

ALLOTMENT MANAGEMENT PLAN
FOR THE
LIMESTONE ALLOTMENT
BLACK MESA RANGER DISTRICT
APACHE - SITGREAVES NATIONAL FORESTS

PERMITTEE 

DATE: 5/6/19

DISTRICT RANGER  DATE: 5/6/19

I. INTRODUCTION

The Limestone Allotment consists of 49,781 acres and is located approximately 35 miles south of Winslow, Arizona, within portions of Townships 12 through 14 N and Ranges 12 and 13E, Gila and Salt River Meridian (G&SRM), Arizona. Elevations range from 6,500 to 7,800 feet. The topography is generally characterized by flat to moderate ridges that run north to south. Steep slopes do occur, associated with Leonard, Willow, Wilkins and Gentry Canyons. The area is generally covered with trees, with the dominant overstory species being ponderosa pine and pinyon-juniper woodland, with pockets of mixed conifers, aspen and riparian.

This allotment management plan (AMP) shall set forth the objectives, management requirements, improvements needed and monitoring and evaluation standards for the Limestone Allotment as outlined in the Forest Plan and the Decision Notice signed by the District Ranger on January 13, 2000.

II. OBJECTIVES

A. Range/Vegetation

- On full capacity range, the ponderosa pine and mixed conifer habitats are in fair or better range condition, riparian habitat is in good or better range condition, and the pinyon/juniper woodland are in fair or better range condition, within 25 to 30 years.
- Ponderosa pine, mixed conifer, and pinyon/juniper Vegetative Structural Stages (VSS) have an even distribution across the landscape.
- Cool season grass and forb plants on full capacity range make up at least 50% of the herbaceous ground cover (given appropriate soil and climatic conditions). Cool season grass species are diverse within each habitat type.

B. Browse

- Browse stands are well distributed and are healthy. Browse stands contain the more desirable shrub species, such as cliffrose, ceanothus, fourwing saltbush, winterfat and mountain mahogany. Browse growth forms are not "clubbed" in appearance, and trees do not exhibit shrub form. Browse utilization is not more than 40% of the terminal ends. Objective is to achieve in 10 years after full implementation.

C. Watershed and Soils

- Satisfactory soil conditions are maintained. Impaired soil conditions are in an upward trend within one decade on all areas where the potential exists to restore soil productivity and hydrologic functions. Soils have the ability to accept, hold, and release water and nutrients. Soils have the ability to resist erosion and degradation because of adequate effective ground cover.

- Water Quality meets or exceeds Arizona Department of Environmental Quality requirement. Upland and riparian areas do not contribute to degraded water quality.
- Floodplain and channel characteristics are adequate to dissipate energy during high stream-flow events. Streambanks and channels are stable, with few headcuts.
- Watershed conditions on the fifth-code watershed are in satisfactory condition by 2020.

D. Riparian

- Riparian areas are in Proper Functioning Condition and meet Forest Plan guidelines within 10 to 20 years of implementation.
- Multi-Storied woody species composition is diverse with at least two deciduous, broadleaf species present in the plant community.
- Grasses and sedges have at least a four-inch stubble height in riparian areas, and exhibit high vigor and diverse composition. Streambank vegetation is comprised of plants able to withstand high stream-flow events. Ponds, springs, seeps and wet meadows exhibit healthy, vigorous plant communities.

E. Wildlife

- Have 40% of the available forage on this allotment available for wild ungulates. Strive to achieve within 5 years. This will be measured by monitoring wildlife utilization in areas of the herd unit with no cattle grazing (rested pastures/cattle exclosures).
- Wildlife populations are consistent with the land's capability. A diverse mosaic of habitats for healthy and balanced wildlife populations is present. Threatened, endangered and sensitive wildlife species have an abundant, widely spread prey base. Prey species have habitats with good hiding cover and forage availability.

III. MANAGEMENT

There are two sections for the management of this allotment, a short-term plan and long-term plan.

In the short term, the Term Grazing permit will authorize 133 cow/calf pairs (or yearling equivalent) grazing from June 15 to September 15, for a total of 398 animal unit months (AUMS). A three pasture, deferred grazing system with an allowable use standard of 25%. The pastures to be grazed would include O'Haco, Tentground and Wilkins (livestock grazing in the O'Haco and Tentground Pastures is contingent upon completion of required fencing, see improvement section). Double Cabin and Five Mile Pastures would be rested to restore plant vigor. Livestock would be allowed to return to Double Cabin and Five Mile when Kentucky Bluegrass reaches five to six inches in length within riparian areas, as verified by Forest Service Monitoring.

After vigor is restored in the Five Mile and the Double Cabin Pastures, the grazing permit will authorize 156 cow/calf pairs (or yearling equivalent) grazing from June 15 through October 15, for a total of 625 AUM's. A five pasture, deferred grazing system, with an allowable use standard of 25% in key areas would be implemented. The pastures to be grazed would be O'Haco, Tentground, Wilkins, Five Mile, and Double Cabin, contingent upon the completion of required fencing for each pasture.

The desired utilization levels by both wildlife and livestock will be as follows: 25% of herbaceous forage species and 40% on browse species (see monitoring section for more details).

Livestock shall not enter the allotment until the scheduled date identified on the AOP or Grazing Permit. The Permittee shall provide at least 5 days advance notice of entering the allotment, the location of entry, and the means by which the livestock will be placed on the allotment. All livestock, including strays shall be removed from the allotment by the last day shown on the AOP and Grazing Permit.

All livestock must be branded or marked, as identified on the current brand certificates in the Term Grazing Permit.

A request for an extension of the grazing season must be received in writing at least 30 days before the end of the season, which shall state the reason for extension. Excess forage is not automatic grounds for approving extensions. Approval will be determined on resource needs (soil protection, seed crop for next year, etc.) and not based on permittee convenience. Approval applies to only current year and previous years' approval does not constitute automatic approval for succeeding years. Any extensions will be paid for at the current grazing fee rate. A request for non-use must be received in writing at least 45 days prior to the grazing season.

Livestock may be moved from pasture to pasture within 3 days of the planned rotation dates. At least 90 percent of the permitted livestock must be moved by the scheduled date, and all livestock must be moved into the correct pasture within 3 days after the scheduled leave date. The permittee must notify the District Ranger if there is a need to deviate from planned rotation dates.

Livestock allowed to remain in pastures beyond the specified rotation date, allowed to drift between pastures, or allowed in a rested pasture will be considered a violation of the Term Grazing Permit. Animals on the allotment after the "off" date may be billed for at the unauthorized use rate and may be subject to administrative actions on the Term Grazing Permit.

Livestock will be managed to avoid concentrated use in any one area, especially riparian areas. A full-time rider may be necessary to disperse livestock and deter concentrations in preferred areas. Permittee shall manage livestock to utilize the less preferred areas by hauling water, placing salt or supplement feed, and herding as needed to achieve proper use.

Salt and mineral blocks may be placed in lightly used areas until the desired level of forage use is achieved. Blocks will not be placed in areas within a quarter mile of water or a riparian area and ideally no closer than 1/2 mile. Blocks will not be placed in over-used areas, meadow bottoms, along roads, along trails, or in heavily used recreation areas. Every time blocks are put out, they need to be placed at different sites. Blocks will be placed on sites not susceptible to erosion.

The permittee is encouraged to have off-Forest range to use in the event drought, excess forage utilization or other unforeseen events necessitate early livestock removal. When these conditions occur, the District Ranger, with input from the permittee, will make the determination if livestock removal is required for resource protection. Drought situations may alter grazing sequence or length of grazing period. The season or numbers may be adjusted in proportion to the amount of moisture that has been received to date.

The number of livestock and/or season of use may be adjusted if the forage use standards or other management objectives are not being met. Livestock will be moved to the next pasture in the grazing schedule or off the Forest when utilization standards are exceeded.

IV. Improvements

The range improvements planned for the allotment include:

A) Construction of approximately 6 miles of fence along Forest Road 115 within the Double Cabin Pasture. This fence will need to be constructed prior to livestock entering the Double Cabin Pasture. (see proposed range development map, Double Cabin Pasture, fence "A")

B) Removal of 3 miles of fence from Five Mile Pasture. (see proposed range development map, 5-mile Pasture, fence "B")

C) Construction of 3 miles of fence along the east side of Bear Canyon, in Five Mile Pasture. This fence is required before cattle enter this pasture and before the grazing permit authorizes 156 hd. By constructing this fence, a new holding pasture from the area located between Bear Canyon and Beaver Park Wash, will be made and will be called Bear Trap. (see proposed range development map, 5-mile Pasture, fence "C")

D) Construction of approximately 4 miles of fence from the Double Cabin Pasture boundary along the west side of Gentry Canyon in O'Haco Pasture to the boundary of Tentground Pasture. This is required prior to livestock grazing the O'Haco Pasture. (see proposed range development map, O'Haco Pasture, fence "D")

E) Construction of approximately 2.5 miles of fence from the Double Cabin Pasture boundary along the east side of Forest Road 115 to the Tentground Pasture Boundary. This fence construction is required before grazing the O'Haco Pasture. (see proposed range development map, O'Haco Pasture, fence "E")

F) Construction of approximately 1.25 miles of fence east and south from Forest Road 115, to exclude livestock from Fairchild draw. (see proposed range development map, O'Haco Pasture, fence "F")

G) Construction of about 1.5 miles of fence from the southern Tentground Pasture boundary northwest to tie into the existing fence south of Forest Road 115A. This fence construction is required before grazing the Tentground Pasture. (see proposed range development map, Tentground Pasture, fence "G")

H) Construction of approximately 1 mile of fence on the west side of Wiggins Crossing. This proposed fence is required before livestock can use this holding pasture. (see proposed range development map, Tentground Pasture, fence "H")

I) Construction of two roadside tanks in Wilkins Pasture. (see proposed range development map, Wilkins Pasture, Tanks "A" and "B")

J) Installation of 3 cattleguards, one each on Forest Road 300 (see proposed range development map, Double Cabin Pasture, cattleguard "A"), Forest Road 225 (see

proposed range development map, Tentground Pasture, cattleguard "B") and Forest Road 62 (see proposed range development map Wilkins Pasture, cattleguard "C").

The cost of these fences would be shared with the Forest Service supplying the materials (as funding allows) and the permittee would supply the labor.

Range Improvement Standards

All assigned range improvements will be maintained by the permittee. When the annual grazing application is approved, in whole or in part, livestock will not be placed on an allotment or moved into pastures if permit requirements concerning range improvement maintenance are not met. Proper maintenance of the range improvements will insure that the condition of the improvements is adequate to hold livestock in a pasture and will extend the useful life of the improvements. Forest officers periodically will inspect assigned improvements for compliance with maintenance standards prior to livestock entry or movement dates. All range improvements are the property of the U.S. Government.

A permit modification will be prepared for approved projects each year. Permittees will sign a permit modification form for the project and will sign for materials furnished by the Forest. Ground disturbing activities will not be initiated by the permittee until proper clearances have been approved. Annual fence maintenance does not require approval.

A. Fences. Standards for maintenance and construction are:

1. All allotment boundary fences are to be maintained prior to livestock entering National Forest lands. Livestock will not be permitted to enter the Forest until fences have been properly maintained to keep livestock where they are placed.

2. Each permittee is responsible for the maintenance of all or a portion of an allotment boundary fence. A permittee will not be allowed to place livestock on the allotment if the neighboring permittee does not maintain their assigned allotment boundary fence.

3. Pasture fences will be maintained before moving livestock to a new pasture.

4. Old wire and steel fence posts will be removed from the Forest.

5. Broken wire will be spliced with good quality double strand, 12-1/2 gauge barbed or smooth wire.

6. Wire spacing will be similar to original spacing. The top wire height will not exceed 42 inches. The bottom wire will be smooth wire. The bottom wire will be 18 inches from the ground. The remaining wire strands will be spaced as follow, counting from the bottom wire: 18 inches, 24 inches, 32 inches, and 42 inches.

7. Wire will not be over tightened and will be stretched to remove slack.
8. Broken posts or rotten wood posts will be replaced with a steel post or a juniper or treated wood post greater than 5 inches in diameter.
9. Brace posts will be maintained in tight and serviceable condition.
10. Steel posts that have settled may need to be jacked up and possibly moved. Leaning steel posts will be straightened.
11. Gates will be maintained so they can be opened easily. Gate sticks will be 2-3 inches in diameter. Smooth wire will be used for gate loops.
12. At least 90 percent of fence stays will be sound. Replacement stays will be good quality wood, 1-1/2-inch by 3 inches in diameter. The bottom of each stay will rest on the ground. Galvanized stay wire will be used for tying stays. For 20-foot spacing between posts, three stays shall be used.
13. Missing staples and fence clips will be replaced.
14. All trees, which have fallen across the fence line will be cut and removed from the fence right-of-way.

B. Water. Issuance of this grazing permit and the permittee's acceptance of the permit does not convey ownership of a water right to the permittee(s) but allows the use of a portion of it within the terms of the appropriation. The Forest has filed for water rights on these waters with the State of Arizona. Grazing domestic livestock may not be possible without these water rights. The Forest will retain ownership of the water rights as appropriated to the United States Forest Service (USFS) for current and future grazing permittees as well as for wildlife and recreation consumptive needs. Ownership of the water rights belonging to the USFS will assure that the use of the water will be appurtenant to the land and will be available for both current and future grazing permittees.

Stock water is important for proper livestock distribution. Water must be used to demonstrate beneficial use in order to maintain water rights. If natural water is not available, the permittee may haul water to obtain proper livestock distribution. The following will be done:

1. Trick Tanks.
 - a. Fences around water sources and equipment shall be maintained annually to FS standards.
 - b. Collection boxes, inlet pipes, and water troughs will be clean of sediment and debris before the improvement is used and during the grazing season as needed.

c. Broken pipe will be repaired or replaced. Material not usable will be removed from the Forest and disposed of properly.

d. Troughs that leak will be repaired. Troughs should be level. Overflow pipes should be placed to avoid creating a boggy area at the trough. Rusted out troughs need to be replaced through a permit modification.

e. Float valves will be cleaned and set to prevent overflow. They shall be checked regularly when pasture is in use and shall contain a protective cover to prevent damage from livestock.

f. Troughs shall have escape ramps for small mammals and birds. Escape ramps shall also be maintained.

g. Trick tank support structure and tin shall be inspected annually to insure that the improvement is sound. All damages need to be repaired.

2. Stock Tanks.

a. Check stock tanks for seepage.

b. As a general rule, spillways need to be free of debris and obstructions. Eroded portions need to be repaired when they exist.

c. Tanks need to be cleaned to their original capacity whenever drought or other circumstances occur that result in the tanks being dry. Special care will be taken during cleaning to prevent future water loss. The work will be coordinated with the District Ranger prior to initiating repairs.

V. Monitoring and Evaluation

It should be recognized that monitoring is not an in depth analysis but a measure of indicators that may trigger further detailed analysis of a particular resource. Either monitoring or detailed analysis may trigger immediate corrective action on the allotment on a seasonal basis or as a change in the AMP and permit.

The following techniques will be used to monitor grazing management:

A. UTILIZATION

Utilization should be determined according to a methodology described in "Utilization Studies and Residual Measurements". Compare actual utilization with allowable standards to determine compliance. Validation of grazing dates and stocking rates can be determined based on actual livestock use in comparison to utilization data.

Three to four places in each pasture were selected for utilization monitoring. These areas are identified on the enclosed maps, and will be referred to as Key Areas. Key species will be monitored in each key area for actual use. Key species for the respective key areas are:

Wilkins Pasture

Key Area #1: Pine dropseed, blue grama and mountain muhly

Key Area #2: pine dropseed, junegrass and mountain muhly

Key Area #3: pine dropseed

Tentground Pasture

Key Area #1: Kentucky bluegrass, redtop

Key Area #2: Kentucky bluegrass, redtop

Key Area #3: Pine dropseed

Key Area #4: Kentucky bluegrass

Key Area #5: pine dropseed

O'Haco Pasture

Key Area #1: Kentucky bluegrass, redtop

Key Area #2: Kentucky bluegrass, redtop

Key Area #3: Kentucky bluegrass, redtop

Key Area #4: Pine dropseed and mountain muhly

5-Mile Pasture

Key Area #1: Arizona Fescue and pine dropseed

Key Area #2: Kentucky bluegrass, redtop

Key Area #3: Arizona Fescue and pine dropseed

Key Area #4: Kentucky bluegrass, Arizona fescue

Key Area #5: Kentucky bluegrass, redtop

Double Cabin Pasture

Key Area #1: Kentucky bluegrass, redtop

Key Area #2: Kentucky bluegrass, Arizona Fescue

Key Area #3: Kentucky bluegrass, redtop

Key Area #4: Kentucky bluegrass, redtop

Key areas and key species may need adjusting, based on better information, additional improvements, pasture divisions, etc.

The desired combined (wildlife and livestock) utilization of these key species (herbaceous) in key areas is 25%. Utilization could not be expected to exactly meet 25% each year, therefore in the long-term a 20% to 30% use would be considered within the acceptable range for this analysis. If annual utilization is above 30% or trends of annual utilization are above 25%, district personnel and the permittee need to re-evaluate the annual stocking. The above ranges apply both to the key species and key areas. If utilization falls outside of these ranges, either high or low, the stocking levels and/or management will be reevaluated. If utilization of one key area or key species is above 30%, then management of that key area should be reassessed, such as salt placement, water locations, etc. The desired utilization levels of browse species is set at 40% of the terminal ends.

Utilization monitoring is the responsibility of the Permittee. The measurements should be taken within 5 days after the scheduled pasture move date specified in the Annual Operating Plan. The data sheets should be turned into the District Ranger within 8 days of the scheduled move date. Pasture use monitoring should be documented and filed in 2210/2230. Successive monitoring data will be used in validating pasture and allotment capacities. Current information on precipitation, forage production, and/or use levels may be used to adjust annual grazing use. The permittee should also keep a copy for their records.

B. COMPOSITION AND DENSITY

To determine changes in composition and density, long-term validation will be accomplished through re-reading Parker 3 Step clusters and/or establishing Daubenmire (cover/frequency) transects as per R3 Rangeland Guide. These range clusters are suitable for determining long-term trend in vegetation and should be read between the 3rd and 5th year and again the ninth or tenth year after the signature of the decision. Great changes may not occur during the 10-year period but trend indications should be detected. The trend indications gathered from transects, should be measured against the desired condition/objectives.

New clusters may be located within each pasture and should be established and read before the 5th year and read again the ninth or tenth year after the signature of the decision.

C. GROUND COVER

Determination of ground cover can be replicated at range clusters. In most cases, an increase in vegetation cover from baseline measures is considered as moving toward Desired Conditions (DC), a decrease is considered as not accomplishing DC. Data will be collected on transects during the ninth or tenth year (same as vegetation monitoring).

D. CAPACITY ESTIMATES

Objective is to determine if original capacity estimates based on desired use levels are correct for individual pastures, considering vegetation, landscape, resource conditions, and forage preference. A combination of utilization monitoring, composition and density and ground cover will be used to validate capacity estimates. The utilization monitoring, composition, density and ground cover data, yearly precipitation data from local stations and any other pertinent information should be reviewed by the District Ranger, Range and Wildlife personnel from the Forest Service, along with the permittee, between the 5th and 6th years. Due to the unpredictability of the results of the data collected, evaluations of stocking will need to be made at this time. Validation of capacity estimates may result in further adjustments in stocking rates, season of use, or both, either up or down.

E. ACTIONS

Monitoring will be used to adjust or amend previously described actions in the decision document or AMP. Information on monitoring should be shared with the permittee and others concerned with the decision. If the monitoring data is not achieving or moving toward the Desired Conditions, Forest Service personnel must analyze the problem and decide on a course of action. If necessary, an ID Team may be instituted to determine the corrective action needed. Re-initiation of NEPA may not be necessary if the action is still within the scope of the original decision.

Failure to comply, by the permittee, with the requirements of this Allotment Management Plan may result in suspension or cancellation of their Term Grazing Permit.

Limestone Allotment
Structural Improvement List

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INFRA Number	Name	Easting	Northing	Responsibility
25001	Hart Canyon Corral			Wallace Permittee
25002	Walers Pasture Fence			Wallace Permittee
25501	Horseshoe Lake	494007	3804240	Limestone Permittee
25501	Horseshoe Lake	493970	3804245	Limestone Permittee
25502	Pit tank #1 115rd	492887	3806604	Limestone Permittee
25503	Pit tank 115rd enclosures	493441	3809498	Limestone Permittee
25504	Pit tank #2 115rd	493031	3810376	Limestone Permittee
25505	Pit tank #1 56rd	493235	3811061	Limestone Permittee
25506	Pit tank #2 56rd	494245	3812063	Limestone Permittee
25507	Pit tank #3 56rd	494588	3812756	Limestone Permittee
25508	Pit tank #4 56rd	495205	3813131	Limestone Permittee
25509	Pius Tank	495100	3813415	Limestone Permittee
25510	Pit tank #1 56G	496089	3813467	Limestone Permittee
25511	Pit tank #2 56G	497204	3813743	Limestone Permittee
25512	Section 35 Tank	496386	3813949	Limestone Permittee
25513	Pit tank #5 56rd	496059	3814033	Limestone Permittee
25514	Dead Elk Tank	497737	3814408	Limestone Permittee
25515	Pit tank 13n 13e sec31	498422	3814895	Limestone Permittee
25516	Pit tank #6 56rd	499404	3816348	Limestone Permittee
25517	Pius Farm Tank	498567	3816692	Limestone Permittee
25518	Pius Spring	500089	3818224	Limestone Permittee
25519	Pit tank #3 115rd	493012	3812885	Limestone Permittee
25520	Pit tank #4 115rd	493436	3813211	Limestone Permittee
25521	Pit tank #1 115Trd	493425	3816050	Limestone Permittee
25522	Pit tank #6 115rd	493793	3816747	Limestone Permittee
25523	Pit tank #8 115Intgrnd	494279	3819959	Limestone Permittee
25524	Pit tank Wof #7 115Intgrnd	493699	3819800	Limestone Permittee
25525	Pit tank #2 115Trd	492270	3817201	Limestone Permittee
25526	Jumping Springs tank	493431	3817206	Limestone Permittee
25527	Pit tank #1 115Intgrnd	493937	3817508	Limestone Permittee
25528	Pit tank #2 115Intgrnd	493738	3817689	Limestone Permittee
25529	Pit tank #3 115Intgrnd	493509	3817949	Limestone Permittee
25530	Pit tank #5 115Intgrnd	493446	3818541	Limestone Permittee
25531	Pit tank #9 115Intgrnd	494632	3820069	Limestone Permittee
25532	Pit tank #6 115Intgrnd	493473	3818978	Limestone Permittee
25533	Pit tank #10 115Intgrnd	494905	3820971	Limestone Permittee
25534	Pit tank #11 115Intgrnd	494810	3821839	Limestone Permittee
25535	Pit tank #12 115Intgrnd	494853	3822025	Limestone Permittee
25536	Pit tank #13 115Intgrnd	494848	3823104	Limestone Permittee

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25537	Soldier Trail Tank	495416	3822483	Limestone Permittee
25538	Pit tank #14 11Stngnd	494718	3824022	Limestone Permittee
25539	Bear Den Tank	496663	3824792	Limestone Permittee
25540	Cave Tank	496937	3825444	Limestone Permittee
25541	Pit tank #1 115B spur	497127	3824529	Limestone Permittee
25542	Section 24 Tank	498049	3826877	Limestone Permittee
25543	Pauls Tank No2	498569	3827150	Limestone Permittee
25543	Pauls Tank No.2	498569	3827150	Limestone Permittee
25544	Pauls Tank No.1	498343	3827466	Limestone Permittee
25545	Fork Tank	496921	3827566	Limestone Permittee
25546	Victorine Tank	494899	3824755	Limestone Permittee
25547	Pit tank #1 115C	495650	3825777	Limestone Permittee
25548	Pit tank #2 115C	496311	3828381	Limestone Permittee
25549	Pit tank #3 115C	496635	3826718	Limestone Permittee
25550	Wilkins Trick Tank	498160	3828786	Limestone Permittee
25551	Wilkins Trick Tank trough	498210	3828852	Limestone Permittee
25552	Pit tank #4 115C	498241	3828820	Limestone Permittee
25553	Pit tank #1 115wilk	495639	3828511	Limestone Permittee
25554	Pit tank #2 115wilk	496061	3828840	Limestone Permittee
25555	Pit tank #3 115wilk	496357	3827413	Limestone Permittee
25556	Pit tank #1 sec14	496225	3828185	Limestone Permittee
25557	Pit tank #4 115wilk	496745	3828261	Limestone Permittee
25558	Pit tank Eof #4 115wilk	467138	3828520	Limestone Permittee
25559	Pit tank #5 115wilk	497016	3828864	Limestone Permittee
25560	Pit tank #2 sec14	495425	3829279	Limestone Permittee
25561	Pit tank #1 Wof #6 115wilk	496572	3829391	Limestone Permittee
25562	Pit tank #2 Wof #6 115wilk	496419	3829677	Limestone Permittee
25563	Pit tank #6 115wilk	496927	3829666	Limestone Permittee
25564	Pit tank #7 115wilk	496953	3830800	Limestone Permittee
25565	Pit tank #8 115wilk	496953	3830800	Limestone Permittee
25566	Leonard Tank	493950	3820049	Limestone Permittee
25567	Pit tank #7 115Ingrnd	493834	3819747	Limestone Permittee
25568	Pit tank #2 115Ard	492802	3818707	Limestone Permittee
25569	Pit tank #1 115Ard	493184	3818685	Limestone Permittee
25570	Pit tank #4 115Ingrnd	493413	3818245	Limestone Permittee
25571	Pit tank #5 115rd	493349	3814565	Limestone Permittee
25572	Bottom tank	493080	3813679	Limestone Permittee
25573	Pit tank #1 115M	492597	3813501	Limestone Permittee
25574	Pit tank #1 91rd	493864	3806604	Limestone Permittee
25575	Gentry Spring	494038	3807586	Limestone Permittee

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25576	Gentry trough	494024	3807709	Limestone Permittee
25577	Pit tank #1 40Frd	494540	3808524	Limestone Permittee
25578	Pit tank #2 40Frd	495336	3809852	Limestone Permittee
25579	Pit tank #2 91rd	495199	3806581	Limestone Permittee
25580	Pit tank #3 91rd	4955717	3808857	Limestone Permittee
25581	Double Cabin Trough	494601	3811403	Limestone Permittee
25582	Pit tank #4 91rd	496099	3809538	Limestone Permittee
25583	Pit tank #5 91rd	497227	3811516	Limestone Permittee
25584	Pit tank #6 91rd	497439	3811880	Limestone Permittee
25585	Double Cabin Spring	494496	3811409	Limestone Permittee
25586	Pit tank #1 sec25	497056	3815573	Limestone Permittee
25587	Spaulding Tank	496839	3817928	Limestone Permittee
25588	Boghole Tank	494363	3817691	Limestone Permittee
25590	Limestone Tank	495595	3819852	Limestone Permittee
25591	Pit tank #3 fairchild ridge	495721	3819245	Limestone Permittee
25592	Pit tank #2 fairchild ridge	495519	3818243	Limestone Permittee
25593	Pit tank #1 fairchild ridge	495278	3817958	Limestone Permittee
25594	Pit tank #1 225rd	497890	3818690	Limestone Permittee
25595	Pit tank #1 62rd	497545	3819174	Limestone Permittee
25596	Tenground Tank	497821	3820075	Limestone Permittee
25597	Pit tank W of #2 62rd	496720	3819993	Limestone Permittee
25598	Pit tank #2 62rd	497131	3820141	Limestone Permittee
25599	Pit tank #3 62rd	497180	3821018	Limestone Permittee
25600	Pit tank #4 62rd (private)	497236	3821799	PRIVATE
25601	Pit tank W of #4 62rd (private)	496780	3821565	PRIVATE
25602	Pit tank #5 62rd	498451	3823284	Limestone Permittee
25603	Pit tank #6 62rd	498991	3824051	Limestone Permittee
25604	Pit tank #1 Sec30	498739	3824077	Limestone Permittee
25605	Pit tank #2 Sec30	498623	3824662	Limestone Permittee
25606	Pit tank #7 62rd	499295	3824665	Limestone Permittee
25607	Pit tank #3 SW Sec30	499093	3824863	Limestone Permittee
25608	Pit tank #5 Sec31	499347	3825158	Limestone Permittee
25609	Pit tank #1 SW Sec30	498384	3824803	Limestone Permittee
25610	Pit tank #2 SW Sec30	498886	3824949	Limestone Permittee
25611	Pit tank #3 NW Sec30	498680	3825853	Limestone Permittee
25612	Pit tank #1 62wilk	499422	3827501	Limestone Permittee
25613	Pit tank #2 62wilk	499877	3828175	Limestone Permittee
25614	Pit tank #1 Roost drainage	499769	3828339	Limestone Permittee
25615	Pit tank #2 Roost Drainage	499653	3828566	Limestone Permittee
25616	Pinon Tank	499471	3828076	Limestone Permittee

Limestone Allotment
Structural Improvement List

NAD 27

25617	Roost Tank	499687	3829812	Limestone Permittee
25618	Pit tank #1 62A	500249	3828600	Limestone Permittee
25619	Pit tank NE of #1 62A	500419	3828978	Limestone Permittee
25620	Pit tank #2 62A	500013	3829304	Limestone Permittee
25621	Pit tank #3 62A	499938	3830378	Limestone Permittee
25622	Pit tank #4 62A	499978	3830631	Limestone Permittee
25623	Pit tank #5 62A	500191	3831267	Limestone Permittee
25624	Pit tank #6 62A	500155	3831572	Limestone Permittee
25625	Pit tank #7 62A	500100	3832263	Limestone Permittee
25626	Pit tank Sw of Rock TT	501459	3829567	Limestone Permittee
25627	Rock Trick Tank	502379	3830016	Limestone Permittee
25628	Turkey Tree Tank	495567	3806678	Limestone Permittee
25629	Pit tank #1 92rd	495979	3807156	Limestone Permittee
25630	Pit tank #2 92rd	496358	3807493	Limestone Permittee
25631	Pit tank #3 92rd	496491	3807660	Limestone Permittee
25632	Pit tank #1 92Erd	496370	3808392	Limestone Permittee
25633	Pit tank #2 92Erd	496819	3809615	Limestone Permittee
25634	Pit tank #4 92rd	496975	3808373	Limestone Permittee
25635	Pit tank #5 92rd	496997	3808906	Limestone Permittee
25636	Tree Stand tank	497112	3807793	Limestone Permittee
25637	Elk Tank	497663	3808255	Limestone Permittee
25638	Bull Tank	497411	3808639	Limestone Permittee
25639	Pit tank #1 92Drd	497518	3809068	Limestone Permittee
25640	Pit tank #1 9286rd	497510	3810280	Limestone Permittee
25641	Pit tank #2 9286rd	497654	3810722	Limestone Permittee
25642	Ridge Tank	498749	3807923	Limestone Permittee
25643	Pit tank NW of Ridge tank	498278	3808537	Limestone Permittee
25644	Beaver Tank	498208	3808920	Limestone Permittee
25645	Pit tank #1 89rd	498953	3808288	Limestone Permittee
25646	Section 17 Tank	499061	3809212	Limestone Permittee
25647	Pit tank #2 89rd	498886	3809562	Limestone Permittee
25648	Pit tank #6 92rd	498386	3809990	Limestone Permittee
25649	Section 7 Tank	498417	3810228	Limestone Permittee
25650	Stand Tank	498918	3810429	Limestone Permittee
25651	Pit tank #3 89rd	498772	3810732	Limestone Permittee
25652	Bench Tank	498586	3811012	Limestone Permittee
25653	Pit tank #4 89rd	498816	3811469	Limestone Permittee
25654	Mule Tank	498988	3811401	Limestone Permittee
25655	Pit tank #1 8-1rd	500660	3807888	Limestone Permittee
25656	Pit tank #2 8-1rd	500603	3808856	Limestone Permittee

Limestone Allotment
Structural Improvement List

NAD27

Page	24	of	48
Permittee Number			
820646010602			
Permit Number			
02054			

25657	Pauls Tank	500163	3810889	Limestone Permittee
25658	Pit tank #3 84rd	499835	3811484	Limestone Permittee
25659	Mule Crossing pit tank	500349	3812461	Limestone Permittee
25660	Willow Tank	501181	3808793	Limestone Permittee
25661	Pit tank #1 78rd	501913	3809799	Limestone Permittee
25662	Pit tank #2 78rd	502022	3811372	Limestone Permittee
25663	Pit tank #1 75rd	501543	3809457	Limestone Permittee
25664	Pit tank Jack's ridge	501457	3810037	Limestone Permittee
25665	Bear Canyon Tank	500735	3810075	Limestone Permittee
25666	Pit tank #2 75rd	500936	3810699	Limestone Permittee
25667	Pit tank #3 75rd	500894	3810939	Limestone Permittee
25668	Pit tank #4 75rd	500953	3811214	Limestone Permittee
25669	Loop Tank	501140	3812276	Limestone Permittee
25670	Pit tank #5 75rd	501493	3813395	Limestone Permittee
25671	Pit tank #6 75rd	501728	3813879	Limestone Permittee
25672	Pit tank #7 75rd	501801	3814086	Limestone Permittee
25673	Pit tank Vincent	502563	3813699	Limestone Permittee
25674	Pit tank #1 75Ard	501280	3814043	Limestone Permittee
25675	Pit tank #2 75Ard	500834	3814552	Limestone Permittee
25676	Pit tank #3 75Ard	501298	3815570	Limestone Permittee
25677	Ranch Tank	503506	3812191	Limestone Permittee
25678	New Tank	503361	3813044	Limestone Permittee
25679	Pit tank NEW	503360	3813044	Limestone Permittee
25680	115rd gravel pits	493267	3805683	Limestone Permittee
25681	Double Cabin/Leonard Fence			Limestone Permittee
25682	Leonard Canyon Fence			Limestone Permittee
25683	Tentground West Fence			Limestone Permittee
25684	Wilkins Gap Fence			Limestone Permittee
25685	T-B Fence			Limestone Permittee
25686	Five-Mile Fence			Limestone Permittee
25686	Five-Mile Southeast Fence			Limestone Permittee
25687	Ohaco Fence			Limestone Permittee
25691	Tentground/Ohaco Div. Fence			Limestone Permittee
25692	Wiggins Horse Pasture			Limestone Permittee
25693	Victorine Water Lot			Limestone Permittee
25694	Wilkins/Tentground Div. Fence			Limestone Permittee
25695	Pit tank #2 115M (private)	492189	3814275	PRIVATE
25696	Pit tank PIUS FARM DRAW(pri	497767	3815765	PRIVATE
25697	Pit tank NW of #4 62rd	496563	3822086	Limestone Permittee
25698	Pit tank SW of #5 62rd	497866	3823042	Limestone Permittee

Limestone Allotment
Structural Improvement List

NAD 27

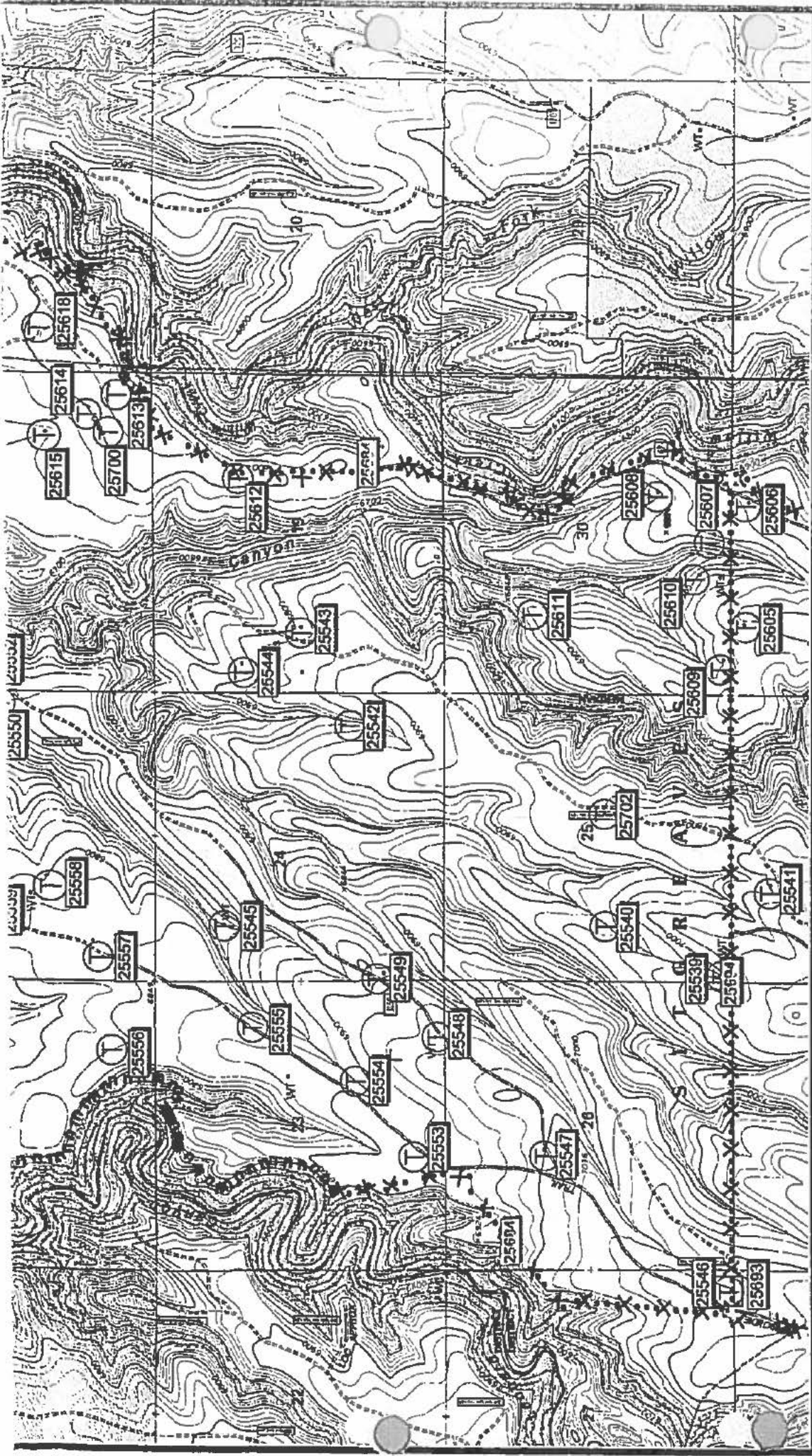
Permittee Number
820646010602

Permit Number
02054

25699	Pit tank W of #5 52rd	498288	3823534	Limestone Permittee
25700	Pit tank W of #1 Pinon drainage	499672	3828217	Limestone Permittee
25701	Pit tank #1 115B (private)	496589	3824137	Limestone Permittee
25702	Pit tank #2 115B spur	497564	3825419	Limestone Permittee
25703	Pit tank 9B 115Intgrnd	494885	3820653	Limestone Permittee
25704	Pit tank #4 75Ard	501414	3816411	Limestone Permittee



Map Scale = 1:



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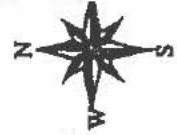
Map Prepared By: S. Richardson Date: 03/20/2003
 c:\s\improvements\improvements.apr
 Wilkins Improvements.vst
 Wilkins Improvements 11 x 8 (2) byrd

Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Range Improvements - Wilkins Pasture Map 2 of 2

Map Legend:
 Improvements (Symbols in legend not to scale with symbols on map)

X--- Fence	W Well
Mule Pen Barrier	Spring
Pipeline	Stock Tank
* Challenge	Whisker Quarter
o-o- Gate	Thick Tank
o-o- Corral	Trough
□ Water	Water Storage Tank
■ Flat-top Storage Tank	Water Dam

Change in Range Improvement of Riding Fence
 Range Improvement 1 (00001) Range Improvement 2 (00002)
 - Fencing - Other Improvements



Map Scale = 1:..

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Map Prepared By: S. Richardson Date: 02/22/2003
C:\pub\improvements.apr
Tentground Improvements view
Tentground Improvements 11 x 6 (9) layout

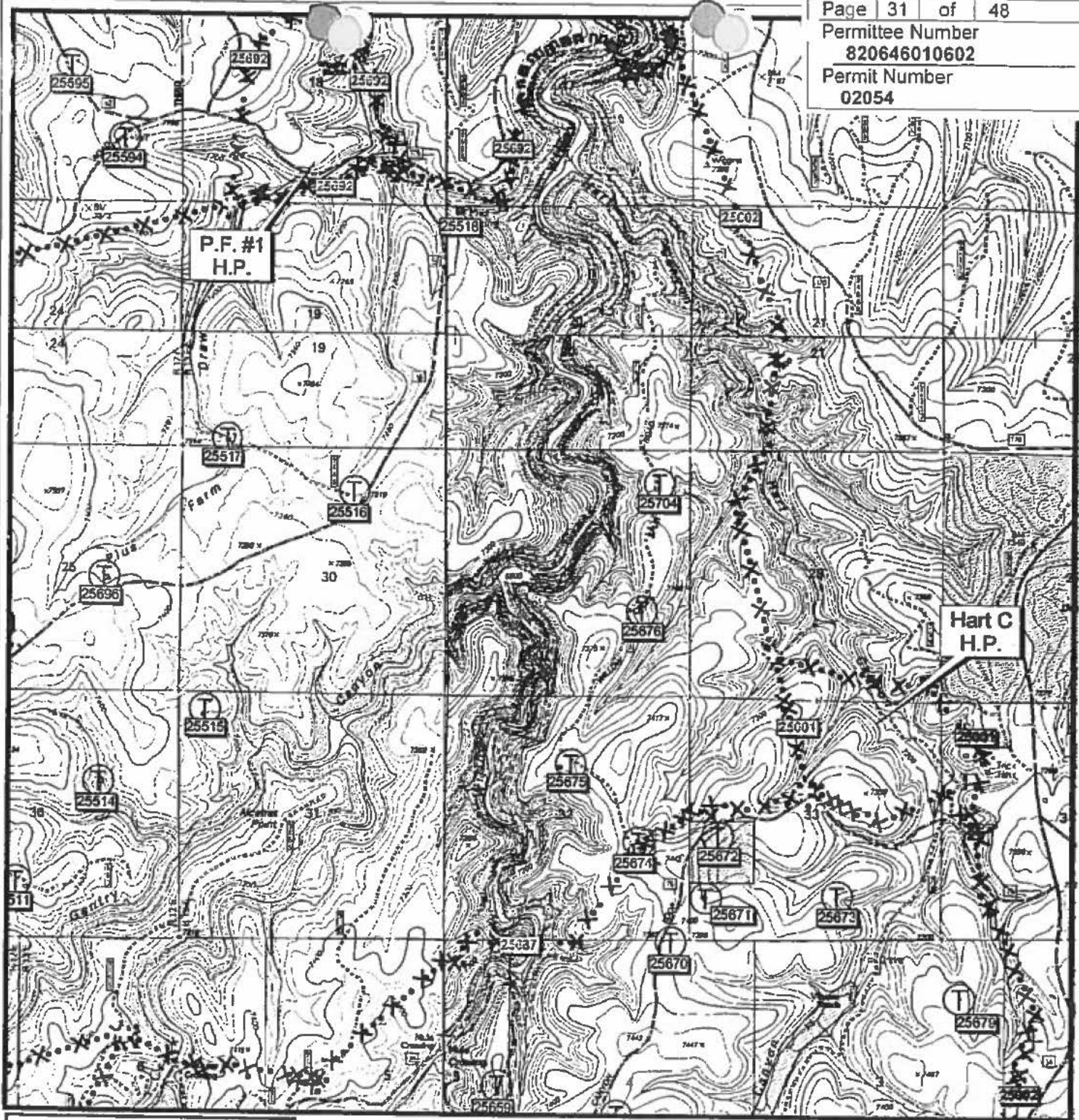
Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Range Improvements - Tent Ground Pasture Map 1 of 2

Map Legend:
(Symbols in legend not to scale with symbols on map)

X---X	Fence	W	Well
	Mature Barrier	⊕	Spring
-----	Pipeline	⊙	Stock Tank
X	Collared	⊙	Whistle Grazier
⊙	Gals	⊙	Thick Tank
⊙	Coal	△	Trough
⊙	Water	⊙	Water Storage Tank
⊙	Flare Storage Tank	⊙	Water Cap

Change in Elevation
Improvement 8 along Contour
Range Improvement 8 2000' - Other Improvements
- Fences





Map Legend:
(Symbols in legend not to scale with symbols on map)

X... Fence	Wet
Natural Barrier	Spring
— Pipeline	Stock Tank
* Callaguard	Whistle Quater
o Oala	Trick Tank
© Coral	Trough
□ Waterrot	Water Storage Tank
■ Future Storage Tank	Water Geo
+	Change in Range Improvement # along Fencelines
Range Improvement # - Fencing	Range Improvement # - Other Improvements

**Limestone Allotment
Black Mesa R. D.
Apache-Sitgreaves N.F.'s
Range Improvements -
O'Haco Pasture
Map 2 of 2**

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Map Prepared By: S.Richardson Date: 02/17/2003
c:\p\smc\ra\improvements\map
O'Haco Improvements # 011 (2) layout

Map Scale = 1 : 38,000



Map Scale = 1:

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Map Prepared By: S. Richardson Date: 05/13/2003
 c:\file\improvements\improvements.mxd
 Double Cabin Improvements View
 Double Cabin Improvements 11 x 8 (R) layout

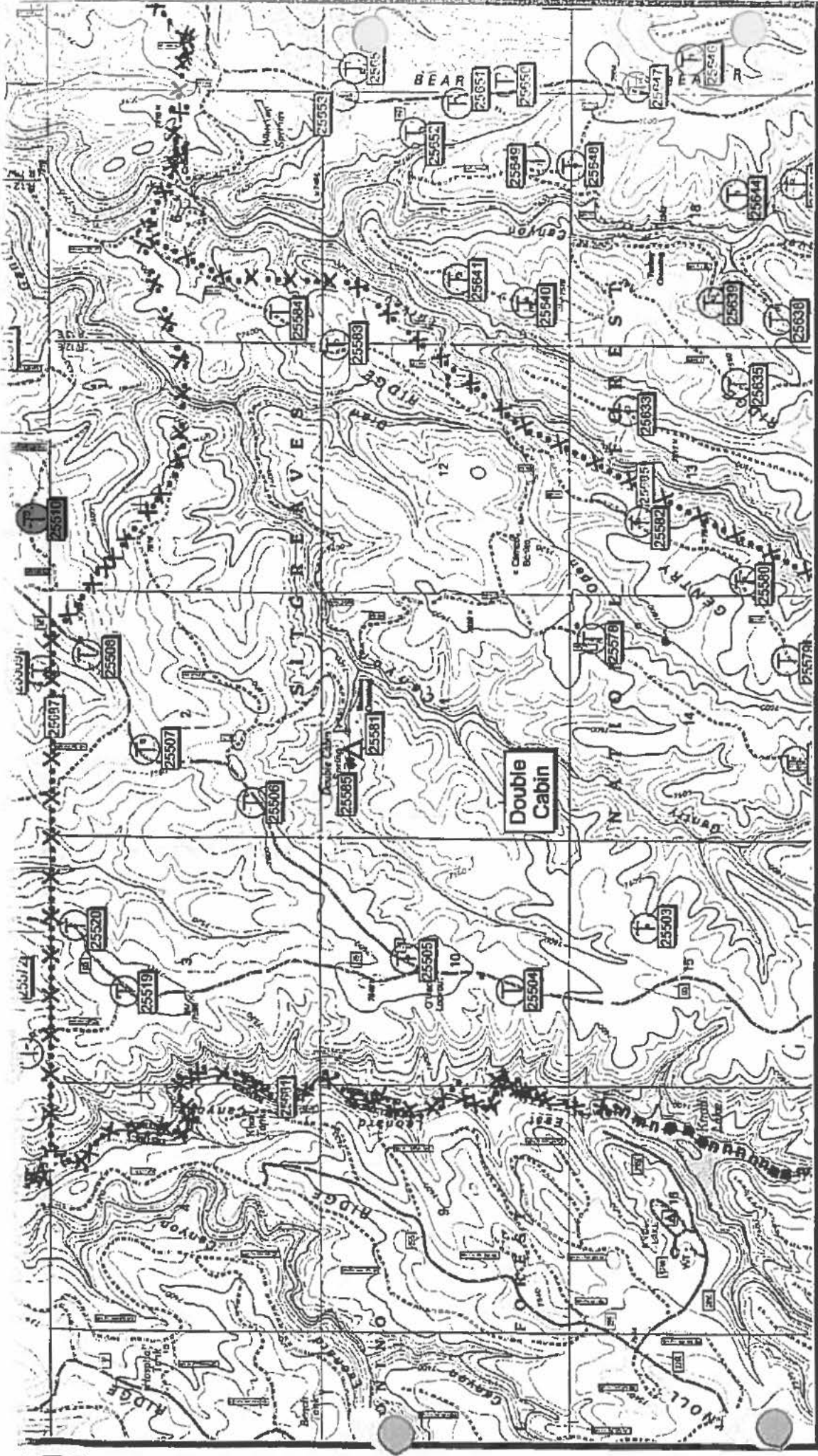
Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Range Improvements - Double Cabin Pasture Map 1 of 2

Map Legend:

Improvements (Shrubs in legend not to scale with symbols on map)	Well
X--- Fence	Spring
Natural Barrier	Stock Tank
----- Pipeline	Woods Quercus
*--- Camargud	Thick Tank
--- Old	Thrup
--- New	Water Storage Tank
--- Water	Water Gap
--- Future Storage Tank	

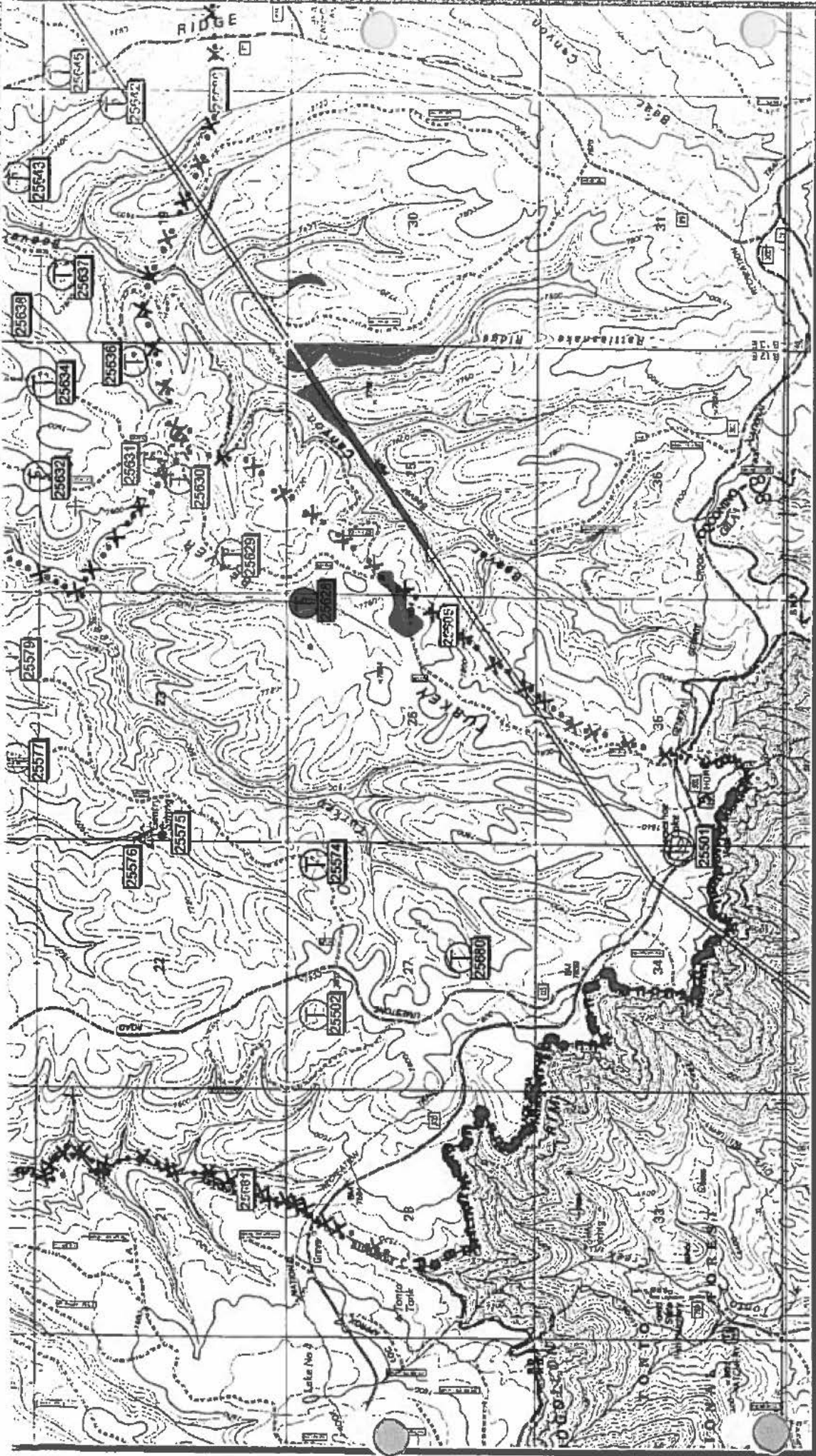
Change in Range Improvement # along Fence/Range Improvement #

20007 - Fencing
 20008 - Other Improvements





Map Scale = 1:1



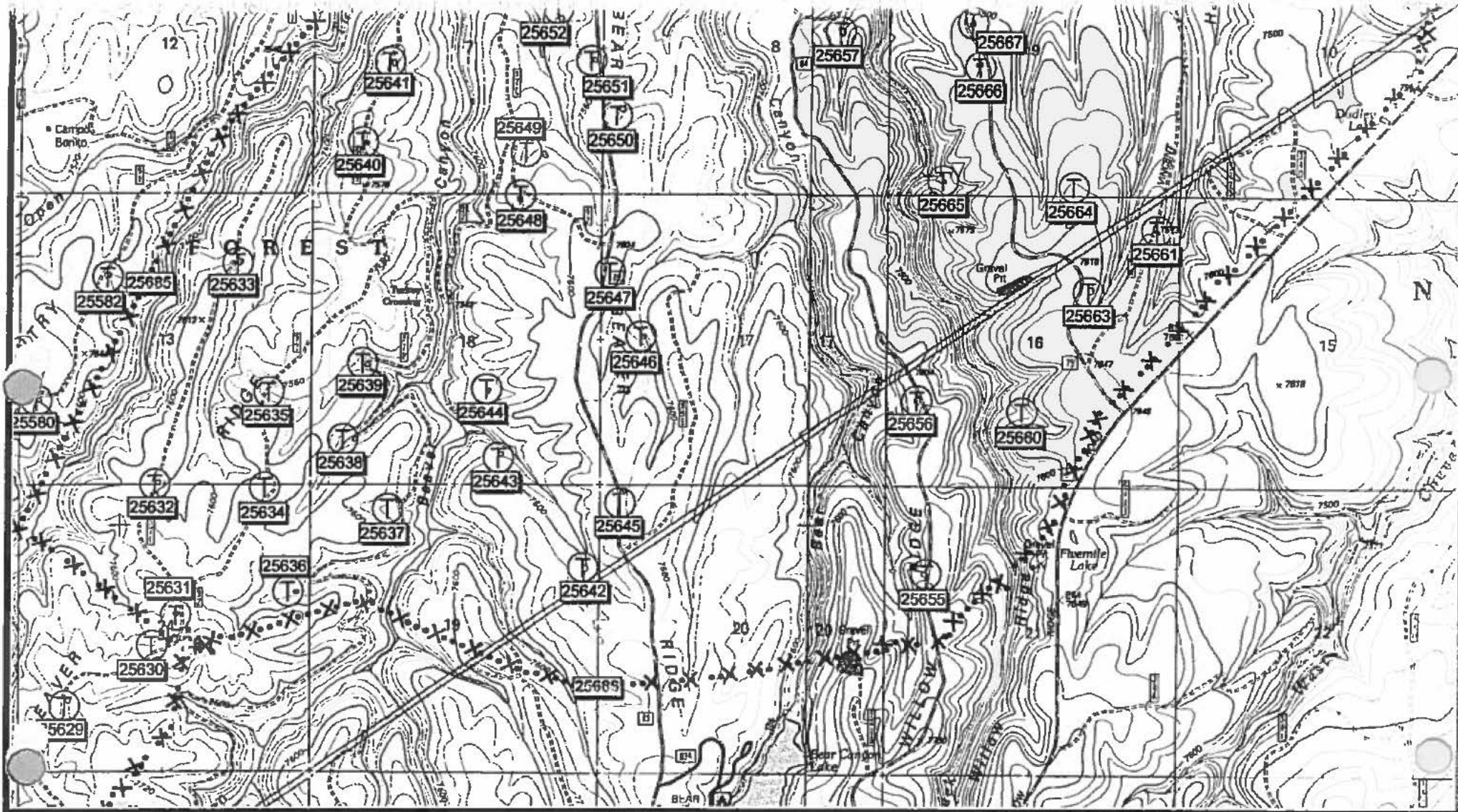
Disclaimer Statement:
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Map Prepared By: S. Richardson Date: 05/13/2003
Project: 02054
Double Cabin Improvements 11 x 8 (7) layout

Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Range Improvements - Double Cabin Pasture Map 2 of 2

Map Legend:
(Symbols in legend not to scale with symbols on map)

Improvements	Wet
X... Fens	Swamp
Natural Barrier	Blank Trail
XXXXX Pipeline	Woods Quarry
* Checkpoint	Thick Trail
○ Date	Trough
○ Cont	Water Storage Tank
□ Water	Water Gap
■ Future Storage Tank	

* Change in Range Improvement # along Perimeter
 Range Improvement # 20004
 - Other Improvements



Map Legend:
 (Symbols in legend not to scale with symbols on map)

X... Fence	W Well
nnnn Natural Barrier	o Spring
==== Pipeline	⊕ Silck Tank
* Contour	⊕ Wildlife Center
o Date	o Thick Tank
⊙ Coal	Δ Trough
□ Waterlot	⊕ Water Storage Tank
⊕ Future Storage Tank	⊕ Water Gap

Change in Range Improvement 2 along Fierstone

20001 Range Improvement 2 - Fierstone	20001 Range Improvement 2 - Other Improvements
---------------------------------------	--

**Limestone Allotment
 Black Mesa R. D.
 Apache-Sitgreaves N.F.'s
 Range Improvements -
 5-Mile Pasture
 Map 2 of 2**

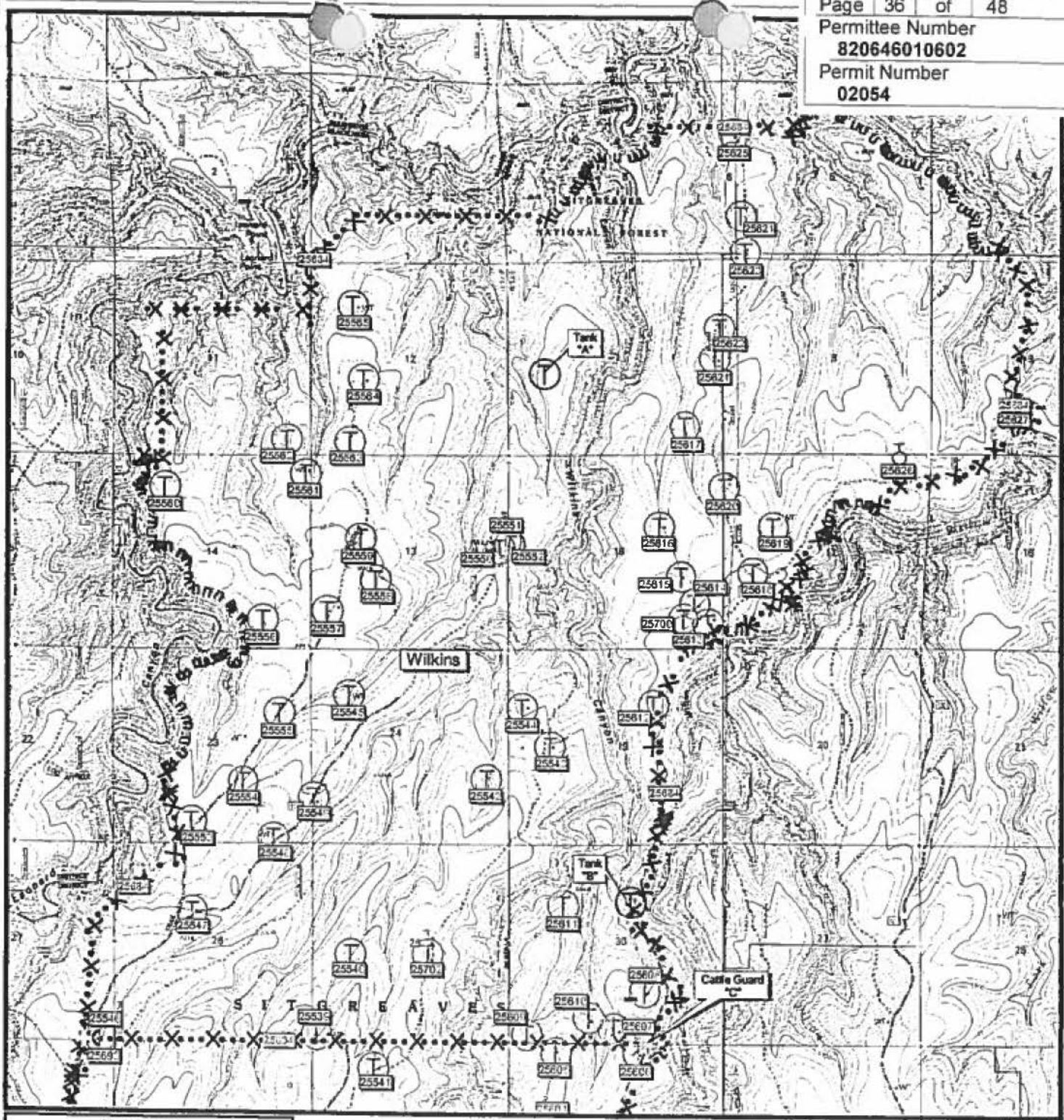
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Map Prepared By: S. Richardson Date: 02/13/2003
 c:\p1\limestone\improvements.apr
 5-Mile Improvements view
 5-Mile Improvements 11 x 8 (2) layout



Map Scale = 1 : 1

Page 35 of 48
 Permittee Number
 820646010602
 Permit Number
 02054



Map Legend:

Improvements (Symbols in legend not to scale with symbols on map)

- | | | | |
|------------|--|---|---|
| X-X-X-X-X | Fence | □ | Well |
| ○-○-○-○ | Fence - Proposed | ⊕ | Well |
| ==== | Fence - Removed | ⊕ | Spring |
| | Natural Barrier | ⊕ | Wholly Outcrop |
| --- | Pipeline | ⊕ | Stock Tank |
| * | Collegard | ⊕ | Stock Tank - Proposed |
| * (dashed) | Collegard - Proposed | ⊕ | Tick Tank |
| ↔ | Gate | ⊕ | Trough |
| ⊕ | Corral | ⊕ | Water Storage Tank |
| ⊕ | Future Storage Tank | ⊕ | Water Gap |
| ⊕ | Change in Fence Improvement # along Fences | | |
| ⊕ | Range Improvement # - Fence | ⊕ | Range Improvement # - Other Improvement |

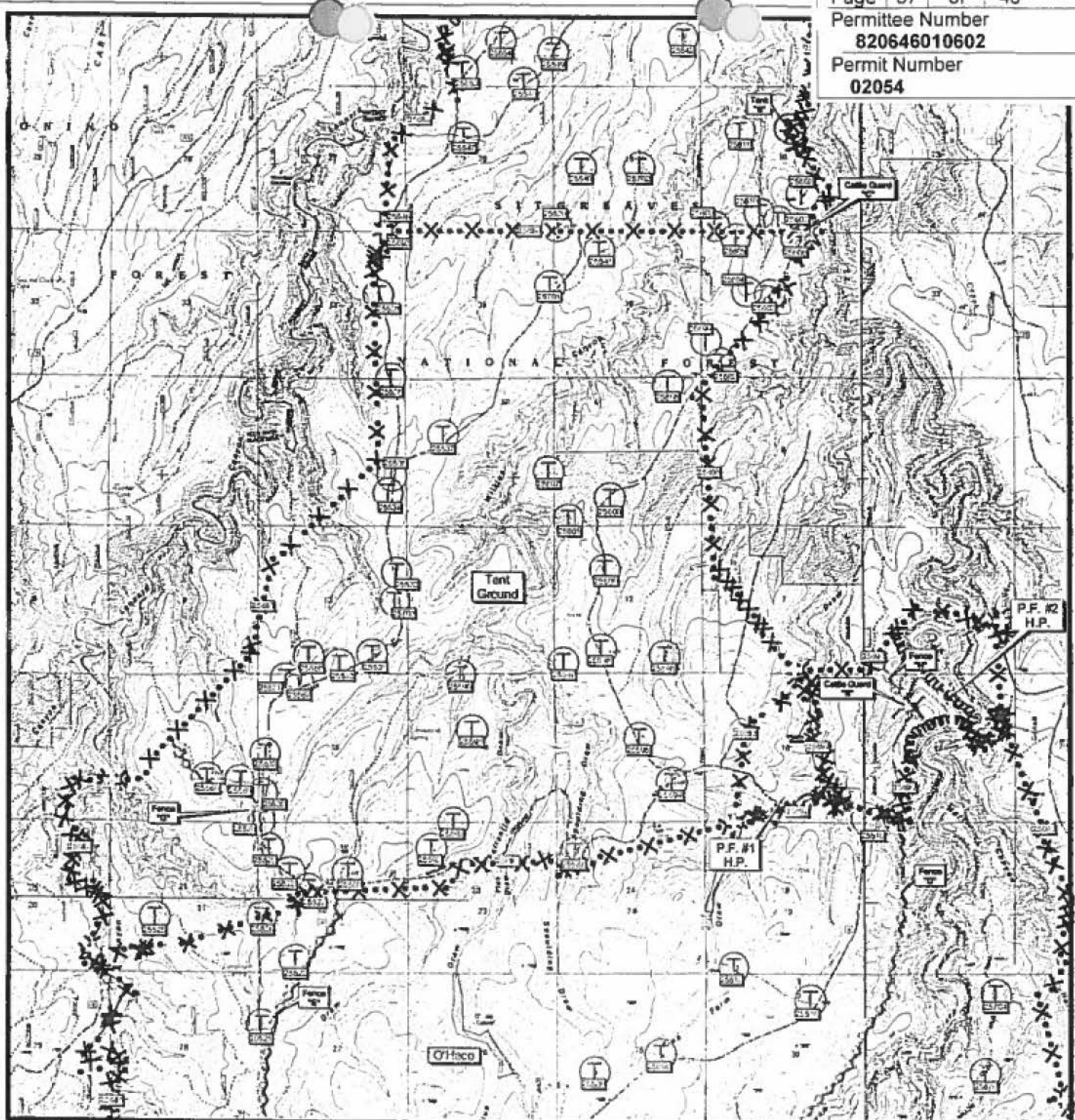
**Limestone Allotment
Black Mesa R. D.
Apache-Sitgreaves N.F.'s
Proposed Range
Improvements -
Wilkins Pasture**

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Map Prepared By: S.Richardson Date: 09/25/2003
c:\gis\limestone\proposed.apr/
Proposed - Wilkins view/
Wilkins Proposed 11 x 8 layout



Map Scale = 1: 45,000



Map Legend:

Improvements (Symbols in legend not to scale with symbols on map)

- | | |
|---|---|
| X-X-X Fence | □ Well |
| -X-X- Fence - Proposed | ⊕ Well |
| --- Fence - Removal | ⊕ Spring |
| Natural Barrier | ⊕ Wildlife Quail |
| ▬ Pipeline | ⊕ Stock Tank |
| ⊕ Cattle Guard | ⊕ Stock Tank - Proposed |
| ⊕ Cattle Guard - Proposed | ⊕ Trick Tank |
| ⊕ Gate | ⊕ Trough |
| ⊕ Corral | ⊕ Water Storage Tank |
| ⊕ F. Awe Storage Tank | ⊕ Water Gap |
| ⊕ Change in Range Top (overland) along Fence line | |
| --- Range Improvement #1 - Fencing | ⊕ Range Improvement #2 - Other Improvements |

**Limestone Allotment
Black Mesa R. D.
Apache-Sitgreaves N.F.'s
Proposed Range
Improvements -
Tentground Pasture**

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Map Prepared By: S. Richardson Date: 08/25/2003
c:\g\limestone\proposed.apr
Proposed - Tentground\view
Tentground Proposed 11 x 8 layout



Map Scale = 1: 60,000



Map Scale = 1

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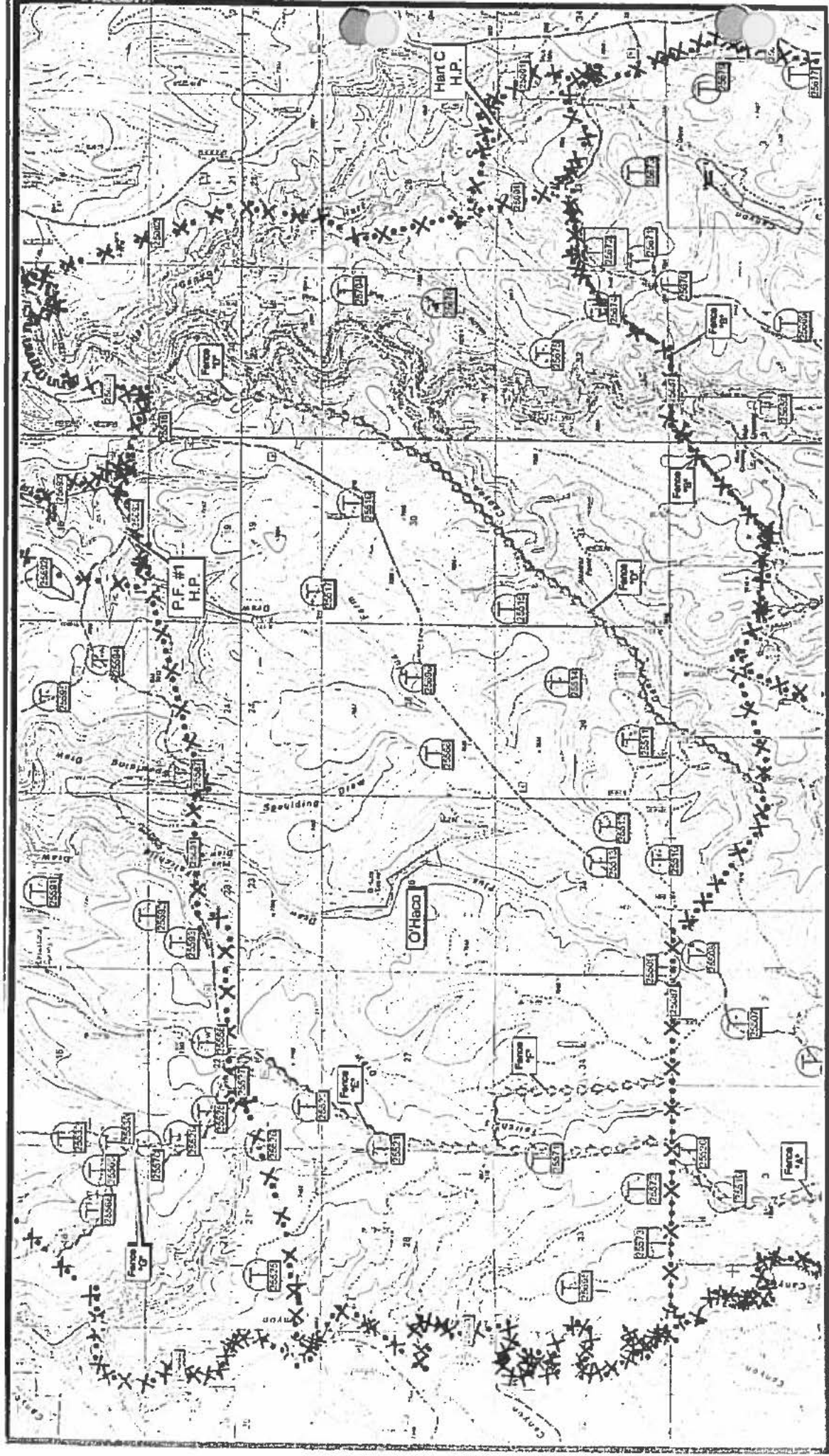
Map Prepared By: S. Robinson Date: 02/01/2008
 srobinson@fs.fed.us
 Prepared - Chico area
 Chico Prepared 11 x 8 (P) layout

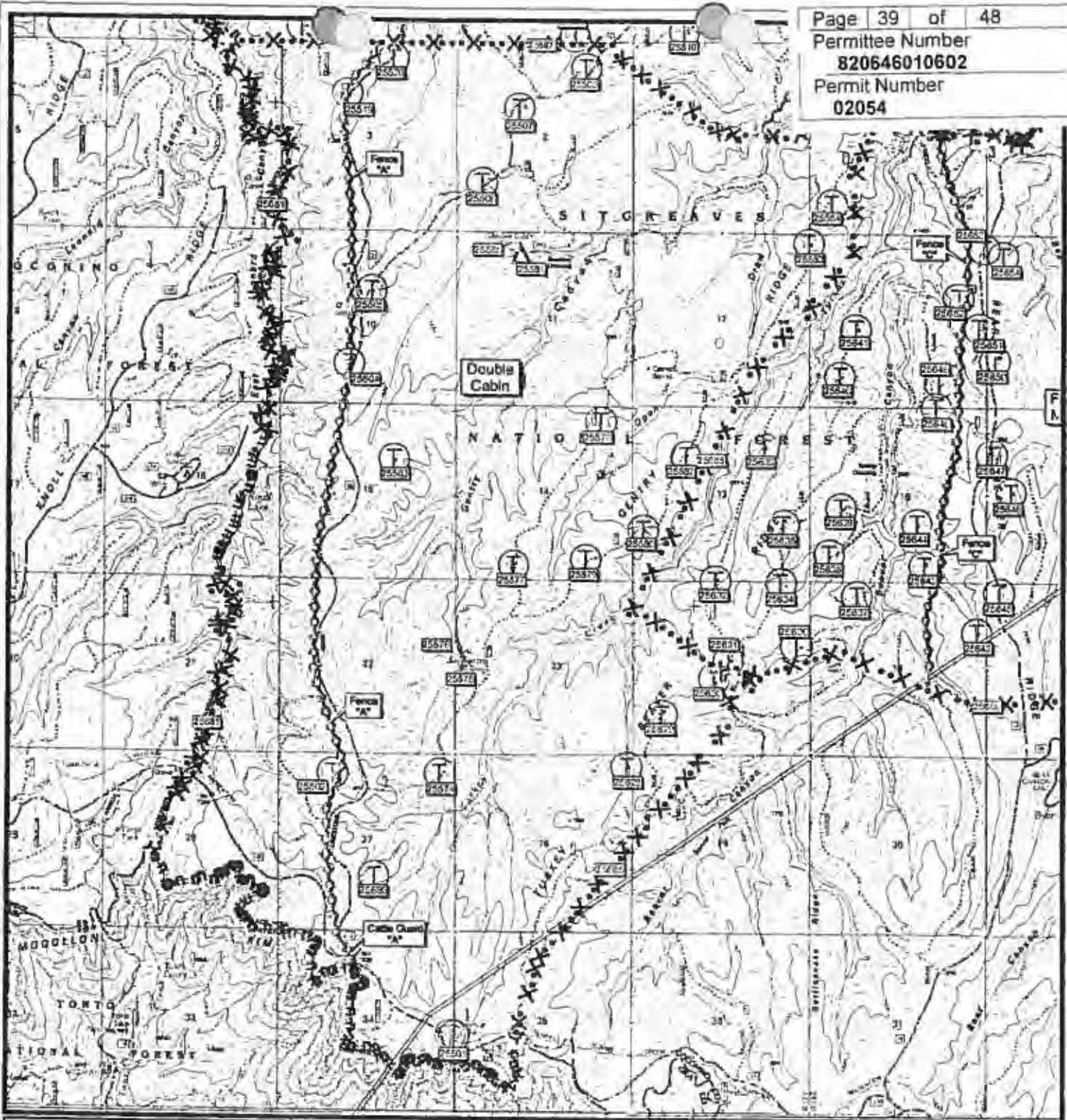
Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Proposed Range Development Map - Ohaco Pasture

Map Legend:
 (Symbols in legend not to scale with symbols on map)

Improvements	••••• Fence	□	Water
	○••••• Fence - Proposed	○	Well
	○••••• Fence - Future	○	Spring
	○••••• Natural Barrier	○	Woods Outcrop
	○••••• Pipeline	○	Stock Tank
	○••••• Contiguity	○	Stock Tank - Proposed
	○••••• Contiguity - Proposed	○	Truck Tank
	○••••• Gate	○	Trough
	○••••• Crib	○	Water Storage Tank
	○••••• Fence Storage Tank	○	Water Gate
	○••••• Change in Range Improvement @ Spring Facilities	○	
	○••••• Range Improvement @	○	

Scale: 1" = 1 Mile
 Date: 02/01/2008
 Prepared by: S. Robinson
 Checked by: S. Robinson





Map Legend:
(Symbol in legend not to scale with symbols on map)

X-X-X-X-X	Fence	□	Well
→	Fence - Proposed	⌘	Well
→	Fence - Approved	⌘	Well
	Natural Barrier	⌘	Well
—	Pipeline	⌘	Well
*	Colleged	⌘	Well
*	Colleged - Proposed	⌘	Well
⊙	Cave	⌘	Well
⊙	Future Storage Tank	⌘	Well
⊙	Change in Range Improvement & Study Facilities	⌘	Well
⊙	Range Improvement & Facility	⌘	Well
⊙	Range Improvement & Facility	⌘	Well

**Limestone Allotment
Black Mesa R. D.
Apache-Sitgreaves N.F.'s
Proposed Range
Improvements -
Double Cabin Pasture**

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Map Prepared By: S. Richardson Date: 08/25/2003
c:\gri\limestone\proposed.apr
Proposed - Double Cabin view
Double Cabin Proposed 11 x 8 layout



Map Scale = 1: 50,000



Map Scale =

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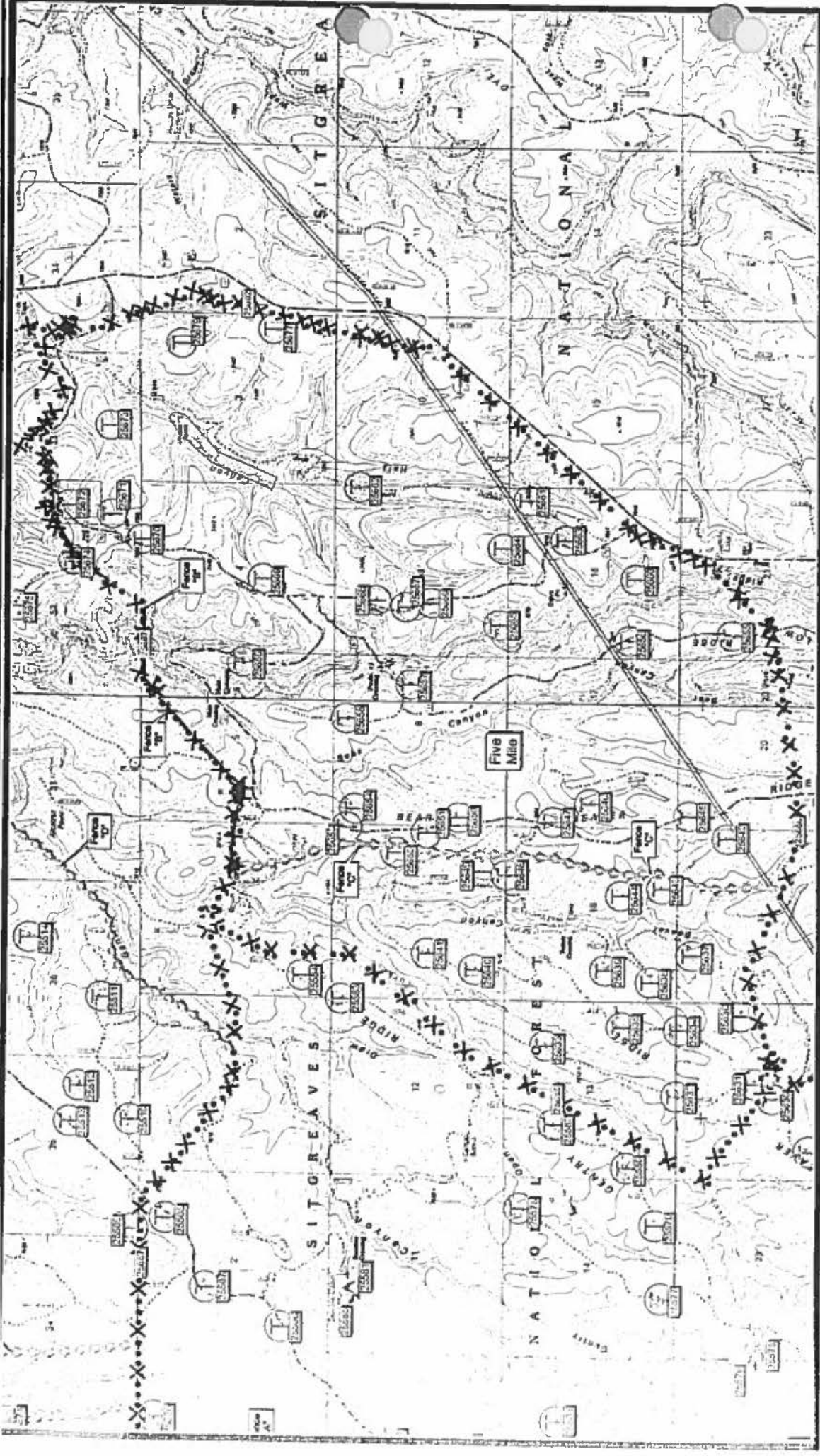
Map Prepared by: S. Richardson Date: 03/25/2003
 c:\msk\m\proposed\p\p\proposed - 5 Mile view
 5-Mile Proposed 11 x 8 layout

Limestone Allotment Black Mesa R. D. Apache-Sitgreaves N.F.'s Proposed Range Development Map - 5 - Mile Pasture

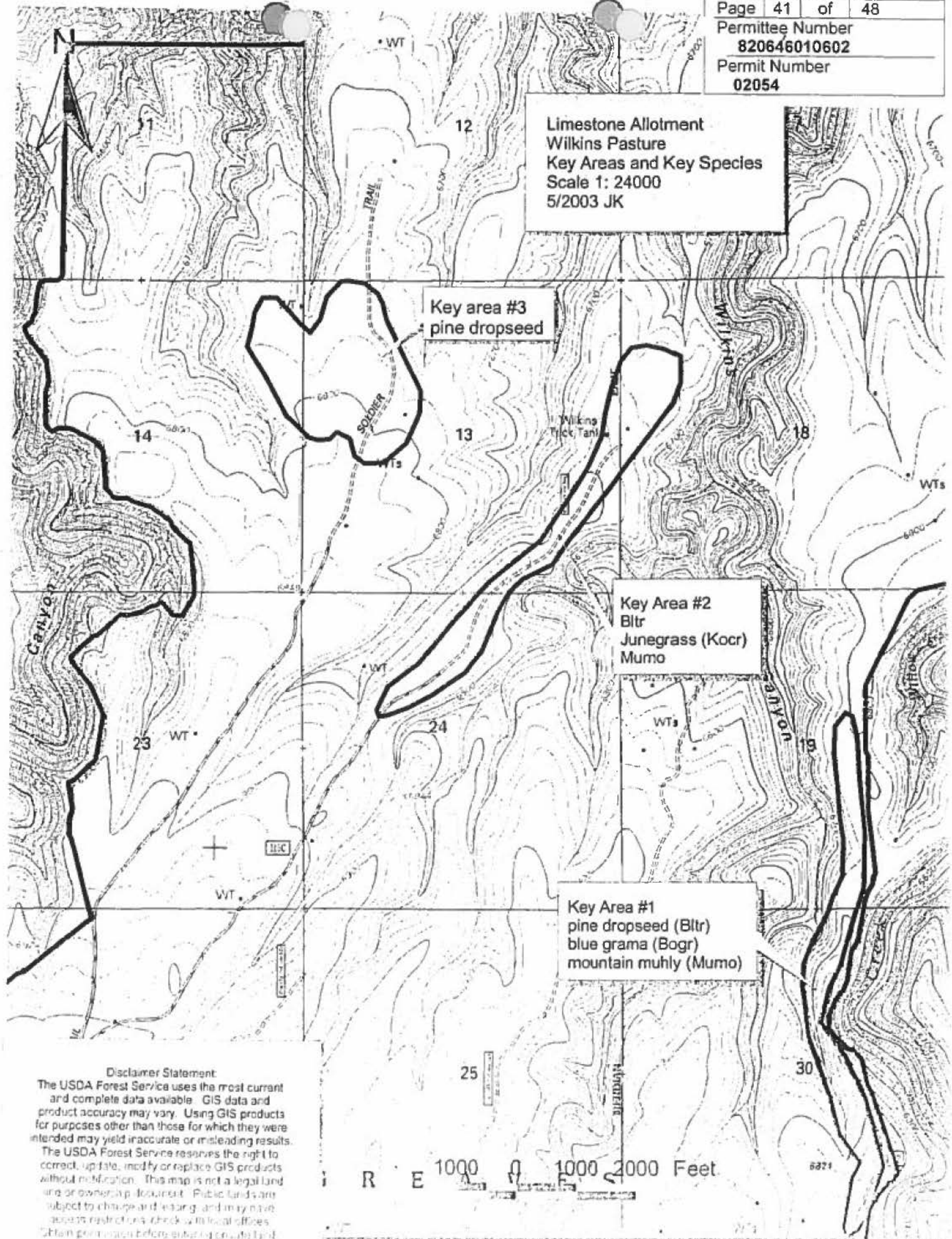
Map Legend:
 (Symbols in legend not to scale with symbols on map)

Improvements	X	Fence - Proposed	□	Well
Fence - Proposed	—	Fence - Existing	—	Well
Fence - Existing	—	Natural barrier	—	Spring
Natural barrier	—	Public	—	Wells Outside
Public	—	Contingent - Proposed	○	Stock Tank - Proposed
Contingent - Proposed	○	Contingent - Existing	○	Stock Tank - Existing
Contingent - Existing	○	Use	○	Thin Tank
Use	○	Good	○	Water Storage Tank
Good	○	Four Storage Tank	○	Water Gap
Four Storage Tank	○	Change in Range Improvement & Leasing Foundation	○	
Change in Range Improvement & Leasing Foundation	○			

Range Improvement # 23001, Range Improvement # 23002, Other Improvements #



Limestone Allotment
 Wilkins Pasture
 Key Areas and Key Species
 Scale 1: 24000
 5/2003 JK



Key area #3
 pine dropseed

Key Area #2
 Bltr
 Junegrass (Kocr)
 Mumo

Key Area #1
 pine dropseed (Bltr)
 blue grama (Bogr)
 mountain muhly (Mumo)

Disclaimer Statement:
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1000 1000 2000 Feet

**Limestone Allotment
Tentground Pasture
Key Areas and Key Species
Scale 1: 24000
5/2003**

**Key Area #5
Bltr**

**Key Area #3
pine dropseed (Bltr)**

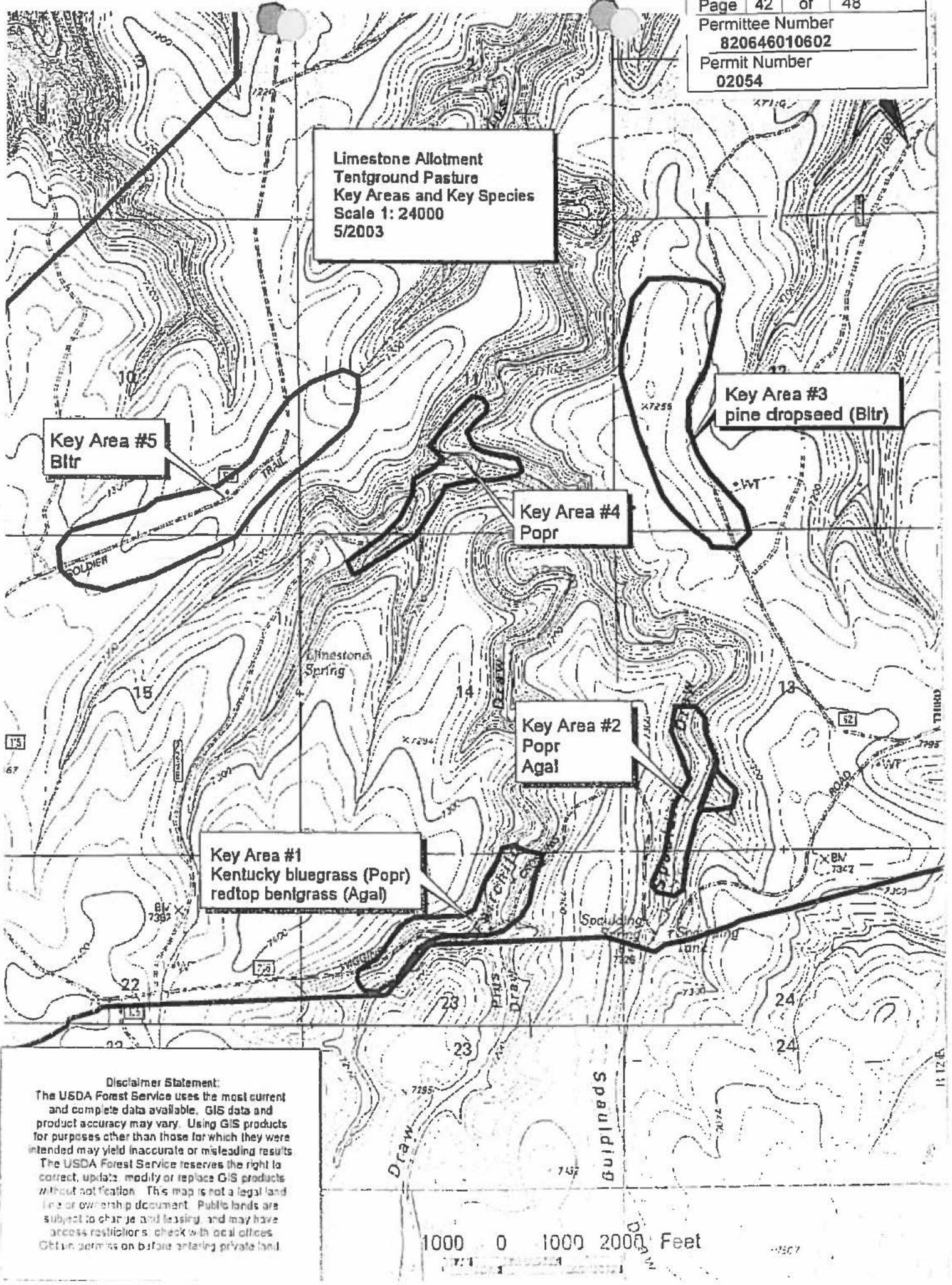
**Key Area #4
Popr**

**Key Area #2
Popr
Agal**

**Key Area #1
Kentucky bluegrass (Popr)
redtop bentgrass (Agal)**

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1000 0 1000 2000 Feet



Key Area #3
 Popr
 Agal

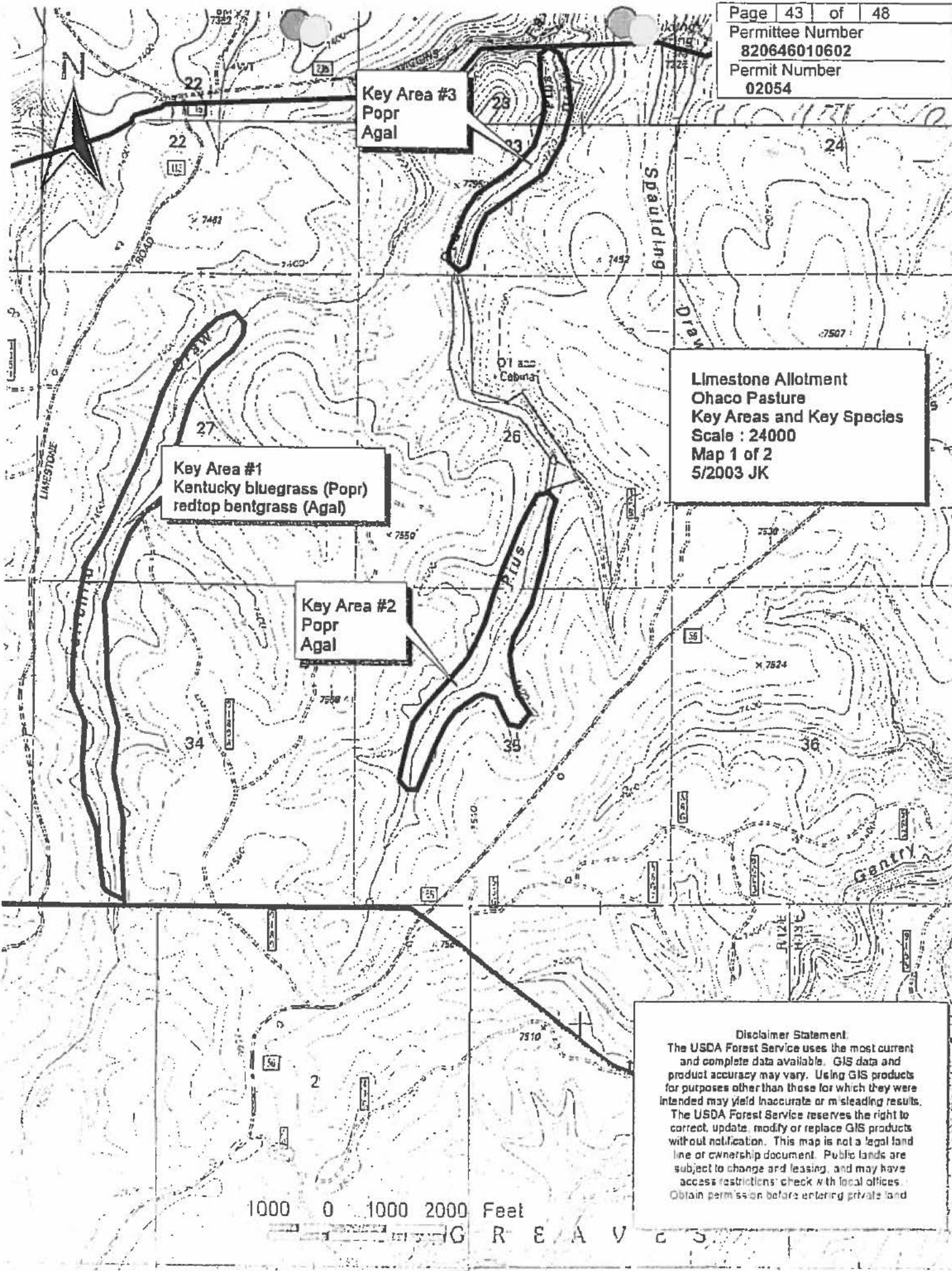
Key Area #1
 Kentucky bluegrass (Popr)
 redbtop bentgrass (Agal)

Key Area #2
 Popr
 Agal

Limestone Allotment
 Ohaco Pasture
 Key Areas and Key Species
 Scale : 24000
 Map 1 of 2
 5/2003 JK

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1000 0 1000 2000 Feet

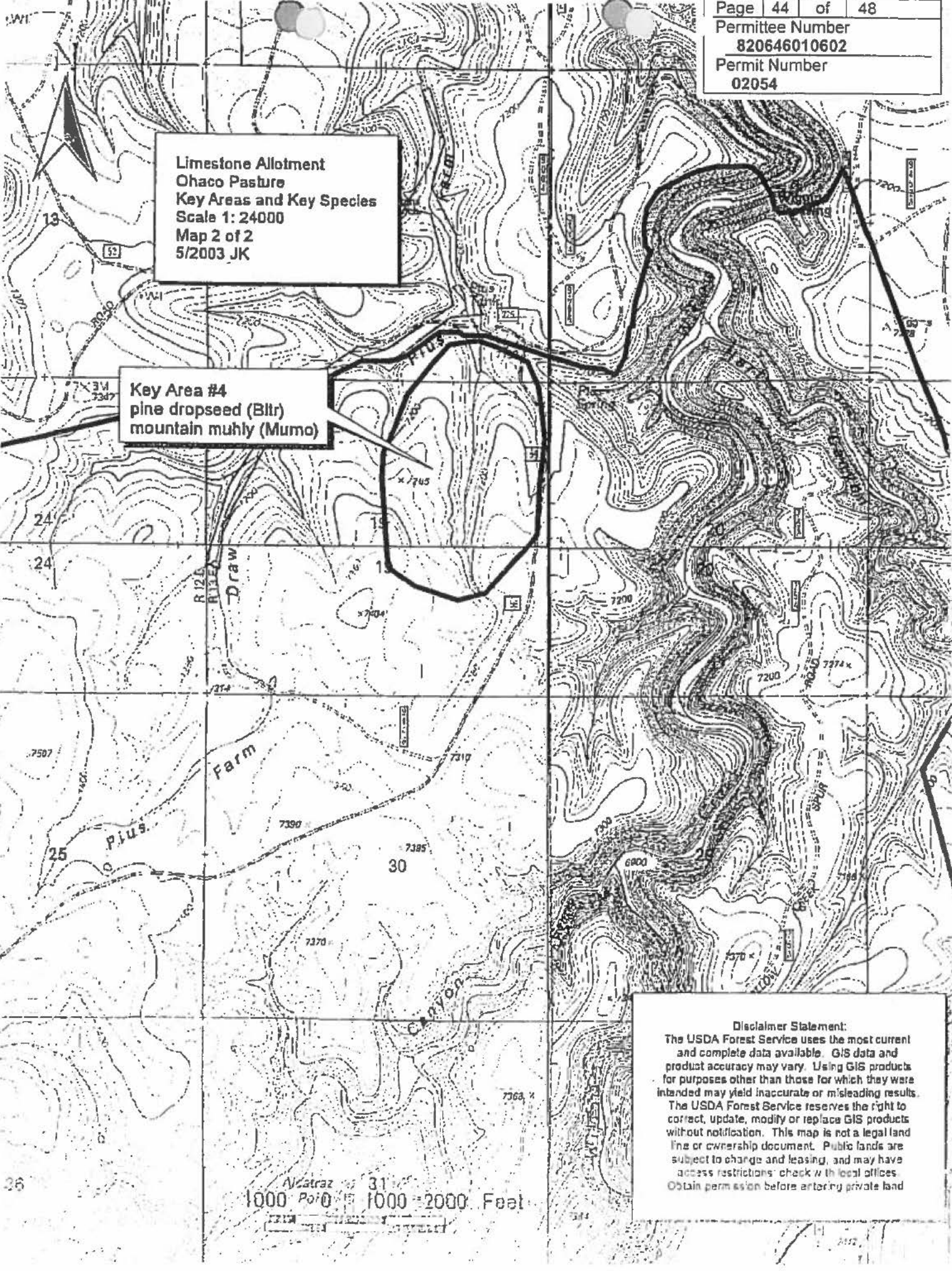


Limestone Allotment
 Ohaco Pasture
 Key Areas and Key Species
 Scale 1: 24000
 Map 2 of 2
 5/2003 JK

Key Area #4
 pine dropseed (Bltr)
 mountain muhly (Mumo)

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1000 1000 = 2000 Feet



Limestone Allotment
Double Cabin Pasture
Key Areas and Key Species
Scale 1:32000
5/2003 JK

Key Area #4
Popr
Agal

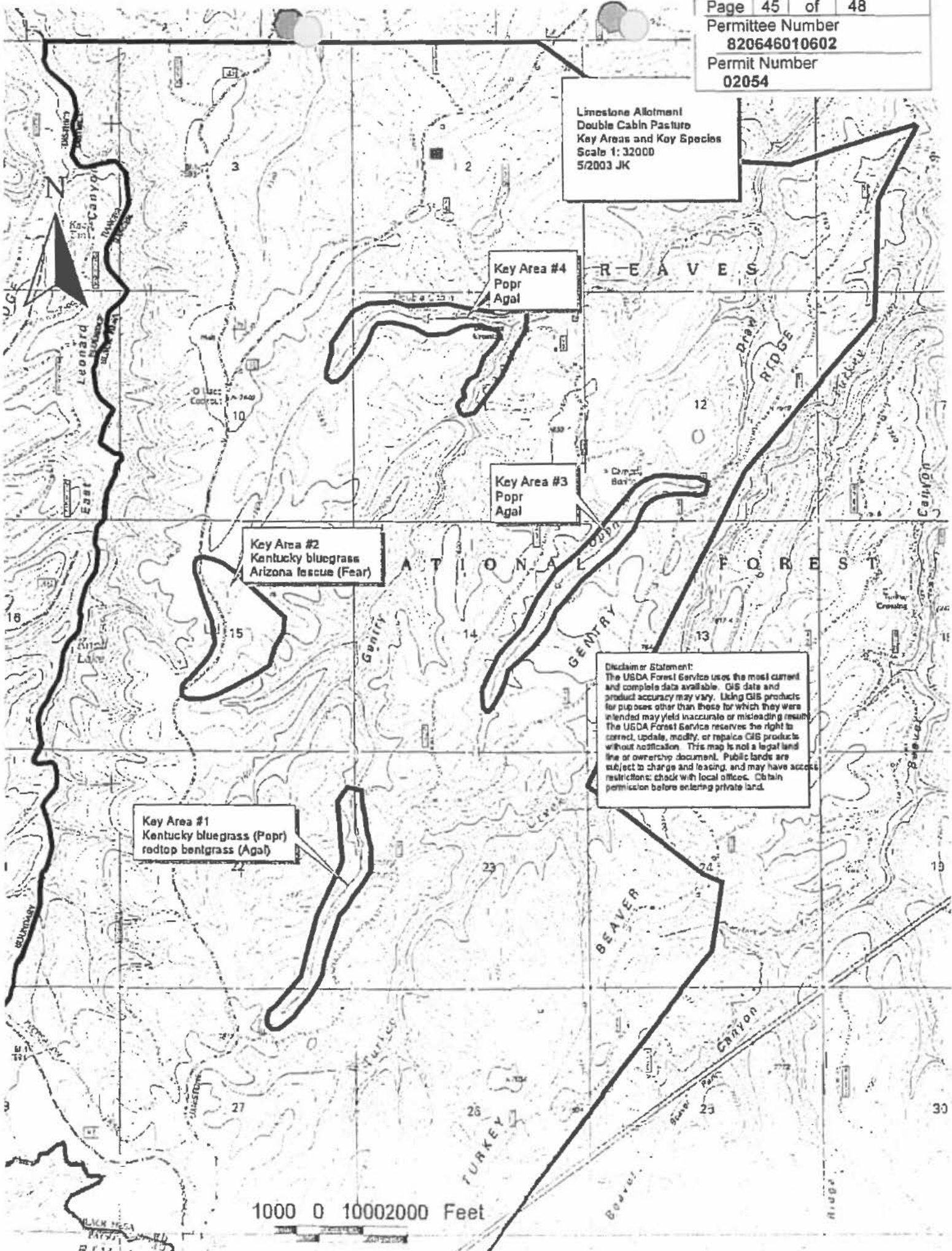
Key Area #3
Popr
Agal

Key Area #2
Kentucky bluegrass
Arizona fescue (Fear)

Key Area #1
Kentucky bluegrass (Popr)
redtop bentgrass (Agal)

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1000 0 10002000 Feet



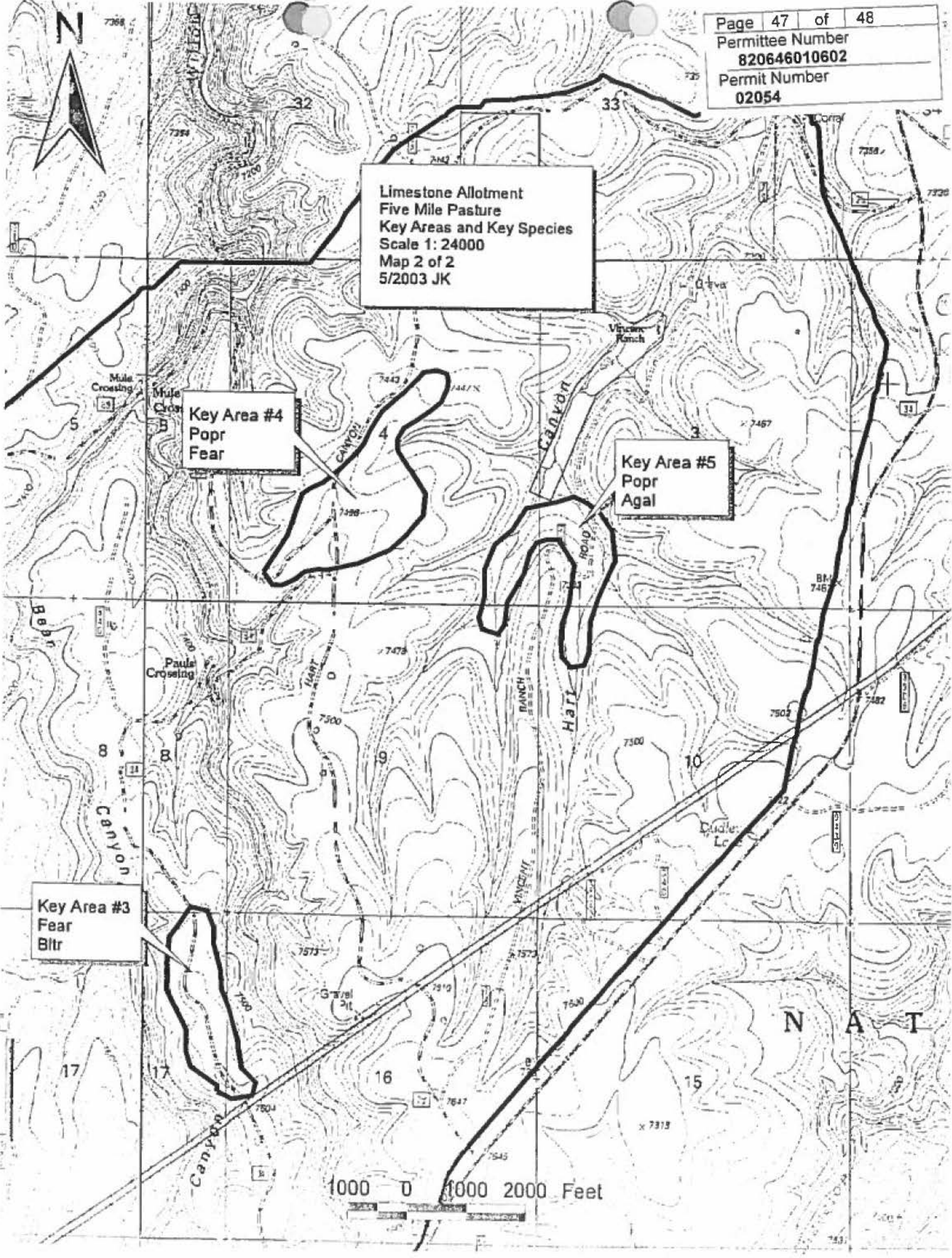
Limestone Allotment
Five Mile Pasture
Key Areas and Key Species
Scale 1: 24000
Map 2 of 2
5/2003 JK

Key Area #4
Popr
Fear

Key Area #5
Popr
Agal

Key Area #3
Fear
Bltr

1000 0 1000 2000 Feet







**Limestone Allotment
Black Mesa R. D.
Apache-Sitgreaves N.F.'s**



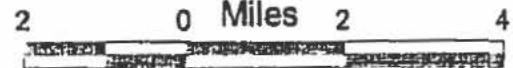
Map Scale = 1: 155,000

Map Legend:

-  Allotment Boundary
-  Pastura Boundary

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Map Prepared By: S. Richardson Date: 12/16/2002
 c:\gis\limestone\locator.mxd
 c:\limestone\locator view
 c:\limestone\locator 8.5 x 11 layout



Rom 3/6/19