

**Massachusetts Department of Conservation and Recreation
Division of Water Supply Protection, Office of Watershed Management
*Forest Management Project Summary***

Project Title: Lot 5252

DWSP Harvest Permit Number: 5252

DWSP Proposal ID: WA-15-226

DCR Forest Cutting Plan File Number: 282-7273-15

Site Information

Watershed: Wachusett

Town(s): Sterling

Acres: 32

Nearest Road: Beaman Road

Natural Heritage Atlas overlap?: Yes

Public Drinking Water Supply Watershed?: Yes

Forest Types: White pine-mixed oak

Area of Critical Environmental Concern (ACEC)?: No

Soils: Chatfield-Hollis-Rock outcrop complex

Wetland Resources: Bailey Brook flows through the middle of this lot. Rocky Brook borders the lot on the eastern side with the south side bordered by the large wetland where Rocky Brook and Bailey Brook join the Stillwater River.

Vernal Pools: None known.

Harvest Information

Harvest Start Date: 5/1/2015

Harvest End Date: 12/1/2016

Number of Wetland Crossings: Two

Number of Stream Crossings: Two

Best Management Practices Applied

Stream Crossings: This stretch of Bailey Brook is intermittent in flow. If crossed while flowing, they will be bridged otherwise they may be crossed with a pole ford.

Filter Strips: No trees will be cut in the filter strips.

Wetland Crossings: The bordering vegetated wetlands associated with the two stream crossings will be crossed when frozen or dry or will be protected with adequate tree tops or corduroy.

Harvesting in Wetlands: No harvesting in wetlands will occur.

DWSP Forester supervising this harvest

Name: Greg Buzzell

Forester License number: 025

Phone number: 774-261-1841

Email: greg.buzzell@mass.gov

Narrative

General Description/Forest Composition/History

This area is located in Sterling across from the Eight Point Sportsman's Club on Beaman Road. Rocky Brook forms the eastern edge with Bailey Brook flowing through the middle. This site is characterized by dry soils and irregular slopes with a steep-sided gravel ridge separating the two brooks. The soil is so sandy that for much of the year, Bailey Brook disappears beneath the sand a couple hundred yards south of Beaman Road.

The forest is comprised primarily of white pine, red oak, white oak and black oak along with red maple, black cherry and hemlock. Most of this forest originated in the 1930's with the forest on the oak-dominated gravel ridge originating in about 1905. Many of the white pines are of exceptional size and quality with many over 100 feet tall. An MDC timber sale took place in 1997 in the portion of this area north of Bailey Brook resulting in a little over an acre of young forest as well as the further development of the advance regeneration. There is also excellent advance regeneration throughout the balance of this sale area comprised of white pine, oaks (especially white oak) and hemlock along with a few other hardwoods such as black cherry and red maple.

Site Selection

The ideal watershed protection forest is one which best serves the function of the land as a producer of high quality drinking water in both short- and long-term. This forest must be vigorous and diverse in tree species and ages, be actively accumulating biomass and actively regenerating. Such a forest will be ideally suited to be resilient to and quickly recover from small- and large-scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

This area was selected for management because both within the forest of these 32 acres as well as in the forest of the much larger area from which water flows into Bailey Brook and ultimately into the Stillwater River, there are too few acres of young forest. There is no young forest in this 32 acre area and only 9% of the forest in this subwatershed, of which the DCR owns 1,778 manageable acres, is comprised of young trees less than 20 years old. The ideal protection forest would have closer to 1/3rd of the area growing young trees.

Silvicultural Objectives

Given the excellent advance regeneration throughout this area, openings will be made in the overstory thereby releasing the young trees from the shade of the older and taller trees and creating a more diverse forest. Throughout this area, openings have been marked totaling 7.3 acres, ranging in size from 0.2 to 0.7 acres with an average size of 0.4 acres. These openings are well distributed with adequate spacing between the patches to allow for future patches of a similar range of sizes. Standards regarding green retention (live trees left within patches for structure and seed) have been followed.

Commonly, a second goal is to further condition the overstory trees in the matrix forest surrounding the new patches by targeting individual trees of poorest vigor and form to reduce competition for healthier trees. However, in this case given the cutting from the timber sale that took place in 1997 as well as the quality and spacing of the trees between the openings in the rest of the area, no cutting between the openings will occur.

Cultural Resources

There are no known or documented significant historic or archeological resources in this area. However, given a number of environmental factors such as proximity to reliable sources of water and certain characteristics of the soil and slopes (e.g. gentle slopes and lack of surface rocks), this area rates as moderately to highly sensitive for Native American resources. Damage to these unknown resources can occur through compaction and rutting of the soil. Therefore, effort will be made to prevent or minimize compaction and rutting by only allowing work to occur when the soil is either frozen or dry enough to adequately support the equipment which will perform the harvesting in this sale.

Rare or Endangered Species

NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.

Figures

- Figure 1. Forest Cutting Plan
- Figure 2. Maps of harvest area showing approximate boundary, proposed openings and other features
- Figure 3. General locus map showing the location of the proposed timber harvest
- Figure 4. Pre-Harvest Photographs, A-D
- Figure 5. Post-Harvest Photographs, A-D

Figure 1. Forest Cutting Plan

Forest Cutting Plan

and Notice of Intent under M.G.L. Chapter 132 – The Forest Cutting Practices Act, 304 CMR 11.00 (Effective Date: 1/1/04)

OCT 30 2014

For DCR Use Only:

File Number 288-1772-15 Case No. _____
 Date Rec'd 1030-14 Nat. Hert. YES 1
 Earliest Start 11-10-14 Nat. Hert. Imp. NO
 River Basin NASHUA Pub. Dr. Wat. WACHUSETT
 Gen. Obj. 17 ACEC NO

Site Information

Location

Town Sterling Lot 5252
 Road Beaman Street
 Acres 32 Proposed Start Date 12/14
 Vol. MBF 113.3 Vol. Cds. 29 Vol. Tons 166

Plan Preparer

Name Gregory S. Buzzell
 Address 180 Beaman Rd.
 Town, State, Zip West Boylston, MA, 01583
 Phone 508-792-7806 Ext 317
 Type of Preparer Mass. Licensed Forester
 *Mass. Forester License # 25
 *Required for land under Ch61, Ch61A or Forest Stewardship

Landowner

Name DCR/DWSP/OWM Wachusett/Sudbury
 Mailing Address 180 Beaman St.
 Town, State, Zip West Boylston, MA 01583
 Phone 608-792-7806
 Ch61 Ch61A Stew *Case # _____
 Est. Stumpage Value _____

Licensed Timber Harvester**

Name To be supplied when known.
 Address _____
 Town, State, Zip _____
 Phone _____
 Mass. Lic. Harvester # _____
 **This information may be supplied after the plan is approved, but before work begins.

Best Management Practices

Stream Crossings

Indicate location on map	SC-1	SC-2	SC-3	SC-4
Type of Crossing	<u>BR/No</u>	<u>BR/PO</u>		
Existing Structure	<u>No</u>	<u>No</u>		
Type of Bottom	<u>GR</u>	<u>GR</u>		
Bank Height (ft)	<u>1'</u>	<u>1'</u>		
Stabilization	<u>CO</u>	<u>CO</u>		

Wetland Crossings

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing	<u>100'</u>	<u>50'</u>		
Mitigation	<u>FR/DR</u>	<u>FR/DR</u>		
Stabilization	<u>CO</u>	<u>CO</u>		

Filter Strips

Indicate location on map	FS-1	FS-2	FS-3	FS-4
Width (50', 100', or VA)	<u>VA</u>	<u>VA</u>	<u>VA</u>	

Harvesting in Wetlands

Indicate location on map	HW-1	HW-2	HW-3	HW-4
Forest Type (see pg 2)				
Acres to be Harvested				
Resid. Basal Area (>50%?)				

Service Forester Comments

ALL SILD ROADS/TRAILS ARE EXISTING

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Ledge	Applicant must provide DCR with all relevant information before plan may be approved and cutting may begin. Some forestry activities, such as prescribed burning and pesticide or fertilizer application may require additional permits. Consult MA Forestry BMP Manual for further information.
TH Lic. Tim. Har	BR Bridge	MU Mulch	DR Dry	ST Stony	
TB Timber Buyer	FO Ford	CO Corduroy	OT Other	MU Mud	
LO Landowner	PO Poled	ST Stone		GR Gravel	
OT Other	OT Other	HB Hay Bales		OT Other	
		OT Other			

If Other (OT) is used in any category an explanation must be given on an attached narrative page

Forest Products

Products to be Harvested*

Table with columns: Species, Mb/Cds, Mb/Cds. Rows include White Pine, Red Pine, Pitch Pine, Hemlock, Spruce, Other Sftwd., White Ash, Beech, White Birch, B & Y Birch, Black Cherry.

*Note: Volumes and values indicated in the Plan are as reported by the plan preparer and have not been independently verified by the service forester upon approval. Mb/Cds = thousand board feet.

Stand Treatment

Cutting Standards

Table with columns: Indicate location on map, ST-1, ST-2, ST-3, ST-4. Rows include Forest Type, Acres, Landowner Objective, Designation of Trees, Type of Cut, Source of Regeneration.

Landowner

Landowner Signature

The most important information on a cutting plan is the Landowner's objective, as this will determine which trees will be harvested and which will remain; this decision will also determine the future condition of the forest for decades to come.

[X] LT - Long-term Forest Management

Planned management of the forest to achieve one or more of the following objectives: produce immediate and maximize long-term income, enhance wildlife habitat, improve recreational opportunities, protect soil and water quality, or produce forest specialty products.

[] ST - Short-term Harvest

Harvest of trees with the main intention of producing short-term income with minimal consideration given to improving the future forest condition, which often results in a forest dominated by poor quality and low value species.

I (we) have read the Massachusetts Cutting Plan Information Sheet, and am aware of my (our) management options. I (we) hereby certify that I (we) have the legal authority to carry out the operation described above.

Handwritten signature of landowner(s)

10/30/14

Signature of landowner(s)

Date

Service Forester

Determination and Status

Form with checkboxes for Approved, Disapproved, Expires, Extension, Amendment, and a handwritten signature and date (11-13-2014).

Final Report and Comments

I hereby certify that the afore described Forest Cutting Plan and all relevant statutes have been substantially complied with.

Signature of Service Forester/Director's Agent Date

Codes

Table with columns: Forest Types, Designation of Trees, Type of Cut, Source of Regeneration. Lists various codes and their corresponding descriptions.

*If Other (OT) or a non-standard system is used an explanation must be given on attached narrative page pg 4 of 5

Forest Cutting Plan

Narrative Page

Landowner: DCR/DWSP

Town: STERLING

File Number: 282-7273-15

Use only if further explanation is required of information on pages one or two or if "other" was used in any category.

BMPs	<p><u>SC-1 is on a flat, sandy stretch of Bailey Brook that is dry for a significant part of the year. This location is where the old cart path crosses the brook and over the years, ATV use has destroyed the banks. Bridging will not be required if the stream is dry. In this case, tops or poles will be used to prevent damage to the stream. The approaches to the streams will be protected with tops unless the ground is adequately frozen or snow-covered. WC-1 is across the wetland that borders each side of Bailey Brook. This will be protected with wood (corduroy and/or tops) as needed depending on conditions.</u></p>
Silviculture	<p><u>In order to release advance regeneration, 18 openings in the overstory are being created, covering 7.3 acres. These openings range from 1/5th to 1/2 acre in size with an average of 0.4 acres. They are well distributed throughout the area taking advantage of the advance regeneration comprised of white pine, oaks and other hardwoods. No thinning will occur between any of these patches.</u></p>
Objectives	<p><u>The objective of this operation is to diversify the age structure of the forest by removing the overstory in patches thereby releasing the advance regeneration. The current age structure is limited with an insufficient component of young forest although there is diversity in middle-aged and older stands owing to the gradual abandonment of these former pastures.</u></p>
Other	

Figure 2. Maps of harvest area showing approximate boundary, proposed openings and other features

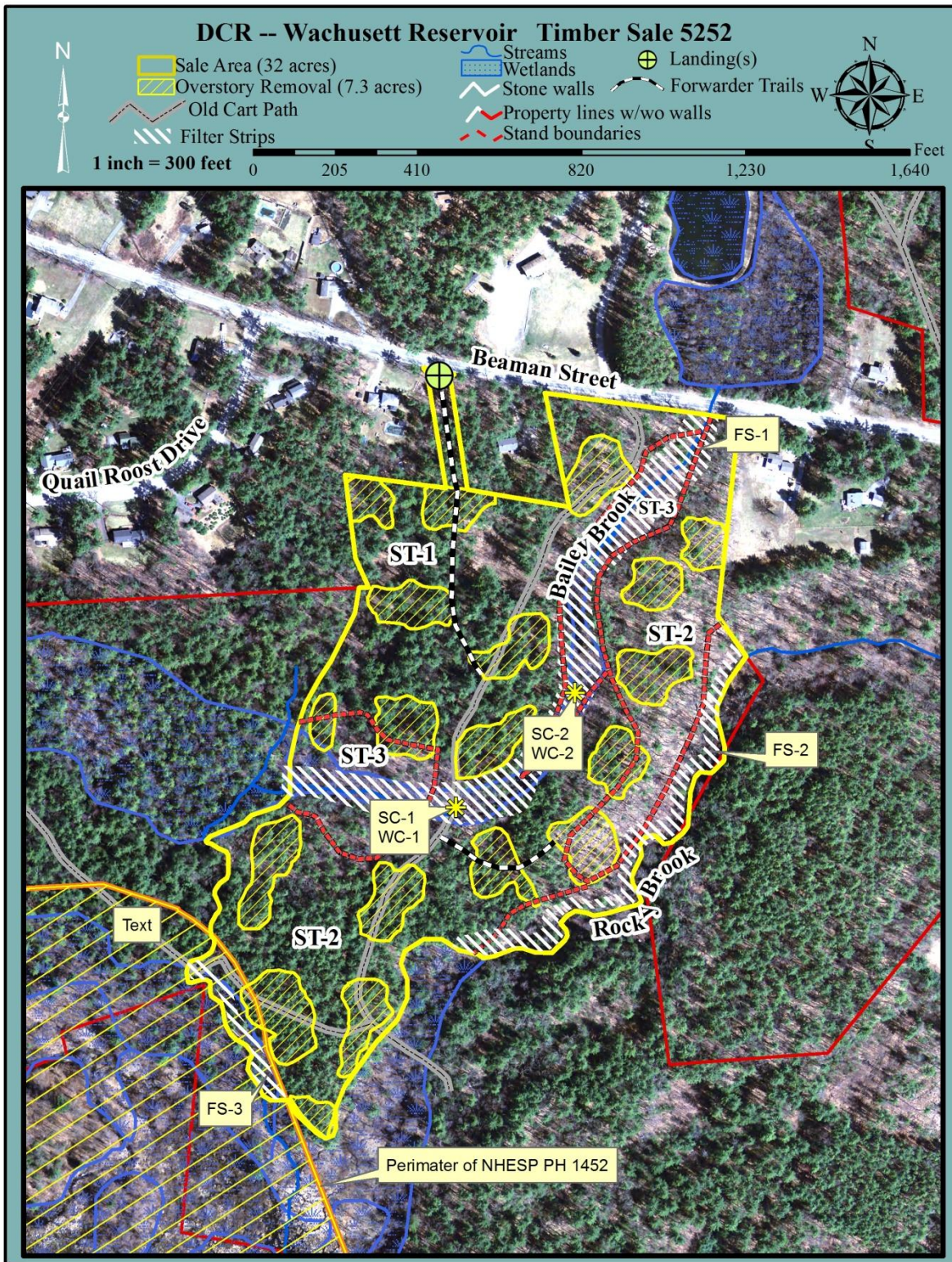


Figure 3. General locus map showing the location of the proposed timber harvest

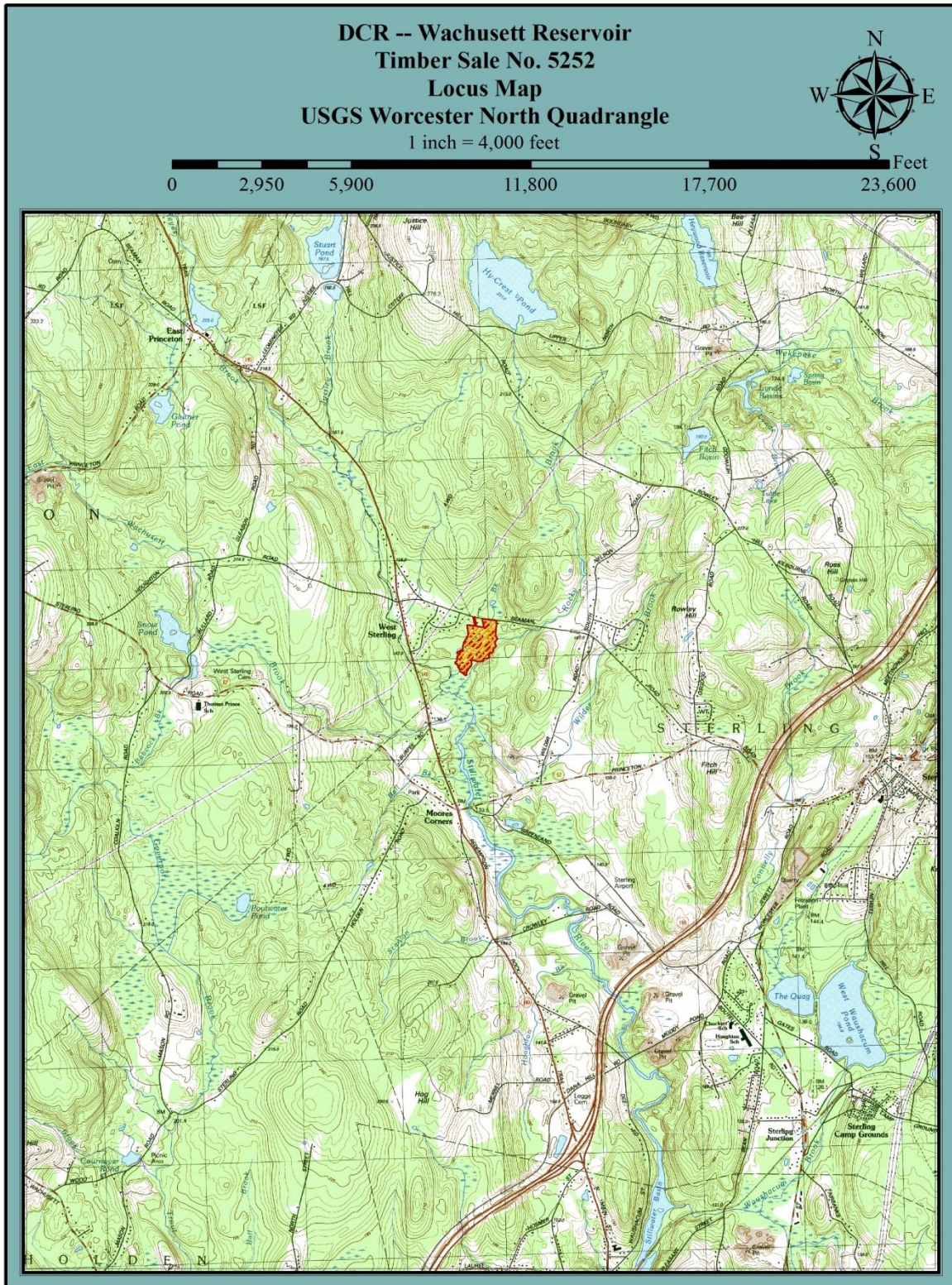


Figure 4. Pre-Harvest Photographs, A-D



A. White pine and oak stand where harvesting took place in 1997 with excellent pine, hemlock and oak regeneration in northern part of sale area.



B. This is where Bailey Brook will be crossed in order to access the oak-dominated gravel ridge that separates Bailey Brook from Rocky Brook.



C. An opening being made on the oak-dominated gravel ridge in order to release the excellent understory of white pine, oaks and hemlock.



D. A white pine dominated stand in the southern part of the sale where the overstory is being removed to release the thick understory of hemlock, white pine, oak and other hardwoods.

Figure 5. Post-Harvest Photographs, A-D



A. The landing on Beaman Road.



B. In this opening, the white pine and hardwood regeneration has been released by the removal of the overstory. The larger white pine in the middle of the opening was intentionally retained.



C. This stream was crossed in this location in order to access the southern part of the sale area.



D. This opening released a good mix of sugar maple and other hardwood saplings. The multi-stemmed black cherry and white pine to its left were retained.