GOSHUTE CREEK HABITAT AREA

EXTENSIVE AND INTENSIVE INVENTORY AND ANALYSIS

.1 Habitat Inventory - See Figure 1 for map showing habitat for wildlife species in habitat area.

	MULE DEER	SAGE GROUSE	BLUE GROUSE	MORNING DOVE	HUNGARIAN PARTRIDGE	CUTTHROAT TROUT
Amount of Habitat	6250 Acres	6789 Acres	3000 Acres	500 Acres	200 Acres	5.0 Miles
Kind	Yearlong	Yearlong	Yearlong	Spring-Summer & Fall	Yearlong	Yearlong

.11 Big Game - The habitat area furnishes a small segment of the mule deer winter range in the Egan-Cherry Creek Unit (State Deer Herd Unit 12). Important vegetative species for mule deer are:

Shrubs

- Big sagebrush
- Black sagebrush
- Chokecherry
- Bitterbrush
- Squawberry
- Currant
- Mt. Mahogany
- Willow

Forbs

- Lupine
- Astragalus
- Oxytropis
- Cirsium

Grasses

- Cheatgrass
- Downy brome
- Bluebunch wheatgrass
- Stipa
- Sandbergs bluegrass

.12 Upland Game Birds - Important vegetative species for each upland game species are:

Sage grouse

- Big sagebrush
- Black sagebrush
- Sedge
- Carex
- Eriogonum
- Vetch

Blue grouse

- Poplar
- Willow
- Serviceberry
- Sedge
- Eriogonum
- Vetch

Hungarian Partridge

- Halogeton
- Crested wheatgrass
- *Wheat
- *Brome Grass
- *Alfalfa
- *Clover
- Variety of grass

* On Private Land

.13 Migratory Game Birds

Important vegetative species for migratory game species are:

Mourning Dove

Crested wheatgrass
Domestic wheat
Indian ricegrass

.14 Small Mammals

See Mammals of Ely BLM District for list of mammals in the district.

.15 Fish

Goshute Creek contains a small population of an undescribed subspecies of cutthroat trout.

.16 Non-Game Birds

See Birds of Ely BLM District for list of birds in the district.

.17 Other Animals

See Amphibians and Reptiles of Ely BLM District for list of amphibians and reptiles in district.

.2 Potentially Suitable Habitat Inventory

The Nevada Department of Fish and Game considers the habitat area potentially suitable for mountain quail and scaled quail.

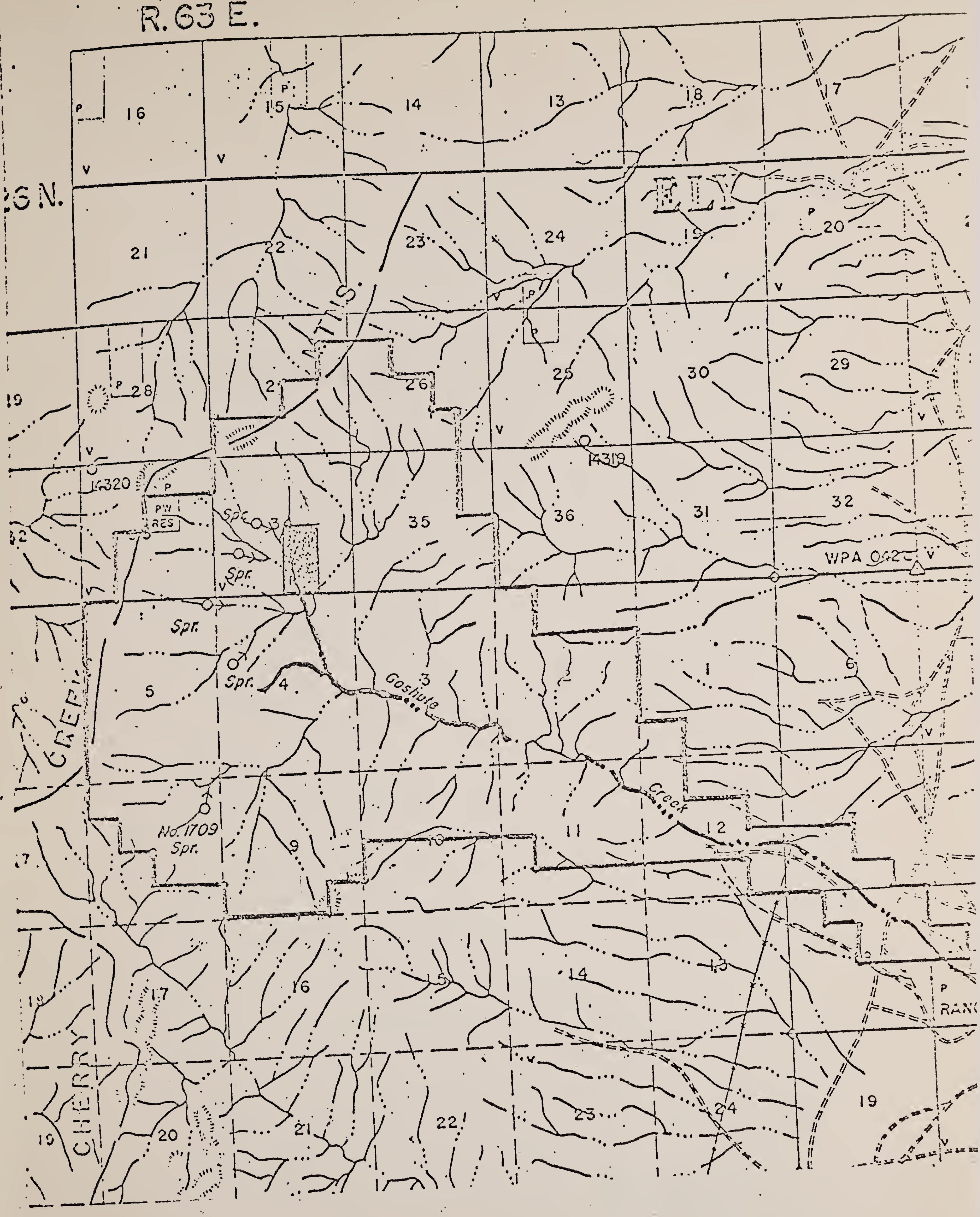

FIGURE 1 - Map showing habitat for terrestrial wildlife species

GOSHUTE CREEK HABITAT MANAGEMENT PLAN

N-4 WHA - A1

ELY DISTRICT
NEVADA

GOSHUTE CREEK HABITAT MANAGEMENT PLAN

N-4 WHA - A1

ELY DISTRICT
NEVADA

Prepared by: Donald R. Cain - Natural Resource Specialist
Bureau of Land Management
Ely District

With Assistance and in Cooperation with:
Frank Dodge and Larry Barngrover
Nevada Department of Fish and Game

Submitted by: Byron Neil Van Zandt
Cherry Creek Area Manager

Concurred by: Nevada Department of Fish and Game

8 July 1971
Date acting Regional Supervisor

Approved by: Bureau of Land Management

6-11-71
Date acting District Manager

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HABITAT MANAGEMENT PLAN PAGE

APPENDIX

INTRODUCTION

The Goshute Creek habitat area is situated about 70 miles north of Ely, Nevada (fig. 1). Goshute Creek gains its source of water from several small springs located at an approximate elevation of 8,000 feet in the Cherry Creek Mountains. It flows intermittently for about 6 miles before being diverted for irrigation water on private land in Steptoe Valley (fig. 2). The elevation at the point of diversion is 6,000 feet. Goshute Canyon is comprised of 6,250 acres of watershed surrounding Goshute Creek. The canyon area is characterized by steep terrain covered by a variety of vegetation.

The habitat furnishes yearlong habitat for mule deer (Odocoileus hemionus). Sage grouse (Centrocercus urophasianus) and blue grouse (Dendragapus obscurus) make yearlong use of the area. Mourning Dove (Zenaidura macroura) and Hungarian partridge (Perdix perdix) frequent the lower parts of the area in Steptoe Valley. A variety of non-game birds, mammals and reptiles occur also in the area. The Nevada Department of Fish and Game considers the habitat area potentially suitable for mountain quail (Oreortyx pictus) and scaled quail (Callipepla squamata).

Goshute Creek contains an unnamed cutthroat trout once thought to be the Utah cutthroat trout (Salmo clarki utah). These trout were transplanted from Pine Creek in 1960 by the

Nevada Department of Fish and Game. (The Utah cutthroat trout is classified as rare and endangered by the U.S. Bureau of Sport Fisheries and Wildlife, 1968). When given a name, this cutthroat trout will justify classification as a rare and endangered wildlife species.

The overall condition of the habitat area is fair, primarily due to over-utilization by deer, sheep and cattle, and the encroachment of pinyon-juniper. This is evidenced by overgrazed key species on the watershed, unsatisfactory watershed conditions and relatively poor wildlife habitat conditions in Goshute Creek.

MANAGEMENT OBJECTIVES

A. Increase the percent composition of desirable forbs from 0 to 10 percent and grasses from 5 to 30 percent on key areas through livestock grazing management. Key areas will be established when an AMP is developed for the grazing allotment.

B. Increase the percent composition of bitterbrush and mountain mahogany from 3 to 18 percent on key areas through livestock grazing management. Key areas will be established when an AMP is developed for the grazing allotment.

C. Maintain present stands of white fir.

D. Reduce the encroachment of pinyon-juniper in the upper watershed by hand-cutting invading trees.

E. Restore and maintain three meadows in the upper watershed and additional meadows along Goshute Creek by: (1) livestock grazing management, and (2) installing control structures in nearby gullies.

F. Protect three springs in upper watershed by fencing.

G. Reduce livestock use on willow from 85 percent to 10 percent through livestock grazing management.

H. Increase the carrying capacity of Goshute Creek from 239 fish per mile to 1000 fish per mile.

I. Improve resting areas in Goshute Creek by: (1) creating pools by means of trash catchers (or other structures) placed at 50 foot intervals on the bench area and approximately 100 foot intervals in the canyon areas, (2) hand excavating pools above the trash catchers, (3) constructing low rock dams in areas between trash catchers, and (4) repairing the spillway in the large BLM pond.

J. Improve spawning areas in Goshute Creek by: (1) installing trash catchers as described above, and (2) reducing siltation on the stream bottom.

K. Improve shade, shelter and protective cover for Goshute Creek by: (1) enhancing streambank cover along the entire length of Goshute Creek through livestock grazing management, and (2) placing stone piles or brush in pools created by trash catchers.

L. Prevent downstream movement and loss of fish by: (1) repairing the large BLM pond, (2) installing trash catchers, and (3) constructing a 6-acre foot reservoir at the lower end of Goshute Creek.

M. Reduce siltation in Goshute Creek by: (1) improving streambank cover along the entire length of Goshute Creek, (2) improving

watershed conditions by increasing ground cover from 30 to 50 percent, (3) installing control structures in gullies in the upper watershed, and (4) seeding road bed along Goshute Creek.

N. Reduce streambank damage as described in item M.

O. Gather upland game population data (Nevada Department of Fish and Game).

P. Explore possibilities of releasing exotic upland game.

Q. Provide public information through interpretative signs, news media, brochures and lectures.

MANAGEMENT METHODS

A. Livestock Grazing

Livestock grazing management will be used to improve: (1) big game habitat, (2) upland game habitat, (3) fisheries habitat, and (4) ground cover needed for watershed protection. Until the necessary fences are installed, livestock grazing in the habitat area will be excluded by: (1) controlling trespass, (2) shifting livestock use to other areas, and (3) prohibiting winter feeding of livestock adjacent to Goshute Creek. When the lower portion of Goshute Creek is fenced water must be piped from Goshute Creek to the north, a distance of 1/2 - 3/4 mile. This is necessary to provide livestock water outside the fenced area and is an administrative problem.

After livestock grazing management has been implemented, it will be necessary to administratively prohibit winter feeding of livestock along Goshute Creek.

If grazing management fails to produce desirable forbs and grasses, a specially designed anchor chain will be used to chain selected sites. These sites will be selected with the assistance of the Nevada Department of Fish and Game.

B. Wildlife Use

Big game and upland game harvest must be regulated by the Nevada Department of Fish and Game. The cutthroat trout will be protected from fishing by the Nevada Department of Fish and Game. These fish will be managed for their evolutionary and aesthetic values until such time they become sufficiently established to warrant controlled fishing.

C. Timber Management

Invading pinyon-juniper in the upper watershed will be hand cut at 15 year intervals. Cutting of white fir will be strictly prohibited. — To [illegible]

D. Habitat Development and/or Improvement

1. Habitat Area Fences

The following fences will be constructed to regulate livestock grazing in the habitat area.

a. Goshute-Indian Creek Drift Fence - 2.0 miles. Will be located in Sections 26 and 35; T. 25N., R. 63E. and Section 2; T. 25N., R. 63E. (see fig. 3).

b. Goshute Creek Fence #1 - 1.0 mile. Will be located in Sections 7 and 8; T. 25N., R. 64E. (see fig. 4).

c. Goshute Creek Fence #2 - 2.0 miles. Will be located in Section 11, 12 and 13; T. 25N., R. 63E. and Section 18; T. 25N., R. 64E. (see fig. 5).

d. South Goshute Canyon Fence - 3.0 miles. Will be located in Sections 5, 8, 9 and 10; T. 25N., R. 63E. (see fig. 6).

2. Trash Catchers

Trash catchers will be installed at 50 foot intervals from the county road to the mouth of Goshute Canyon and at approximately 100 foot intervals from the mouth of Goshute Canyon to the large BLM pond (a total distance of 3.5 miles). It will be necessary to install an estimated 275 trash catchers. Basic designs are contained in Figure 7. A small pool will be hand excavated in front of each trash catcher. Piles of stone or brush will be piled in each excavated pool. Willows will be hand planted along both sides of the stream for a distance of ten feet above and below each trash catcher.

3. Other Structures

A study will be initiated to determine the feasibility and economics of placing other types of structures in Goshute Creek. These may be used inplace of trash catchers in certain locations. Included will be structures made from modified cattleguard bases (fig. 8).

4. BLM Pond Maintenance

The spillway on the large BLM pond (fig. 9) will be reconstructed in accordance with engineering design and specifications.

5. Terminal Reservoir

A 6-acre foot reservoir will be constructed in theSE¼NE¼, Section 18; T. 25N., R. 63E. This reservoir should be designed to provide a maximum depth of 10 feet and an average depth of 6 feet.

6. Spring Improvement

Three springs located in the upper watershed will be fenced to prevent trampling by livestock. Water will be provided inside fenced areas for upland game. It also will be piped outside the fenced areas for livestock and deer.(fig. 10). Livestock grazing management will be used to control trampling of springs along the upper portion of Goshute Creek.

7. Meadow Restoration

Livestock grazing management will be used to restore meadows in the upper watershed and along Goshute Creek. Gully plugs, or other structures, will be placed in gullies in the upper watershed to raise the water table needed for meadow restoration and maintenance. Engineering input is needed to determine proper types and locations of structures.

E. Access Development, Improvement and Management

The road paralleling Goshute Creek will be seeded to a suitable grass species.

F. Land Acquisition, Classification and Withdrawal

The entire habitat area, comprising 7,489 acres, has been classified and designated as the Goshute Canyon Natural Area.

As such, it is segregated from all forms of land disposal, except the mineral leasing laws. No additional classification or segregation is necessary.

G. Other

1. Water Rights and Unauthorized Diversion of Water

Close cooperation with Jennifer Day Enterprise must be maintained to prevent conflicts with water rights and correct unauthorized diversion of water from Goshute Creek.

2. Pollution of Goshute Creek

The area near the mouth of Goshute Canyon will be posted to discourage campers from camping next to Goshute Creek.

3. Public Information

When the cutthroat trout in Goshute Creek is formally named, an interpretative sign will be placed at the entrance of Goshute Canyon. A brochure on the cutthroat trout will be prepared.

MANAGEMENT EVALUATION

The following evaluation studies will be established to determine the effectiveness of management methods:

A. Evaluation studies for big game and upland game habitat will be done in accordance with evaluation studies specified in grazing allotment management plans.

B. Annual fall fish population studies using electro - shocking devices will be made to determine the status of fish populations and the effectiveness of stream improvement work.

C. Big game and upland game studies will be done in accordance with Nevada Department of Fish and Game procedures.

D. A thermal recorder will be placed near the mouth of Goshute Canyon to record water temperatures.

E. Vegetative studies on the watershed will be done in accordance with evaluation studies specified in allotment management plans.

IMPLEMENTATION SCHEDULE

A. Budget Year

1. Install 50 trash catchers.
2. Install interpretative sign.
3. Exclude livestock grazing on lower end of Goshute Creek.
4. Engineer design and determine: (1) cost estimates of the 6-acre foot reservoir, (2) reconstruction of spillway on BLM pond, and (3) type and location of structures needed for gully control in the upper watershed.
5. Correct unauthorized diversion of water.
6. Initiate study to determine feasibility of installing drop structures in Goshute Creek. Install two modified cattleguard bases to determine their effectiveness.
7. Post signs to discourage camping next to Goshute Creek.
8. Explore possibilities of releasing mountain quail and scaled quail.

B. Program Year

1. Construct Goshute - Indian Creek Drift Fence, Goshute Creek Fence #1 and 2 and South Goshute Canyon Fence.

2. Install 50 trash catchers.

3. Repair spillway on BLM pond.

4. Exclude all livestock grazing.

5. Seed access road in Goshute Canyon to suitable grass.

6. Prepare brochure.

7. Maintain existing trash catchers.

8. If practicable, release mountain quail and scaled quail (Nevada Department of Fish and Game).

C. Program Year + 1

1. Construct 6 acre foot reservoir.

2. Install 50 trash catchers.

3. Maintain existing trash catchers.

D. Program Year + 2

1. Redevelop and fence springs in upper watershed.

2. Implement grazing management system.

3. Install 125 trash catchers (or other structures as determined in feasibility study).

4. Install structures in upper watershed (numbers to be determined in engineering study).

5. Maintain existing trash catchers.

E. Subsequent Years

1. Maintain existing trash catchers.

2. Maintain other structures, as needed.

PROVISION FOR REVIEW AND MODIFICATION

All elements of this plan are subject to annual review by BLM and the Nevada Department of Fish and Game. If deemed necessary, objectives, management methods and evaluation studies will be revised. All plan revisions shall be documented and dated.

REFERENCES

Dodge, F. and D. Cain, 1971. Research and Management on an undescribed cutthroat trout in eastern Nevada. Unpublished paper.

U.S. Bureau of Sport Fisheries and Wildlife. 1968. Rare and endangered fish and wildlife of the United States, Wash., D.C. Resource Publ. 34.

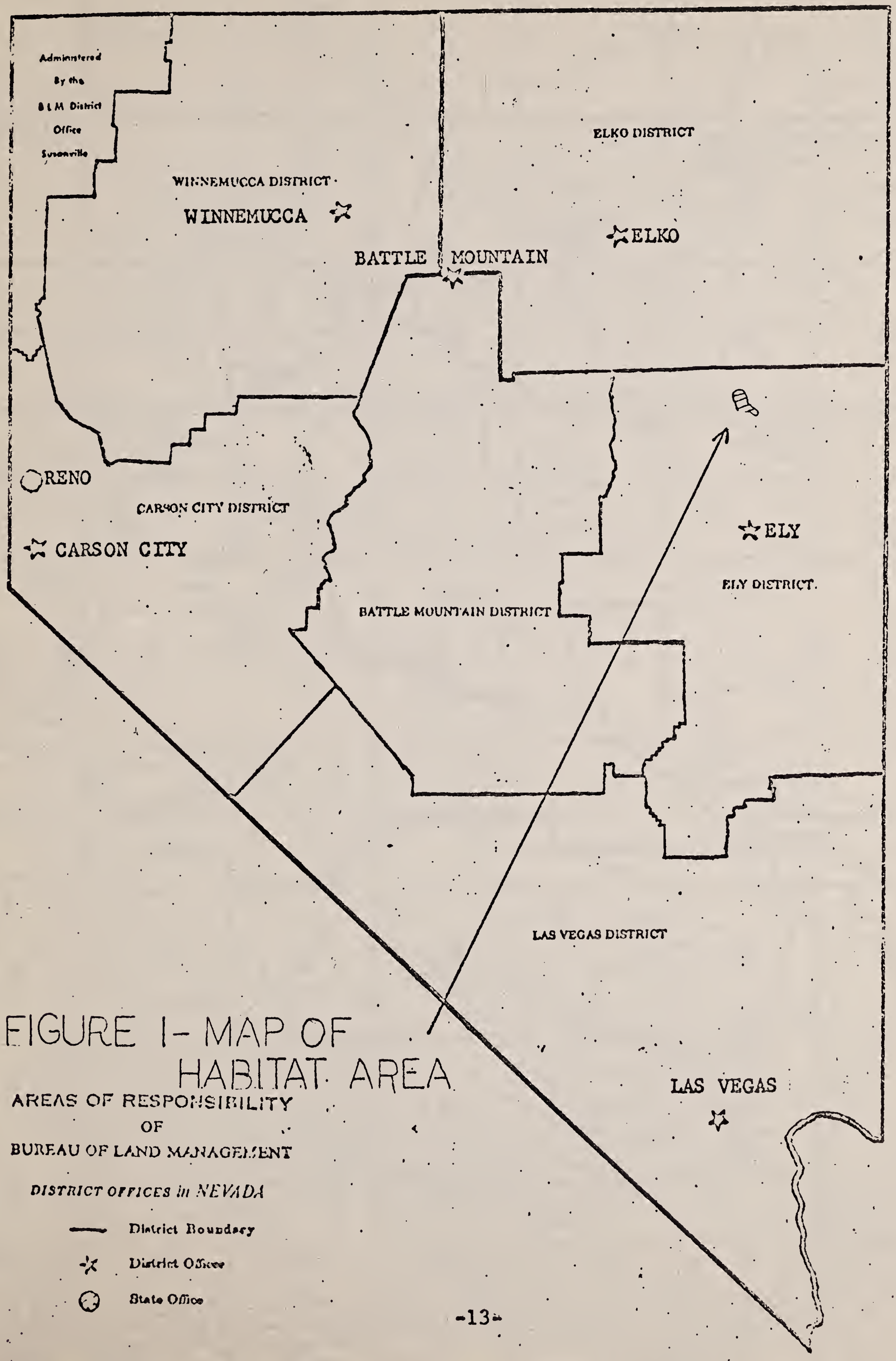


FIGURE 1- MAP OF HABITAT AREA

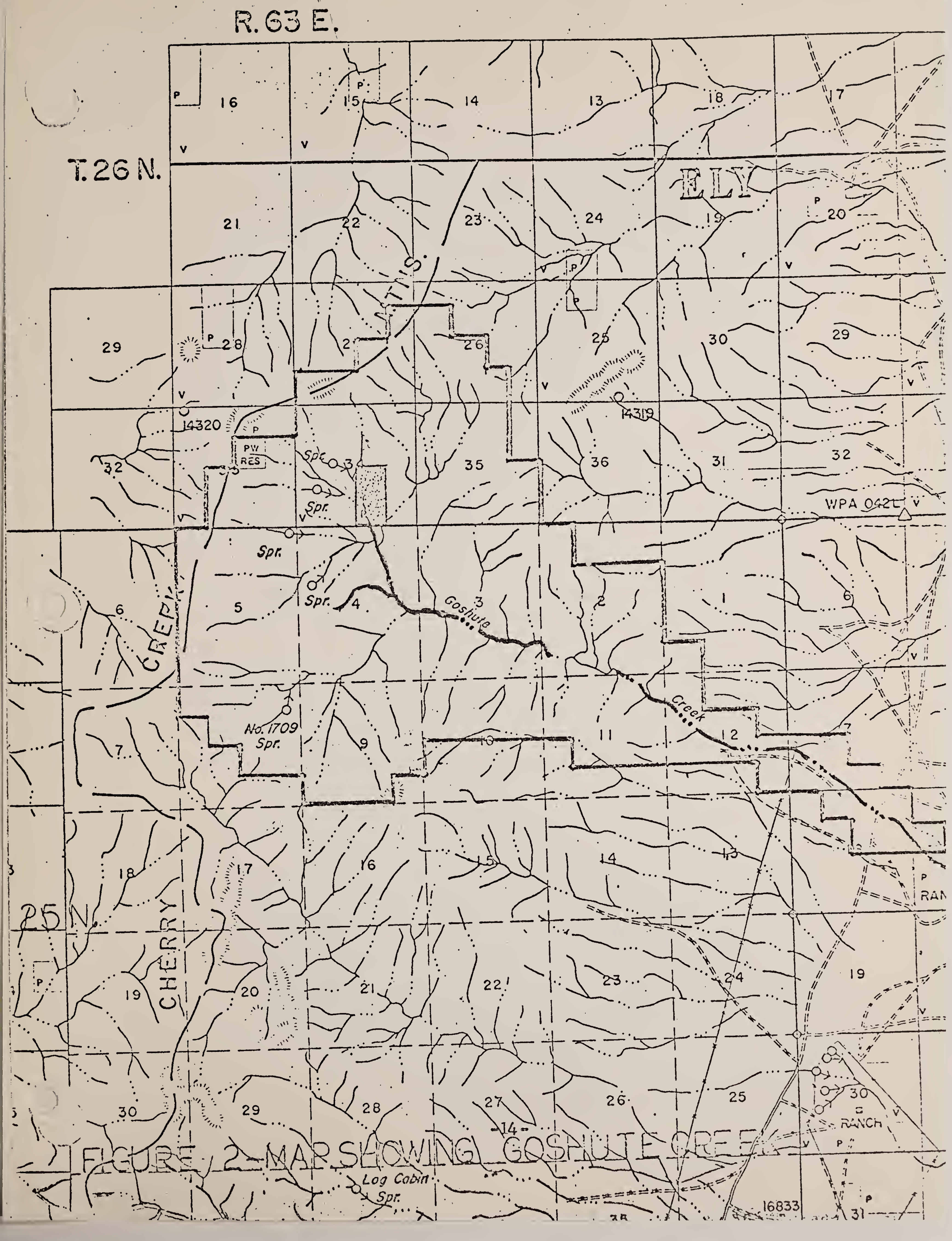


FIGURE 2—MAP SHOWING GOSHUTE CREEK

Form 7330-11/July 1970

FIGURE 5

S.2-1

14

U.S. DEPARTMENT OF INTERIOR
Bureau of Land Management

JOB DOCUMENTATION REPORT

JOB IDENTIFICATION

(1) E 2 7 (2) DISTRICT 0 4 (3) JOB NO. ___ ___ ___ ___

(4) TRANSACTION CODE 1

I GENERAL AREA DESCRIPTION

(5) JOB NAME [illegible] Ck drift Fe

Location Codes: (6) SPECIAL PROJECT CODE ___ ___ ___

(7) PLANNING UNIT 0 4 (8) SUB-BASIN 5 3

(9) COUNTY 0 3 3 (10) WATERSHED NO. ___ ___ ___

(11) ALLOTMENT NO. ___ ___ ___

(12) WILDLIFE HABITAT AREA ___ ___ ___

Site: (13) Vegetative Subtype ___ ___ ___ (14) Acres/AUM ___ ___ • ___;

VEGETATIVE COMPOSITION:

(15) Grasses ___ ___ (16) Forbs ___ ___ (17) Shrubs ___ ___;

PERCENT GROUND COVER: (18) Vegetation ___ ___ (19) Other ___ ___;

(20) Percent Slope ___ ___ ___ (21) Exposure ___

(22) Soil Texture ___ (23) Erosion Class ___;

PRECIPITATION: (24) Spring/Summer ___ ___ (25) Fall/Winter ___ ___

II JOB ESTIMATE DATA

(26) SUBACTIVITY 1 2 6 0 (27) WJC 6 4 4 8

UNITS PLANNED: (28) Primary ___ ___ ___ ___ ___ 2.0

(29) Secondary ___ ___ ___ ___ ___ ___;

PLANNED COMPLETION: (30) Fiscal Year 7 3 (31) Third 1;

(32) Work Participant 2 (33) Maintenance Responsibility 2

(34) Contributed Cost $___ ___ ___ ___ ___

(35) BLM Man-Months ___ ___ • ___ (36) BLM Cost $___ ___ ___ ___ ___ ___

III JC ETAIL AND BENEFITS

(37) PRIMARY JOB OBJECTIVE 1

Plant and Pest Control: (38) Target Species ___ ___ ___ ___ ___ / ___;

CHEMICAL CONTROL: (39) Chemical ___ ___

(40) Lbs. Active Ingredient/Ac. ___ ___ • ___ ___ ___ (41) Carrier ___

(42) Application Method ___

(43) Sensitive Area Type ___ (44) Distance ___ ___ • ___;

MECHANICAL CONTROL: (45) Type ___

Artificial Revegetation: SEEDING/PLANTING:

(46) Species ___ ___ ___ ___ ___ / ___ (47) Lbs./Ac. ___ ___ • ___

(48) Seedlings/Ac. ___ ___ ___ ___ (49) Method ___

(50) Repellant/Fungicide ___ ___

(51) AUMs Livestock Forage Added ___ ___ ___ ___

(52) Soil Saved (annual cu. yds.) ___ ___ ___ ___ ___

(53) Big game AUMs Added ___ ___ ___ ___

Watershed Tillage: (54) Treatment Code ___

IV JOB DETAIL AND BENEFITS

Facilities: (55) Type of Fence 2 (56) Other Misc. ___

Water Development: (57) Perm. Storage (ac./ft.) ___ ___ ___ ___ ___ • ___

(58) Pipeline (mi.) ___ ___ • ___

Water Control: (59) Structure Type ___

Storage (ac./ft.): (60) Flood ___ ___ ___ ___ ___ (61) Silt ___ ___ ___ ___

Wildlife: HABITAT DEVELOPMENT/PROTECTION:

(62) Type Code ___ ___ (63) Primary Species ___ ___ ___

(64) Animal Months ___ ___ ___ ___ ___ (65) No. Increase ___ ___ ___ ___

(66) Lbs. Fish Increase ___ ___ ___ ___ ___ (67) Rare/Endangered ___;

VISITOR DAYS ADDED: (68) Fisherman ___ ___ ___ ___

(69) Hunter ___ ___ ___ ___ (70) Other ___ ___ ___ ___

V DETAIL ESTIMATE OF COSTS AND QUANTITIES

WORK DESCRIPTION AND MATERIALS (1)	BLM M/M PERM. (2)	BLM M/M TEMP.	UNITS EA., MI., ect. (3)	UNITS COST (4)	COST BLM (5)	COST COOPERATOR (6)	GRAND TOTAL (7)
TOTAL							

VI JOB COMPLETION DATA

(71) SUBACTIVITY ___ ___ ___ ___ (72) WJC ___ ___ ___ ___

(73) Primary ___ ___ ___ ___ ___ ___ • ___

(74) Secondary ___ ___ ___ ___ ___ ___;

DATE COMPLETED: (75) Calendar Year ___ ___ (76) Month ___ ___

CONTRIBUTION DETAIL: (77) Agreement ___ (78) Participant ___

(79) Contributor Name ______________________

(80) Deposited Contributions ___ ___ ___ ___ ___

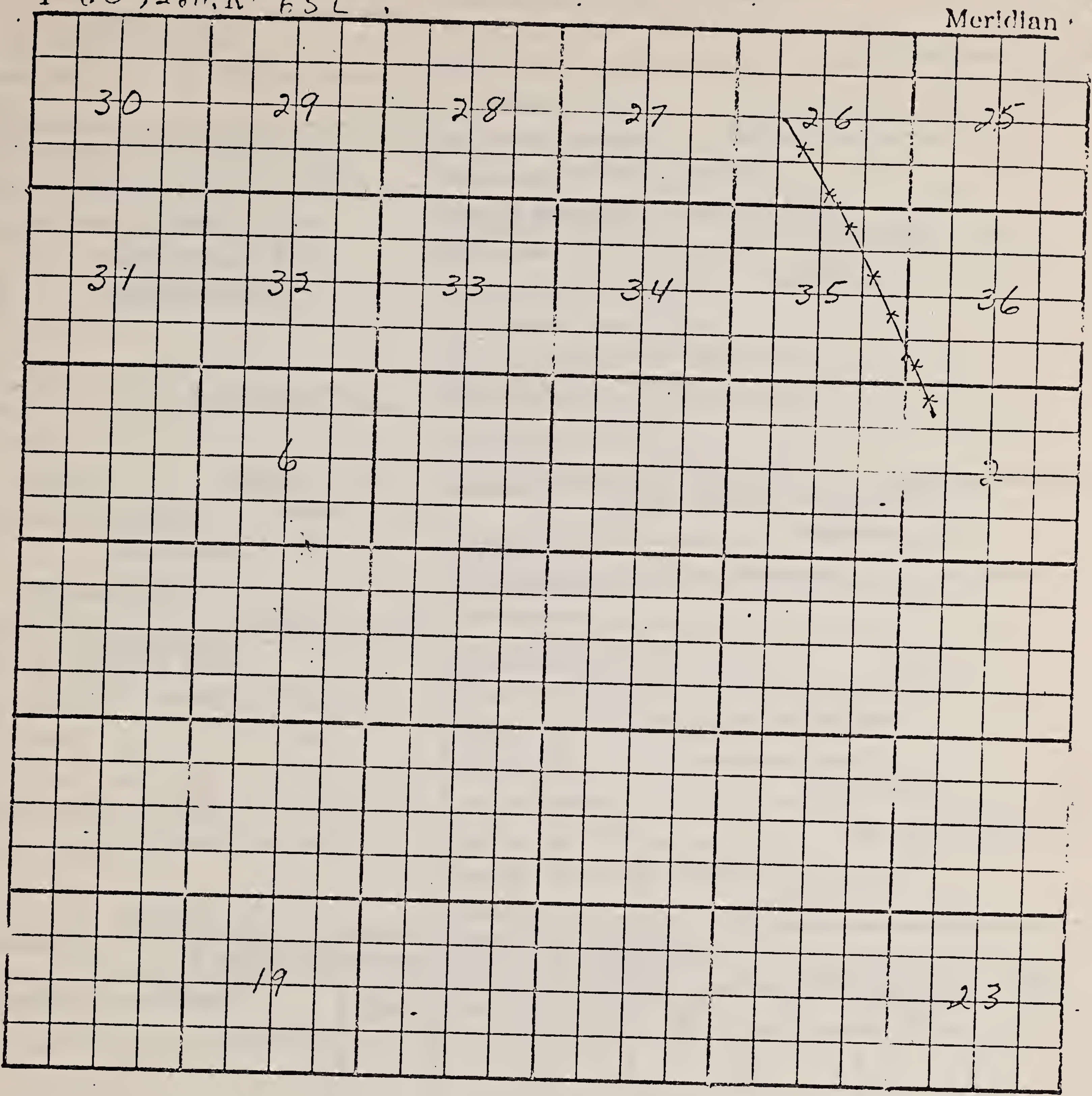
Undeposited Contributions:

(81) labor/equipment ___ ___ ___ ___ ___ (82) Material ___ ___ ___ ___

[illegible] STATE _ / _ DIST _ [illegible] NUMBER

VII. LOCATION PLAT SCALE =1 MILE

T 25, 26N. R 63E. Meridian



VIII. NARRATIVE DESCRIPTION OR JUSTIFICATION

This fence is needed to divide the Indian Creek and Cherry Creek Allotments. It's primary function will be to control livestock use in the upper Goshute Basin. Good condition of this watershed is of prime importance in maintaining good stream habitat for the Goshute trout in Goshute Creek. Livestock management is the chief means of achieving this goal.

Prepared by Dwain Nelson	Date 11-30-70	Approved for PAWP (*Signature District Manager*)	Date
Reviewed by			

Form 7330-11/July 1970

FIGURE 41

17

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

JOB DOCUMENTATION REPORT

JOB IDENTIFICATION

(1, E ___ ___ (2) DISTRICT ___ ___ (3) JOB NO. ___ ___ ___ ___

(4) TRANSACTION CODE ___

I GENERAL AREA DESCRIPTION

(5) JOB NAME Goshute Creek Fence #1

Location Codes: (6) SPECIAL PROJECT CODE ___ ___ ___

(7) PLANNING UNIT 2 4 (8) SUB-BASIN 5 3

(9) COUNTY 0 3 3 (10) WATERSHED NO. ___ ___ ___

(11) ALLOTMENT NO. ___ ___ ___

(12) WILDLIFE HABITAT AREA ___ ___ ___

Site: (13) Vegetative Subtype ___ ___ ___ (14) Acres/AUM ___ ___ . ___;

VEGETATIVE COMPOSITION:

(15) Grasses ___ ___ (16) Forbs ___ ___ (17) Shrubs ___ ___;

PERCENT GROUND COVER: (18) Vegetation ___ ___ . (19) Other ___ ___;

(20) Percent Slope ___ ___ ___ (21) Exposure ___

(22) Soil Texture ___ (23) Erosion Class ___;

PRECIPITATION: (24) Spring/Summer ___ ___ (25) Fall/Winter ___ ___

II JOB ESTIMATE DATA

(26) SUBACTIVITY 1 2 6 0 (27) WJC 6 4 4 8

UNITS PLANNED: (28) Primary ___ ___ ___ ___ ___ 1 . 0

(ndory ___ ___ ___ ___ ___ ___;

P. ED COMPLETION: (30) Fiscal Year 7 2 (31) Third 1;

(32) Work Participant 2 (33) Maintenance Responsibility 2

(34) Contributed Cost $___ ___ ___ ___ ___

(35) BLM Man-Months ___ ___ . ___ (36) BLM Cost $___ ___ ___ ___ ___ ___

III JOB DETAIL AND BENEFITS

(37) PRIMARY JOB OBJECTIVE ___

Plant and Pest Control: (38) Target Species ___ ___ ___ ___ ___ / ___;

CHEMICAL CONTROL: (39) Chemical ___ ___

(40) Lbs. Active Ingredient/Ac. ___ ___ . ___ ___ ___ (41) Carrier ___

(42) Application Method ___

(43) Sensitive Area Type ___ (44) Distance ___ ___ . ___;

MECHANICAL CONTROL: (45) Type ___

Artificial Revegetation: SEEDING/PLANTING:

(46) Species ___ ___ ___ ___ ___ / ___ (47) Lbs./Ac. ___ ___ . ___

(48) Seedlings/Ac. ___ ___ ___ ___ (49) Method ___

(50) Repellent/Fungicide ___ ___

(51) AUMs Livestock Forage Added ___ ___ ___ ___

(52) Soil Saved (annual cu. yds.) ___ ___ ___ ___ ___

(53) Big game AUMs Added ___ ___ ___ ___

Watershed Tillage: (54) Treatment Code ___

IV JOB DETAIL AND BENEFITS

Facilities: (55) Type of Fence ___ (56) Other Misc. ___

Water Development: (57) Perm. Storage (ac./ft.) ___ ___ ___ ___ ___ . ___

(58) Pipeline (mi.) ___ ___ . ___

Water Control: (59) Structure Type ___

Storage (ac./ft.): (60) Flood ___ ___ ___ ___ ___ (61) Silt ___ ___ ___ ___

Wildlife: HABITAT DEVELOPMENT/PROTECTION:

(62) Type Code ___ ___ (63) Primary Species ___ ___ ___

(64) Animal Months ___ ___ ___ ___ ___ (65) No. Increase ___ ___ ___ ___

(66) Lbs. Fish Increase ___ ___ ___ ___ ___ (67) Rare/Endangered ___;

VISITOR DAYS ADDED: (68) Fisherman ___ ___ ___ ___

(69) Hunter ___ ___ ___ ___ (70) Other ___ ___ ___ ___

V DETAIL ESTIMATE OF COSTS AND QUANTITIES

WORK DESCRIPTION AND MATERIALS (1)	BLM M/M (2)		UNITS		COST		GRAND TOTAL (7)
	PERM.	TEMP.	EA., MI., ect. (3)	COST (4)	BLM (5)	COOPERATOR (6)	
TOTAL							

VI JOB COMPLETION DATA

(7 BACTIVITY ___ ___ ___ ___ (72) WJC ___ ___ ___ ___

(73) Primary ___ ___ ___ ___ ___ ___ . ___

(uary ___ ___ ___ ___ ___ ___;

DATE COMPLETED: (75) Calendar Year ___ ___ (76) Month ___ ___

CONTRIBUTION DETAIL: (77) Agreement ___ (78) Participant ___

(79) Contributor Name ___

(80) Deposited Contributions ___ ___ ___ ___ ___

Undeposited Contributions:

(81) labor/equipment ___ ___ ___ ___ ___ (82) material ___ ___ ___ ___ ___

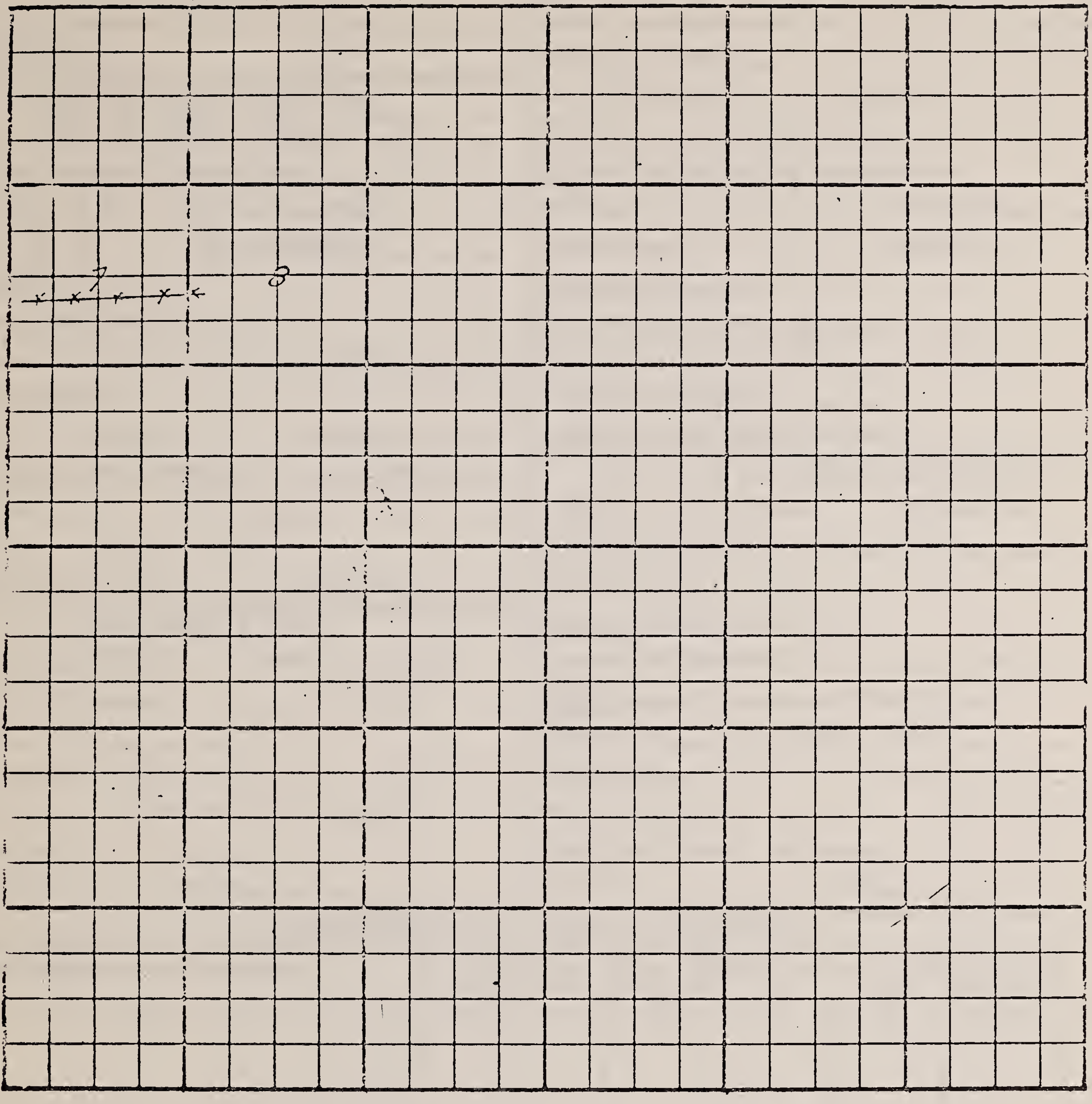
See Instructions (Form 7330-11a)

See Codes for Job Documentation Report (Form 7330-11b)

JOB-ID: STATE 27 DIST 04 JOB NUMBER ____

VII. LOCATION PLAT SCALE =1 MILE

T 35 N. ,R 64 E. , Mount Diablo Meridian.



VIII. NARRATIVE DESCRIPTION OR JUSTIFICATION

This fence is needed to regulate livestock grazing in the Cherry Creek allotment and control livestock grazing along Goshute Creek, which presently is causing considerable damage to the streambank. When a grazing system is initiated for the Cherry Ck. allotment, this fence will be used as a pasture division fence.

Prepared by Donald R. Cain Reviewed by	Date 3/5/77	Approved for PAWP (*Signature District Manager*)	Date

GPO 858-576

330-11/July 1970

FIGURE 5

DISTRIBUTION: DSC & District File

U.S. DEPARTMENT OF THE INTERIOR
Bureau ~~of Land~~ Management

JOB DOCUMENTATION REPORT

JOB IDENTIFICATION

(E 27 (2) DISTRICT 04 (3) JOB NO. ___ ___ ___ ___

(4) TRANSACTION CODE ___

I GENERAL AREA DESCRIPTION

(5) JOB NAME Goshute Creek Fence #2

Location Codes: (6) SPECIAL PROJECT CODE ___ ___ ___

(7) PLANNING UNIT 04 (8) SUB-BASIN 53

(9) COUNTY 033 (10) WATERSHED NO. ___ ___ ___

(11) ALLOTMENT NO. ___ ___ ___

(12) WILDLIFE HABITAT AREA ___ ___ ___

Site: (13) Vegetative Subtype ___ ___ ___ (14) Acres/AUM ___ ___.___;

VEGETATIVE COMPOSITION:

(15) Grasses ___ ___ (16) Forbs ___ ___ (17) Shrubs ___ ___;

PERCENT GROUND COVER: (18) Vegetation ___ ___, (19) Other ___ ___;

(20) Percent Slope ___ ___ ___ (21) Exposure ___

(22) Soil Texture ___ (23) Erosion Class ___;

PRECIPITATION: (24) Spring/Summer ___ ___ (25) Fall/Winter ___ ___

II JOB ESTIMATE DATA

(26) SUBACTIVITY 1260 (27) WJC 6448

UNITS PLANNED: (28) Primary ___ ___ ___ ___ ___ 2.0

(ndary ___ ___ ___ ___ ___ ___;

P D COMPLETION: (30) Fiscal Year ___ ___ (31) Third ___;

(32) Work Participant ___ (33) Maintenance Responsibility ___

(34) Contributed Cost $___ ___ ___ ___ ___

(35) BLM Man-Months ___ ___.___ (36) BLM Cost $___ ___ ___ ___ ___

III JOB DETAIL AND BENEFITS

(37) PRIMARY JOB OBJECTIVE ___

Plant and Pest Control: (38) Target Species ___ ___ ___ ___ ___ /___;

CHEMICAL CONTROL: (39) Chemical ___ ___

(40) Lbs. Active Ingredient/Ac. ___ ___.___ ___ ___ (41) Carrier ___

(42) Application Method ___

(43) Sensitive Area Type ___ (44) Distance ___ ___.___;

MECHANICAL CONTROL: (45) Type ___

Artificial Revegetation: SEEDING/PLANTING:

(46) Species ___ ___ ___ ___ ___ / ___ (47) Lbs./Ac. ___ ___.___

(48) Seedlings/Ac.___ ___ ___ ___ (49) Method ___

(50) Repellant/Fungicide ___ ___

(51) AUMs Livestock Forage Added ___ ___ ___ ___

(52) Soil Saved (annual cu. yds.) ___ ___ ___ ___ ___

(53) Big game AUMs Added ___ ___ ___ ___

Watershed Tillage: (54) Treatment Code ___

IV JOB DETAIL AND BENEFITS

Facilities: (55) Type of Fence ___ (56) Other Misc. ___

Water Development: (57) Perm. Storage (ac./ft.) ___ ___ ___ ___ ___.___

(58) Pipeline (mi.) ___ ___.___

Water Control: (59) Structure Type ___

Storage (ac./ft.): (60) Flood ___ ___ ___ ___ ___ (61) Silt ___ ___ ___ ___

Wildlife: HABITAT DEVELOPMENT/PROTECTION:

(62) Type Code ___ ___ (63) Primary Species ___ ___ ___

(64) Animal Months ___ ___ ___ ___ ___ (65) No. Increase ___ ___ ___ ___

(66) Lbs. Fish Increase ___ ___ ___ ___ ___ (67) Rare/Endangered ___;

VISITOR DAYS ADDED: (68) Fisherman ___ ___ ___ ___

(69) Hunter ___ ___ ___ ___ (70) Other ___ ___ ___ ___

V DETAIL ESTIMATE OF COSTS AND QUANTITIES

WORK DESCRIPTION AND MATERIALS (1)	BLM M/M		UNITS		COST		GRAND TOTAL (7)
	PERM. (2)	TEMP.	EA., MI., ect. (3)	COST (4)	BLM (5)	COOPERATOR (6)	
TOTAL							

VI JOB COMPLETION DATA

(71) SUBACTIVITY ___ ___ ___ ___ (72) WJC ___ ___ ___ ___

U 3) Primary ___ ___ ___ ___ ___ ___ ___.___

(74) ry ___ ___ ___ ___ ___ ___;

DATE COMPLETED: (75) Calendar Year ___ ___ (76) Month ___ ___

CONTRIBUTION DETAIL: (77) Agreement ___ (78) Participant ___

(79) Contributor Name ___

(80) Deposited Contributions ___ ___ ___ ___ ___

Undeposited Contributions:

(81) labor/equipment ___ ___ ___ ___ ___ (82) material ___ ___ ___ ___ ___

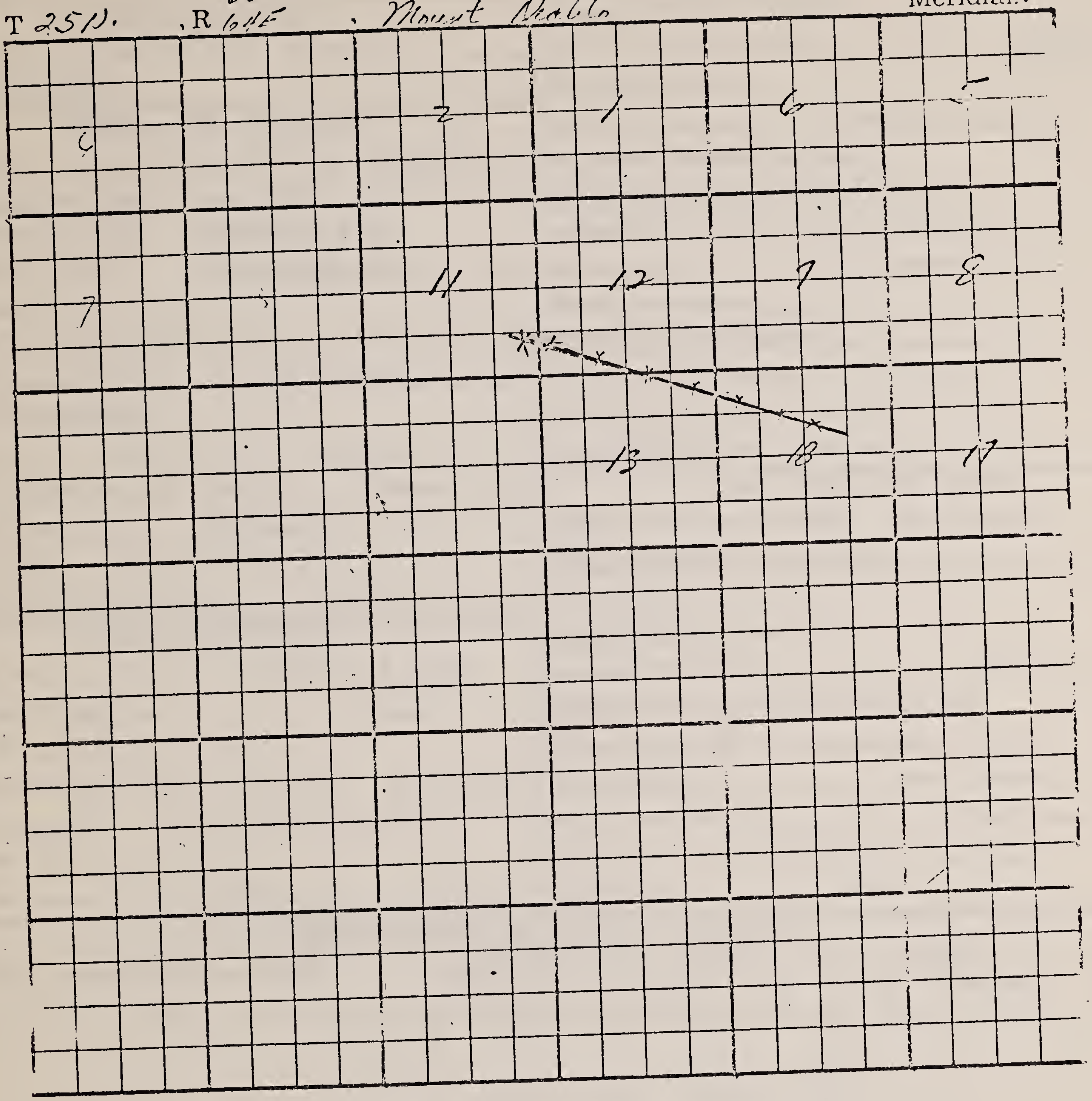
[illegible]

[illegible]

JOB-ID: STATE 27 DIST 04 JOB NUMBER

VII. LOCATION PLAT SCALE =1 MILE

T 25N., R 64E 63E, Mount Diablo Meridian.



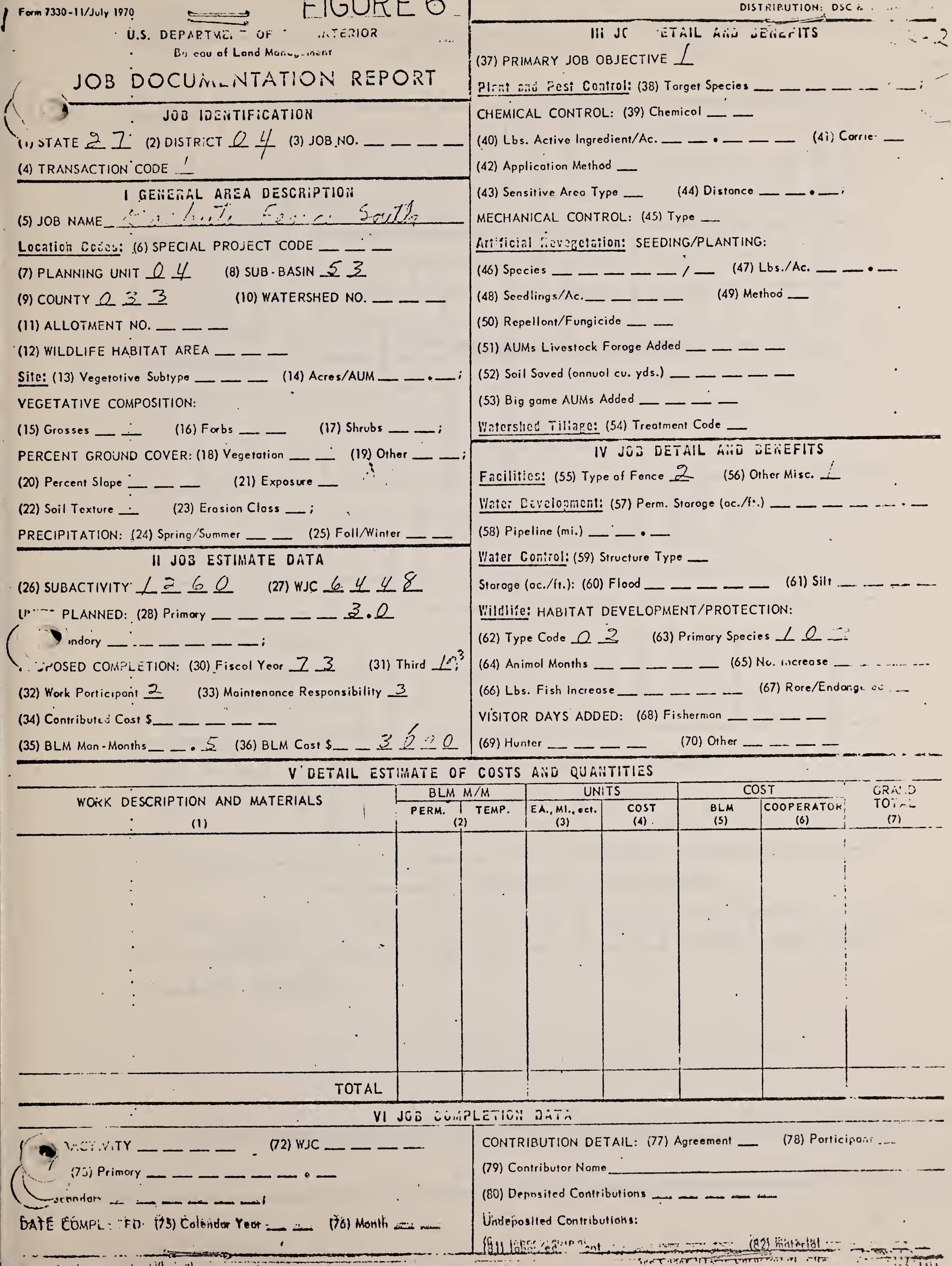
VIII. NARRATIVE DESCRIPTION OR JUSTIFICATION

This fence is needed to regulate livestock grazing in the Cherry Creek Allotment and control livestock grazing along Goshute Creek, which presently is causing considerable damage to the streambank. When a grazing system is initiated for the Cherry Creek Allotment, this fence will be used as a pasture division fence.

Prepared by	Date 2/8/71	Approved for PAWP (*Signature District Manager*)	Date
Reviewed by			

GPO 858-576

FIGURE 6



Form 7330-11/July 1970

DISTRIBUTION: DSC &

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

JOB DOCUMENTATION REPORT

JOB IDENTIFICATION

(1) STATE 27 (2) DISTRICT 04 (3) JOB NO. ___ ___ ___ ___

(4) TRANSACTION CODE 1

I GENERAL AREA DESCRIPTION

(5) JOB NAME [illegible] Fence South

Location Codes: (6) SPECIAL PROJECT CODE ___ ___ ___

(7) PLANNING UNIT 04 (8) SUB-BASIN 53

(9) COUNTY 033 (10) WATERSHED NO. ___ ___ ___

(11) ALLOTMENT NO. ___ ___ ___

(12) WILDLIFE HABITAT AREA ___ ___ ___

Site: (13) Vegetative Subtype ___ ___ ___ (14) Acres/AUM ___ ___ . ___

VEGETATIVE COMPOSITION:

(15) Grasses ___ ___ (16) Forbs ___ ___ (17) Shrubs ___ ___

PERCENT GROUND COVER: (18) Vegetation ___ ___ (19) Other ___ ___

(20) Percent Slope ___ ___ ___ (21) Exposure ___

(22) Soil Texture ___ (23) Erosion Class ___

PRECIPITATION: (24) Spring/Summer ___ ___ (25) Fall/Winter ___ ___

II JOB ESTIMATE DATA

(26) SUBACTIVITY 1260 (27) WJC 6448

UNITS PLANNED: (28) Primary ___ ___ ___ ___ ___ 3.0

(29) Secondary ___ ___ ___ ___ ___ ___

PROPOSED COMPLETION: (30) Fiscal Year 73 (31) Third 1^{3}

(32) Work Participant 2 (33) Maintenance Responsibility 3

(34) Contributed Cost $ ___ ___ ___ ___ ___

(35) BLM Man-Months ___ ___ . 5 (36) BLM Cost $ ___ ___ 3600

III JOB DETAIL AND BENEFITS

(37) PRIMARY JOB OBJECTIVE 1

Plant and Pest Control: (38) Target Species ___ ___ ___ ___ ___ ___

CHEMICAL CONTROL: (39) Chemical ___ ___

(40) Lbs. Active Ingredient/Ac. ___ ___ . ___ ___ ___ (41) Carrier ___

(42) Application Method ___

(43) Sensitive Area Type ___ (44) Distance ___ ___ . ___

MECHANICAL CONTROL: (45) Type ___

Artificial Revegetation: SEEDING/PLANTING:

(46) Species ___ ___ ___ ___ ___ / ___ (47) Lbs./Ac. ___ ___ . ___

(48) Seedlings/Ac. ___ ___ ___ ___ (49) Method ___

(50) Repellant/Fungicide ___ ___

(51) AUMs Livestock Forage Added ___ ___ ___ ___

(52) Soil Saved (annual cu. yds.) ___ ___ ___ ___ ___

(53) Big game AUMs Added ___ ___ ___ ___

Watershed Tillage: (54) Treatment Code ___

IV JOB DETAIL AND BENEFITS

Facilities: (55) Type of Fence 2 (56) Other Misc. 1

Water Development: (57) Perm. Storage (ac./ft.) ___ ___ ___ ___ ___ . ___

(58) Pipeline (mi.) ___ ___ . ___

Water Control: (59) Structure Type ___

Storage (ac./ft.): (60) Flood ___ ___ ___ ___ ___ (61) Silt ___ ___ ___ ___

Wildlife: HABITAT DEVELOPMENT/PROTECTION:

(62) Type Code 02 (63) Primary Species 1 0 [illegible]

(64) Animal Months ___ ___ ___ ___ ___ (65) No. Increase ___ ___ ___ ___ ___

(66) Lbs. Fish Increase ___ ___ ___ ___ ___ (67) Rare/Endangered ___

VISITOR DAYS ADDED: (68) Fisherman ___ ___ ___ ___

(69) Hunter ___ ___ ___ ___ (70) Other ___ ___ ___ ___

V DETAIL ESTIMATE OF COSTS AND QUANTITIES

WORK DESCRIPTION AND MATERIALS (1)	BLM M/M (2)		UNITS		COST		GRAND TOTAL (7)
	PERM.	TEMP.	EA., MI., ect. (3)	COST (4)	BLM (5)	COOPERATOR (6)	
TOTAL							

VI JOB COMPLETION DATA

(71) SUBACTIVITY ___ ___ ___ ___ (72) WJC ___ ___ ___ ___

(73) Primary ___ ___ ___ ___ ___ ___ . ___

(74) Secondary ___ ___ ___ ___ ___ ___

DATE COMPLETED: (75) Calendar Year ___ ___ (76) Month ___ ___

CONTRIBUTION DETAIL: (77) Agreement ___ (78) Participant ___

(79) Contributor Name ___

(80) Deposited Contributions ___ ___ ___ ___ ___

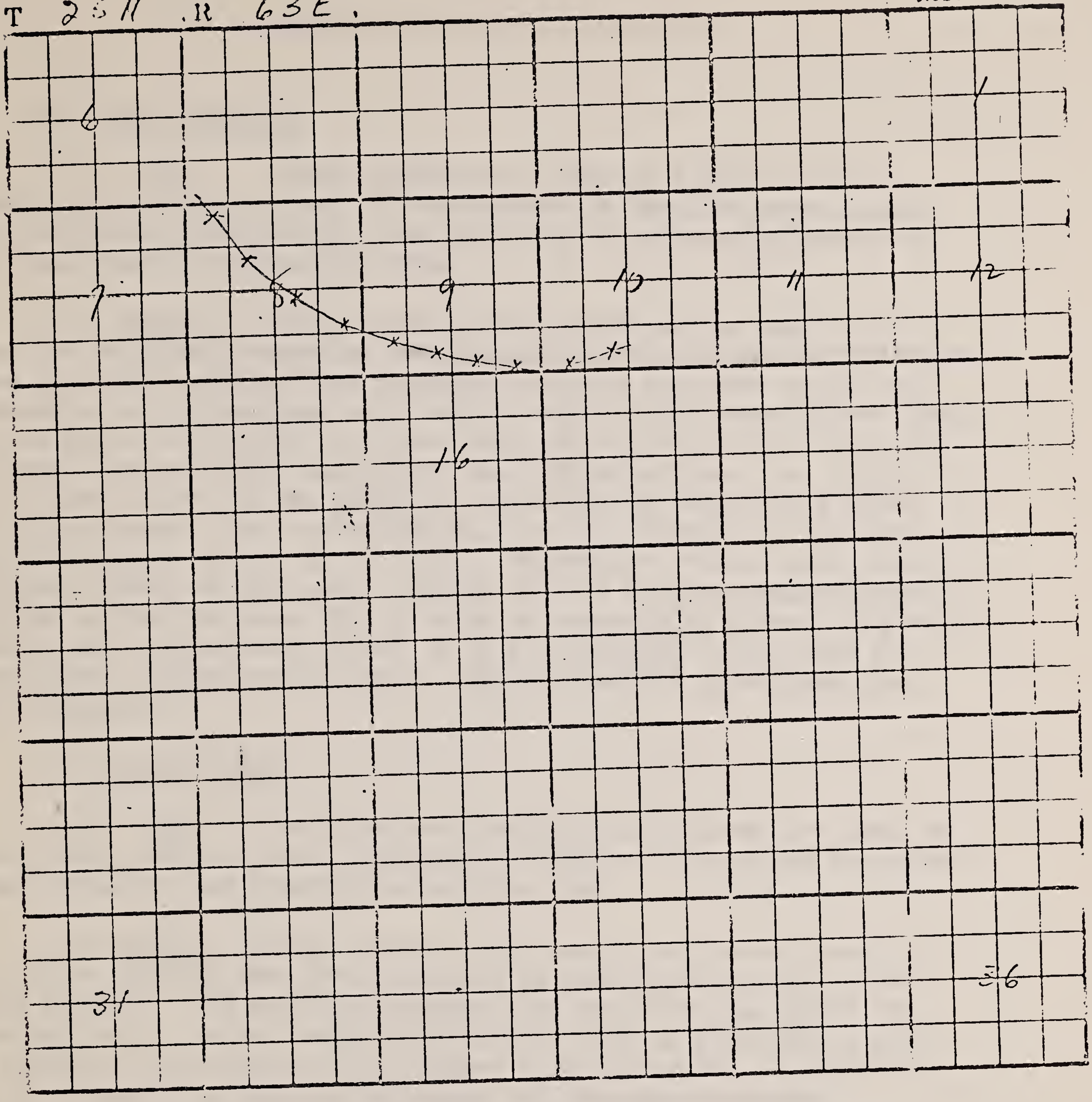
Undeposited Contributions:

(81) Labor/Equipment ___ (82) Material ___

STATE ___ DIST ___ JOB NUMBER ___

VII. LOCATION PLAT SCALE =1 MILE

T 25N R 63E. Meridian.



VIII. NARRATIVE DESCRIPTION OR JUSTIFICATION

This fence is needed in order to achieve proper management and control of livestock use on Goshute Creek and the Goshute Basin.

Prepared by	Date 11-30-70	Approved for PAWP (*Signature District Manager*)	Date
Reviewed by			

FIGURE 7

.26 Trash Catchers.

A. Use. Trash catchers are used as a weir or drop structure in a small stream. The structure is used to create pools, increase stream surface area, slow velocity, hold spawning gravel in place, and provide shelter for fish.

B. Method. Six foot steel fence posts cut in half form the three-foot sections needed for the basic dam. The three-foot posts are driven into the streambed and extended out into the bank at two-foot intervals so as to protrude about eight inches above normal water level. Excavate banks and extend wire into banks approximately six feet. Extend posts into the bank well above the high-water line. A slight slope to the center of the stream is desirable to concentrate water and protect banks. The top of the Hog wire is attached to the steel posts by a double strand of tie wire. Attach wire to at least two additional places on the post. Excess wire is bent upstream and rocks are piled on the upstream edge to hold it securely in place. Hog wire is thirty-two inches wide, 8 bar, 3 to 6 inch mesh; stay wires 6 inches apart, 1½ gauge galvanized. Tie wire ~~is~~ #12 galvanized (See Illustration 6).

.27 Low Rock Dams.

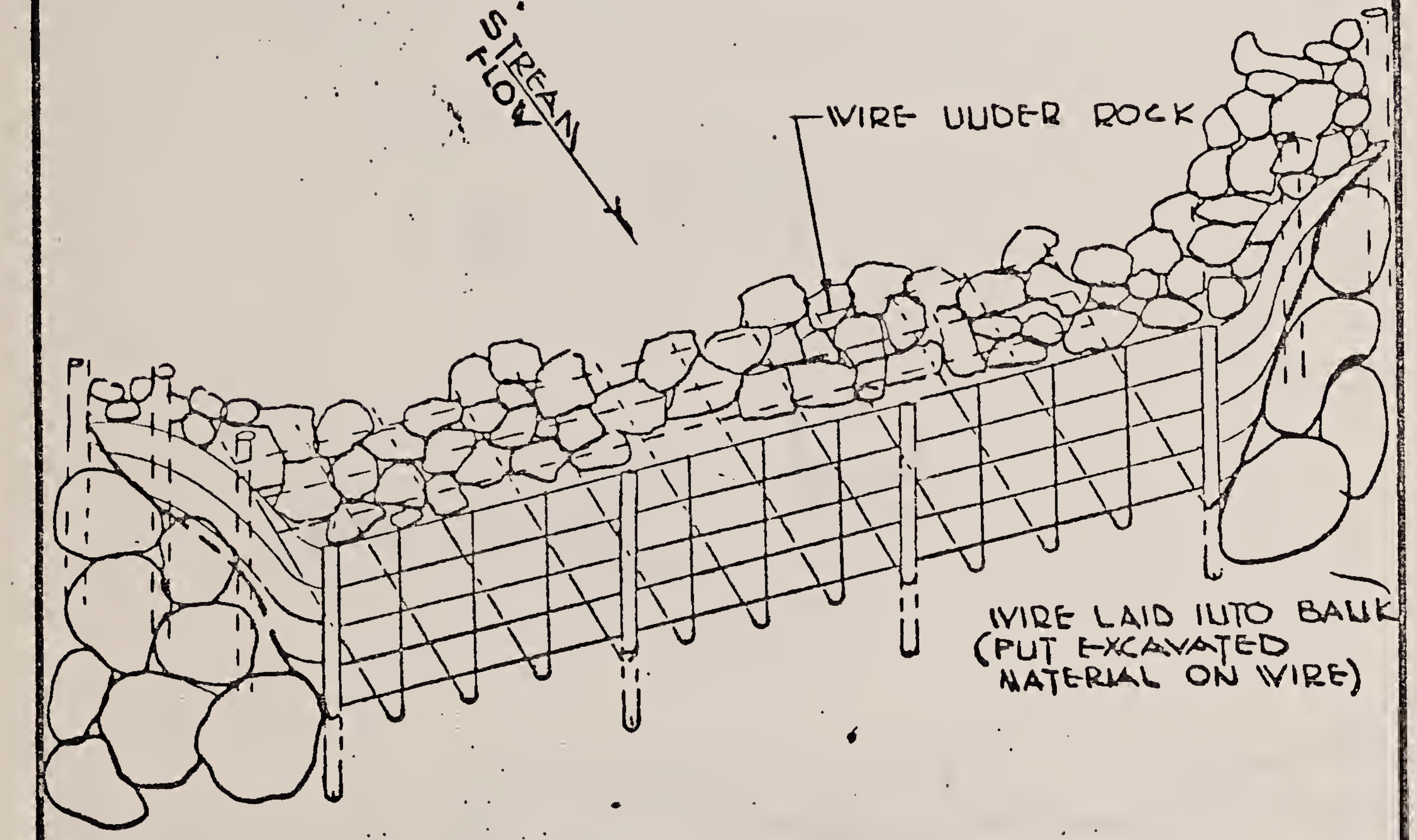
A. Use. Low rock dams installed in streams are used to create pools, decrease water velocity, hold gravel, increase the water holding capacity, and provide shelter for fish.

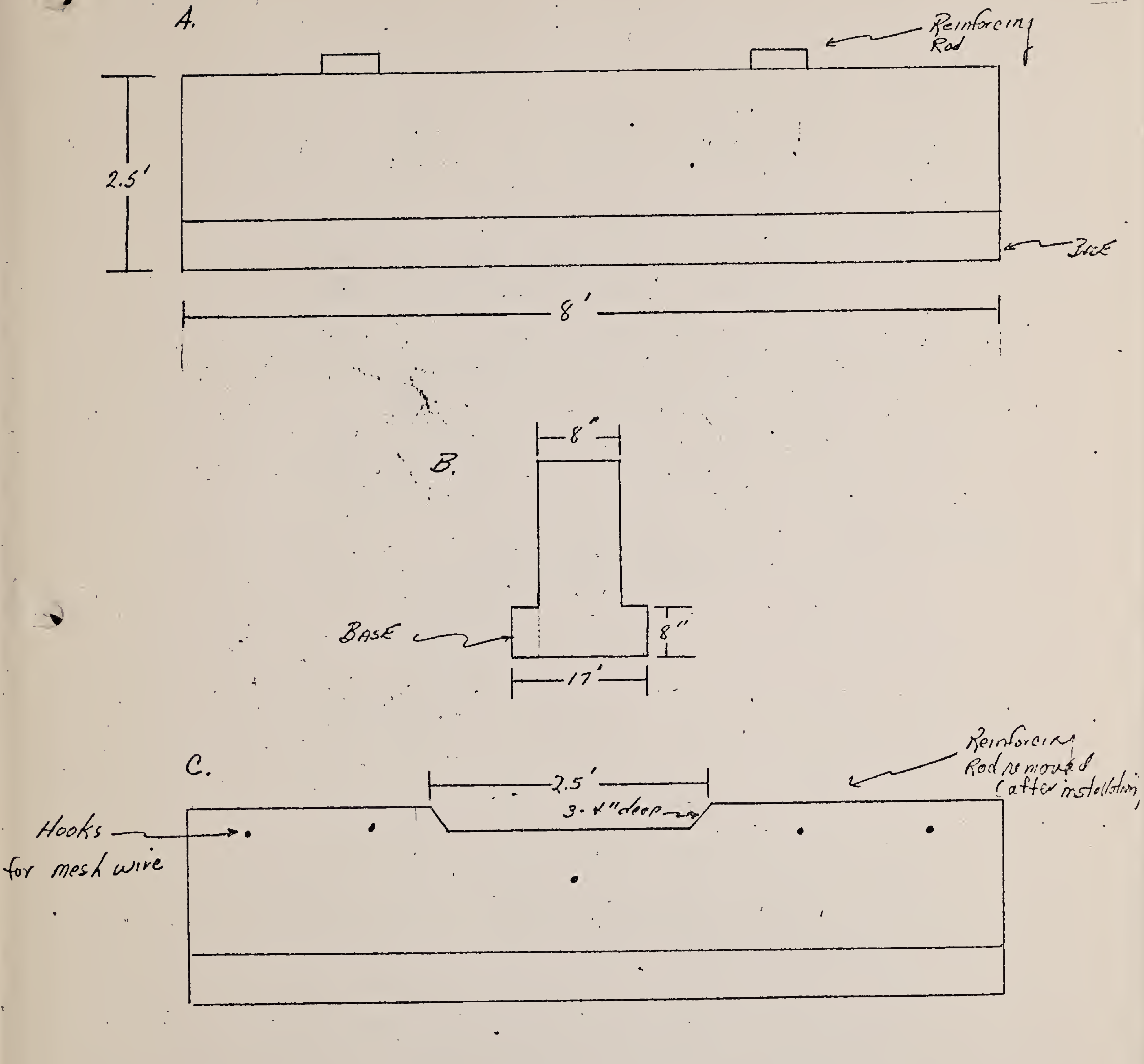
B. Method. Large boulders from one to two cubic yards in size must be used or the structure will be lost in high water. To prevent erosion, rock must be extended into the bank well above the high water mark. Rocks should interlock as much as possible to prevent shifting. The ends must be higher than the center of the dam in order to concentrate flow to the center of the stream channel. Position rock so that there is no upstream blockage to fish. Dams are more satisfactory if confined to small streams and if the existing natural boulders in place are used to advantage in forming a base for the dam (See Illustration 7).

.28 Log or Board Dams.

A. Use. Log or board dams can be used in small streams (less than 100 cfs) to reduce water velocity, hold spawning gravel in streams, create pools below the dam, and increase the water holding capacity.

Trash Catcher - Fisheries





Dimensions same as cattle guard base

FIGURE 8 - A. Concrete cattleguard base; B. End view of cattleguard base; C. Drop structure made from concrete cattleguard base.

FIGURE 9 - PRESENT CONDITION OF SPILLWAY ON BLM POND.

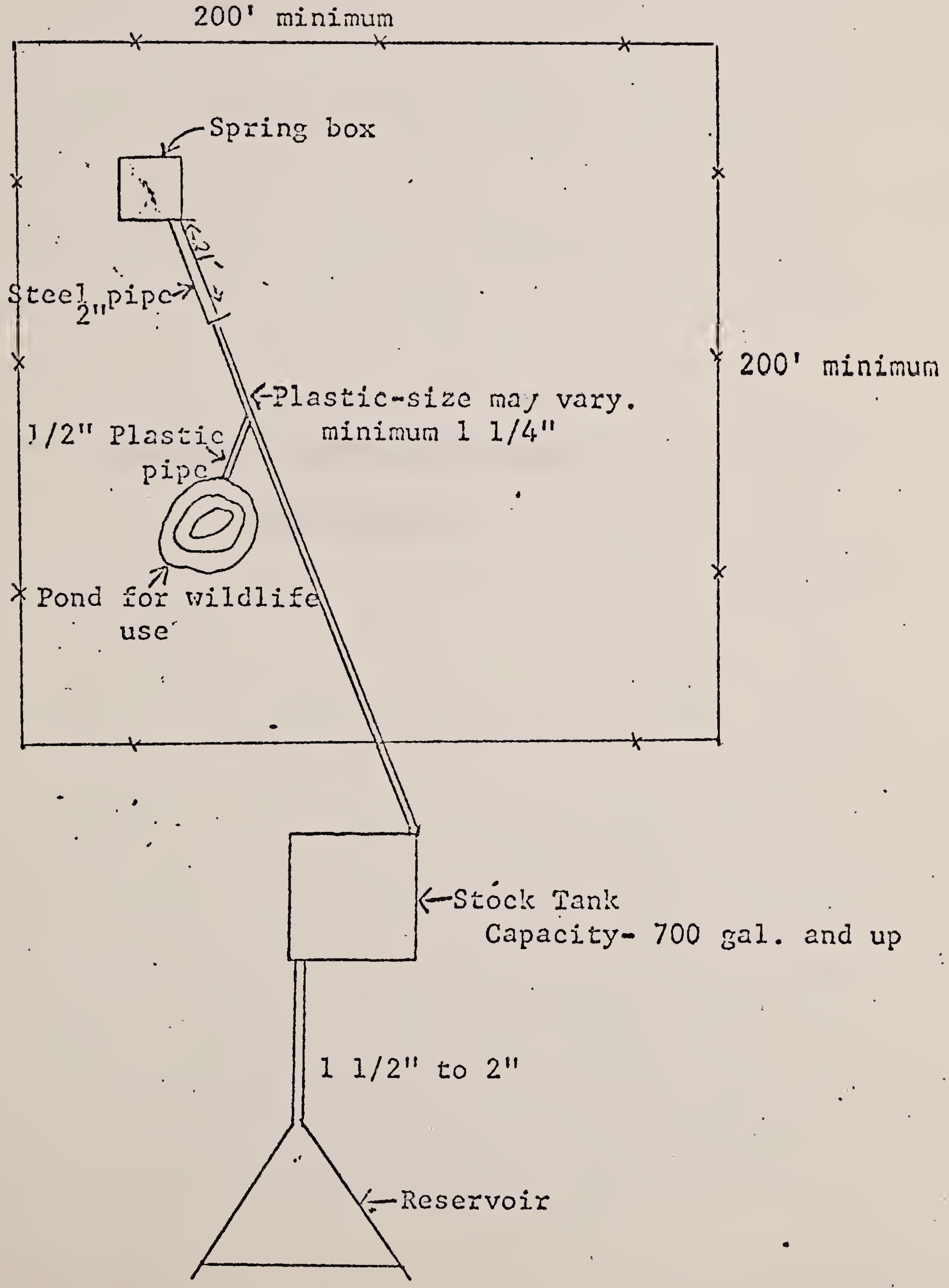


FIGURE 10 - Typical Spring Development

BIG GAME INTENSIVE INVENTORY
AND ANALYSIS

.11 Habitat Condition

A. Present Condition

Goshute Canyon provides yearlong range for mule deer.

1. Food

The habitat area supports a variety of vegetative types. Pinyon-juniper, white fir, big sagebrush, black sagebrush, mountain mahogany, bitterbrush and cliffrose occur on the steep slopes of Goshute Canyon. Forbs and grasses associated with these types include: wyethia, lupine, downy brome, bluebunch wheatgrass, stipa and sandberg's bluegrass. Evidence of several small meadows on the upper watershed are evident, but these have been invaded by wyethia. Other small deteriorated meadows are found along upper Goshute Creek. Chokecherry, squawberry, currant, serviceberry, virgin's bower, rose, willow and cottonwood trees dominate the canyon bottom.

Past grazing use by livestock and deer has been severe, due to competition for key forage species. Many of the important forb and grass plants are nearly gone. The mahogany plants are high-lined and the bitterbrush, serviceberry, willow and chokecherry plants are severely hedged.

2. Cover

Dense stands of vegetation, broken terrain and numerous rock outcroppings provide excellent cover for deer.

3. Water

Adequate water is furnished by Goshute Creek and several springs near the upper watershed.

B. Capability of Habitat for Improvement

1. Forage

Forage conditions for deer can be improved by regulating livestock grazing in Goshute Canyon. Livestock grazing should be used in improving key forage species and eliminating competition between livestock and deer.

2. Water

There is no need to improve water for deer.

3. Cover

There is no need to improve cover for deer.

.12 Population Condition

A. Present Numbers

Actual numbers of deer inhabitating the habitat area are unknown because it is only a small segment of the total Egan Cherry Creek Herd Unit.

Population data for the Egan-Cherry Creek Unit is contained in Figure 1.

B. Potential Carrying Capacity and Production

With improved range conditions, deer numbers will be increased to unknown numbers.

.13 Utilization of Wildlife

A. Present

1. Harvest

Harvest data are only available for the Egan Cherry Creek Unit (fig. 2).

B. Potential

1. Harvest

Unknown - will have to be correlated with total Egan Cherry Creek Unit.

BIG GAME HABITAT

PROBLEM ANALYSIS AND MANAGEMENT

.21 Problem Identification

A. Limiting Factor Related Problems

Lack of quality browse species for winter feed and forbs and grasses for succulent spring and summer feed.

B. Utilization Related Problems

None

C. Other Problems

Concentration of livestock near springs in upper watershed.

.22 Problem Causes

A. Limiting Factor Related Problems

The absence of quality browse species and forbs and grasses is due to grazing competition between livestock and deer and the encroachment of pinyon-juniper.

B. Other Problems

Livestock are trampling springs in the upper watershed which supply free water to deer.

.23 Problem Solutions

A. Limiting Factor Related Problems

Competition between livestock and deer can be alleviated by implementing grazing management systems.

Because of the frail condition of the watershed and the designation of the canyon area as "Goshute Canyon Natural Area" mechanical control of pinyon-juniper is not permissable. Proper grazing management will help reduce the rate of pinyon-juniper encroachment. Handcutting of invading pinyon-juniper in the upper watershed can be used to control the rate of pinyon-juniper encroachment.

B. Other Problems

Spring sources can be fenced to prevent livestock trampling. Water should be piped outside fenced area.

.24 Management Methods

A. Alternative Methods

1. Livestock Grazing

Grazing management should be used to improve deer habitat by reducing competition between livestock and deer and providing for increased vigor, seed production and seedling establishment of key forage species, including bitterbrush, mountain mahogany, forbs and grass. To accomplish this, the parts of the watershed which are accessible to livestock movement must be fenced. Springs in the upper watershed should be fenced to protect them from trampling by livestock.

2. Wildlife Population Use

Because the habitat area is only a small segment of the total Egan Herd Unit, it is not practicable to regulate population use in the habitat area.

3. Access Development, Improvement and Management

Present access is sufficient. No additional access is desired. Road in Goshute Canyon should be seeded to grass.

4. Timber Management

Hand cutting invading pinyon-juniper in the upper watershed should be done to reduce the rate of pinyon-juniper invasion.

5. <u>Land Acquisition, Calssification and Withdrawal</u>

In 1971, the Goshute Canyon Area was designated as the Goshute Canyon Natural Area and was segregated from all forms of disposal, except for land entry under the mineral leasing laws.

B. <u>Analyze Alternative Methods</u>

<u>Livestock Grazing</u>

As a minimum effort in improving livestock grazing through livestock management, the habitat area should be fenced and livestock grazing be restricted until a grazing management system can be implemented.

BIG GAME MANAGEMENT RECOMMENDATIONS

.31 Objectives

Big game habitat can be improved by:

1. Increase the percent composition of desirable forbs from 0 to 10 percent and the percent composition of grasses from 5 to 30 percent on key areas within grazing allotments.

   This should be accomplished in the big sagebrush, black sagebrush and coniferous vegetative types through livestock grazing management.

2. Increase the percent composition of bitterbrush and mountain mahogany from 3 percent to 18 percent on grazing allotment key areas.

3. Protect three springs in the upper watershed by fencing from livestock trampling. Provide water by constructing reservoirs outside fenced areas.

4. Control pinyon-juniper encroachment in upper watershed by hand cutting invading trees.

BIG GAME HABITAT MANAGEMENT

EVALUATION

.34 Evaluation

Big Game

Evaluation studies for deer habitat should be done in accordance with evaluation studies specified in grazing allotment management plans.

WILDLIFE HABITAT - PRESENT SITUATION

HERD COMPOSITION

B. Big Game, Deer

Mgt. Area No. 12 Herd Unit - Egan/Cherry Creek

	Year	1962	1963	1964	1965	1966	1967	1968	1969	1970
Fall-Post Season	No. Classified	126	185	83	106	96				
	Bucks/100 Does	35	33	30	27	35				
	Fawns/100 Does	75	87	95	50	74				
	Fawns/100 Adults	56	65	73	39	55				

	Year	1962	1963	1964	1965	1966	1967	1968	1969	1970
Spring	No. Classified			144						
	Fawns/100 Adults			37						
	%Difference(Fawns)			-49						

FIGURE 1 - Population data for the Egan-Cherry Creek Unit

WILDLIFE HABITAT - PRESENT SITUATION

HUNTER HARVEST DATA

D. Big Game, Deer

Mgt. Area No. 12 Herd Unit - Egan/Cherry Creek*

Year	Total Anterless	Total Bucks	Total	Estimated Hunter Days	% Hunter Success**	Type Season***
1961	46	109	155	1,860	58	BO & AQ
1962	70	95	165	1,980	56	ES & AQ
1963	91	119	210	2,520	45	ES & AQ
1964	110	98	208	2,496	46	ES & AQ
1965	95	105	200	2,400	39	ES & AQ
1966	27	88	115	1,380	68	ES
1967						
1968						
1969						
1970						

*Includes entire west side of Planning Unit

**Based on average of non-resident and anterless quota return for Management Area No. 12

***BO - Bucks only

ES - Either Sex

AQ - Anterless Quota

FIGURE 2 - Harvest data for the Egan-Cherry Creek Unit

UPLAND GAME INTENSIVE INVENTORY
AND ANALYSIS

.11 Habitat Condition

A. Present Condition

1. Food

The habitat area contains yearlong habitat for sage grouse. The upper part of the watershed above the mouth of Goshute Canyon contains summer habitat. The area on the benchland contains winter habitat. Blue grouse habitat is found throughout the area, except on the bench area. Hungarian partridge yearlong habitat is located along Goshute Creek below the county road.

Big sagebrush and black sagebrush vegetative types provide the major source of food for sage grouse. However, adequate forbs and grasses are lacking for good sage grouse habitat.

Important food for blue grouse is supplied by leaves and twigs of white fir, willow, rose, serviceberry and poplar. Herbaceous plants such as sedge, vetch and eriogonum supply additional food.

Alfalfa, clover and wheat on nearby private land furnishes the bulk of the Hungarian partridge food. Crested wheatgrass, brome grass and halogeton furnishes supplemental feed.

2. Cover

Generally, adequate cover is provided for all upland game birds.

3. Water

Sufficient water is supplied by Goshute Creek and several springs located in the upper watershed.

B. Capability of Habitat for Improvement

1. Food

Sage grouse habitat can be significantly improved through livestock management designed to enhance growth of forbs and grasses and restoration of small meadows in the upper watershed and along Goshute Creek.

Reducing competition for forbs, willow and serviceberry by livestock and big game will improve blue grouse habitat, as will restoration of the meadow types.

Habitat of Hungarian partridge does not support significant potential for improvement.

2. Cover

There is no need to improve cover for upland game.

3. Water

The springs in upper Goshute Canyon should be protected from trampling by livestock and re-developed to permit use by upland game.

.12 Population Condition

A. Present Numbers

No upland game population data are available from the Nevada Department of Fish and Game.

B. Potential Carrying Capacity

Although population data are not known it is likely that with improved habitat conditions an increase in numbers will be realized.

.13 Utilization of Wildlife

A. Present

No data are available on harvest of upland game in the habitat area.

B. Potential

The habitat area contains habitat potentially suitable for habitation by mountain quail and scaled quail.

UPLAND GAME HABITAT
PROBLEM ANALYSIS AND MANAGEMENT

.21 Problem Analysis

A. Limiting Factor Related Problems

The limiting factors relating to the habitat requirements of upland game are:

1. Lack of forbs and grasses in big sagebrush, black sagebrush and coniferous types.
2. Deteriorated condition of wet meadows.
3. Competition between livestock and wildlife for willow and serviceberry.

B. Utilization Related Problems

Nothing is known of utilization related problems.

C. Other Related Problems

Livestock are trampling springs in upper watershed.

.22 Problem Causes

A. Limiting Factor Related Problems

1. Lack of forbs and grasses is caused by over utilization by livestock.
2. The deteriorated condition of the wet meadows, the invasion of wyethia and excessive gully erosion is attributed to overgrazing and trampling by livestock.
3. Competition for willow and serviceberry is caused by heavy livestock grazing.

B. Other Related Problems

Livestock are concentrating near springs in upper watershed.

.23 Problem Solutions

A. Limiting Factor Related Problems

1. Proper livestock management can enhance the growth of forbs and grasses.

2. Restoration of wet meadows can be accomplished by implementing livestock management systems and controlling gully erosion.

3. Competition for willow and serviceberry can be eliminated by implementing livestock management systems.

B. Other Related Problems

Fence springs in upper watershed and provide water for upland game in fenced area.

.24 Management Methods

A. Alternative Methods

1. Livestock Grazing. Livestock grazing management should be used to enhance forb and grass composition in the big sagebrush and black sagebrush types, reduce competition for willow and serviceberry and restore the meadow types in the upper watershed and along Goshute Creek.

2. Wildlife Population Use. Regulation of upland game species is the responsibility of the Nevada Department of Fish and Game.

3. Timber Management. Cutting of white fir should be prohibited for the benefit of blue grouse.

4. Habitat Development and/or Improvement.

If livestock grazing management fails to produce desirable forbs and grasses needed to meet requirements of upland game, limited amounts of sagebrush chainings should be undertaken. To accomplish this, a specially designed anchor chain should be pulled behind a single crawler tractor. These chainings should be confined to special areas, as recommended by the Nevada Department of Fish and Game.

Water control structures should be placed in the gullies in the upper watershed to check erosion and raise the water table which is needed for meadow restoration and maintenance.

The springs in the upper watershed should be fenced to protect them from livestock use. Water should be provided in fenced areas for upland game.

5. Access Development, Improvement and Management.

Access is adequate. No additional access is desired.

B. Analyze Alternative Methods

As a minimum effort in improving the upland game habitat, the accessible parts of the habitat should be fenced from livestock grazing. Livestock grazing should be restricted until adequate grazing management can be implemented.

UPLAND GAME MANAGEMENT
RECOMMENDATIONS

.31 Objectives

Upland game habitat can be improved by:

1. Increasing the percent composition of grasses from 5 to 30 percent on key areas within grazing allotment. This should be accomplished in the big sagebrush, black sagebrush and coniferous vegetative types through livestock grazing management.

2. Maintain present stands of white fir by prohibiting the cutting of white fir.

3. Restore and maintain three meadows in upper watershed and along Goshute Creek. This should be accomplished by livestock grazing management and placing gully plugs in nearby gullies to raise water table.

4. Reduce livestock use on willow from 85 percent to 10 percent through livestock grazing management.

5. Protect three springs in the upper watershed by fencing from livestock trampling. Provide water inside fenced area.

Other Objectives

1. The Nevada Department of Fish and Game will gather upland game population data.

2. The Nevada Department of Fish and Game will explore the possibilities of releasing mountain quail and scaled quail.

UPLAND GAME HABITAT MANAGEMENT

EVALUATION

.34 Evaluation

A. Upland Game

Evaluation studies for big game habitat should be done in accordance with evaluation studies specified in grazing management plans.

B. Population Data

The Nevada Department of Fish and Game will collect upland game population data.

GOSHUTE CREEK INTENSIVE
INVENTORY AND ANALYSIS

.11 Habitat Condition

A. Present Condition

1. Water

Goshute Creek gains its source of water from several small springs located at an approximate elevation of 8,000 feet in the Cherry Creek Mountains (fig. 1). The stream acquires additional seepage and spring water during a one-half mile descent. The water continues its course for 1.5 miles, at which point it disappears into the stream bed. One-half mile below this point a large flow emanates from the stream bed and adjacent seepage area to continue its downward course for 1.8 miles. Here the water leaves the mouth of Goshute Canyon and flows over an alluvial fan for 1.7 miles before being diverted for irrigation water on private land in Steptoe Valley. The elevation at the point of diversion is 6,100 feet.

The average width of Goshute Creek is 2'11" and the average depth is 2.5'.

The approximate volume of flow is 1.2 cubic feet per second. A flow of less than 23 gallons per minute arises from the north tributary at the upper elevation. On October 25, 1957 the approximate flow at various points along Goshute was recorded using the float method: Area (a) 1.29 cfs., Area (b) 2.0 cfs., and Area (c) 1.3 cfs. A loss of water in

the amount of 0.7 cfs. occurs from area (b) to area (c) (fig. 2).

In 1969, a permanent stream recorder was placed in Goshute Creek near the mouth of Goshute Canyon.

On October 28, 1970, water temperatures were recorded as follows:

Location	Time	Air Temperature	Water Temperature
Source	1:45 p.m.	50.0°F	46.0°F
Sample Area (a)	2:00 p.m.	47.0°F	46.5°F
Sample Area (b)	4:00 p.m.	48.0°F	46.0°F
Sample Area (c)	5:00 p.m.	47.0°F	45.0°F

2. Stream Bed Characteristics

The streambed at the upper elevation has a bottom composed of 15% rocks, 15% rubble, 15% gravel, 35% sand and 15% compacted mud. At the central elevation the bottom composition is 10% rocks, 20% rubble, 10 to 20% gravel, 30 to 40% sand and 10 59 20% mud. The bottom type is cemented with a light encrustment of carbonates. This encrustment is not noticeable at the upper and lower elevations, although there is some adherence of bottom material. The stream bottom at the lower elevation is made up of 5% rocks, 10 to 20% rubble, 30% gravel, 30 to 40% sand and 10 to 15% mud.

3. Food

Algae are equally distributed throughout the stream, but not in great densities. Algae found to be present include such diatoms and vaucheria as (Chaetophora elegans), (Cladophora glomerata), (Palmella myosurus) and (Prasiola nevadensis).

The following acquatic organisms are found in fair amounts. Insects - mayfly nymphs, caddisfly (3 species) and blackfly larvae.

4. Cover

Cover along Goshute Creek varies from fair to poor. At the upper and center elevations deadwood and beaver cut aspens in or over the streambed afford some protection. Additional, but limited, cover is offered by overhanging shrubs (chokecherry, rose, dogwood, squawbush and virgin's bower) and some roots submerged in the water. Fair overhead cover is given by stands of aspens and cottonwoods. Willows give fair shelter to the stream along the lower elevation. Very little cover is provided by grasses or forbs along the entire stream.

5. Pools

Pools in the entire stream are poor in number and quality. This is due in part to the steep gradient of Goshute Creek; the average is 273.5 ft per mile (fig. 3). In an effort to improve the pool situation three small ponds were constructed by BLM in 1966 (fig. 4). Since then the ponds have silted in and the spillway in the largest pond has been lost to flooding (the spillway was incorrectly installed).

6. Riffle Area

Riffle areas are good along most sections, except at the central elevation where they are only considered as fair.

7. Spawning Conditions

Along much of the stream at the upper and central elevations, suitable spawning areas are generally lacking. This is primarily due to the adherence of the bottom type and the presence of silt. Spawning areas are more abundant at the lower elevation, but they are only rated as fair.

8. Watershed Conditions

The watershed in Goshute Canyon lacks sufficient basal ground cover to provide adequate protection. Certain amount of natural geologic erosion is taking place, which adds to the unstability of the watershed. Evidence of this appears in the form of numerous "earth slumps" in the upper watershed. Considerable head-cutting is occuring in several gullies in the upper watershed.

9. Chemical Analysis

On October 28, 1970, a chemical analysis was conducted on the water in Goshute Creek.

Results of that analysis are as follows:

Dissolved Oxygen - 10 ppm
CO_3(Phph) - 0 ppm
HCO_3 - 222 ppm
CO_2 - 10 ppm
ph - 8.5 - 9.0

10. Stream Type

On October 28, 1970, the stream type was rated as slow.

11. Turbidity

On October 28, 1970, the turbidity was rated as clear.

B. Capability of the Habitat for Improvement

1. Water

Water in Goshute Creek is suitable for habitation by cutthroat trout.

2. Streambed Characteristics

Enhancement of streambed characteristics is possible by eliminating or reducing siltation in Goshute Creek through stabilization of the upper watershed and the streambank.

On the hard-bottom types, low dams of artificial materials can be employed to create plunge basins to scour out light encrustments.

3. Cover

Streamside vegetation in the form of trees, shrubs, forbs and grass can be an important factor in providing natural cover (shelter and escape cover) and increasing terrestrial food. Streamside vegetation also is valuable in reducing water temperatures, siltation and runoff and stopping minor slash and debris movement. Both the shelter and feeding range can be extended by creating small pools.

Survival of young fish can be encouraged by installing stone piles, log jams or other structures having many interstices.

4. Food

Food conditions are adequate to support increased populations of cutthroat trout.

5. Pools and Riffles

Pool and riffle ratios can be increased by constructing small dams to raise water levels for pool formation upstream and to create a plunge basin with feeding and resting shelter downstream.

6. Spawning Conditions

Spawning conditions can be enhanced by (1) creating plunge basins which scour out the encrustment on the streambottom, (2) reducing the siltation in the stream, and (3) increasing streambank cover.

7. Watershed Condition

Watershed conditions can be enhanced by perpetuating the growth of basal ground cover through livestock management.

.12 Population Condition

A. Present Numbers

On September 11, 1953, the Nevada Department of Fish and Game planted 25,000 yellowstone cutthroat trout fingerlings in Goshute Creek. On August 5, 1955, a large cloudburst was believed to have destroyed the entire fish population. Subsequent population inventories by the Nevada Department of Fish and Game substantiated this belief when no fish were found in any of the sample areas. It was then decided by the Nevada Department of Fish and Game that Goshute Creek was suitable habitat for possible establishment of a

rare and endangered cutthroat trout found in Pine Creek, a small stream located on the western slope of Wheeler Peak.

On July 17, 1960 the Nevada Department of Fish and Game planted 54 (3½ - 10½ inch) Pine Creek trout into existing beaver dams in Goshute Creek. By 1966, the beaver dams had been destroyed by high water.

On September 16, 1969, a formal population inventory was conducted by the Nevada Department of Fish and Game and Bureau of Land Management. Nine permanently located 125-foot electro-shocking sections were established along the creek, beginning at a point where the stream divides about one-half mile above the county road and continuing to a point about 100 yards below the BLM ponds (fig. 5). These shocking sections were marked with a metal fence post. Following are result of that inventory:

	Size of Fish		Computed
Sample Area	2-inch	8-10 inch	Fish per Mile
A	8	4	506.4
B	5	0	211.0
C	12	2	590.8
D	30	0	1266.0
E	0	0	0.0
F	0	0	0.0
G	0	0	0.0
H	0	0	0.0
I	1	0	0.0
			291
Total	56	6	

Sample areas A thru D are on the bench area. This population inventory tends to show that the upper portions of Goshute Creek are devoid of cutthroat trout. However, during the inventory, fish were seen in pools outside the shocking sections. The inventory does indicate that the population of trout in this section is very low.

On October 28, 1970, a second population inventory was conducted. Following are the results:

Sample Area	Size of Fish (Inches) 5	6	7	8	9	10	Computed Fish Per Mile
A	5	3			2		
B	1	1					
C	7	4			2		
D	5	2	1				
E		1	2		1		
F			1		1		
G	0	0	0	0	0	0	
H		1		2			
I	1			1		1	
Total	19	12	4	3	6	1	239

The lack of 2-3 inch cutthroat trout in this second inventory suggests that reproduction was not successful in 1969. High spring run-off and high turbidity will have a detrimental affect upon the reproduction.

B. Potential Carrying Capacity and Production

With proper habitat development and improvement Goshute Creek has the capability to support a significant population of cutthroat trout. Actual numbers the habitat can support must be determined by the Nevada Department of Fish and Game.

.13 Utilization of Wildlife

A. Present

In 1960, the Department of Fish and Game closed Goshute Creek to fishing. An undetermined amount of illegal fishing has been occurring since then.

B. Potential

If future plans prove successful in perpetuating the cutthroat trout, it may be feasible to open Goshute Creek to limited fishing. The chance to catch a native cutthroat trout would be a unique experience. At this time, however, it appears as though the cutthroat

trout is of greater evolutionary and ecological importance and should be protected for these values.

.21 Problem Identification

A. Limiting Factor Related Problems

The limiting factors relating to the habitat requirements of the cutthroat trout are:

1. Lack of pools to provide resting areas. The fish are either being forced downstream by high water or are moving down stream in search of pools. Population studies show the highest population to be in the lower portions of Goshute Creek.
2. Spawning areas are lacking or are generally inadequate to meet spawning requirements.
3. Lack of streambank cover needed to provide (1) shade, (2) shelter, (3) protection from predators, and (4) survival of young fish.
4. Loss of fish through a headgate at the lower point of diversion.
5. Frequent severe flooding conditions is causing considerable damage to the streambank.
6. Siltation of BLM ponds and natural pools.

B. Utilization Related Problems

Because the cutthroat trout is protected by Federal and State laws, utilization is not a problem. The amount of illegal fishing occurring is unknown; however, it is not considered critical. As the public becomes aware of the status of the fish in Goshute Creek, illegal fishing could become a problem.

GOSHUTE CREEK HABITAT
PROBLEM ANALYSIS AND MANAGEMENT

C. Other Related Problems

1. Lack of quality vegetation in watershed area to provide basal ground cover for watershed protection.

2. A secondary road parallels part of Goshute Creek above the mouth of Goshute Canyon. In many locations, this causes sluffing of the streambank and run-off water to run directly into Goshute Creek.

3. Diversion of water from main channel where spillway in large BLM pond is washed out.

4. Loss of water, habitat and fish where water is diverted from original stream channel below the mouth of Goshute Canyon.

5. Existing water rights belong to Jennifer Day Enterprises.

.22 Problem Causes

A. Limiting Factor Related Problems

1. Lack of pools is caused by the steep gradient of Goshute Creek and the absence of obstructions in the creek needed to change the gradient.

2. Spawning areas are lacking because of siltation and the encrustment of the streambottom.

3. Streambank cover is absent because of the concentration of livestock along Goshute Creek.

4. Loss of fish through the headgate is occurring because of the lack of good upstream habitat and the absence of a screen or other device needed to keep fish out of the headgate.

5. Frequent flooding is the result of poor watershed conditions and protective plant cover on the watershed.

6. Siltation occurs because of unstable streambanks, poor watershed conditions and trampling of streambanks by livestock.

B. Utilization Related Problems

None.

C. Other Related Problems

1. Uncontrolled livestock grazing on the watershed is responsible for a lack of quality vegetation needed to provide basal ground cover for watershed protection.

2. The secondary road paralleling Goshute is located too close to the streambank.

3. Diversion of water from the main channel on the bench area is occurring unauthorized.

.23 Problem Solutions

A. Limiting Factor Related Problems

1. Lack of Pools

Adequate resting areas in the form of pools can be provided by installing stream devices such as concrete drop structures, trash catchers, large rocks or other obstructions in Goshute Creek to raise water levels for pool formation upstream and create plunge basins with shelter downstream.

2. Spawning Areas

Spawning areas can be improved by (1) installing structures which will create plunge basins which in turn will scour-out the encrustment on the stream bottom, (2) reducing siltation on the streambank by improving watershed conditions, and (3) enhance streambank cover and reduce sluffing of streambanks.

3. Watershed Conditions

Watershed conditions can be improved by implementing a grazing management system on the watershed.

4. Lack of Streambank Cover

Adequate streambank cover can be provided by regulating livestock use to enhance growth of vegetation along Goshute Creek.

5. Loss of Fish

A small reservoir at the terminal end of Goshute Creek can be used to prevent downstream loss of fish. Structures along the entire length of Goshute Creek can be used to encourage fish to remain in the higher elevations.

6. Flooding

Flooding conditions caused by severe run-off in the upper watershed can be reduced by improving watershed conditions through grazing management and installation of structures in gullies.

7. Siltation

Siltation of BLM ponds and natural pools can be reduced by improving watershed conditions and eliminating sluffing of the streambank.

B. Utilization Related Problems

Public relations work and strict enforcement of Federal and State laws can help reduce unlawful fishing.

C. Other Problems

1. Uncontrolled Livestock Grazing

Properly implemented grazing systems is a worthwhile means of increasing quality basal ground cover in the upper watershed and enhancing streambank cover. Winter feeding cattle along lower Goshute Creek must be handled as a range administrative problem.

2. Access Along Goshute Creek

Travel on the road paralleling Goshute Creek should be limited to use by BLM and Nevada Department of Fish and Game for administrative reasons. The road bed should be seeded with a suitable grass species to prevent accelerated runoff and sluffing of the streambank.

3. Indescriminate Camping

Camping within 50 feet of Goshute Creek should be discouraged.

4. Diversion of Water

The problem of unauthorized diversion of water from Goshute Creek on lower bench area can be controlled by working with Jennifer Day Enterprises.

5. Water Rights

Future plans to improve habitat in Goshute Creek must be closely coordinated with Jennifer Day Enterprises so as to insure that their supply of water is not adversely affected.

.24 Management Methods

A. Alternative Methods

1. Livestock Grazing

Fence the accessible parts of the habitat area and restrict all livestock grazing until a grazing management system for the range users in the area can be implemented. When a grazing management system is implemented, the habitat area should be used as a single pasture. Winter feeding of cattle along lower Goshute Creek should be halted immediately.

2. Wildlife Population Use

Until such time as the cutthroat trout become sufficiently perpetuated to warrant consideration as a fisheries, they should be managed for their research and aesthetic values. Such use must be regulated by the Nevada Department of Fish and Game. Provisions for public use should be made through field trips, news media, brochures and slide presentations.

3. Habitat Development and/or Improvement

The following improvements are needed:

a. Fences along both sides of Goshute Creek near the

mouth of Goshute Canyon to private land in Steptoe Valley and on the north and south boundaries of the watershed.

b. Hand planting of shrub species along the entire length of Goshute Creek.

c. Reconstruction of the spillway in the larger BLM pond.

d. Small terminal reservoir on Goshute Creek above the private land.

e. Trash catchers - create pools, increase surface area, slow water velocity and provide shelter for fish.

f. Low rock dams - create pools, decrease water velocity and provide shelter for fish.

g. Pool excavation - provide resting and rearing areas for fish where there is a lack of pools.

h. Submerged brush and trees - provide cover and hiding places for fish in parts of Goshute that are lacking in natural submerged brush and trees.

4. <u>Access Development, Improvement and Classification</u>

None needed.

5. <u>Land Acquisition, Classification and Withdrawal</u>

The habitat area is included in the recently designated and segregated Goshute Canyon Natural Area. No further land classification is needed.

6. Diversion of Water

Work with Jennifer Day Enterprises in correcting the unauthorized diversion of water from Goshute Creek.

7. Water Rights

Seek immediate involvement of Jennifer Day Enterprises in future plans involving Goshute Creek.

GOSHUTE CREEK MANAGEMENT
RECOMMENDATIONS

.31 Objectives

Cutthroat trout habitat in Goshute Creek can be improved by:

1. Increase the carrying capacity of Goshute Creek from 291 fish per mile to 1000 fish per mile.
2. Improve resting areas by: (1) creating pools by means of trash catchers placed at 50 foot intervals on the bench area and 100 foot intervals in the canyon area, (2) excavating pools above trash catchers, (3) constructing low rock dams in areas between trash catchers and (4) repairing the spillway in the large BLM pond.
3. Improve spawning areas by: (1) installing trash catchers as described above and (2) reducing siltation in stream bottom.
4. Improve shade, shelter and protective cover by: (1) enhancing streambank cover along the entire length of Goshute Creek and (2) placing stone piles or brush in pools created by trash catchers.
5. Prevent downstream movement of fish by: (1) repairing the large BLM pond, (2) installing trash catchers and (3) constructing a small reservoir at the lower end of Goshute Creek.
6. Reduce siltation in Goshute Creek by: (1) improving streambank cover along the entire length of Goshute Creek, (2) improving watershed conditions by increasing ground cover from 30 to 50 percent and installing control structures in gullies in the upper watershed.

7. Reduce streambank damage by improving watershed conditions as described in 6 above.

8. Control loss of fish by constructing: (1) trash catchers and (2) small reservoir at the lower portion of Goshute Creek.

9. Correct unauthorized diversion of Goshute Creek by working with Jennifer Day Enterprises.

<u>Other Related Objectives are as follows</u>:

1. Prevent conflicts with owner of water rights by working with Jennifer Day Enterprises.

2. Provide public information through interpretative signs, news releases, brochures, etc.

GOSHUTE CREEK HABITAT MANAGEMENT

EVALUATION

.34 Evaluation

The following evaluation studies are needed to evaluate the effectiveness of management methods used in meeting objectives.

1. Annual fall fish population studies using electro-shocking devices should be made to determine the status of fish populations and the effectiveness of stream improvement work.
2. A thermal recorder should be placed near mouth of Goshute Canyon to record water temperatures.
3. Vegetative studies on watershed should be done in accordance with evaluation studies specified in allotment management plans.

FIGURE 1 - Goshute Creek gains its source of water from springs located in upper Goshute Canyon.

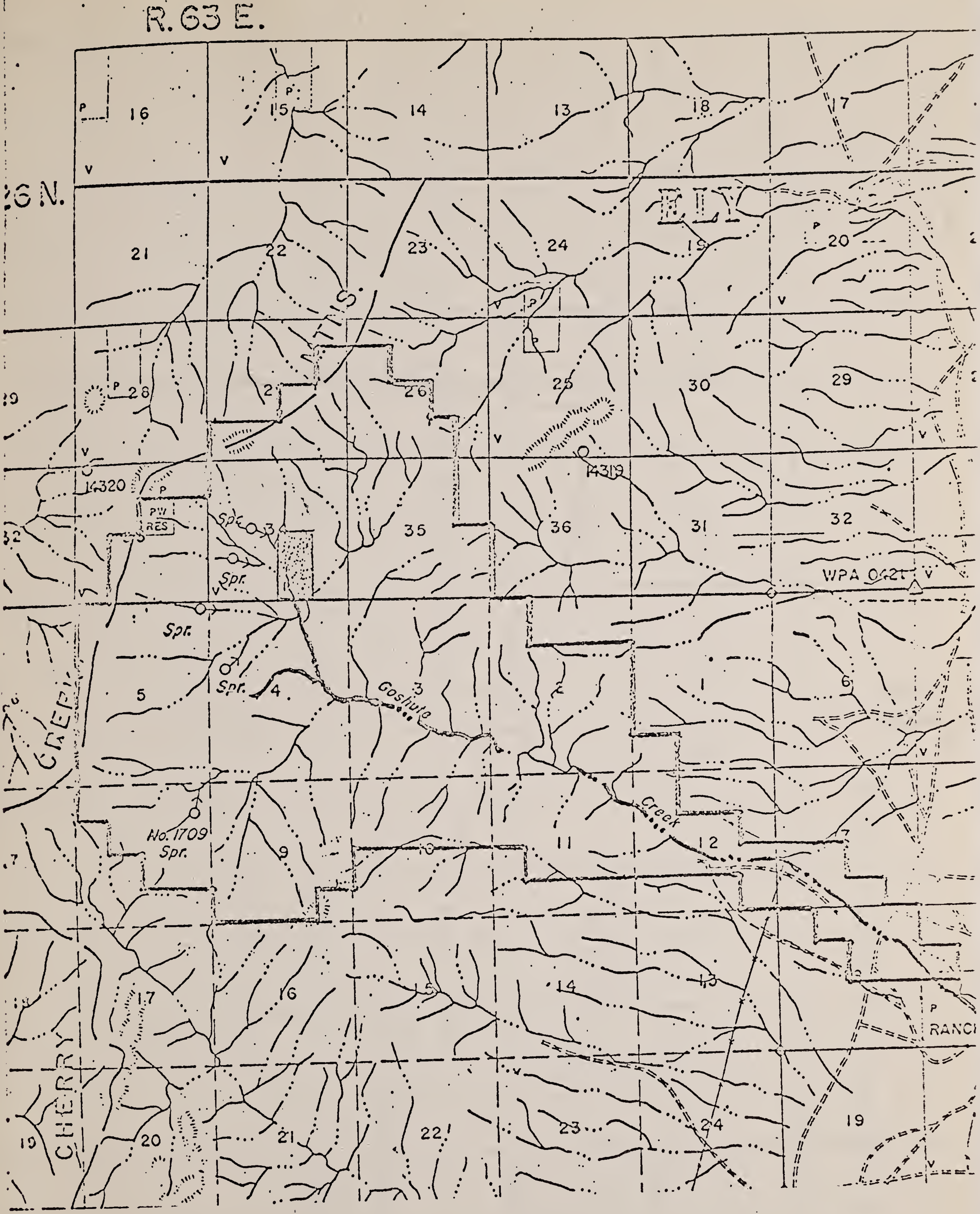


FIGURE 2 - Locations of sample areas

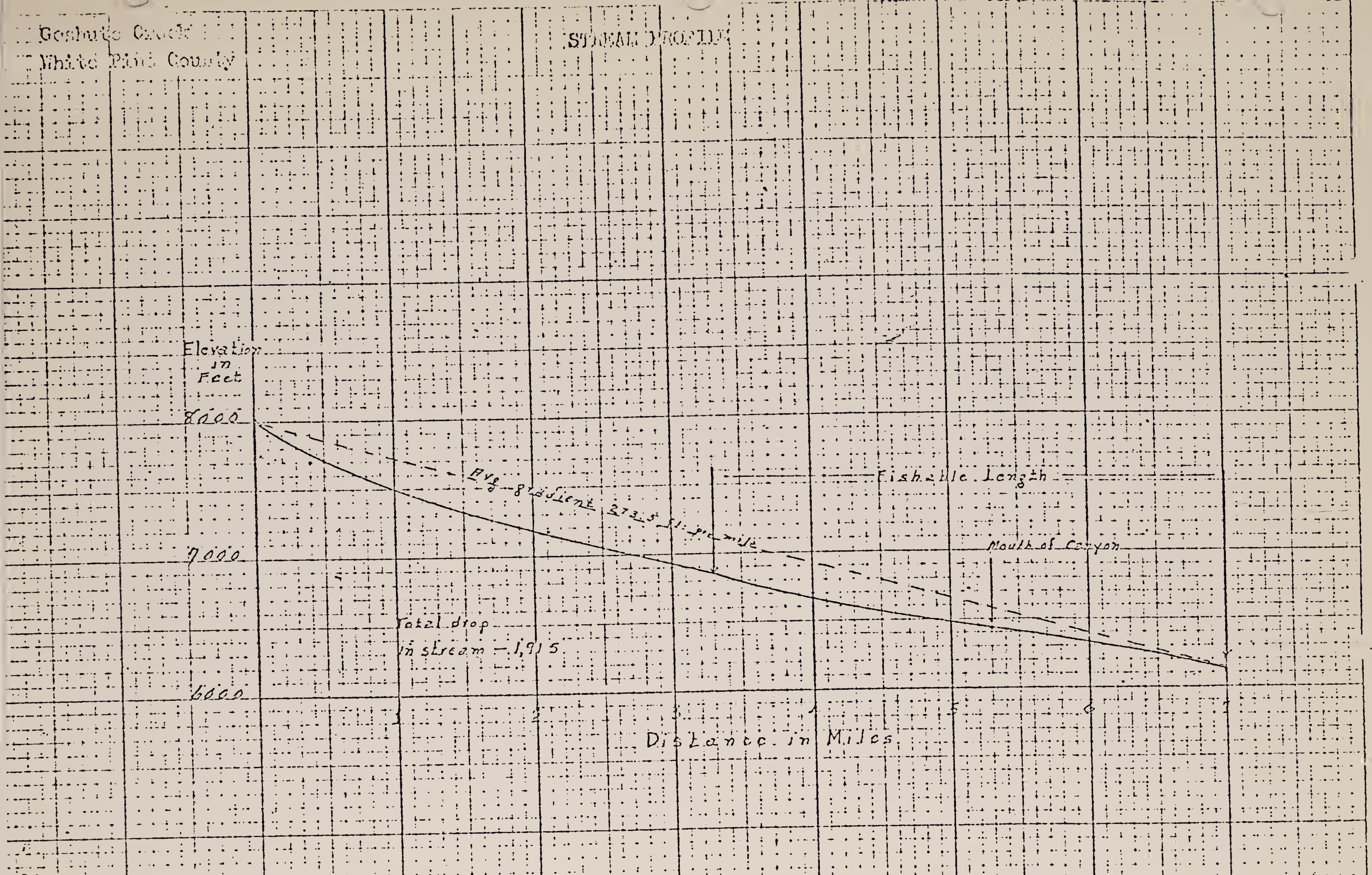


FIGURE 3.- GRADIENT OF GOSHUTE CREEK

FIGURE 4 - Three small ponds constructed in 1967 to improve fisheries habitat in Goshute Creek.

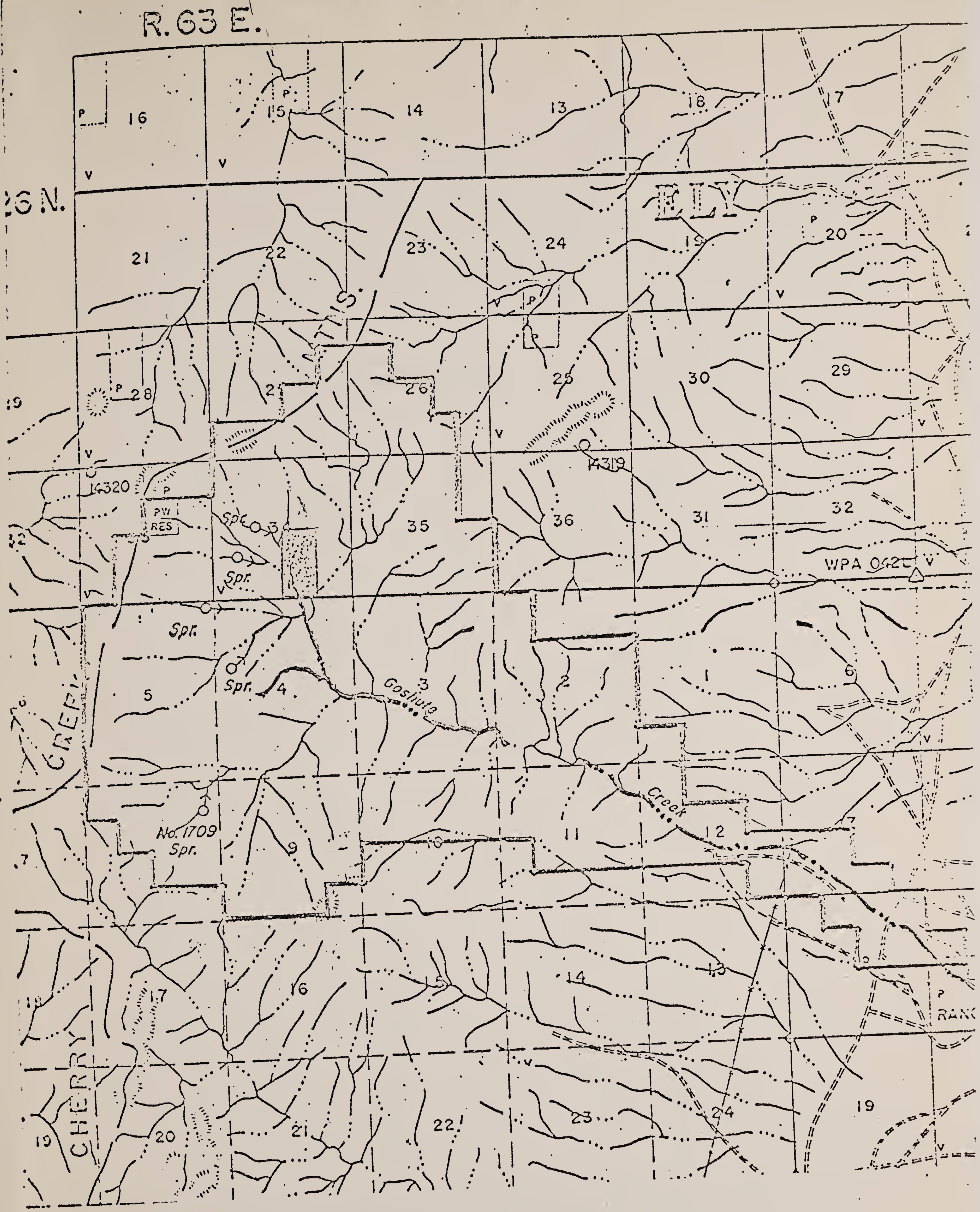


FIGURE 5 - Locations of electro - shocking sections