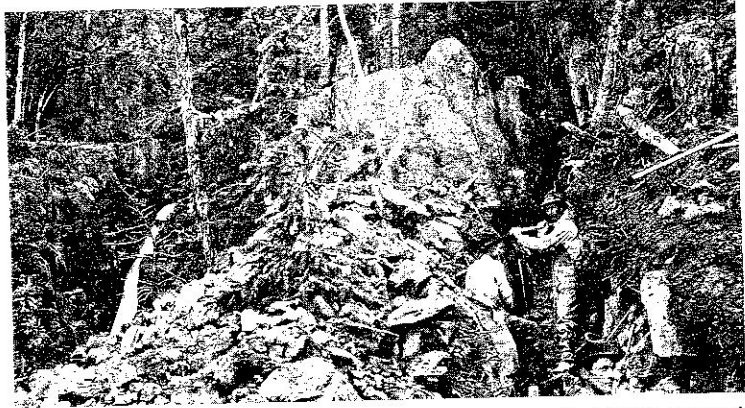
39 John LaFont, *58 Years Around Creede* (New York, New York: Vantage Press, 1971) 54.

40 Lory Walker, Personal Interview, South Fork, Colorado, September, 2004.

41 Corlett & Corlett, "Brief."

42 Ibid.

pipeline through rock and on steep inclines was extremely difficult. In later years, maintenance costs made it prohibitive to continue its use,⁴³ and the pipe has been left to rust and weather.



Santa Maria Reservoir Company

Trench excavation at head of Bennett Creek Pipe Line. Falls at left.

Of the water sources for Santa Maria, North Clear Creek is by far the largest. The creek originates near the Continental Divide, drops over North Clear Creek Falls, tumbling eastward through boxcar size boulders and small valleys, cutting across Long Ridge, and eventually merges into the Rio Grande.

A continuous 4 foot diameter wood stave pipe, about 8,000 feet long, was built to carry water from North Clear Creek to a concrete lined canal, traveling an additional 8,000 feet to the reservoir. This water provided the high pressure required for hydraulic washing of material to the dam site and after construction became the major source of reservoir water.

Workers at movable carpenter shops cut lumber for the pipe. Nine-sixteenths inch steel rods around the outside held the pipe all together, similar construction as for a wood stave barrel. In 1934, a large crew of men replaced this pipe with one of steel. These laborers were paid \$28 a week, plus room and board (notably low end cuts of meat such as 'bull necks') but they were free to go into Creede for Saturday night dances at the Bucket of Blood.⁴⁴

⁴³ Ron Peterson, Personal Communication, February 2, 2006, Monte Vista, Colorado.

⁴⁴ Ms Frances Hibbs, Telephone Interview, February 8, 2006, Del Norte, Colorado.



Santa Maria Reservoir Company

Wood stave pipe construction, October 1910.

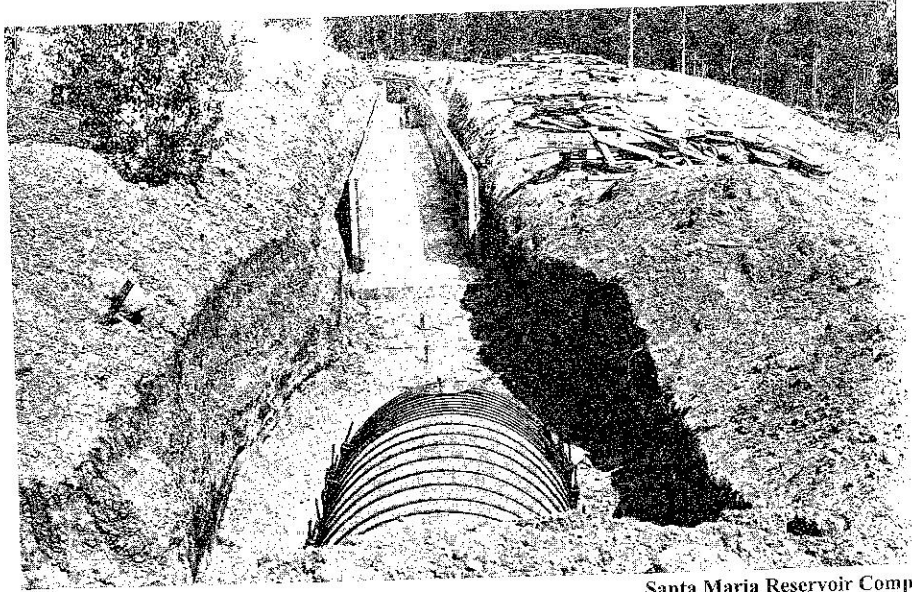
While the original pipe was being built and laid – especially challenging across the slide-rock expanse down from the headgates on North Clear Creek – the tunnel and outlet canal were being excavated. The outlet works include a tunnel 600 feet long excavated under the dam and the outlet canal which carries water back to North Clear Creek. Sluices were constructed to bring the rock and earth to the dam site.

In contrast to the situation at the Terrace where there was not much loose material to sluice, there were many areas surrounding the dam at Santa Maria with suitable dam-building material. Monitors began sluicing material on October 26, 1911, and operated 24 hours a day, using Milburn lights at night.⁴⁵

Tremendous water pressure was required to move material through sluices. This pressure was developed by taking the water into the pipes at a much higher elevation. Some pipes brought water to borrow pits on the south side of the dam.

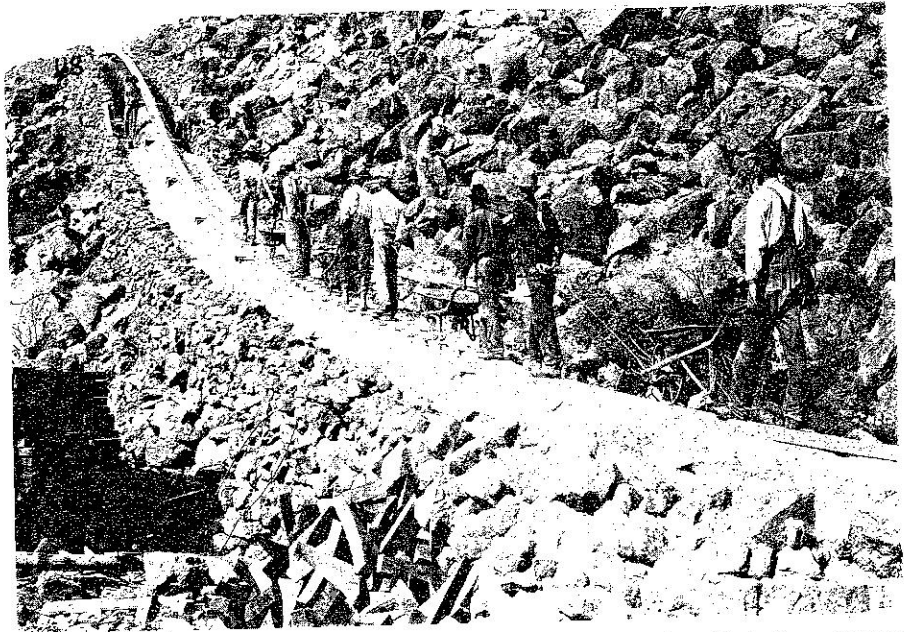
In a Valley Courier dated January 7, 1911, it was reported the cost of the Santa Maria Reservoir would be \$250,000, however no data on actual cost has been found.

⁴⁵ Information from Santa Maria Reservoir Company photograph labels (Monte Vista, C. L. S. M. R. Co. 1911).



Santa Maria Reservoir Company

Pipe empties into concrete conduit at top of hill; note man in back.



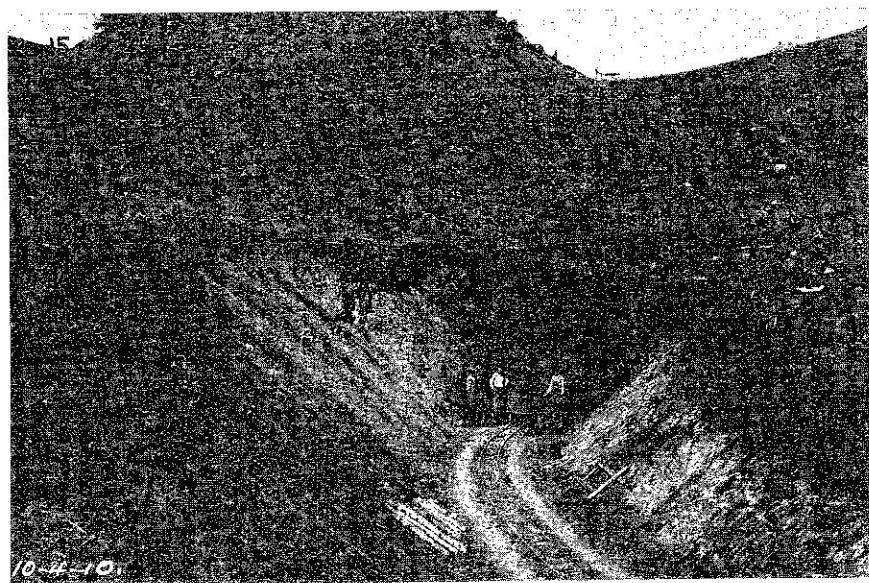
Santa Maria Reservoir Company

A crew of Bulgarians was hired to work on the reservoir. Here they haul material in wheel barrels to fill in and protect the pipeline.



Santa Maria Reservoir Company

*Laborers carry material in cloth bas to backfill pipe.
Carpenter shop in center shows cutting of wood for pipeline.*



Santa Maria Reservoir Company

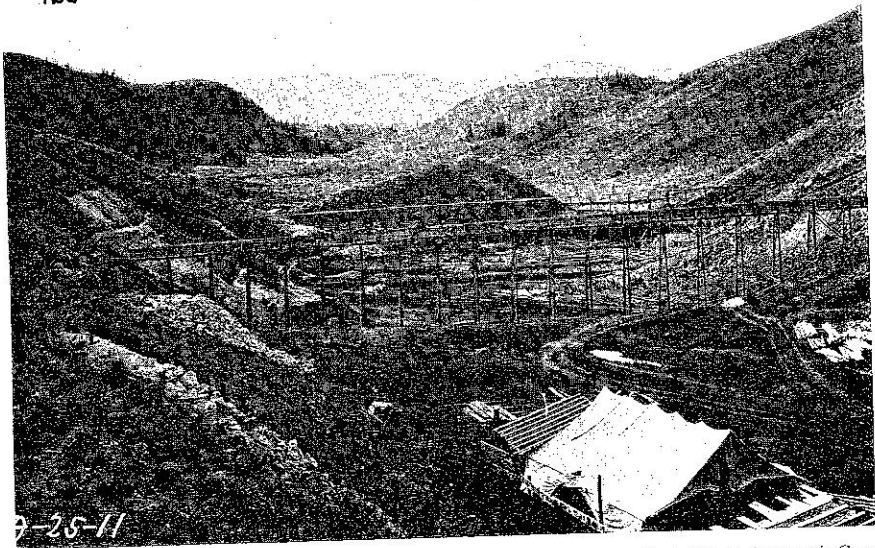
The beginning of the 600-foot long tunnel excavated through this hill.



Santa Maria Reservoir Company

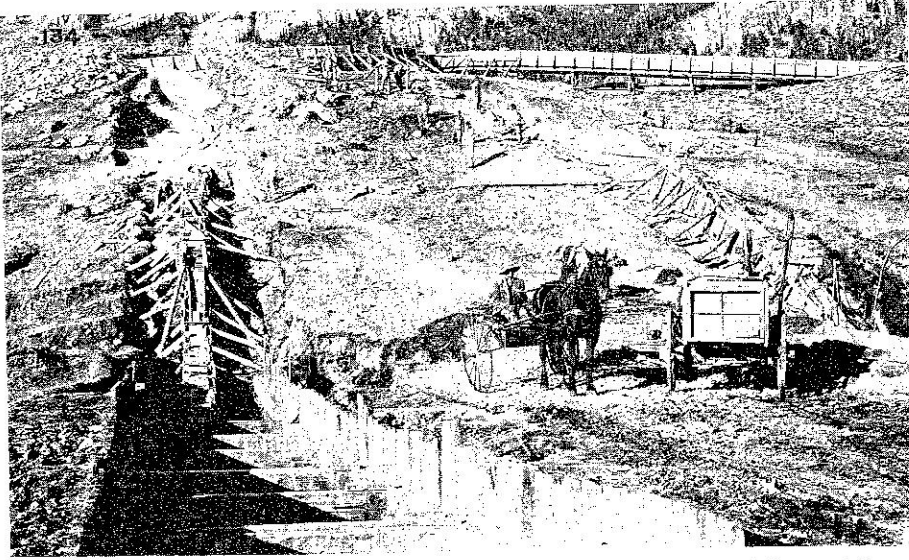
Headgate on North Clear Creek was built amongst boulders.

125



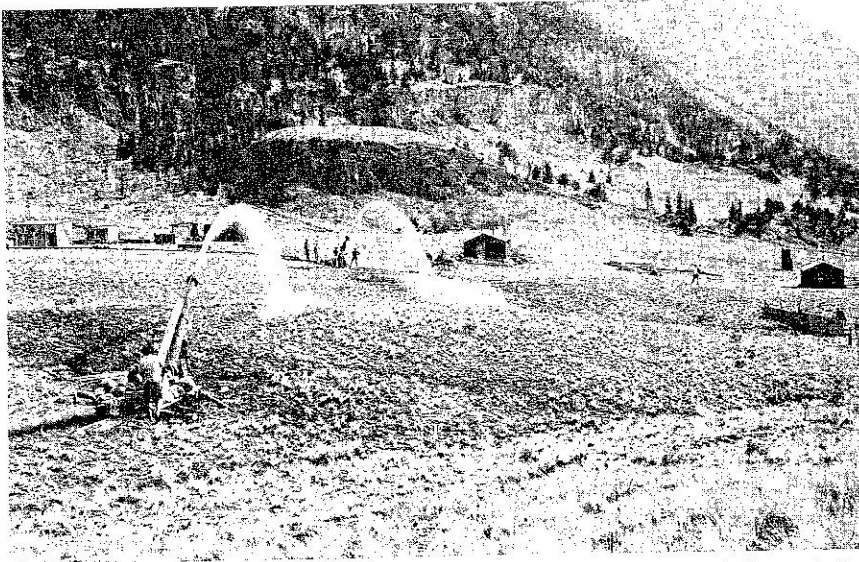
Santa Maria Reservoir Company

First wooden sluices built over dam site to carry material are far apart.



Santa Maria Reservoir Company

Cut-off trenches in center of dam base were filled with concrete.



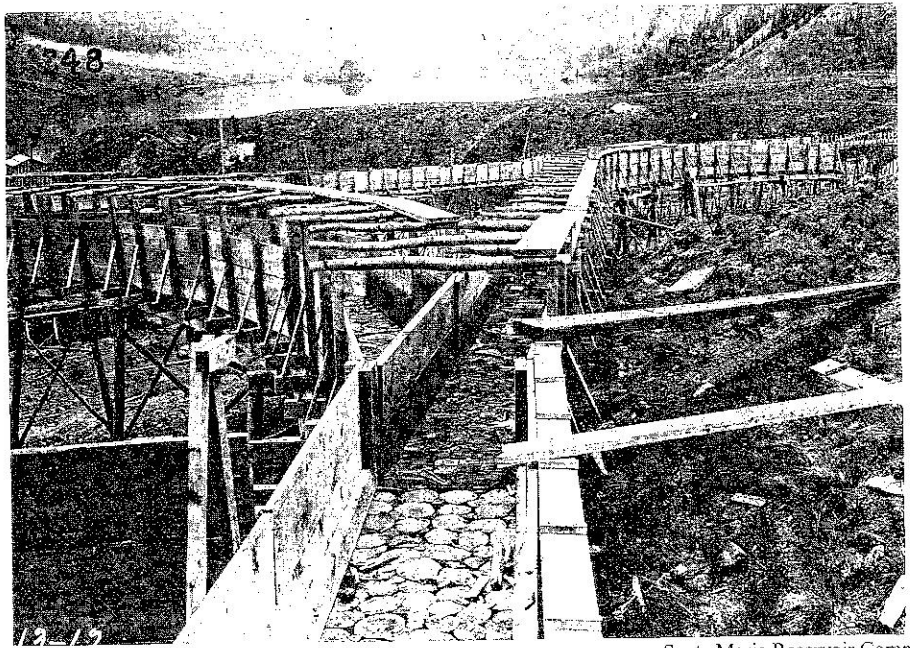
Santa Maria Reservoir Company

First day of monitors washing soil and rocks into sluices.



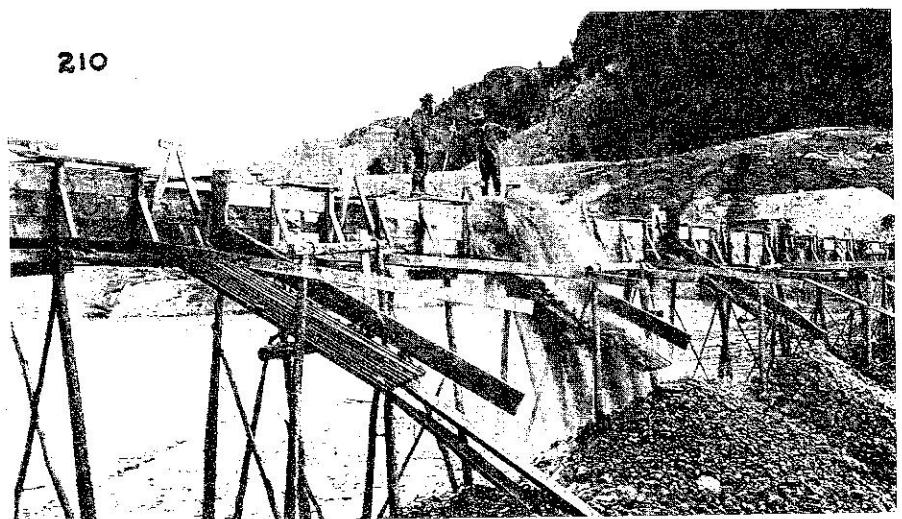
Santa Maria Rerservoir Company

*Replaceable wood blocks, 2' in length,
protected the bottom of the sluices from abrasion and wear.*



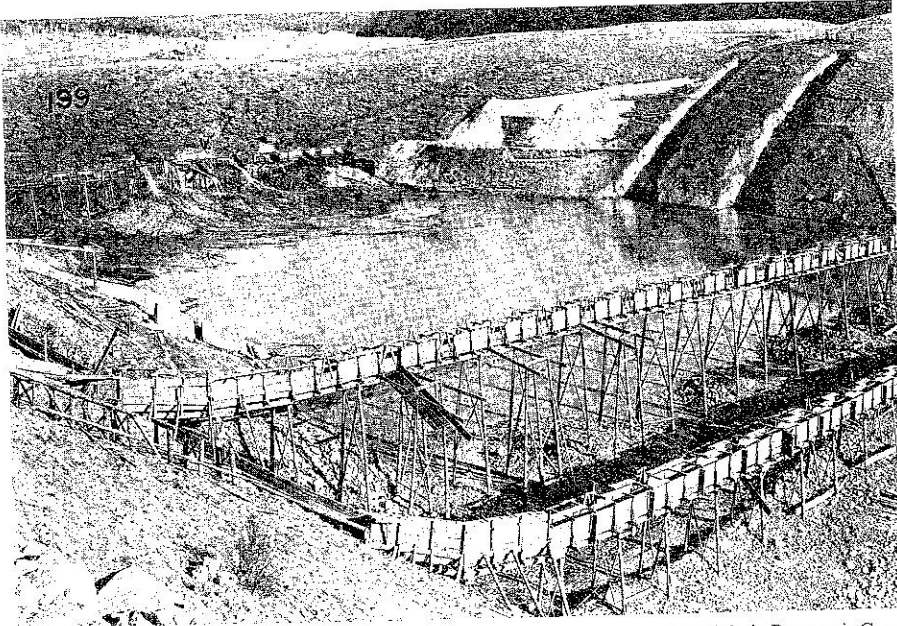
Santa Maria Reservoir Company

Sluices divided, bringing material to seperate sides of dam.



Santa Maria Reservoir Company

Coarse material went on outside of dam, fine material was used in the middle of the dam in what is called the puddle. This procedure prevented seepage and possible failure.



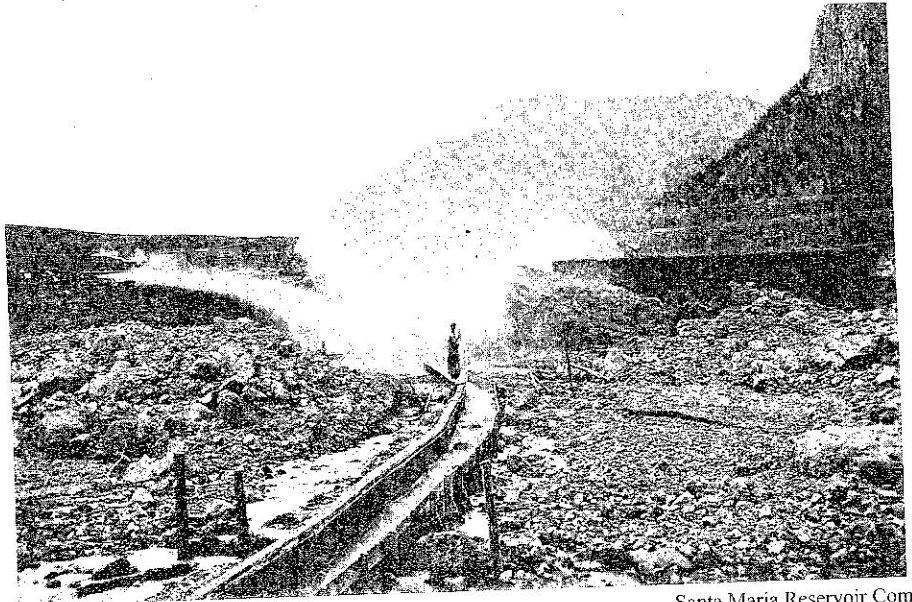
Santa Maria Reservoir Company

*The second set of sluices is built higher and closer to the center.
This picture demonstrates the puddle between the outside slopes of the dam
and also the core walls going up the hillside.
The puddle and the core wall seal the dam.*



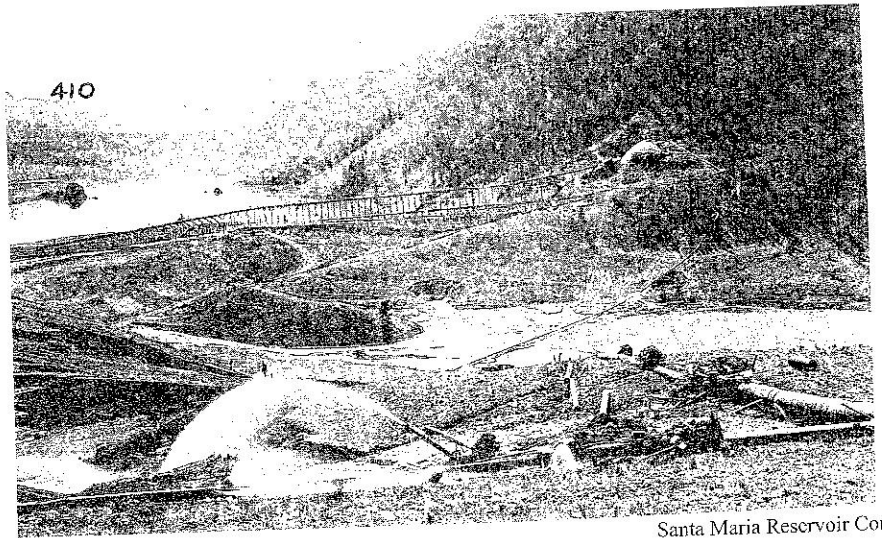
Santa Maria Reservoir Company

Work continued 24 hours a day using Milburn lights.



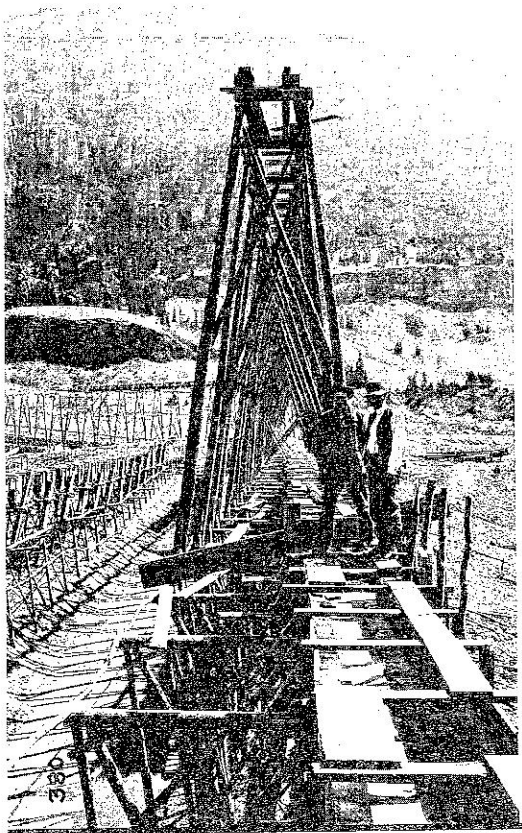
Santa Maria Reservoir Company

Three monitors working at once.



Santa Maria Reservoir Company

*Monitors work in foreground and in right background.
Supply pipe can be seen going across canyon below dam to bring water
to monitors in south borrow pit.*



Santa Maria Reservoir Company

The last set of sluices; center puddle to the left.

Continental

The Continental Reservoir is located at the highest elevation of all the storage reservoirs of the San Luis Valley, 10,290 feet. North Clear Creek runs through it and is the sole source of water, although at one time a diversion to bring water from Lost Trail Creek was filed on and included as part of the Continental Reservoir decree approved by the water court. This ditch that was never built across the ridge between the creeks, would have carried 75 cfs (cubic feet per second) of water.⁶⁷

A survey of the site was completed in 1901. The original plat of the reservoir was filed September 24, 1902 by Theodore J. Lukeman, claiming a capacity for 383,763,600 cubic feet of water (8,812 acre-feet). Some work was done on the outlet tunnel and on test holes each year until a government order stopped the project, probably because of the Embargo. In May of 1907, the Continental Land and Irrigation Company filed an amended plat and statement of claim, with an additional claim for water, bringing the total to 32,198 acre-feet. After the governmental order was withdrawn, active construction operations were prosecuted with diligence. Several, additional enlargement claims were filed by Jesse E. Hall in 1908 and 1909, making a total claimed capacity of 58,760 acre-feet.⁶⁸

Financing of the construction was prevented by litigation against the company and a receiver was appointed by the District Court on April 1, 1908. The receiver remained in charge of the reservoir, ditch rights, and other interests, until April 1914. Following the discharge of the receiver, the Continental Land and Irrigation Company resumed work developing the reservoir site and digging the canal system.⁶⁹

In December of 1921, the Del Norte Irrigation District was organized, and succeeded to the ownership of the Continental Reservoir and the District water rights on July 1, 1922. The District issued bonds in the sum of \$350,000 and Certificate of Indebtedness in the amount of \$124,998, all of which was used to complete construction of the reservoir and a canal system.⁷⁰ Although plans submitted by T.W. Jaycox in 1911 had been approved by the State Engineer, Carl G. Gould redesigned the dam in 1925. The earth fill dam was completed by October 1928.⁷¹ Water was stored beginning in 1925, although the reservoir could not be used to

⁶⁷ Court Order regarding Priority Nos. 1934-1, 1934-3, 1934-4.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Dennis Miller, "Inspection Report," Colorado Division of Water Resources (February 1928).

capacity until the spillway was completed in 1933.⁷² The capacity of the reservoir at the crest of the spillway is 26,716 acre-feet.⁷³

The District canal took its water out of the Rio Grande at a head gate located on the north bank near Ute Bluff, below South Fork. This canal, completed in 1928, had a capacity of 130 cfs and ran approximately 19 miles to supply the lands in the District.⁷⁴ It followed the contour of the hillside above the Anaconda Ditch, heading northeasterly toward Embargo Creek. After crossing the creek through a flume constructed of timber lined with sheet metal, the canal followed along the foothills above Shaw Springs.

Court records indicate that reservoir water was first used for irrigation in September of 1926, and put to beneficial use each and every year until a decree was granted under appropriation priority No. 1934-1, dated June 1, 1901 for 8,832 acre-feet and May 4, 1907 for 21,918 acre-feet, of which 19,361 is conditional. The first priority is earlier than the one for Rio Grande Reservoir.⁷⁵

There were several crises in the early 1940s on the North Clear Creek reservoirs. In 1941, a huge controversy arose between the Del Norte Irrigation District's Continental Reservoir and the Santa Maria over which reservoir had priority to store water. On June 25, it was decided that after Santa Maria reached 37,524 acre-feet the Continental could then store 11,389 acre-feet. However, on July 2, by order of the State Engineer, it was determined that Continental could not store water until Santa Maria had stored its full appropriation of 43,826 acre-feet, and Continental was ordered to release 400 cfs⁷⁶ until Santa Maria's priority was satisfied. Reservoirs stopped storage on July 23, 1941, as the river went on appropriation basis. The only year the authors have determined for certain that Continental spilled, was in 1948. Apparently this was a big occasion because Dave Mathias invited State Engineer Hinderlider down to witness the event.⁷⁷

In 1942, there were problems again at Continental as a 15-ton boulder, plus many smaller stones, crashed into the spillway, breaking up the concrete. State Engineer Hinderlider accompanied Dave Mathias to survey the damage, and ordered immediate repairs be made and that oil and gas be kept handy in the gatehouse to operate the gate control power

72 Court Order Regarding Priority 1934-1, 1934-3, 1934-4.

73 Ibid.

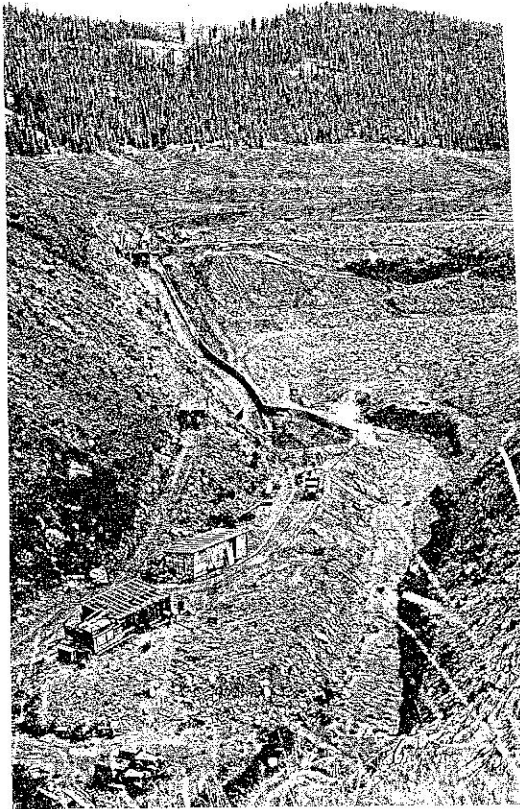
74 Ibid.

75 Ibid.

76 Mathias diaries, 1941.

77 Mathias diaries, 1948.

drive. He also ordered storage to cease until this was accomplished.⁷⁸ That same year the District's diversion dam on the Rio Grande washed out, preventing diversions after the river dropped.



Dennis Miller, Division of Water Resources

Spillway under construction.

All of these problems surely contributed to the demise of the District, but anecdotal reports indicate that the tremendous loss of water from the canal, running high along the foothills through very permeable soils, also was a big factor in this unsuccessful venture. Since the canal was above the blue clay layer that divides valley aquifers, the water loss recharged the confined aquifer and benefited the whole valley, even though the people in the District suffered greatly.

In 1946, the Santa Maria Reservoir Company agreed to purchase the Continental Reservoir for \$116,000. Surveys and other studies

stigated the possibility of expanding storage capacity in the 1960s.⁷⁹
Operating cooperatively, rather than in competition, the two reservoirs are
able to take advantage of water situations as they develop.

CARLSON, HAMMOND & PADDOCK, L.L.C.
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(1940-1992)

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website: www.chp-law.com

January 29, 2013

Via E-mail (keithholland@amigo.net) and U.S. Mail
Santa Maria Reservoir Company
c/o Keith Holland, President
P.O. Box 288
Monte Vista, CO 81144

Re: Santa Maria Reservoir and Supply and Outlet Facilities

Dear Mr. Holland:

As you have requested, we have reviewed the records of the Santa Maria Reservoir Company ("Company") concerning title to the lands occupied by the Santa Maria Reservoir and by its appurtenant supply and outlet facilities. We conclude that Santa Maria Reservoir is located on private land held by the Company, and that the supply and outlet facilities for the reservoir are located on a Right of Way in the Rio Grande National Forest (Del Norte 03165) that was approved on May 12, 1916 pursuant to the Act of March 3, 1891 (43 USC §§ 946 - 949) as amended by the Act of May 11, 1898 (43 USC § 510).

Review of the Act of March 3, 1891, related statutes, case law, and regulations regarding rights of way on lands of the United States, supports the conclusion that the Company enjoys a right (and indeed is subject to a duty) to maintain, repair, and rehabilitate its supply and outlet facilities located on the Right of Way, and, in conjunction therewith, an implied right of access via Forest Service lands to the Right of Way to carry out such operation, maintenance, repair, and rehabilitation. However, such rights are subject to reasonable regulation by the United States Forest Service in order to protect the forest. Accordingly, the Company will work with the Forest Service to effectuate its access to and repair of Company facilities located on the Right of Way. To that end, the Company has been in contact with Mr. Tom Malecek, District Ranger of the Divide Ranger District of the Rio Grande National Forest, and has scheduled a meeting to discuss the Company's proposed rehabilitation work for the Santa Maria Reservoir supply and outlet facilities.

Yours very truly,



Mary Mead Hammond

CARLSON, HAMMOND & PADDOCK, L.L.C.

Santa Maria Reservoir Company

January 29, 2013

Page 2

Copy: Ed Toms, URS Corp. (via email: ed.toms@urs.com)
Connie Pleasant (via email)

MMH/rls-7758

Appendix D
Final Design Drawings and Construction Cost Estimates

Santa Maria Siphon Cost Estimate and Drawings

**SANTA MARIA SIPHON SUPPORT SYSTEM STABILIZATION PROJECT
ENGINEER'S COST ESTIMATE**

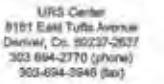
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
SANTA MARIA SIPHON SUPPORT SYSTEM STABILIZATION PROJECT					
1	Mobilization, Demobilization, and Preparatory Work	1	LS	\$12,580	\$12,580
2	Erosion and Sediment Control	1	LS	\$2,000	\$2,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Selective Demolition - Thrust Blocks	1	LS	\$20,000	\$20,000
5	Selective Demolition - Intermediate Supports	1	LS	\$20,000	\$20,000
6	Reinforced Concrete Overlays - Thrust Blocks	13	CY	\$1,500	\$19,800
7	Reinforced Concrete Overlays - Intermediate Blocks	26	CY	\$1,500	\$39,000
8	Fabrication and Installation of Steel Bearing Plates	10	EA	\$500	\$5,000
9	Removal of Loose Rock and Boulders	60	CY	\$250	\$15,000
CONSTRUCTION SUBTOTAL					\$138,380
CONSTRUCTION TOTAL (ROUNDED)					\$140,000

Footnotes:

1. The Engineer's Opinion of Probable Cost is based on information developed for the design and market conditions at the time of preparation. Construction cost has been estimated with the use of a combination of historical unit pricing and detailed unit pricing, depending on the availability of information. The logic, methods and procedures for developing costs, is assumed to be typical for the construction industry.

2. Accuracy is not guaranteed and the use of unit pricing should not be deemed as an offering or proposal with respect to the outcome of the cost of an activity or project. Unit price opinions are subject to change without prior notice. Any estimate of unit prices is not intended to predict the outcome of hard dollar results from open and competitive bidding.

3. The estimates shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project costs will vary from the estimate presented here. Because of these factors, project feasibility, benefit/cost ratios; risks, and funding needs must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding.



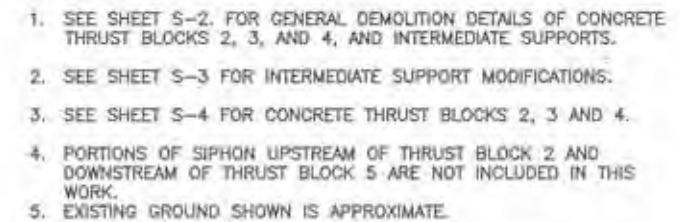
SANTA MARIA
SIPHON SUPPORT SYSTEM
STABILIZATION PROJECT

ISSUED FOR CONSTRUCTION

URS PROJECT NO:	22241248
DRAWN BY:	DWG
DESIGNED BY:	JMC
CHECKED BY:	MSL
DATE CREATED:	-
PLOT DATE:	-
SCALE:	AS SHOWN
ACAD VER:	2012

SIPHON
PLAN AND PROFILE

SHEET 2 OF 8





ISSUED FOR BIDDING 12/7/12

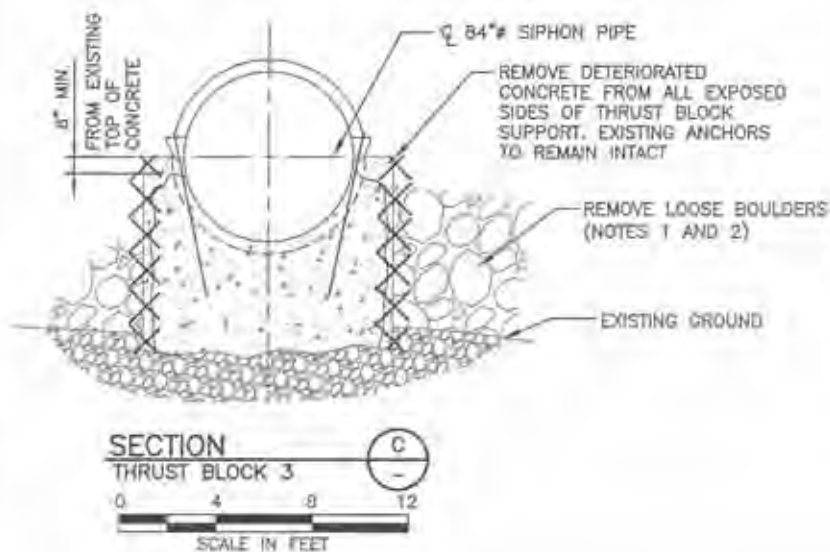
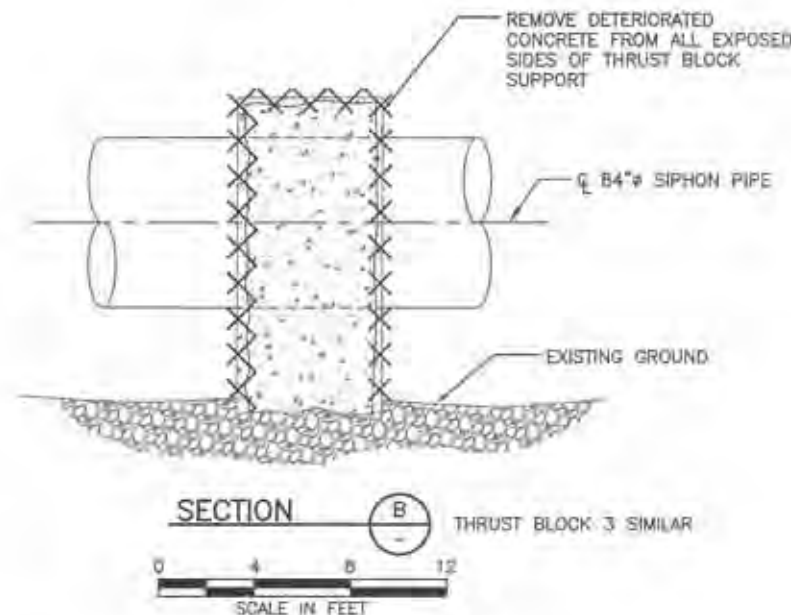
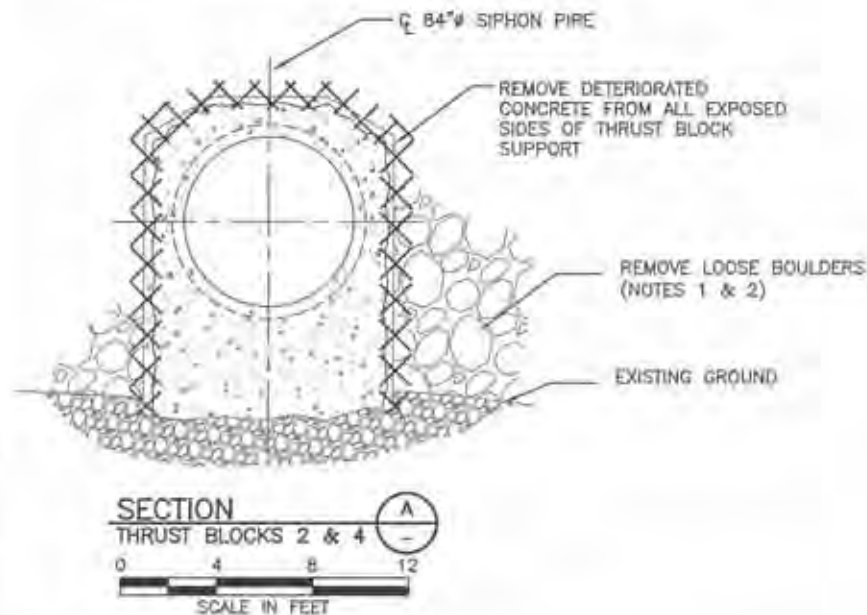
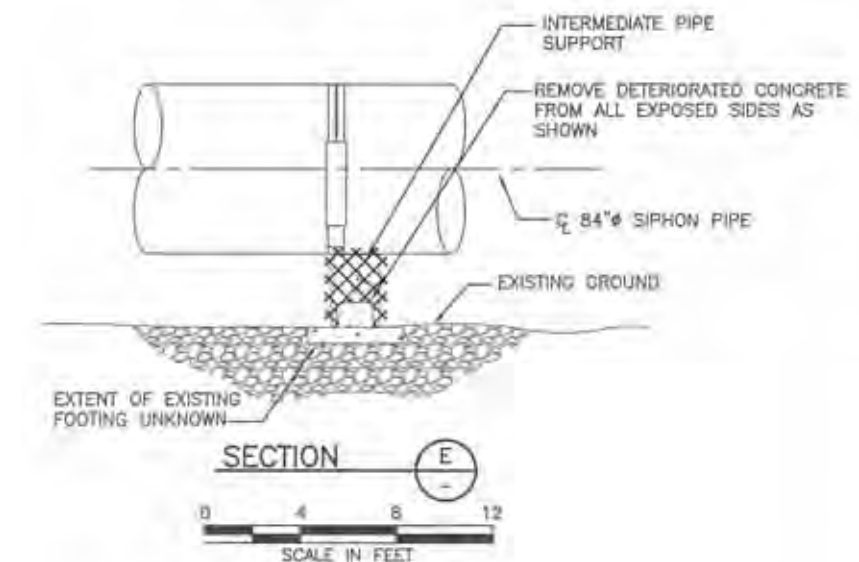
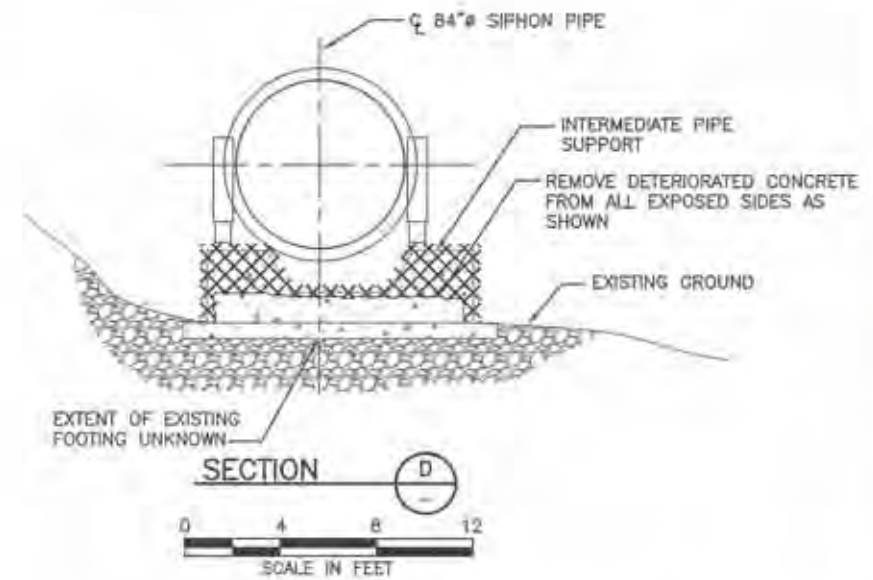
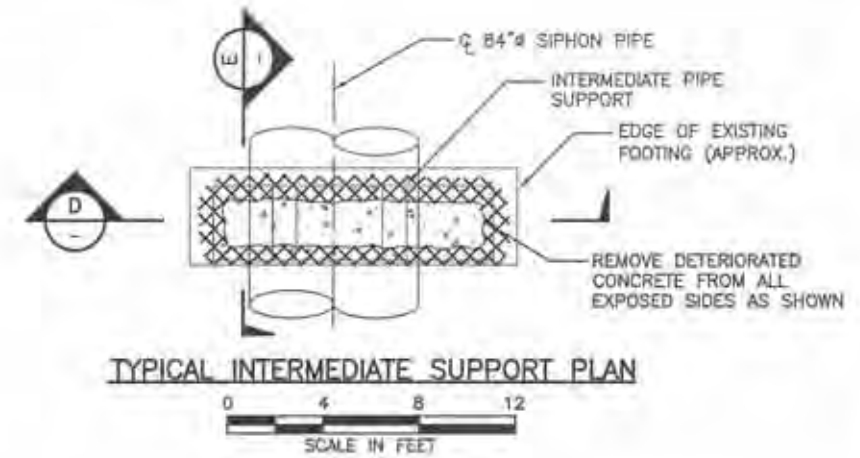
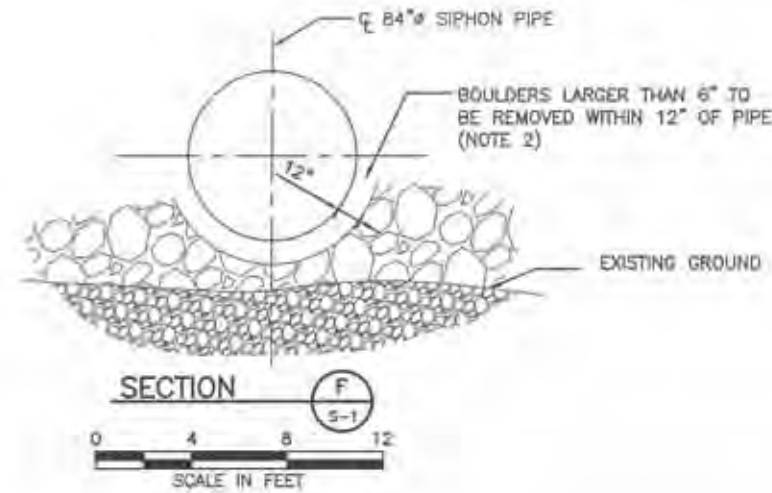
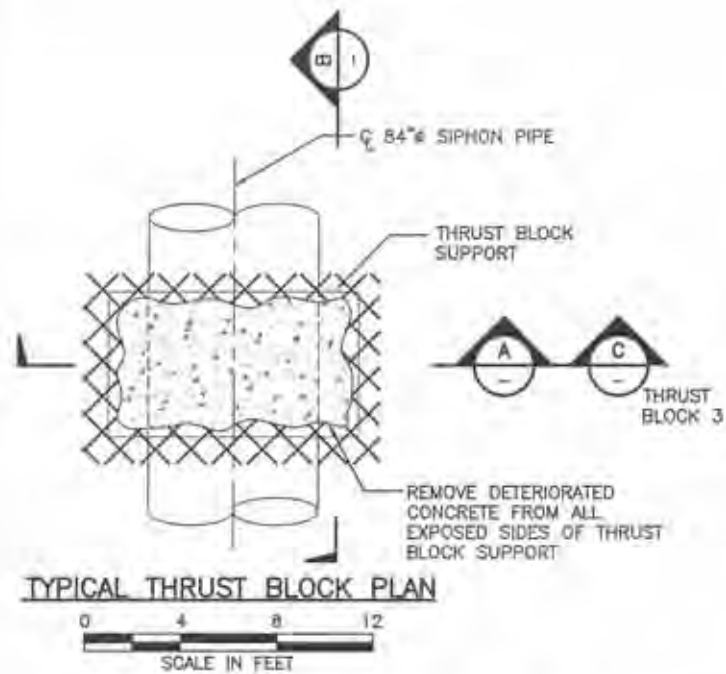
ISSUED FOR CONSTRUCTION 12/7/12

REVISIONS		
NO.	DESCRIPTION	DATE
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2		
3		
4		
5		

URS PROJECT NO.	22241248
DRAWN BY:	DAW
DESIGNED BY:	JMC
CHECKED BY:	MIL
DATE CREATED:	-
PLOT DATE:	-
SCALE:	AS SHOWN
ACAD VER.	3912

SHEET TITLE

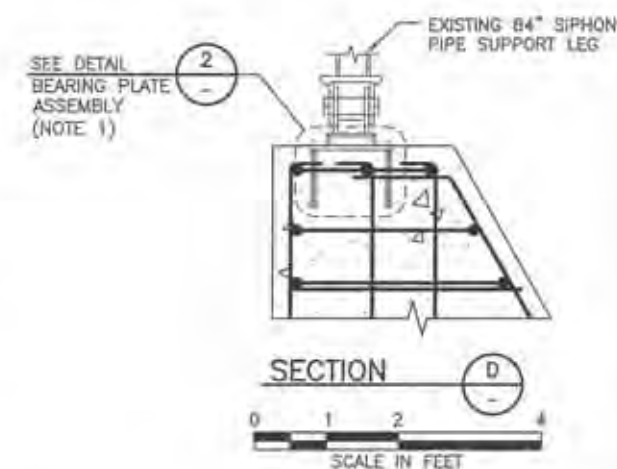
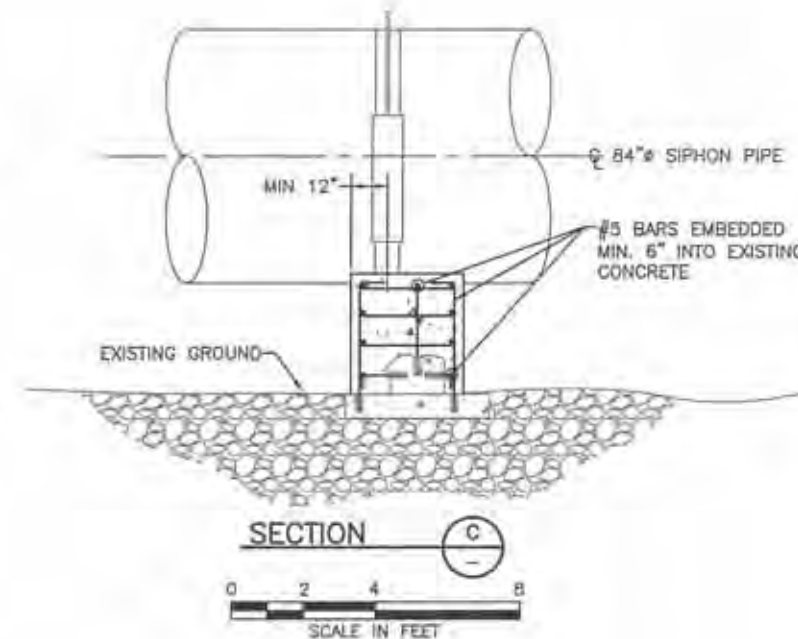
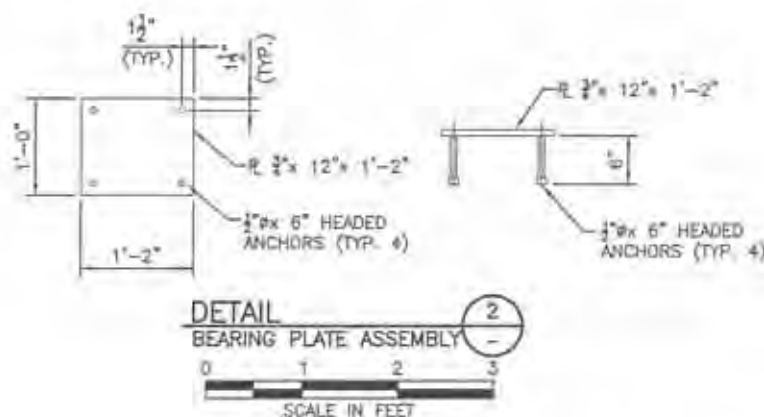
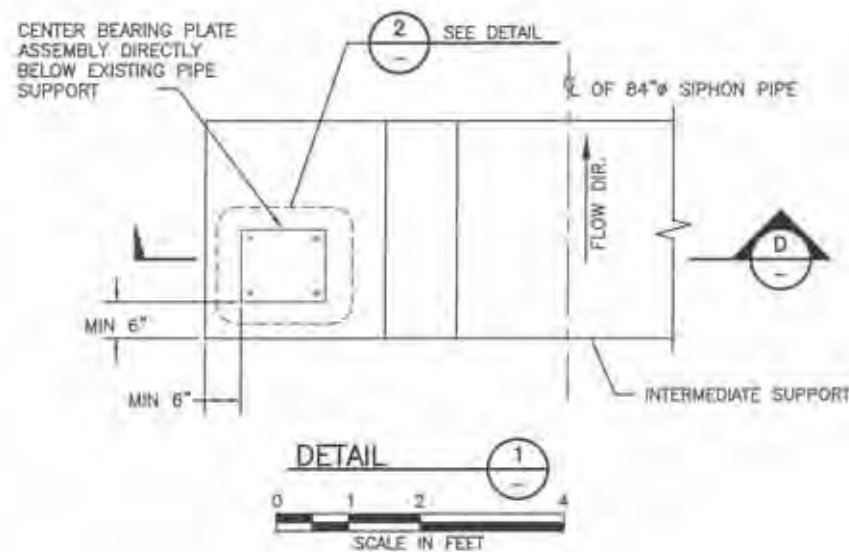
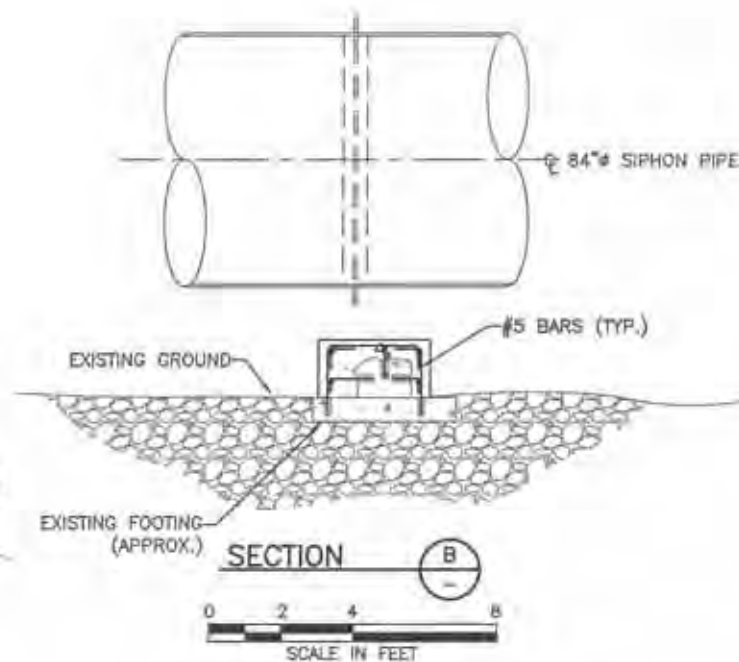
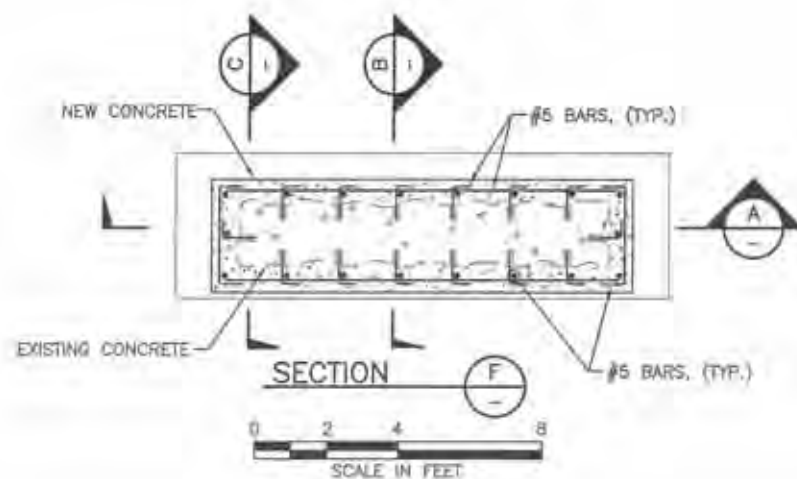
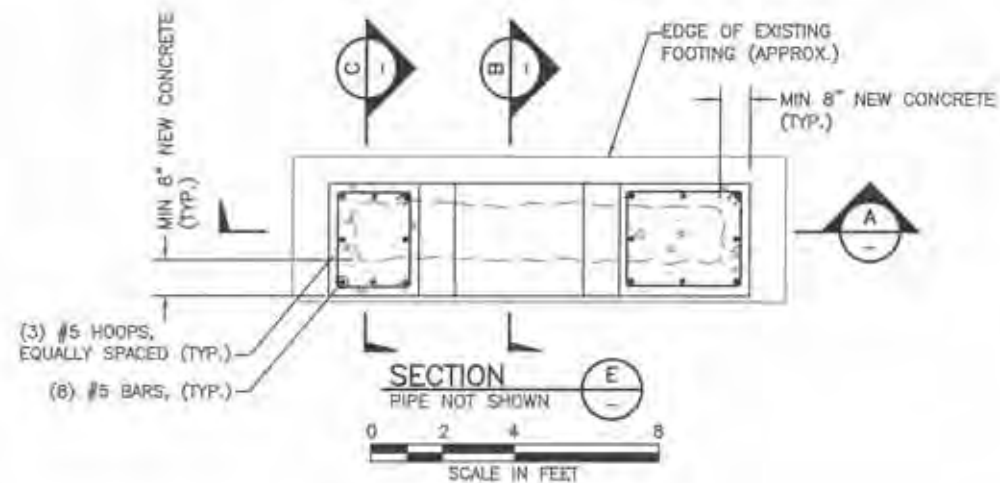
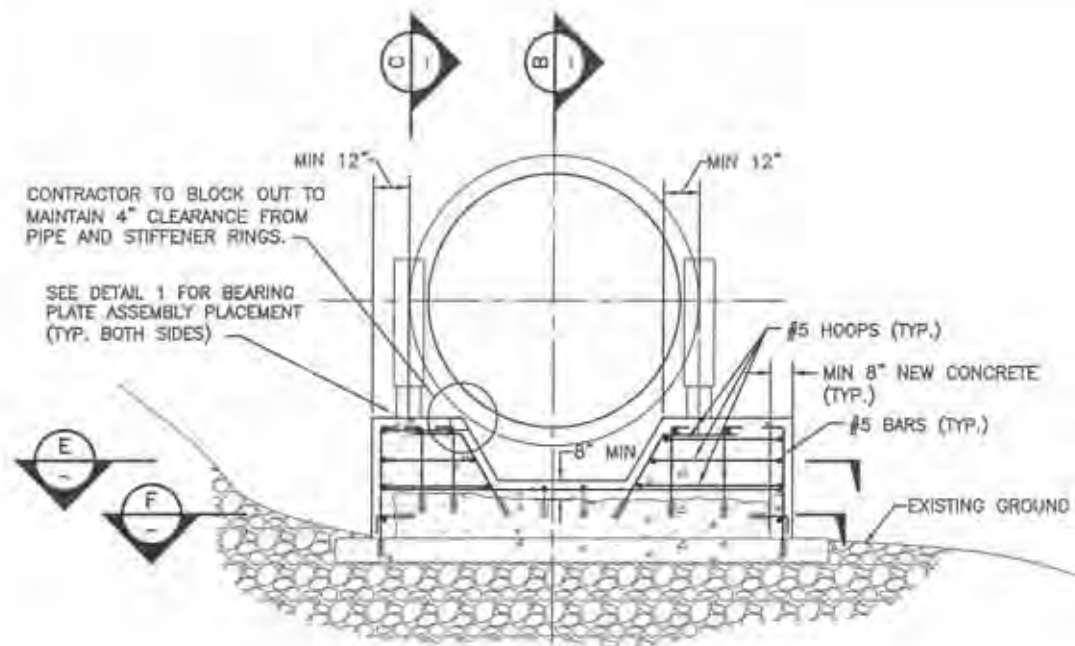
**SIPHON
SUPPORT SYSTEM
DEMOLITION**



NOTES:

1. REMOVE ROCKS AND BOULDERS AS REQUIRED TO COMPLETE WORK.
2. CONTRACTOR SHALL NOT DESTABILIZE ROCK SLOPE WHEN REMOVING BOULDERS.
3. INTERMEDIATE SUPPORTS S7 THROUGH S11 EACH CONTAIN TWO EMBEDDED STEEL PLATES THAT SHALL BE REMOVED AS PART OF DEMOLITION. INTERMEDIATE SUPPORTS S12 AND S13 EACH CONTAIN TWO STEEL PLATES THAT SHALL BE REMOVED AND REINSTALLED. SEE APPENDIX A OF THE TECHNICAL SPECIFICATIONS FOR HISTORICAL DRAWINGS OF THE EXISTING HARDWARE.

URS DRAWING PATH: N:\Projects\2012\1348 Santa Maria Reservoir\Drawings\Main\Stabilization\Support\Support Detail.dwg



NOTES:

1. AT INTERMEDIATE SUPPORTS S12 AND S13, REINSTALL EXISTING ROLLER SUPPORT PLATES. SEE APPENDIX A OF THE TECHNICAL SPECIFICATIONS FOR HISTORICAL DRAWINGS OF THE EXISTING HARDWARE.

URS

URS Center
8181 East Teller Avenue
Denver, CO 80231-3517
303.854.2770 (phone)
303.854.3845 (fax)

**SANTA MARIA
RESERVOIR
COMPANY**

SANTA MARIA
SIPHON SUPPORT SYSTEM
STABILIZATION PROJECT

FINAL DESIGN



ISSUED FOR BIDDING: 4/27/12 MSL

ISSUED FOR CONSTRUCTION: MSL

REVISIONS		
NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	4/27/12
2		
3		
4		
5		

URS PROJECT NO: 2241348

DRAWN BY: DWG

DESIGNED BY: JMC

CHECKED BY: MSL

DATE CREATED: -

PLOT DATE: -

SCALE: AS SHOWN

ACAD VER: 3012

SHEET TITLE

**INTERMEDIATE
SUPPORT
MODIFICATIONS**

S-3

SHEET 4 OF 6

D-6

SANTA MARIA
SIPHON SUPPORT SYSTEM
STABILIZATION PROJECT

FINAL DESIGN



ISSUED FOR INDEXING 822752 NSA
DATE 82

ISSUED FOR CONSTRUCTION.

REVISIONS		
NO.	DESCRIPTION	DATE
△	ISSUED FOR BID	8/27/12
△		
△		
△		
△		

URS PROJECT NO: 222412A

DRAWN BY: BWS

DESIGNED BY: JAC

CHECKED BY: MSL

DATE CREATED:

PLOT DATE:

SCALE _____ ALL SHOWING _____

ACAD VER: 2012

SHEET TITLE

SHEET TITLE: _____

THURSDAY, BLOCK 4

THRUST BLOCK

MODIFICATIONS

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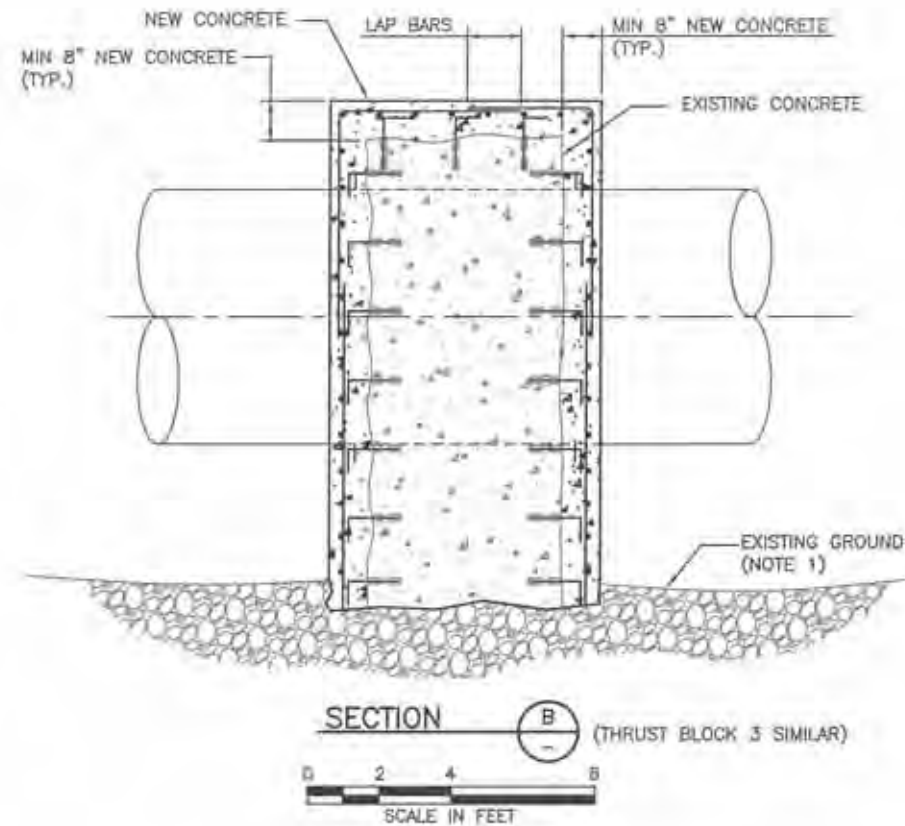
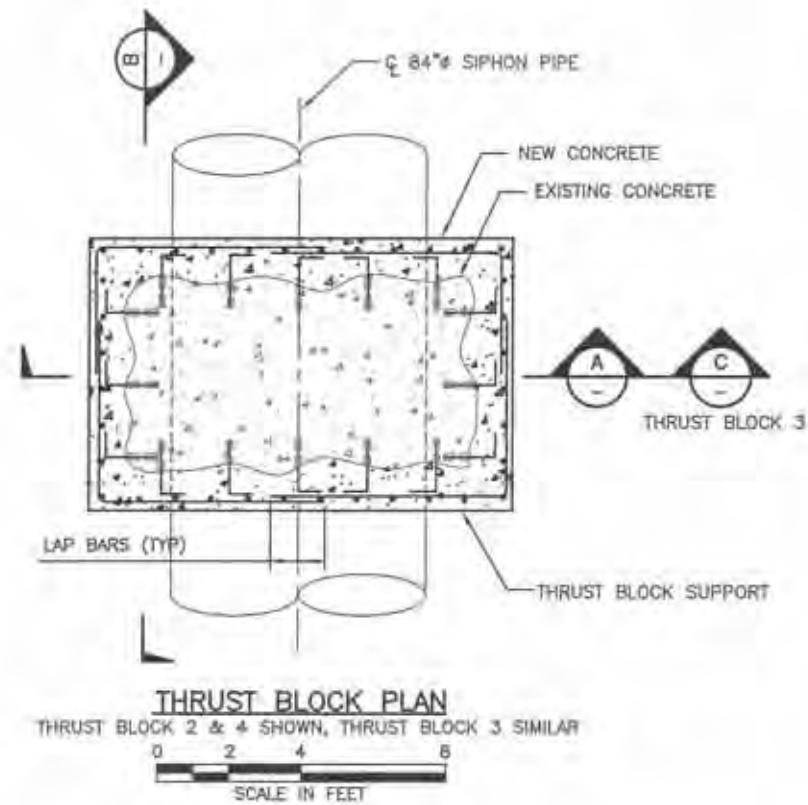
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SA

D. 7

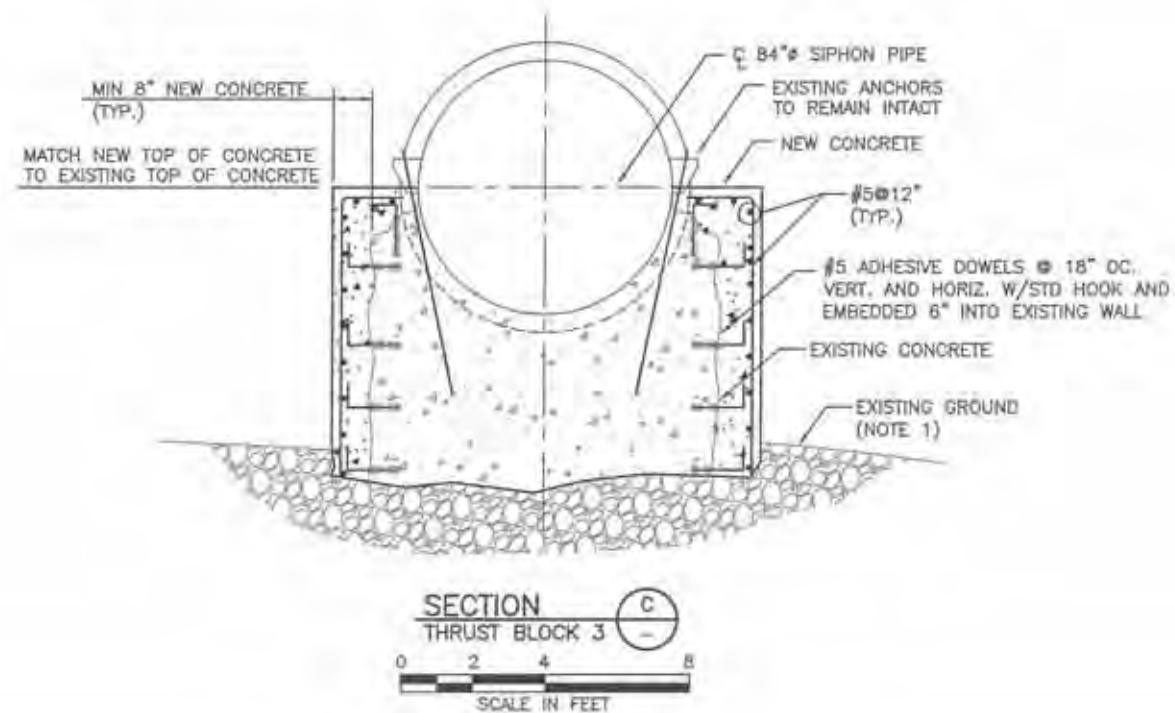
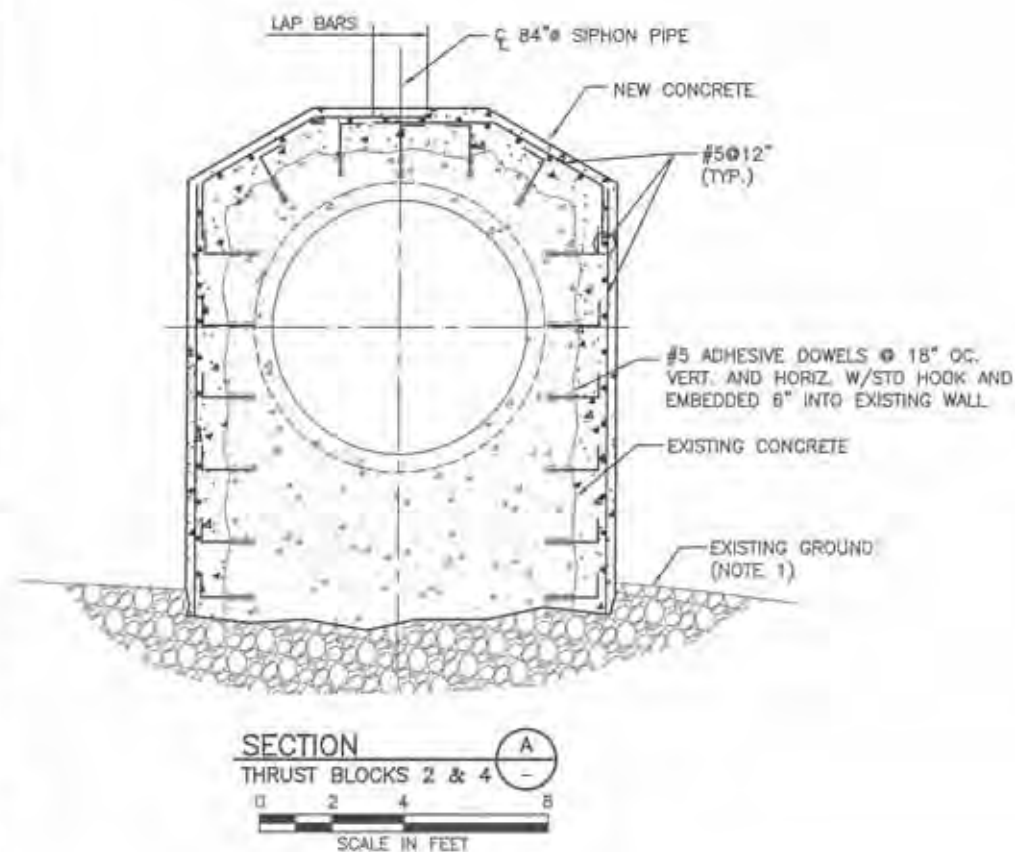
D-7
SHEET 5 OF 6

TABLE 1. *Continued*



NOTES

1. DO NOT EXCAVATE BELOW EXISTING CONCRETE OR OTHERWISE UNDERMINE THE THRUST BLOCKS.



UNLESS OTHERWISE SHOWN ON THE REINFORCEMENT DESIGN DRAWINGS, THE DETAILS AND NOTES SHOWN ARE TYPICAL FOR ALL REINFORCEMENT DRAWINGS.

BF = BOTTOM FACE	CRJ = CONTRACTION JOINT
TF = TOP FACE	EJ = EXPANSION JOINT
NF = NEAR FACE	BR = BOTTOM ROW
FF = FAR FACE	TR = TOP ROW
EF = EACH FACE	NR = NEAR ROW
IF = INSIDE FACE	FR = FAR ROW
OF = OUTSIDE FACE	ER = EACH ROW
CJ = CONSTRUCTION JOINT	IR = INSIDE ROW
OCJ = OPTIONAL CONSTRUCTION JOINT	OR = OUTSIDE ROW
CTJ = CONTROL JOINT	MR = MIDDLE ROW

D-8

Santa Maria Canal Cost Estimate and Drawings

**SANTA MARIA CANAL IMPROVEMENTS PROJECT
ENGINEER'S COST ESTIMATE**

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE
SANTA MARIA CANAL IMPROVEMENTS					
1	Mobilization, Demobilization, and Preparatory Work	1	LS	\$119,049	\$119,049
2	Erosion and Sediment Control	1	LS	\$10,000	\$10,000
3	Dewatering and Diversion	1	LS	\$10,000	\$10,000
4	Clearing and Grubbing	3.0	AC	\$6,000	\$18,000
5	Stripping and Stockpiling Topsoil	1200	CY	\$5	\$6,000
6	Selective Demolition	1	LS	\$40,000	\$40,000
7	42" Bypass Pipe	2410	LF	\$120	\$289,200
8	Concrete Encasement	1170	CY	\$350	\$409,500
9	Unclassified Excavation	1460	CY	\$9	\$13,140
10	Rock Excavation	170	CY	\$60	\$10,200
11	Fill	200	CY	\$30	\$6,000
12	Concrete Canal Liner	7110	SY	\$50	\$355,500
13	Riprap and Bedding	230	CY	\$65	\$14,950
14	Concrete Check Structures	4	CY	\$800	\$3,200
15	Reclamation of Disturbed Areas	1.2	AC	\$4,000	\$4,800
CONSTRUCTION SUBTOTAL					\$1,309,539
CONSTRUCTION TOTAL (ROUNDED)					\$1,310,000

Footnotes:

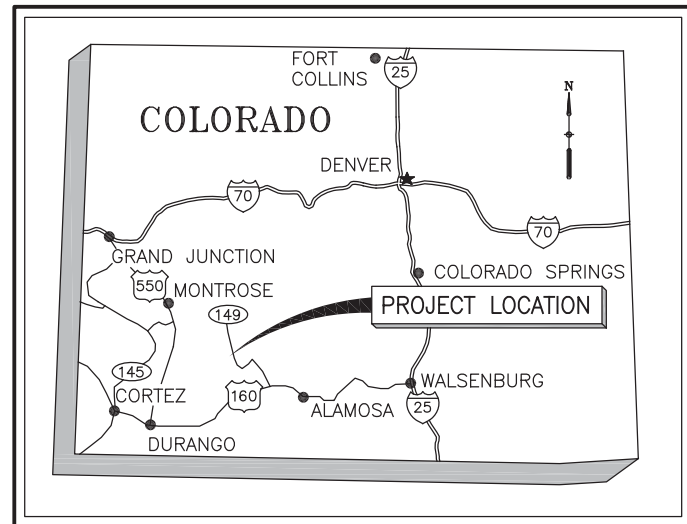
1. The Engineer's Opinion of Probable Cost is based on information developed for the design and market conditions at the time of preparation. Construction cost has been estimated with the use of a combination of historical unit pricing and detailed unit pricing, depending on the availability of information. The logic, methods and procedures for developing costs, is assumed to be typical for the construction industry.

2. Accuracy is not guaranteed and the use of unit pricing should not be deemed as an offering or proposal with respect to the outcome of the cost of an activity or project. Unit price opinions are subject to change without prior notice. Any estimate of unit prices is not intended to predict the outcome of hard dollar results from open and competitive bidding.

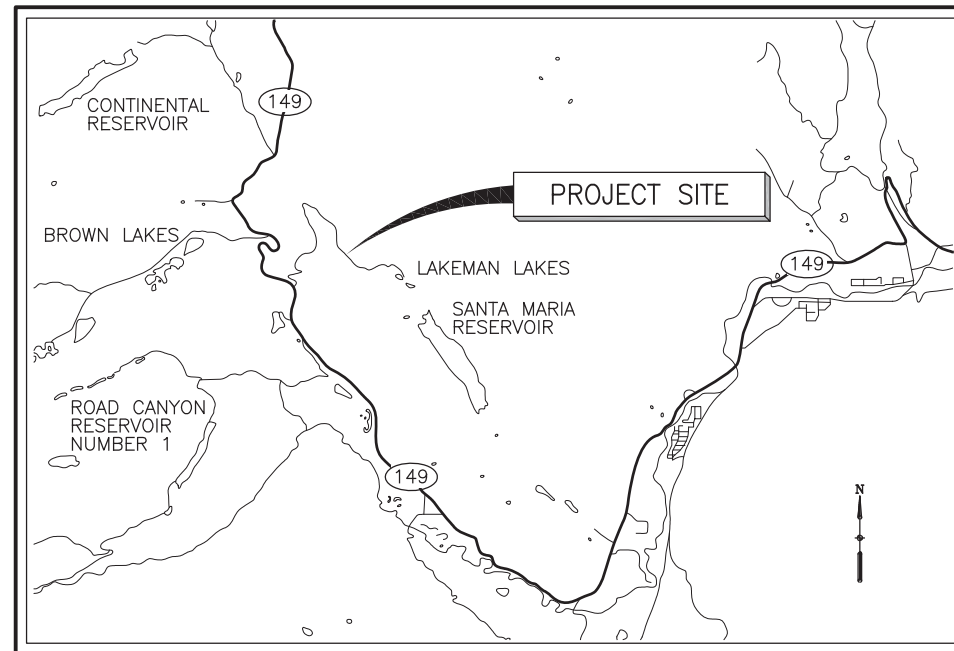
3. The estimates shown, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project costs will vary from the estimate presented here. Because of these factors, project feasibility, benefit/cost ratios; risks, and funding needs must be carefully reviewed prior to making specific financial decisions or establishing project budgets to help ensure proper project evaluation and adequate funding.

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DESIGN DRAWINGS
FOR
SANTA MARIA CANAL IMPROVEMENTS
PREPARED FOR
SANTA MARIA RESERVOIR COMPANY
MINERAL COUNTY, COLORADO



STATE MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET INDEX		
SHEET NO.	DRAWING NO.	DRAWING TITLE
GENERAL		
1	G-1	COVER SHEET, LOCATION MAPS AND SHEET INDEX
CIVIL		
2	C-1	SITE PLAN, SURVEY CONTROL AND LEGEND
3	C-2	GENERAL PLAN OF MODIFICATIONS AND DEMOLITION PLAN
4	C-3	NEW 42" BYPASS PIPE PLAN AND PROFILE STA 100+00 THRU 113+00
5	C-4	NEW 42" BYPASS PIPE PLAN AND PROFILE STA 113+00 THRU 124+04
6	C-5	NEW 42" BYPASS PIPE DETAILS
7	C-6	CANAL LINER PLAN & PROFILE STA 35+50 TO 46+50
8	C-7	CANAL LINER PLAN & PROFILE STA 46+50 TO 59+00
9	C-8	CANAL LINER DETAILS
10	C-9	CROSS SECTIONS STA 36+00 TO 47+50
11	C-10	CROSS SECTIONS STA 47+50 TO 58+00
12	C-11	CANAL CHECK STRUCTURES

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SANTA MARIA CANAL
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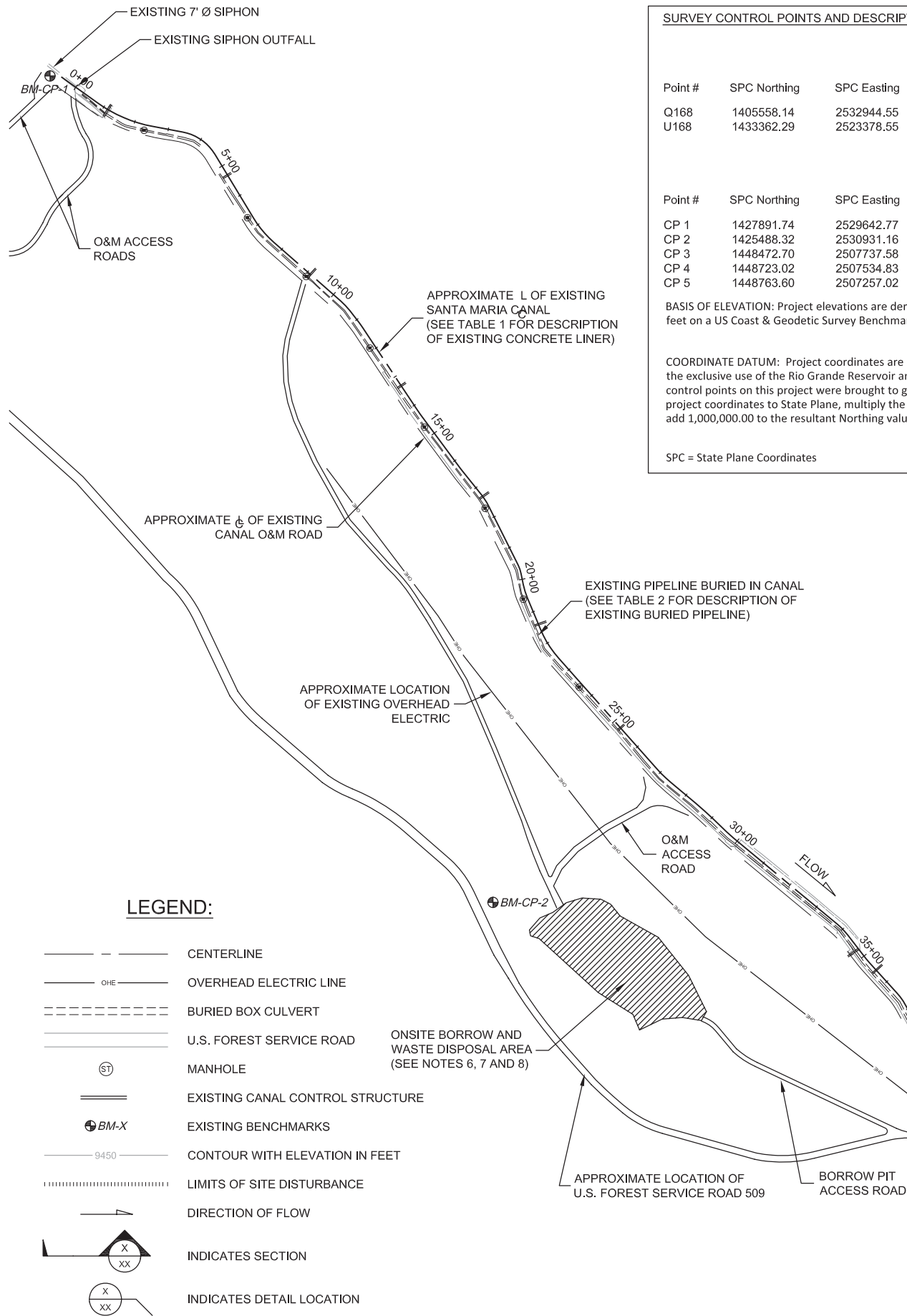
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DRAWN BY: BB
DESIGNED BY: JD
CHECKED BY: TM
DATE CREATED: 4/1/2012
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ACAD VER: 2012

SHEET TITLE

COVER SHEET,
LOCATION MAPS
AND SHEET INDEX

G-1
SHEET 1 OF 12 D-11

URS DRAWING PATH: N:\Projects\22241248_Santa_Maria_Constr_Design\Santa_Maria_Canal\Plan_Sheets\Survey Control.dwg



SURVEY CONTROL POINTS AND DESCRIPTION

Point #	SPC Northing	SPC Easting	Project Coordinate Northing	Project Coordinate Easting	NAVD88 Elevation	Latitude	Longitude	Height	Description
Q168	1405558.14	2532944.55	405772.31	533225.98	9005.24	37°46'09.75942"N	107°06'57.31268"W	8954.70	Found USC&GS Brass Cap set in top of concrete monument
U168	1433362.29	2523378.55	433591.14	523654.93	9970.01	37°50'42.95235"N	107°09'02.55468"W	9919.72	Found USC&GS Brass Cap set in top of concrete monument

Point #	SPC Northing	SPC Easting	Project Coordinate Northing	Project Coordinate Easting	NAVD88 Elevation	Latitude	Longitude	Height	Description
CP 1	1427891.74	2529642.77	428117.69	529922.46	9717.98	37°49'49.96284"N	107°07'43.27871"W	9667.61	Set 18" #5 Rebar with a 1.5" Aluminum Cap stamped "CONTROL POINT CP-1"
CP 2	1425488.32	2530931.16	425713.01	531211.53	9664.85	37°49'26.42666"N	107°07'26.70053"W	9614.45	Set 18" #5 Rebar with a 1.5" Aluminum Cap stamped "CONTROL POINT CP-2"
CP 3	1448472.70	2507737.58	448709.53	508005.70	10308.60	37°53'09.53924"N	107°012'20.96506"W	10258.78	Set 18" #5 Rebar with a 1.5" Aluminum Cap stamped "CONTROL POINT CP-3"
CP 4	1448723.02	2507534.83	448959.98	507802.84	10291.05	37°53'11.97704"N	107°012'23.55080"W	10241.23	Set 18" #5 Rebar with a 1.5" Aluminum Cap stamped "CONTROL POINT CP-4"
CP 5	1448763.60	2507257.02	449000.58	507524.89	10346.88	37°53'12.32792"N	107°012'27.02498"W	10297.06	Set 18" #5 Rebar with a 1.5" Aluminum Cap stamped "CONTROL POINT CP-5"

BASIS OF ELEVATION: Project elevations are derived from GPS observations, using GEOID09, based on a NAVD88 elevation of 9970.01 feet on a US Coast & Geodetic Survey Benchmark disk U 168 (Brass Cap set in concrete). No differential levels were performed.

COORDINATE DATUM: Project coordinates are modified Colorado State Plane South Zone (0503) NAD 83(2007) coordinates, and are for the exclusive use of the Rio Grande Reservoir and Ditch Company, and are considered project coordinates only. Coordinates for the control points on this project were brought to ground using the inverse of the Combined Scale factor (1/0.999472205). To convert project coordinates to State Plane, multiply the Project Northing and Easting values by the Combined Scale Factor (0.999472205), then add 1,000,000.00 to the resultant Northing value, and 2,000,000.00 to the resultant Easting value.

SPC = State Plane Coordinates

TABLE 1 - EXISTING CANAL DESCRIPTION

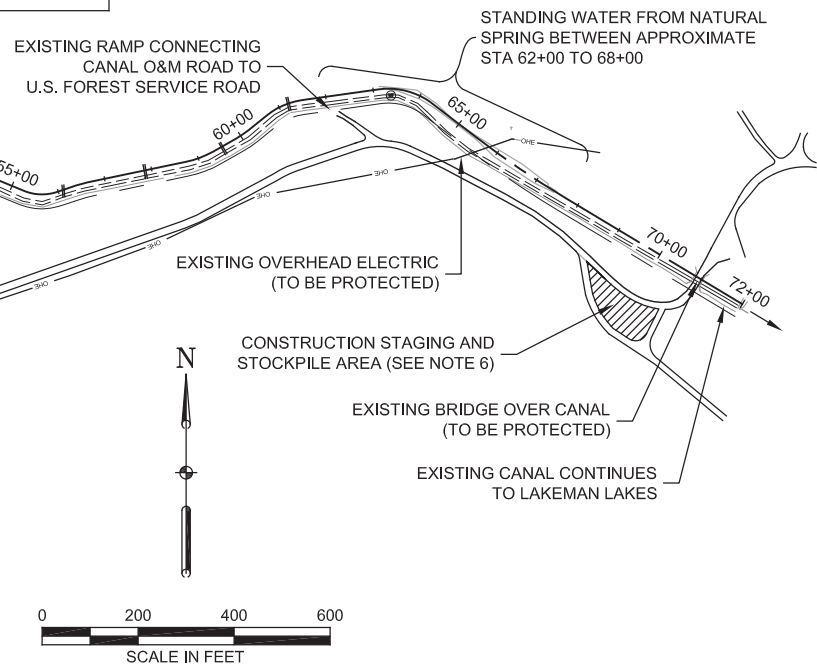
STA	DESCRIPTION OF CONCRETE LINER
0+00 TO 0+25	ENTIRE CANAL
0+25 TO 1+20	RIGHT BANK
1+20 TO 12+60	NO LINER
12+60 TO 16+80	RIGHT BANK
16+80 TO 20+50	NO LINER
20+50 TO 30+08	RIGHT BANK
30+08 TO 34+78	ENTIRE CANAL
34+78 TO 53+00	RIGHT BANK
53+00 TO 55+60	NO LINER
55+60 TO 72+00	RIGHT BANK

TABLE 2 - EXISTING BYPASS DESCRIPTION

STA	DESCRIPTION
0+00 TO 30+08	4' CMP ENCASED IN CONCRETE
30+08 TO 44+50	4' x 5' CONCRETE BOX CULVERT (INSIDE DIMENSIONS)
44+50 TO 47+90	4' CMP ENCASED IN CONCRETE
47+90 TO 72+00	4' x 5' CONCRETE BOX CULVERT (INSIDE DIMENSIONS)

NOTES:

- EXISTING FEATURES ARE BASED ON SURVEY CONDUCTED BY URS ON AUGUST 20, 2011 THROUGH AUGUST 15, 2011.
- CONTRACTOR TO VERIFY COORDINATES AND ELEVATIONS OF EXISTING MONUMENTS PRIOR TO USE.
- PERFORM UNDERGROUND UTILITY LOCATES PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE TO RESTORE THE U.S. FOREST SERVICE ROAD AND BRIDGE TO PRE-CONSTRUCTION CONDITIONS AT THE END OF CONSTRUCTION.
- UNLINED AREAS OF THE CANAL MAY BE USED FOR CONSTRUCTION ACCESS. NO EQUIPMENT SHALL BE ALLOWED TO OPERATE ON THE EXISTING BOX CULVERT, EXISTING LINED CANAL SECTIONS, OR NEW LINED CANAL SECTIONS.
- STRIPPING AND CLEARING OF THE CONSTRUCTION STAGING AND STOCKPILE AREAS AND DISTURBED PORTIONS OF THE ONSITE BORROW AND WASTE DISPOSAL AREAS IS REQUIRED.
- DISPOSAL OF EXCAVATED WASTE SHALL BE PLACED WITHIN A 0.5 ACRE FOOTPRINT WITHIN THE ONSITE WASTE DISPOSAL AREA AT DIRECTION OF THE OWNER.
- CONTRACTOR TO PROVIDE POSITIVE DRAINAGE IN FINAL GRADES.



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COMPANY

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IMPROVEMENTS

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URS PROJECT NO:	22241248
DRAWN BY:	BB/PRH
DESIGNED BY:	
CHECKED BY:	
DATE CREATED:	4/1/2012
PLOT DATE:	
SCALE:	AS SHOWN
ACAD VER:	2012

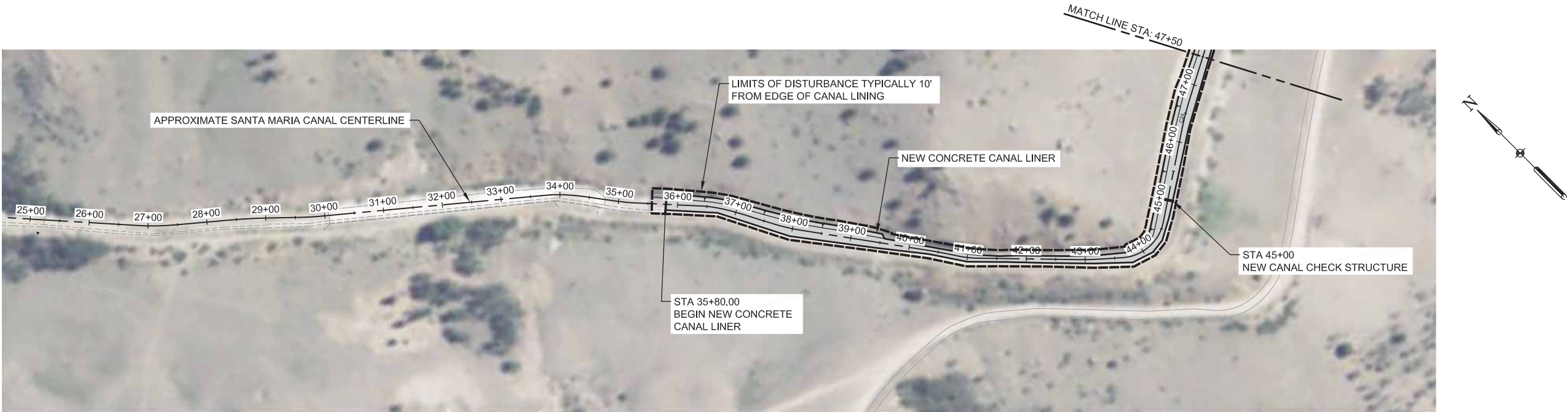
SHEET TITLE

SITE PLAN,
SURVEY CONTROL
AND LEGEND

C-1

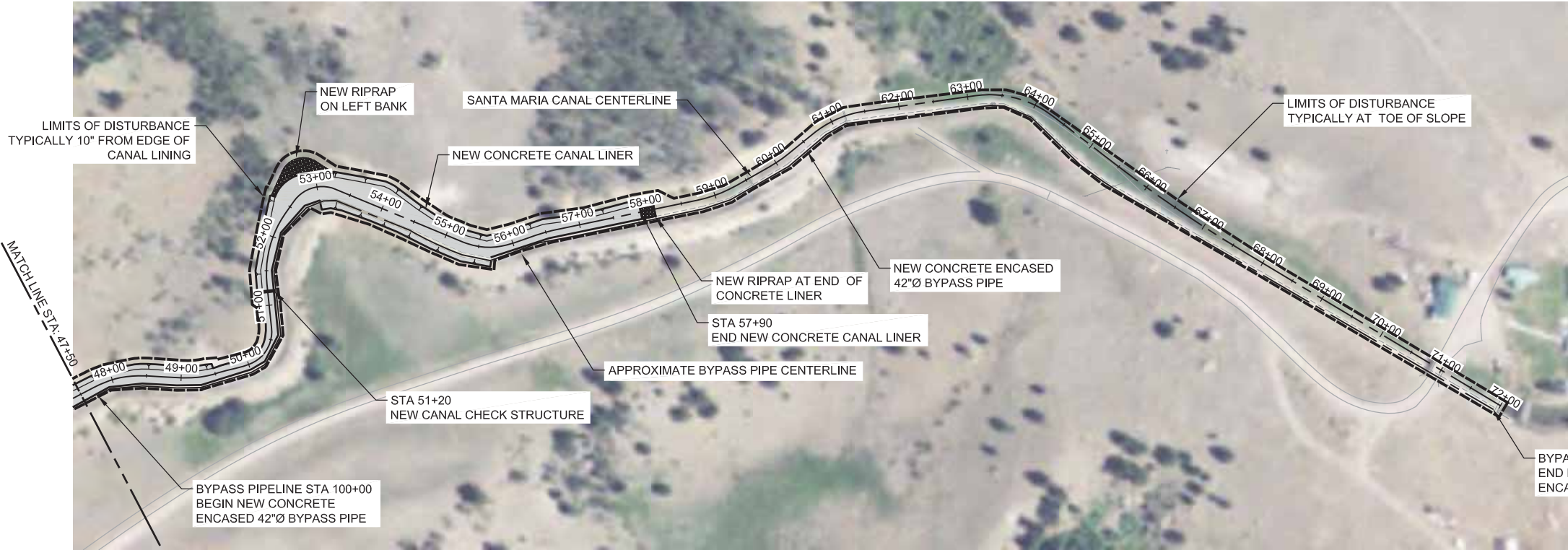
SHEET 2 OF 12 D-12

URS DRAWING PATH: N:\Projects\22241248_Santa_Maria_Confirm\Sub_0019_0_Constr_Design\Santa_Maria_Canal\Plan_Sheets\Plan of Modifications.dwg



GENERAL PLAN OF MODIFICATIONS

DEMOLITION PLAN	
STATION	DESCRIPTION
BYPASS PIPE STA 100+00 TO 124+04	DEMOLISH AND REMOVE TOP SLAB OF EXISTING BOX CULVERT (SEE DETAIL 1/C-5) (SEE NOTE 2)
46+85	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
49+28	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
50+24	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
51+05	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
52+10	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
56+12	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)
57+85	DEMOLISH AND REMOVE CANAL CONTROL STRUCTURE (SEE NOTES 1 AND 2)



GENERAL PLAN OF MODIFICATIONS

NOTES

- EXISTING CANAL CONTROL STRUCTURES SHALL BE DEMOLISHED AND REMOVED TO 3-INCHES (MIN.) BELOW GRADE OF NEW CONCRETE LINER.
- ALL DEMOLISHED MATERIALS FROM EXISTING CONCRETE STRUCTURES SHALL BE HAULED AND DISPOSED OF OFFSITE.

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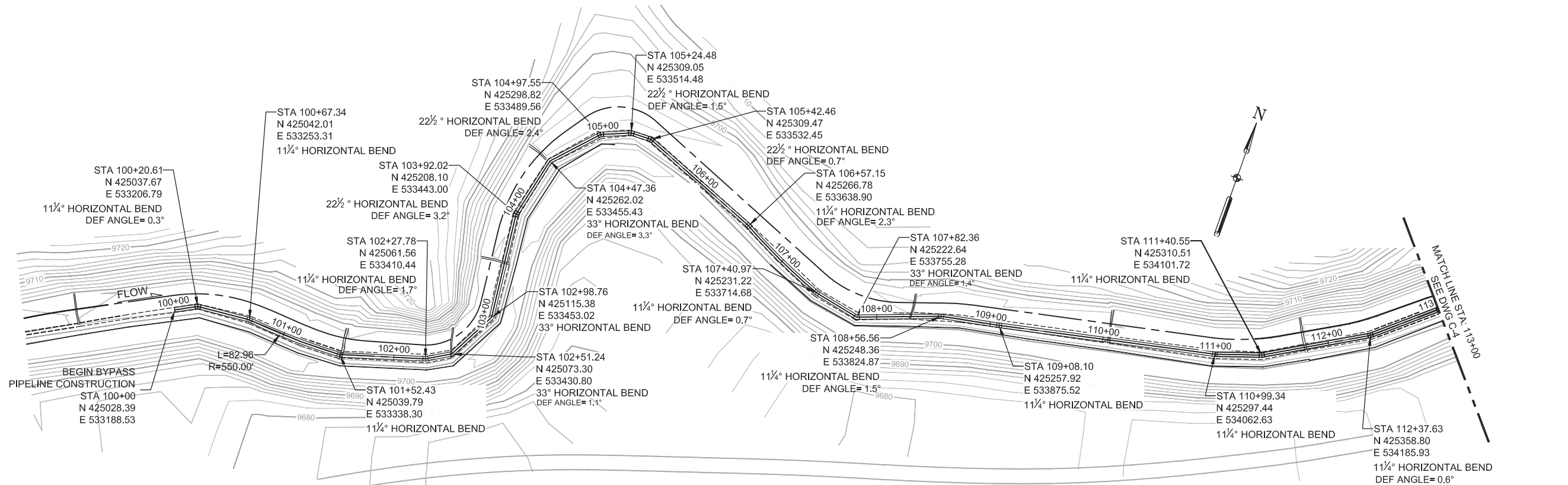
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GENERAL PLAN OF
MODIFICATIONS AND
DEMOLITION PLAN

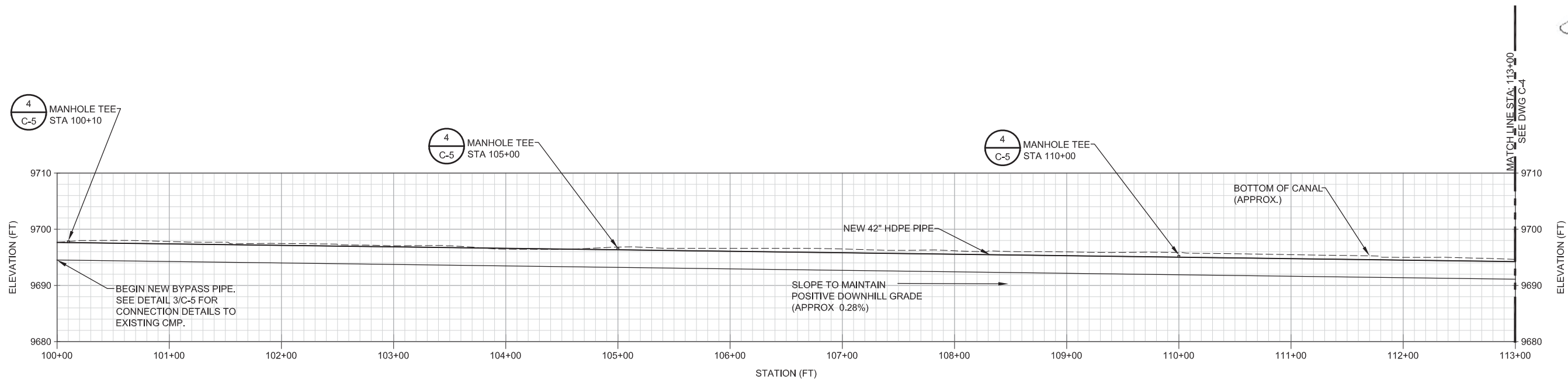
C-2
SHEET 3 OF 12 D-13

DRAWING PATH: N:\Projects\22241248_Santa_Maria_Canals\Sub_00\9_0_Constr_Design\Santa_Maria_Canals\Plan_Sheets\CULVERT_Plan_and_Profile.dwg

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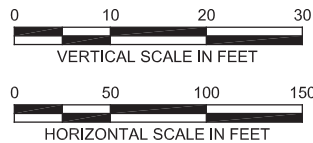
BYPASS PIPE PLAN



BYPASS PIPE PROFILE

NOTES

1. NEW BYPASS PIPE TO BE INSTALLED INSIDE EXISTING BOX CULVERT. SEE SHEET C-5 FOR INSTALLATION DETAILS.
2. NEW BYPASS PIPE SHALL FOLLOW ALIGNMENT AND GRADE OF EXISTING BOX CULVERT. FITTINGS AND PIPE LENGTHS SHOWN HERE ARE TO BE CONFIRMED IN THE FIELD.
3. CONCRETE CANAL LINER NOT SHOWN FOR CLARITY.



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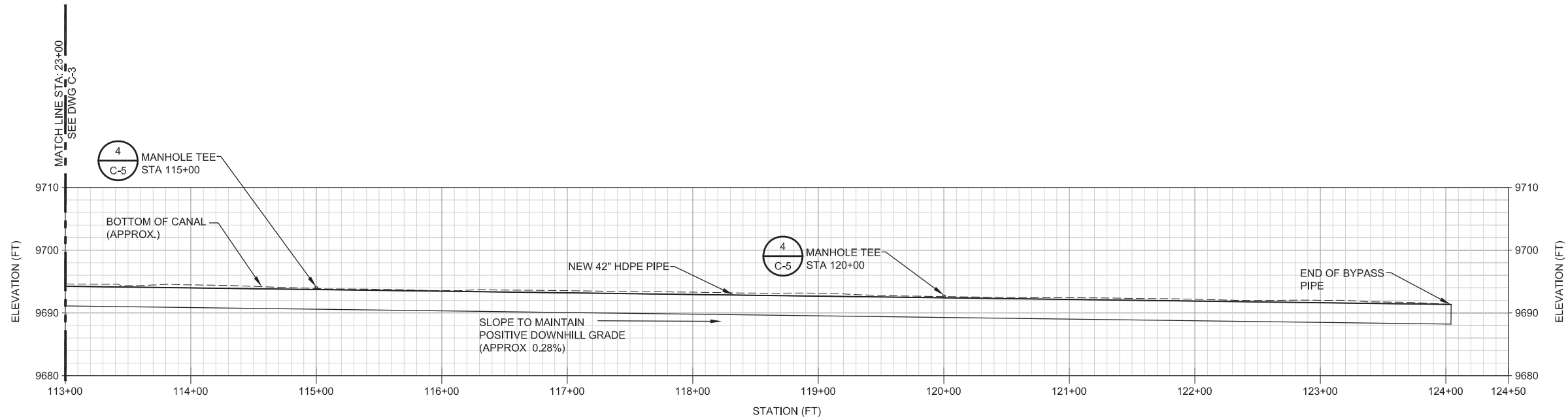
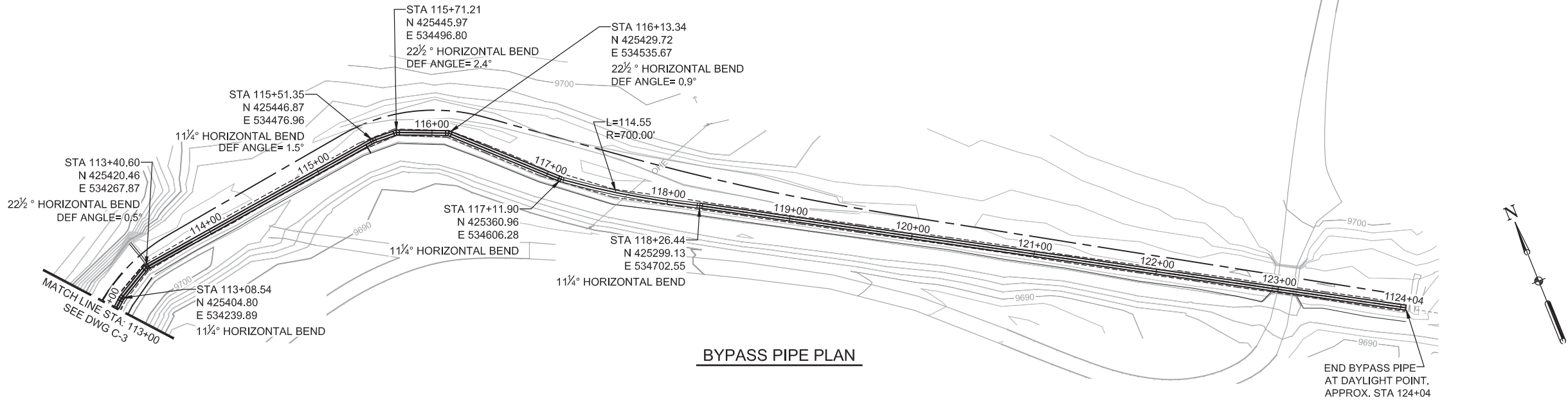
SHEET TITLE

NEW 42" BYPASS PIPE
PLAN AND PROFILE
STA 100+00 TO 113+00

C-3

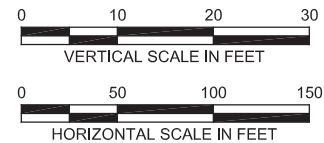
SHEET 4 OF 12 D-14

URS
DRAWING PATH: N:\Projects\22241248_Santa_Maria_Canal\Sub_00\9.0_Constr_Design\Santa_Maria_Canal\Plan_Sheets\CULVERT_Plan_and_Profile.dwg



NOTES

1. NEW BYPASS PIPE TO BE INSTALLED INSIDE EXISTING BOX CULVERT. SEE SHEET C-5 FOR INSTALLATION DETAILS.
2. NEW BYPASS PIPE SHALL FOLLOW ALIGNMENT AND GRADE OF EXISTING BOX CULVERT. FITTINGS AND PIPE LENGTHS SHOWN HERE ARE TO BE CONFIRMED IN THE FIELD.
3. CONCRETE CANAL LINER NOT SHOWN FOR CLARITY.



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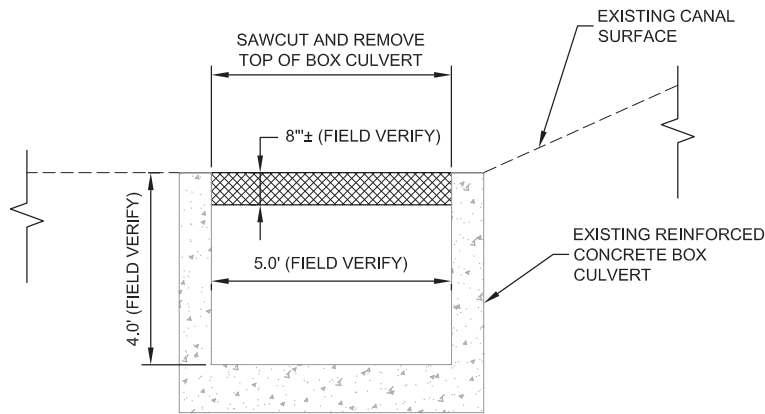
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NEW 42" BYPASS PIPE
PLAN AND PROFILE
STA 113+00 TO 124+04

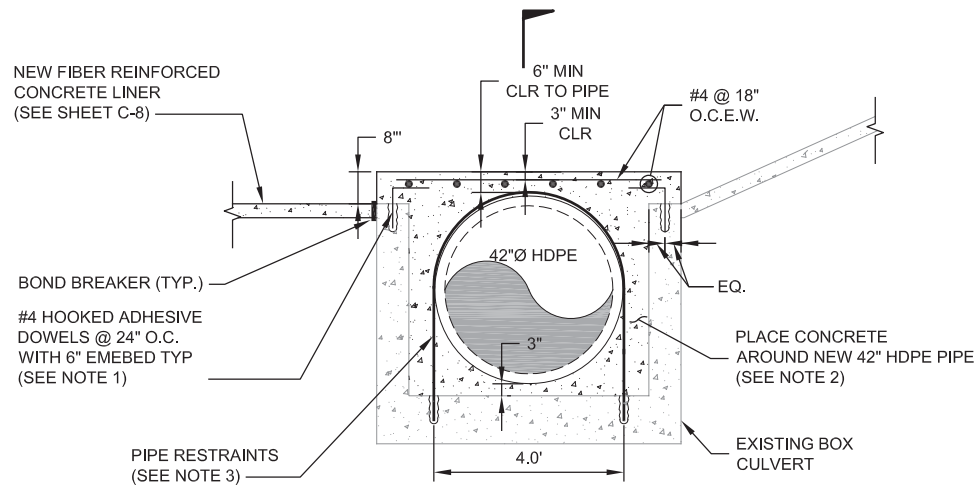
C-4

SHEET 5 OF 12 D-15

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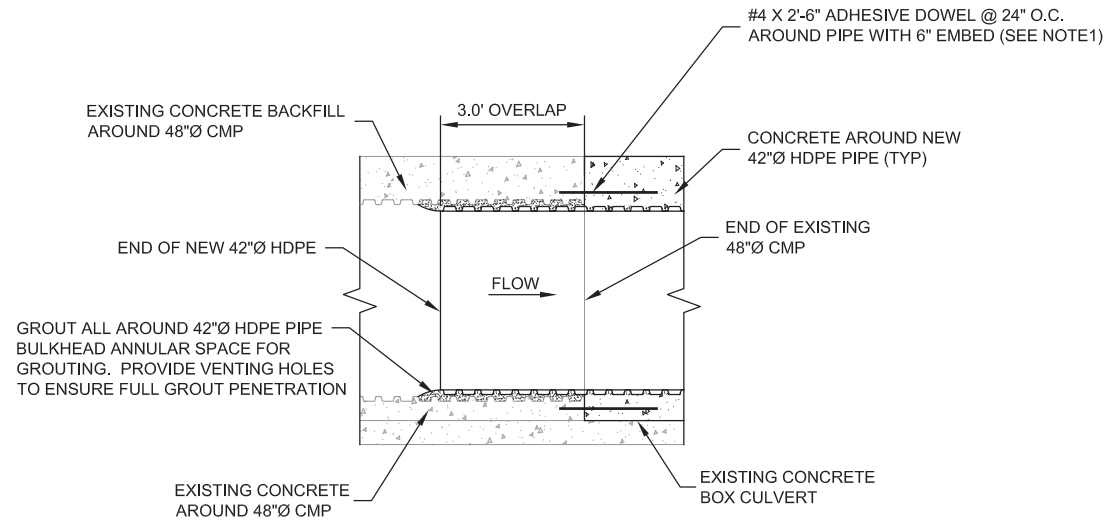
1
C-3/C-4
DEMOLITION SECTION
1" = 2'



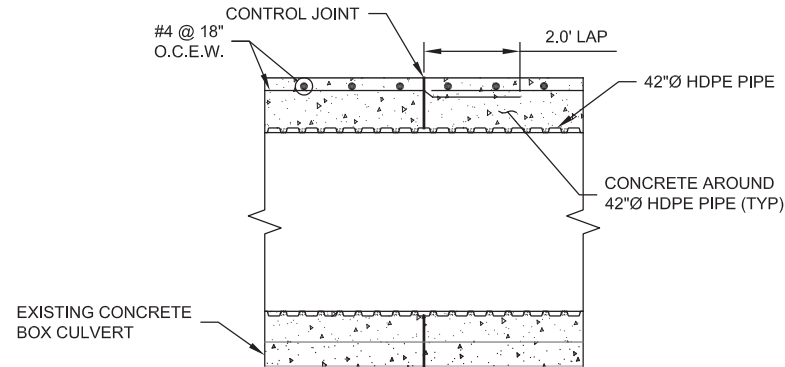
2
C-3/C-4
MODIFICATION SECTION
1" = 2'

NOTES

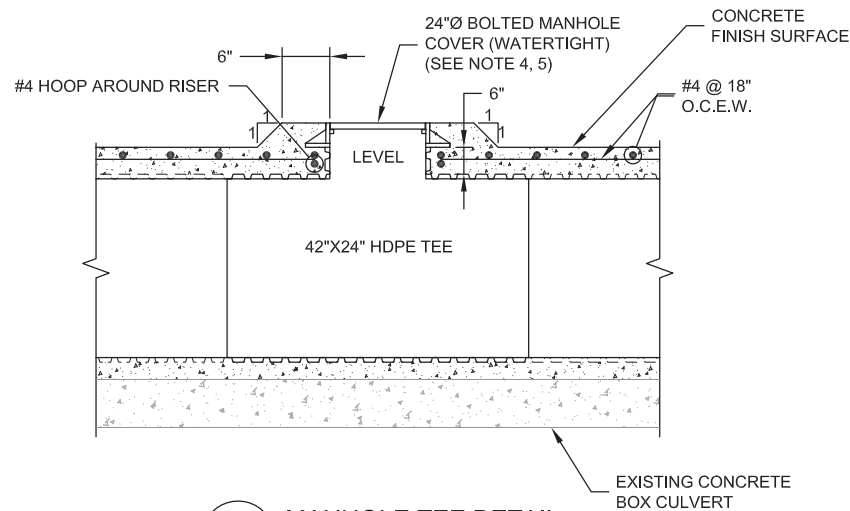
1. USE HILTI HY 150 EPOXY, OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S RECOMMENDATION.
2. CONCRETE ENCASEMENT CONTROL JOINTS TO BE SPACED AT 20' O.C. MAXIMUM, AND AT EXISTING JOINTS IN BOX CULVERT.
3. PIPE RESTRAINT SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND IMPLEMENTING THE PIPE RESTRAINTS. PIPE RESTRAINTS TO BE SPACED A MAXIMUM OF 10' O.C.
4. TRIM 24" RISER 6" (LEVEL) FROM O.D. OF 42" SECTION OF TEE TO ACCOMMODATE MANHOLE COVER.
5. USE NEENAH R-1916 WATERTIGHT MANHOLE FRAME AND BOLTED LID, OR APPROVED EQUAL.



A
C-3
CONNECTION TO EXISTING
48"Ø CMP SECTION
1" = 2'



B
C-3/C-4
CONCRETE ENCASEMENT
CONTROL JOINT SECTION
1" = 2'



4
C-3/C-4
MANHOLE TEE DETAIL
1" = 2'

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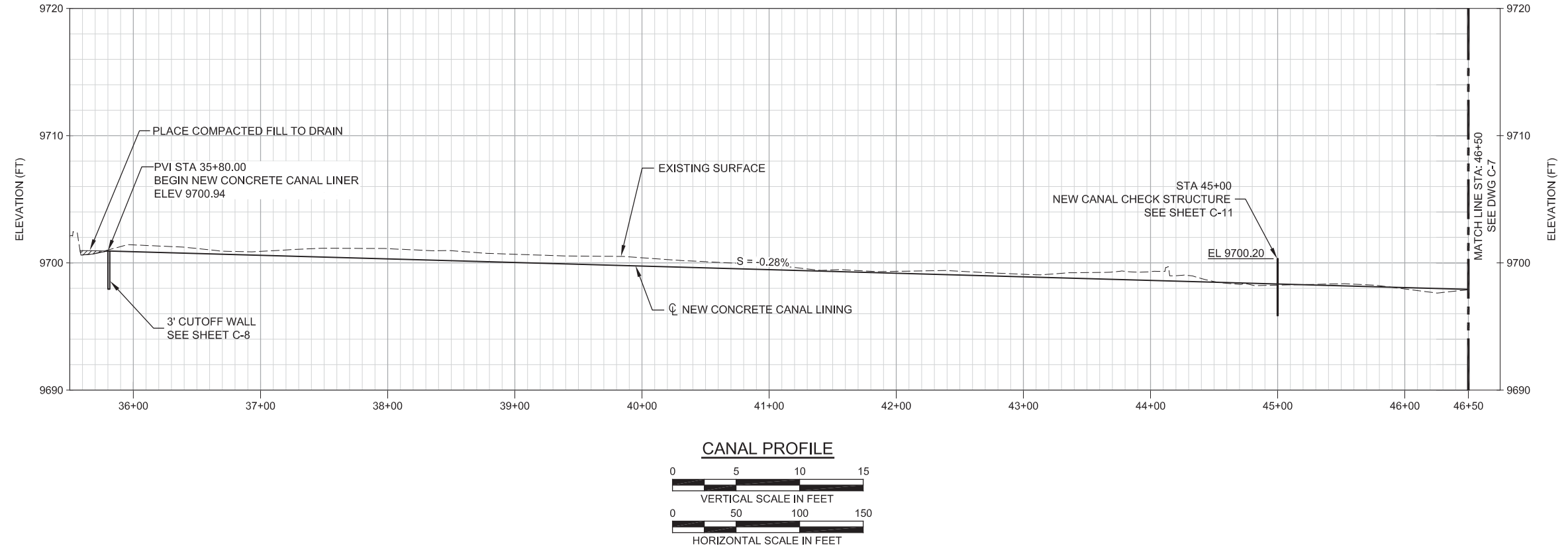
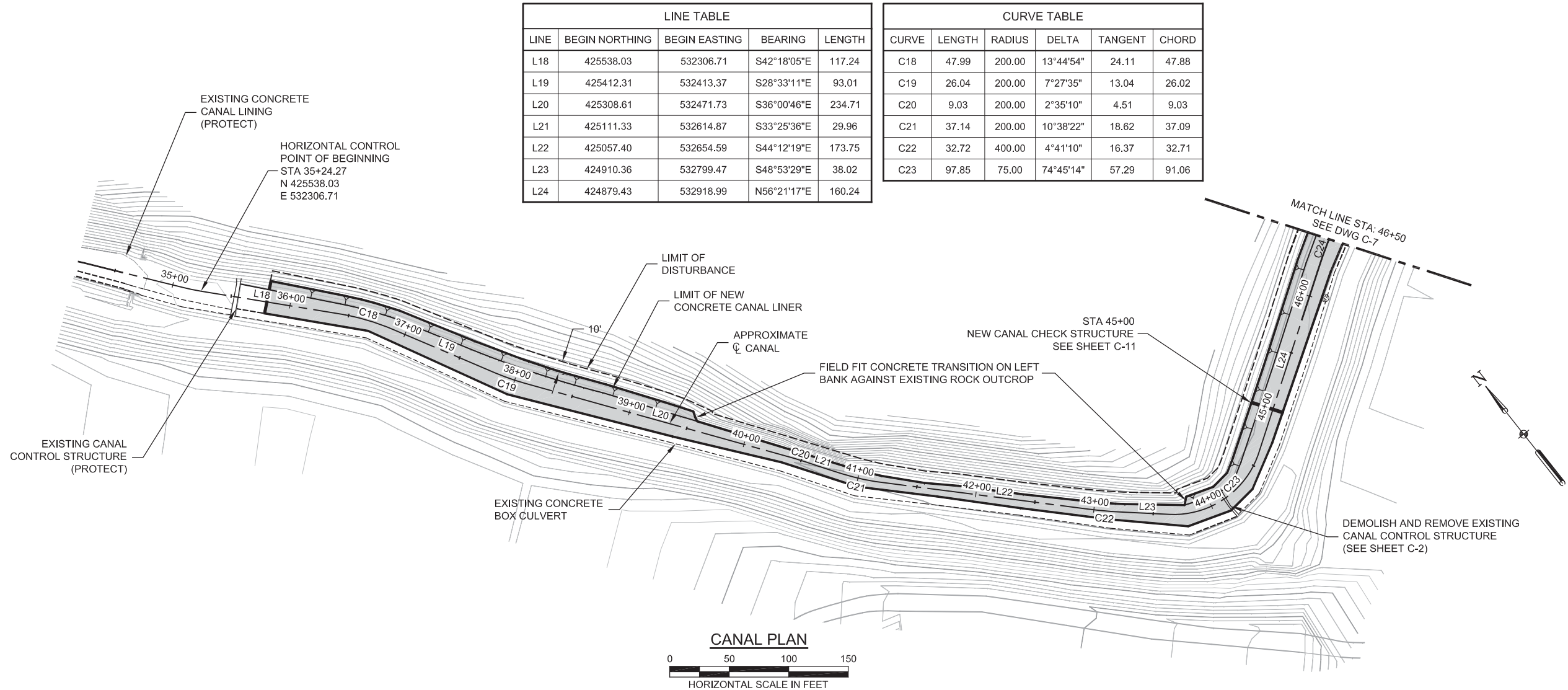
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NEW 42" BYPASS PIPE
DETAILS

C-5

SHEET 6 OF 12 D-16

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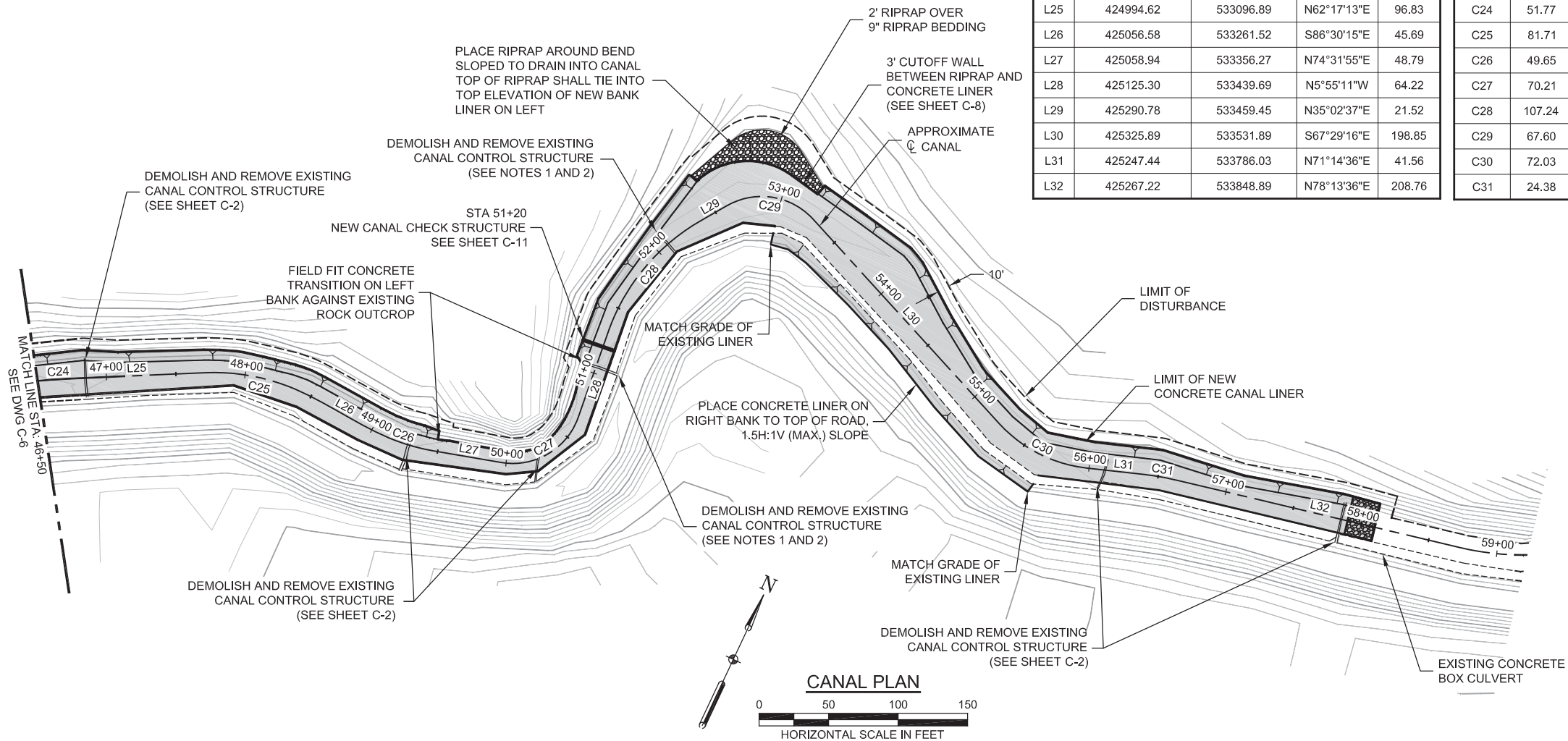
CANAL LINER
PLAN & PROFILE
STA 35+50 TO 46+50

C-6

SHEET 7 OF 12 D-17

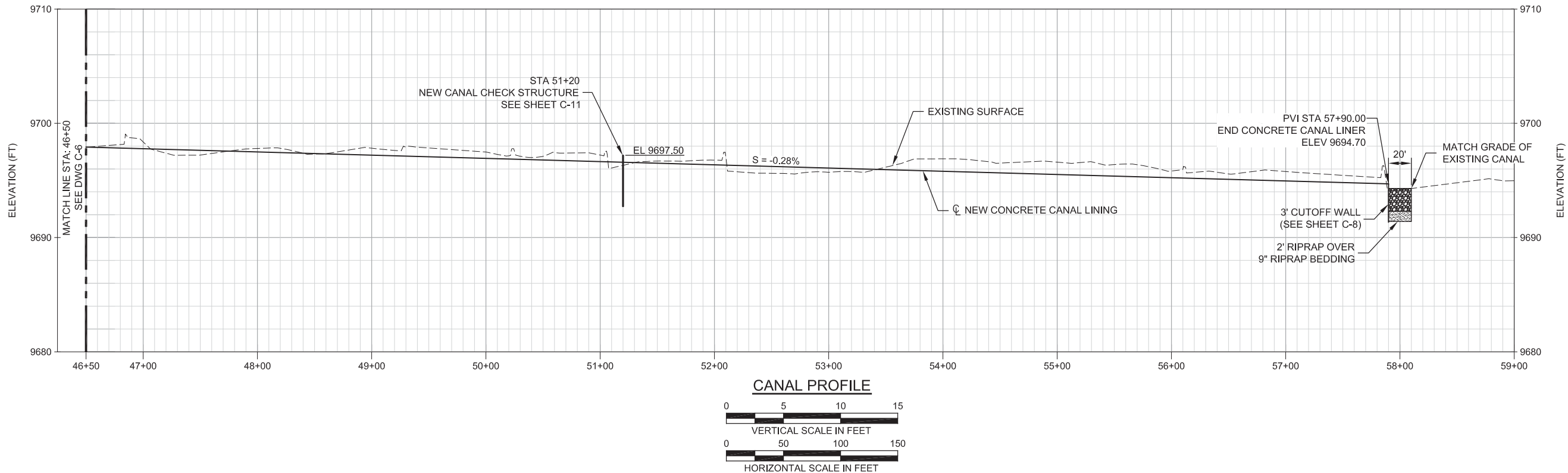
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URS



LINE TABLE				
LINE	BEGIN NORTHING	BEGIN EASTING	BEARING	LENGTH
L25	424994.62	533096.89	N62°17'13"E	96.83
L26	425056.58	533261.52	S86°30'15"E	45.69
L27	425058.94	533356.27	N74°31'55"E	48.79
L28	425125.30	533439.69	N5°55'11"W	64.22
L29	425290.78	533459.45	N35°02'37"E	21.52
L30	425325.89	533531.89	S67°29'16"E	198.85
L31	425247.44	533786.03	N71°14'36"E	41.56
L32	425267.22	533848.89	N78°13'36"E	208.76

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD
C24	51.77	500.00	5°55'56"	25.91	51.75
C25	81.71	150.00	31°12'33"	41.89	80.70
C26	49.65	150.00	18°57'51"	25.05	49.42
C27	70.21	50.00	80°27'06"	42.29	64.58
C28	107.24	150.00	40°57'48"	56.03	104.97
C29	67.60	50.00	77°28'07"	40.11	62.57
C30	72.03	100.00	41°16'08"	37.66	70.48
C31	24.38	200.00	6°59'01"	12.20	24.36



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ACAD VER: 2012

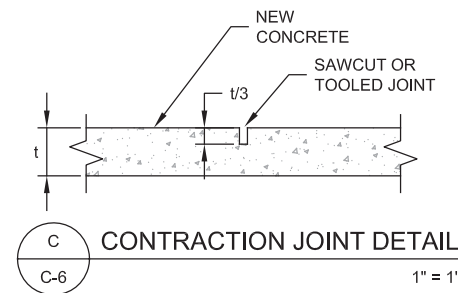
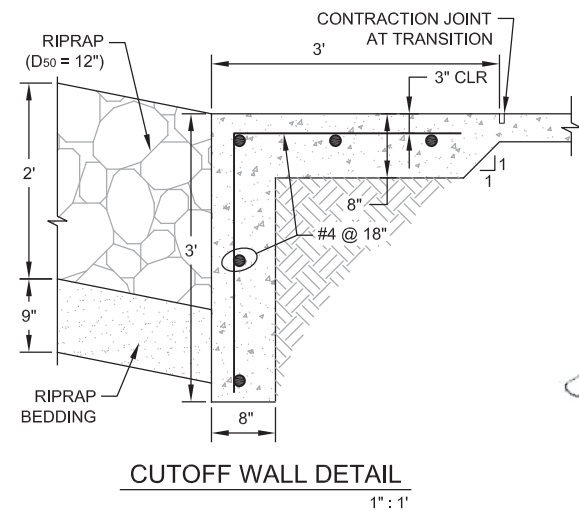
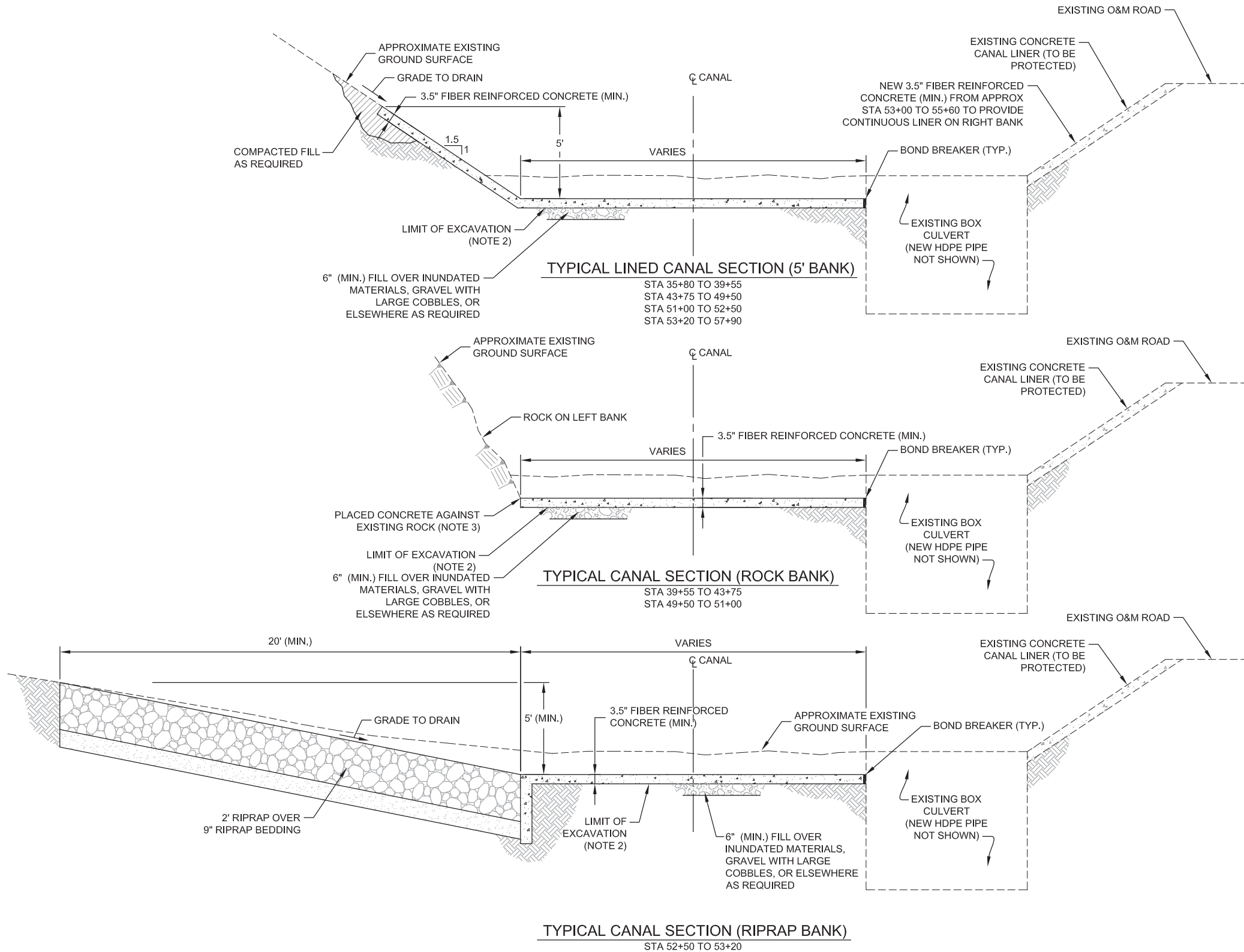
SHEET TITLE

CANAL LINER
PLAN & PROFILE
STA 46+50 TO 59+00

C-7

SHEET 8 OF 12 D-18

URS
DRAWING PATH: N:\Projects\22241248_Santa_Maria_Reservoir\Sub_00\9.0_Constr_Design\Santa_Maria_Canal\Plan_Sheets\Channel_Lining_Details.dwg



- NOTES
- CONCRETE CANAL LINER CONTRACTION JOINTS TO BE CONSTRUCTED AT A MINIMUM LONGITUDINAL SPACING OF 10'.
 - CONCRETE CANAL LINER SUBGRADE SHALL NOT CONTAIN VEGETATION, ROOTS, AND OTHER DELETERIOUS MATERIAL.
 - REMOVE ROCK PROTRUSIONS AND ANY LOOSE MATERIAL AT THE DIRECTION OF THE ENGINEER.

URS

URS Center
8181 East Tufts Avenue
Denver, Co. 80237-2637
303 694-2770 (phone)
303-694-3946 (fax)

SANTA MARIA
RESERVOIR
COMPANY

SANTA MARIA CANAL
IMPROVEMENTS

FINAL DESIGN



ISSUED FOR BIDDING 5/18/12 JPD

ISSUED FOR CONSTRUCTION DATE BY

REVISIONS		
NO.	DESCRIPTION	DATE
△	ISSUED FOR BID	5/18/12
△		
△		
△		
△		

URS PROJECT NO: 22241248
DRAWN BY: PRH
DESIGNED BY:
CHECKED BY:
DATE CREATED: 4/27/2012
PLOT DATE:
SCALE: AS SHOWN
ACAD VER: 2012

SHEET TITLE

CANAL LINING DETAILS

C-8

SHEET 9 OF 12 D-19