NORTH PLATTE BASIN ROUNDTABLE

Wm. Kent Crowder, Chair
P.O. Box 1019
Walden, Colorado 80480

FAX (970) 723-4706
(970) 723-4660

March 13, 2013

Mr. Greg Johnson
Colorado Water Conservation Board
Water Supply Planning Section
WSRA Application
1580 Logan Street, Suite 200
Denver, CO 80203

Re: Water Supply Reserve Account Grant Application for the Mutual Ditch Check/Wastegate Structure for Water Control - $41,940.00 Basin Account WSRA Funds

Dear Mr. Johnson:

This letter is to advise you that the WSRA grant application for $41,940.00 in Basin Account funds for the Mutual Ditch Project - Structure for Water Control (Check/Wastegate) was reviewed by the North Platte Basin Roundtable (NPBRT) during its March 12, 2013 meeting, and was evaluated utilizing the NPBRT Water Supply Reserve Account Grant Evaluation Criteria. During this meeting of the North Platte Basin Roundtable, ten voting members of the NPBRT voted to approve the project and the requested WSRA funding and one voting member, Blaine Evans, abstained from voting because he is one of the owners of water right in the Mutual Ditch and will be a direct beneficiary of the project. A minority report is not required because there were no dissenting votes.

The NPBRT has identified the development of the full allocation of irrigated acres in the North Platte Basin allowed under the equitable apportionment Supreme Court Decree and the Three States Agreement as a very high priority consumptive need. This project will provide funding to replace an old deteriorated check/wastegate structure that no longer has the ability to effectively protect the Mutual Ditch from damage and wash out. A new structure will play and essential role in regulating and controlling the water level in the Mutual Ditch, by serving as an emergency check/wastegate during periods of high flows. This important water control structure will improve irrigation water management and benefit all uses associated with the Mutual Ditch water. The Mutual Ditch provides irrigation water to five different landowners in the western part of the county and provides water to irrigate approximately 4,900 acres of hay and pasture land. In addition to irrigating the highly valuable hayland, the irrigation ditches below the structure create extremely valuable irrigation induced wetlands and riparian areas that provide habitat for many species of big game, waterfowl and upland birds, including the Greater Sage Grouse.

Please feel free to call me with any questions that you may have regarding the North Platte Basin Roundtable meeting or our level of support for this project.

Sincerely,

Wm. Kent Crowder

Wm. Kent Crowder, Chair
North Platte Basin Roundtable

cc: Greg Ray

COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Mutual Ditch – Structure For Water Control

Name of Water Activity/Project

Greg Ray

Name of Applicant

North Platte Basin Roundtable

Approving Basin Roundtable(s)
(If multiple basins specify amounts in parentheses.)

Amount from Statewide Account:	**$0.00**
Amount from Basin Account(s):	**$41,940.00**
Total WSRA Funds Requested:	**$41,940.00**

Application Content

Required Exhibits and Additional Exhibits

A. Statement of Work, Budget, and Schedule
B. Project Map
C. Photos
D. Water Rights
E. NRCS Standards and Specifications - #587 Structure for Water Control
F. NRCS Approved Design
G. Operation & Maintenance Agreement

Appendices – Reference Material

1. Program Information
2. Insurance Requirements
3. WSRA Standard Contract Information (Required for Projects Over $100,000)
4. W-9 Form (Required for All Projects Prior to Contracting)

Instructions

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCB). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCB staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCB website at: http://cwcb.state.co.us Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Greg Johnson – WSRA Application
Colorado Water Conservation Board
1580 Logan Street, Suite 200
Denver, CO 80203
gregory.johnson@state.co.us

If you have questions or need additional assistance, please contact Greg Johnson at: 303-866-3441 x3249 or gregory.johnson@state.co.us.

Water Supply Reserve Account – Application Form
Revised December 2011

Part I. - Description of the Applicant (Project Sponsor or Owner);

1.	Applicant Name(s):	**Greg Ray**		
	Mailing address:	21536 Colorado Highway 14 Walden, Colorado 80480		
	Taxpayer ID#:	———————		
	Primary Contact:	Greg Ray	Position/Title:	Ditch Representative
	Email:	gjrayranch@aol.com		
	Phone Numbers:	Cell: 970-846-4901	Office:	970-723-8383
	Alternate Contact:	Blaine Evans	Position/Title:	Alternate Contact
	Email:	n/a		
	Phone Numbers:	Cell: n/a	Office:	970-723-4927

2. Eligible entities for WSRA funds include the following. What type of entity is the Applicant?

[ ] Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.

[ ] Public (Districts) – authorities, Title 32/special districts, (conservancy, conservation, and irrigation districts), and water activity enterprises.

[ ] Private Incorporated – mutual ditch companies, homeowners associations, corporations.

[x] Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.

[ ] Non-governmental organizations – broadly defined as any organization that is not part of the government.

3. Provide a brief description of your organization

The Mutual Ditch point of diversion is located in the NW1/4,NW1/4,SW1/4 of section 6, Township 6 North, Range 80 West, 6pm. (Reference: Attachment 5. Project Location Map). The ditch is utilized and maintained by five water owners (Kohlmans O.K. LP, Evans Cattle Co., Grizzly Ranch, Felch & Nichols, and James Elliot Estate) and irrigates over 4,500 acres of hay and pasture land in the western part of Jackson County.

The ditch was originally constructed in 1888, by Elias, Andrew and Grace Peterson, James Taylor and John B. and James C. Riach, to carry 100 cubic feet per second (cfs) of water, from the point of diversion on the Big Grizzly Creek to the irrigated lands lying thereunder. An additional 10 feet of water was appropriated in 1947 for livestock water use, but was not adjudicated until 1988 to the Earnest Blain Shawver Residuary Trust, Kohlmans (a partnership), Wamsley Cattle Company, 4900 Inc and Levis Ranch. This application for right was amended twice, once in October of 1988 and again in May of 1989 to change the applicants from the Earnest Blain Shawver Residuary Trust, Kohlmans (a partnership), Wamsley Cattle Company, 4900 Inc and Levis Ranch to the Earnest Blain Shawver Residuary Trust, Kohlmans (a partnership), Wamsley Cattle Company, 4900 Inc and Jack Reuer and back again to the Earnest Blain Shawver Residuary Trust, Kohlmans (a partnership), Wamsley Cattle Company, 4900 Inc and Levis Ranch. The ditch was enlarged around 1963 to carry an additional 40 cfs to be used for irrigation as well as some livestock and domestic water use. The right was adjudicated in 1970 to E.B. Shawver, Wamsley Cattle Company, 4900 INC., Kohlmans INC. and Peterson-Sevison INC. An addition 8 cfs was adjudicated in 2005 by the Kohlman O.K. LP to be used for livestock water.

The total water right for the Mutual Ditch as it exists today is 158 cfs. The rights are split between five water right holders: Evans Cattle Co., Kohlmans O.K. LP, Grizzly Land LLC, Felch & Nichols and the James Elliot Estate.

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

n/a

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

[x] The Applicant will be able to contract with the CWCB using the Standard Contract

[ ] The Applicant has reviewed the standard contract and has some questions/issues/concerns. Please be aware that any deviation from the standard contract could result in a significant delay between

grant approval and the funds being available.

6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

   n/a The Mutual Ditch – Structure For Water Control Project Applicant is not an entity.

Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

	Nonconsumptive (Environmental or Recreational)
X	Agricultural
	Municipal/Industrial
	Needs Assessment
	Education
	Other Explain:

2. If you feel this project addresses multiple purposes please explain.

   Installation of the Structure for Water Control addresses both consumptive and non-consumptive needs in a cost effective, collaborative way. The Mutual Ditch provides irrigation water to five different landowners in the western part of the county, which irrigate over 4,900 acres of hay and pasture land. In addition to irrigating the highly valuable hayland, some water is also allocated for livestock and domestic use. The irrigation ditches below the structure create extremely valuable irrigation induced wetlands and riparian areas that provide habitat for many species of big game, waterfowl and upland birds, including the Greater Sage Grouse.

3. Is this project primarily a study or implementation of a water activity/project? (Please check only one)

	Study	X	Implementation

4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)
	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
	Length of Pipe/Canal Built or Improved (linear feet)
	Efficiency Savings (acre-feet/year OR dollars/year – **circle one**)
	Area of Restored or Preserved Habitat (acres)
x	Other -- Explain: Structure for Water Control (maintenance of existing CFS use and rights)

4. To help us map WSRA projects please include a map (Exhibit B) and provide the general coordinates below:

Latitude: 40degrees 31’45.78” N Longitude: 106 degrees 25’8.82” W

5. Please provide an overview/summary of the proposed water activity (no more than one page). Include a description of the overall water activity and specifically what the WSRA funding will be used for. A full **Statement of Work** with a detailed budget and schedule is required as **Exhibit A** of this application.

The Mutual Ditch water right holder’s propose to replace an old, concrete, deteriorated check/wastegate structure located approximately 4,900 feet downstream from the existing headgate structure on Big Grizzly Creek. The existing structure was built in the fall of 1949 and is now in poor functioning condition and can no longer effectively and efficiently regulate and control water levels.

The check/wastegate structure plays an essential role in regulating and controlling the water level in the Mutual Ditch, by serving as an emergency check/wastegate during periods of high flows. At the location where Anderson Draw and the Mutual Ditch intersect, the ditch is inundated with water. Prior to the installation of the check/wastegate in 1949, the Mutual Ditch washed out numerous times at the intersection. Without the capability to divert/waste the excess water from Anderson Draw back into the

Grizzly creek drainage, the ditch runs the risk of failing once again.

A new structure will allow the user's to effectively and efficiently manage the amount water in the Mutual Ditch during seasonal irrigation flows, as well as provide an emergency check/wastegate, at the Anderson Draw location, during periods of high and flood water conditions. The installation of the structure will improve the level of water control, thus improving irrigation water management and benefit to all uses associated with the Mutual Ditch water.

Installation of the Structure for Water Control addresses both consumptive and non-consumptive needs in a cost effective, collaborative way. The Mutual Ditch provides irrigation water to five different landowners in the western part of the county, which irrigate over 4,900 acres of hay and pasture land. In addition to irrigating the highly valuable hayland, some water is also allocated for livestock and domestic use. The irrigation ditches below the structure create extremely valuable irrigation induced wetlands and riparian areas that provide habitat for many species of big game, waterfowl and upland birds, including the Greater Sage Grouse.

The water right holder's of the Mutual Ditch have received technical and engineering assistance through the Natural Resources Conservation Service (NRCS) for the survey and design of the proposed structure.

Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

   a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.[1]

   The applicant and the project are both eligible under the criteria as outlined in "Threshold Criteria (a.)". Implementation of this project will not harm, nor adversely affect any other appropriations, but will in fact improve the water holder's and commissioner's abilities to better manage the water rights and flows associated with the Mutual Ditch.

   b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRTs evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

   *** Reference: the attached letter submitted by the North Platte Basin Roundtable Chairman.

   c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] The Basin

[1] 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair, limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.

[2] 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

*** Reference: the attached letter submitted by the North Platte Basin Roundtable Chairman.

d) Matching Requirement: For requests from the **Statewide Fund**, the applicants is required to demonstrate a **20 percent** (or greater) match of the request from the Statewide Account. Statewide requests must also include a minimum match of **5 percent** of the total grant amount from Basin Funds. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the application was submitted to the CWCB. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

2. For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

This application is not for State-wide funds.

Evaluation Criteria – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three "tiers" or categories. Each "tier" is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

Tier 1: Promoting Collaboration/Cooperation and Meeting Water Management Goals and Identified Water Needs

a. The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).
b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.
c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

Tier 2: Facilitating Water Activity Implementation

d. Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).
e. The amount of matching funds provided by the applicant via direct contributions, demonstrable in-kind contributions, and/or other sources demonstrates a significant & appropriate commitment to the project.

Tier 3: The Water Activity Addresses Other Issues of Statewide Value and Maximizes Benefits

f. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs.
g. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.
h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.
i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.
j. The water activity is complimentary to or assists in the implementation of other CWCB programs.

Continued: Explanation of how the water activity/project meets all applicable **Evaluation Criteria**.
Please attach additional pages as necessary.

This application is not for State-wide funds.

Part IV. – Required Supporting Material

1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

The Mutual Ditch water right holder's currently hold a total right of 158 cubic feet per second (cfs) of water in the Big Grizzly Creek. The majority of the water is for irrigation purposes, with smaller amounts utilized for livestock and domestic water.

Water Rights are as follows:

100 cfs – adjudicated in 1902 as original (appropriated in 1888): irrigation
40 cfs – adjudicated in 1970 as supplemental (appropriated in 1963): irrigation, stock, Domestic
10 cfs – adjudicated in 1988 as supplemental (appropriated in 1947): stock
8 cfs – adjudicated in 2005 as supplemental (appropriated in 2005): stock

The Mutual Ditch check/wastegate structure for water control is located on the land owned by

Fuller family; and measures shall be taken to assure that the implementation of this project will not harm nor adversely affect any appropriations, but will in fact improve the water user's and commissioner's abilities to better manage the water rights and flows associated with the Mutual Ditch.

2. Please provide a brief narrative of any related studies or permitting issues.

n/a

3. Statement of Work, Detailed Budget, and Project Schedule

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement**. All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

Please provide a detailed statement of work using the template in Exhibit A. Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

Statement of Work

WATER ACTIVITY NAME – Mutual Ditch - Structure for Water Control Project

GRANT RECIPIENT – Greg Ray

FUNDING SOURCE – WSRA: North Platte Basin Roundtable Allocation

INTRODUCTION AND BACKGROUND:

The Mutual Ditch water right holder's propose to replace an old, concrete, deteriorated check/wastegate structure located approximately 4,900 feet downstream from the existing headgate structure on Big Grizzly Creek. The existing structure was built in the fall of 1949 and is now in poor functioning condition and can no longer effectively and efficiently regulate and control water levels.

The check/wastegate structure plays an essential role in regulating and controlling the water level in the Mutual Ditch, by serving as an emergency check/wastegate during periods of high flows. At the location where Anderson Draw and the Mutual Ditch intersect, the ditch is inundated with water. Prior to the installation of the check/wastegate in 1949, the Mutual Ditch washed out numerous times at the intersection. Without the capability to divert/waste the excess water from Anderson Draw back into the Grizzly creek drainage, the ditch runs the risk of failing once again.

A new structure will allow the user's to effectively and efficiently manage the amount water in the Mutual Ditch during seasonal irrigation flows, as well as provide an emergency check/wastegate, at the Anderson Draw location, during periods of high and flood water conditions. The installation of the structure will improve the level of water control, thus improving irrigation water management and benefit to all uses associated with the Mutual Ditch water.

Installation of the Structure for Water Control addresses both consumptive and non-consumptive needs in a cost effective, collaborative way. The Mutual Ditch provides irrigation water to five different landowners in the western part of the county, which irrigate over 4,900 acres of hay and pasture land. In addition to irrigating the highly valuable hayland, some water is also allocated for livestock and domestic use. The

irrigation ditches below the structure create extremely valuable irrigation induced wetlands and riparian areas that provide habitat for many species of big game, waterfowl and upland birds, including the Greater Sage Grouse.

The water right holder's of the Mutual Ditch have received technical and engineering assistance through the Natural Resources Conservation Service (NRCS) for the survey and design of the proposed structure (Reference: Attachment 6. NRCS Structure Design). NRCS will continue to provide technical support throughout the construction, installation, revegetation, and maintenance phases of the project. The structure must meet NRCS's Standards and Specifications for Structure for Water Control #587 (Reference: Attachment 7. Standards and Specifications for #587), in order to be certified by an NRCS representative as complete and approved for payment.

The entire amount of the WSRA funds requested will be used in the actual construction, installation and reclamation of the new check/wastegate structure.

OBJECTIVES:

1. To install a Structure for Water Control (check/wastegate) that will efficiently and effectively control the amount of water in the Mutual Ditch, and provide an emergency spillway/wastegate during periods of high water.
2. To provide the water users and commissioner with a better means of controlling and administering the water rights and flows associated with the Mutual Ditch.

TASKS:

TASK 1 – Determination of Project Need and Feasibility (COMPLETED)

Description of Task – Determine the need and feasibility of installing a new Structure for Water Control in the Mutual Ditch

Method/Procedure – Site visit: Mutual Ditch representative and NRCS personnel

- ✓ Assess the current condition of the existing structure and consider the need, feasibility and cost of installing a new structure.

Deliverable – Project was determined to be needed and feasible

TASK 2 – Engineering Survey and Design (COMPLETED)

Description of Task - Perform the on-site engineering survey and design a Structure for Water Control.

Method/Procedure - Follow-up visit: NRCS staff

- ✓ an engineering survey will be performed

Deliverable – An engineering plan, draft structure design and copies of NRCS's Standards and Specifications were provided to the company contact. Reference: the attached NRCS Structure for Water Control design

TASK 3 – Project Construction and Installation

Description of Task – The planned Structure for Water Control shall be installed

Method/Procedure – On site: Contractor (NRCS staff and contact person when needed)

- ✓ the structure shall be constructed/installed

Deliverable – A functioning Structure for Water Control

TASK 4 – Reclamation and Reseeding of Disturbed Area

Description of Task – The area disturbed by the installation of the Structure for Water Control shall be reclaimed and reseeded.

Method/Procedure – On site: Contractor and/or Water Right Owner

- ✓ the disturbed area shall be reclaimed and reseeded

Deliverable – A completed Structure for Water Control

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion 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 Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

- ✓ ***A final report will be provided to the CWCB after the construction and installation of the project is completed.***

BUDGET

Costs		
Task	***Labor/Equipment/Materials***	***Cost***
Task 1 – Need and Feasibility	**NRCS staff: In-Kind Contribution Project Contact Person: In-Kind Contribution**	**300.00**
Task 2 – Survey and Design	**NRCS staff: In-Kind Contribution**	**2,600.00**
Task 3 – Construction and Installation	**Contractor : Concrete Check Boards Galvanized Steel Walkway Earth Fill**	**46,500.00**
Task 4 – Reclamation and Reseeding	**Land Smoothing Seed**	**100.00**
Total Costs:		**49,500.00**

Contributions	
NRCS (In- Kind Contribution):	**2,900.00**
Applicant / Water Owners Contribution (10% of monetary contribution):	**4,660.00**
WRSA Contribution:	**41,940.00**
Total Contributions:	**49,500.00**

- ***The Applicant/Landowner shall be responsible for any and all cost over-rides.***
- ***If the final project completion cost is less than the requested WRSA funds, the remaining funds will be returned to the Basin Account.***

SCHEDULE

Task	Estimated Start Date	Estimated Completion Date
1. Need and Feasibility	COMPLETED	
2. Survey and Design	COMPLETED	
3. Construction and Installation	07/01/2013	10/01/2014
4. Reclamation and Reseeding	Fall - Post Completion of the Structure 10/15/2013 – 10/15/2013	Fall - Post Completion of the Structure 10/15/2013 - 10/15/2014

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion 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 Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

- ✓ ***A final report will be provided to the CWCB after the construction and installation of the project is completed.***

PAYMENT

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

The above statements are true to the best of my knowledge:

Signature of Applicant:

Print Applicant's Name:

Project Title:

Return an electronic version (hardcopy may also be submitted) of this application to:

Greg Johnson – WSRA Application
Colorado Water Conservation Board
1580 Logan Street, Suite 200
Denver, CO 80203
gregory.johnson@state.co.us

Exhibit A.
Statement of Work, Budget, and Schedule

Statement of Work

WATER ACTIVITY NAME – Mutual Ditch - Structure for Water Control Project

GRANT RECIPIENT – Greg Ray

FUNDING SOURCE – WSRA: North Platte Basin Roundtable Allocation

INTRODUCTION AND BACKGROUND:

The Mutual Ditch water right holder's propose to replace an old, concrete, deteriorated check/wastegate structure located approximately 4,900 feet downstream from the existing headgate structure on Big Grizzly Creek. The existing structure was built in the fall of 1949 and is now in poor functioning condition and can no longer effectively and efficiently regulate and control water levels.

The check/wastegate structure plays an essential role in regulating and controlling the water level in the Mutual Ditch, by serving as an emergency check/wastegate during periods of high flows. At the location where Anderson Draw and the Mutual Ditch intersect, the ditch is inundated with water. Prior to the installation of the check/wastegate in 1949, the Mutual Ditch washed out numerous times at the intersection. Without the capability to divert/waste the excess water from Anderson Draw back into the Grizzly creek drainage, the ditch runs the risk of failing once again.

A new structure will allow the user's to effectively and efficiently manage the amount water in the Mutual Ditch during seasonal irrigation flows, as well as provide an emergency check/wastegate, at the Anderson Draw location, during periods of high and flood water conditions. The installation of the structure will improve the level of water control, thus improving irrigation water management and benefit to all uses associated with the Mutual Ditch water.

Installation of the Structure for Water Control addresses both consumptive and non-consumptive needs in a cost effective, collaborative way. The Mutual Ditch provides irrigation water to five different landowners

in the western part of the county, which irrigate over 4,900 acres of hay and pasture land. In addition to irrigating the highly valuable hayland, some water is also allocated for livestock and domestic use. The irrigation ditches below the structure create extremely valuable irrigation induced wetlands and riparian areas that provide habitat for many species of big game, waterfowl and upland birds, including the Greater Sage Grouse.

The water right holder's of the Mutual Ditch have received technical and engineering assistance through the Natural Resources Conservation Service (NRCS) for the survey and design of the proposed structure (Reference: Attachment 6. NRCS Structure Design). NRCS will continue to provide technical support throughout the construction, installation, revegetation, and maintenance phases of the project. The structure must meet NRCS's Standards and Specifications for Structure for Water Control #587 (Reference: Attachment 7. Standards and Specifications for #587), in order to be certified by an NRCS representative as complete and approved for payment.

The entire amount of the WSRA funds requested will be used in the actual construction, installation and reclamation of the new check/wastegate structure.

OBJECTIVES:

3. To install a Structure for Water Control (check/wastegate) that will efficiently and effectively control the amount of water in the Mutual Ditch, and provide an emergency spillway/wastegate during periods of high water.
4. To provide the water users and commissioner with a better means of controlling and administering the water rights and flows associated with the Mutual Ditch.

TASKS:

TASK 1 – Determination of Project Need and Feasibility (COMPLETED)

Description of Task – Determine the need and feasibility of installing a new Structure for Water Control in the Mutual Ditch

Method/Procedure – Site visit: Mutual Ditch representative and NRCS personnel

- ✓ Assess the current condition of the existing structure and consider the need, feasibility and cost of installing a new structure.

Deliverable – Project was determined to be needed and feasible

TASK 2 – Engineering Survey and Design (COMPLETED)

Description of Task - Perform the on-site engineering survey and design a Structure for Water Control.

Method/Procedure - Follow-up visit: NRCS staff

- ✓ an engineering survey will be performed

Deliverable – An engineering plan, draft structure design and copies of NRCS's Standards and Specifications were provided to the company contact. Reference: the attached NRCS Structure for Water Control design

TASK 3 – Project Construction and Installation

Description of Task – The planned Structure for Water Control shall be installed

Method/Procedure – On site: Contractor (NRCS staff and contact person when needed)

- ✓ the structure shall be constructed/installed

Deliverable – A functioning Structure for Water Control

TASK 4 – Reclamation and Reseeding of Disturbed Area

Description of Task – The area disturbed by the installation of the Structure for Water Control shall be reclaimed and reseeded.

Method/Procedure – On site: Contractor and/or Water Right Owner

- ✓ the disturbed area shall be reclaimed and reseeded

Deliverable – A completed Structure for Water Control

BUDGET

Costs		
Task	***Labor/Equipment/Materials***	***Cost***
Task 1 – Need and Feasibility	**NRCS staff: In-Kind Contribution Project Contact Person: In-Kind Contribution**	**300.00**
Task 2 – Survey and Design	**NRCS staff: In-Kind Contribution**	**2,600.00**
Task 3 – Construction and Installation	**Contractor : Concrete Check Boards Galvanized Steel Walkway Earth Fill**	**46,500.00**
Task 4 – Reclamation and Reseeding	**Land Smoothing Seed**	**100.00**
Total Costs:		**49,500.00**

Contributions	
NRCS (In- Kind Contribution):	**2,900.00**
Applicant / Water Owners Contribution (10% of monetary contribution):	**4,660.00**
WRSA Contribution:	**41,940.00**
Total Contributions:	**49,500.00**

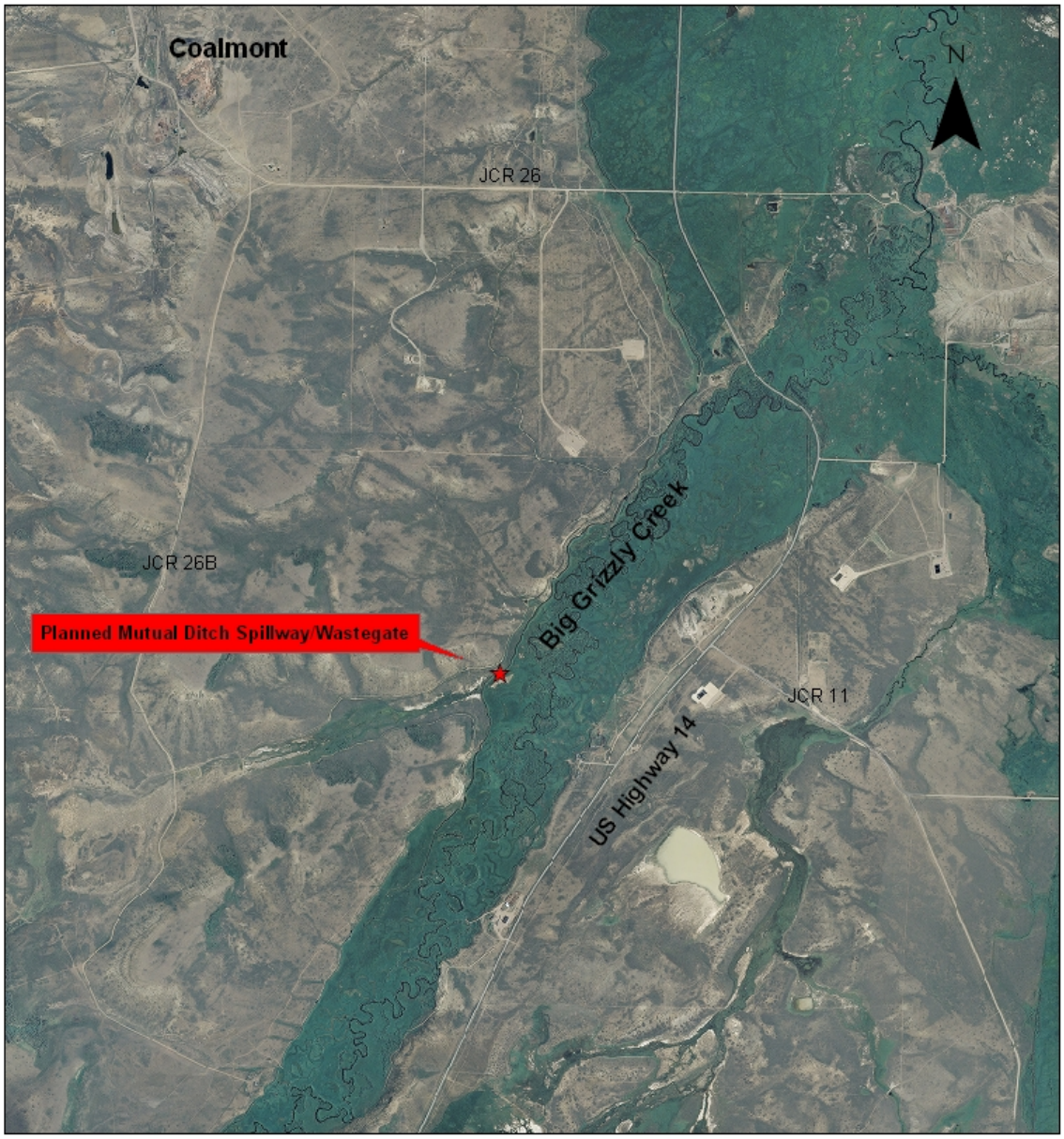
- ***The Applicant/Landowner shall be responsible for any and all cost over-rides.***
- ***If the final project completion cost is less than the requested WRSA funds, the remaining funds will be returned to the Basin Account.***

SCHEDULE

Task	Estimated Start Date	Estimated Completion Date
1. Need and Feasibility	COMPLETED	
2. Survey and Design	COMPLETED	
3. Construction and Installation	07/01/2013	10/01/2014
4. Reclamation and Reseeding	Fall - Post Completion of the Structure 10/15/2013 – 10/15/2014	Fall - Post Completion of the Structure 10/15/2013 - 10/15/2014

Exhibit B.
Project Map

Mutual Ditch - Structure For Water Control Location Map



Location of Planned Spillway/Wastegate Structure for Water Control:
Township 7 North
Range 80 West
Section: 6 (SE1/4, SW1/4 of 6)

Miles
0 0.2 0.4 0.8 1.2 1.6

Exhibit C.
Photos

Photo of existing check/wastegate structure in Mutual Ditch

Existing Check/Wastegate Structure (check section)

Existing Check/Wastegate Structure (waste section

Exhibit D.
Water Rights

Structure Name: **MUTUAL DITCH** ***WDID :*** **470078**

Source: BIG GRIZZLY CK @ Mile 69.9
Location:

Q10	Q40	Q160	Section	Twnshp		Range		PM	*CIU:* A
	NW	SW	6	6	N	80	W	S	

Distance from section lines: *From N/S line:* *From E/W line:*
UTM Coordinates (NAD 83): *Northing (UTM y):* 4486218.0 *Easting (UTM x):* 379320.0 *GPS*
Latitude/Longitude (decimal degrees): 40.5179 -106.4246
Measuring Device/Recorder: 8 FT PF METAL

NOTE - DWR is not required to track ownership. This data is provided for assistance only and may not reflect actual ownership.

Name: **EVANS CATTLE CO (EVANS, BLAINE)** **Association Type: OWNER**

Address(s):

Type	Address	City	State	ZIP	Country	Primary
Home	3605 JCR 26	COALMONT	CO	80430	UNITED STATES	

Name: **KOHLMANS O.K. LP (KOHLMAN, OLEY)** **Association Type: OWNER**

Address(s):

Type	Address	City	State	ZIP	Country	Primary
Other	GREG RAY (CONTACT)	WALDEN	CO		UNITED STATES	

Contact Number(s):

Type	Country Code	Phone Number	Extension	Primary
HOME	US	(970) 723-8383		

Name: **GRIZZLY LAND, LLC (SHINER, KIRK)** **Association Type: OWNER**

Address(s):

Type	Address	City	State	ZIP	Country	Primary
Home	33420 ANTELOPE ROAD	MC COY	CO	80463	UNITED STATES	
Other	1601 PELICAN LAKES PT.	WINDSOR	CO	80550	UNITED STATES	

Contact Number(s):

Type	Country Code	Phone Number	Extension	Primary
HOME	US	(970) 723-4444		

Name: **FELCH & NICHOLS** **Association Type: OWNER**

Address(s):

Type	Address	City	State	ZIP	Country	Primary
Other		WALDEN	CO	80480	UNITED STATES	

Name: **STEPHENS, RAY (TRUST)** **Association Type: OWNER**

Address(s):

Type	Address	City	State	ZIP	Country	Primary
Other		WALDEN	CO	80480	UNITED STATES	

Name: **ELLIOT, JAMES** **Association Type: OWNER**

Water Rights Summary

Total Decreed Rate(s):	*Abs.:*	158.0000	*Cond.:*	0.0000	*AP/EX abs:*	0.0000	*AP/EX cond:*	0.0000
Total Decreed Volume(s):	*Abs.:*		*Cond.:*		*AP/EX abs:*		*AP/EX cond:*	

Ownership

Priority	Owner	Amount/Shares	Comments
		14.66 CFS	36.66% owner W0048-70
	ELLIOT, JAMES	3.23 CFS	8.08% owner W0048-70
77	ELLIOT, JAMES	8.08 CFS	8.08 % owner
	ELLIOT, JAMES	0.81 CFS	8.08% owner 88CW0116
77	EVANS CATTLE CO (EVANS,	17.5 CFS	17.5% owner; JCR Book 171, Page 53
	EVANS CATTLE CO (EVANS,	7 CFS	17.5% owner; JCR Book 171, Page 53 W0048-70
	EVANS CATTLE CO (EVANS,	1.75 CFS	17.5% owner; JCR Book 171, Page 53 88CW0116

Water Supply Reserve Account – Application Form
Revised December 2011

Structure Name: **MUTUAL DITCH** ***WDID :*** **470078**

Ownership

Priority	Owner	Amount/Shares	Comments
	FELCH & NICHOLS	1.4 CFS	3.5% owner; JCR Book 172, Page 133 W0048-70
77	FELCH & NICHOLS	3.5 CFS	3.5% owner; JCR Book 172, Page 133
	FELCH & NICHOLS	0.35 CFS	3.5% owner; JCR Book 172, Page 133 88CW0116
	GRIZZLY LAND, LLC (SHINER,	0.92 CFS	9.17% owner: JCR Book 182, Page 224 88CW0116
	GRIZZLY LAND, LLC (SHINER,	3.67 CFS	9.17% owner; JCR Book 182, Page 224 W0048-70
	GRIZZLY LAND, LLC (SHINER,	1.11 CFS	11.09% owner 88CW0116
77	GRIZZLY LAND, LLC (SHINER,	11.09 CFS	11.09 % owner
77	GRIZZLY LAND, LLC (SHINER,	9.17 CFS	9.17 % owner; JCR Book 182, Page 224
	GRIZZLY LAND, LLC (SHINER,	4.44 CFS	11.09% owner W0048-70
77	KOHLMANS O.K. LP (KOHLMAN,	36.66 CFS	36.66 % owner
	KOHLMANS O.K. LP (KOHLMAN,	3.67 CFS	36.66% owner 88CW0116
	STEPHENS, RAY (TRUST)	1.1 CFS	10.5% owner, JCR Book 180, Page 664 88CW0116
	STEPHENS, RAY (TRUST)	4.2 CFS	10.5% owner; JCR Book 180, Page 664 W0048-70
77	STEPHENS, RAY (TRUST)	10.5 CFS	10.5% owner; JCR Book 180, Page 664

The Ray Stephens (Trust)rights have been transferred to the Evans Cattle Company

Water Rights – Transactions

Seq. #	Case Number	Adjudication Date	Appropriation	Admin. Number	O #	Priority Number	Max Rate (CFS)	Total Vol (AF)	Adj. Type	Uses	Comments
1	CA1523	4/23/1902	8/29/1888	14121.00000	0	0	100		O	1	
2	W0048-70	12/31/1970	8/15/1963	43829.41499	0	0	40		S	189	
3	88CW0116	12/31/1988	7/31/1947	50403.35640	0	0	10		S	9	
4	05CW0042	12/31/2005	5/28/2005	56761.00000	0	0	8		S	9	Diversions can be made from 4/15-5/31 for 1 7 day period

Exhibit E.
NRCS's Standards & Specifications #587 for Structure for Water Control

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

STRUCTURE FOR WATER CONTROL

(No.)

CODE 587

DEFINITION

A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water.

PURPOSE

The practice may be applied as a management component of a water management system to control the stage, discharge, distribution, delivery or direction of water flow.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies wherever a permanent structure is needed as an integral part of a water-control system to serve one or more of the following functions:

- Convey water from one elevation to a lower elevation within, to or from a water conveyance system such as a ditch, channel, canal or pipeline designed to operate under open channel conditions. Typical structures: drops, chutes, turnouts, surface water inlets, head gates, pump boxes and stilling basins.
- Control the elevation of water in drainage or irrigation ditches. Typical structures: checks, flashboard risers and check dams.
- Control the division or measurement of irrigation water. Typical structures: division boxes and water measurement devices.
- Keep trash, debris or weed seeds from entering pipelines. Typical structure: debris screen.
- Control the direction of channel flow resulting from tides and high water or back-flow from flooding. Typical structures: tide and water management gates.
- Control the water table level, remove surface or subsurface water from adjoining land, flood land for frost protection or manage water levels for wildlife or recreation. Typical structures: water level control structures, flashboard risers, pipe drop inlets and box inlets.
- Convey water over, under or along a ditch, canal, road, railroad or other barriers. Typical structures: bridges, culverts, flumes, inverted siphons and long span pipes.
- Modify water flow to provide habitat for fish, wildlife and other aquatic animals. Typical structures: chutes, cold water release structures and flashboard risers.
- Provide silt management in ditches or canals. Typical structure: sluice.
- Supplement a resource management system on land where organic waste or commercial fertilizer is applied.
- Create, restore or enhance wetland hydrology.

CRITERIA

General Criteria Applicable to All Purposes

Structure for water control design and construction shall comply with all applicable federal, state and local laws and regulations.

Structures shall be designed on an individual job basis, or applicable NRCS standard drawings shall be adapted, to meet site conditions and functional requirements. Designs shall be based upon site surveys, required hydraulic functions, and site soils and

foundation investigations. Structures not covered standard designs or standard drawings shall be designed in accordance with current NRCS engineering handbooks and associated technical materials.

Capacity. Irrigation structures shall have sufficient capacity to provide adequate irrigation streams to meet the peak consumptive use for the crops and method of irrigation planned. Drainage structures shall have the capacity to carry the design flow without damaging erosion or sedimentation.

Materials. Structural materials may include concrete, rock masonry, concrete blocks, wire mesh baskets (gabions), rock riprap, treated or redwood lumber (minimum 2-inch nominal dimension), metal, steel, or concrete pipe. Metal shall be provided with protective coatings as needed. The minimum requirements for sheet steel shall conform to the gage requirements as shown in Colorado Standard Structural Plan (CO-SSP) 52. Structural steel members shall a minimum yield stress of 36,000 psi. Air entrained concrete shall be used for all concrete structures.

Minimum wall thickness for concrete structures shall be five (5) inches.

All structures shall have sufficient footing, cutoff, weight, and strength to be stable against overturning, sliding, displacement, and foundation failure, based on all superimposed loads.

Wire mesh baskets (gabions) and ties shall be made of heavily galvanized steel wire. Wire mesh shall be 11 or 12 gage, and non-raveling. Opening shall not exceed 4 inches in any dimensions. Baskets shall be securely tied together at all adjacent edges, tensioned and well-filled with clean rock larger than the mesh opening. The upstream face of gabion structures shall be backed with plastic or rubber sheeting or similar material to prevent piping of small grained materials into the baskets. In easily erodible channels, apron baskets shall be at least one-half below the existing streambed, and should project at least one and one-half times the depth of anticipated scour. In easily erodible soils, a filter of geotextile fabric, gravel, or similar material shall be placed under or behind the baskets or a cutoff shall be provided. The upstream ends of the channel structures shall be well keyed into the banks.

Vegetation complying with Critical Area Planting standard (code 342) shall be established on all disturbed earth surfaces. Where soil, climate or site specific conditions preclude establishing permanent vegetation, other protective means such as mulches or gravels, shall be used.

The structure shall be fenced, if necessary, to protect the vegetation.

Structures shall not be installed that have an adverse effect on septic filter fields.

The water level upstream of water control structures shall not be raised on adjacent landowners without their permission.

CONSIDERATIONS

When planning, designing, and installing this practice, the following items should be considered:

- Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation and ground water recharge.
- Potential for a change in the rate of plant growth and transpiration because of changes in the volume of soil water.
- Effects on downstream flows or aquifers that would affect other water uses or users.
- Effects on the field water table to ensure that it will provide a suitable rooting depth for the anticipated crop.
- Potential use for irrigation management to conserve water.
- Effect of construction on aquatic life.
- Effects on stream system channel morphology and stability as it relates to erosion and the movement of sediment, solutes and sediment-attached substances carried by runoff.
- Effects on the movement of dissolved substances below the root zone and to ground water.
- Effects of field water table on salt content in the root zone.
- Short term and construction-related effects of this practice on the quality of downstream water.

- Effects of water level control on the temperatures of downstream waters and their effects on aquatic and wildlife communities.
- Effects on wetlands or water-related wildlife habitats.
- Effects on the turbidity of downstream water resources.
- Existence of cultural resources in the project area and any project impacts on such resources.
- Conservation and stabilization of archeological, historic, structural and traditional cultural properties when appropriate.

Design alternatives presented to the client should address economics, ecological concerns and acceptable level of risk for design criteria as it relates to hazards to life or property.

PLANS AND SPECIFICATIONS

Plans and specifications for installing structures for water control shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

The plan shall specify the location, grades, quantities, dimensions, materials, and hydraulic and structural requirements for the individual structure. Provisions must be made for necessary maintenance. Care must be used to protect the surrounding visual resources. If watercourse fisheries are important, special precautions or design features may be needed to facilitate continuation of fish migrations.

OPERATION AND MAINTENANCE

An operation and management plan shall be provided to and reviewed with the land manager. The plan shall be site specific and include but not be limited to the following: Structures will be checked and necessary maintenance, including removal of debris, shall be performed after major storms and at least semi-annually. Water level management and timing shall be adequately described wherever applicable.

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

587 - STRUCTURE FOR WATER CONTROL

I. SCOPE

The work will consist of installing the structure for water control and all appurtenances to the lines, grades, and elevations as shown on the drawings.

II. MATERIALS

A. Timber and Lumber. Timber and lumber shall be accurately cut and assembled to a close fit and shall have an even bearing on the entire contact surface. No open or shimmed joints will be accepted. All cuts, holes, and abrasions shall be swabbed with not less than three coats of the same preservative used in the original treatment.

B. Rock Riprap. Rock riprap shall consist of hard, durable, well graded angular to subangular rock conforming to the gradation shown on the drawings. Rock riprap and source shall be approved prior to commencement of work.

C. Metals. Unless specified otherwise, all structural steel shall have a minimum yield stress of 36,000 psi. All metal, not galvanized, stainless, aluminum, or painted by the manufacturer, shall be protected by paint, powder coating, and/or cathodic protection, or other approved coating as specified and appropriate for the exposure conditions of the metal.

D. Concrete.

1. Materials

Cement. Portland cement shall conform to the requirements of ASTM Designation C150 and shall be Type II, Type IIA, or Type V as specified for the job and shall be free of lumps and partially set masses. Approved Class C or Class F pozzolans (fly ash) may be used to replace not more than 15 percent of the cement by weight. All pozzolans shall be subject to approval by the Engineer.

Water. Shall be free from acid, alkali, oils, or organic matter.

Aggregate. Shall be clean, hard, strong and durable, free from dirt and other substances deleterious to concrete and shall conform to the requirements of ASTM C 33. Coarse aggregate shall be gravel or crushed stone and the maximum size shall be one and one half inches.

Admixtures. Air-entraining admixtures shall conform to the requirements of ASTM Specification C 260. The use of accelerators or antifreeze compounds will not be allowed.

Reinforcing Steel. Reinforcing steel shall be deformed bars conforming to the requirements of ASTM Designation A 615, A 616, or A 617. Fabricated deformed steel bar mats shall conform to ASTM Designation A 184.

Plain steel welded wire fabric reinforcement shall conform to ASTM Designation A 185. Deformed steel welded wire fabric shall conform to ASTM Designation A 497. All reinforcing shall conform to the sizes and shapes shown on the drawings.

2. Proportioning

Unless otherwise specified on the drawings, concrete shall be proportioned to provide a minimum compressive strength of 3,000 psi at 28 days. The mix will be considered to comply with this

requirement if it includes not more than six gallons of water per sack of cement, and not less than six sacks of cement per cubic yard of concrete. Air entrainment is required for all concrete structures. The air content (by volume) shall be 4 to 8 percent of the volume of the concrete. Consistency of the concrete shall allow it to be worked into place without segregation, and the slump shall be 4 inches $\pm$ 1 inch.

When ready-mixed concrete is furnished, the supplier will provide the owner a delivery ticket that shows: time of loading, quantity of materials used, including water and any admixtures and revolution counter reading at time of loading. Ready-mix suppliers shall also submit concrete cylinder test break data for the proposed mix to the Engineer or Technician for approval prior to placement of the concrete.

3. Mixing

For stationary mixers, the mixing time after all cement and aggregates are in the mixer drum shall be not less than 1-1/2 minutes. When concrete is mixed in a truck mixer, the number of revolutions of the drum or blades at mixing speed shall be not less than 70 or more than l00. Each batch shall be completely discharged before the mixer is recharged.

4. Forms

Forms and associated falsework shall conform to the shapes, lines, and dimensions as shown on the drawings. They shall be braced and/or tied together so as to maintain position and shape and be sufficiently tight to prevent leakage of mortar. Metal ties or anchorages within the forms shall be equipped with ¾ inch snap tie cones, she bolts or other devices that permit their removal to a depth of one inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones. Cone holes shall be filled with a mortar mixture, approved by the Engineer, prior to applying curing compound. All exposed corners shall be chamfered or finished with molding tools. Forms shall be thoroughly covered with a form release agent or wetted and shall be cleaned of all debris prior to placement of concrete.

5. Placement

Concrete shall not be placed until the subgrade, forms, and reinforcing steel have been inspected by the Engineer.

Concrete shall be discharged into the forms within 1-1/2 hours after the introduction of the cement to the aggregates.

Items to be embedded in the concrete shall be positioned accurately and firmly anchored to prevent displacement during placement of concrete.

All reinforcement at the time of placement shall be free from rust, oil, grease, paint or other deleterious matter. Unless noted otherwise on the drawings, reinforcing steel for single mats shall be placed in the center of the section. Double mat reinforcement shall have a minimum concrete cover of 2 inches, except, when concrete is deposited on or against the earth, the minimum concrete cover shall be 3 inches.

The concrete shall be deposited as closely as possible to its final position and shall be worked into the corners and angles of the forms and around all reinforcement and embedded items in a manner to prevent segregation of aggregates or excessive laitance. The deposition of concrete shall be regulated so that the concrete may be consolidated with a minimum of lateral movement. No concrete shall be placed upon soft or frozen foundations or in water.

Concrete shall not be dropped more than five feet vertically unless suitable equipment is used to prevent segregation.

Consolidation of concrete may be accomplished by means of internal type mechanical vibrators. Use of rodding, spading, or hand tamping for consolidation must be approved by the engineer.

6. Construction Joints

Construction joints shall be provided as shown in the drawings or as approved by the Engineer. Joints shall be thoroughly cleaned and laitance removed before a new placement is made. Each joint shall be wetted immediately before the placing of new concrete.

7. Form Removal and Finishing

After the concrete has been consolidated, the unformed surfaces shall be given a float finish.

Forms shall not be removed without the approval of the Engineer. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually.

Immediately after form removal, formed surfaces shall be cleaned of all fins and irregular projections from exposed surfaces. All defective concrete shall be removed and effectively repaired. All forming used to construct concrete structures shall be removed.

8. Protection and Curing

Concrete shall be prevented from drying for a curing period of at least seven days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period. Moisture shall be maintained by sprinkling, flooding, or fog spraying or by covering with continuously moistened canvas, burlap, cloth mats, straw, sand, or other approved material. For formed surfaces, the protection may be accomplished by leaving the forms in place and keeping them wet for the entire curing period. In lieu of water curing, the concrete shall be protected by spraying with an approved curing compound. The curing compound shall conform to ASTM Designation C 309 and shall be applied uniformly over the entire concrete surface immediately after the forms are stripped and the cone tie holes are filled. Curing compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel, and other embedded items. All surfaces shall be kept moist until the compound is applied.

The curing compound shall be applied at the rate of not less than one gallon per 175 square feet.

9. Concreting in Cold Weather

Before any concrete is placed, all ice, snow, and frost shall be completely removed from all surfaces to be in contact with the new concrete, and the temperature of these surfaces shall be raised to as close as may be practical to the temperature of the new concrete that is to be placed thereon. No concrete shall be placed on a frozen subgrade or on one that contains frozen materials.

When the atmospheric temperature may be expected to drop below 40ºF at the time concrete is placed, or at any time during the curing period, the following provisions also shall apply:

a. The temperature of the concrete at the time of placing shall not be less than 50º F nor more than 90º F. The temperature of neither aggregates nor mixing water shall be more than 100º F just prior to mixing the cement.

b. When the daily minimum temperature is less than 40º F, concrete shall be insulated or housed and heated after placement. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50º F or more than 90º F for the duration of the curing period.

c. Methods of insulating, housing, and heating the structure shall conform to "Recommended Practice for Cold Weather Concreting", ACI Standard 306.

d. The use of accelerators or antifreeze compounds will not be allowed.

e. When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40 percent shall be provided unless the concrete has been coated with a curing compound or is covered tightly with an approved impervious material.

10. Concreting in Hot Weather

When climatic or other conditions are such that the temperature of concrete may reasonably be expected to exceed 90º F at the time of placement, or during the first 24 hours after placement, the following provisions also shall apply:

The temperature of the concrete shall be maintained below 90º F during mixing, conveying, and placing. Methods used shall conform to "Recommended Practice for Hot Weather Concreting", ACI Standard 305.

In hot weather or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes, unless an approved set-retarding admixture is used.

Exposed concrete surfaces that tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying immediately after placement.

Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period, and for the entire curing period unless curing compound is applied as specified in Section 8.

If moist curing is discontinued before the end of the curing period, curing compound shall be applied immediately.

III. SITE PREPARATION

Foundation Area. The entire structure area shall be cleared of all trees, brush, roots, sod, soil containing excess amounts of organic matter and other objectionable materials and shall be disposed of at sites away from the area of work. All trees with root systems hazardous to any structure shall be removed.

Clearing and disposal methods shall be in accordance with applicable state and county laws with due regard to the safety of persons and property.

IV. EXCAVATION

Excavation for the structure shall conform to the lines, grades, and elevations shown on the drawings or as staked in the field. Unsuitable material, as shown on the drawings or as determined by the Engineer, shall be removed and backfilled with firmly compacted material. Excavated materials meeting the specified fill requirements may be used in embankments or other fill areas. Excess material shall be wasted at locations noted on the drawings or as staked in the field.

V. STRUCTURAL BACKFILL

Materials. The fill materials shall be the in place excavated materials unless otherwise stated and shown on the drawings.

Placement. The fill shall be placed so that the distribution of materials will be to the limits shown on the drawings and shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. No fill shall be placed upon a frozen surface nor shall snow, ice or frozen material be incorporated in the fill.

For concrete structures, fill shall not be placed until the end of the 7 day curing period.

The fill shall be placed in a manner adequate to prevent damage to the structure and allow the structure to gradually and uniformly assume the backfill loads. The fill shall be placed in not more than four-inch layers.

Moisture Content. The soil moisture of the fill material shall be sufficient to hold a ball shape when squeezed in the hand, unless otherwise stated and shown on the drawings.

Compaction. The fill material shall be compacted to a density equal to that of the adjacent materials. Compaction shall be accomplished by hand tampers, manually directed power tampers, plate vibrators, or other acceptable means excluding heavy equipment. Heavy equipment shall not be operated within two feet of any structure.

VI. INLET AND OUTLET APPURTENANCES.

The inlet and outlet appurtenances shall conform to materials, sizes and installation as shown on the drawings. Pipe bedding conditions and depths of cover shall be as shown on the drawings. Water control gates, when required, shall conform to the details shown on the drawings and shall be installed according to the manufacturer's recommendation.

VII. VEGETATIVE COVER

Unless otherwise specified, a protective cover of vegetation shall be established on the disturbed area. The planting of vegetative materials shall conform to the requirements of Practice Specification 342, Critical Area Planting.

VIII. SPECIAL MEASURES

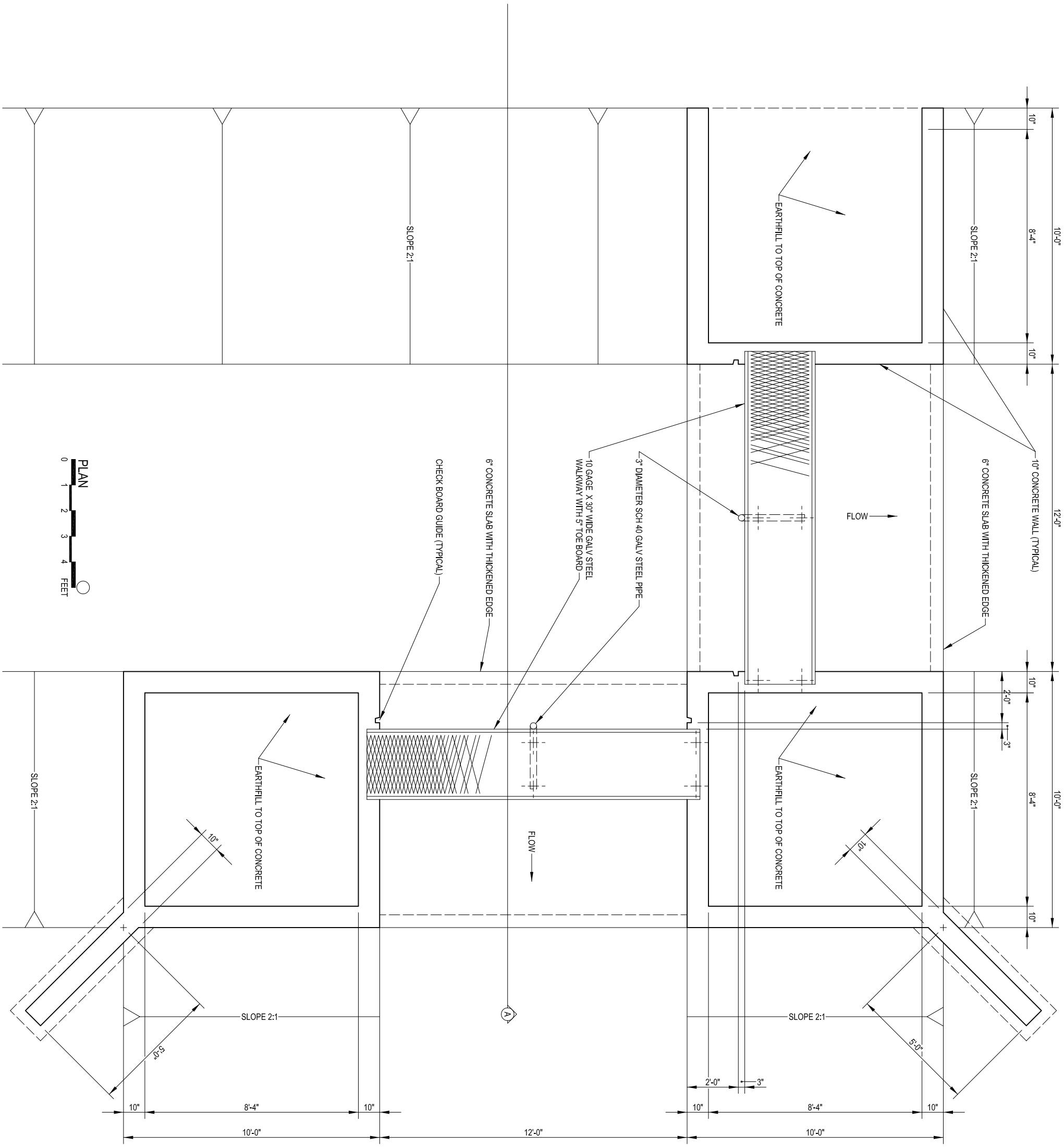
Measures and construction methods shall be incorporated as needed and practical that enhances fish and wildlife values. Special attention shall be given to protecting visual resources and maintaining key shade, food and den trees.

IX. CONSTRUCTION OPERATIONS

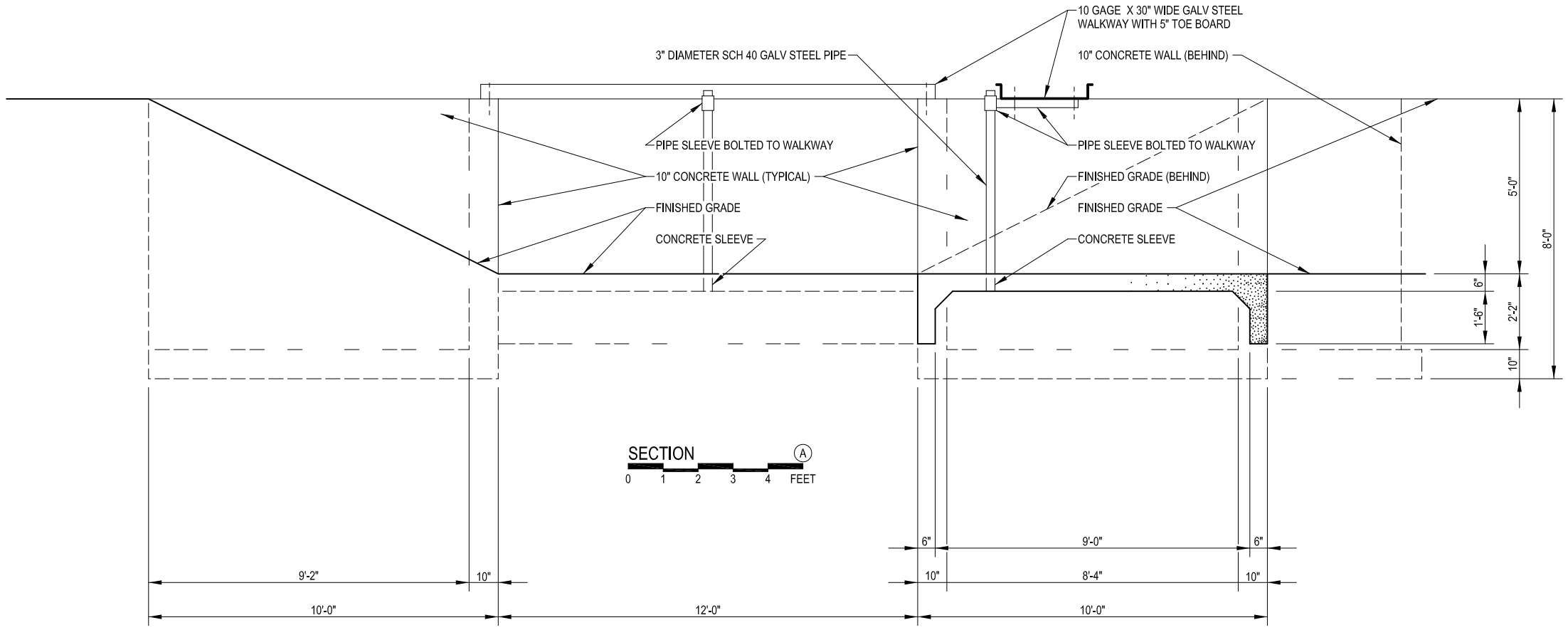
Construction operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits. The owner, operator, Contractor or other persons will conduct all work and operations in accordance with proper safety codes for the type of construction being performed with due regards to the safety of all persons and property.

The completed job shall be workmanlike and present a good appearance.

Exhibit F.
NRCS Approved Design



Sheet 2 of 3	Drawing No. XX - X - XXXX	File Name XXXXXXX	NRCS Natural Resources Conservation Service United States Department of Agriculture	ARCHITECTURAL DRAWINGS MUTUAL DITCH CHECK STRUCTURE REPLACEMENT JACKSON COUNTY	Designed Stambaugh Dec 2012 Drawn Stambaugh Dec 2012 Checked Marine XXXX Approved Andrews XXXX



		Date
Designed	Stambaugh	Dec 2011
Drawn	Stambaugh	Dec 2011
Checked	Marine	XXXX
Approved	Andrews	XXXX

ARCHITECTURAL DRAWINGS

MUTUAL DITCH CHECK STRUCTURE REPLACEMENT
JACKSON COUNTY

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File Name
XXXXXXXX

Drawing No.
XX - X -XXXX

Sheet 3 of 3

Mutual Ditch
OPERATION AND MAINTENANCE REQUIREMENTS
Check/Wastegate Structure for Water Control

PRACTICE	PRACTICE LIFESPAN
Structure for Water Control	20

OVERVIEW: *Properly maintained practices are assets to your property. Lifespans of practices can be assured and usually increased by developing and carrying out an effective operation and maintenance program.*

STRUCTURE FOR WATER CONTROL:

This structure shall be installed and maintained according to the NRCS standards and specifications for Structure For Water Control #587. The standards and specifications are included as Exhibit E.

1. Control any erosion around the structure and maintain the width, height, and side slopes of soil berms and embankments.
2. Periodically check and repair as necessary all/any valves, gates, air vents and regulators.
3. Clean all/any trash racks and screens on a regular basis.
4. Winterize system as appropriate. Drain the system and components in areas subject to freezing.
5. Check concrete surfaces for accelerated weathering, spalling, settlement, alignment or cracks. Repair any damages.
6. Re-paint painted items as necessary.
7. Clean staff gages as needed.
8. Periodically lubricate gates and other moving parts.
9. Remove accumulated sediment from structure.
10. If livestock are present, prevent access to components subject to damage.