USDA-FOREST SERVICE Date of Report: 12/21/90

BURNED AREA REPORT
(Reference FSH 2509.13, Report FS-2500-A)

PART I - TYPE OF REQUEST

1. Type of Report

[ ] A. Funding (Request for estimated FFF funds)
[X] B. Accomplishment Report

2. Type of Action

[ ] A. Initial (estimated funding is first requested)
[ ] B. Interim

[ ] Updating the initial funding request.
[ ] Supplying information for accomplishments to date on emergency work underway.
[X] C. Final

[ ] Best estimate for funds needed to complete eligible rehabilitation measure.
[X] Following completion of funded work.

PART II - FIRE LOCATION

1. Fire Name (from Form FS-5100-29): DOCE
2. Forest Supervisor's Fire No. (from Form FS-5100-29): P37409
3. State: ARIZONA
4. County: YAVAPAI
5. Region: 03
6. Forest: PRESCOTT
7. Ranger District: 03
8. Date Fire Started: 6/13/90
9. Date Fire Controlled: 6/16/90
10. Estimated Suppression Costs: $380,000
11. Fire Suppression Damages Repaired with FFF 102 Funds: $ 2,500

0.50 miles (firelines waterbarred)
2 acres (firelines seeded)
other: heliport, road to DP 1, roads and facilities at Buckman Camp

12. Fire Intensity: 20 % (low) % (medium) 80 % (high)

PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

1. Watershed No.: 1503020320 and 1506020183
2. NFS Acres Burned: 853
3. Water Repellant Soil: 40 % of NFS acres burned

4. Vegetation Types: Chaparrel w/ woodland and ponderosa pine in drainages
5. Geologic Types: granite
6. Soil Erosion Hazard Rating:

% (low)	40 % (medium) [10 to 30% slopes]	60 % (high) [> 30% slopes]

7. Erosion Potential: (est) 33.0 tons / acre.
8. Miles of Stream Channels by Regional Order or Classes: 5.2 mi.[no class]
9. Miles of Forest Service Trails: 2.32
10. Miles of Forest Service Roads by Maintenance Levels: 0.0*
    * 1.0 miles rehabilitation under suppression rehab.
    _____ miles (Level I) __0.0__ miles (Level II)
    _____ miles (Levels III, IV, V)

PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

1. Estimated Vegetative Recovery Period: 5 years.
2. Chance of Success Desired by Management: 80 percent.
3. Equivalent Design Recurrence Period: 25 years.
4. Related Design Storm Duration: 6 hours.
5. Related Design Storm Magnitude: 2.8 inches; 3.6 inches*.
6. Related Design Flow 60 cfs; 150 cfs.
7. Estimated Reduction in Infiltration: 10 percent.
8. Adjusted Related Design Flow: 165 cfsm.

    * In the past 20 years there have been 3 storms of > 100 year magnitude so I have increased the design storm magnitude by 30% to 3.6 inches to reflect this effect. K. Groswold

PART V - SUMMARY OF SURVEY AND ANALYSIS

1. Skills Represented on Burned Area Survey Team ("x" appropriate boxes):

[X] Hydrology	[X] Soils	[ ] Geology	[X] Range
[ ] Timber	[X] Wildlife	[X] Fire Mgmt.	[X] Engineering
[ ] Contracting	[X] Local Mgmt.	[ ] Research	[X] Other (CULTURAL RES.)

2. Describe Emergency: (SEE NARRATIVE)
3. Emergency Rehabilitation Objective: (SEE NARRATIVE)
4. Probability of Completing Treatment Prior to First Major Damage Producing Storm:
   Land ___90 % Channel ___80 % Roads ___90 % Other: Trails 90%
5. Net Environmental Quality Benefit Index:
   [ ] Significant [X] Not Significant
6. Net Social Well Being Benefit Index:
   [X] Significant [ ] Not Significant
7. Benefit/Cost Ratio: 2.23:1
8. Net Benefits: $ 69,663.00_____
9. Cost Effectiveness Index: [ ] I. [ ] II. [X] III. [ ] IV.

PART VI - ELIGIBLE EMERGENCY REHABILITATION MEASURES OR TREATMENTS AND SOURCE OF FUNDS

NOTE: Emergency rehabilitation is work done promptly following a wildfire and is not to solve watershed problems that existed prior to the wildfire.

			NFS Lands			Other Lands			All Lands
Line Items	Units	Unit Cost	No. of Units	FFF 092 $	Other $ ident.	No. of Units	Federal$ ident.	Non-Federal $ identify	Total $
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
A. LAND									
a. Seeding [wilder]	Acres	24	574	13,810		-			13,810
b. [non-wilder]		16	279	4,585					4,585
c. 4-wire fence	mile	2976	2.5	2,650	4,789				7,439
d. helicopter (seed)				4,362					4,362
e.									
B. CHANNELS									
a. Opening water courses	Miles								
b. Stabilizing streambanks	Miles								
c. placing chk dams	miles	1000	2.4	2303					2.303
d. Check dams and soil catchments	miles								
C. ROADS AND TRAILS									
a.									
b. Trails [wtrbar]	each	-							
c. [mark route]	miles	-	2.32	-					
[wilderness bdry]	miles	-	2.32	-					
D. MAJOR STRUCTURES									
a. Preplanned - from Forest Plans									
E. TOTAL				$27,710	$4,789		$	$	$27,710.00

PART VII - APPROVALS

/S/ J. R. Thompson
for

Forest Supervisor (Signature) — Date: 6/19/90

/S/ R.F. Carpenter

Regional Forester (Signature) — Date: 6/22/90

NARRATIVE

DOCE FIRE
6/13-16/90

2. Narrative of Fire Emergency:

The DOCE FIRE burned over 90% of the 853 acres at an intensity great enough to remove all vegetation from the area which had a stem diameter less then one inch at ground level. The fire started the right-of-way of State Highway 96 [Iron Springs Road], at 5720 feet elevation and travelled quickly to the top of Little Granite Mountain, elevation 7089 feet, and continued north to the base of Granite Mountain near Blair Pass, on Forest Trail 261. The fire was approximately one mile northwest of the Iron Springs homes and one mile west of the Granite Basin summer homes. It burned in chaparral and scattered woodland and ponderosa pine associated with drainages.

The steep slopes and granite soils have a west to southwest aspect. Although previously covered by moderate to dense chaparral, the upper slopes show signs of interill (sheet) erosion , rill, and gully formation. The lower slopes show deposition associated with the chaparral which gives these slopes a terraced look once the vegetation is removed. The burned remnants of plant stems will provide little resistance to soil movement and the terraces will disintegrate with heavy rainfall. Deposits of granite soils which have accumulated in low gradient drainages have cut deeply as a result of the heavy rains which fell in 1970, 1979 and 1983. The removal of vegetation along the drainages will accelerate channel cutting. The soil movement is likely to completely fill existing tanks used for livestock and wildlife water. High water and siltation could affect facilities at the Contreras Ranch 2.5 miles downstream. Soils eroded from the channel north of Little Granite Mountain are likely to contribute sediments to Granite Basin Lake. This lake is to be dredged with State Lake Improvement Funds for greater water capacity which will improve its use for recreation and as a fishery. The site improvement is in its final stages of planning and is to be completed later this year.

With 574 acres of the Granite Mountain Wilderness burned, it is necessary to meet the management objectives for the Wilderness which include not using mechanized equipment within the wilderness and not introducing exotic plant species into the Wilderness during the seeding process. Using hand labor to place native materials in channels within the Wilderness will be the key to reducing water velocities and soil movement. The steep slopes within the Wilderness portion of the burn are very susceptible to erosion. Helicopter seeding of the entire burned area with the native species mixture will be done immediately to take advantage of moisture available during the summer rains.

The 279 acres outside the Wilderness will be seeded with native and non native species with the objective of effective ground cover at the earliest possible time. Soil catchment basins will be placed in channels below the Wilderness boundary [trail # 38], and two stock tanks will be cleaned to reduce sedimentation at the Contreras Ranch.

Forest Trail #38 received some damage from the fire. Several log water bars were burned and need immediate replacement to prevent damage to the trail surface and soil loss from the area.

Two and one half miles of two strand solar powered electric fence will be installed west of Trail #38 and parallel to the western fire edge to protect the reseeded area from grazing for two seasons. The East Unit is now used as winter pasture on the Contreras Allotment. Most of this winter pasture can be used while the newly reseeded area is protected from grazing. Without the electric fence the attraction of the reseeded and sprouting residual vegetation to grazing livestock would cause significant soil and vegetation damage within the burn area.

3. Emergency Rehabilitation Objectives:

- Reduce sediment movement and in-loading through placement of catch basins and structures in channels on and immediately below the burned area.

- Protect the Contreras Ranch facilities and property from flooding and sediment deposition.

- Reduce the effect of sedimentation on Granite Basin Lake and soil loss from the Granite Mountain Wilderness.

- Promote infiltration of precipitation through seeding and vegetation establishment.

- Implement a closing order to control public access into the burn area and onto Forest Trail # 37, for the protection of new vegetation and exposure of the public to burn area hazards such as loose rock.

DOCE FIRE
REHABILITATION PROPOSAL

JUNE 16, 1990

The Burn Rehab Team consisting of Ray Thompson (Leader), Jeff Whitney, Alan Kelso and Karen Groswold reviewed the Doce Fire on June 15 and 16. The field review consisted of riding horseback, flying over and hiking through the area. The burn rehab recommendations are separated for the wilderness and non-wilderness areas of the fire and are following.

Wilderness

1. Aerial seed with native grasses/legumes.
2. Rock check dams comprising of several rocks laid in the gullies (up to 2 feet deep) to temporarily slow the velocity of the water and allow for the deposition of sediment.

Non-Wilderness

1. Aerial seed with non-native and native grasses/legumes.
2. Use of rock check dams and logs in the small side gullies (up to 18 inches deep) to retain sediment.
3. Use of earthern pit structures in the channels to slow the velocity of water and allow for the deposition of sediment. There are 2.8 miles of channels in the non-wilderness portion of the Doce Fire. Structures using a dozer could be laid in the channel at an interval to allow the velocity of the runoff to be decreased and sediment to accumulate. From the field review, there were 9 channels or groups of channels found within the Doce Fire. These are on the accompanying map and are ranked as to their priority for rehabilitation needs. Each will be discussed seperately following.

Channel group #1
This group of channels is in the most northern portion of the fire and involves both wilderness and non-wilderness areas. This area is of most importance due to the large size of the subwatershed, presence of existing channels and tributaries and, the intensity of the fire. This channel drains to the west and past the Contreras ranch.

Channel group #2
This group of channels involves just non-wilderness. This area is of importance due to the large size of the subwatershed, the intensity of the fire, presence of several large existing channels that have developed in this area. This channel drains to the west down to a stocktank and towards Buckman Flat Spring.

Channel group #3
This group of channels is in the most eastern portion of the fire and involves just wilderness. This area is of importance due to the size of the large subwatershed, the channel development, the location with the Granite Basin Lake subwatershed and the intensity of the fire. There are presently several rather large channels with tributaries that have developed in this area.

Channel #4
This channel is one of several that drains the western side of Little Granite Mountain in the central portion of the fire and involves both wilderness and non-wilderness areas. This area is of importance due to the channel development and the intensity of the fire. This channel also drains west to an stocktank/spring and then past the Contreras ranch.

Channel #5
This channel is one of several that drains the western side of Little Granite Mountain in the central portion of the fire and involves both wilderness and non-wilderness areas. This area is of importance due to the channel development and the intensity of the fire. This channel also drains west to an stocktank.

Channel #6
This channel is one of several that drains the western side of Little Granite Mountain near the southern edge of the fire and involves just non-wilderness. This area is of importance due to the size of the subwatershed, the channel development and the intensity of the fire. This channel also drains west to an stocktank.

Channel #7
These channels are one of several that drains the western side of Little Granite Mountain in the central portion of the fire and involves both wilderness and non-wilderness areas. This area is of importance due to the channel development and the intensity of the fire. This channel also drains west to Division well, Upper Pasture Spring and Contreras Spring.

Channel #8
This channel drains the southern portion of Little Granite Mountain in the southern portion of the fire and involves just non-wilderness area. This area is of importance due to the present channel development and the intensity of the fire. This channel also drains west and passes the Borrow Pit and then to Buckman Flat Spring.

EXAMINING IMPACTS OF MANAGEMENT ALTERNATIVES FOR AN EMERGENCY PROGRAM

(Reference FSH 2509.13)

Fire Name	Date of Report
DOCE	6/20/90

A. ENVIRONMENTAL QUALITY BENEFIT INDEX

Environmental Factor (a)	Weight Factor (b)	Without Treatment Actual (c)	Without Treatment Weighted (d)	With Treatment Actual (e)	With Treatment Weighted (f)	Difference Actual (g)	Difference Weighted (h)
1. Erosion and sediment *	10	2	20	1	10	1	10
2. Aesthetic land quality *	8	1	8	0	0	1	8
3. Water quality *	7	1	7	1	7	0	0
4. Site productivity *	5	1	5	0	0	1	5
5. Wildlife habitat *	7	1	7	1	7	0	0
6. Fish habitat * 1/	2	1	2	0	0	1	2
7. Other *							
8. TOTAL *	39		49		24		25
9. Average weighted index *			1.256		0.615		0.641
10. Net environmental quality benefit index*							0.641

B. SOCIAL WELL-BEING BENEFIT INDEX

Social Criteria (a)	Weight Factor (b)	Without Treatment Actual (c)	Without Treatment Weighted (d)	With Treatment Actual (e)	With Treatment Weighted (f)	Difference Actual (g)	Difference Weighted (h)
1. Life, health, safety *	8	2	10	1	8	1	8
2. Employment *	1	0	0	0	0	0	0
3. Recreational opportunity *	7	2	14	1	7	1	7
4. Economic stability *	1	0	0	0	0	0	0
5. Income distribution *	1	0	0	0	0	0	0
6. Preserve special sites *	2	1	2	0	0	1	2
7. Other * 2/	5	1	5	0	0	1	5
8. TOTAL *	25		31		15		22
9. Average weighted index *			1.24		0.60		0.88
10. Net social well-being benefit index *							0.88

C. REMARKS

*1/ Granite Basin Lake: SLIF project scheduled for 1990.

2/ Wilderness values and the acceptance of change in a heavily used local environment

D. EXPECTED DAMAGE REDUCTION BENEFIT SUMMARY

Note: At current Water Resources Council interest rate 8.625 percent

Economic Benefit Indices	Units of Measure	Damage Expected: Without Treatment No. of Units	Damage Expected: Without Treatment Present Value($)	Damage Expected: With Treatment No. of Units	Damage Expected: With Treatment Present Value($)	Expected $ Damage Reduction
(a)	(b)	(c)	(d)	(e)	(f)	(g)
I. Watershed Impacts Sediments	//////////	//////	//////////	//////	//////	////////////////
1. Downstream water storage *	acre feet	4	3750	2	1875	$ 1,875
2. Sediment removal *	CY	4250	1/ 9750	1700	3900	5,850
3. Fish habitat *	surface acres 2/	3	5000	4	0	5,000
4. Water quality *						
II. Flood Water	//////////	//////	//////////	//////	//////	////////////////
1. Land *						
2. Water Improvements *	$/existing tank	2	12,000	2	0	12,000
3. Subtotal, Watershed *	//////////	//////	30,500	//////	5,775	24,725
III. Resource Related Impacts	//////////	//////	//////////	//////	//////	////////////////
1. Range *	AUM					3/
2. Wildlife and recreation *	RVD	4/ 9,125	5/ 81,555	6/ 4,562	36,617	44,938
3. Timber *	--					
4. Subtotal, Resource Related *	//////////	//////	81,555	//////	36,617	44,938
IV. Other Impacts	//////////	//////	//////////	//////	//////	////////////////
1. *						
2. Subtotal, Other *	//////////	//////		//////		
V. TOTAL DOLLARS *	//////////	//////	112,055	//////	42392	69,663

E. REMARKS

* 1/ Sediment removal from existing facilities 2 1/2 times without treatment

2/ Granite Basin Lake

3/ W/o treatment minimum forage would be available; and with treatment the electric fence would remove new vegetation from grazing so a minimal chnge is expected between treatment and no treatment.

4/ Five years at five RVD per day

5/ $11.40 [LMP figure]/ RVD discounted to present over five years

6/ Closed to public entry for 1/2 of the five years

USDA-FOREST SERVICE FS-2500-8c (11/82)

SUMMARY OF EMERGENCY REHABILITATION NEEDS BY LANDOWNERSHIP
(Reference FSH 2509.13)

Fire Name
DOCE
Date of Report
6/22/90

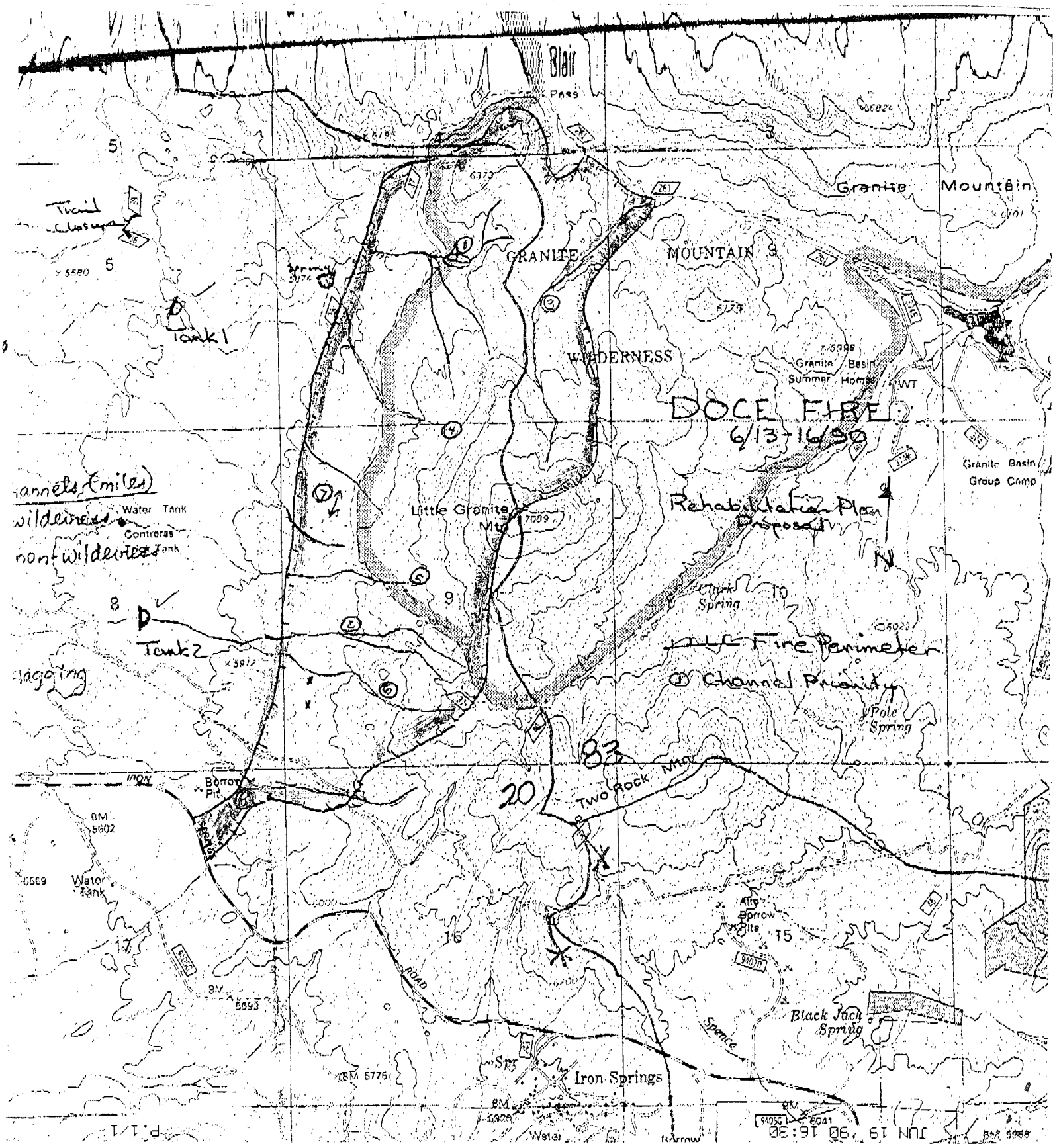
Landownership	A. Acres Burned	B. Emergency Rehabilitation Needs (1) Land (acres)	(2) Channel (miles)	(3) Road & Trail (miles)	(4) Other
Federal (NFS) * Wilderness/ nonwilderness	574/ 279	574/ 279	2.4/ 2.8	2.3	
Other (specify) *					
Subtotal (NFS) *	853	853	5.2	2.3	
Non-Federal (State & County) *					
Indian reservation *					
Private *					
Subtotal (Non-Federal) *					
TOTAL *	853	853	5.2	2.3	

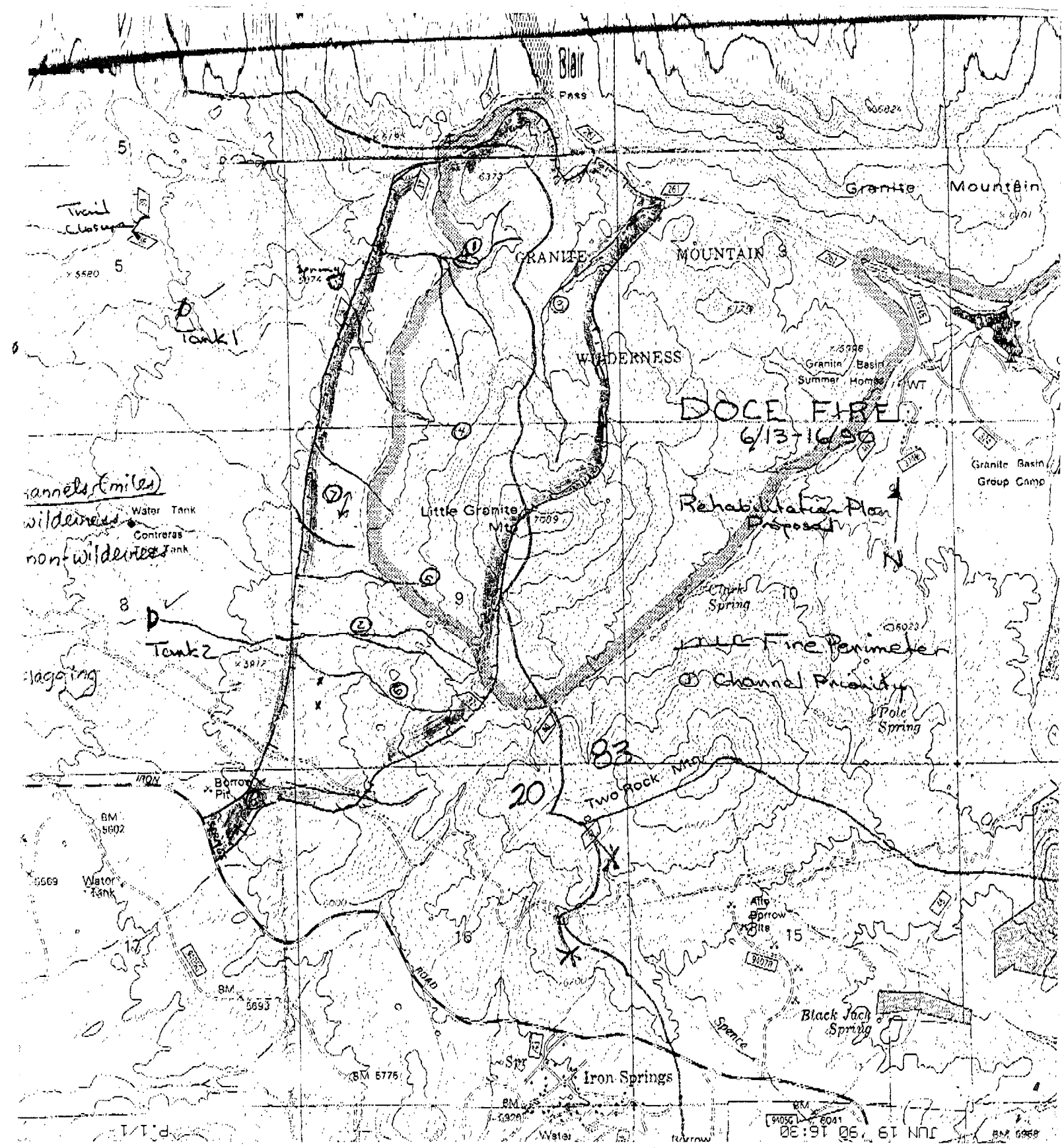
C. Source of Emergency Rehabilitation Funds for Needed Work ($)

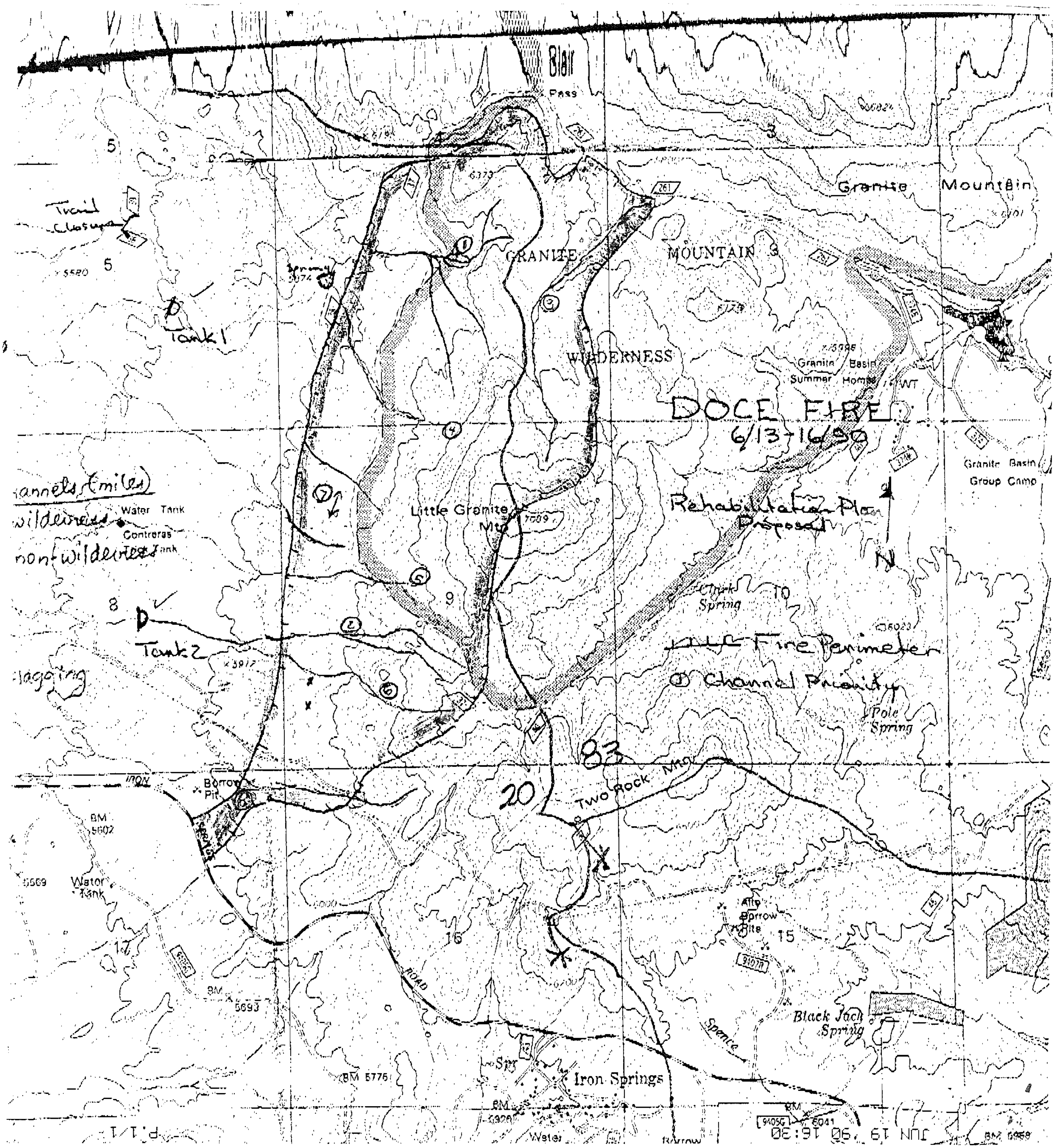
Landownership	1. PFF (a) 092	1. PFF (b) 102	2. Emergency Flood Prevention	3. FR & T	4. Other Federal (Enter fund)	5. Non-Federal (Enter fund)	6. Total
Federal (NFS) *	$30408						$30408
Other (specify) *							
Subtotal (NFS) *							
Non-Federal (State & County) *							
Indian reservation *							
Private *							
Subtotal (Non-Federal) *							
TOTAL *	$30408						$30408

D. Remarks

*


Blair
Pass
Granite Mountain
GRANITE MOUNTAIN
WILDERNESS
Granite Basin Summer Home
DOCE FIRE
6/13-16/98
Granite Basin Group Camp
Rehabilitation Plan Proposed
N
Little Granite Mtn
Water Tank
Contreras Tank
Tank 1
Tank 2
Clark Spring
Fire Perimeter
Channel Priority
Pole Spring
Two Rock Mtn
Borrow Pit
BM 5602
Water Tank
Alip Borrow Pit
Black Jack Spring
Spence
Iron Springs
BM 5775
BM 5693
ROAD
Trail
Chaparral
channels (miles)
wilderness
non-wilderness
flagging


Blair
Pass
Granite Mountain
GRANITE
MOUNTAIN
WILDERNESS
Granite Basin
Summer Home
DOCE FIRE
6/13-16/90
Granite Basin
Group Camp
Rehabilitation Plan
Proposed
N
Little Granite
Mtn
Water Tank
Contreras
Tank
Tank 1
Tank 2
Spring
Fire Perimeter
Channel Priority
Pole
Spring
Two Rock Mtn
Borrow
Pit
BM
5602
Water
Tank
Alfa
Borrow
Pits
ROAD
Spence
Black Jack
Spring
Spr
Iron Springs
BM 5775
BM
5693
BM
5929
Water
Narrow
BM
6041
BM 6968
JUN 19 '90 16:30
P.1/1



Blair Pass
Granite Mountain
GRANITE MOUNTAIN
WILDERNESS
DOCE FIRE
6/13-16/90
Rehabilitation Plan Proposal
N
Trail Closure
Tank 1
Tank 2
channels (miles)
wilderness
non-wilderness
flagging
Water Tank
Contreras Tank
Little Granite Mtn
Granite Basin Summer Homes
Granite Basin Group Camp
Clark Spring
Fire Perimeter
① Channel Priority
Pole Spring
Two Rock Mtn
Borrow Pit
Water Tank
Alto Borrow Pits
Black Jack Spring
Spence
ROAD
Iron Springs
IRON
83
20

MESSAGE DISPLAY

To p.luehring:r03a

From: KAREN GROSWOLD:R03F09A
Postmark: Jul 02,90 6:31 PM Delivered: Jul 02,90 7:49 PM
Status: Previously read
Subject: DOCE FIRE SEED

Message:
PENNY: FOR YOUR INFO - WE ORDERED @7000 LBS OF SEED FROM ARKANSAS VALLEY SEED AND IT WILL BE DELIVERED FRIDAY. WE CAME WAY DOWN ON OUR POUNDS/ACRE TO 8 LBS/ACRE BUT STAYED AT WILDERNESS COST OF $24.08/ACRE AND NON-WILDERNESS COST OF $16.32/ACRE. THANKS FOR YOUR HELP IN LOCATING THAT. WE ARE BUSY BUILDING ROCK AND LOG STRUCTURES NOW AND THE DOZER WORK STARTS TOMARROW. BUT - CAN YOU BELIEVE IT RAINED LAST NIGHT "BIG TIME" - HAD 1.6 INCHES AT THE AIRPORT HERE IN TOWN. LOOKS LIKE CLOSE TO THAT OUT ON THE REHAB!! PRAY FOR GENTLE RAIN STARTING FRIDAY!!!!!!
-KAREN

----------X==========