Exhibit A

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

Exhibit A

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

Exhibit A

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.***

Exhibit A

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.***

Exhibit A

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

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- ✓ ***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.

Exhibit A

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

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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.

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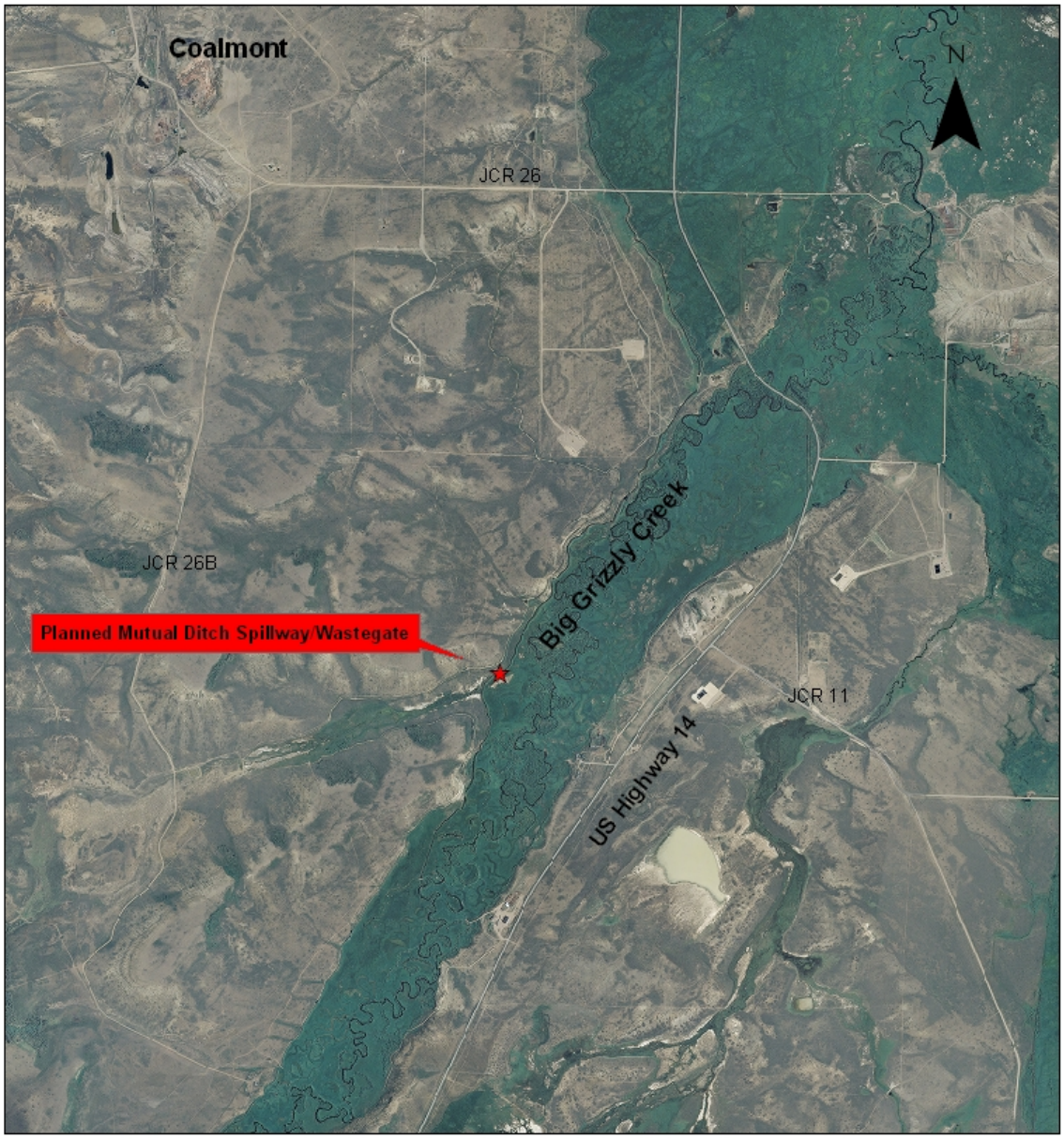
Exhibit A

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 A

Exhibit C.
Photos

Photo of existing check/wastegate structure in Mutual Ditch

Exhibit A

Existing Check/Wastegate Structure (check section)

Existing Check/Wastegate Structure (waste section

Exhibit A

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

Exhibit A

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

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.

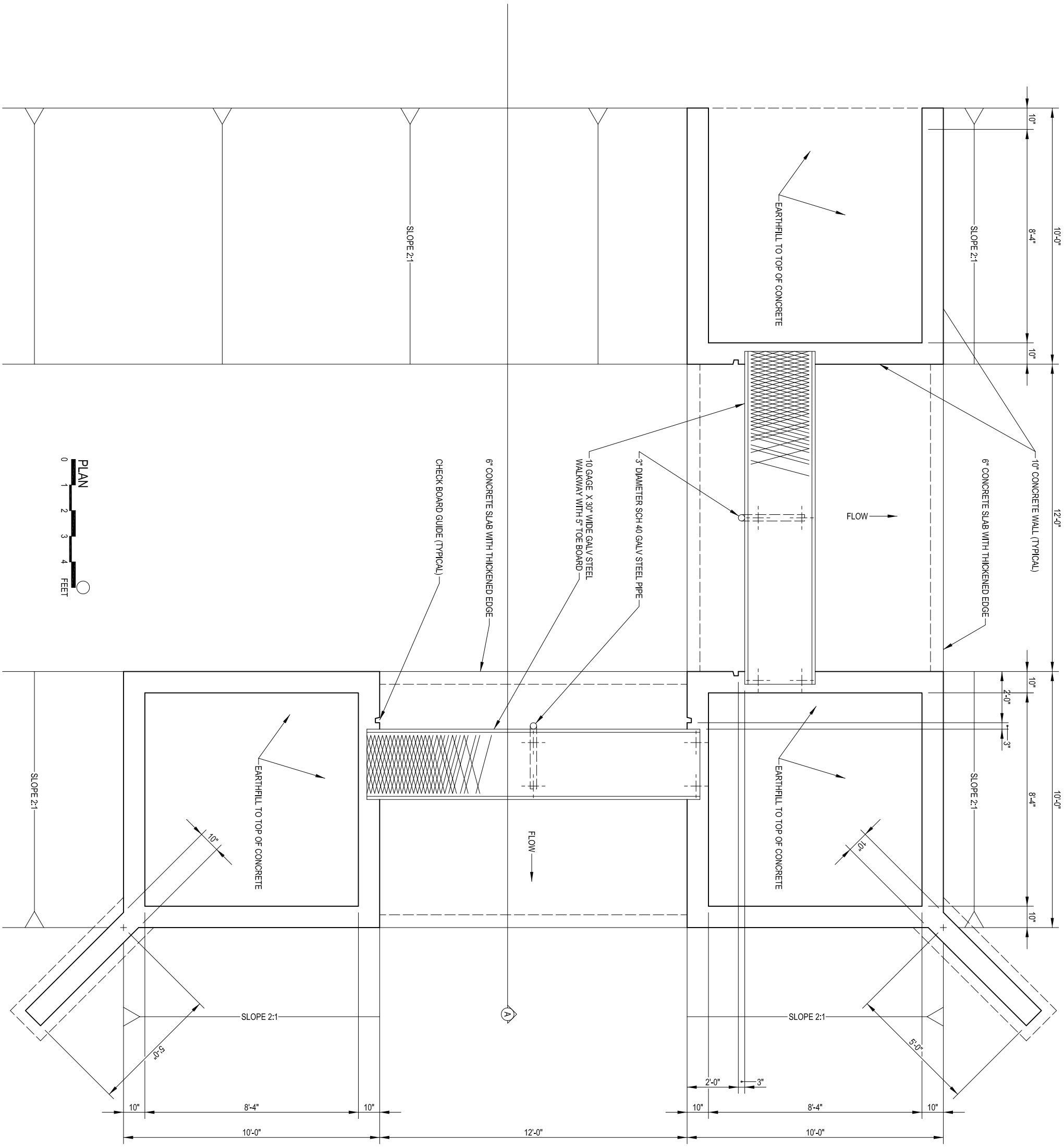
IX. CONSTRUCTION OPERATIONS

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 A

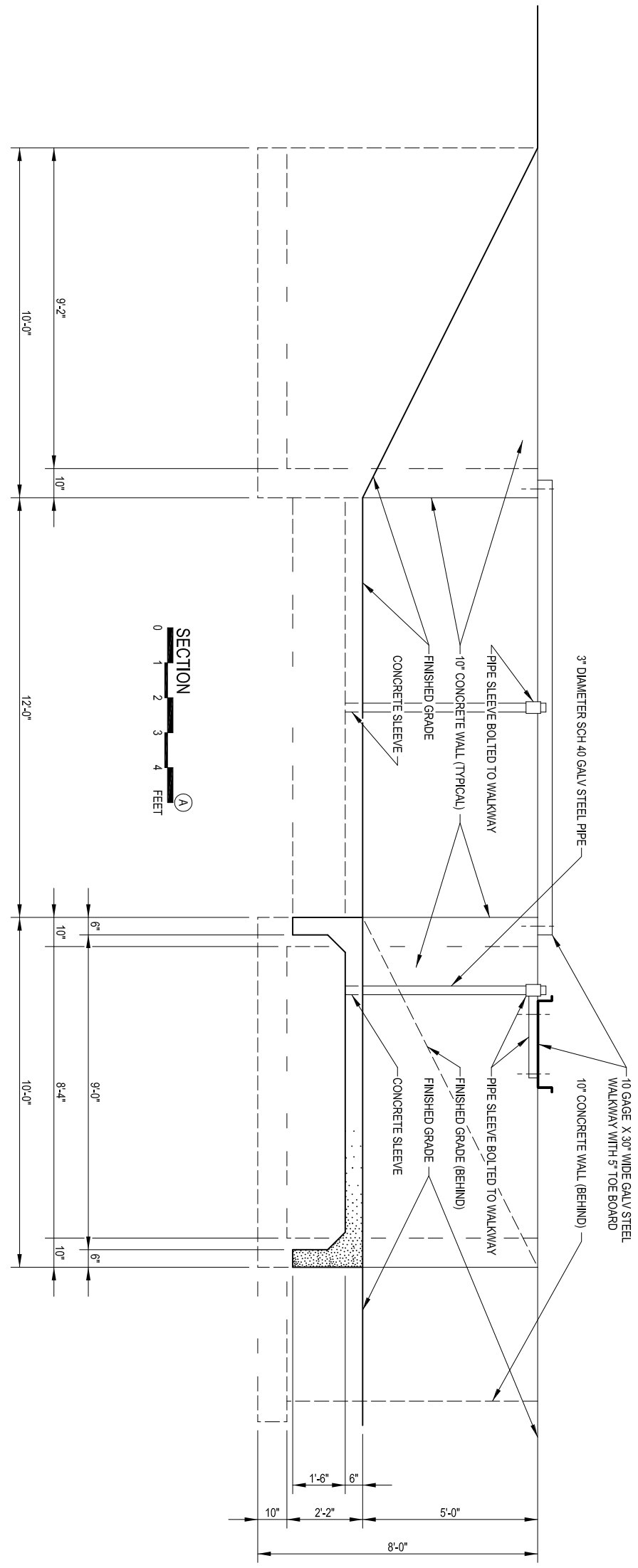
Exhibit F.
NRCS Approved Design



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

		Date
Designed	Stambaugh	Dec 2012
Drawn	Stambaugh	Dec 2012
Checked	Marine	XXXX
Approved	Andrews	XXXX

Exhibit A



Sheet 3 of 3

Drawing No. XX - X - XXXX

File Name XXXXXXXX

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

ARCHITECTURAL DRAWINGS

MUTUAL DITCH CHECK STRUCTURE REPLACEMENT
JACKSON COUNTY

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

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.