



Last Updated: July 2019

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as “project”) funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage Projects
Conservation, Land Use Planning
Engagement & Innovation Activities
Agricultural Projects
Environmental & Recreation
Projects

Anna.Mauss@state.co.us
Kevin.Reidy@state.co.us
Ben.Wade@state.co.us
Alexander.Funk@state.co.us
Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to

waterplan.grants@state.co.us

in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	Cimarron Canal and Reservoir Company	
Name of Water Project	Fish Creek Reservoir #2 Repair and Conservation Project	
CWP Grant Request Amount		\$ 154,134
Other Funding Sources <u>CWCB WSRF</u>		\$ 138,866
Other Funding Sources <u>CC&RC In-kind</u>		\$ 78,600
Other Funding Sources <u>Trout Unlimited In-Kind</u>		\$ 6,400
Other Funding Sources <u>BPWCD Grant</u>		\$20,000
Applicant Funding Contribution		\$ 4,911
Total Project Cost		\$ 402,911



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Applicant & Grantee Information	
Name of Grantee(s):	Cimarron Canal & Reservoir Company
Mailing Address.	400 South 3 rd Street Montrose, CO 81401
FEIN	84-0566173
Organization Contact.	Allen Distel
Position/Title.	President
Email	allen@bpwps.com
Phone	970 249-8707
Grant Management Contact.	Allen Distel
Position/Title.	President
Email	allen@bpwps.com
Phone	970 249-8707
Name of Applicant.	Cimarron Canal & Reservoir Company
Mailing Address.	400 South 3 rd Street Montrose, CO 81401
Position/Title.	President
Email	allen@bpwps.com
Phone	970 249-8707
Description of Grantee/Applicant	
Provide a brief description of the grantee's organization (100 words or less). The Cimarron Canal and Reservoir Company is a C Corporation that distributes water to users in the Cimarron and Uncompahgre Valley. The company has a 185cfs direct flow water right out of the Big Cimarron River as well as rights to storage in reservoirs including Fish Creek #2. The canal company is the result of 3 smaller canal companies merging into one when Silverjack Reservoir was built by the US Bureau of Reclamation which led to the formation of the Bostwick Park Water Conservancy District, the sister district of CCRC. The company also carries and delivers municipal water to the City of Montrose.	
Type of Eligible Entity (check one)	
☐	Public (Government): Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.



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	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
X	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes .

Type of Water Project (check all that apply)	
	Study
X	Construction
	Identified Projects and Processes (IPP)
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)		
X	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap. <i>Applicable Exhibit A Task(s):</i>	
	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. <i>Applicable Exhibit A Task(s):</i>	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. <i>Applicable Exhibit A Task(s):</i>	
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. <i>Applicable Exhibit A Task(s):</i>	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. <i>Applicable Exhibit A Task(s):</i>	
	Other	Explain:

Location of Water Project



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Please provide the general county and coordinates of the proposed project below in decimal degrees . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Countries	Gunnison
Latitude	38.26579 N
Longitude	107.56834 W

Water Project Overview

Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain.

The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.

Fish Creek #2 reservoir is in the headwaters of the Cimarron watershed on Fish Creek, a tributary to the Cimarron River. In 2017 the reservoir was placed under a zero-storage restriction by the State of Colorado citing seepage along the outlet pipe and slope stability on the downstream face of the dam.

CCRC plans to address the issues by slip lining an HDPE pipe through the existing outlet pipe, replacing the intake structure, improving the slope on the downstream dam face, and installing a two-stage filter diaphragm at the downstream end of the improved outlet works.

By reclaiming the storage pool of 350 acre-feet, CCRC will increase water availability for irrigation water users in the Cimarron basin and in the Uncompahgre Valley. The improvements will also provide flat water recreation and fishing opportunities.

CCRC will also work with Trout Unlimited and the Colorado Water Conservation Board to lease water from the reservoir to the CWCB Instream Flow program. CWCB holds an instream flow right on the Big Cimarron River that begins near the confluence with of the Fish Creek.

This project will complement ongoing efforts by CCRC, TU, and CPW to improve flows and protect fisheries in the Cimarron drainage.

Measurable Results

To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
350	Existing Storage Preserved or Enhanced (acre-feet)
42,000	Length of Stream Restored or Protected (linear feet)



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	Efficiency Savings (indicate acre-feet/year OR dollars/year)
40	Area of Restored or Preserved Habitat (acres)
50 acre-feet (varies on annual hydrology)	Quantity of Water Shared through Alternative Transfer Mechanisms
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning
	Number of Coloradans Impacted by Engagement Activity
	Other Explain:

Water Project Justification

Provide a description of how this water project supports the goals of [Colorado's Water Plan](#), the most recent [Statewide Water Supply Initiative](#), and the applicable Roundtable [Basin Implementation Plan](#) and [Education Action Plan](#). The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).

The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

Fish Creek Reservoir #2 Repair and Conservation Project supports numerous goals of Colorado's Water Plan. On page 8 of Chapter 4 *Water Supply*, the Water Plan contemplates how warming temperatures and changes in hydrology will impact stream flows, particularly those in late summer. This chapter also discusses how riparian habitats and cold-water fisheries could be impacted by increased water temperatures. This project will protect consumptive and non-consumptive water users from potential impacts of climate change by storing water at a relatively high elevation and having that water available when it is needed for multiple uses.

Chapter 6 of the Water Plan highlights the importance of maintaining stable water supplies and allowing the State to use its legal entitlements to the water. This project will facilitate those goals while also addressing other goals stated in the chapter including; drought mitigation, environmental and recreation enhancements (section 6.5). Additional storage in the basin may also prove critical to implementing alternative transfer methods (section 6.4) which have been considered by CCRC and project partners.

On page 6 of chapter 7, the Water plan suggests that in order to best manage limited water resources, water partnerships are formed to help meet multiple objectives. It is important to point out the CCRC is willing to partner with Trout Unlimited, Colorado Parks and Wildlife and Colorado Water Conservation Board and others to meet multiple objective related to this and other projects in the Cimarron watershed.

Reclaiming storage to project and improve the existing uses of irrigation and the historic uses of flat-water recreation complement the primary goal of the Gunnison Basin Roundtable which is to protect existing uses. The basin goals can be found on page 4 and 28 of the Gunnison BIP. The proposed project also supports the following goals found in the Gunnison BIP:

3. Improve agricultural water supplies to reduce shortages.
5. Quantify and protect environmental and recreational water uses.
7. Describe and encourage the beneficial relationship between agricultural and environmental recreational water uses.
8. Restore, maintain, and modernize critical water infrastructure, including hydropower.



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On page 7 of the BIP the Cimarron River is listed as a target reach for environmental protection.

Page 64 of the BIP makes note of the impacts that droughts can have on fisheries. Decreased flow and supplies may reduce license purchases that support the State. Improved flow in the Cimarron basin supports the Cimarron State Wildlife area, a popular recreation area in the Gunnison Basin.

While this project is not specifically listed in the BIP IPP list, project number 20 on the project list found on page 96 in the BIP is the Prioritized Conveyance Improvements and System Optimization Planning Study. This effort considered the importance of the storage project and assisted in developing the plans that will be used to finalize the improvements to the reservoir.

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

This water project will complement the Cimarron Canal Diversion Gate Replacement and Water Management Planning Project which was funded by the CWCB through Water Plan grants and WSRF in 2018. CWCB provided \$30,418 to Trout Unlimited to complete modifications to the Cimarron Canal Diversion gate and to complete water supply and demand analysis to improve water management practices and improve streamflow. As a result of these investments, the diversion gate has been modified and will be connected to an existing SCADA system in the Spring of 2020. The modeling is partially completed and has shown the need for late season supplies to bolster the flows in the Big Cimarron River.

BPWCD/CCRC has completed and is involved in a several water conservation projects including; an infrastructure assessment, infrastructure improvements including SCADA, and piping projects to reduce salinity runoff.

Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

None

Taxpayer Bill of Rights

The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.

None



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Submittal Checklist	
	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract .
Exhibit A	
X	Statement of Work ⁽¹⁾
X	Budget & Schedule ⁽¹⁾
X	Engineer's statement of probable cost (projects over \$100,000)
X	Letters of Matching and/or Pending 3 rd Party Commitments ⁽¹⁾
Exhibit C	
X	Map (if applicable) ⁽¹⁾
X	Photos/Drawings/Reports
X	Letters of Support (Optional)
	Certificate of Insurance (General, Auto, & Workers' Comp.) ⁽²⁾
	Certificate of Good Standing with Colorado Secretary of State ⁽²⁾
	W-9 ⁽²⁾
	Independent Contractor Form ⁽²⁾ (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation Supplemental Application ⁽¹⁾

(1) Required with application.

(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.



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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	1/22/2020
Name of Grantee:	Cimarron Canal and Reservoir Company
Name of Water Project:	Fish Creek Reservoir #2 Repair and Conservation Project
Funding Source:	Colorado Water Plan- Storage and Supply
Water Project Overview:	
Cimarron Canal and Reservoir Company (CCRC) is applying for funding assistance to repair the dam and outlet works on Fish Creek #2 Reservoir. The water rights with which the reservoir stores water under are as follows; 1925 adjudication for a 1904 appropriation of 298 acre-feet and a 1941 adjudication for an appropriation of an additional 225 acre-feet. Fish Creek #2 Reservoir is in the headwaters of the Big Cimarron watershed approximately 4 miles northwest of Silverjack Reservoir on Fish Creek, a tributary to the Big Cimarron River. In 2017 the reservoir was placed under a zero-storage restriction by the State of Colorado. The dam is considered a significant hazard dam. At CCRC's direction, J-U-B Engineers has completed the required design and engineering phases to satisfy the State of Colorado dam safety division and prepare this project for construction. With grant support from the CWCB, CCRC will slipline an HDPE pipe through the existing outlet pipe, replace the intake structure, increase the slope angle on the downstream dam face, and install a two-stage filter diaphragm near the downstream end of the improved outlet works. Reclaiming the storage capacity in the reservoir will provide CCRC with additional irrigation water and increase flexibility in delivering irrigation water. By repairing the reservoir, CCRC and partners will be restoring what was once a productive trout fishery at the reservoir thereby enhancing recreational opportunities in the Gunnison Basin. CCRC will work with CPW and other partners to operate the reservoir in a fashion that best meets the needs of the CCRC shareholders as well as support a sustainable fishery in the reservoir. The owners of the storage right will also work with Trout Unlimited and the Colorado Water Conservation Board to develop lease agreements to meet and enhance instream flows in the Cimarron River. As a tributary stream to the Aspinall Unit, instream deliveries to the Cimarron River will contribute to the stored water in the Aspinall Unit thereby bolstering total water storage on the Western Slope. The Cimarron River is a working river that is often largely dewatered to provide irrigation water to lands in and outside of the Cimarron Basin. Additional late season supply is critically important for protecting the river and all it supports.	

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Fish Creek #2 reservoir is currently decreed for municipal and irrigation. With an existing delivery mechanism, reclaiming storage capacity will improve access for reliable emergency municipal supplies for the City of Montrose.

The reclaimed storage will provide increased access to flat water recreation in Silverjack Reservoir by extending the reservoir storage period in Summer months, which will also improve late season flows in the Cimarron River below Silverjack Reservoir.

Project Objectives:

1. Repair outlet works and dam at Fish Creek #2 reservoir
2. Lift the zero-storage restriction on Fish Creek #2
3. Protect storage water rights
4. Improve late season water supplies for all water users in the basin
5. Meet multiple objectives including supporting healthy fishery in the reservoir and provide water to the Cimarron River.

Tasks
Task 1 – Subcontractor Selection
Description of Task:
CCRC staff will serve as the general contractors for the project and will provide equipment and labor for general civil and earthwork construction tasks. Certain tasks, such as on-site material testing, annular grouting of the sliplined HDPE pipe, and a portion of the earthwork will require the use of subcontractors. This task will consist of securing subcontractors to perform the necessary work.
Method/Procedure:
Prepare scope of work and project description for required tasks. Release request for proposals from subcontractors. Interview sub-contractors. Select sub-contractor.
Deliverable:



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Tasks
Selection of competent sub-contractors.

Tasks
Task 2 – Construction and Installation
Description of Task:
Construction of the outlet repairs will strictly adhere to the already state-approved plans and specifications. Construction will require, but is not limited to: - Clearing and Grubbing of the site - Excavating embankments and some existing 21" CMP pipe to clear an obstruction within the existing pipe - Acquisition of necessary materials - Installation of precast outlet structure - Installation of outlet headwall - Slipline existing 21" CMP pipe with 16" HDPE pipe - Installation of concrete encased 16" HDPE through entire embankment - Installation of two-stage filter diaphragm - Backfill of excavated embankment extents and improvement of downstream embankment slope - Installation of all appurtenant outlet structures including gate hoist structure and concrete encasement of vent pipe and valve stem pipe - Installation of downstream scour protection - Installation of crest and toe piezometers - Post-project reclamation Per State Rules and Regulations, the construction will be overseen by a qualified professional engineer (J-U-B). J-U-B will ensure that all installation and construction meet the required specifications. On-site material testing will be required and will occur throughout construction. Upon completion of dam construction, J-U-B and CCRC will perform a final dam inspection with the State to lift the zero-storage restriction on the dam. J-U-B will provide all necessary documentation, including as-builts to CCRC and the State of Colorado.
Method/Procedure:
Construction will follow industry accepted means and methods provided they adhere to the already approved construction specifications. Pre-construction meetings will convey specifications and requirements of the dam rehabilitation and will serve as an opportunity for collaboration between CCRC, J-U-B, subcontractors, the United States Forest Service, and the State of Colorado.
Deliverable:

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Tasks
A functional outlet works with required appurtenances, monitoring piezometers, and embankment improvements that pass the final dam inspection with the State of Colorado. The deliverable will result in lifting the zero-storage restriction and allowing for reclamation of the reservoir. Reclamation of disturbed areas will ensure that the project site is reclaimed to a state similar or better than pre-project conditions.

Tasks
Task 3 – Multiple benefit planning
Description of Task:
In this task CCRC will work with Trout Unlimited, Colorado Parks and Wildlife, Colorado Water Conservation Board and others to maximize the benefits of the stored water. Opportunities to increase and support instream flows and support a sustainable fishery while meeting consumptive needs will be examined. Lease agreements and operations agreements will be constructed.
Method/Procedure:
Using the supply and demand modeling that will be completed by J-U-B at the oversight of Trout Unlimited, CCRC will determine the amount of water that can be left in storage to support trout fishery in the reservoir as well as the amount of water that can be released to the stream for lease to the CWCB to improve or meet the instream flow right. CCRC will work with legal counsel and supporting partners to add the use of instream flows to the reservoir right. Agreements to lease, share and operate the reservoir will be drafted and signed by project partners.
Deliverable:

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Tasks

A conservation plan that describes how the storage in the reservoir will best meet the need of the irrigators served by CCRC, municipal water users, recreation and environmental uses. This task will provide ease agreements between CCRC and CWCB.

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

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Performance Measures

Performance measures for this contract shall include the following:

- (a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.
- (b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.
- (c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.
- (d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.



COLORADO

Parks and Wildlife

Department of Natural Resources

Montrose Office
2300 S. Townsend Avenue
Montrose, CO 81401
P 970.252.6000 | F 970.252.6053

January 24th, 2020

Re: Cimarron Canal and Reservoir Company proposed improvements to Fish Creek Reservoir #2

Colorado Water Conservation Board

Colorado Parks and Wildlife (CPW) has received and reviewed plans from Bostwick Park Conservancy District (BPCD) and Cimarron Canal and Reservoir Company (CCRC) for proposed improvements to Fish Creek Reservoir #2, located in the headwaters of the Cimarron watershed on Fish Creek in Gunnison County, Colorado. CPW understands that CCRC has applied for a grant through the Colorado Water Conservation Board to help with funding the Fish Creek Reservoir #2 improvements.

CCRC plans to rebuild the dam and pipework on Fish Creek Reservoir #2 to reclaim the storage pool to 350 acre-feet. CCRC will be able to increase water availability for irrigation water users in the Cimarron and Uncompahgre Valley. The reservoir improvements will also provide better fishing opportunities in the Cimarron basin. This project will also help meet instream flow rights on the Big Cimarron River further improving the fishery and the aquatic ecosystem in the river.

Colorado Parks and Wildlife supports the efforts of BPCD, CCRC and Trout Unlimited to make improvements to Fish Creek Reservoir #2 in the Cimarron Basin, Gunnison County, Colorado. If you have further questions please contact me or District Wildlife Manager Matt Ortega at 970-252-6011.

Sincerely

Renzo DelPiccolo

Area Wildlife Manager

970-252-6010



Gunnison Basin Roundtable

January 30, 2020

Allen Distel
Board President
Cimarron Canal and Reservoir Company
400 S 3rd Street
Montrose, CO 81401

Subject: Letter of Support – Dam Repairs and Water Conservation Project Fish Creek Reservoir #2

Dear Mr. Distel,

The Gunnison Basin Roundtable provides this letter of support for the Cimarron Canal Company's grant application to the Colorado Water Conservation Board's Water Plan – Storage and Supply grant fund for dam repairs and water conservation efforts at Fish Creek Reservoir #2.

The Gunnison Basin Roundtable believes that repairing the dam and outlet works at Fish Creek Reservoir # 2 is critical to supporting multiple water use objectives in the Cimarron watershed as well as the Gunnison Basin. The goals of this project, including supporting irrigation demands as well as in-stream uses and recreation, are aligned with the goals of the Gunnison Basin Roundtable.

We look forward to this project being implemented.

Sincerely,

Kathleen Curry

Kathleen Curry
Chair, Gunnison Basin Roundtable
54542 US Highway 50
Gunnison, CO 81230
Cell 970-209-5537
kathleencurry@montrose.net



Colorado Water Conservation Board
Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

Prepared Date: 1/22/2020
 Name of Applicant: Cimarron Canal and Reservoir Company
 Name of Water Project: Fish Creek Reservoir #2 Repair and Conservation Project

	Unit	Quantity	Unit Cost	CWCB WSRF Funds	CWCB Water Plan Funds	CCRC Matching Funds	BPWCD Matching Funds	CCRC in-kind Match	TU In-kind Match	Total In-Kind Contribution	Total Cost
Task 1 - Subcontractor Selection											
Procure Concrete Subcontractor for Sliplining and other Concrete work	EA	1	\$ 1,000.00					\$ 1,000.00		\$ 1,000.00	\$ 1,000.00
Procure Piezometer Installation Subconsultant with Boring Capability	EA	1	\$ 1,000.00					\$ 1,000.00		\$ 1,000.00	\$ 1,000.00
Procure On-Site Materials Testing Subconsultant	EA	1	\$ 1,000.00					\$ 1,000.00		\$ 1,000.00	\$ 1,000.00
Procure Qualified Excavation Assistance	EA	1	\$ 1,000.00					\$ 1,000.00		\$ 1,000.00	\$ 1,000.00
Engineering Assistance for Contractor Selection	EA	1	\$ 2,000.00		\$ 2,000.00						\$ 2,000.00
Task Total					\$ 2,000.00			\$ 4,000.00		\$ 4,000.00	\$6,000.00
Task 2 - Construction and Installation											
Mobilization	LS	1	\$ 37,600.00		\$ 35,600.00			\$ 2,000.00		\$ 2,000.00	\$ 37,600.00
Clearing and Grubbing	LS	1	\$ 5,750.00		\$ -			\$ 5,750.00		\$ 5,750.00	\$ 5,750.00
Excavate Embankments, Remove and Dispose of Existing CMP Pipe Sections, Stockpile Embankment Material	CU. YD	1490	\$ 41.40	\$ 10,686.00	\$ -		\$ 20,000.00	\$ 31,000.00		\$ 41,000.00	\$ 61,686.00
Install Precast Outlet Structure	LS	1	\$ 17,250.00		\$ 17,250.00						\$ 17,250.00
Furnish and Install Outlet Headwall	LS	1	\$ 6,900.00		\$ 6,900.00						\$ 6,900.00
Install 16" DR 32.5 HDPE Pipe through embankment	LF	120	\$ 46.00		\$ 5,520.00						\$ 5,520.00
Furnish and Place Annular Grout Around Sliplined HDPE	CY	2.5	\$ 11,500.00		\$ 28,750.00						\$ 28,750.00
Furnish and Place HDPE Pipe Concrete Encasement	LF	45	\$ 193.20	\$ 8,694.00							\$ 8,694.00
Place Outlet Pipe Select Fill	TONS	160	\$ 40.25		\$ 5,440.00			\$ 1,000.00		\$ 1,000.00	\$ 6,440.00
Install Two Stage Filter	LS	1	\$ 4,485.00		\$ 4,485.00						\$ 4,485.00
Replace Embankment Material	CU. YD	1490	\$ 41.40	\$ 45,686.00	\$ -			\$ 16,000.00		\$ 16,000.00	\$ 61,686.00
Furnish and Install Valve Stem, Vent Pipe, Concrete Encasement with Gauge Rod and Gate Hoist Structure	LS	1	\$ 19,550.00	\$ 15,550.00				\$ 4,000.00		\$ 4,000.00	\$ 19,550.00
Restore Upstream Rip Rap	LS	1	\$ 5,750.00		\$ -			\$ 5,750.00		\$ 5,750.00	\$ 5,750.00
Excavate, Moisture Condition, Place, and Compact Embankment Material on Downstream Face	CY	500	\$ 41.40		\$ 16,700.00			\$ 4,000.00		\$ 4,000.00	\$ 20,700.00
Install Scour Protection	CY	12	\$ 575.00		\$ 5,400.00			\$ 1,500.00		\$ 1,500.00	\$ 6,900.00
Furnish and Install Crest Piezometer	EA	1	\$ 10,350.00	\$ 10,350.00							\$ 10,350.00
Furnish and Install Toe Piezometer	EA	1	\$ 6,900.00	\$ 6,900.00							\$ 6,900.00
Onsite and Laboratory Testing	LS	1	\$ 15,000.00	\$ 15,000.00							\$ 15,000.00
Engineering Oversight, Construction Observation, and Record Drawings	LS	1	\$ 57,000.00	\$ 26,000.00	\$ 26,089.00	\$ 4,911.00					\$ 57,000.00
Site Reclamation								\$ 2,000.00			\$ 2,000.00
Task total				\$ 138,866.00	\$ 152,134.00	\$ 4,911.00	\$ 20,000.00	\$ 73,000.00		\$ 81,000.00	\$ 388,911.00
Task 3 - Multiple benefits planning											
Water availability assessment	HR	60	\$80.00					\$1,600	\$3,200.00	\$4,800.00	\$4,800.00
Lease agreements and plan drafting	HR	40	\$80.00						\$3,200.00	\$3,200.00	\$3,200.00
Task Total								\$1,600.00	\$6,400.00	\$8,000.00	\$8,000.00
TOTAL				\$ 138,866.00	\$ 154,134.00	\$ 4,911.00	\$ 20,000.00	\$ 78,600.00	\$6,400.00	\$93,000.00	\$402,911.00
Contribution percentages				34.47%	38.26%	1.22%	4.96%	19.51%	1.59%		100.00%

Fish Creek Reservoir #2 Repair and Conservation Project
Engineer's Opinion of Probable Cost
27-Jan-20

Item	Description	Total Quantity	Unit	Engineer's Opinion of Probable Cost	
				Unit Price	Amount
	Task 1 - Subcontractor Selection				
1	Procure Concrete Subcontractor for Sliplining and other Concrete work	1	EA	\$ 1,000.00	\$ 1,000
2	Procure Piezometer Installation Subconsultant with Boring Capability	1	EA	\$ 1,000.00	\$ 1,000
3	Procure On-Site Materials Testing Subconsultant	1	EA	\$ 1,000.00	\$ 1,000
4	Procure Qualified Excavation Assistance	1	EA	\$ 1,000.00	\$ 1,000
5	Engineering Assistance for Contractor Selection	1	EA	\$ 2,000.00	\$ 2,000
	Task 1 Subtotal				\$ 6,000
	Task 2 - Construction				
6	Mobilization	1	LS	\$ 37,600	\$ 37,600
7	Clearing and Grubbing	1	LS	\$ 5,750	\$ 5,750
8	Excavate Embankments, Remove and Dispose of Existing CMP Pipe Sections, Stockpile Embankment Material	1490	CU. YD	\$ 41	\$ 61,686
9	Furnish and Install Precast Outlet Structure	1	LS	\$ 17,250	\$ 17,250
10	Furnish and Install Outlet Headwall	1	LS	\$ 6,900	\$ 6,900
11	Furnish and Install 16" DR 32.5 HDPE Pipe through embankment	120	LF	\$ 46	\$ 5,520
12	Furnish and Place Annular Grout Around Sliplined HDPE	2.5	CY	\$ 11,500	\$ 28,750
13	Furnish and Place HDPE Pipe Concrete Encasement	45	LF	\$ 193	\$ 8,694
14	Furnish and Place Outlet Pipe Select Fill	160	TONS	\$ 40	\$ 6,440
15	Furnish and Install Two Stage Filter	1	LS	\$ 4,485	\$ 4,485
16	Replace Embankment Material	1490	CU. YD	\$ 41	\$ 61,686
17	Furnish and Install Valve Stem, Vent Pipe, Concrete Encasement with Gauge Rod and Gate Hoist Structure	1	LS	\$ 19,550	\$ 19,550
18	Restore Upstream Rip Rap	1	LS	\$ 5,750	\$ 5,750
19	Excavate, Moisture Condition, Place, and Compact Embankment Material on Downstream Face	500	CY	\$ 41	\$ 20,700
20	Furnish and Install Scour Protection	12	CY	\$ 575	\$ 6,900
21	Furnish and Install Crest Piezometer	1	EA	\$ 10,350	\$ 10,350
22	Furnish and Install Toe Piezometer	1	EA	\$ 6,900	\$ 6,900
23	Onsite and Laboratory Testing	1	LS	\$ 15,000	\$ 15,000
24	Engineering Oversight, Construction Observation, and Record Drawings	1	LS	\$ 57,000	\$ 57,000
25	Site Reclamation	1	LS	\$ 2,000	\$ 2,000
	Task 2 Subtotal				\$ 388,911
	Task 3 - Multiple benefits Planning				
26	Water Availability Assessment (60 Hrs @ \$80/hr)	1	LS	\$ 4,800	\$ 4,800
27	Lease Agreements and Plan Drafting (40 Hrs @ \$80/hr)	1	LS	\$ 3,200	\$ 3,200
	Total Indirect Costs				\$ 8,000
	TOTAL				\$ 402,911



January 29, 2020

Colorado Water Conservation Board
1313 Sherman St.
Room 718
Denver, CO 80203

Re: Fish Creek #2 Reservoir Repair and Conservation Project

Dear CWCB Board,

On behalf of Trout Unlimited, the nation's largest coldwater conservation organization, I'm providing this letter of support and notification of in-kind match for the Fish Creek # 2 Reservoir Repair and Conservation Project.

If Cimarron Canal and Reservoir company obtains funding to repair the reservoir, TU will dedicate at least \$6,200 of in-kind support in the form of staff time for task 3- Conservation Planning. This assistance will come in the form of supporting meetings, analyzing supply and demand, and negotiating lease agreements with various parties including CWCB.

TU has been working with CCRC and its sister company Bostwick Park Water Conservancy District for several years on a numerous conservation and restoration projects. TU has always found the companies to be great partners who are interested in assisting other water users in the Cimarron and Gunnison watersheds. We hope the application for funding is successful so that we can proceed with this win-win project.

Sincerely,

Cary Denison, Trout Unlimited
Gunnison Basin Project Manager

BOSTWICK PARK WATER CONSERVANCY DISTRICT

400 South 3rd Street
Montrose, CO 81401



Phone (970) 249-8707
Fax (970) 252-7168

bostwickpark@qwestoffice.net
www.bostwickcimarronwater.com

Colorado Water Conservation Board
1313 Sherman St.
Room 718
Denver, CO 80203

Re: Fish Creek #2 Reservoir Repair and Conservation Project

CWCB Board members,

This letter is provided to notify CWCB of Bostwick Park Water Conservancy District's intent up to contribute \$20,000.00 (Twenty Thousand Dollars) to the Cimarron Canal and Reservoir Company for the repair of the Outlet and Inlet Pipe and Structures for Fish Creek Reservoir #2. This grant is to be used in conjunction with other grants received for this project.

BPWCD is willing and enthusiastic to make this contribution for the infrastructure and water conservation project because the reservoir improvement will improve water storage for BPWCD's sister company which will improve water availability for BPWCD share holders and reduce impacts of diverting water from the Cimarron River.

We greatly appreciate any funding assistance from the CWCB.

Kind Regards.

Allen Distel

President

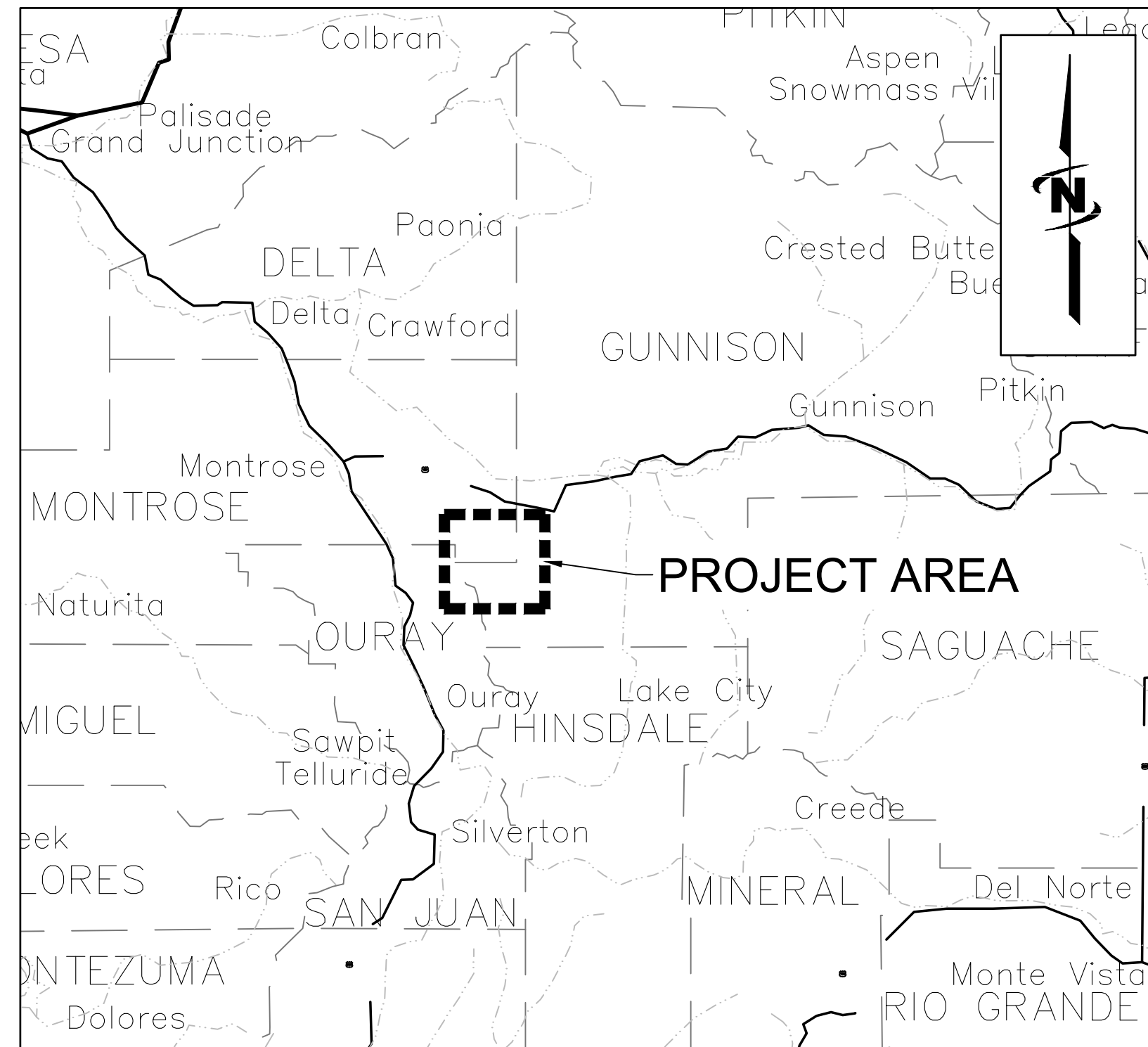
Bostwick Park Water Conservancy District

FISH CREEK #2 DAM, DAM ID: 620121

WATER DIVISION 4, WATER DISTRICT 62

FISH CREEK #2 DAM OUTLET REHABILITATION

GUNNISON COUNTY, COLORADO



PROJECT VICINITY MAP

PLEASE NOTE THAT A LIST OF
DRAWINGS FOR THESE
CONSTRUCTION DRAWINGS MAY BE
FOUND ON SHEET 2 (G-002)

JULY 2019

PROJECT NO. 55-17-077



J-U-B ENGINEERS, INC.

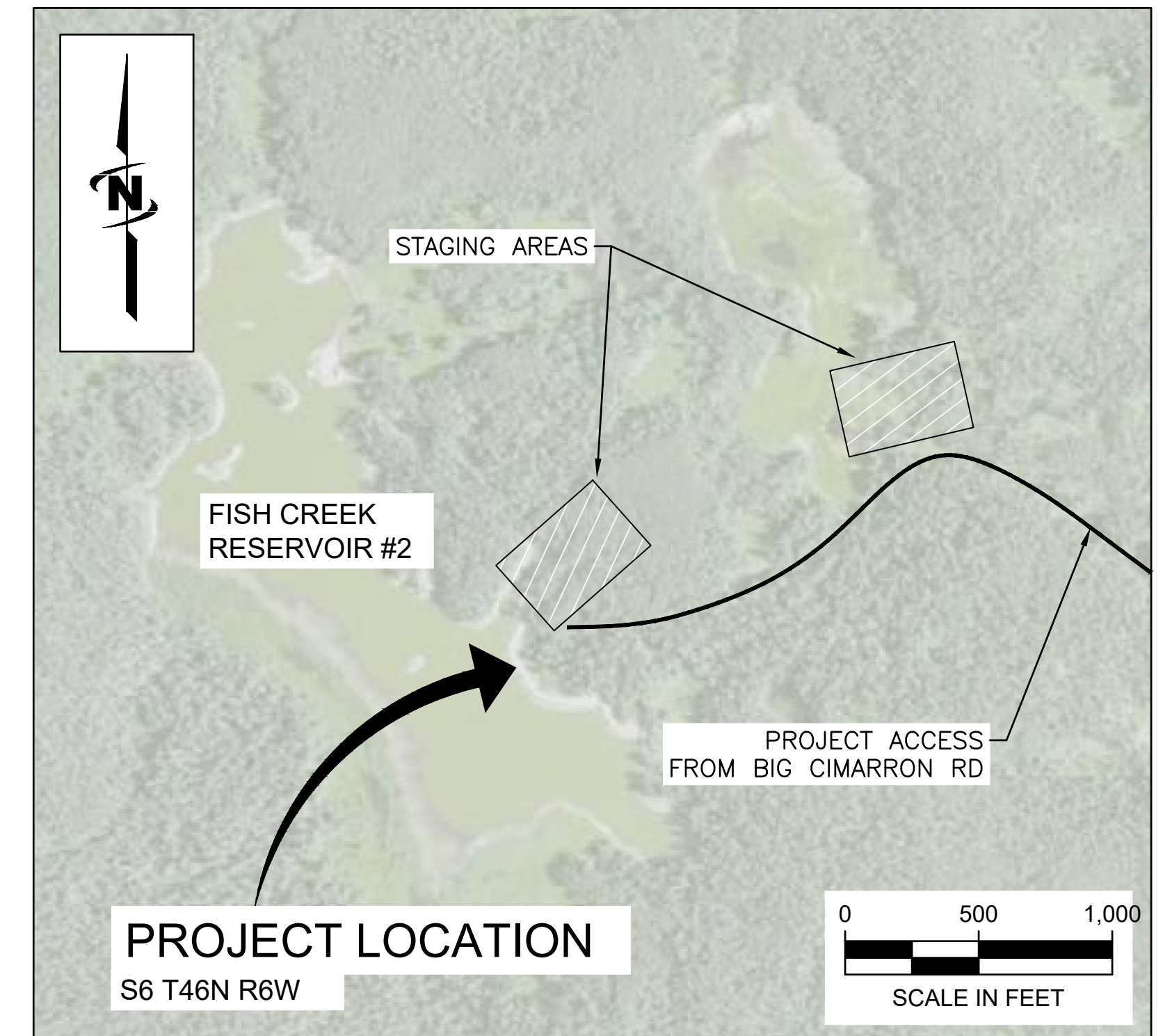
REUSE OF DOCUMENTS

J-U-B grants to CLIENT a nonexclusive, non-transferable license to use the Drawings, Specifications and/or Contract Documents (Documents) as follows:

CLIENT may make and retain copies of the Documents for reference, but J-U-B shall retain all common law, statutory and other reserved rights, including the copyright thereto, and the same shall not be reused on this Project or any other Project without J-U-B's prior written consent. Distribution of Documents to meet regulatory or permitting requirements, or for similar purposes, in connection with the Project, including but not limited to distribution to contractors or subcontractors for the performance of their work, is not to be construed as publication adversely affecting the reserved rights of J-U-B. The Documents are not intended for use in creating dtm for grading or earthwork, survey staking layout (unless specifically identified as such in the documents), or property boundary layouts.

Any reuse without written consent by J-U-B, or without verification or adoption by J-U-B for the specific purpose intended by the reuse, will be at CLIENT's sole risk and without liability or legal exposure to J-U-B. The CLIENT shall release, defend, indemnify, and hold J-U-B harmless from any claims, damages, actions or causes of action, losses, and expenses, including reasonable attorneys' and expert fees, arising out of or resulting from such reuse.

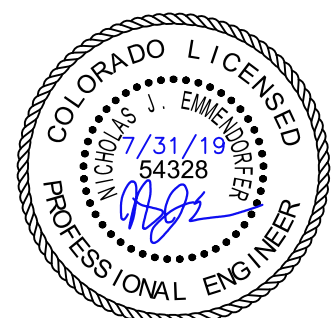
If the Documents are provided in electronic format, the electronic documents are subject to the provisions of J-U-B's "electronic document/data limited license" found at edocs.jub.com.



These plans have been prepared by me or under my direct supervision.

Nicholas J. Emmendorfer

NICHOLAS J. EMMENDORFER,
Colo. P.E. No. 54328



Approved on the 19th day of August 2019.

Kevin G. Rein

State Engineer



By:

William T. McCormick III
William T. McCormick III, Chief,
Colorado Dam Safety,
Colorado P.E. No. 29127

And,

These plans represent the AS-CONSTRUCTED conditions of Fish Creek #2 Dam to the best of our knowledge and judgement, based in part on information furnished by others,

as of the _____ day of _____, 20____.

NICHOLAS J. EMMENDORFER,
Colo. P.E. No. 54328

FILE NUMBER: C-1750A

LAST UPDATED: 7/30/2019
SHEET 1 OF 12
TITLE G-001

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND BUSINESS LICENSES PRIOR TO CONSTRUCTION. ACCESS THROUGH AND ONTO FOREST SERVICE LANDS WILL BE COORDINATED BY THE CIMARRON CANAL AND RESERVOIR COMPANY (CC & RC).
2. CONTRACTOR IS RESPONSIBLE FOR DUST ABATEMENT AND ANY LIABILITY ISSUES RELATED TO DUST AT ANY LOCATION WHICH MAY BE CAUSED BY THIS PROJECT.
3. DIRECT ACCESS TO THE PROJECT SITE IS THROUGH PRIVATE PROPERTY AND MUST BE CAREFULLY COORDINATED WITH CC&RC.
4. ALL DISTANCES AND DATA SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. IN CASE OF CONFLICT THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY SO THAT CLARIFICATION MAY BE MADE PRIOR TO THE START OF THE WORK.
5. THE CONTRACTOR SHALL ARRANGE FOR, SECURE AND PAY FOR DIRECTLY, ANY AND ALL TEMPORARY UTILITY SUPPLIES (E.G. WATER POWER, AND TELEPHONE) IT MAY REQUIRE FOR PROSECUTION OF ITS WORK. THE COST OF SUCH UTILITIES SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM WITH WHICH IT IS ASSOCIATED.
6. SHOULD CONSTRUCTION BE HALTED BECAUSE OF INCLEMENT WEATHER CONDITIONS, THE CONTRACTOR WILL COMPLETELY CLEAN UP ALL AREAS AND MAINTAIN THE SURFACE IN GOOD CONDITION DURING THE SHUT-DOWN PERIOD.
7. THE CONTRACTOR'S PERSONNEL, EQUIPMENT, AND OPERATIONS SHALL COMPLY FULLY WITH ALL APPLICABLE STANDARDS, REGULATIONS, AND REQUIREMENTS OF EXISTING FEDERAL, COLORADO STATE, AND LOCAL GOVERNMENTAL AGENCIES.
8. ALL WORK SHALL BE CONTAINED IN OR LIMITED TO THE IMMEDIATE SITE AND APPROVED STAGING AREAS. NO MATERIAL MAY BE STOCK PILED ON THE EXISTING EMBANKMENT.
9. THE PROJECT SITE IS ACCESSIBLE TO HIKERS AND HORSES. CONTRACTOR TO PROVIDE, CONSTRUCT, MAINTAIN AND REMOVE A TEMPORARY FENCE AROUND THE CONSTRUCTION SITE. CONTRACTOR IS ALSO RESPONSIBLE TO PROTECT WORK SITE.
10. ANY CONSTRUCTION STAKING REQUIRED TO COMPLETE THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITIES AND BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITIES AND EXISTING IMPROVEMENTS AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION ACTIVITIES.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR, MAINTAIN AND/OR REPAIR THE ACCESS ROAD IN EQUAL OR BETTER CONDITION THAN EXISTED AT THE START OF THE PROJECT.
13. CC & RC WILL BE REPRESENTED ON SITE DURING ALL CRITICAL CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL COORDINATE CONCRETE AND BACKFILL ACTIVITIES ACCORDINGLY.
14. CONTRACTOR IS RESPONSIBLE FOR ALL PUMPING ACTIVITIES NECESSARY TO PROPERLY AND ADEQUATELY DRAW DOWN THE RESERVOIR AND DEWATER THE SITE FOR CONSTRUCTION. SEE SPECIFICATION SECTION 02140.

NOTE:
A DASH MAY BE PLACED IN THE LOWER PORTION
OF THE IDENTIFIER IF THE DETAIL DRAWING OR
SECTION VIEW IS LOCATED ON THE SAME SHEET.

1. APPROXIMATE LOCATIONS OF UTILITIES ARE SHOWN ON THE PLANS. THEY ARE TO BE USED FOR GENERAL INFORMATION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN CONSTRUCTION MIGHT INTERFERE WITH NORMAL OPERATION OF ANY UTILITIES. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE APPROPRIATE UTILITY COMPANY FIELD-LOCATE ANY UTILITY INSTALLATIONS WHICH MIGHT BE AFFECTED BY CONSTRUCTION PRIOR TO BEGINNING WORK IN THAT AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE OF EXISTING UTILITIES AND FOR RESTORING ANY UTILITIES DAMAGED DUE TO CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. DEPTHS AND ELEVATIONS OF UTILITIES ARE UNKNOWN UNLESS OTHERWISE SHOWN. CONTRACTOR SHALL FIELD VERIFY UTILITY DEPTHS, ELEVATIONS, ANY DISCREPANCIES AND/OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATERIALS TESTING INCLUDING BUT NOT LIMITED TO CONCRETE, FLUSHING, LEAK, PRESSURE, AND COMPACTION. ALL TESTS SHALL MEET MINIMUM ENGINEER REQUIREMENTS. SEE THE CONTRACT DOCUMENTS AND DRAWINGS FOR FREQUENCY OF TESTING. RESULTS ARE TO BE DELIVERED TO SPECIAL INSPECTOR, OWNER AND ENGINEER.
2. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ENGINEER AND SPECIAL INSPECTOR FOR INSPECTIONS OF WORK AT APPROPRIATE INTERVALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PAY FOR ADDITIONAL INSPECTIONS THAT ARE THE RESULT OF HIS WORKMANSHIP.

CIMARRON CANAL AND RESERVOIR COMPANY -		
ALLEN DISTEL	970-249-8707 o	PRESIDENT
TREY DENNISON	970-964-7488 c	
ENGINEER -		
J-U-B OFFICE (WESTERN CO)	970-208-8508 o	ENGINEER
NICHOLAS EMMENDORFER, P.E.	720-323-9408 c	

SHEET NUMBERING

DISCIPLINE DESIGNATOR
SHEET TYPE DESIGNATOR
SHEET SEQUENCE NUMBER

C - 1 01

SHEET TYPE DESIGNATORS	
DESIGNATOR	SHEET TYPE
0	GENERAL (SYMBOLS, LEGENDS, NOTES, ETC.)
1	PLANS (HORIZONTAL VIEWS)
2	ELEVATIONS, PROFILES, COMBINED PLAN & PROFILES
3	SECTIONS (SECTIONAL VIEWS)
4	LARGE-SCALE VIEWS (PLANS, ELEVATIONS, ECT.)
5	DETAILS OR COMBINED DETAILS AND SECTIONS



SHEET 2 OF 12
TITLE G-002



CONSTRUCTION

SET

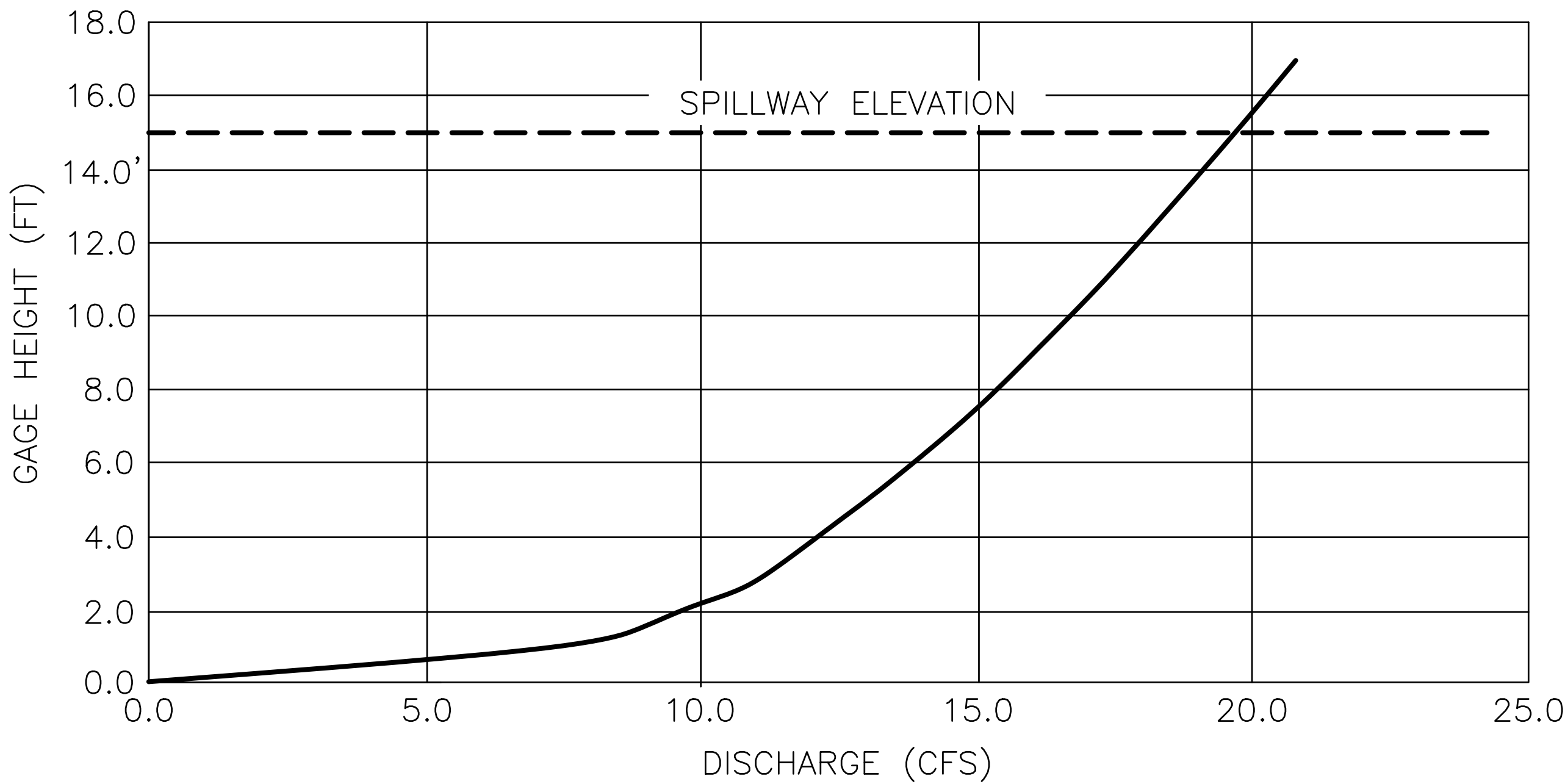
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GENERAL NOTES

FILE : 55-17-077_G-002
JUB PROJ. # : 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG
 ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2019

Plot Date: 7/31/2019 1:02 PM Plotted By: Nicholas Emmendorfer
Date Created: 2/28/2019 10:11 PALISADE-G-003 PROJECT SUBBOSTWICK PARK WATER CONSERVANCY DISTRICT FISH CREEK #2 CAD SHEET GENERAL 55-17-007 G-003.DWG

OUTLET RATING CURVE



OUTLET RATING TABLE

Gage Height (ft)	Discharge (cfs)	Gage Height (ft)	Discharge (cfs)
17	20.8	8	15.3
16	20.2	7	14.6
15	19.7	6	13.8
14	19.1	5	13.0
13	18.5	4	12.2
12	17.9	3	11.2
11	17.3	2	9.7
10	16.7	1	7.8
9	16.0	0	0.0

THIS SPACE INTENTIONALLY LEFT
BLANK FOR REVISED STORAGE
RATING CURVE



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com

CONSTRUCTION

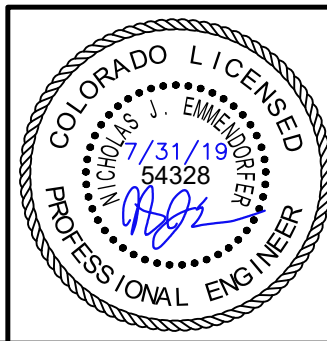
SET

REVISION			
NO.	DESCRIPTION	BY	DATE

REUSE OF DRAWINGS
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FISH CREEK #2 OUTLET REHABILITATION
CIMARRON CANAL AND RESERVOIR COMPANY

RATING CURVES

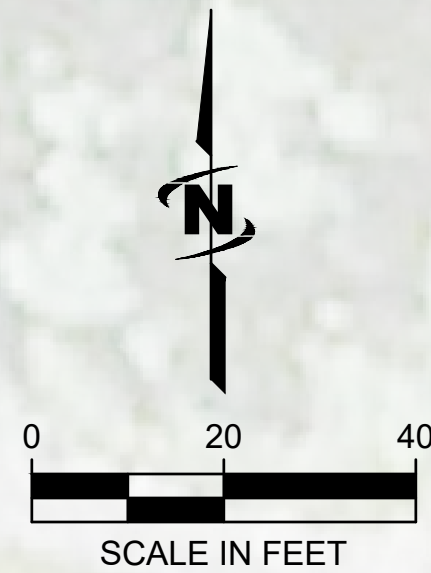


FILE: 55-17-007-G-003
JUB PROJ. #: 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 7/31/2019

SHEET 3 OF 12
TITLE G-003

FILE NUMBER: C-1750A

Plot Date: 7/31/2019 1:02 PM Plotted By: Nicholas Emmendorfer
Date Created: 2/22/2019 10:11 PALISADE-GPUB/C/PROJECTS/JUB/STWICK PARK WATER CONSERVANCY DISTRICT/FISH CREEK #2/CAD/SHEET/CIVIL/55-17077 C-101X.DWG



FISH CREEK RESERVOIR #2

POTENTIAL EMBANKMENT FILL MATERIAL MAY BE FOUND IN TP-2 AND TP-5, AS IDENTIFIED IN THE GEOTECHNICAL INVESTIGATION (APPENDIX D1 OF DESIGN REPORT). LOCATIONS ARE OUTSIDE EXTENTS OF THIS MAP. ALL EMBANKMENT FILL MUST COMPLY WITH SPEC. SECTION 02400. CONTRACTOR SHALL CONFIRM COMPLIANCE PRIOR TO USE

SLIPLINE EXIST. 67' OF CMP WITH 16" DR 32.5 HDPE. GROUT ANNULAR SPACE ACCORDING TO DETAIL B1/C-503 REFER TO SPEC. SECTION 02555

REMOVE EXIST. PIPE OUTLET STRUCTURE. EXCAVATE EMBANKMENT TO REMOVE EXIST. OUTLET PIPE 7' BEYOND PIPE OBSTRUCTION (APPROX. 27 FT. TOTAL) REPLACE WITH CONC. ENCASED 16" DR 32.5 HDPE PIPE, REPAIR EMBANKMENT, INSTALL NEW OUTLET STRUCTURE WITH APPURTENANT GATE HOIST STRUCTURE AND VALVE STEM CONC. ENCASEMENT.

STA: 0+50 TO 3+50
REGRADE DAM CREST AS
NEEDED TO PROVIDE 2%
SLOPE TOWARD RESERVOIR.

INSTALL PIEZOMETER 1
(APPROX. LOCATION)

EXCAVATE EMBANKMENT, REMOVE EXIST. CMP PIPE
REPLACE WITH CONCRETE ENCASED 16" DR 32.5 HDPE.
INSTALL TWO-STAGE FILTER, INSTALL OUTLET HEADWALL.
PROVIDE DOWNSTREAM SCOUR PROTECTION.

INSTALL PIEZOMETER 2
(APPROX. LOCATION)

RE-GRADE DOWSTREAM EMBANKMENT.
SLOPE TO 2H:1V MIN. (DO NOT RE-GRADE
IF SLOPE IS LESS THAN 2:1)
SEE SHEET C-301 FOR GRADING PROFILES

DAM CREST ALIGNMENT
STA: 0+00.00
N: 1164224.49
E: 2406262.73

CONSTRUCTION NOTES:

- CONTRACTOR MUST GROUT ANNULAR SPACE IN CMP PRIOR TO ENCASING HDPE PIPE IN CONCRETE
- CONTRACTOR MUST SET AND MAKE CONNECTIONS TO PRECAST OUTLET STRUCTURE AND OUTLET HEADWALL PRIOR TO ENCASING HDPE PIPE IN CONCRETE
- CONTRACTOR MUST POUR CONCRETE ENCASEMENT AROUND BEFORE BACKFILLING.
- CONTRACTOR MUST RESTORE UPSTREAM EMBANKMENT, PLACE HOIST STRUCTURE, AND CONNECT STEM AND VENT PIPE PRIOR TO POURING STEM CONCRETE ENCASEMENT.
- ALL CONCRETE MUST EXTEND 36" BELOW GROUND SURFACE FOR FROST HEAVE PROTECTION

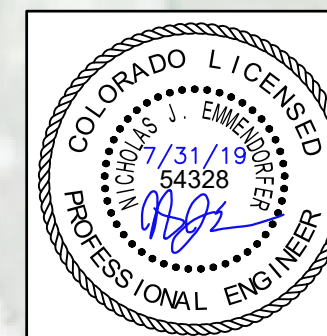
PIEZOMETER NOTES:

- PIEZOMETER 1 TO BE NESTED INTERVAL TYPE INSTALLED AT DAM CREST WITH 5' SCREENED INTERVALS. INTERVAL BOTTOMS AT: 9378' (50' BELOW E.G.) AND 9409' (19' BELOW E.G.)
- PIEZOMETER 2 TO BE INSTALLED IN-LINE WITH PIEZOMETER 1 AND SHALL BE ISOLATED-TIP TYPE WITH 5' SCREENED INTERVAL BOTTOM AT 9378' (25' BELOW E.G.)
- PIEZOMETERSS SHALL BE INSTALLED NEAR OUTLET PIPE WITH MINIMUM 10' OFFSET OF OUTLET PIPE CENTERLINE.
- SEE DETAILS A1 AND A2 ON SHEET C-504 FOR PIEZOMETER DETAILS

POINT TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP-1	1164218.77	2406252.33	9428.844	CP BASE <RWC>
CP-2	1164106.70	2406609.94	9429.428	CP <RWC>

COORDINATES — COLORADO CENTRAL STATE PLANE (0502)
VERTICAL DATUM — NAVD88



FILE NUMBER: C-1750A



J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com

CONSTRUCTION

SET

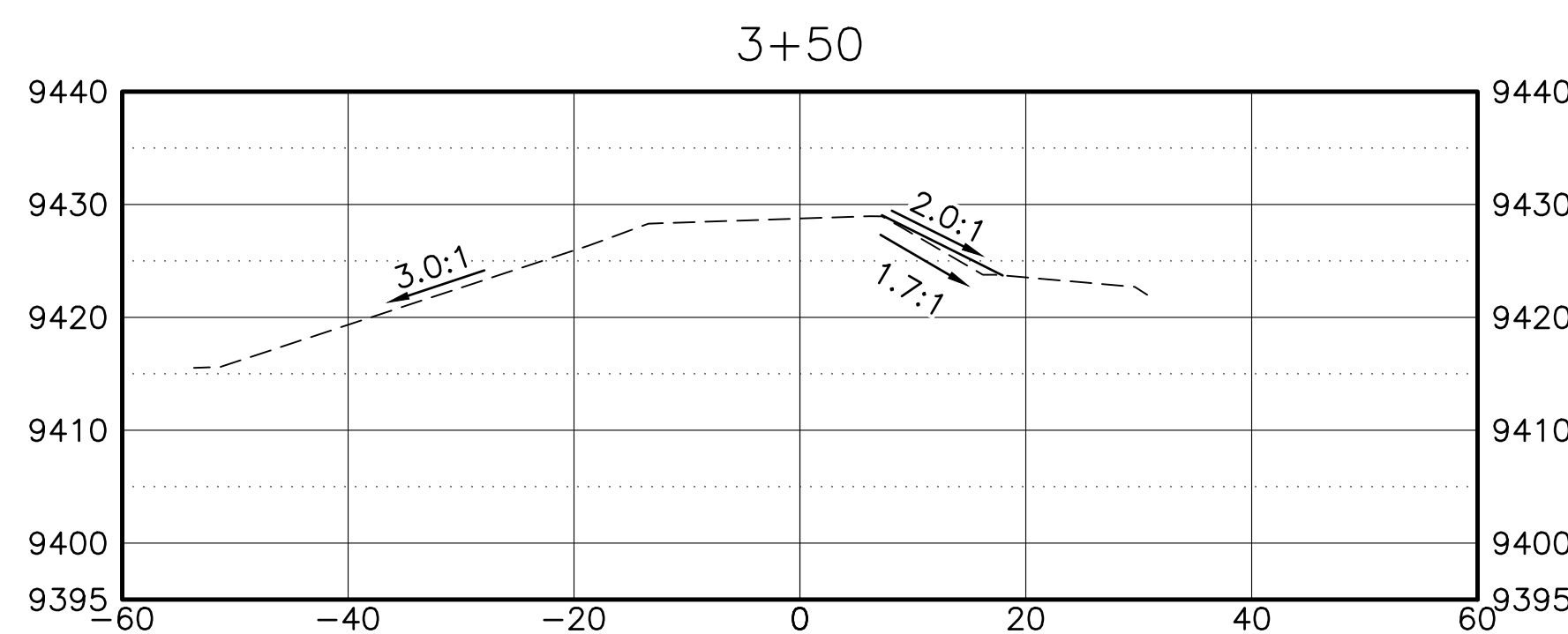
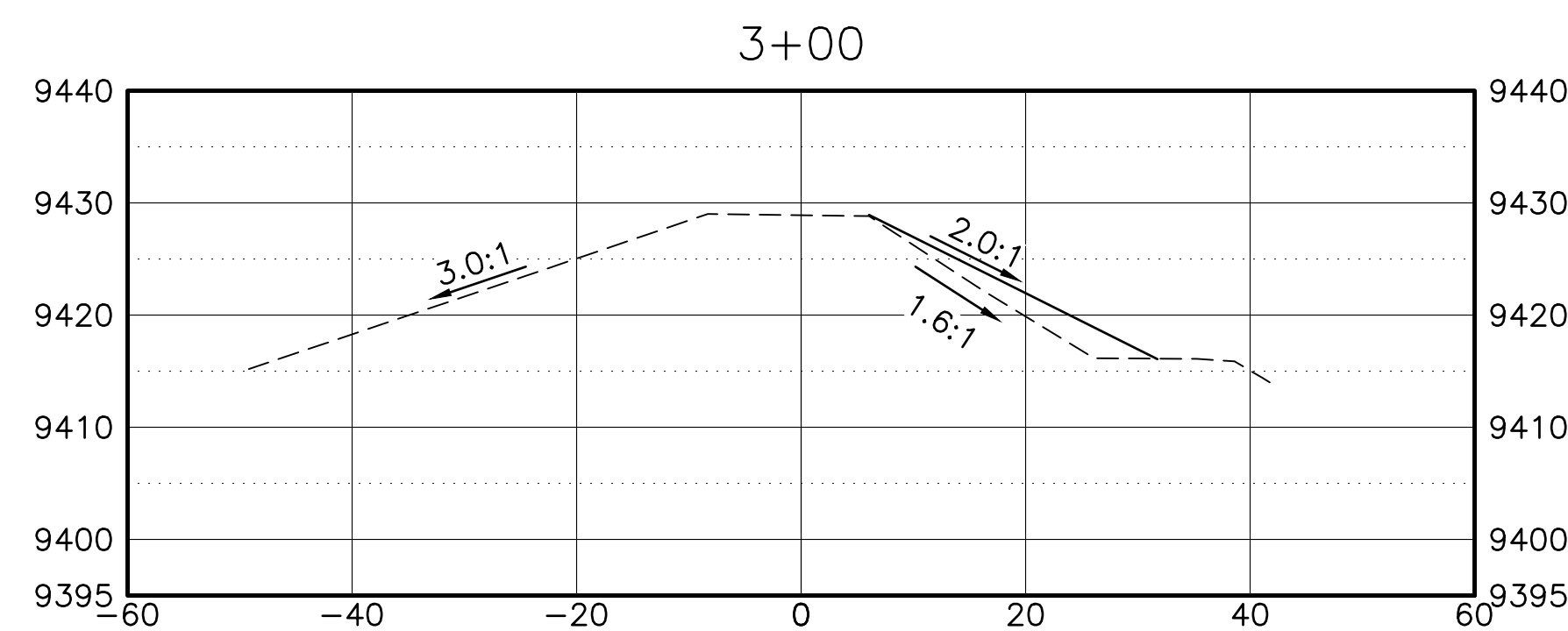
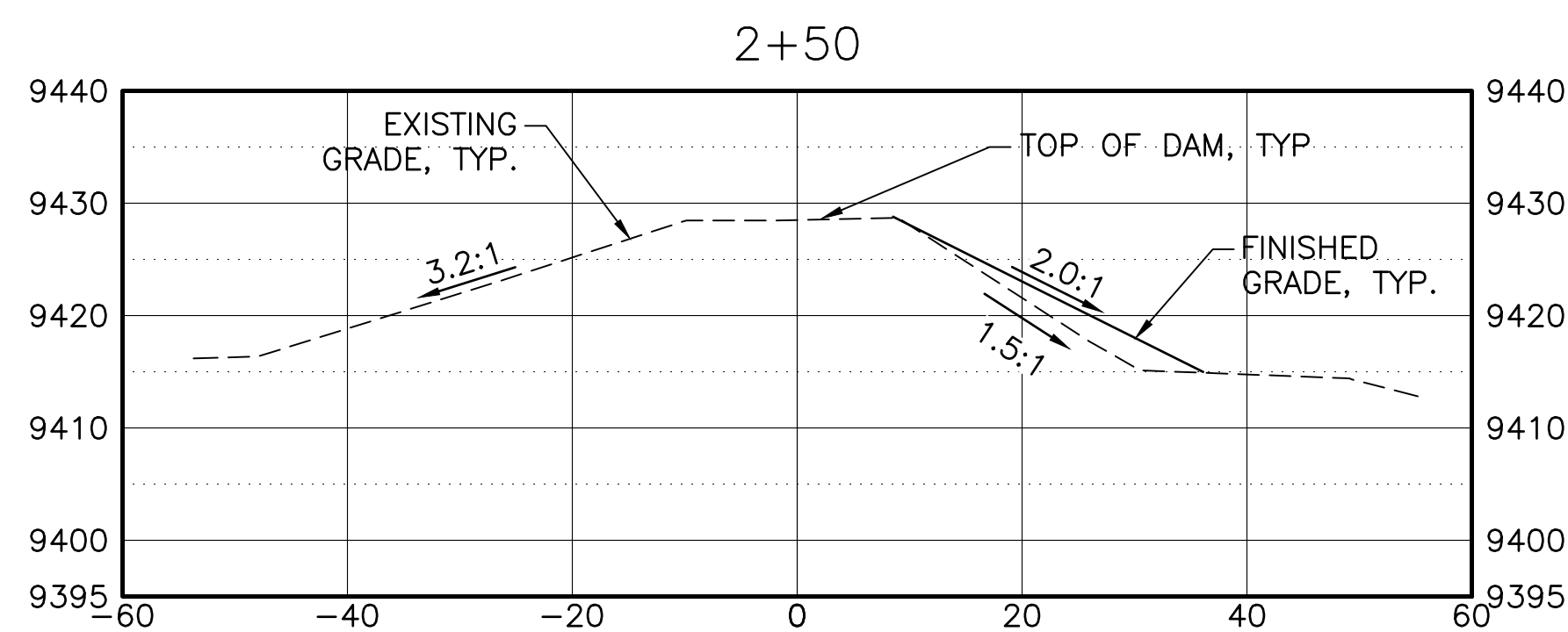
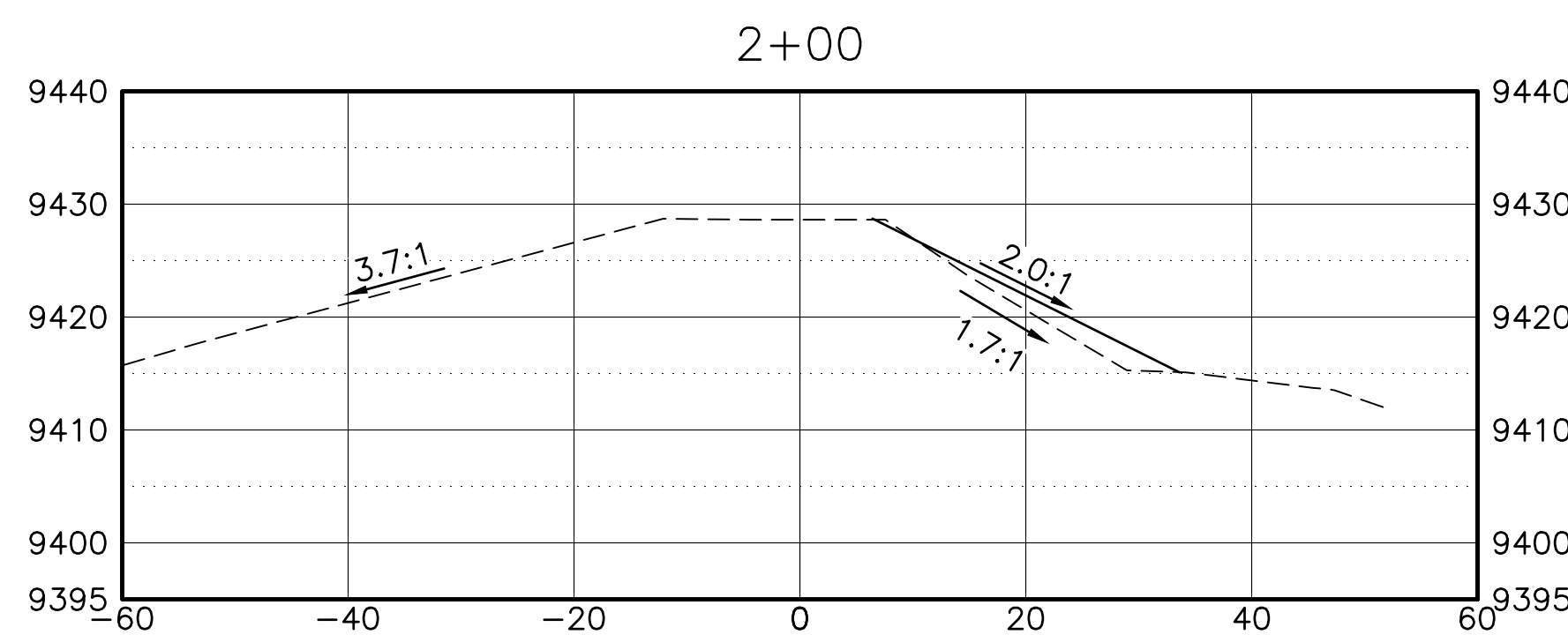
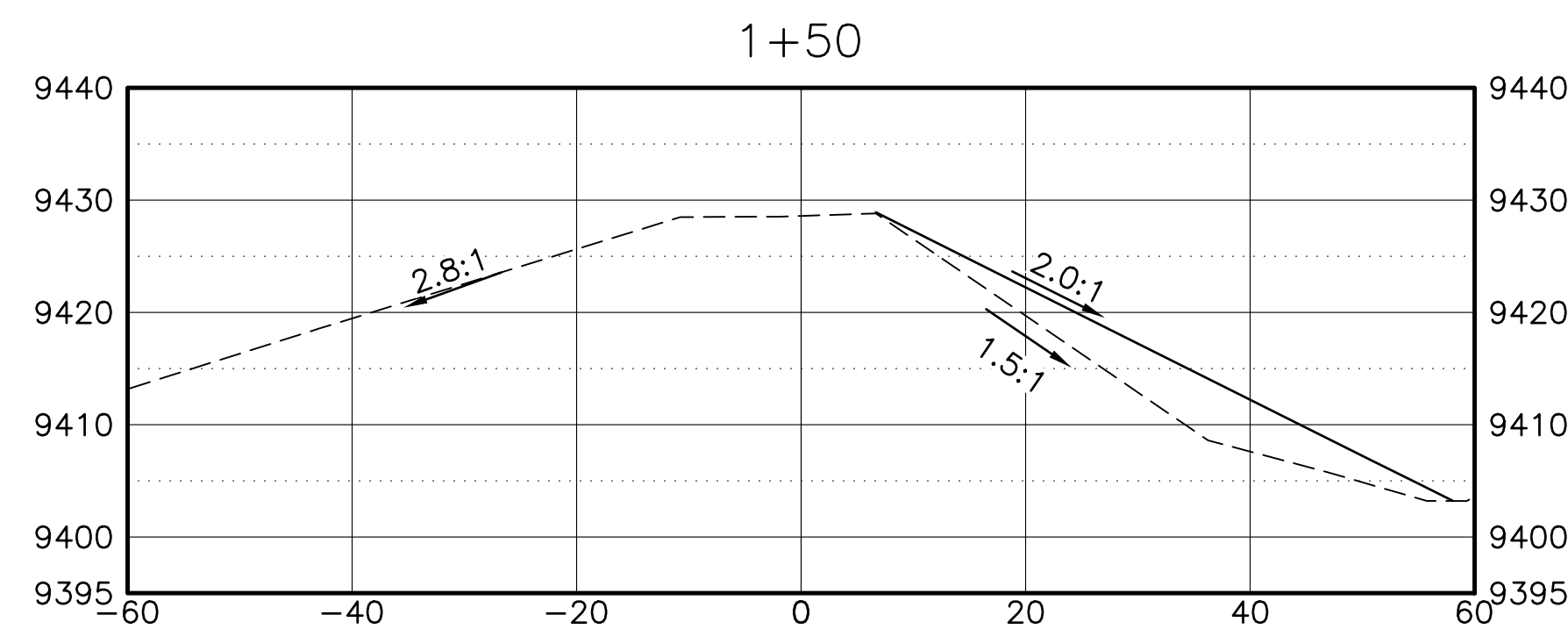
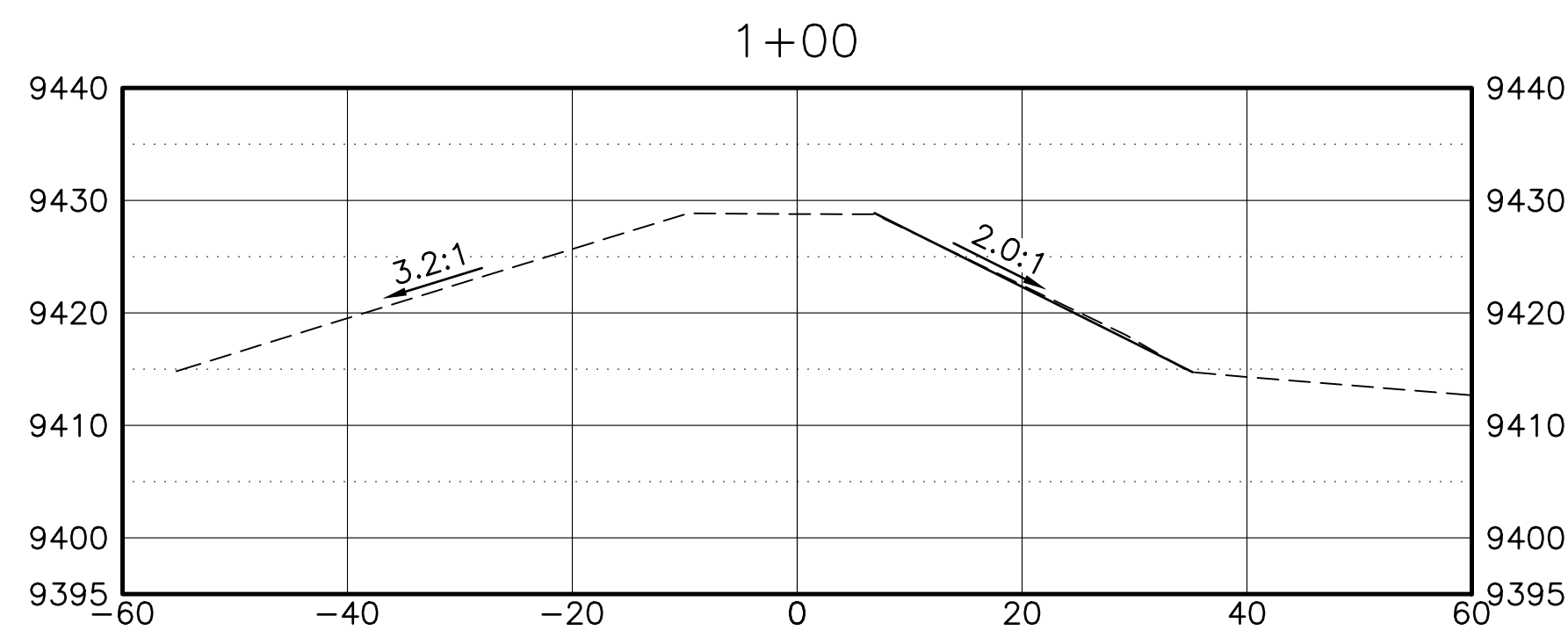
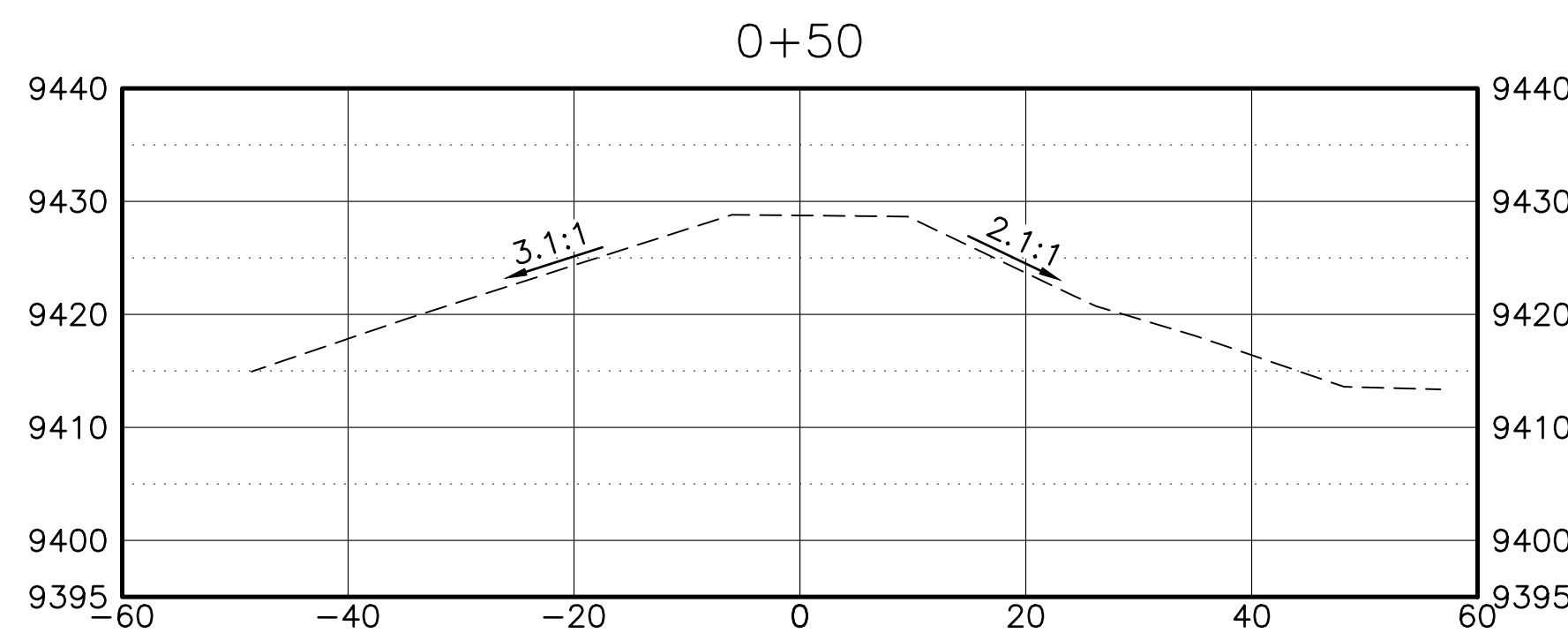
REUSE OF DRAWINGS		REVISION		BY		DATE	
J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT WRITTEN CONSENT BY J-U-B. WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.		NO.		DESCRIPTION		BY	
						APR	

FISH CREEK #2 OUTLET REHABILITATION
CIMARRON CANAL AND RESERVOIR COMPANY

PLAN VIEW

FILE: 55-17-077 C-101X
JUB PROJ. #: 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 7/31/2019

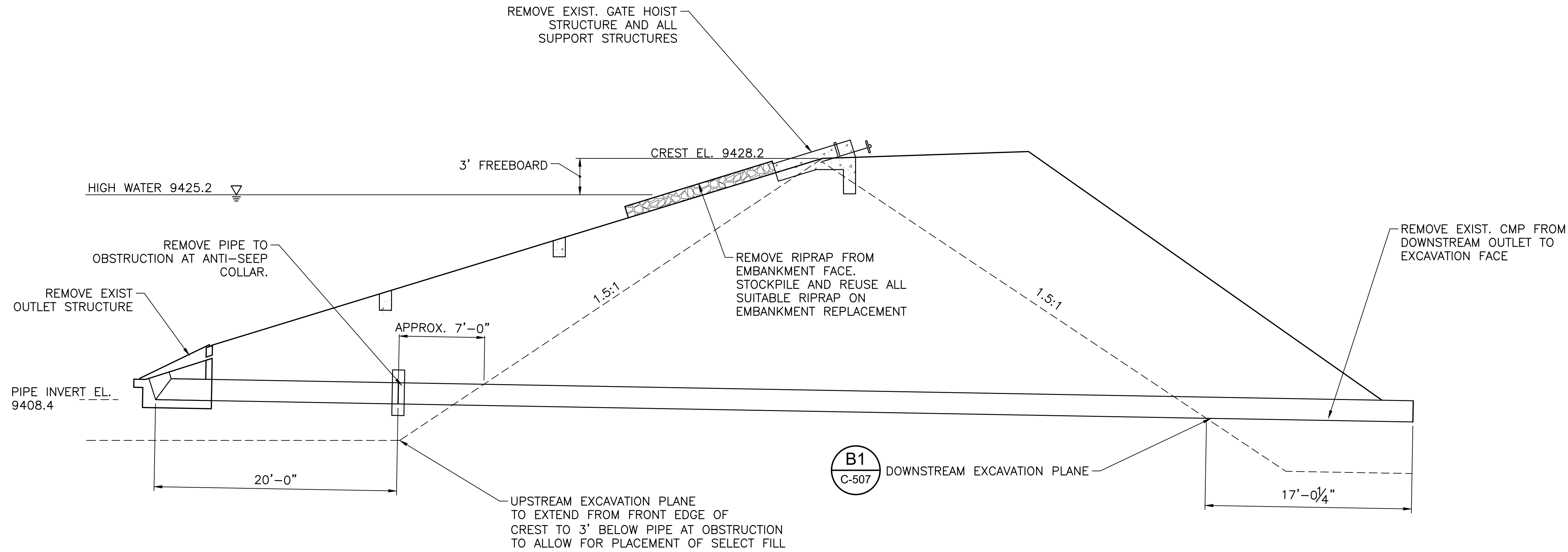
SHEET 4 OF 12
TITLE C-101



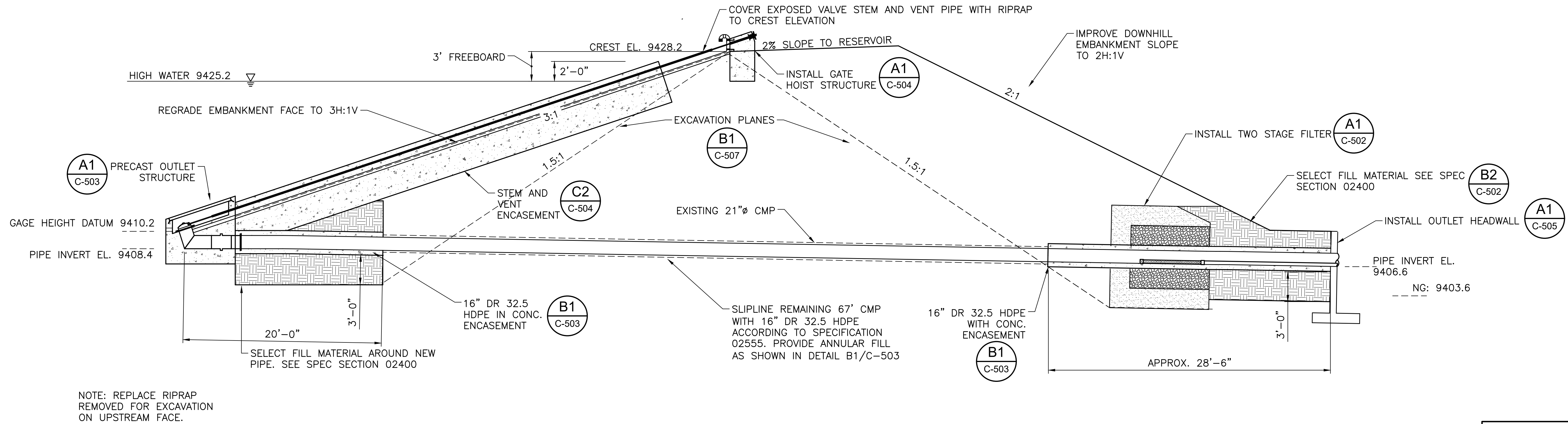
NOTES:

- UTILIZE EMBANKMENT FILL (MATERIAL DESCRIPTION IN SPEC. SECTION 02400) FOR ALL DOWNSTREAM EMBANKMENT SLOPE IMPROVEMENTS.
- RE-GRADE DAM CREST TO 2% SLOPE TOWARD RESERVOIR AS REQ'D (NOT-SHOWN). TOP WITH 12" COMPACTED ROADBASE.
- GRADING AROUND OUTLET PIPE SHOWN IN DETAIL B1/C-501
- RESTORE RIPRAP ON EXCAVATED UPSTREAM FACE. SEE SPEC 02371 FOR MATERIAL SPEC.

File Date: 7/31/2019 1:02 PM Plotted By: Nicholas Emmertdiner
Date Created: 7/30/2019 10:11 PALISADE-GROUNDCOVER PROJECT SUBDISTRICT PARK WATER CONSERVANCY DISTRICT FISH CREEK #2 CAD SHEET CIVIL 55-17-077 C-501X.DWG



A1 OUTLET REHABILITATION PREPARATION CROSS-SECTION



B1 PROPOSED CROSS-SECTION OF DAM THROUGH OUTLET PIPE



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com

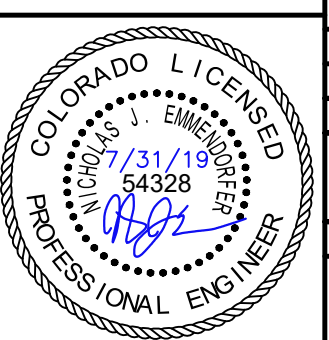
CONSTRUCTION

SET

REUSE OF DRAWINGS		REVISION		BY		DATE	
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FISH CREEK #2 OUTLET REHABILITATION
CIMARRON CANAL AND RESERVOIR COMPANY

OVERVIEW DETAILS



FILE: 55-17-077 C-501X
JUB PROJ. #: 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG

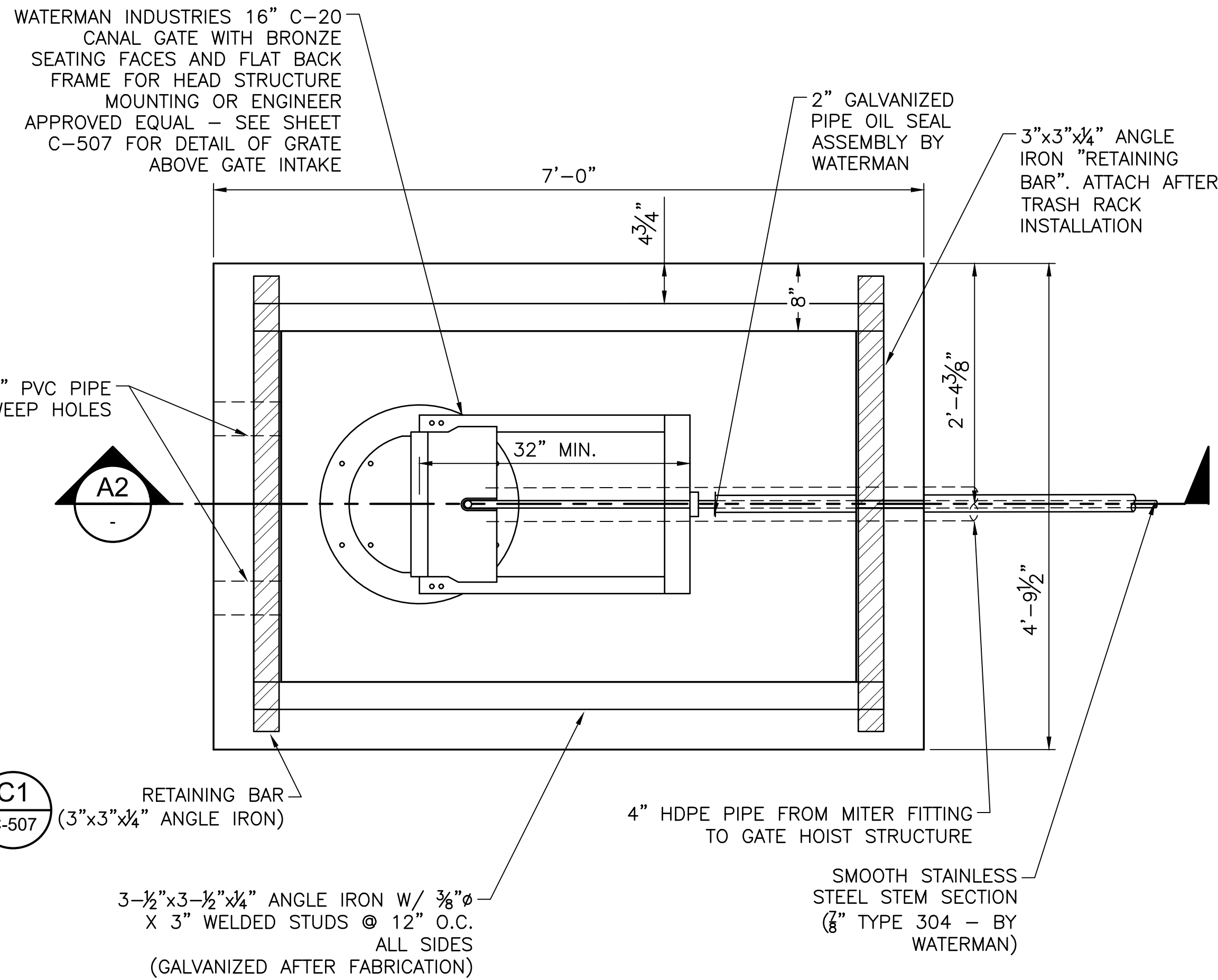
LAST UPDATED: 7/31/2019

SHEET 6 OF 12

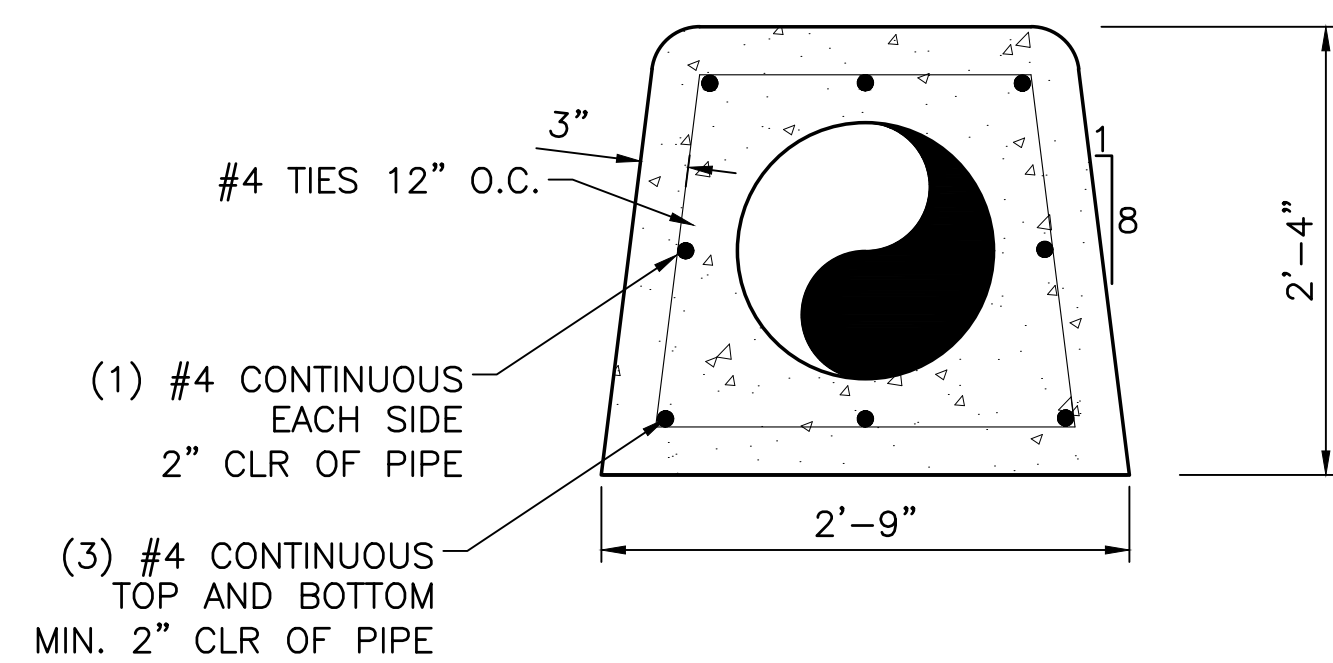
TITLE C-501

FILE NUMBER: C-1750A

File Date: 7/31/2019 1:04 PM Plotted By: Nicholas Emmert
Date Created: 7/31/2019 1:04 PM Plotted By: Nicholas Emmert
Project: 181-PALISADE-GRAVEL PROJECT SUBMITTAL SHEET CIVIL SHEET 12 OF 12 C-503.DWG

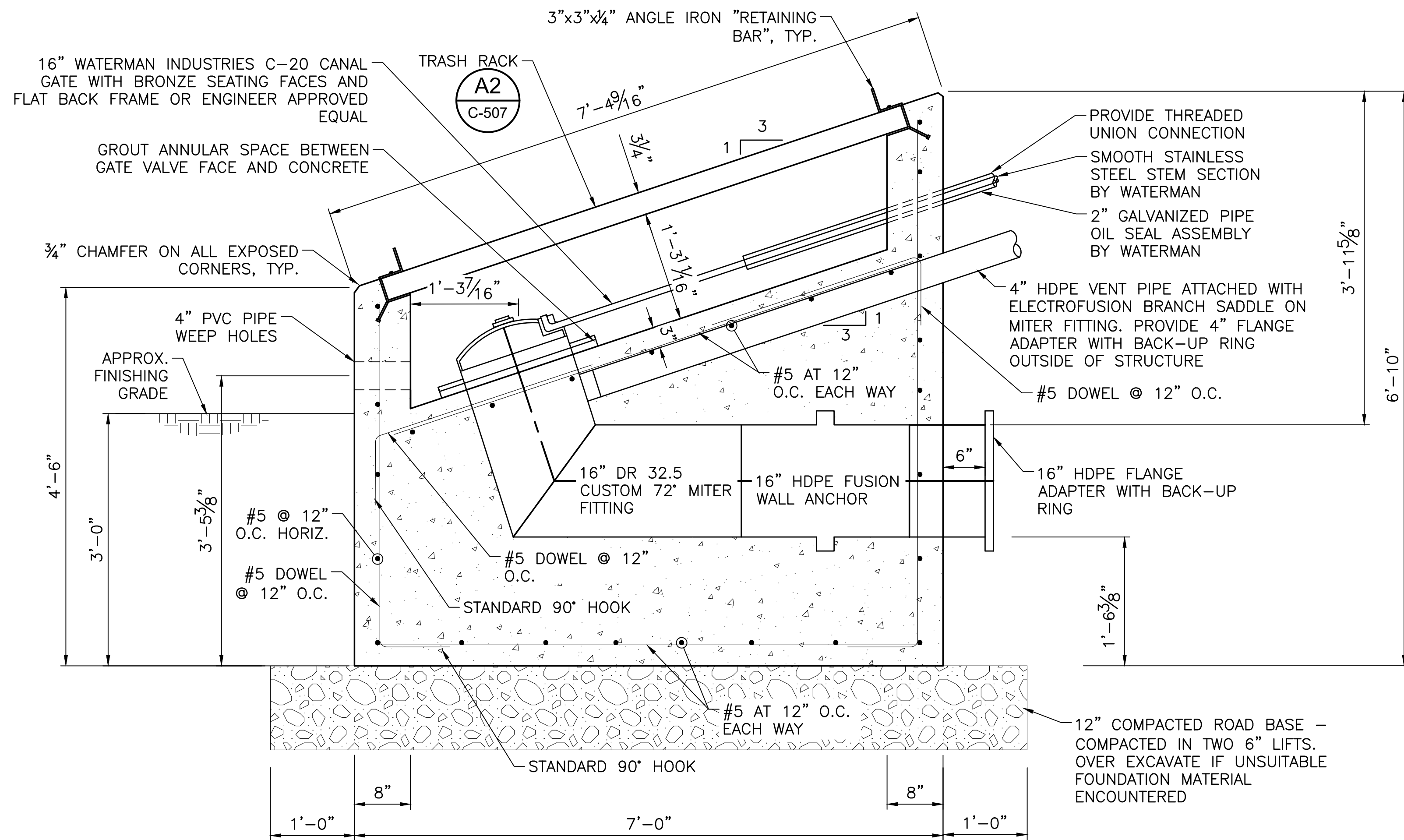


A1 PRECAST OUTLET STRUCTURE



NOTE:
CONCRETE ENCASEMENT MUST BE PLACED ON
NEWLY-COMPACTED SELECT FILL AND THEN
BACKFILLED. (NOT "TRENCHED" INTO SELECT FILL.)

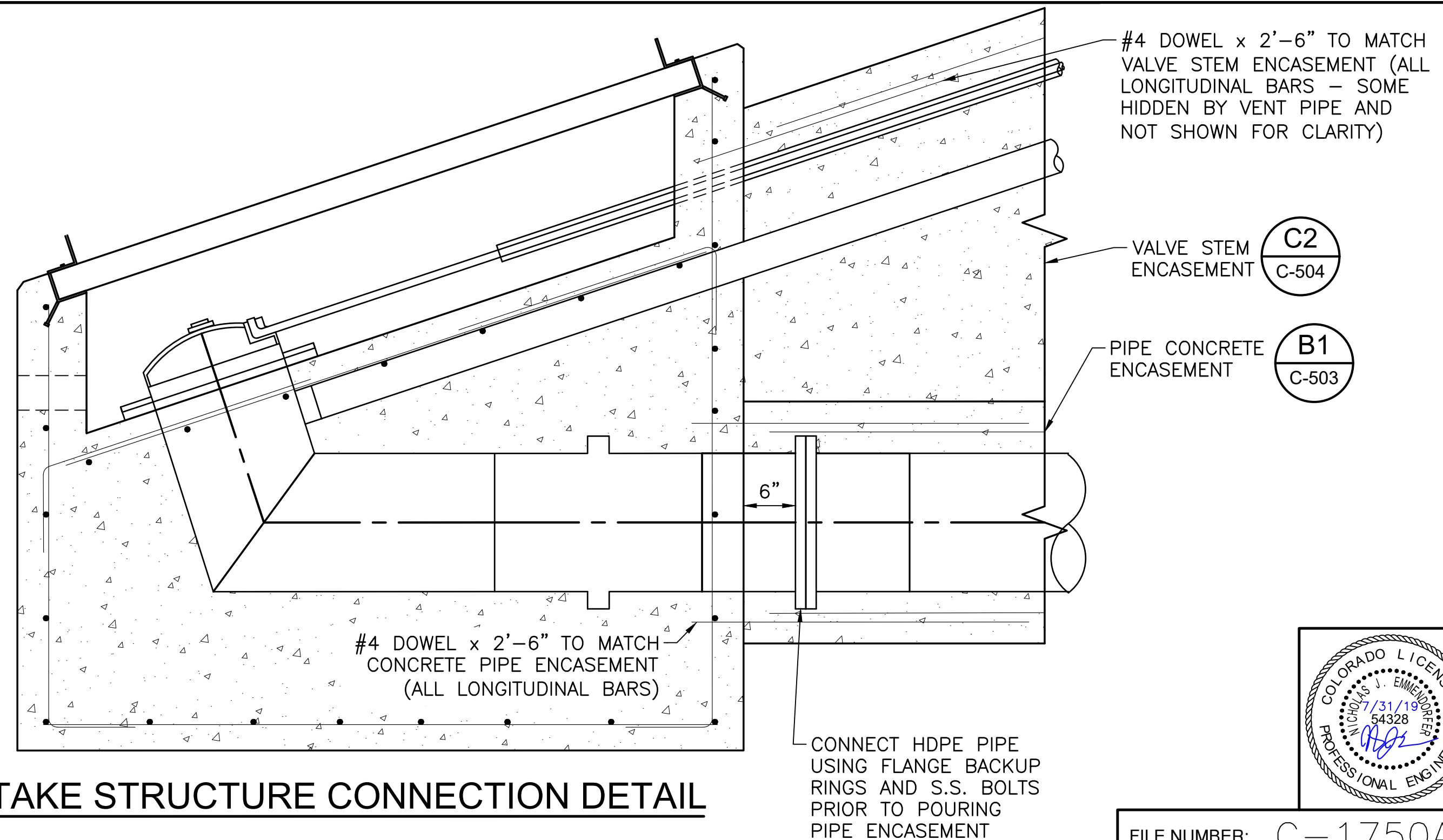
B1 CONCRETE ENCASEMENT



NOTES:
- REBAR DIMENSIONS PROVIDED ARE SUITABLE FOR BOTH CAST-IN-PLACE AND PRECAST CONCRETE. MANUFACTURER MAY SUBMIT ALTERNATIVE PRECAST DESIGN IN ACCORDANCE WITH PARAGRAPH 1.3 OF SECTION 3400 IN THE PROJECT SPECIFICATIONS.
- ALL REBAR TO BE 3" CLEAR ON ALL EXTERIOR INTERFACES. 2" CLEAR MIN. ON ALL INTERIOR INTERFACES
- SEE DETAIL A1/C-507 (SHEET 12) FOR REBAR AT PIPE PENETRATION

A2 PRECAST OUTLET STRUCTURE

NOTES:
- SOME DETAILS REMOVED FOR CLARITY
- DRILL AND EPOXY 6" OF #4 BAR INTO PRECAST STRUCTURE IN LINE WITH ALL LONGITUDINAL BARS IN ENCASEMENTS PRIOR TO POURING CONCRETE FOR ENCASEMENTS.
- EPOXY SHALL BE HILTI HIT-RE 500 V3 OR ENGINEER APPROVED EQUIVALENT
- MAKE ALL CONNECTION FOR OUTLET PIPE, VENT PIPE, AND VALVE STEM PRIOR TO POURING ENCASEMENTS



B2 PRECAST INTAKE STRUCTURE CONNECTION DETAIL



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com

CONSTRUCTION

SET

NO.	REVISION	DESCRIPTION	BY	DATE

FISH CREEK #2 OUTLET REHABILITATION
CIMARRON CANAL AND RESERVOIR COMPANY

FILE: 55-17-077 C-801X
JUB PROJ. #: 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG

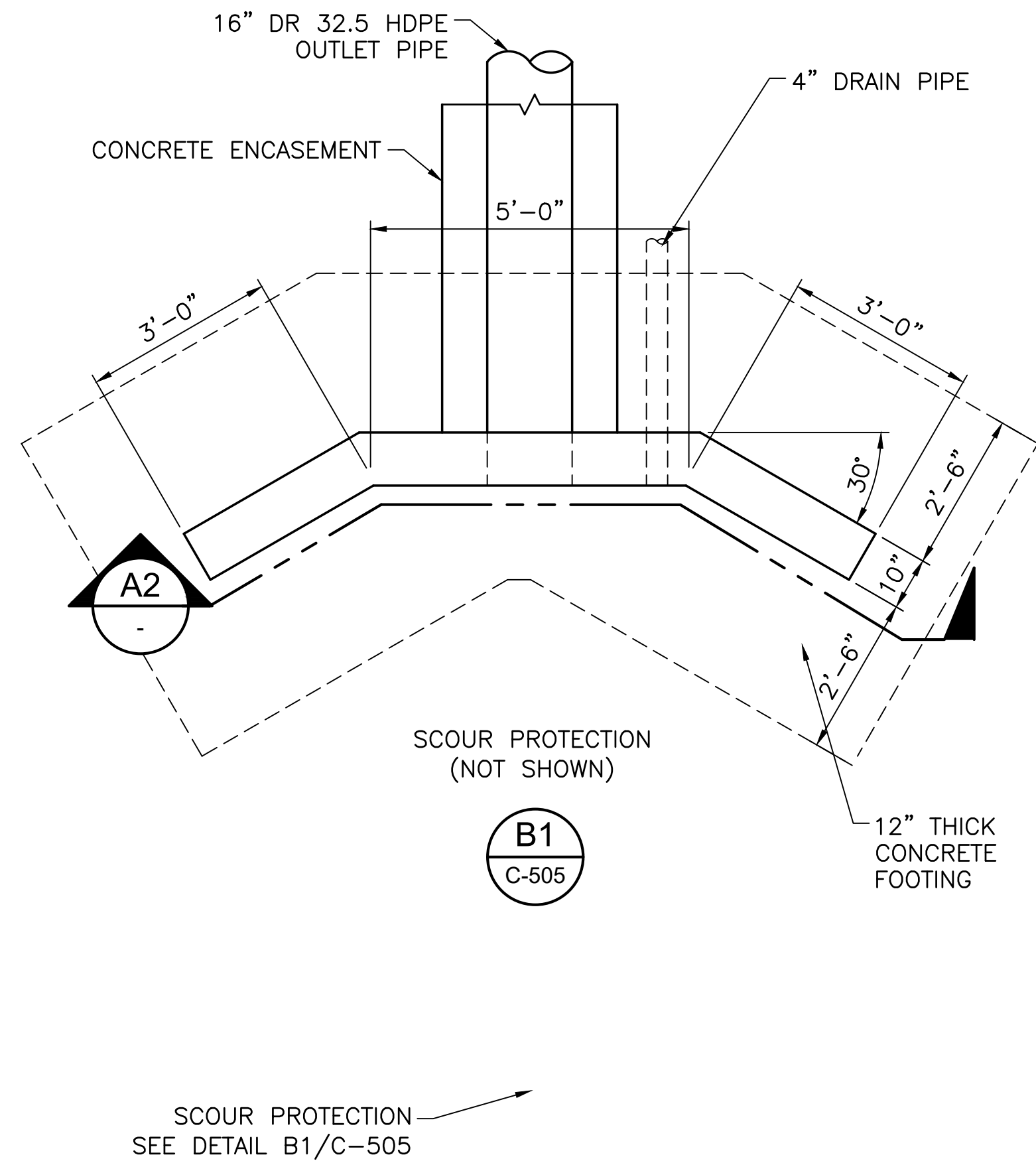
LAST UPDATED: 7/31/2019

SHEET 8 OF 12

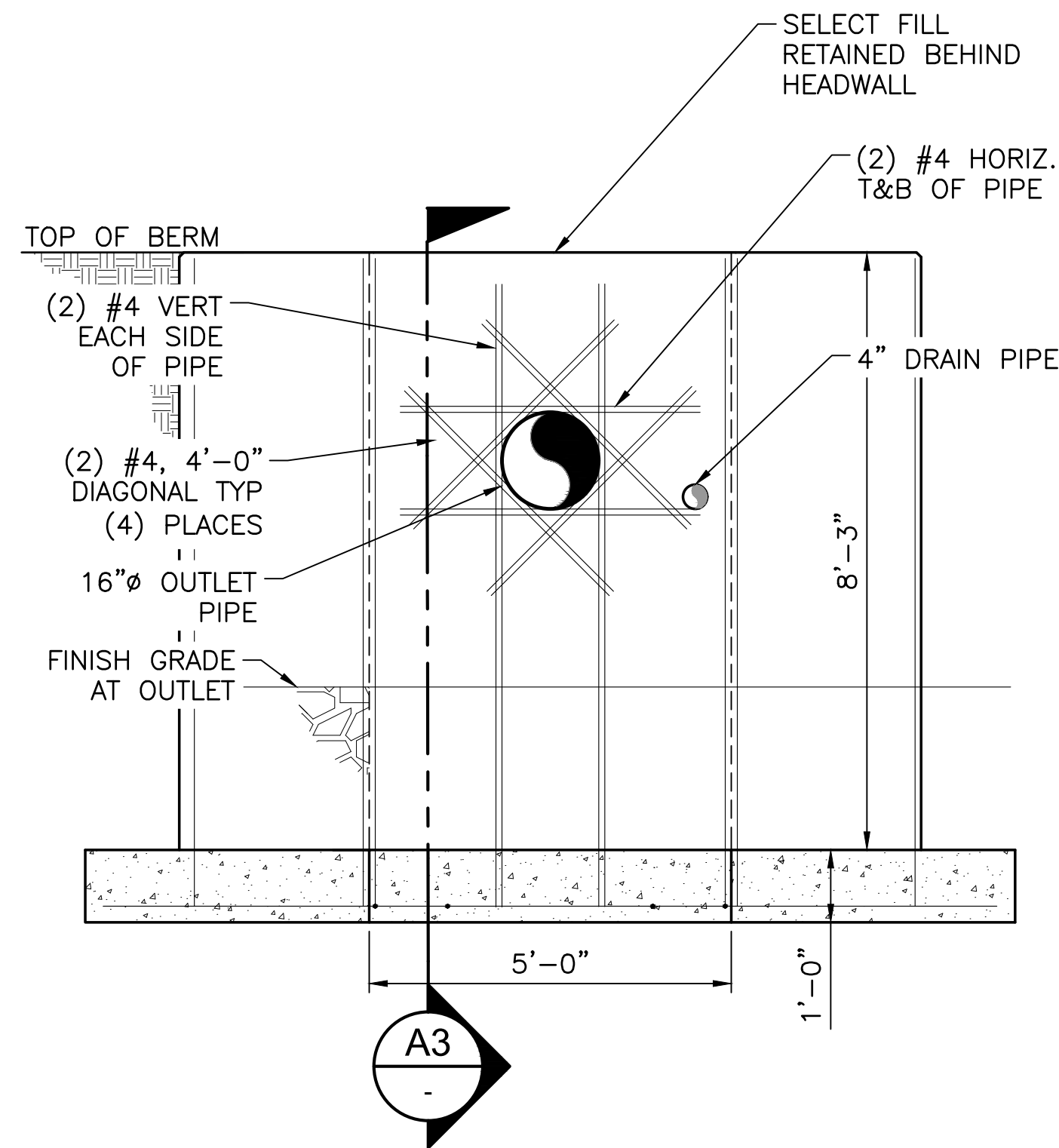
TITLE C-503

FILE NUMBER: C-1750A

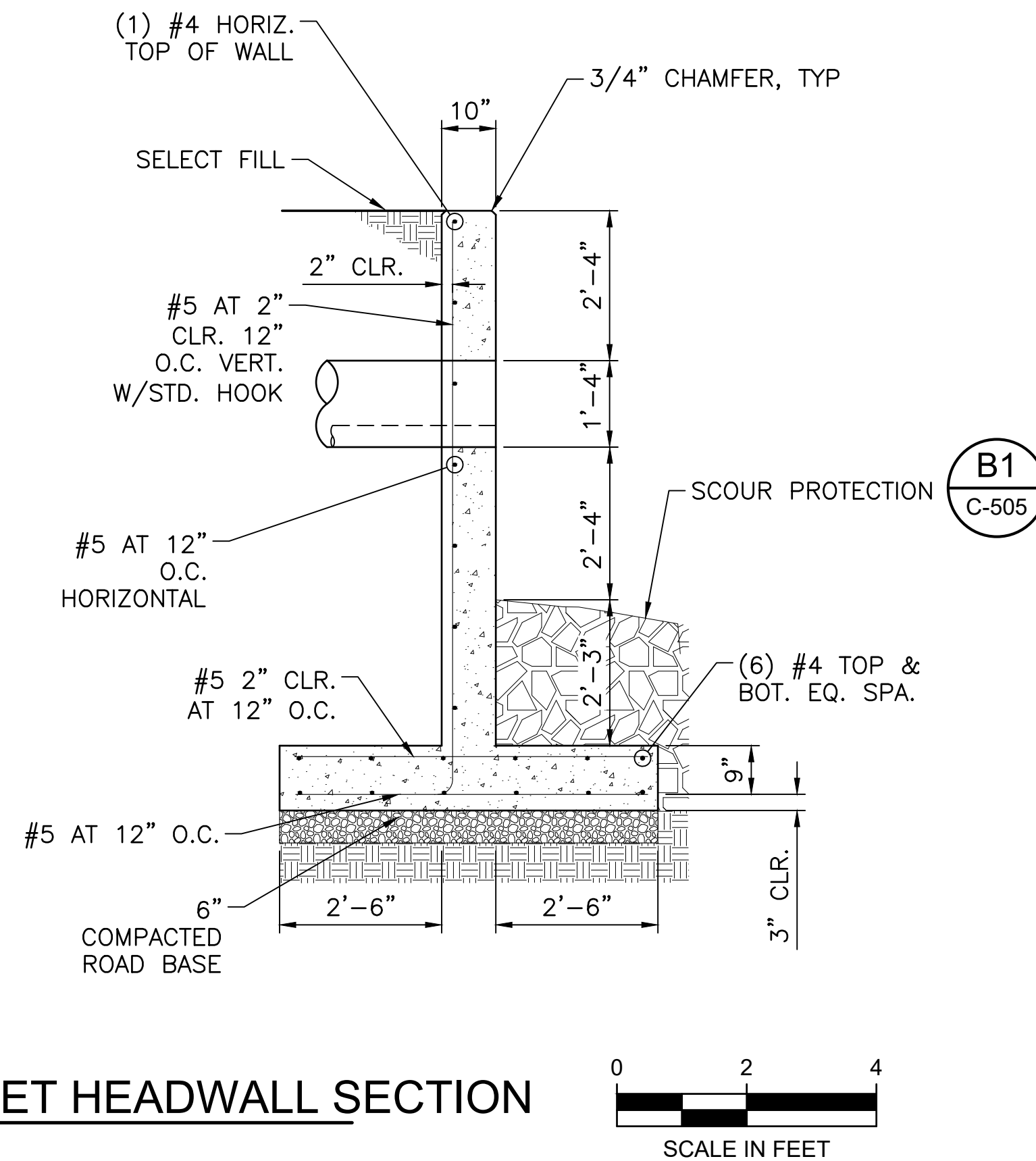
File Date: 7/31/2019 1:04 PM Plotted By: Nicholas Emmendorfer
Date Created: 7/30/2019 10:11 PALISADE-GPUB-PROJECTS\SUBS\STWICK PARK WATER CONSERVANCY DISTRICT FISH CREEK #2 CAD SHEET CIVIL\55-17-077 C-501X.DWG



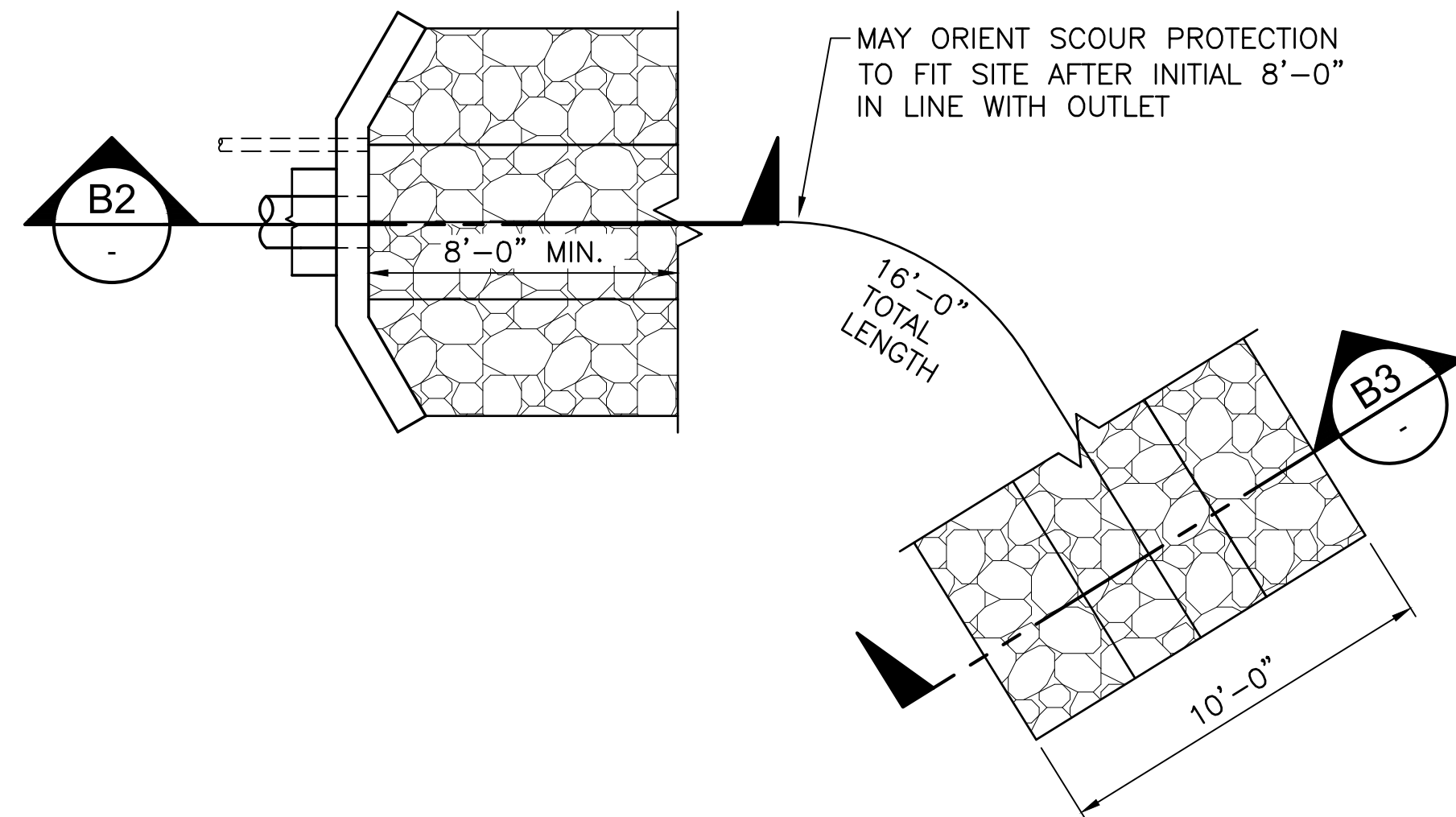
A1 OUTLET HEADWALL



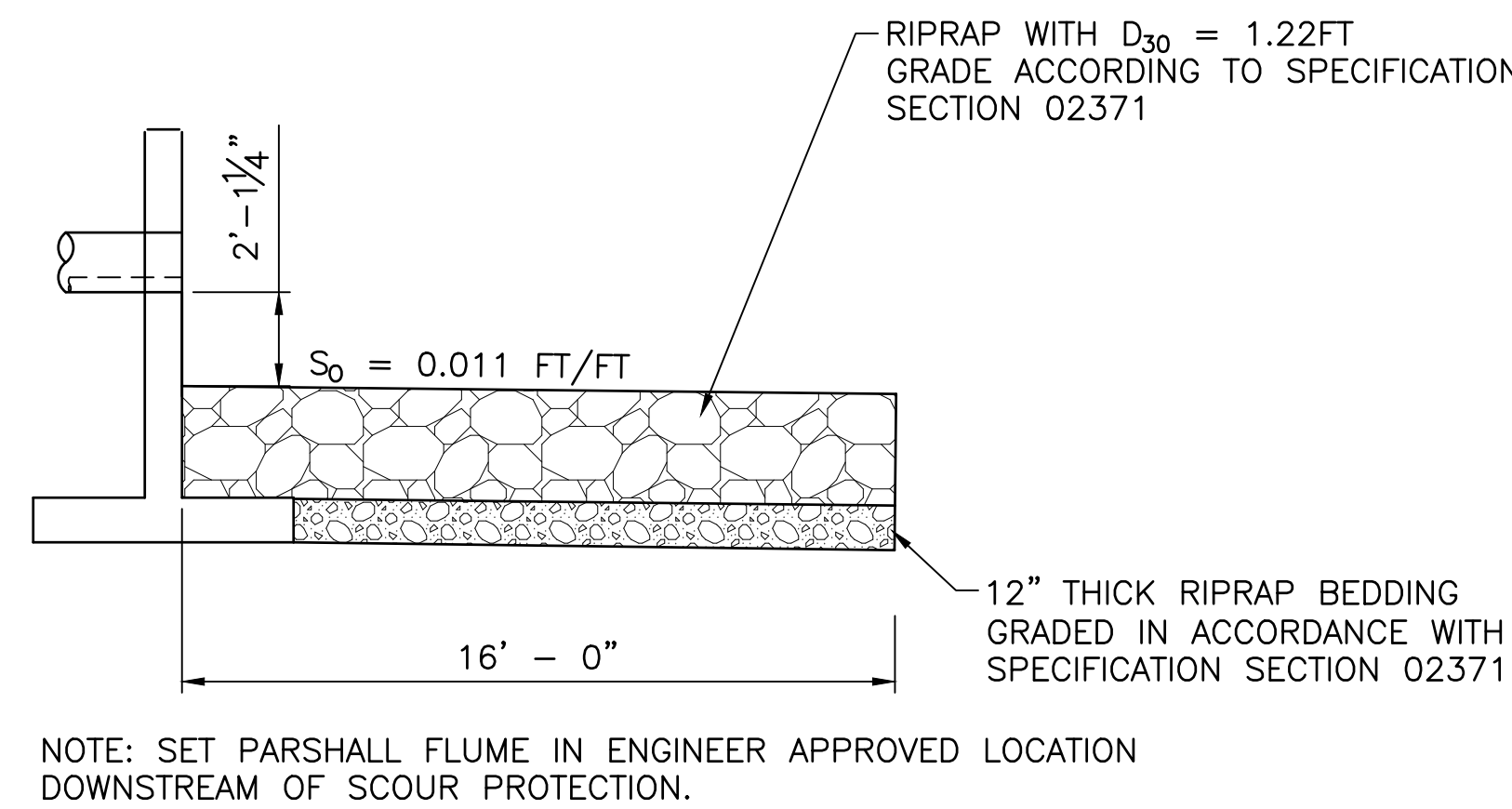
A2 OUTLET HEADWALL ELEVATION



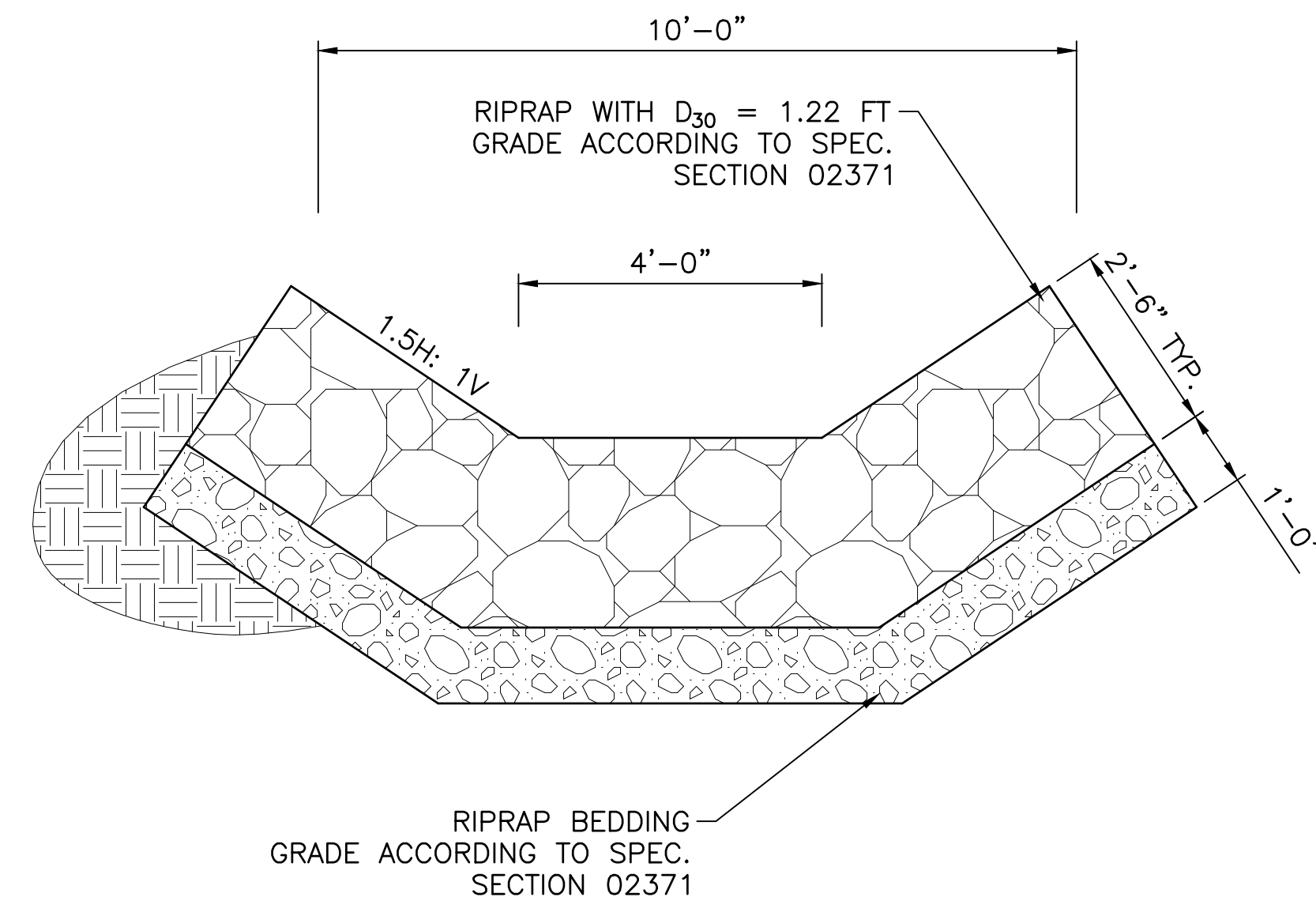
OUTLET HEADWALL SECTION



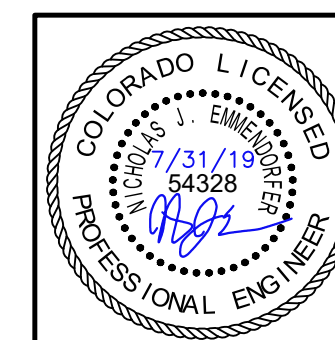
B1 OUTLET SCOUR PROTECTION - PLAN



B2 OUTLET SCOUR PROTECTION - PROFILE



B3 SCOUR PROTECTION - X-SEC



FILE NUMBER: C-1750A



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305 S. Main Street
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		BY	APR

FISH CREEK #2 OUTLET REHABILITATION
CIMARRON CANAL AND RESERVOIR COMPANY
OUTLET AND SCOUR PROTECTION DETAILS

FILE: 55-17-077 C-501X
JUB PROJ. #: 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG

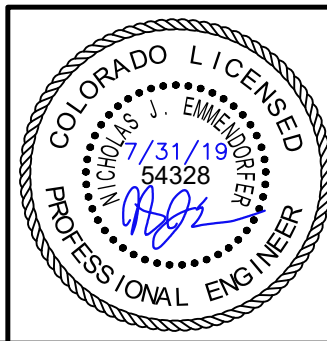
LAST UPDATED: 7/31/2019

SHEET 10 OF 12

TITLE C-505

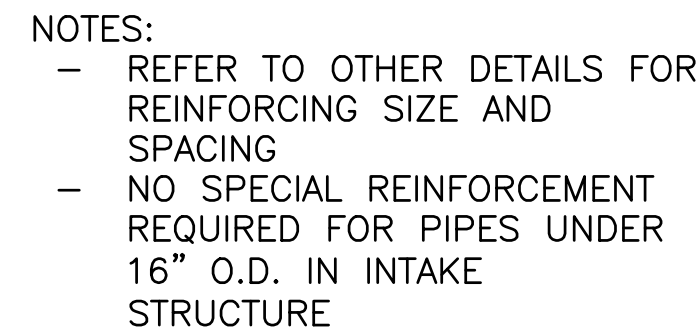


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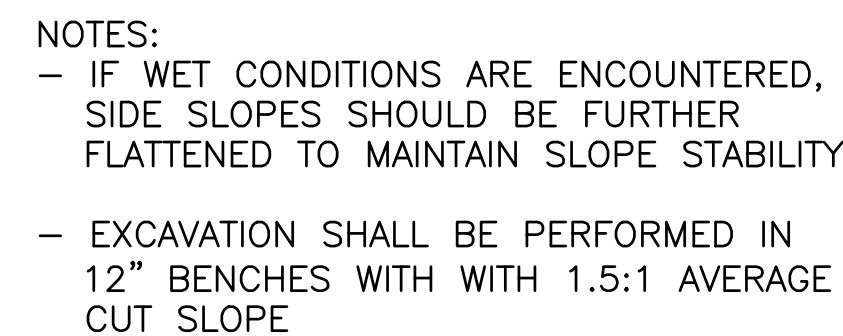
SCALE:N.T.S.

FILE : 55-17-077_C-501X
JUB PROJ. # : 55-17-077
DRAWN BY: NJE
DESIGN BY: NJE
CHECKED BY: LDG



0 1 2

SCALE IN FEET

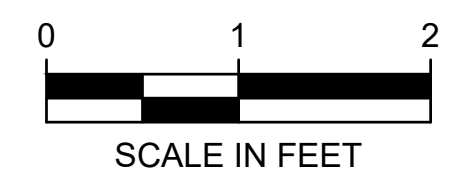


1/2" S.S. BOLT 1-1/2" FROM EDGE OF
STEEL. DRILL AND EPOXY AT 4"
EMBEDMENT USING HILTI HIT-RE 500
V3 OR ENGINEER APPROVED EQUIV.



NOTE:

- SET TRASH RACK PRIOR TO INSTALLING RETAINING BAR



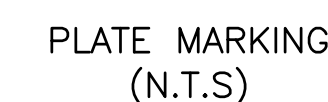
1/2" S.S. BOLT 1" FROM EDGE OF STEEL
@ 2.0' O.C.. DRILL AND EPOXY AT 4"
EMBEDMENT USING HILTI HIT-RE 500
V3 OR ENGINEER APPROVED EQUIV.

WELD GRADATION MARKS
ON TOP SURFACE OF
ANGLE IRON AS
SPECIFIED BELOW



MARKING AND SETTING GAGE:

- ANGLE IRON (GAUGE PLATE) SHALL BE AFFIXED TO SIDE OF VALVE STEM ENCASEMENT AS SHOWN ABOVE
- (GAUGE PLATE) SHALL BE SURVEYED UPON COMPLETION OF UPSTREAM FACE IMPROVEMENTS IN REFERENCE TO THE PIPE INVERT AT THE FACE OF THE PRECAST OUTLET STRUCTURE. SEE "GAGE HEIGHT DATUM" ON DETAIL B1/C-501
- GRADATION INDICATIONS SHALL BE COMPLETED WITH WELD MARKS AT AT 0.1' INCREMENTS
- 1.0' (MAJOR) INCREMENTS SHALL BE MARKED WITH A LINE ACROSS THE FULL WIDTH OF THE GAUGE PLATE WITH THE NUMBER WRITTEN DIRECTLY ABOVE THE LINE USING WELD MARKING
- 0.1' (MINOR) INCREMENTS SHALL BE MARKED WITH A LINE HALFWAY ACROSS THE GAUGE PLATE. NO NUMBER SHALL BE WRITTEN FOR MINOR INCREMENTS
- MARKINGS SHALL NOT EXTEND MORE THAN 1.0' BEYOND SPILLWAY CREST ELEVATION





Fish Creek #2



Legend

County

Location



Notes

14.17 0 7.09 14.17 Miles

1: 449,028



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Date Prepared: 1/31/2020 9:37:31 AM