Historic Structure Report

March 2004

Oakland Plantation South Tenant Cabin
Cane River Creole National Historical Park
Natchitoches, Louisiana

Report Prepared by

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Project Team and Methodology

Project Team

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Brandy Herlinger, Intern Architect
Jay Carlson, Graphics
Tara Cooner, Drafter

Methodology

In preparation for this report, documents relating to the building and the surrounding plantation were obtained from the National Park Service. These documents included *Oakland Plantation – a Comprehensive Subsurface Investigation,* by Christina Miller and Susan Wood, based on archaeological research undertaken for the National Park Service in 2000; *The Big House, Oakland Plantation, Cane River National Historical Park, Historic Structure Report* completed by Tommy Jones for the National Park Service Southeast Support Office in 2001; *"The Cultural Landscape Inventory and Assessment, Cane River Creole National Heritage Area Natchitoches, Louisiana,"* completed in 1997 by Lucy Lawliss, C. Goetcheus, and D. Hasty for the National Park Service Southeast Support Office; and the *Cane River Creole National Historical Park General Management Plan/Environmental Impact Statement* compiled by the National Park Service Denver Service Center in 2000, with the final approved in 2001. In addition to these resources, Hartrampf, Inc. already possessed background information on the history and social context of the general area in the form of Dr. Ann Patton Malone's unpublished draft of a 1998 oral history project entitled "Oakland Plantation, Its People's Testimony," copies of the transcripts of the oral interviews from which information for that paper was drawn, and a copy of "Bermuda-Oakland Plantation, 1830-1880," an unpublished masters thesis by Carolyn Breedlove. Dr. Ian Firth provided Hartrampf. Inc. with a draft copy of his *Cultural Landscape Report - Oakland Plantation, Cane River Creole National Historical Park.* Drawings from the Historic American Buildings Survey (HABS) website were downloaded for use in this report.

During the course of the research, several published sources provided information regarding the Cane River area as well as general information on topics relating to plantation management. The Federal Census records and Civil War Service Records were consulted as well as private papers such as diaries, farm journals, genealogies, old photographs, and letters. These provided insight into the lives of the inhabitants of the South Tenant Cabin and the plantation as a whole. A complete list of the books and

papers consulted may be found in the Bibliography section of this report. Interviews with people with a connection to the plantation, either personal or professional, were conducted. Some of these interviews were conducted via e-mail.

To facilitate a detailed understanding of the development of the building, Dorothy Krotzer, Architectural Conservator, completed a materials analysis study in January 2003 titled, *Oakland Plantation, Cane River Creole National Historical Park, Interior and Exterior Finishes Study: Cook's House, North Tenant Cabin, South Tenant Cabin.* Ms. Krotzer and Ms. Lindsay Hannah completed the fieldwork for this study November 13 to 15, 2002. Laboratory analysis of the material samples was conducted in December 2002 and January 2003. The original samples for this report were submitted to the National Park Service Southeast Regional Office in Atlanta, Georgia. Ms. Krotzer was also consulted personally by Jacqueline Renell of the Office of Jack Pyburn, Architect, Inc. regarding the findings in this report.

Members of the project team made initial site visits in August and September of 2002. Jack Pyburn AIA, of the Office of Jack Pyburn, Architect, Inc. visited the site August 31 through September 2, 2002. Chau Tran, P.E., and Deborah Harvey of Hartrampf, Inc. made a site visit September 4 through September 7 of 2002. During these visits, photographs and measurements of the South Tenant Cabin were taken, and the Park staff was interviewed regarding stabilization measures already completed. Copies were made of daily crew reports for the work crews at the South Tenant Cabin. Copies of the HABS drawings for the South Tenant Cabin were annotated with the measurements and observations from the field investigation. Deborah Harvey also traveled to the University of Georgia at Athens on September 9, 2002, to interview Dr. Ian Firth regarding his work on the Cultural Landscape report for Oakland Plantation. Jack Pyburn made several field follow-up investigative visits to Oakland Plantation in November of 2002 and January of 2003. On March 26 through March 28, 2003, another field investigation trip to the Cane River Creole National Historical Park was made by the research to team from both Hartramf, Inc. and the Office of Jack Pyburn, Architect, Inc. to verify measurements and obtain information not gathered during the earlier trips. To facilitate the plans of the Park for the building, Chau Tran, P.E., Structural, built a computerized model and analyzed the existing floor framing members and connections in order to make recommendations for reinforcing the floor framing to allow visitors into the South Tenant Cabin.

Acknowledgements

Hartrampf, Inc. and the Office of Jack Pyburn, Architect, Inc. would like to acknowledge the assistance of several people in the preparation of this report. Not the least of these are Eric Z. Ford, Project Supervisor at the Cane River Creole National Historical Park and his staff, especially Rick Gupman, David Williamson, and Greg Duggan, who toted ladders, unlocked doors, and helped to locate and copy Park Service documents relating to the South Tenant Cabin. Dr. Ian Firth made time in his busy schedule to discuss the development of the cultural landscape of Oakland Plantation. Kenneth Prud'homme, Vivian Prud'homme, and Doris Brett Vincent responded with infinite patience to numerous questions of detail in the history and development of the South Tenant Cabin.

The authors would especially like to thank Myesha Braden, a descendant of some of the residents of the South Tenant Cabin, for sharing the stories and information she obtained from her grandmother, Carrie Helaire Davis, about her family. The assistance of these kind and generous people greatly facilitated the writing of this report.

South Tenant Cabin, Cane River Creole National Historical Park, 2003

Executive Summary

The South Tenant Cabin at Oakland Plantation, Cane River Creole National Historical Park, Natchez, Louisiana, is part of one of the most complete collections of plantation structures in the possession of the National Park Service. The National Park Service acquired the property in 1998. The South Tenant Cabin is an antebellum building on its original site. Therefore, it retains both its historic context and its historic character. The building was used first as a cabin for the enslaved workforce on the plantation and later as housing for tenant farmers who were, first, contract laborers and sharecroppers and, later, day labor. The layers of material, both exterior and interior, reveal something of the conditions and characteristics of slave and tenant life on the plantation. The South Tenant Cabin was in a state of disrepair when the National Park Service purchased the site. The National Park Service staff has since stabilized the South Tenant Cabin and arrested much of the deterioration it was experiencing. The General Management Plan for the Park designates the South Tenant Cabin for interpretation on both the exterior and the interior. This Historic Structure Report presents the historical background and context of the South Tenant Cabin, the existing conditions, and the significant historic characteristics of the building. It includes recommendations for the preservation of the existing features and modifications necessary for use of the building as designated in the General Management Plan for the Cane River Creole National Historical Park.

Historical Summary

While the exact date of construction of the South Tenant Cabin is unknown, investigation of the construction methods and materials used indicate that it is an antebellum building. It may have been constructed during a spate of building activity that occurred on the plantation in the late 1850s. However, it could have been constructed much earlier.

The South Tenant Cabin is located in the old slave quarters. Before the Civil War, the cabin was occupied by slaves, but no information has been uncovered to link specific slaves or their families with specific cabins in the quarters. After the Civil War, the owners of the plantation, the Prud'homme family, turned to sharecropping arrangements with their workforce, and the South Tenant Cabin was occupied by the families of laborers hired at Oakland Plantation. It has not been possible to determine who occupied the South Tenant Cabin before 1940. The members of the Prud'homme family who were interviewed for this report associate the South Tenant Cabin with the family of Ben Helaire, who worked on the plantation intermittently between 1910 and 1965. However, census records and recollections of immediate family members of Ben Helaire indicate that he lived in the North Tenant Cabin until sometime in the 1930s. Oral interviews with members of the Prudhomme workforce place Ben Helaire in the South Tenant Cabin between 1940 and 1965. When Ben Helaire finally left the area permanently, Earl "Dilly" Beard occupied the South Tenant Cabin. When Earl Beard moved out of the cabin is unknown, although it is not likely he occupied the building beyond 1985, when the Prud'hommes ceased farming operations. During their occupancy, the slaves and tenants made few modifications to the South Tenant Cabin, which, fortunately, left the original construction substantially intact and available for interpretation.

The Prud'hommes ceased farming operations in 1985 and auctioned off the farm equipment. Public Law 103-449 established the Cane River Creole National Historical Park in 1994. In 1998, the National Park Service purchased 44 acres of Oakland Plantation to be included in the Cane River Creole National Historical Park. The South Tenant Cabin is a part of the park. Stabilization was undertaken in 1998 to arrest the decline that the North Tenant Cabin was experiencing. Park preservation crews completed further stabilization measures in June and July of 2000. Oakland Plantation was designated a National Historic Landmark on January 3, 2001. This designation recognizes the national significance of Oakland Plantation to the history of the United States.

Architectural Summary

The South Tenant Cabin was originally a one-room traditional slave cabin, which, with modifications over time, evolved into a three-room building with an open front gallery on the east elevation. The original east gallery had a bracket-supported roof and extended across the entire front elevation of the cabin. The east gallery was extended to its present configuration in the 1920s. The rear gallery, on the west elevation, may have once been open. However, it was likely built sometime after the original cabin construction. The rear gallery is now enclosed.

The primary structure of the South Tenant Cabin is hewn-timber framing with *bousillage*[1] infill. Brick and log piers support hewn sill beams at the perimeter walls of the timber frame and *bousillage* building. The circular sawn floor and wall framing for the front gallery extension and entire rear gallery are of a later date than the hewn timber structure of the main cabin.

The existing corrugated roof is likely an early twentieth century replacement of an earlier wood shingle roof, probably of cypress.

The 1987 HABS drawings state that the South Tenant Cabin was originally sided in weatherboard (clapboard). However, the field research for this report found that the original exterior walls of the building were the exposed timber framing and *bousillage* infill. Currently, the overlaying exterior finish on the main building and the rear gallery is comprised of recycled, butt-jointed boards covered with patterned, 18"-wide, rolled asphalt siding.[2] In consideration of the HABS documentation of clapboard siding, the evidence observed in the field work for this report suggests that the butt-jointed board underlayment beneath the asphalt siding was likely originally installed as a clapboard finish and later removed and reinstalled as sheathing.

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[1] *Bousillage* was a common means of creating insulated walls generally used in Louisiana until the close of the Civil War or shortly thereafter. *Bousillage* was a mixture of clay and plant material or animal hair installed within a system of horizontal lath affixed between the heavy timber upright members of a wall. The *bousillage* could remain an exterior finish of a structure, but it was usually either plastered and whitewashed or covered with board siding to protect the material.

[2] The boards are known to be recycled due to the presence of unused nail holes.

Existing evidence suggests the building had lost much of its *bousillage* on the north and south elevations some years ago. This was probably due to exposure of the *bousillage* to the elements and a lack of the necessary maintenance to keep the *bousillage* intact and in sound condition, a demanding and frequently recurring task. To compensate for the loss of *bousillage* on the north and south elevations, the clapboard siding was likely installed as lateral support for the timber frame structure. This siding was later removed and relaid flat as an underlayment for the asphalt siding. This renovation was an improvement in protection from both moisture and wind over the earlier exposed *bousillage* condition.

The South Tenant Cabin has five doors, two of which are exterior doors, and five windows. A stuccoed and whitewashed masonry fireplace at the north wall of Room 102 is interior to the building. The chimney was removed to below the roofline before the National Park Service took possession of the property.

The paint analysis of the South Tenant Cabin reveals that the earliest finishes were a limewash, or whitewash. In some places, as many as five layers of whitewash were found. Likewise, five layers of wallpaper were found in the Cabin. The sequence of layers varies from room to room, complicating the understanding of the chronology of installation. However, it is clear that two layers of wallpaper were installed after 1962 on the west wall of Room 103, when a layer of newspaper dated that year was applied to the wall. Some paint finishes were identified on materials and features believed to have been salvaged from other structures on the plantation. These finishes were applied to the materials before their installation in the cabin. The horizontal, butt-jointed siding on the exterior, under the asphalt siding, is one significant example of these reused materials.

A team of specialists from the National Park Service Northeast System Support Office of the Northeast Cultural Resources Center Building Conservation Branch in Lowell, Massachusetts, in concert with the Denver Service Center, made repairs to the house in 1998 to stabilize it. The National Park Service approach to stabilizing the South Tenant Cabin included the installation of exterior-grade plywood sheathing and metal ventilation louvers on the exterior walls of the building. These materials are protecting the exposed framing and windows from moisture and insect damage until more permanent and historically appropriate treatments are implemented. The roof was stabilized and appears substantially watertight. On the east gallery, floor framing members in contact with grade were lifted and placed on pressure-treated pads. In 2000, the Park preservation crew stabilized the interior of the south wall by covering the *bousillage* with hardware cloth and screening to prevent further loss of material. The preservation crew also installed additional concrete units for temporary floor framing support. The exterior piers of the main cabin are 16" sections of tree trunks flattened on two sides resting on the remains of older brick piers. The concrete with brick aggregate piers supporting the front gallery appear sound, but the brick piers supporting the rear gallery require some repairs.

The General Management Plan (GMP) schedules the South Cabin for interpretation of the people, lifeways, and events associated with this building during the slavery and tenant farmer periods. This approach includes public access to the interior of the cabin. Only

one door to Room 103, a sleeping room on the south of the main building, does not have the necessary 32" width for handicapped access in accordance with the Americans with Disabilities Act (ADA). The building is sufficiently close to the ground that a minimal ramp, earthen or portable, located on the south side of the cabin and connecting with the front gallery will accomplish the necessary requirements for public access. The rear door height is limited. The number of visitors allowed in the building at any one time should be defined by the capacity of the historic floor structure. It is desirable not to supplement the floor structure any more than is necessary to accomplish managed access interpretation. Any supplemental framing and foundation supports should protect and retain the historic materials of the cabin.

Recommendations

The South Tenant Cabin is one of only two such buildings remaining in the old slave quarters of the Prud'hommes' plantation, now Oakland Plantation. It is a significant resource from an historical documentation standpoint and for its ability to interpret slave and tenant farmer life on the plantation. The proposed interpretive use of the cabin is appropriate, provided the number of visitors allowed in the cabin at one time is managed in tandem with the protection of the historic foundation and floor structure. **It is of the utmost importance that the historic features and materials of the cabin be retained and protected amidst the interpretation program designed for the building.**

There are two primary interpretative stories that surround the North and South Tenant Cabins: the antebellum slave life and the postbellum tenant farmer lifestyle. Given the size of the buildings, it will be difficult to interpret both in a single cabin. Both the North and South Tenant Cabins have postbellum features that make straightforward interpretation of antebellum conditions a challenge. However, the existing characteristics of both cabins are sufficiently different that one is suited best for the interpretation of the slave lifestyle and one for the post bellum tenant farmer lifestyle. It is recommended that the South Tenant Cabin be interpreted for the tenant farmer lifestyle. The original interior of this cabin was divided into two rooms, a significant postbellum modification. The South Tenant Cabin has remnants of the gas and electrical systems that served the building, also postbellum features. No remnant of a gas system was observed in the North Cabin.

It is recommended that the tenant farmer lifestyle be interpreted in the South Tenant Cabin through the presentation of existing conditions. The improvements should be focused on structural stability, safe and appropriate public access, and an accurate interpretation of the circa 1960 period, which would include the entire history of the site. The only identified features known to postdate 1960 are the 1962 newspaper and the two subsequent layers of wallpaper found on the west wall of Room 103.

Specific recommendations for treatment include:

Foundation:

- Stabilize and secure existing historic building foundations. This may require resetting some historic piers using their existing materials. Replace missing

bricks and repoint piers using bricks and mortar matching the existing in strength and composition. Structural analysis indicates that it is not necessary to level the piers if visitor access is managed to limit the load on the floor framing system.

- Provide supplemental floor framing support with new piers that are distinct and subordinated in appearance to the historic piers.
- Replace interior wood post supports with piers to match existing.

Floor Framing:

- Identify specific members that are structurally unsound and replace with materials that match the existing in dimension, character, and species.
- Reattach unstable beam and joist connections to assure historic framing members function properly.
- Supplement historic framing only as is required to accommodate the appropriate and minimally feasible visitation needs. See the Structural Analysis of the floor framing system in the Physical Description portion of this report for a complete discussion of the floor framing system. See Allowable Floor Load Drawings in the Appendix to this report for proposed method to strengthen the floor framing system if desired. Protect and preserve historic flooring members and other significant materials when installing supplemental framing.

Wall Framing:

- Reconstruct the structurally unsound south wall of the cabin with circular-sawn timbers that match the original hewn timbers in dimension, character, and species.
- Do not replace the *bousillage* missing from the south wall. Other infill will not be necessary as this is scheduled to be an unoccupied building. While the original *bousillage* acted as a stabilizer for the wall framing as well as insulation, the new supplemental framing will sufficiently stabilize the wall.
- Replace other unsound framing members with circular-sawn materials that match the original hewn materials in dimension, character, and species.
- Secure the connections in the balance of the historic wall framing.

Roof Framing:

- Structural calculations find that the roof framing is inadequate to meet current codes for wind load. Carefully consider the historic performance of the existing roof structure in relation to the extent of modification necessary to satisfy modern design calculations. Retain as much of the historic material and assembly as is possible. Any treatment should minimize the damage to the historic materials of the building while achieving adequate structural stability.
- Replace any roof framing members that are not structurally sound with materials that match the original in dimension, character, and species.

Exterior Wall Finish:

- Replace missing horizontal, butt-jointed siding on the south wall of the cabin with materials matching the siding on the balance of the exterior walls.
- Retain and secure the historic rolled, patterned, asphalt siding where stable and sound.

- Where the asphalt siding is missing, install siding to match existing in pattern, color, and width.
- Where the asphalt siding is missing, and if an exact match cannot be acquired, install an unpatterned, granulated, rolled siding of 18" width and a complementary color on the unprotected wall surfaces of the cabin. This will focus the interpretation on the appropriate overall appearance of the cabin and on the historic rolled asphalt siding.

Roofing:

- Retain the historic roofing.
- Replace only those pieces that are subject to rust penetration through the material. All new roofing panels should match the historic in material, profile and configuration.
- Assure adequate attachment to the shingle lath and roof framing.
- Assure proper flashing at the reconstructed chimney.
- There is no visible evidence of earlier gutters on the cabin. However, it is possible that they were installed by 1960. Furthermore, a cistern may have been on the site before 1960. It is recommended that half-round gutters be mounted off the roof decks on the east and west elevation in order to provide for water run-off. Drain the water away from the building.

Fireplace and Chimney:

- Stabilize the foundation of the chimney.
- Secure the head condition of the firebox.
- Rebuild the chimney to its circa 1960 profile above the roof with materials matching the existing, including matching the new mortar to that which is existing and historic.

Interior Wall Finishes:

- Interpret the interior walls substantially as they are.
- Preserve the remnants of wallpaper *in situ*.

Doors:

- Interpret the doors in their present condition with the exception of Door 1, which should be reconstructed based on the remaining evidence of the historic rear door on the North Tenant Cabin.
- Supplement remaining hardware with materials to match the historic.

Windows:

- Treatment of the windows is important. Like those in the North Tenant Cabin, the windows are known to be a mid-twentieth century addition installed in a crude manner. It will be important for the windows to be repaired and sashes reinstalled in the same manner, based on existing conditions, while ensuring that they are watertight for continued use. This will require some careful attention to the existing construction details in order to replicate the historic configuration when restoring the windows.

Floors:

- The floors of the cabin are substantially intact. Once the floor framing conditions are addressed, the floorboards will likely need only isolated patching and supplemental treatment at door thresholds to accommodate ADA access. To retain the historic character of the cabin, the focus of structural treatments should be to achieve the desired floor load capacity. Otherwise, the historic floor conditions should be retained. It is recommended that no attempt be made to make them as firm and level as would be expected in new construction.

Electrical System:

- The electrical system cannot be reused. The cloth-coated wiring should be retained for historic documentation. New wiring concealed in the attic and running under the floorboards to historic fixtures and junction boxes should be installed to provide the historically-appropriate lighting and power to the building. The new wiring and electrical fixtures must meet National Electrical Code specifications.

Gas System:

- It is clear from remaining evidence, such as the type of material used in the piping, that the building had propane gas before 1960. During the site visit for this report, no holes in the floor where gas service might have entered the cabin were observed. However, there were a number of items stored in the cabin that may have blocked view of prior gas service piping locations. It is also possible that later installations of flooring are concealing any pipes, if present, from view. This should be interpreted for its implications for cooking and heating in the South Tenant Cabin. Treatment could include installation of space heaters in the cabin, gas piping under the cabin, and an appropriate vintage propane tank installed on the south side of the building.

Cistern:

- There is no evidence of a cistern at this cabin such as there is at the North Tenant Cabin. However, oral history suggests that one existed near the house. This matter should be researched through archaeological investigation to determine its former location, but, since its appearance would be conjectural, it should not be reinstated.

Fire Protection:

- Given the size of the cabin, likely limited occupancy, and two means of egress, a hand-held canister extinguisher maintained at the site and a fire management plan prepared by the staff in case of fire are the only recommended fire protection measures. Installation of a sprinkler system is not recommended. Such a system is unnecessary and would be damaging to the historic fabric and impede interpretation of the building.

Handicapped Access:

- Handicapped access should be provided through the front door. A ramp on the south side of the building would have minimal impact on the historic setting . The ramp could be portable and stored under the south side of the building when not in use.
- The only interior improvement recommended to accommodate ADA access is the installation of supplemental tapered wood strips at the existing ¾" thresholds. This treatment would provide the necessary transition between rooms.

Visitor Access

- To minimize the load on the floor system to meet the allowable load capacity, the National Park Service should limit the number of people allowed inside the cabin at one time. According to the structural analysis of the load capacity of the floor framing system beneath the South Tenant Cabin, it was determined that the maximum number of visitors that should be allowed inside the South Tenant Cabin at one time is fifteen. This is less than the number allowed by the National Fire Protection Code for the size of the building and the number of egress points, so the number of visitors allowed in the house is restricted only by the load capacity of the floor framing system. The maximum number of visitors allowed on the gallery after it has been repaired is twenty. If the National Park Service chooses not to repair the front gallery, visitors should not be allowed on it.

Administrative Data

Locational Data:

Building Name:	South Tenant Cabin
Building Address	4386 Hwy. 494 Bermuda, LA 71456
LCS #	91639

Related Studies:

Firth, Ian. "Cultural Landscape Report - Oakland Plantation, Cane River Creole National Historical Park." Draft report for the National Park Service Southeast Support Office, unpublished, 2003.

Jones, Tommy. *The Big House, Oakland Plantation, Cane River National Historical Park, Historic Structure Report.* Atlanta: National Park Service Southeast Support Office, 2001.

Keel, Bennie C., and Christina E. Miller. "Gabe Nargot's Cabin – Investigations at a Nineteenth Century Slave Domicile in Northwest Louisiana." Paper presented at 1999 Society for Historical Archeology Conference, Salt Lake City. (http://www.cr.nps.gov/seac/gabes/ 15 Dec 2000).

Krotzer, Dorothy. *Oakland Plantation - Cane River Creole National Historical Park - Interior and Exterior Finishes Study: Cook's House, North Tenant Cabin, South Tenant Cabin.* Atlanta: National Park Service Southeast Support Office, 2002.

Lawliss, L., C. Goetcheus, and D. Hasty. *"The Cultural Landscape Inventory and Assessment, Cane River Creole National Heritage Area Natchitoches, Louisiana."* Atlanta: National Park Service Southeast Support Office, 1997.

Malone, Ann Patton, Ph.D. Series of oral history interviews conducted between 1996-1997 with members of the extended Prud'homme family and their workers. Individual citation states name of interviewee.

Malone, Ann Patton, Ph.D. "Oakland Plantation, Its People's Testimony." Draft of oral history project. Unpublished. 1998.

Miller, Christina E. and Susan E. Wood. *Oakland Plantation – A Comprehensive Subsurface Investigation.* Tallahassee: Southeast Archeological Center, 2000.

National Park Service. *Cane River Creole National Historical Park General Management Plan/Environmental Impact Statement.* Denver: Denver Service Center, 2000.

Cultural Resource Data:

National Register of Historic Places: The Jean Pierre Emmanuel Prud'homme Plantation (Oakland Plantation), contributing building, originally listed 29 August 1979 (upgraded from local to statewide significance 2 August 1989) under Criterion A for association with events that have made a significant contribution to the broad patterns of our history.

Historic American Buildings Survey: The South Tenant Cabin was documented in 1987 as part of the Historic American Building Survey (HABS) program. The original drawings and field notes are housed in the Library of Congress. The call number for the South Tenant Cabin is HABS, LA, 35-BERM, 2-M.

National Historic Landmark: Oakland Plantation was designated a National Historic Landmark on January 3, 2001. Properties are designated National Historic Landmarks only if they are of national significance.

Period of Historical Significance: The period of historical significance for Oakland Plantation begins with the foundation of the plantation and concludes about 1960, around the time that the last of the sharecroppers and tenants were leaving the plantation. The South Tenant Cabin was probably built before the Civil War. The exact date is uncertain. It was occupied by plantation workers nearly to the end of the period of historical significance.

Proposed Treatment and Use: According to the General Management Plan for the Cane River Creole National Historical Park, the proposed use for the South Tenant Cabin is used to "interpret stories associated with the people, lifeways, and events associated with those structures including the slavery and tenant periods...."[3]

[3] National Park Service. *Cane River Creole National Historical Park General Management Plan,* Denver: Denver Service Center, 2000, p. 45.

PART I
DEVELOPMENTAL HISTORY

Historical Timeline

1787 – Jean Pierre Emmanuel Prud'homme begins to farm lands along the Red (now Cane) River in Natchitoches Parish, Louisiana, that would become Oakland Plantation.

1808 – Congressional edict outlaws the African slave trade. Henceforth, slaves must be purchased domestically.

1809 – Helaire, slave of Emmanuel Prud'homme, baptized. His mother is identified as Jeanne, also a slave of Emmanuel Prud'homme.

1818-1821 – Emmanuel Prud'homme replaces his original home on Bermuda Plantation with a larger building farther back from the river, the Main House that stands today at Oakland Plantation.

1831-1834 – Importation of slaves from outside Louisiana is banned by the state legislature as a result of the Nat Turner rebellion.

1850 –Pierre Phanor Prud'homme I purchases Prud'homme plantation from his father's estate.

1852 – Son, John, born to the slave, Helaire, and his mate (name unknown) at Prud'hommes' plantation.

Late 1850s – Spate of building activities on Prud'hommes' plantation may indicate when the South Tenant Cabin was constructed.

1861 – Civil War begins at Ft. Sumter, Charleston, South Carolina.

1863 – Emancipation Proclamation issued.

1864 – Red River Campaign.

1865 –End of the Civil War.

1866 – Former slave, Helaire, adopts the name Helaire Langlois, which appears in the contracts for labor at Prud'hommes' plantation.

1868 – Sharecropping begins at Prud'hommes' plantation.

1870 – Census records indicate that Helaire Langlois, later called Jean Baptiste Helaire, was living "in the yard," not in the quarters. It is not possible to discern who was living in the South Tenant Cabin.

1873 – Formal division of the Prud'hommes' plantation results in Atahoe Plantation on the east side of Cane River and Oakland Plantation on the west side.

1873 – John Helaire, son of Helaire Langlois, marries Ann Bobb.

1880 – Census records indicate that John Helaire, son of Jean Baptiste Helaire, formerly called Helaire Langlois, was living next to his father "in the yard." It is not possible to discern who was living in the South Tenant Cabin.

Between 1880 and 1900 – Jean Baptiste Helaire, formerly called Helaire Langlois, dies of bee stings while pulling the hay rake at the plantation.

1897 – Ben, son of John Helaire and Ann Bobb, born at Oakland Plantation.

1900 – John Helaire and his family, including Ben, aged 2, are enumerated in the Federal Census. The census indicates that they were living on or near Oakland Plantation, but it is not clear whether they occupied a house "in the yard," in the quarters, or elsewhere.

1910 – John Helaire and family, including Ben, aged 11, are enumerated at what appears to be Riverside Plantation.

1917 – Ben Helaire marries Emily Hamilton.

1920 – Census records show Ben Helaire, with his wife and one daughter living at Oakland Plantation. It appears that they are living in the North Tenant Cabin in the old quarters.

1920 – Carrie Helaire, daughter of Ben Helaire and Emily Hamilton, born at Oakland Plantation.

Early 1920s – Ben Helaire moves his family to Alexandria, Louisiana.

1920s – Front and back galleries added to the South Tenant Cabin.

1927 – Ben Helaire returns to Oakland Plantation and again lives in the North Tenant Cabin, according to the census of 1930.

1929 – Carrie Helaire, aged 9, begins working as a children's nurse for the Prud'hommes of Oakland Plantation.

About 1935 – Ben Helaire moves out of the North Tenant Cabin to a plantation near Cloutierville, Louisiana.

1937 – Carrie Helaire marries Andrew Davis.

Before 1940 – Ben Helaire returns to Oakland Plantation and settles in the South Tenant Cabin.

Early 1940s – John Helaire, who is living with his son, Ben, dies on the porch of the South Tenant Cabin while waiting for the mail to arrive.

1949 – Electricity is installed at the South Tenant Cabin.

1959 – End of sharecropping arrangements on Oakland Plantation. Afterward, the Prud'hommes hire only day laborers. However, they continue to rent the tenant cabins to their laborers.

1962 – Layer of newspaper applied to the walls of the South Tenant Cabin, probably as insulation before a subsequent layer of wallpaper is applied.

By 1966 – Ben Helaire leaves Oakland Plantation for the last time. Earl "Dilly" Beard occupies the South Tenant Cabin.

1985 – Prud'hommes quit farming and auction off most of the farm equipment.

1989 – Oakland Plantation is upgraded in the National Register of Historic Places from local to statewide significance.

1994 – Public Law 103-449 establishes the Cane River Creole National Historical Park.

1998 – National Park Service acquires 44 acres of Oakland Plantation to be included in Cane River Creole National Historical Park.

2001 – Oakland Plantation, including the South Tenant Cabin House, is designated a National Historic Landmark. This designation recognizes the national significance of Oakland Plantation to the broader events of United States history.

Historical Background and Context

No discussion of the dependent structures at what is now called Oakland Plantation can begin without first establishing, in brief, the background history of the plantation on which they stand and the people that erected them and put them to use. Much has been written regarding the Natchitoches Prud'homme family. They were among the first families of Louisiana when the territory belonged to the French. They continued to be one of the prominent families of the area through the subsequent occupation of the Spanish, the re-establishment of French control, and the acquisition of the territory by the United States government. However, the story of Oakland Plantation is also the story of the workers, both slave and free, who coaxed the plants from the soil and processed the results, producing the agricultural surplus that enabled the Prud'homme family to expand their holdings and enjoy the culture of the comparatively wealthy cotton planters on the *Cote Joyeuse.*[4] During their tenure on the land along the Cane River, the Prud'hommes and their workers established a successful agricultural enterprise that prospered despite the vicissitudes of economic forces and national politics. More than 200 years after the establishment of their plantation, the Prud'hommes sold an important part of it to the National Park Service to establish a park that would serve to educate the public and preserve the remnants of a vanished way of life and an important part of the nation's history.

One of those remnants is the South Tenant Cabin. Originally built to house slaves, it was used by sharecroppers working the Prud'hommes' plantation after the end of the Civil War. This building serves as a vivid reminder of how the residents of the plantation lived before the end of the Civil War and of the adaptations they made to their built environment as their needs changed afterward. The story of the South Tenant Cabin is an integral part of the story of Oakland Plantation.

As early as 1758, Jean-Baptiste Prud'homme had acquired land along what was then called the Red River and begun to farm it, growing indigo and tobacco as the main crops for export.[5] According to family tradition, his oldest son, Jean Pierre Emmanuel, was farming land that would become Oakland Plantation by 1787, though his residence in the early 1790s was still on a 51-acre tract opposite the post at Natchitoches.[6] However, by the late 1790s, family tradition holds that Emmanuel Prud'homme had purchased the property from Nicholas Rousseau, the original owner, and built a small home on the banks of the river.[7]

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[4] The name given to the Cane River Country by other Louisianians in the early 1800s. See Robert B. deBlieux, *Cane River Country, "La Cote Joyeuse" and Kisatchie National Forest – An Auto Guide to the Historically and Architecturally Important Plantations of Creole Origins and a Guide to the Vistas, Hiking Trails and Flora of the Forest of Natchitoches Parish,* Natchitoches: The Natchitoches Times, 1993, p. 3.

[5] Anne Patton Malone, "Oakland Plantation, Its People's Testimony," unpublished MS, National Park Service, 1998, pp. 24-25.

[6] *Ibid.,* p. 26.

[7] *Ibid.*

In 1803, the United States Government purchased the Louisiana Territory from France, and, in 1810, when the third United States Federal Census was taken, a census of the "Orleans Territory" was conducted as well. By that time, the Prud'hommes were well established on plantations along what was then called the Red River.[8] To this plantation, Emmanual Prud'homme brought slaves to work the land. According to historian, Ann Malone, two of these slaves were Jeanne, and her infant son, Helaire. The child was reported by Malone to be the son of a slave, Hilario, owned by a planter named Langlois.[9] Oral traditions of the Helaire family that descends from this child indicate that their first ancestor came to the area by boat from New Orleans, landing at Monet's Ferry, located on Cane River south of Natchitoches, near what is now Chopin.[10] However, records of slave purchases do not show a slave named Hilario purchased by a Langlois before 1809, when the infant Helaire was in the possession of Emmanuel Prud'homme and was baptized into the Catholic faith.[11] They do show that, in 1811, a man named Hertzog sold a slave named Hilario to planter August Langlois of Natchitoches Parish.[12] Hertzog also sold a slave named Marie Jeanne and her infant child to an unknown purchaser.[13] These may be the slaves to whom Malone refers, though she admits that the connection between these slaves and those owned by Emmanual Prud'homme is tenuous, at best. Early Louisiana law forbade parting husbands from wives or parents from children under fourteen years of age by sale if the kinship relationship occurred while the slaves were the property of one owner.[14] Therefore, if Jeanne and Helaire were the property of Emmanuel Prud'homme in 1809, Hilario must have been the property of someone else before the marriage, though not the property of August Langlois until 1811. August Langlois appears in the 1810 Federal census of Natchitoches Parish, located considerably south of the Prud'homme plantation. The distance between them makes a possible "marriage" between Jeanne and Langlois's Hilario somewhat problematic, as they would have had little opportunity to even meet under the conditions of their servitude. The further development of the family that descended from Helaire, certainly the son of Jeanne, and, possibly, the son of Hilario, will be discussed in greater depth later in this report.

The Prud'hommes' small home on the banks of the Cane River was eventually replaced. By 1818, the frequent flooding of the Red River (now the Cane River) and the subsequent erosion of the riverbank[15], induced the Prud'hommes to build another home farther from the river.[16] Work was begun on a larger home, which was built some distance behind the

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[8] *Third Census of the United States, 1810, Population Schedule, Orleans Territory,* reviewed on-line at www.ancestry.com, 2002

[9] Malone, p. 8

[10] Braden, Myesha, in e-mail to Deborah E. Harvey, 26 Feb 2002.

[11] Malone, p. 8.

[12] Braden, e-mail, 3 Mar 2002. This information is a result of her research into slave purchases in Louisiana.

[13] *Ibid.*

[14] Gary B. Mills, *The Forgotten People – Cane River's Creoles of Color.* Baton Rouge: Louisiana State University Press, 1977. p.5. See also Joe Gray Taylor, *Negro Slavery in Louisiana,* Baton Rouge: The Louisiana Historical Association, 1963, p. 40. Taylor says the age after which partition was permitted was age 10.

[15] Vivian Prud'homme Flores Duggan, oral interview with Deborah Harvey, Oct 18, 2001.

[16] Malone, p. 26.

location of the original house, sometime after 1818 and finished in 1821. Before 1822, the Emmanuel Prud'homme family had moved into their new home. This home stands today, identified as the Main (or Big) House at Oakland Plantation.

In addition to their own home, the Prud'hommes provided residences for their workers. These residences were grouped together into areas known as "the quarters." Many references to the quarters appear in the farm journals, and the areas in which the quarters were located were still known to residents of Oakland Plantation in the mid-1900s. The Prud'hommes' plantation appears to have had two quarters, one on each side of the river. The layout of these quarters is currently not known. It should be remembered that the road passing Oakland plantation changed locations. It formerly hugged the riverbank but was relocated in the 1930s and currently passes through the area referred to by Seneca Pace, the plantation overseer in 1861, as the quarters "this side."[17] Archaeological investigation revealed what is essentially a sheet midden of cut nails south and east of the Overseers' House, essentially in the old quarters, with a high concentration around the North Tenant Cabin and the ruins of Gabe Nargot's Cabin, and a lighter concentration around the South Tenant Cabin. Investigation also revealed a huge sheet midden of whiteware, and, to a lesser extent, pearlware, in the vicinity of the old quarters.[18] The whiteware does not appear to be concentrated around any of the existing tenant cabins, but there is a small concentration of pearlware around the North Tenant Cabin and another in a portion of the former quarters no longer occupied by a structure west of the South Tenant Cabin. Both middens appear to run right up to the current road, on the other side of which was probably the rest of the right-bank quarters.[19] If possible, further archaeological investigation should be undertaken in the area between the road and the river, south of Bermuda Bridge. Such an investigation could reveal a great deal of information about the extent of the former slave quarters and the locations of the cabins now missing from the landscape.

Malone describes the function of the quarters at Prud'hommes' plantation.

> "The ...[quarters provided] housing for enslaved workers and their families. The quarters also served as the seat of internal governance. Here slave community leaders met to discuss common problems and to devise appropriate strategies. Courtship and marriage generally took place here. Here workers used their free time for domestic production—of foodstuffs, furniture, clothing, tools, and toys for their own use.... In the quarters, slaves forged their own institutions—their families, kinship networks, recreation, and religious values and practices. The quarters was in every sense the heart of the plantation slaves' private world."[20]

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[17] Seneca Pace, "Daily Record of Passing Events on Prud'homme Plantation, 1860," Prud'homme Family Papers, Series 3.1.5, Plantation Journals and Records, 1788-1997, Southern Historical Collection, Wilson Library, University of North Carolina, Chapel Hill, North Carolina. n.p.

[18] *Whiteware* and *pearlware* are both types of pottery used in the preparation and consumption of food.

[19] Christina E. Miller and Susan E. Wood, *Oakland Plantation – A Comprehensive Subsurface Investigation,* Tallahassee: Southeast Archaeological Center, 2000, p. 75.

[20] Malone, pp. 58-59.

How many buildings occupied the quarters is not known and, indeed, changed over time. By the 1830 census, Emmanuel Prud'homme was housing ninety-two slaves, of whom only eighteen were under the age of ten years. By 1840, Emmanuel and his son, Phanor, were listed as separate heads of households, each with their own slave population, Emmanuel with one hundred and four, and Phanor with forty. All these would have been housed in the plantation quarters, either on the same side of the river as the plantation homes in which the owners lived, or on the other side. By the 1850 census, the number of slaves owned by Phanor had reached one hundred and twenty-six,[21] due, in part, to the succession sale in January of that year that followed the deaths of his parents. Phanor purchased forty-six of his parents' slaves plus a half-interest, with his brother, in another couple, the weaver, Lindor, and his wife.[22] However, the marriage contract of Phanor Prud'homme and his second wife, Cephalide Metoyer Archinard, executed in 1855, indicated that Phanor owned only ninety-nine slaves, with Cephalide bringing seven of her own into the marriage.[23] In 1860, on the eve of the Civil War, Phanor Prud'homme was housing about one hundred and fifty slaves in the quarters on his plantation. In the *Slave Schedule* of the 1860 Federal Census, he is listed with one hundred and forty-seven slaves. However, Dr. Heulin, who is listed immediately afterward with three slaves, was, at that time, renting the Cottage from Phanor and may have been housing his slaves in the quarters as well. An interesting feature of this *Schedule* is the first slave listed as belonging to Phanor. This slave is enumerated as being a black male, 108 years old. Above his age is written the name, Langlois.[24]

During the 1850s, economic conditions greatly improved for the planters due to a significant rise in the price for which a bale of cotton could be sold. Phanor Prud'homme, who had purchased the Prud'homme plantation in 1850 after his parents died, embarked on a spate of improvements to the built environment. According to plantation journals, many of the slave cabins were demolished, relocated, or improved, and new cabins were constructed.[25] As a result, it is not possible to accurately determine the configuration of the original quarters or the original slave cabins. From plantation journals, the domiciles appear to have been constructed of cypress with brick or stone fireplaces. In 1860, the slaves of the Prud'homme plantation were housed in thirty such buildings.[26] The remaining cabins and the ruins of what is known as "Gabe Nargot's Cabin" were originally all one- to three-room buildings with fireplaces at one gabled end and galleries on two opposite sides. The dimensions of the two remaining cabins do not match those of the ruins of "Gabe Nargot's Cabin." However, the dimensions of the cabin known as the Cook's Cabin, originally located behind the Main Cabin, match those

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[21] *Fifth* through *Seventh Censuses of the United States,1830-1850, Slave Schedules.* Reviewed on-line at www.ancestry.com, 2002.

[22] Carolyn Breedlove, "Bermuda/Oakland Plantation, 1830-1880," unpublished masters thesis. Northwestern State University of Louisiana, 1999. pp. 14-15.

[23] *Ibid.*, p. 18.

[24] *Eighth Census of the United States, 1860, Slave Schedule.* Reviewed on-line at www.ncestry.com, 2002, image 22 of 76.

[25] Malone, p. 58.

[26] *Ibid.*, pp. 84-85

of Gabe Nargot's Cabin almost exactly.[27] This may indicate that the remaining cabins were built at a different time from the cabins occupied by Gabe Nargot and the cook. Nevertheless, because all the cabins contain walls of *bousillage*, it can be inferred that all of them were built prior to the end of the Civil War because *bousillage* was not used much afterward due to the labor-intensive nature of the medium. The tenant cabins were later remodeled to suit the needs of the occupants.

One of the most important of the slave cabins would have been that of the slave driver and his family. This cabin was generally larger than the rest and located at the head of the first row in the quarters. According to Malone, the position of slave driver after 1845 was held by Helaire, the son of Hilario and Jeanne.[28] In the antebellum South, the slave driver was one of the most trusted slaves on the premises. It was he who served as intermediary between the slaves and their overseer and owners, and it was his responsibility to see to it that the slaves worked with as little interruption as possible. In the words of a descendant of Helaire, "they [slaves] couldn't talk to the whites, so they would talk to him and he would talk to them."[29] One verification that the slave Helaire must have held a position of some importance is that he is not listed as a picker of cotton in the 1860 "Daily Record of Cotton Picked" compiled by Seneca Pace. This list assigned a number to each of seventy slaves who were assigned to pick cotton and recorded the amount picked in pounds. Phillis, who appears, according to later census records, to have been Helaire's second wife, is listed as number 50. It is noted on this list that she is the "washerwoman," and, generally, no amounts of picked cotton are recorded next to her name until late in the picking season when, it is assumed, all available hands were pressed into service. Helaire's name does not appear on this list, which is reasonable if his task was to see to it that the other slaves worked diligently rather than to pick cotton himself.[30]

Helaire was an enterprising worker who seemed willing to use any means he could to make his life better. According to Malone, "the Prudhomme extended family was somewhat unusual, even among French slaveowners, in the degree of economic independence they allowed their slaves....Prudhomme slaves produced small crops of their own, both for subsistence and for sale, as well as owning and free-ranging small amounts of their own livestock."[31] As early as 1837, Helaire appears on the record of accounts kept by Phanor Prud'homme of the corn he sold for his slaves.[32] In the 1860 journal of overseer, Seneca Pace, Pace notes that he branded two head of cattle for Helaire; the slaves' cattle apparently ran with the Prud'homme herd.[33] These cattle were intended to eventually be sold by the Prud'hommes for the slave owner. In addition,

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[27] Christina E. Miller and Dr. Bennie C. Keel, "Gabe Nargot's Cabin – Investigations at a Nineteenth Century Slave Domicile in Northwest Louisiana," reviewed online at www.cr.nps.gov/seac/gabes October 2002. n.p.
[28] Malone. p. 75.
[29] Braden, e-mail, Feb 28, 2002.
[30] Pace, n.p.
[31] Malone, pp. 69-70.
[32] Phanor Prud'homme, Farm Journals, 1837, Vol. 2, Prud'homme Family Papers, Southern Historical Collection, Wilson Library, University of North Carolina at Chape Hill, entries for March, n.p.
[33] Pace, n.p.

slaves were allowed to earn their own money cutting wood that their owners sold for them.[34] In this way, Prud'homme slaves such as Helaire were able to earn money for small "luxuries" not afforded them by their owners or, perhaps, to save money that might eventually give them some capital with which to begin life as free people.

When the Civil War erupted, the Prud'homme sons, Jacques Alphonse and Pierre Emmanuel II, both enlisted in the Confederate Army in 1861.[35] In March of 1862, Alphonse was wounded. He was discharged from his unit and sent home to recuperate. He remained at the Prud'hommes' plantation until July of that year, when he and his brother-in-law, Winter Breazeale, recruited five companies of cavalry and set off in September to rejoin the fight. However, in April of 1863, Alphonse was again wounded and obliged to return home to recuperate. By June of that year, he felt recovered enough to rejoin his unit. Still, he was mustered out of his unit in July of 1864 because of disability from the wounds that he had received and from which he had never properly recovered.[36]

Unable to continue as a soldier, Alphonse Prud'homme set about assisting his father with the management of the plantation. This was no small task, as the war had at last overrun the area. The defeat of the Federal army at the battles of Mansfield and Pleasant Hill, north of Natchitoches, resulted in a retreat that led the Federal troops down the Cane (formerly, Red) River in April of 1864. Because the war made it impossible for Phanor Prud'homme to market his cotton, he was apparently storing it in the Old Gin near the river. Sometime during the Red River Campaign, the Old Gin was burned to the ground. Prud'homme family legend ascribes this event to the activities of Federal troops.[37] Though they lost virtually all of their cotton to fire (only four bales escaped the blaze),[38] the Prud'hommes were among the lucky. Unlike Magnolia Plantation, where the Main House was consumed by fire,[39] neither the Main House of the Prud'hommes' plantation nor most of the outbuildings were harmed. Family tradition attributes this good fortune to the story that "faithful slaves begged the yankees [sic] not to burn the home."[40] One of the aforementioned slaves, however, Jean Baptiste, son of Helaire, told his granddaughter that he "hid in the fireplace" when the Yankees swept through.[41] According to his account, he was afraid because the soldiers were stealing and burning things.[42] He was only about 12 years old at the time.[43] Fortunately, the rest of the war was short. In May

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[34] Malone, p. 78.
[35] Breedlove, pp. 24-26.
[36] Alcee Fortier, ed., "Jacques Alphonse Prud'homme," *Louisiana, Comprising Sketches of Counties, Towns, Events, Institutions, and Persons Arranged in Cyclopedic Form,* Atlanta: Southern Historical Association, 1909, no page numbers.
[37] This traditional family story ignores the implication that Phanor had not followed the orders of the Confederate Commander in the area to burn all stored cotton before the Federal forces could get it, which, considering his devotion to the Confederate cause, seems uncharacteristic.
[38] Breedlove, p. 36.
[39] *Ibid.*, p. 37.
[40] DeBlieux, 1993, p. 21.
[41] Braden, e-mail, Feb 28, 2002.
[42] *Ibid.*
[43] *Ninth Census of the United States, 1870, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.

of 1865, the last of the Confederate Army surrendered. Emmanuel Prud'homme II returned home to the plantation, and he and Alphonse undertook its management.

The end of the Civil War changed life for the planters along the Cane River. It was the end of their long-standing relationship with the people who formerly constituted the majority of their workforce. New arrangements for working the land had to be made. At least from the planters' point of view, the local Union commander, Lieutenant Colonel S.G. Van Anda made the transition to a free workforce somewhat smoother. On June 5, 1865, he issued orders instructing the freed people to remain on the plantations where they had formerly been slaves and encouraging their former owners to employ them as workers.[44] By that time, however, some former slaves had already abandoned their former owners. Some did not wait for the end of the war. Phanor recorded that 12 men, 8 women, and 12 children "left with the Yankees" in the spring of 1864. The rest, however, apparently remained at the Prud'hommes' plantation or nearby and contracted with the Prud'hommes and their neighbors as free laborers.[45]

Several methods were tried to accommodate the new labor force and incorporate it into the needs of the planters. Immediately after the Civil War, new laws required that planters negotiate and sign yearly labor contracts with their workers under the direction of the Freedmen's Bureau[46]. Yearly contracts began on January 4, and monthly wages ranged from $4 to $10. Nursing mothers received half pay. Working days per month ranged between 22 days and 25 days.[47] The contract apparently required the yearly wage to be paid in part every three months. In addition, the Prud'hommes provided shelter if the workers required it and, apparently, some food rations as they had done for their workers prior to the Civil War. Phanor described his arrangements in July of 1865: "I had to make a contract with them in the presence of an officer…to finish the crop of this year….I give them the care, that I had always given them when they were slaves, I dress them, and I give them each 10 bushels of corn." Phanor also expressed the belief that it was his responsibility to provide for those former slaves who were too old to work (which he numbered at five on his plantation), and children under the age of twelve, of whom there were forty-six. [48] Immediately after the war, the Prud'hommes still retained more than seventy-five percent of the able-bodied workforce that they had at its beginning. The free workers probably remained in the cabins in which they had lived as slaves or moved into vacant cabins on the property that year. Phanor worried about how he would manage to keep his workers the following year and also realize a profit to feed, house, and clothe his own family.[49]

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[44] Breedlove, p. 45.
[45] *Ibid.*, pp. 103-104.
[46] Malone, p. 91.
[47] *Ibid.*, pp. 114-115.
[48] *Ibid.*
[49] Breedlove, p. 104.

He did not live to see 1866. Weakened by the demands of war, Phanor retired to the Lecomtes' townhouse in Natchitoches, where he died on October 12, 1865.[50] It was left to his sons, Alphonse and Emmanuel, to deal with the aftermath of the Civil War and move the plantation into a new era.

Among the workers hired under contracts on the Prud'homme plantation in 1866 and 1867 were Helaire Langlois, the former slave driver, his second wife, Philis Langlois, and his daughter, Melinda Langlois, all listed with these names in the plantation ledgers.[51] The former slaves had quickly appropriated one of the characteristics of free people after the Civil War: the application of a surname. The choice of surname was left to the people to whom they were applied. Indeed, one of the early freedoms enjoyed by the former slaves seems to have been the selection of a new surname as frequently as they chose to do so.[52] Why the former slave Helaire chose the surname Langlois is an interesting question.

Gary B. Mills, in his book, *The Forgotten People – Cane River's Creoles of Color*, debunks an earlier notion that freed slaves assumed the names of their former masters. According to Mills, freed slaves assumed the names of their former masters only if there were "blood ties," that is, parental ties, between them.[53] Mills says, "In the case of all...slaves of color in this one parish [Natchitoches]...there has been found no instance in which such a freed man 'took' the name of a master unless there was strong indication of a blood tie. Freed slaves...normally took as a surname the given name of their parent...."[54] Though he is discussing the *gens de couleur libre*, free people of color, of the area, an examination of surnames of former slaves whose familial relationships prior to the Civil War are known reveals a similar tendency. The children of the slave, Bob, became Louise Bob, Rose Bob, and Valsin Bob (spelled Bobb in later documents) and the children of the slave, Francois, became Melanie Francois, Louis Francois, and Pauline Francois. In some cases, the given name of the mother was used, possibly when the father was either unknown or lived on another plantation, as the children of Celeste became Marie Celeste and Paul Celeste. In any case, the name of Helaire's former owner was not Langois, it was Prud'homme. If Malone has surmised correctly that the name of the owner of Helaire's father was August Langlois, it is still unlikely that Helaire would have chosen as a surname the name of his father's owner. It is more likely that the name Langlois was chosen as a surname because of parentage. This leaves open the possibility that the white planter, Langlois, was the actual father of the slave Helaire, and not Hilario, as Malone asserts. Another possibility is that the 108-year-old slave designated "Langlois" in the 1850 *Slave Schedules* was a "foreparent"[55] of Helaire who chose the

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[50] Lucile K. Prud'homme, "The Prud'homme Family," unpublished genealogy, p. 3. Also see Melrose Collection, Scrapbook 256, Cammie Henry Research Center, Northwestern University, Natchitoches, Louisiana, for Phanor Prud'homme's obituary.

[51] Malone, pp. 114-115.

[52] See Lalita Tademy's description of the assorted surnames selected by her ancestors in her book, *Cane River*, New York: Warner Books, 2001, pp. 284-412 *passim*, but especially pp. 285-286, 411-412.

[53] Mills, p. 103.

[54] *Ibid.*, p. 104.

[55] *Foreparent* was the term used by Lawrence Helaire and others to describe ancestry in discussions with Ann Malone.

surname Langlois after the Civil War. To complicate the matter, by the 1880 census, Helaire had dropped the surname Langlois, and adopted the name Jean (anglicized by the census-takers to "John") Helaire,[56] later amending that to Jean Baptiste Helaire, which he, thereafter, remained.

The paid labor system was unsatisfactory to both the plantation owners and their workers. Malone explains that the freed slaves viewed the contract system as little better than slavery. In 1867 and 1868, many of the former slaves refused to sign labor contracts, opting instead for the sharecrop system.[57] According to Malone, "they saw sharecropping as an imperfect alternative. They reasoned that farming on shares, on their own assigned plot of land...would give them more independence....Many [people] saw sharecropping as the first step in accumulating enough money to buy land of their own."[58] To the planters, the necessity of paying their workers throughout the year when, often, the proceeds from cotton did not accrue until the following year, was a hardship. Sharecropping offered the possibility of putting off the "day of reckoning," and dividing some of the responsibility for the success of the crop with the labor force. Though some workers on the Prud'hommes' plantation continued to work through contracted labor arrangements, the majority shifted to working for shares of the crop in 1868.[59]

Under sharecropping arrangements, the landlord furnished the land and the seed, and the worker furnished the labor and, in some cases, equipment to raise the crop. The crop produced was then divided between the landlord and the worker according to an established method. Workers who worked "half-shares," also known as "half-hands," provided only the labor, with the landlord furnishing land, materials, and equipment for the raising of the crop. In exchange, the landlord received half of the proceeds of the crop raised by the worker. Workers who also provided equipment such as their own mules and plows to work the crop were working under a "quarter-share" arrangement. The landlord received only a quarter of the proceeds of the crop because the landlord provided only the land and seed, with the worker furnishing labor, materials, and equipment.

After the settlement of Pierre Phanor Prud'homme's estate, the Prud'homme plantation was formally divided between J. Alphonse Prud'homme and Pierre Emmanuel Prud'homme in 1870. Pierre Emmanuel Prud'homme moved his family across the Cane River to his portion, which he renamed Atahoe Plantation. J. Alphonse Prud'homme renamed the portion that remained to him Oakland Plantation. Hereafter, it is that portion of the Prud'homme plantation that was named Oakland with which this report is concerned.

The Prud'hommes were not the only family on the plantation making decisions about living arrangements. The cabins in the quarters were, after the Civil War, largely intact.

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[56] *Tenth Census of the United States, 1880, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.
[57] Malone, p. 91.
[58] *Ibid.*
[59] Malone, pp. 114-115.

There is some evidence in plantation records that building activities took place there, but the two cabins still remaining in the area were built before the Civil War.[60] Some writers have argued that the former slaves moved their families to other locations in an effort to wipe out the stigma of living in the slave quarters, even that they also moved the cabins elsewhere.[61] While it is certain that the labor force did move about much more freely after the end of the war, it is quite unlikely that they also moved or demolished buildings at will. The buildings in which they had lived while in slavery belonged to the owners of the plantations, not to the occupants. Evidence from the 1870 census and later indicates that the former occupants of the quarters and other cabins in the vicinity of the Main House continued to live there after Emancipation. The Prud'hommes may have moved a few cabins or constructed new ones in locations closer to the fields worked by their labor force, such as that occupied by Felix Helaire after 1920.[62] A map drawn from a 1947 aerial photograph and currently in the possession of Kenneth Prud'homme shows Felix's cabin, with his syrup mill, located on the riverbank south of the remaining tenant cabins. Felix Helaire's son, Lawrence, described his father's house as originally having board-and-batten walls and a dirt floor,[63] indicating it was probably built after the Civil War. The map owned by Kenneth Prud'homme also identifies two cabins, those of Lawrence and Emage Helaire, whose homes were located on the east side of Route 119, between the road and the river. Charlie Helaire's cabin was located on the riverbank between Felix and Emmage. Elnora Roberson Helaire, who married Charlie Helaire, described the house she lived in at Oakland Plantation as having "mud" (meaning *bousillage)* walls.[64] This may indicate that the dwelling that Charlie Helaire occupied was part of the original slave quarters. Generally, however, there is no indication of mass destruction, relocation, or construction of housing on Oakland Plantation. The existing slave cabins that became unoccupied and deteriorated were probably removed gradually over time as the need arose for materials to mend those that were occupied or to construct other buildings. Plantation records from 1918 show twenty-eight cabins allotted to plantation workers.[65] Although only two cabins currently remain, two others still existed as late as 1987.[66]

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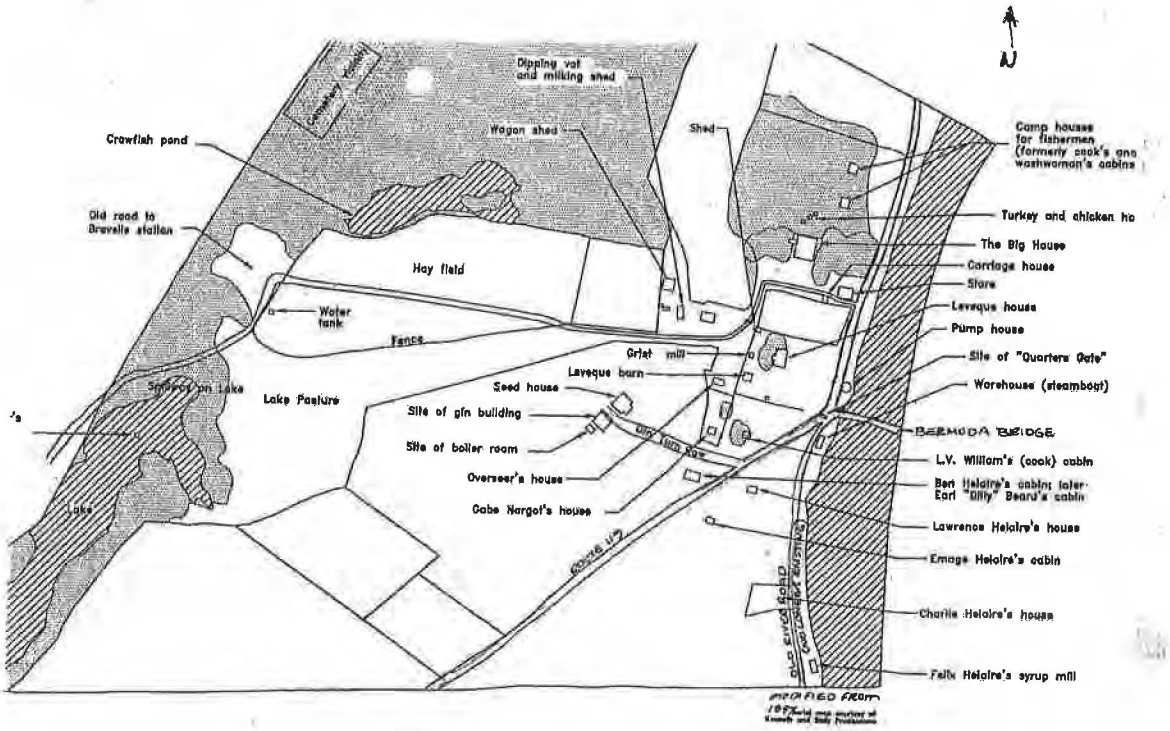
[60] Miller and Wood, p. 28.
[61] Malone, p. 90.
[62] *Ibid.*, pp. 127-128
[63] Lawrence Helaire to Ann Malone, oral interview, March 14, 1997, transcript, pp. 35-36.
[64] Elnora Roberson Helaire to Ann Malone, oral interview, March 14, 1997, transcript, p. 8.
[65] J. Alphonse Prud'homme, Farm Journals, 1918, Folder 288, Prud'homme Family Papers, Southern Historical Collection, Wilson Library, University of North Carolina at Chapel Hill, n.p.
[66] National Park Service, Historic American Buildings Survey map of Oakland Plantation, Washington: Department of the Interior, 1987.



Sharecroppers at Oakland Plantation were allotted parcels of land in relation to the number of working members of the family. According to Kenneth Prud'homme, a man, his wife, and three or four children of working age (8 years old and up) could farm twelve to fifteen acres of cotton, plus a small amount of acreage for corn and a vegetable garden.[67] This was a far cry from the twenty to forty acres the freed slaves anticipated farming in order to save money for farms of their own.[68] Because most of the sharecroppers were "half-hands," they needed to live within close proximity of the Prud'homme's barns and equipment sheds where, each morning, they retrieved the tools and livestock necessary for farming, and, each evening, returned them. This was probably one of the major considerations leading the hands to remain in the cabins existing in the old quarters. At Oakland Plantation, it appears that only Felix Helaire, who worked on quarter-shares and, thus, owned his own mules and equipment, moved away from the quarters, and he didn't move far. His cabin was located south of the probable location of the old quarters on the west side of the river. Others of the sharecroppers occupied some newer cabins, but they were still located close to the old quarters, if not in them.

According to the recollections of the Prud'hommes, Helaire is the name most closely associated with the South Tenant Cabin. They specifically recall that Ben Helaire, grandson of the former slave driver, Helaire, lived there. In 1870, Helaire Langlois, age 62, appears to be living "in the yard" of the Main House with his family.[69] "In the yard"

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[67] Kenneth Prud'homme to Ann Malone, oral interview March 11, 1997, transcript, p. 7.
[68] Malone, p. 91.
[69] *Ninth Census of the United States, 1870, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.

is something of a misnomer as we might conceive of it today. The cabins allotted to slaves with closer relationships to the plantation owners were located behind the Main House, though some distance from it. "In the yard" differentiates them from the housing provided "in the quarters." The location of Helaire Langlois, designated in the census as a "gardener," not a farmer as the sharecroppers tended to call themselves, can be inferred from his location in the census. He is enumerated surrounded by others known to have been occupying "the yard," such as the cook, Elizabeth Jones, the shoemaker, Alexis Lewis, and the carpenter, Solomon Wilson. Another indication that he was living "in the yard" is that the Prud'homme family members recalled that the "washwoman's house" was originally located behind the Main House, along with the Cook's House. The washwoman's house and the Cook's House were both moved in the early 1930s to a field north of the Main House to provide cabins for a fishing camp the Prud'homme family developed as an income-producing venture.[70] Helaire's second wife, Phillis, was listed as the "washerwoman" in the antebellum farm journals. It is very likely that she continued in this capacity at the close of the war, and entirely possible that she and her family lived, therefore, in the washwoman's house when it was located behind the Main House. Those living in the quarters, where the South Tenant Cabin is located, included the families of Alexis Petite, Anthoine and York Dorsino, Dersilin Nargo, Rene Jules, Minique and Simmeon Toussin (Toussaint), and Jean Baptiste Charles, among others. Which of these might have been located in the South Tenant Cabin is unknown.

By 1880, Helaire was probably still living "in the yard." The order in which the census-taker lists those on the census indicates a rather haphazard method of conducting the census. It appears that several passes were made in the vicinity of Oakland Plantation to complete the census information, possibly because the census-taker had to return after a first effort found people away from home because they were working. The actual reason for the disorganization of the census in 1880 is unknown, but it makes determining the locations of the people enumerated in it difficult. To complicate matters, by 1880, Helaire Langlois had changed his name to Jean Baptiste Helaire. Fortunately, he is still listed with members of his family who were listed with him in the 1870 census, and so it is possible to determine that Helaire Langlois and Jean Baptiste Helaire are the same person. Enumerated separately, and next to him, is his oldest son, John Helaire, with a wife and three sons.[71]

By 1888, John Helaire had moved his family out of the cabin "in the yard" and into one of the newer cabins constructed after the Civil War by the Prud'hommes. It was in this cabin by the river that his son, Felix, was born in 1888.[72] By the 1900 census, this family included two-year old Ben Helaire, whom the Prud'hommes associate with the South Tenant Cabin.[73]

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[70] Malone, p. 166.

[71] *Tenth Census of the United States, 1880, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.

[72] Helaire, Lawrence, March 14, 1997, p. 38.

[73] *Twelfth Census of the United States, 1900, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.

Helaire Langlois/Jean Baptiste Helaire died sometime between 1880 and 1900. Ann Malone records in her interviews the death of Helaire as recounted by John Batten. Though the information is third-hand, it is the only information currently available regarding the end of the former slave's life. According to Batten, Helaire was pulling the hay rake in the field when he was attacked by a swarm of bees. He died of bee stings before he could be taken to a doctor.[74]

In 1901, J. Alphonse Prud'homme built a new house at what is now called Riverside Plantation for his son, P. Phanor Prud'homme II. This did not actually constitute a division of the plantation, however. It appears, from the journal kept by Edward C. Prud'homme, second-oldest son of J. Alphonse Prud'homme, that the workers at Oakland Plantation, though they might be supervised by Alphonse, Phanor, or Edward, all worked for the same plantation. By 1910, Phanor had moved from Riverside into the Cottage next to the Main House and John Helaire had moved his family from the cabin "in the yard" to a location on Riverside Plantation.[75] Edward C. Prud'homme, who was then living at Riverside, commented on the progress of planting of the sharecroppers employed by his father, saying, in March, that the cotton the Frank Helaire planted the week before had sprouted, and, in December, that several of the hands, including George, Frank, and John Helaire had made a "short crop and want money."[76] Plantation records show that three of the grandsons of Helaire were working as sharecroppers on Oakland in 1912: Frank, Edward, and Felix, in addition to their father, John Helaire.[77]

John Helaire, son of Helaire Langlois/Jean Baptiste Helaire, was famous among the tenants of Oakland Plantation for being a healer. It was believed that the incantations that he recited in the course of his healings originated in Africa. According to his grandson, Lawrence, John Helaire could cure snakebite, whooping cough, fevers, and shingles, among other illnesses. Lawrence Helaire told Ann Malone that "wagonloads" of people would come to his grandfather to be healed.[78] Lawrence remembered expeditions into the woods with his grandfather and some of the the Prud'homme men to gather herbs for healing.[79] John Helaire's granddaughter, Carrie, remembered the recipes for some of the healing concoctions and the motions that went with the incantations, but said she never learned the incantations because they were in French.[80] John Helaire was even more famous among the tenants for being a "snake doctor" or "snake charmer." Lawrence and another grandson, Atlas Helaire, recounted several stories of John Helaire's control over snakes. Lawrence recited an incantation for Ann Malone that he said John used to call a snake out from under a cabin and remove it.[81] Though this may have been an African incantation, as Lawrence Helaire maintained, John Helaire spoke fluent French. By the

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[74] John Batten to Ann Malone, oral interview, Apr 20, 1997, transcript, p. 40.
[75] *Thirteenth Census of the United States, 1910, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.
[76] Malone, pp. 132-135.
[77] *Ibid.*, pp. 109-110.
[78] Lawrence Helaire to Ann Malone, oral interviews, Mar 14, 1997, transcript, p. 3, and Apr 18, 1997, transcript, pp. 54-55.
[79] *Ibid.*, Mar 14, 1997, p. 6 and Apr 18, 1997, p. 30.
[80] Braden, e-mail, Sep 12, 2002.
[81] Helaire, Lawrence, Apr 18, 1997, pp. 54-55.

time his great- grandchildren were growing up, however, children were forbidden to speak it in school. According to Mark Dupuy, history professor at Georgia State University at Atlanta, Georgia, this was because it was considered a "country" language, that is, one spoken by the less educated of the population.[82] Therefore, Lawrence Helaire and his generation did not speak French. It may be that Lawrence simply mistook an incantation spoken in French as one spoken in an African language. Carrie Helaire Davis's assertion that her grandfather, John Helaire, spoke his incantations in French strengthen this conclusion.

Ben Helaire married Emily Hamilton about 1917.[83] By 1920, they had one child and were enumerated next to Ben's father, who, by that time, was again widowed.[84] Living with the elder John Helaire was Vernon Williams, probably a great-grandson, although the census record indicates a grandson.[85] Neither Alex Williams nor Mandy Petite Williams, Vernon's parents, were children of John Helaire. Ben Helaire and his small family appear to have been living in the North Tenant Cabin at this time. Ben's daughter, Carrie, born after the census in 1920, insists that they lived in the North Tenant Cabin when she was growing up, and the position of the Ben Helaire family in the 1930 census seems to corroborate her statement.[86] However, Ben Helaire's family moved away from Oakland Plantation to Alexandria in the 1920s, returning to Oakland Plantation in 1928,[87] so Carrie Helaire Davis' recollections of growing up at Oakland must have been formed after 1928.

The Helaires were hard-working people. They did whatever it took to make a living. Especially during the 1930s, when money was extremely tight, the plantation workers took on extra tasks to earn a little extra money. "John Helaire worked 'off and on' in the flower garden....Charley Helaire hauled wood for the gin and installed a press there. Felix Helaire worked at the press, the gin, and on the bridge. He drove hay and cotton wagons and repaired the pigeon house. All this was in addition to his usual farming, butchering, and ferry operations."[88] Felix Helaire owned his own mules and equipment, and so worked as a "fourth hand" on the plantation. In addition to his farming, Felix did the blacksmithing and butchering for the neighborhood, ran a ferry across the Cane River, and produced cane syrup and beer.[89] His brother, Ben, helped Felix with the syrup-making and the ferry, which continued to operate even after the bridge across the Cane River was built.[90] Earl Helaire was paid for helping to install a slate roof, hauling wood and hay, and repairing a fence.[91]

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[82] Mark Dupuy, in history lecture at Georgia State University, Atlanta, Georgia, 2002.
[83] Braden, e-mail, Aug 26, 2002.
[84] *Fourteenth Census of the United States, 1920, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.
[85] *Ibid.*
[86] *Fifteenth Census of the United States, 1930, Natchitoches Parish, LA, Population Schedule.* Reviewed on-line at www.ancestry.com, 2002.
[87] Braden, e-mail, Sep 12, 2002.
[88] Malone, pp. 147-148.
[89] *Ibid.*, pp. 167-170.
[90] Braden, e-mail, Feb 28, 2002.
[91] Malone, p. 182.

At least one of the enterprises undertaken by the sharecroppers to earn money was frowned upon by members of law enforcement, though ignored, and sometimes even encouraged, by the planters. This was making corn whiskey, or "moonshine." In addition to drinking it themselves and selling or trading it to other tenant farmers, the entrepreneurs sold the fruits of their labor to the white planters in the area.[92] According to Lawrence Helaire, the South Tenant Cabin was the site of Ben Helaire's moonshine still.[93] The local sheriff apparently knew who kept stills and periodically made raids and arrested them. Lawrence Helaire recounted an incident in which Ben Helaire was arrested by the sheriff for being in possession of a still and 10 gallons of moonshine. For some reason, during the arrest, Ben Helaire broke a bottle of moonshine into the fireplace and set the cabin on fire. The fire truck had to be called to put out the fire. The sheriff arrested Ben anyway and notified Phanor Prud'homme II that he was taking his worker to jail. When Ben was released, Phanor insisted that the sheriff had to bring him back to Oakland because it was the sheriff who had taken him away from it.[94] Several cases were recalled during the oral history interviews in which the planter who employed the worker paid the bail for an arrested employee, though this was not stipulated in the story of Ben Helaire. It should be noted that evidence of fire was not found around the area of the fireplace during the site investigation for this report. However, evidence of fire and excessive water damage was found on the roof rafters of the enclosed back gallery. This may be the actual location where the saga of the moonshine still took place.

Children of the sharecroppers at Oakland Plantation were pressed into service to help earn money for the family. Most of the sharecroppers' children did not attend school beyond the age of eight years. They were required in the fields to help produce the cotton crop. Children too young to work the fields gathered the pecans that fell from the trees in the autumn and sold them to the Prud'hommes "on halves" to sell in the plantation store.[95] Older boys could earn thirty-five cents per day picking peaches and other fruits in the orchard.[96]

Two members of the Ben Helaire family acquired less rigorous positions. Carrie Helaire, and, later, her younger sister, Eartha, were employed as nursemaids for the young Prud'homme children in the late 1920s and the 1930s. Carrie was only eight or nine years old when she first became a "children's nurse." She was unhappy about having to leave school to watch other people's children,[97] but the Helaires did what they had to do to survive. She worked for the Prud'hommes for six years. The photograph shows Carrie Helaire with her charges.

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[92] Atlas Helaire to Ann Malone, oral interview, May 2, 1997, transcript, p. 40
[93] Lawrence Helaire to Ann Malone, oral interview, Apr 18, 1997, transcript, pp. 50-51
[94] *Ibid.*
[95] Malone, p. 160.
[96] *Ibid.*, p. 165.
[97] Braden, e-mail, Sep 19, 2002.

Carrie Helaire with the Prudhomme family, 1932
Photograph from the Prudhomme Family Collection

Carrie Helaire's employment with the Prud'hommes probably ended when her father moved his family away from Oakland Plantation to a plantation near Cloutierville about 1935.[98] Carrie Helaire married in 1937.[99] The world was changing for agricultural workers of the area. Though those who remained in the area after the Civil War had settled into the life of free agricultural workers, their situation was only a little better than it had been when they were slaves. In theory, they could come and go as they pleased and work for whomever they wished. In practice, they were tied to the land by poverty and debt, without much expectation of a substantial change in their fortunes. Mechanization and the boll weevil took their toll. The workers moved about frequently, always looking for a way to increase their income and better their lives. By 1940, Ben Helaire had moved back to Oakland Plantation and into the South Tenant Cabin. It was here that John Helaire died in the early 1940s.

Ben Helaire's father, John, the son of the former slave driver, was the last of the Oakland slaves when he died. He was twelve years old when the Federal troops swept through the Cane River country, and he hid in the fireplace to escape them. He was thirteen when the Civil War ended. Between 1870 and 1940, he worked as a sharecropper at Oakland

[98] *Ibid.*
[99] Braden, e-mail, Aug 2, 2002.

Plantation, though he lived for a while at Riverside Plantation. He married his first wife, Ann Bobb, about 1873, and fathered at least ten children. Six of his seven sons also became, for at least part of their lives, sharecroppers at Oakland Plantation, continuing an agrarian life that began for their grandfather in 1809, one hundred and thirty years earlier on the same plantation. Lawrence Helaire recalled that his grandfather, who was living in the South Tenant Cabin with his son, Ben Helaire, at the time, died while asleep on the porch of the cabin waiting for the mail to arrive.[100] John Helaire was nearly ninety years old when he died.

In 1959, the Prud'hommes decided to end sharecropping arrangements on the plantation and hire only day laborers. However, they continued to rent the tenant cabins, and Ben Helaire may have remained on Oakland Plantation after 1959. Elnora Helaire, who married Charlie Helaire, Ben's brother, recalled that Ben still lived in the South Tenant Cabin when she lived at Oakland Plantation, between 1952 and 1966.[101] The fact that Carrie Helaire married in 1937 and moved away from her father's Cabin may account for her insistence that they lived in the North Tenant Cabin, in opposition to the memories of the Prud'hommes and their workers, who assign Ben and his family to the South Tenant Cabin. Findings of the materials analysis of the wallpaper layers inside the South Tenant Cabin indicate that it was still occupied after 1962. When Ben Helaire left Oakland for the last time is not known. After Ben left Oakland, Earl "Dilly" Beard (Buard?) occupied the South Tenant Cabin.[102] Research has also not uncovered how long "Dilly" Beard remained in the cabin.

The Prud'hommes ceased farming operations altogether in 1985. In 1994, Public Law 103-449 established the Cane River Creole National Historical Park. In 1998, the National Park Service purchased 44 acres of Oakland Plantation, including the portion of the old quarters in which the South Tenant Cabin stands, to include in the Cane River Creole National Historical Park. Oakland Plantation was designated a National Historic Landmark in 2001. This designation recognizes the national significance of Oakland Plantation to the broader events of United States history.

[100] Lawrence Helaire to Ann Malone, oral interview, Mar 14, 1997, transcript, pp. 2-4.
[101] Malone, pp. 191-192.
[102] Kenneth Prud'homme to Ann Malone, oral interview, Mar 25, 1996, transcript, p. 8.

Chronology of Development and Use

While the specific date of construction of the South Tenant Cabin is not known, the methods and materials used in its construction, hewn timber frame with *bousillage* infill, cut nails, and sawn roof framing without a ridge member, indicate that the cabin was constructed prior to the Civil War. For much, if not all of its life, until the acquisition of the plantation by the National Park Service, the South Tenant Cabin was used as a residence, first by slaves, then by tenant farmers, and, toward the end of plantation operations, by renters who worked as day laborers on the plantation.

Physical evidence reveals that the original configuration of the building was a single room, traditional slave cabin with a fireplace and an extended front overhanging shed roof supported by wall brackets. The original cabin was supported on brick piers. In the 1920s, open galleries were added to the front and back, also supported by piers. The back gallery is supported by brick piers, and the front gallery is supported by concrete piers with brick chip aggregate, which provide the likely date of construction of the front gallery. The use of concrete with brick chip aggregate as front gallery post piers resembles others constructed using the bricks from the brick enclosure of the Gin Barn steam boiler after it was dismantled in the 1920s.

Based on field observations and materials analysis, it is evident that the cabin underwent further transformation in the 1940s through the 1960s.[103] The characteristics that indicate this period of change include the installation of recycled, butt-jointed, horizontal boards on the north, east and west sides of the building. Horizontal asphalt rolled siding was likely installed at this time. According to notes on the 1987 HABS drawings for this building, the exterior walls were originally finished with weatherboard (clapboard). However, the field research for this report found that the original exterior walls of the building were the exposed timber framing and *bousillage* infill. In consideration of the HABS documentation of clapboard siding, the evidence observed in the field work for this report suggests that the butt-jointed board underlayment beneath the asphalt siding was likely originally installed as a clapboard finish and, sometime around 1940, was removed and reinstalled as sheathing. Layers of wallpaper used on the interior can be associated with the latter part of this time period. Analysis of the layers of wallpaper indicates that several layers of wallpaper were installed as late as the 1960s. A layer of newspaper dated 1962 exists beneath three layers of paper.

The roof structure indicates that the original roof was wood shingles, probably cypress. The corrugated metal roof was likely not the original roof given the period of construction of the main body of the cabin. It likely is an early twentieth century modification, replacing a wood shingle roof. Recollections of surviving early twentieth century cabin occupants reveal that, during that period, the window openings were

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[103] In 2003, a finishes study was completed for the South Tenant Cabin. For the full report, see *Oakland Plantation, Cane River Creole National Historic Park, Interior and Exterior Finishes Study: Cook's House, North Tenant Cabin and South Tenant Cabin* by Dorothy S. Krotzer, included in the Appendix.

covered only with shutters. There were no window sashes or screens. The existing true divided light double hung windows recorded in the Historic American Building Survey (HABS) drawings of 1987, the components of which were observed in the building during the site investigation for this report, had been added by 1960.

Electrical service to the South Tenant Cabin, with fabric-wrapped wiring and ceramic surface mounted fixtures, was a twentieth century addition. Electrical service came to the Cane River area after 1937. Mayo Prud'homme asserted to Ann Malone that the Prud'hommes did not install electrical service at the tenant cabins.[104] According to Mayo, the tenants used kerosene lamps. A technical representative of Square D, an electrical equipment supplier, identified the likely year of installation of electrical equipment at the South Tenant Cabin, based on the description of the components, as being 1949.

The South Tenant Cabin did not have running water. A cistern, noted in the historical record but no longer existing on the site, was probably located in proximity to a corner of the cabin to catch the rain from the roof. If there was a cistern serving the cabin, there would have been gutters on either the front or back roof or on both the front and back eave of the cabin. There is no evidence of gutters at this time, however. In interviews with Camille Metoyer, who lived in the Overseer's House and Ivory Dee Hamilton Augustus, who lived in the North Tenant Cabin, Anne Malone inquired into how the tenants handled washing and bathing. According to her respondents, bathing was undertaken in a portable tub set up in the main room using water heated in the fireplace or on the wood-fired cook stove. Washing of dishes and clothing took place outside, in a tub near the cistern.[105] Though they were not talking about the South Tenant Cabin, it seems reasonable to infer that residents in this building handled these chores in similar fashion. The location of the outhouse that probably served the South Tenant Cabin is also currently unknown.

Overall, a significant amount of historic fabric of the building remains. The National Park Service undertook stabilization measures at the South Tenant Cabin in 1998, after it acquired the property. Strategic supplemental framing and plywood sheathing with metal louvered vents was installed on the north, south, and west elevations of the building to achieve structural stability and provide moisture protection. New 4" by 4" wooden posts were installed to support the extended portion of the front gallery, and new 2" by 4" bracing was installed on the south interior wall to stabilize the interior framing of the cabin. New concrete supports and some additional wood shimming was used to raise and level the floor framing of the cabin. In 2000, the Park preservation crew also stabilized the *bousillage* in the south wall by installing hardware cloth and screening over it to prevent any further loss of materials. They also placed cinder pads under the floor framing in several locations where the brick piers were no longer supporting the building.

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[104] Mayo Prud'homme, to Ann Malone, oral interview, Apr 2, 1997, transcript, p. 12.
[105] Camille Metoyer, to Ann Malone, oral interview, Apr 16, 1997, transcript, p. 29 and Ivory D. Hamilton Augustus to Ann Malone, oral interview, Oct 13, 1997, pp. 7-8.

Physical Description

South Tenant Cabin, east elevation

The South Tenant Cabin was constructed prior to the Civil War as a one-room slave cabin. The original building is hewn timber framing with *bousillage* infill. This method of construction is typical of Louisiana architecture in the antebellum period. The floor and roof joists are circular sawn. Cut nails were observed in the original part of the cabin. The earliest roofing was likely cypress shingles that were replaced in the early twentieth century with corrugated metal roofing. The cabin contained an interior fireplace and chimney, the latter of which was originally exposed above the ridgeline at the north gabled end of the roof. The original configuration of the front elevation of the cabin included a gallery formed by extended rafters supported by exterior wall brackets to produce some rain protection at the front entrance. This gallery originally had an earthen floor.

A vertical board wall divides the original one room configuration of the cabin into two rooms. With the exception of this wall, all interior board siding is horizontal and continuous. The flooring is also continuous, running under the interior wall. While it is not known when this wall was installed, its construction and finish indicate that it was not part of the original building.

In the 1920s, based on the aggregate used to construct the support piers for it, the original configuration of the front gallery was modified. The roof was extended, and four supporting posts were added. A wood floor with a pier foundation was installed. A rear gallery, similar to that on the front, was also added at this time. In the 1940s or 1950s, the rear gallery was enclosed with recycled, horizontal butt-jointed boards. The boards were finished with 18" roll asphalt patterned siding installed over building felt to compensate for deteriorated or lost *bousillage*.

Structural System
Foundation Piers

The existing brick piers differ below each component of the building. Brick piers originally supported the perimeter of the main portion (Rooms 102 and 103) of the building. Over time these piers deteriorated. Rather than rebuild the brick piers, the deteriorated portions were removed, leaving residual brick at grade.

Foundation piers

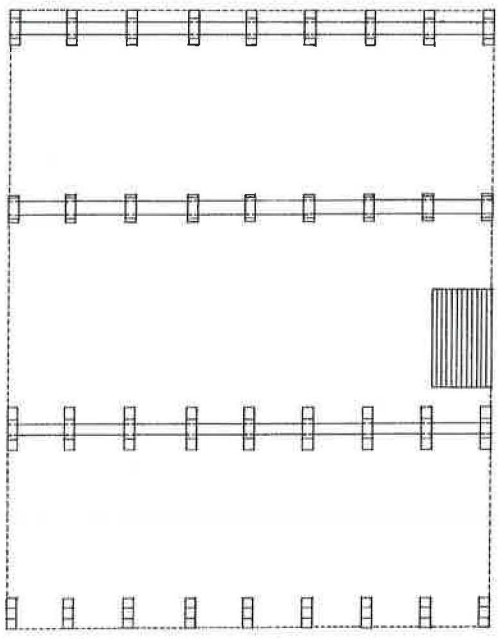
Sixteen-inch logs, sawn flat on two opposite sides, were turned horizontally and installed on top of the remaining brick at grade. Deteriorated interior supports for the floor framing were replaced by wood blocks resting directly on the ground as well as by modern concrete supports installed by the National Park Service to stabilize the building.

Foundation pier, front gallery

Foundation pier, main building

The piers for the rear gallery are of newer brick and appear to be of harder bricks than those observed on the main portion of the cabin. The piers under the front gallery are concrete with brick chips as aggregate. This material is used elsewhere on the plantation and reportedly was made with brick recycled from the steam engine boiler casing, once part of the Gin Complex, that was dismantled in the 1920s.

During the National Park Service stabilization work, several supplemental concrete piers were installed under the cabin to reduce the unbraced length of floor beams and joists.



FOUNDATION PLAN

Figure 1

Wood shoring under building

The configuration of piers as shown in the HABS floor plan of 1987 (Figure 1) is nine across each of the four sills, which run in a north-south direction. The number and placement of piers indicated in the HABS documents varies from the pier placement observed on site. For example, on the east elevation, the HABS documents suggest that nine piers support the north porch floor beam. Field observations indicate only four piers across the east elevation. HABS documentation of other structures on Oakland plantation were been found to be inaccurate in other instances, as well, so the nine piers shown on the HABS document do not necessarily indicate the condition in 1987, when the drawings were made. However, it is the only documentation currently available for this feature. The distance from the bottom of the floor joists to the ground is only a few inches, limiting access to the underside of the cabin to only the perimeter. Observations of the interior foundation support include wood blocking and cinder block piers installed by the National Park Service for temporary stabilization. The condition of the historic piers identified above is poor, caused by masonry deterioration, rotation from unstable soil, missing bricks, and mortar deterioration.

Original floor framing

Floor Framing

The floor framing reveals the evolution of the building. The floor framing under the main portion of the building is 5¾" by 2½" circular sawn joists framed into 6" by 9" hewn beams. All but one joist was mortised into the front hewn beam. Shifting occurred in the building as it deteriorated. In response to this, the National Park Service installed galvanized hangers to re-secure joists to the front beam.

The rear gallery floor structure is comprised of 5" by 3½" circular-sawn joists spaced at 36" on center framed into a ledger at the original hewn beam. The west beam at the rear of the gallery is a circular-sawn member supporting the joists. Wire nails were used to attach the joists to the rear beam.

Rear gallery floor framing

Beam at front gallery

The front gallery floor framing has a significant amount of recycled material, including some hewn members. Based on the characteristics of the materials used in the front gallery piers, the front gallery was constructed sometime during or after the 1920s. The joists are toe-nailed to the hewn beam of the main building with wire nails, a poor structural detail. Some of the joists are hewn. Prior to the National Park Service stabilization work in 1998, wood blocking was placed under some joists to provide additional support to the failed nail connections. The outside beam of the front gallery is a circular-sawn member. Joists rest on top of the beam.

Five different types of piers exist beneath the South Tenant Cabin: brick piers, concrete piers with brick chip aggregate, flattened log section on top of the remains of prior brick, at-grade piers, wood posts in direct contact with the ground, and concrete piers installed by the National Park Service as part of their stabilization measures at the South Tenant Cabin. Of these, only the perimeter piers were accessible for inspection and thorough analysis of condition. Some of the older brick piers beneath the main portion of the cabin are tilted and out of plumb, with missing bricks. Interior brick piers are not present; instead the floor framing is supported by earlier wood posts and by cast concrete piers placed temporarily beneath the floor by the National Park Service to level and support the building.

Inspection of the first floor framing from the exterior appears to indicate that the first floor framing under the main building is in satisfactory condition, with little apparent effect from decay. However, some floor framing connections at the west end of the main cabin structure have failed. The wood framing under the front gallery is in poor shape. The wood is weathered and decayed and in need of repair. Several framing connections have failed.

The South Tenant Cabin floor system was modeled in *Visual Analysis 5.0* using structural elements defined from field observations and drawings from the National Park Service. Structural analyses were performed on the floor and roof system for compliance with the 2000 International Building Code for strength.

A structural system is designed and analyzed for strength and serviceability. Strength involves the safety of occupants in the structure and the maximum load capacity that the structure can carry. Deflection is a serviceability concern and relates to the comfort of the occupants. Occupants may become concerned if they can feel the floor "give" when they walk across it, so deflection limits are strictly followed for new construction. In an historic building, the main concern is making the structure safe for visitors with the least amount of intrusion into the historic fabric as possible. Since the South Tenant Cabin is an historic building, the deflection limits were increased for the analysis to allow more deflection than the code limits for new construction. This approach will allow visitors to have a more accurate experience of the building as it was when it was used as slave and tenant quarters. If the floor framing system was to be rehabilitated and new members added, it would be to meet strength requirements and not to decrease deflection.

The South Tenant Cabin was originally constructed as a slave cabin and was later converted to use by tenant sharecroppers and day laborers. Because the National Park Service wishes to interpret the South Tenant Cabin to the public as a slave and tenant cabin, complete with appropriate furnishings, the live loads listed in the 2000 International Building Code Table 1607.1 for assembly areas and theaters with fixed seats and for walkways, 60 psf in both cases, would be the upper limit of the live loads to which the interior of the South Tenant Cabin would be subjected. A live load of 100 psf was applied to the gallery because the floor area available to visitors would not be restricted by furnishings, so more visitors could be accommodated on the gallery. A weight of 10 psf plus the actual weight of the wood members was used to represent the dead load. The results of this analysis show that most framing members and connections are not adequate for public access loading as required by current building codes. In its existing condition, with no additional strengthening, the main portion of the South Tenant Cabin can adequately support a dead load of 10 psf and a live load of 30 psf, typical loads for residential construction. The front gallery framing must be repaired before any loads are applied to it.

Wall Framing

Traditional hewn-timber framing infilled with *bousillage* was used to construct the original walls of the main component of the building (Rooms 102 and 103). It is difficult to determine the full extent and condition of the remaining *bousillage* due to the

protective plywood covering installed by the National Park Service. A considerable amount is lost, particularly in the north and south walls and the gable ends of the building. Most of the south wall had already collapsed when the Park Service acquired the property. A team of specialists from the National Park Service Northeast System Support Office of the Northeast Cultural Resources Center Building Conservation Branch in Lowell, Massachusetts, in concert with the Denver Service Center, made repairs to the house in 1998 to stabilize it.

The wall framing of the rear gallery is substantially obscured by the plywood used by the National Park Service to stabilize the rear gallery. However, evidence from exposed walls where the plywood paneling was removed and from under the floor suggests the framing of the rear porch is of modern-dimension lumber.

There are no walls on the front gallery. However, the post framing for the front gallery is new 4" by 4" pine posts provided by the National Park Service for stabilization. It is not clear what preceded the current post framing.

Roof framing over main building

Roof Framing

The roof framing over the main building is 2" by 5" circular sawn rafters spaced at 36" on center with 1" shingle lath running horizontally at approximately 12" on center. There was no ridge member in the roof framing. Cut nails were observed, identifying the roof framing as contemporary with the hewn-timber framed *bousillage* building below. Full access to the attic area to examine each member and its connection was not available. The spacing and size of the lath is consistent with support for wood shingle roofing.

Detail of extended front gallery framing

The HABS notes for this building indicate that the east elevation originally had "an overhang supported by diagonal braces," and that this brace feature "is extant and was a design detail used on other structures at Oakland." The notes list these other buildings as the blacksmith's shop and slave cabins. One of the slave cabins known to have had this feature was Gabe Nargot's Cabin.[106] In addition to these buildings, the Seed House also has this feature. The original east gallery roof framing consists of the 2" by 5" main roof rafters that extend outside the east

Detail of original east gallery roof framing

[106] See HABS drawings, Oakland Plantation, Slave Quarters, December 16, 1987

cabin wall. A beam, recycled from another structure, spans the four wooden wall brackets and supports these rafters.

Based on the construction of the support piers, it seems that the front gallery was expanded sometime during or after the 1920s by sistering 2½" by 3¼" rafters to the original front overhanging rafters. These new rafters span to a header that is supported by four 4" by 4" gallery posts. Shingle lath 1" thick and of random widths run horizontally at 16" on center, a configuration that would have supported wood shingles.

The rear gallery roof framing appears to be constructed from recycled material all reused from the same structure. The rafters vary in size from 4¾" by 3½" to 5½" by 3½" spaced at approximately 48" on center. Some of the rafters are hewn and contain cut nails from previous installations. The lath is ¾" by 5" boards spaced at 12" to 14" on center, a spacing that would support wood shingles. However, the number and close spacing of the shingle lath is likely intended to compensate for the wide span between ceiling joists. At the original building wall, the east wall of the rear gallery, the rafters are nailed either to the rafters of the main building or to the top sill plate and bear on the wall framing.

The main building has an approximate 12:12 pitched gabled roof. The gable runs north to south. The roof over the front gallery transitions from the 12:12 pitch to an approximately 8:12 pitch. The pitch on the rear gallery is 6:12.

Rear gallery roof framing

South Tenant Cabin, north elevation

The roof framing of the South Tenant Cabin is in fair condition but is inadequate to support the roof by modern standards. Moisture infiltration from poorly fastened roof covering has caused decay in the roof boards, rafters, and attic floor framing. The roof rafters were analyzed for compliance with current building codes. To comply with the International Building Code, the roof must support a live load of 12 psf. The roof was also analyzed for wind loading. Per the requirements of the International Building Code for wind conditions in the portion of the state of Louisiana in which the building is situated, the roof of the main portion of the cabin should resist a load of 15 psf (based on the pitch) and the overhang should resist a load of 22 psf. The existing rafters are

approximately 2" by 6" spaced at 3'-0" on center. The results of the analysis indicate that the roof rafters are not adequate to support the loading as required by the International Building Code for modern construction.

Roofing

The cabin has 2½" corrugated metal roofing applied to the horizontal shingle lath that once supported wood shingles. Though weathered, the roofing appears to be in substantially sound condition. The area where the chimney projected through the roofing has been patched with sheet metal to deter the infiltration of rain.

Doors

There are five doors in the cabin, two exterior and three interior. As part of the National Park Service stabilization work, the exterior doors have been removed and stored inside the building. Each of the interior doors is historic and located in or beside its frame.

Door 1: This door is located in the west exterior wall. This is the rear door to the cabin and provides entry into the rear gallery. Little remains of this door. The remaining components indicate an overall measurement of 2'-10" by 5'-4" constructed of ¾" thick, vertical, butt-jointed boards measuring 10" wide and attached to two horizontal beveled battens measuring 1" by 3¼" and 1" by 5½". The door casing is a Type 1 (see illustration). The door opening measures 2'-10" by 5'-4", an adequate width for ADA accessibility. In the opening, a plywood stabilization door has been installed over the fragments of the historic door and hinged to the exterior stabilization paneling on the west elevation. The plywood stabilization door is fitted with a metal louver.

Door 2: The opening for Door 2, connecting Rooms 103 and 104, is 2'-6" by 6'-3". The door measures 2'-5" by 5'-10¼" and is constructed of three ¾" circular sawn, vertical, butt-jointed boards measuring 5½", 12", and 11½" wide connected by two 1" by 3" horizontal battens. There is no casing. The door is hung in its opening with wrought iron strap hinges.

Door 3: The opening for Door 3, connecting Rooms 102 and 104, measures 3'-2½" by 6'-7". The door measures 3'-2½" by 6'-6" and is constructed of four 1" circular sawn, vertical, butt-jointed boards measuring 7", 11½", 10", and 10" wide connected by two horizontal 1" by 8½" beveled battens. The casing is a Type 2. The threshold measures ¾" by 3" and is Type 1 (see illustration). The door is removed from its frame and is located beside Opening 3.

Door 4: Centrally located on the wall connecting Rooms 102 and 103, the opening for Door 4 measures 2'-8" by 6'-5". The door measures 2'-7¼" by 6'-8¼" and is constructed of five 1½" circular sawn, vertical, butt-jointed boards measuring 6¼", 6¼", 6¼", 6½", and 5¾" wide and connected by three horizontal 4¾" by 2-6¾" beveled battens. There is no casing on this opening. The door is in its frame and hinges into Room 103.

Door 5: The opening for Door 5 measures 3'-2½" by 7'-3½". Located on the east wall of Room 102, this door provides access to the front gallery. The door measures 2'-10½"

by 5'-10" and is constructed of four 1" circular sawn, vertical, butt-jointed boards measuring 6½", 6½", 10½", and 10¾" wide. The boards are connected by three partial battens. One batten is tongue-and-groove, measuring 1" by 5". The other two battens are 1" by 2½", and ½" by 3½". Wrought iron strap hinges are located on the exterior side of the north jamb of this door. The original door has been removed from its hinges and is located adjacent to Opening 5. There is no trim on the interior of the frame in this opening. The wood threshold measures ¾" by 3½" and is a Type 2 (see illustration). The National Park Service has installed a wood, louvered door on the exterior of the opening to assist in providing air circulation to the building.

Door Types

Door 1

Doors 2 and 3

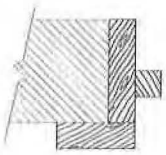
Door 4

Door 5, historic door

Door 5, temporary exterior door

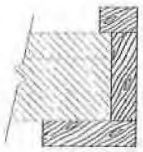
Door Casings

The door casings, where they exist, are simple boards and stops. Only door openings 1 and 3 have any significant casing components.

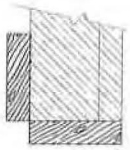


Door Jamb 1

Door Head 1

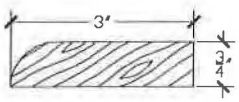


Door Jamb 2

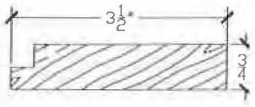


Door Head 2

Door Thresholds



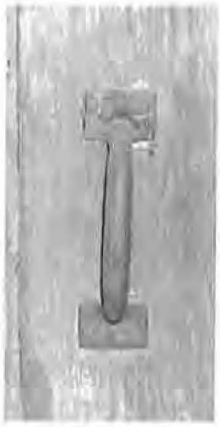
Type 1



Type 2

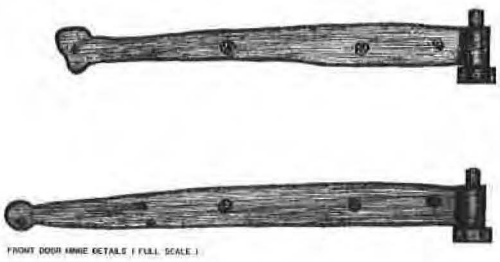
Door Hardware

The remaining historic door hardware consists of strap hinges, except for one pull on Door 2.

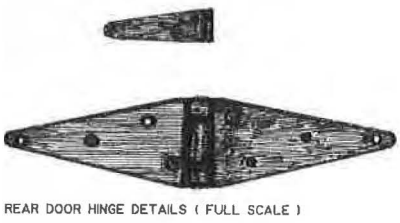


Pull, Door 2

- The hardware on Door 1 consists of modern, galvanized metal strap hinges measuring 3" by 7".
- The hardware on Door 2 consists of wrought iron strap hinges measuring 1¾" by 4". Door 2 has a pull attached with screws.
- The hardware on Door 3 consists of wrought iron strap hinges measuring 1½" by 11".
- The hardware on Door 4 consists of wrought iron strap hinges measuring 1¾" by 6".
- The hardware on the historic door for Opening 5 consists of metal strap hinges measuring 11" by 1½". The temporary wood, louvered door is attached to its opening with screws. There is no hardware on this door.



Historic Door 5 strap hinges



Door 1 strap hinges

Windows

There are five windows in the South Tenant Cabin. The east and south elevations have two windows each and the north elevation has one window. All the window frames are either missing, or in poor condition and only partially intact. Only Window B has a sash in its frame. This sash appears to be of recent vintage. There are four sashes stored in the cabin. All the sashes in the cabin have 2/2 divided lights that conform to the window patterns documented in the HABS drawings. There are not enough sashes in the cabin to outfit the five windows: five sashes are missing.

Window Sashes Stored in the South Tenant Cabin

All the window openings have been covered with louvered metal panels to protect the openings and building from further moisture damage and to facilitate air circulation. All window openings are considered historically significant.

Window A: Window opening A measures 2'-1" by 2'-3". The jamb is a Type 3, and the sill is a Type 2 (see illustration). The HABS drawings suggest that a single 2/2 divided light sash was fixed in the casing.

Window B: Window opening B measures 2'-½" by 4'-6". The HABS drawings indicate that this window was double hung with 2/2 divided lights in each sash. The jamb is a

Type 4, and there is no sill present (see illustration). Currently, only one sash is in the opening.

Window C: The frame and sash in window opening C no longer exist. The HABS drawings indicate that this window was double hung with 2/2 true divided lights in each sash.

Window D: Window opening D measures 2'-½" by 2'-3". The jamb is a Type 1, and there is no sill present (see illustration). HABS drawings suggest that this sash was fixed and had four 2/2 divided lights.

Window E: Window opening E measures 2'-4" by 4'-7½". The jamb is a Type 2, and the sill is Type 1 (see illustration). The HABS drawings indicate that this window was double hung with four 2/2 divided lights in each sash.

Existing Window Openings

Interior of Window A

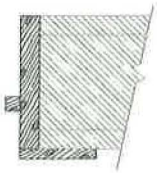
Interior of Window B

Interior of Window D

Exterior of Window E

Casing Types

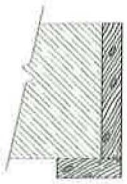
Window Jamb 1
Head not accessible



Window Jamb 2

Window Head 2

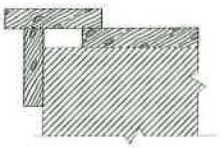
Window Jamb 3



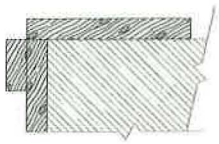
Window Head 3

Window Jamb 4
Head not accessible

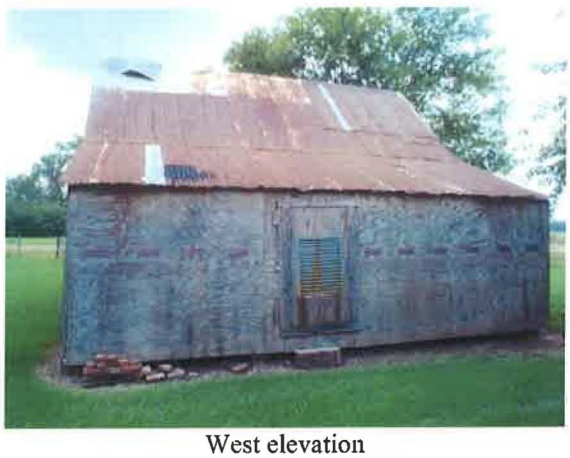
Sill Types



Sill 1



Sill 2



West elevation

Exterior Finish Materials and Characteristics

Access to the historic exterior materials on the South Tenant Cabin was limited by the protective plywood siding installed by the National Park Service. However, selected panels were removed to allow for the examination of the underlying conditions. The characteristics observed on each elevation of the building are summarized below.

North: The north elevation is covered with protective plywood with aluminum vents. However, the removal of one of the plywood panels between the chimney and the rear gallery revealed that there is horizontal butt-jointed, board siding on both the main building and the rear gallery. There is a joint between the siding on the main building and the rear gallery, suggesting the two were sided at different times. The siding is ¾" by 5½" and is attached with wire nails. The tops of the boards on the rear gallery exhibit evidence of having once been installed as lap siding and whitewashed. Remains of the 18" wide, asphalt, rolled siding were observed in the exposed area. Given the butt-jointed, horizontal boards and the absence of evidence of any other protective covering, the conditions support the conclusion that the siding was originally installed as clapboards and later removed and relaid flat as sheathing for the rolled asphalt siding, likely in the 1940s or 1950s. No *bousillage* remains in the exposed wall area of the main building.

Detail of north exterior siding

South: The south elevation is covered with protective plywood with aluminum vents. One panel was removed from this side, revealing deteriorated original framing and supplemental support framing installed by the National Park Service to stabilize the collapsed southeast corner of the cabin. While it is known that the original construction was timber frame with *bousillage* infill, there is little remaining of the original framing of the building in this area for use in identifying the material characteristics.

East: The front wall under the gallery is primarily finished with granulated, asphaltic, exterior rolled siding in two patterns. The exterior layer is patterned to simulate stone. The simulated stone pattern is achieved with gray granules. The simulated mortar joints are achieved with black granules. The pattern on the underlying rolled asphalt siding is a simulated slate using gray granules for the slate and darker gray granules to achieve a simulation

Detail of asphalt siding on the east elevation

of the surface irregularities of slate. A small area of horizontal, butt-jointed board sheathing was observed under the asphalt siding, north of the door. This siding is 7" butt-jointed boards painted white. It appears the boards were originally installed as clapboards and later removed and relaid flat as sheathing for the rolled, asphalt siding.

West: The west, or rear, wall of the cabin is covered with protective plywood on both the interior and the exterior. The exterior plywood contains aluminum vents. The underlying materials were not accessible, but conditions on the north elevation suggest that this elevation consists of support posts and infill framing supporting horizontal siding which, in turn, received a granulated asphalt exterior rolled siding treatment.

Interior Finish Materials and Characteristics

Room 101 / Gallery
Four new pine 4" by 4" posts support the extended front gallery framing. The gallery height from the floor to the underside of the exposed roofing is 5'-8" at the support posts and 9'-7" at the east wall of the cabin.

Roofing: Historic 2½" corrugated metal roofing is installed over wood shingle lath. The roofing appears to be in good to fair condition.

Flooring
The gallery floor is constructed of 11½" boards. Tongue-and-groove boards, 3¼" wide, cover the floor on the south half of the gallery, starting at the south jamb of Door 5. The floor boards on the north half of the gallery are exposed.

Exterior Light Fixtures
There is an abandoned, surface-mounted junction box adjacent to and on the south side of Door 5. Given the height of the box, approximately 5' above the porch floor, the junction box likely supplied power to a porch light.

Room 102 / Living Room
The room measures 12'-6" by 12'-3" with a ceiling height of 9'-10½". HABS drawings indicate this room served as the living room. Centrally located along the south wall is Door 4, which leads into Room 103. On axis with Door 4, along the north wall, is a fireplace constructed of brick with a plaster finish.

Ceiling: The ceiling is constructed of 8" to 12" butt-jointed boards running north-south. The ceiling is painted white and partially covered with wallpaper. The wallpaper is in poor condition.

Flooring: The room has 3¼" tongue-and-groove flooring over an earlier floor, which is not accessible in this room but extends under the floor into the adjacent Room 103.

Walls: The north, east, and west walls are finished with horizontal boards applied over the hewn timber frame and *bousillage* infill. From the finished floor, the bottom three

boards measure 12" wide, while the remaining wall surface above is a random assembly of-tongue-and groove boards measuring 5½", 6", and 8½" wide. A 3¼" tongue-and-groove base exists. Portions of the wall surfaces are painted white. The ceiling also supports the remnants of three layers of wallpaper. Both the paint and wallpaper are in poor condition.

The south wall is constructed of vertical boards in random widths of 8" to 11½", painted white. Portions of two layers of deteriorated wallpaper remain on the ceiling.

Detail of north wall of Room 102

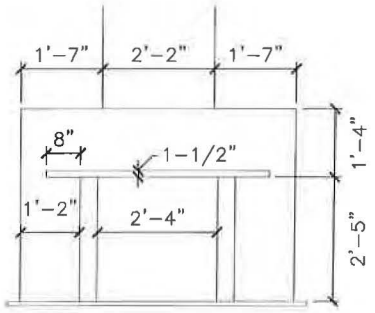
Detail of south wall of Room 102

Fireplace in Room 102

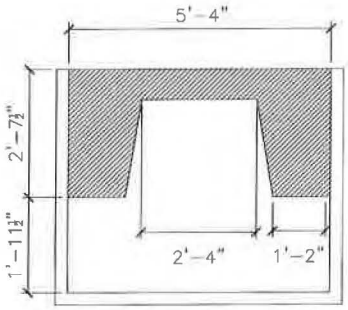
Light Fixtures: A ceramic, surface-mounted light fixture is attached to a ceiling joist.

Fireplace: Overall, the fireplace is 64" wide and is approximately 30" deep. The chimney cheek on each side of the firebox is 14" wide. The height of the chimney cheek is 45" above the finished floor. The east and west sides of the chimney and the interior north surface of the firebox are exposed brick. The hearth, south face of the chimney, and the remaining surfaces of the firebox and mantel have a plastered finish. The firebox measures 24" deep, 28" wide at the rear, and 36" wide at the outside face. A 1½" solid metal, steel or wrought bar serves as a header over the firebox opening. The header extends into the

masonry 8" on each side of the firebox. The metal bar is an unusual feature for fireplace construction. It may be a remedial modification for a previous header that failed. The fireplace exhibits considerable cracking and has received some supplementary support installed by the National Park Service to stabilize it prior to restoration. Overall, the fireplace is in poor condition.



Elevation of fireplace



Plan of fireplace

Room 103 / Bedroom

Room 103 is 12'-6" by 11'-10" with a ceiling height of 9'-10½". Located on the north wall is Door 4, which leads into Room 102.

Ceiling

The ceiling is constructed of 8" to 12" butt-jointed boards running north to south. The ceiling is painted white. Portions of deteriorated wallpaper remain on the ceiling.

Flooring

The flooring is comprised of 7" wide boards running north to south with a joint at 6'-0 ½" from the north wall. There is no appreciable difference in the floorboards, but the joint is pronounced. Although there is little difference between the floorboards on each side of the joint, the presence of a joint suggests that the flooring was replaced at some point in the past.

Flooring joint, Room 103

Detail of west wall of
Room 103

Walls

The north wall is constructed of ¾" vertical boards of 8" to 11½" random width, painted white. A portion of the wall is finished with two layers of wallpaper. Both the paint and the paper are in poor condition.

The south, west, and east walls are constructed of 8" to 11½" random-width vertical boards, painted white and finished with two layers of wallpaper and newspaper.

Light Fixtures

A round, ceramic, surface-mounted ceiling fixture is attached to a rafter in the center of the room.

Room 104 / Rear Gallery

The rear gallery appears to be an assembly of recycled materials. Due to the significant amount of stabilization that has taken place in this room, only the floor and ceilings were visible for inspection.

Ceiling

There is no finished ceiling in Room 104. The underside of the corrugated roofing and its supporting shingle lath are exposed to the interior of the room. The condition of the roof framing and shingle lath suggests that material was reused from another structure to build the rear gallery. It appears that the ceiling rafters and nailing boards were painted at one time, likely prior to their installation in this building. It also appears that the roof framing was also exposed to considerable moisture and likely fire and/or smoke damage. The framing exhibits a chalky white finish and dark areas suggesting char from fire. It is this evidence that suggests that the incident with the moonshine-induced fire that Lawrence Helaire related to historian Ann Malone transpired in this room rather than in the fireplace in the living room.

Flooring

The flooring on the north half of the rear gallery is 11½" wide boards. Tongue-and-groove boards, 3½" wide, cover the original floor on the south half of the room from the southern jamb of Door 1. While the characteristics and condition of the flooring under the tongue-and-groove board finish is not visible, it is reasonable to expect that the dimensional characteristics are similar to that exposed in the northern half of the room and that damage or deterioration necessitated an overlayment.

South wall in Room 104

Walls

The walls in Room 104 are covered with plywood. The walls in this room were not accessible for examination at the time of the site visits for this report.

Light Fixtures

A round, ceramic, surface-mounted ceiling fixture is attached to a rafter in the center of the room.

Attic

The roof framing, shingle lath, and underside of the corrugated metal roofing enclose an attic space above Rooms 102 and 103. It appears that the attic has never been occupied, as there is no evidence of finishes. The floor of the attic is 1"thick boards of random widths spanning between the ceiling joists. There is no defined access to the attic.

Detail of attic

Utilities

The primary utility in the building is electrical service. There are round, ceiling-mounted, ceramic light fixtures in each room of the cabin and a junction box on the east wall that was undoubtedly for a front gallery light, though no fixture remains. The wiring is cloth covered and dates to the middle of the twentieth century.

An examination of the underside of the cabin revealed abandoned gas lines, possibly running from a propane tank to a stove and, perhaps, heating units. The limited access under the cabin and the location and amount of remaining piping did not provide enough evidence to further understand the routing of the gas piping.

Summary of Finish Analysis

The finish study for the South Tenant Cabin conducted in parallel with this report identified whitewash as the primary finish in the cabin. The *bousillage* interior was originally finished in whitewash, as were most of the interior exposed boards. The whitewash was applied in a range of one to three separate applications. Deviations from the whitewash finish were, in most cases, a result of recycled material that had been previously painted prior to installation in the cabin.

Door 5 was originally painted a medium green on both sides, but, later, each side was painted a different color. According to the finish analysis report, the exterior was painted medium brown, and the interior was painted pale blue. Door 2, between Rooms 102 and 103 is an early door but was likely salvaged from another building. It is painted a pale turquoise. Doors 3 and 4 each have one layer of whitewash. The remains of Door 5 contain three layers of whitewash.

One pair of window sashes currently stored in the cabin relates to the dimensions of Window B. The windows sashes appear to be twentieth century and have been painted white on the interior. The surround on Window E has five layers of whitewash and may be original to the building. There were no other remarkable findings in the analysis of window finishes.

In Room 102, six layers of wallpaper were identified on the walls and two on the ceiling. The sequencing of paper patterns is not straightforward. On the ceiling, the earlier layer is a brown oak grained paper. Covering it is a layer of dogwood-patterned paper. On the walls, the brown oak grained paper is the final layer, covering five previous layers of wallpaper.

In Room 103, there are five layers of paper on the north wall. The west wall has a differing assortment of paper, which includes a September 1962 newspaper located between the bottom two layers and the top three layers. On both the north and west walls, the final layer is the brown oak-grained paper also found in Room 102. This finding of the newspaper between other layers of wallpaper establishes a point in time between these two groups of paper. As discussed in the Historical Background and Context section of this report, it is unclear in what year the house was vacated for the last time. However, according to oral history, it is possible that it was vacated in the latter part of the 1960s. The dating of the newspaper raises some important decisions about the treatment of the paper above the newspaper, which may be outside the circa 1960 period of historical significance established in the General Management Plan for the Park.

Detail of exposed roof and light fixture in Room 104

Electrical Evaluation

The existing electrical service to the South Slave/Tenant Cabin consists of the following:

Interior

- Ceramic lamp sockets are located in the center of each room to receive light bulbs/fixtures. They were originally mounted on the bottom of the beam. The fixture in Room 104 is now detached from the beam and hanging from its wiring.
- Fabric-wrapped wires run through the attic space and along the beams. All are in poor condition and cannot meet current National Electrical Code standards.

Exterior

- An abandoned, surface-mounted, exterior junction box is mounted on the wall to the south of Door 5, presumably for a light fixture.
- A ground rod is present on the south side of the building. It does not have any cables/wires bonded to it.

All other components of the electrical service have been removed, such as weather-proof connections, the meter box, the power panel, and power outlets. The existing electrical service does not comply with current National Electrical Code requirements and standards.

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PART II
TREATMENT AND USE

Treatment and Use

Introduction

The South Tenant Cabin is one of two buildings on the south end of the site through which slave and tenant farming life at Oakland Plantation can be interpreted. The General Management Plan (GMP) has designated the South Tenant Cabin for this interpretation. Overall, the historic features of the cabin are sufficiently intact to serve as a meaningful resource for interpretation.

The primary requirement for use is to restore the building in accordance with the circa 1960 period of historical significance. The appropriate response to the interpretive plan suggested by the General Management Plan for the period of historical significance will be to stabilize and preserve the layers of history contained in the building and to develop an interpretative program. The interpretive program will tell the story of the building to the mid-twentieth century and the life it supported from slavery, to the tenant farmer, to the day laborer renter. The building must also be made safe and accessible for visitors.

The physical character of the South Tenant Cabin at the end of the historical period is substantially defined despite the amount of building fabric obscured by the interior and exterior stabilization materials. The following are representative of the building's characteristics at the end of the historical period.

- The exterior walls were clad in rolled asphalt siding nailed to horizontal butt jointed boards over the *bousillage*.
- The roofing was corrugated metal on historic nailing boards.
- The original hewn timber frame is substantially intact.
- The historic foundations and piers that existed at the time of this report are intact, although some are in poor condition.
- The interior finish was predominantly whitewash with multiple layers of decorative wallpaper in the main rooms of the cabin. There was minimal electrical service and lighting in the cabin, though electrical service was present in the building by 1960.

Requirements for Treatment and Use

The primary requirement for use is to treat the building as proposed in the General Management Plan in accordance with the circa 1960 period of historical significance. The appropriate response to the period of historical significance will be to retain and structurally secure the identified historic features of the building for inclusion in the interpretative program for Oakland Plantation.

Treatment of the building should be guided by the International Building Code, including that code's statement regarding historic buildings, included below.

> **3406.1 Historic Buildings.** The provisions of this code related to the construction, repair, alteration, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.

Threats to public health and safety will be eliminated, but, because this is an historic building, alternatives to full code compliance are recommended where compliance would needlessly compromise the integrity of the historic building.

Applicable Laws: Section 106 of the National Historic Preservation Act (NHPA) mandates that federal agencies, including the National Park Service (NPS), take into the account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places (NRHP) and give the Advisory Council on Historic Preservation a reasonable opportunity to comment. NHPA regulations (36 CFR 800.10) mandate special requirements for protection of National Historic Landmarks. Section 110(f) of the Act requires that the Agency Official, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly and adversely affected by any undertaking. The National Park Service's "Cultural Resource Management Guideline" (DO028) requires planning for the protection of cultural resources whether or not they relate to the specific authorizing legislation or interpretive programs of the parks in which they lie. The South Tenant Cabin should be understood in its own cultural context and managed in light of its own value, as well as to Oakland Plantation as a whole, so that it may be preserved and rehabilitated, unimpaired, for the enjoyment of present and future generations. To help guide compliance with these statutes and regulations, the Secretary of the Interior has issued *Standards for the Treatment of Historic Properties.* The National Park Service's *Preservation Briefs* also provide detailed guidelines for appropriate treatment of a variety of materials, features and conditions found in historic buildings.

Functional Requirements: Using the cabin for interior interpretation, as implied in the General Management Plan could require improvements that will alter some of the historic features of the cabin. Beyond the preservation of the previously discussed historic

features, the following measures will be required in order for the building to meet the use expectations as established in the General Management Plan.

- Rehabilitate the foundation and floor framing system to accommodate group visitation as outlined in the structural recommendations. The existing building foundation (piers and floor beams) vary in condition. Some piers are deteriorated to the point of having to be replaced, on the north and south sides of the building.
- Install access in accordance with the Americans with Disabilities Act (ADA) or provide "alternative minimum" access to the building. It should be possible to accomplish this with minimal negative impact.
- Provide power to restore the circa 1960 lighting scheme and accommodate basic interpretative requirements and support maintenance.

Human Safety: With the actions addressed in other sections of this document, no significant health safety issues were identified.

Fire Protection: Given the size of the building and the proposed use, the primary operational risk of fire would be if the fireplace were to be rebuilt and used for interpretation with a live fire. Fortunately, this is not at option because it is prohibited by the National Park Service. A fire suppression system is not recommended for this building based on the low risk potential for fire relative to the intrusion it would create. It is recommended that the appropriate class of hand held fire extinguisher(s) be located and maintained on the premises. A fire protection and emergency response plan should be prepared for the building. The number of visitors that can be allowed in the cabin at one time is restricted by the load carrying capacity of the floor framing system to a number that does not exceed the number of visitors allowed with regard to egress in case of fire. Therefore, there are no additional restrictions to the number of visitors that can be allowed inside the cabin with regard to fire and life safety issues.

Energy Conservation: Energy conservation should not be an issue in this building. It is expected that the building will not be heated or cooled by modern means in order to protect the historic features and interpret the building as it was when occupied.

Abatement of Hazardous Materials: There are no reported hazardous materials in the building. The finish analysis being carried out in conjunction with this report will identify any lead based paint that has been applied to the building. The National Park Service should verify there is no asbestos containing material in the building. One candidate material for verification in the building would be the wrap on the wiring to the remaining light fixtures.

Handicapped Accessibility: Accessibility to the cabin will be required to provide interpretation of the interior to the public unless an "alternative minimum" approach is provided in accordance with ADA guidelines. The characteristics of the rear door (2'-10" by 5'-4") are not conducive to accessibility due to the limited height. The front door is a candidate for providing ADA access (3'-2" by 7'-3"). Use of the front door for ADA access will require a ramp to the front gallery. Installing a wood or earthen ramp on the south side of the cabin, ramping up from the west end of the south elevation to the front

deck, would minimize any detraction from the historic setting. The ramp will need to be between 10' and 15' long, depending on exact elevations to be determined by a surveyor or architect. Once access is provided to the front gallery, all rooms should be accessible based on historic door widths of Doors 1, 3, 4, and 5. While Door 2 does not meet the minimum width required by ADA for access, alternate entries between the rooms will ensure full handicapped accessibility to all parts of the cabin.

Alternatives for Treatment

The General Management Plan provides for both the interior and exterior interpretation of the North and South Tenant Cabins. The proposed use will illustrate the history of slave and tenant housing and the life it supported at Oakland Plantation. An alternative use for the South Tenant Cabin is to interpret it from the exterior only, reserving both interior and exterior interpretation for the North Tenant Cabin. Through this alternative use, the interior of the South Tenant Cabin would remain intact, free from any adaptations and modifications that public access to the interior would require. This approach would ensure that an intact record of slave and tenant housing remains at Oakland Plantation.

However, the North and South Tenant Cabins are sufficiently different in dimension and character that both are unique contributions to the history of the plantation. Furthermore, it would be difficult to effectively interpret both slave and tenant farmer life in one cabin. Based on these considerations, the interior and exterior interpretation of the South Tenant Cabin, as scheduled in the General Management Plan, is preferred to this alternative.

Both the North and South Tenant Cabins are distinctive and, due to the nature of their construction, delicate structures. Special care should be given to managing the interpretation of and access to these cabins. Every effort should be made to avoid damage to the buildings caused by interpretation. This could include limiting visitor access to a few people at one time and preventing public handling of materials and features.

Ultimate Treatment and Use

Ultimate Use

The General Management Plan for the Oakland Plantation unit of the Cane River Creole National Park has slated the South Tenant Cabin for both interior and exterior interpretation. Given the amount of interpretative potential that exists in the history of the slave quarters and the fact that only two cabins remain on the site, this is an appropriate use for the South Cabin.

Treatments for the Ultimate Use

The most effective way to interpret the South Cabin in accordance with the General Management Plan would be present the layers of history that exist. To do so, it is important to preserve the overall physical character of the building through circa 1960, the end of the period of historical significance. This approach requires the following treatments.

Exterior Treatments

Siding: Rolled asphalt siding was applied to all exterior wall surfaces sometime in the 1940s or 1950s. This siding was the outermost historic wall finish for the South Cabin. Therefore, the remaining sound portions of this siding should be preserved wherever possible. Portions of the siding that are missing or are in poor condition should be replaced, using materials identical in both pattern and configuration. If an exact match is not available, rolled granulated asphalt siding without a pattern, yet having a complementary color and dimension, should be used. This would give an overall historically sensitive appearance to the cabin while emphasizing the historic, patterned, rolled asphalt siding.

Before the application of the rolled asphalt siding, the exterior wall surfaces were sided with lap siding. These were later reinstalled as butt-jointed boards. Some of these boards still exist on the east, north and, possibly, the west elevation. No historic siding exists on the eastern end of the south elevation. Where missing or deteriorated beyond repair, new horizontal, butt-jointed boards of similar dimension and species should installed.

Given the presence of the protective stabilization plywood, a complete examination of the historic exterior finishes was not possible. However, it is known that portions of the original whitewashed, hewn-timber frame with *bousillage* infill exist beneath some of the later finishes on the building. A first step in the treatment of the exterior wall surfaces would be to remove the stabilization plywood from all exterior wall surfaces in order to fully understand the extent of the intact historic finishes. When doing so, every effort should be made to maintain the stability of the structure and prevent any further loss of historic fabric, particularly *bousillage*. With the opportunity to interpret *bousillage* construction at the Cook's House, it should not be a priority to expose it in the South Tenant Cabin.

The current siding assembly differs on each elevation of the cabin, and, in some cases, may vary on the same wall. In consideration of these variations and in order to present the entire history of the exterior wall finishes the recommended treatments have been addressed by elevation.

- *North*: A portion of this elevation should be restored to its 1940-1950 appearance. This would involve the preservation of existing rolled asphalt siding and the restoration of this siding in areas where it is missing or in poor condition. However, the area where the rear gallery frames into the main cabin should be left accessible while providing weather protection to the exposed historic board sheathing. A possible approach to this would be to install a panel of asphalt siding at this location in a way so that it could be folded back to expose the underlying boards. This treatment will allow for the illustration of how the rear gallery was enclosed and how different materials were used according to availability and need. The juxtaposition of the asphalt siding and the board sheathing will further the understanding of how the building evolved. All newly-installed siding should be identical, if possible, in pattern, dimension, and attachment to the historic materials. If an exact match is not available, rolled granulated asphalt siding without a pattern, yet having a complementary color and dimension should be used.

- *South*: A large part of the historic fabric has been lost on this elevation, particularly on the east end of the wall. Therefore, horizontal boards matching the historic board sheathing found elsewhere on the exterior walls should be applied over reconstructed sawn-timber framing that reestablishes the structural characteristics of the original cabin. Rolled asphalt siding, identical in both pattern and configuration to that found on the east and north elevations should be installed over the sheathing. If an exact match is not available, apply compatible non-patterned granulated asphalt rolled roofing consistent will that proposed for the north elevation.

- *East*: This is the only elevation not currently covered in temporary stabilizing plywood. The layers of board sheathing and rolled asphalt siding are largely intact. Likewise, some of the original *bousillage* exists beneath the later finishes. Therefore, it is recommended that this wall be preserved in its current state to interpret the historic appearance through original materials. The front gallery roof offers some protection to the siding materials, making this proposed preservation treatment possible. This treatment will afford the visitor an understanding of how the building was constructed for its original use as slave housing and evolved according to need throughout the periods of sharecropper and day laborer farming.

- *West*: Evidence suggests that horizontal board sheathing and some asphalt siding exist beneath the temporary stabilization plywood. Therefore, it is recommended that the existing asphalt siding be retained and preserved and new siding be installed in areas where the historic asphalt panels are either missing or in poor condition. All newly-installed siding should be identical in both pattern and configuration to the historic fabric. If an exact match is not available, apply compatible non-patterned granulated asphalt rolled siding consistent with that proposed for the north elevation.

Front Gallery: The gallery is a significant feature of the South Cabin and has evolved over time. Therefore, all existing features of the gallery should be retained.

- *Gallery Flooring*: The newer, 3¼" wide tongue-and-groove boards overlaying the southern half of the historic, 11½" wide board flooring should be retained and preserved. This later floor finish is representative of the building's evolution and therefore contributes to its historic integrity. Structural reinforcement of the gallery floor framing will be necessary for visitor access. This is discussed in detail in the Structural Recommendations included below. It is important to note that the existing framing is significant to the overall historic integrity of the building. **Structural reinforcement of existing framing should be installed with regard to the significance of the front gallery porch framing, retaining as many of the historic framing members as possible.**

- *Gallery Roof Structure and Supports*: The roof framing and brackets should be preserved. Any additional support added to the roof framing should match the historic materials in size, detail, attachment, and species. The current temporary wood roof supports should be replaced with posts matching in both size and species those that existed during the later part of the period of historical significance. Modern-dimensioned wood posts may be required if more definitive information is not available to fabricate historically appropriate gallery roof posts.

Foundation: The cabin foundation piers are historically significant with the exception of those installed as supplemental foundation support by the National Park Service. The piers should be preserved or reconstructed, as needed for structural stability, in their historic configuration and location. The brick aggregate concrete piers beneath the front gallery should be preserved and secured to assure they support the front gallery floor and roof framing. The piers that are in poor condition should be repaired and pointed using new materials matching the existing in strength, color, and composition only where existing historic materials are structurally unsound. No attempt should be made to plumb the piers to provide a level, bearing surface for the floor framing system. Structural analysis indicates that the piers are adequate to support the floor framing system if visitor load is managed as indicated in other portions of this report.

Specific consideration should be given to the 16" logs on top of deteriorated brick piers serving as additional foundation support. The use of these logs is significant to the historic integrity of the cabin. The condition of these logs should be determined. If sound, the logs should be preserved.

Floor Framing System: The South Tenant Cabin floor system was modeled in *Visual Analysis 5.0* using structural elements defined from field observations and drawings from the National Park Service. Structural analyses were performed on the floor and roof system for compliance with the 2000 International Building Code for strength.

A structural system is designed and analyzed for strength and serviceability. Strength involves the safety of occupants in the structure and the maximum load capacity that the structure can carry. Deflection is a serviceability concern and relates to the comfort of the occupants. Occupants may become concerned if they can feel a floor "give" when they walk across it, so deflection limits are strictly followed for new construction. In an historic building, the main concern is making the structure safe for visitors with the least amount of intrusion into the historic fabric as possible. Since the South Tenant Cabin is an historic building and was once a slave cabin, the deflection limits were increased for the analysis to allow more deflection than the code limits for new construction. Therefore, if the floor framing system is rehabilitated and new members added, it is to meet strength requirements and not to reduce deflection. This approach will allow visitors to have a more accurate experience of the building as it was when it was used as slave and tenant housing.

The South Tenant Cabin was originally constructed as a slave cabin and was later converted to use by tenant sharecroppers and day laborers. Because the National Park Service wishes to interpret the South Tenant Cabin to the public as a slave and tenant cabin, complete with appropriate furnishings, the live loads listed in the 2000 International Building Code Table 1607.1 for assembly areas and theaters with fixed seats and for walkways, 60 psf in both cases, would be the upper limit of the live loads to which the interior of the South Tenant Cabin would be subjected. A live load of 100 psf was applied to the gallery because the floor area available to visitors would not be restricted by furnishings, so more visitors could be accommodated on the gallery. A weight of 10 psf plus the actual weight of the wood members was used to represent the dead load. The results of this analysis show that most framing members and connections are not adequate for public access loading as required by current building codes. In its existing condition with no additional strengthening, the main portion of the South Tenant Cabin can adequately support a dead load of 10 psf and a live load of 30 psf, typical loads for residential construction.

To minimize the load on the floor system to meet the existing allowable load capacity without making any modifications to the framing, the National Park Service should limit the number of people allowed inside the house at one time. To determine the maximum number of people that should be allowed inside the house at the same time, the allowable capacity (40 psf) determined from the analysis was multiplied by the smallest available room area inside the house and divided by 400 pounds (the IBC standard 300-lb person multiplied by an impact factor of 130%). Based on the results of these calculations, it was determined that the maximum number visitors that should be allowed inside the South Tenant Cabin at any one time should be limited to fifteen. The front gallery framing must be repaired before any loads are applied to it. If the front gallery is repaired with materials matching the existing, the number of people allowed on the gallery should be restricted to twenty at a time. If the Park chooses not to repair the front gallery, visitors should not be allowed on it.

The piers at the perimeter of the main cabin support the floor framing. Some of them are out of plumb and/or are missing some bricks and mortar. However, if the visitor load is

managed as described for the floor framing, they are adequate to support the load. For purposes of visual presentation, it is suggested that the piers be repaired as needed but that no attempt be made to correct their bearing or make them level since the angle of these short piers does not affect the stability of the building. The piers supporting the interior of the floor framing were inaccessible for inspection. If the National Park Service finds that they are deteriorated, they should be replaced, either with materials to match the existing or with more durable material. They do not affect the historical presentation of the building, but the retention of historic construction methods is important to the preservation of the building. The temporary concrete supports installed as stabilization by the National Park Service should be replaced with historically appropriate supports to clearly interpret the circa 1960 character of the building.

The roof rafters of the South Tenant Cabin were also analyzed for compliance with current building codes. Based on the International Building Code, the roof must support a live load of 12 psf. The roof was also analyzed for wind loading. In Louisiana, new roofs are required to resist a load of 15 psf for all roof slopes, and 22 psf for overhangs. The existing rafters are 2" by 6" members spaced at 3'-0" on center. The results of the analysis show that the roof rafters are not adequate to support the loading required by the IBC. The roof requires additional rafter support to meet code.

Drawings included with this report indicate the repairs necessary to strengthen the floor framing system to accommodate the intended use of the South Tenant Cabin to meet current building codes. The majority of repairs indicated on the drawings are below the floor structure and out of sight of visitors. However, the repairs may be detrimental to the historic fabric of the building, so the National Park Service may choose not to perform any modifications to the existing structure. If that is the case, the National Park Service **must** ensure that the floor load on the building does not exceed 40 psf by restricting the number of people inside the house to 15 and on the gallery to 20.

Chimney: According to a circa 1960 photograph taken of the South Tenant Cabin and Gabe Nargot's Cabin, the chimney on the South Cabin was intact at that time. Therefore, it is recommended that the chimney be rebuilt to its circa 1960 appearance using the remaining sound chimney bricks located at the northwest exterior corner of the cabin. When needed, the historic brick should be supplemented with new bricks to match the originals in strength and composition. Characteristics of the mortar should be identified to determine the appropriate mortar for rebuilding chimney.

Roof Framing System: At the roof, the existing rafters are not adequate to support the code-mandated loading. Strengthening the roof rafters to meet code requirements would involve adding a new 2" by 6" rafter between every existing rafter. If the National Park Service chooses not to add new roof rafters to the existing ones, the possibility of roof failure exists. When considering whether or not to strengthen the roof, the National Park Service should evaluate the historic performance of the existing roof under local weather conditions, which has apparently stood the test of time for approximately one hundred and fifty years, weighed against the effect of intrusion into the historic construction by the addition of new materials to prevent possible future failure.

Roofing: Overall, the condition of the corrugated metal roofing appears to be sound. It should be checked for pinholes or spots that have rusted through or will rust through in the near term. Roofing sheets with holes or those likely to leak in the near term should be replaced. All other roofing should be retained, except the non-historic sheet metal currently covering the space where the chimney once projected through the roof.

Windows: All of the window openings are historically significant. The materials analysis for this building indicates that the surround for Window E, located on the front elevation of the cabin, appears to be the oldest of the window casings and could be original to the building. The metal louvers and temporary stabilization plywood should be removed to allow for the appropriate treatment of the windows. The windows were installed in a crude manner. Some of the window frames are missing. Those that are existing are considered in poor condition. It is recommended that the frames be repaired, retaining as much of the historic fabric as possible. The existing 2/2 divided light sashes should be restored and reinstalled in the corresponding window frames. As five of the sashes have been lost, new replacement sashes, similar in materials and configuration, should be constructed. The treatment of these windows should be sensitive to the manner in which they were installed, maintaining their rough, yet historic appearance, while ensuring they are watertight for continued use.

Doors: All temporary stabilization doors should be removed. Historic Door 5 should be preserved and re-hung. A door for Door Opening 1 should be built to appropriately interpret the circa 1960 appearance of the west elevation. Historic Door 1 on the rear elevation of the North Tenant Cabin provides a reference for the character of a rear cabin door. Although only remnants exist, this door type is of board and batten construction and was connected to its frame by wrought iron strap hinges.

As discussed in the Requirements for Treatment section of this report, Door 5 meets width requirements for ADA accessibility and is the recommended handicapped access to the cabin. Therefore, the opening for Door 5 should be retained and preserved in its current configuration and size. The threshold for this access measures ¾" high, slightly exceeding the maximum threshold thickness for ADA access of ½". A supplemental piece of wood applied on each side of the threshold would provide the necessary slope to satisfy the access requirements while preserving the historic integrity of the threshold.

Interior Treatments

Flooring: The interior flooring in the South Tenant Cabin is historically important and should be retained and preserved.

Walls: The interior wall finishes of the cabin are varied and contribute to the historic character of the building. The interior finishes should be preserved as they currently exist. This includes all horizontal and vertical board and painted finishes. As it is unclear in exactly what year the house was last occupied, consideration should be given to the wallpaper known to have been applied in 1962 and later. It is possible that these papers

are representative of the proposed circa 1960 period of significance and should be preserved. Evidence of various finishes and intact window openings in Room 104, the rear gallery, suggests that the interior gallery walls are largely intact. However, removal of the temporary stabilization plywood that currently covers all of the interior rear gallery walls will be necessary to obtain a complete understanding of the existing historic wall finishes. Any remaining circa 1960 features consistent with those identified elsewhere in the cabin would be considered historically significant and should be retained and preserved.

Ceilings: The ceiling finishes in Rooms 102 and 103 consist of boards of varying sizes, paint and wallpaper. As with the other papered finishes in the cabin, the wallpaper on the ceiling in these rooms is in poor condition. There is some indication, based on the layers of wallpaper on the walls, that the ceiling wallpaper may have been installed after the end of the period of historical significance. The remaining historic wallpaper should be preserved in its current location for interpretive purposes. It is recommended that the wallpaper finish not be restored, largely because the full extent of the paper application is unknown.

The underside of the roof framing and corrugated roofing for the rear gallery serves as the ceiling finish in Room 104. The charred features that are evident on the underside of the rear gallery roof are possible testimony to a fire that occurred in the cabin, according to oral history. The existing rear gallery roof framing contributes to the history of this cabin. While structural recommendations suggest the possible need for supplemental framing throughout the entire cabin roof, the existing framing is significant to the historic character of the building and should be preserved.

Doors: All interior doors are historically significant to the cabin. Door 3 should be re-hung, and all the doors should be retained and preserved in their current finish. As discussed in the Requirements for Treatment section of this report, Door Opening 3 and 4 meet the necessary minimum requirements for ADA accessibility, although Door Opening 2 does not. However, along with exterior Door 5, which also meets ADA width requirements, interior Doors 3 and 4 provide access to the interior rooms of the cabin. Therefore, the openings should be retained and preserved in their current configuration and size.

The threshold for Door 3 contains two conditions to be addressed. In Room 102, a layer of ¾" thick flooring has been overlaid on the earlier flooring. However, the overlayment stopped about 3" before the threshold at Door 3. To achieve ADA accessibility at this threshold, the 3" gap between the overlayment and the threshold at Door Opening 3 should be filled with a compatible, ¾" thick material. At the west side of the threshold in Door opening 3, a 9" long by ¾" high, tapered wood transition should be applied at the threshold. This would achieve ADA accessibility and minimize the impact on the historic threshold.

Fireplace: The fireplace should be rebuilt.

Electrical System Treatments

Base the interpretive plan for the South Tenant Cabin on the circa 1960 power and electrical features. The South Tenant Cabin had electricity during the period of historic significance. Historic lighting fixtures remain in each of the three interior rooms. However, the remaining wiring and these fixtures do not meet National Electrical Code. In order to maintain the authenticity of the cabin, the existing fixtures (ceramic sockets and duplex outlet boxes) should be reactivated with updated power service, if possible, to support interpretation. If reactivation of the existing fixtures is not possible, it is recommended that new, ceramic, incandescent bulb fixtures be installed to match the existing, retaining the historic level of light once emitted. Additionally, updated power must be supplied and new wiring installed in the cabin. These measures will maintain the historic appearance of the lighting while meeting current safety standards. It is recommended that the original historic light fixture, junction box and wiring in one of the rear gallery rooms be retained in an inoperable condition for interpretive purposes. New service should be brought to the cabin as it was in 1960, the end of the period of historic significance, via overhead wiring attached to a minimal masthead. From this masthead, the electrical service would enter a junction box in the attic. The existing box would remain, but only to accommodate an accessible switch for power to the duplex outlet and single light fixture. Any additional power requirements in the vicinity of the cabin should be in a concealed vault on the site.

If any additional lighting is desired, it should be portable, task-related, and not have any impact on the historic features and character of the cabin. For many years the occupants of this cabin existed with only natural light, fireplace light, and kerosene lamps. Using the historically appropriate fixtures with bulbs compatible to those used in 1960, augmented by natural light, will present an accurate representation of the cabin environment.

Gas System Treatments

Though the remnants of a gas system exist at the South Tenant Cabin, there is no historical documentation, such as photographs or oral history, that describes what this system might have included. The limited access under the cabin and the location and amount of remaining piping did not provide enough evidence to further understand the routing of the gas piping. Possible components might have included gas space heaters, gas stove, and an exterior propane tank. Therefore, unless further investigation into the components of the system that was installed and their location is undertaken, no attempt to replicate it should be made.

APPENDICES

A. Supplementary Documents
B. Historic Photographs
C. Allowable Floor Load Calculations
D. Allowable Floor Load Drawings
E. Interior and Exterior Finishes Study and Photographs
F. Supplementary Photographs

SUPPLEMENTARY DOCUMENTS

North Slave/Tenant Quarters Stabilization by CARI Preservation crew. HS-O-1

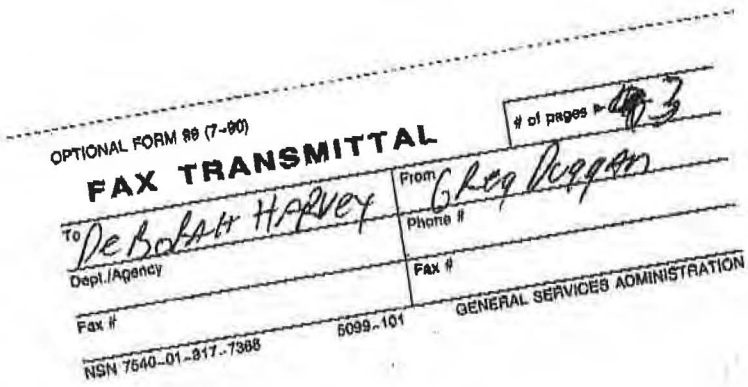
There has been no work done on the North tenant cabin other than routine cleaning of the structure by the Preservation Crew.

South Slave/Tenant Cabin Quarters Stabilization by the CARI Preservation Crew. HS-O-2
June 19 thru July 13 2000

The south boussiage wall was stabilized using 2x4's, hardware cloth and screening to prevent any remaining boussiage from falling out. The area west of the chimney was stabilized due to separation of the connections at the wall/ceiling line and the wall/floor line. 2 x 4's were used to stabilize this area. 16" square cinder pads were installed in numerous spots around the structure where the brick piers had rolled our of position or failed due to collapse.

Deborah Harvey Hope this information helps in your reports.

GREG DUGGAN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To Deborah Harvey

From Greg Duggan

Dept./Agency

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Fax #

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NSN 7540-01-317-7368 5099-101

GENERAL SERVICES ADMINISTRATION

Completion Report

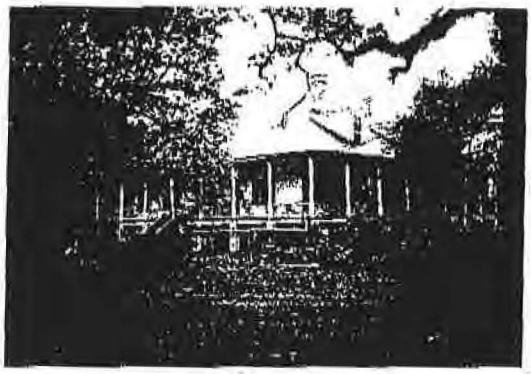
Oakland Plantation Emergency Stabilization

Cane River Creole National Historic Site

Project was accomplished by the
National Park Service
North East System Support Office
North East Cultural Resources Center
Building Conservation Branch
and
Denver Service Center

January 1998 through March 1998

10-26. View from the roof of Main House looking southwest over the site.



1-29. Southeast corner of the Main House in late November 1997 prior to stabilization.

13-2. Work complete on the East Pigeoneer and the Post Office/Store Building.

11-18. Work complete on the west elevation of the South Slave Quarter's.

Written and Compiled by: Tom Ballos, BCB Exhibits Specialist

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Word 97

UNITED STATES DEPARTMENT OF INTERIOR
NATIONAL PARK SERVICE
NESO – NCRC
FACE SHEET FOR COMPLETION REPORT

Park Cane River Creole National Historical Site 120 Church Street Natchitoches, Louisiana 71457	Region Southeast	Work Order Number 4526-0032-CZY Fund Symbol Year Programmed FY 1997 PCP Number
Location In Park Oakland Plantation 4386 Highway #494 Natchez, Louisiana 71456 Contract [ ] and/or Day Labor [X]	State(s) Louisiana County(s) Natchitoches Parish	Master Plan Number Master Plan Corrected By As Built Drawings By
Work Order Title Oakland Plantation Emergency Stabilization		Date Started January 1998 Date Completed March 1998

DESCRIPTION OF FIXED ASSETS (For completion by employee in charge of project)	**TOTAL COSTS** (For completion by FFO)
Work consisted of the emergency stabilization of ten of the structures located on the Oakland Plantation. Stabilization criteria was to maintain these ten building for a period of five years. ******* Cost pages will be generated after all project charges have been received and compiled. When they are complete they will be forwarded to the appropriate people. *******	Total =

Distribution No	Distribution To	THE FIXED ASSET DESCRIBED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS, SPECIFICATIONS, AND AUTHORIZED CHANGES		
		Submitted By	Title Exhibits Specialist, NESO, NCRC, BCB	Date
		Approved By	Title Branch Chief, NESO, NCRC, BCB	Date
		Costs Verified By	Title Administrative Officer, NESO, NCRC	Date

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UNITED STATES DEPARTMENT OF INTERIOR
NATIONAL PARK SERVICE
NESO – NCRC
COMPOSITION COSTS FOR COMPLETION REPORT

Work Order Number
4526-0032-CZY
Fund Symbol

Park	Region	Year Programmed
Cane River Creole National Historical Site 120 Church Street Natchitoches, Louisiana 71457	Southeast	FY 1997
Location in Park Oakland Plantation 4386 Highway #494 Natchez, Louisiana 71456		
Work Order Title Oakland Plantation Emergency Stabilization		

COMPOSITION OF COSTS		
Costs Charged to Funds Allotted to Field Finance Office		
	01. Personal Services	
	02. Travel	
	03. Contract Work	
	04. Material and Supplies	
	05. Other Direct Expenses	
	06. Operation of Equipment	
	07. Depreciation of Equipment	
	08. Purchase of Construction Equipment	
	09. Purchase of Other Accountable Equipment	
	10. Other Goods	
	11. TOTAL COSTS CHARGED TO FFO FUNDS	
Less		
	12. Residual Value of Equipment on Line 08	
	13. Value of Other Equipment on Line 09	
	14. Other Credits	
	15. FFO FUNDS CHG TO CONSTR PROJECT	
Other Costs		
	16. Non Fund Costs, Incl. free inv & donations	
	17. ON SITE CONSTRUCTION COSTS	
	18. PS&S, AP, or Facilitation Svcs @ % of Line 17	
	19. TOTAL CONSTRUCTION COSTS	
	20. Equipment included on Lines 12 and 13	
	21. Line 14 Credits	
	22. GROSS WORK ORDER COSTS	

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Project Narrative

Statement of Significance

Oakland Plantation was constructed between 1817 and 1821 and it has remained in one family through eight generations. The Federal Government received ownership of the site in November of 1997 and it became part of the Cane River Creole National Historic Site. Oakland Plantation is located at 4386 Highway #494, in Natchez, Louisiana 71456. It is part of Natchitoches Parish.

Goals and Objectives

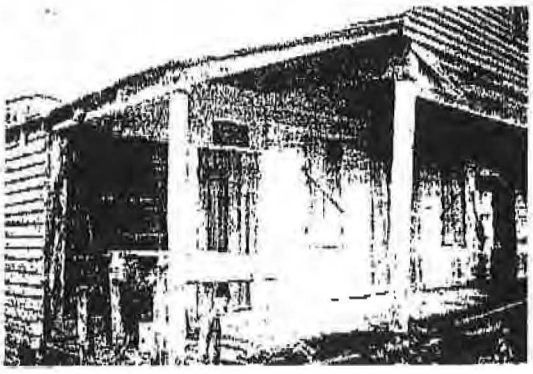
The purpose of the project is to perform emergency stabilization on ten of the structures located on the plantation grounds including the Main House. Stabilization treatment will be designed and installed to last a minimum of five years. Work will consist of exterior envelope stabilization and will include repair to roof covers, exterior walls, porches, windows and doors. Roof repair will encompass refastening roof cover panels on all the buildings and applying a "Top Coat" treatment to the roof and gutters of the Main House. Repair to the walls will involve the application of 2x4" studs and vented plywood panels over failing sections including the windows and doors. Structural work will include removal and storage of a fallen chimney in the North Slave Quarter's, propping up failing porch columns, framing members, and roofs at various locations, and augmenting the supporting posts, beams, and braces on the Wagon Shed.

Existing Conditions

The site has been without maintenance for a long time. Brick piers have failed causing wood framing members to be in contact with grade and on many of the structures this has led to failing porch columns. Metal corrugated roof panels are loose and/or have blown or fallen from their covers. The chimneys in the Slave Quarter's have failed and the one in the North Slave Quarter's has fallen. Siding is loose or decayed exposing wall cavities and in many areas, the interior spaces. Vegetation (mostly poison ivy) is growing on many of the buildings. The occupied Main House has several roof leaks and the roof drainage system has many holes and missing leaders.

(note... photos do not necessarily correspond to the text on each page but are in an order of work accomplished)

1-35. West elevation of the Store/Post Office prior to work. Note decayed porch deck.



2-6. East elevation of Store/Post Office prior to work. Deck and columns same as back.

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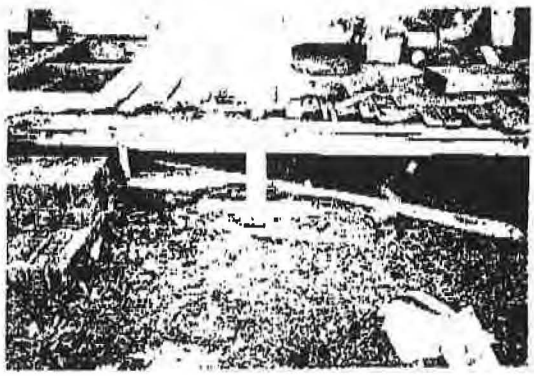
Techniques, Material, and Tools

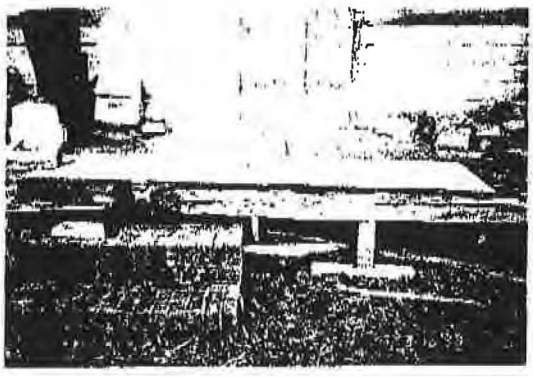
1) *Temporary Wall Enclosures.* Many of the exterior walls on each of the structures had loose or missing sections of siding. Instead of just screwing plywood directly on the surface we provided an air space by using 2x4" CCA pressure treated studs screwed vertically over existing wall posts. The studs were applied directly over the siding acting to hold loose and decayed pieces in place. They were fastened via 3" and 4" galvanized screws. Pressure treated ACA ½" CDX plywood was screwed (using 1-5/8" galvanized screws) over the studs to provide the necessary five years of protection. Unless otherwise stated in this completion report all lumber and plywood was pressure treated and all screws were galvanized #2 drive Phillips heads. We installed 4x16" aluminum, screened louvered vents, at the top of the walls, between each of the studs. The space between the studs at the bottom of each wall will circulate air through the top vent. Where the siding, generally the asphalt, could be patched and replaced we did so blending the patches into the existing providing proper water shed. Aluminum flashing and an asphaltic tar were used where they provided us with the necessary time and function.

2) *Roof Repair.* Roof repair, in many instances, was handled in a similar fashion to the walls. 2x4" studs were laid directly over the existing roof covers and screwed in place. The plywood was then cut and installed on the studs. The difference was that we did not install any vents and the plywood was covered with 90# asphalt mineral surface roofing. This treatment was applied to the roof covers made up of wood shingles and not the metal roofs. On the corrugated metal roofs, we replaced missing panels in kind screwing them in place. The exception was the wagon shed, it was clad in metal but the framing was not sound enough to hold replacement roofing. We installed a supplemental wood roof over the top of it, see Wagon Shed further on in this report. Two other products were used. One is the TopCoat Flexseal product which is a solvent based synthetic elastomeric compound designed to line and waterproof old gutters and capable of withstanding ponding water. The other is the basic TopCoat product, a liquid applied, water based, UV curing seamless rubber membrane which comes in two consistencies. One is heavier than the other and is applied with their Topester fabric to joints, fastener heads, and seams. The heavier product is called the TopCoat Flashing Grade and it is followed with a finish coat of regular TopCoat.

3) *Tools and Equipment.* The following tools and equipment were purchased to accomplish work Oakland Plantation. The items have been secured inside the Mule Barn: two cum-a-longs,



13-22. Temporary treated 4x4" joist and post augmenting the deck @ back of PO/Store.



13-19. Back deck of Post Office/Store after repair and covered with treated plywood.

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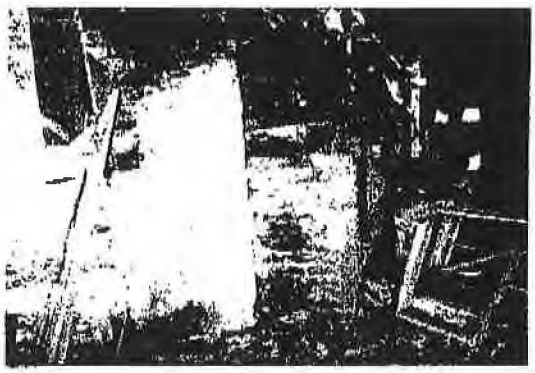
two 10' nylon chokers, three safety belts, one framing square, one 4' sheet-rock square, one clip-on light, two trouble lights, two 100' 12/3 electrical extension chords, two 50' 12/3 electrical extension chords, one 25' 3 outlet extension chord, one 4 way chord, two 2' pry bars, one 3' pry bar, two 4' pry bars, two brooms, four tarps, two hand saws, one 30 gallon air tank, one 4' step ladder, one 6' step ladder, one 28' extension ladder, one 32' extension ladder, one 4' aluminum level, one ladder stabilizer, two 28' 3/8" lengths of chain and hooks, two 75' garden hoses, one brass nozzle, one small grease gun, five 5 gallon gasoline (plastic) containers, one 1 gallon (plastic) gasoline container (mixed 2 cycle for chain-saw), two Porta-Cable 14.4 volt battery drill/drivers, two Porta-Cable 7-1/4" circular saws, one Porta-Cable tiger saw, one 5000 watt Coleman generator, one Poulan 20" chainsaw, one 4' steel job box, and miscellaneous material and supplies. We also purchased 24 frames of steel tube scaffold, 42 cross braces, 8 screw jacks with base plates and 8 base plates (without screws), 21 aluminum/plywood platforms, 70 toggle pins, 10 guard rail posts, 14 safety rail posts, 2 top safety rails, 2 mid safety rails, 1 hoist, and 1 12" hoist wheel.

Main House

1) *Brick Supporting Columns*. One of the brick supporting columns under the kitchen, West side, is leaning. We installed a temporary 8x8" pressure treated wood post adjacent to it to pick up the load. We also installed a ½" plywood shim on top of another column right next to the it because there was a space and the wood beam was not in contact with the column.

2) *Roof Cover Repair*. The roof was inspected during several rainstorms and we found many leaks. The Northwest hip was leaking along much of its length due to missing and failing hip caps. We repaired this by thoroughly cleaning the area then applying TopCoat Flashing Grade in the cracks and openings followed by wrapping the hip with 12" wide by 24" long pieces of aluminum flashing applied directly over the existing caps. The flashing was installed with a 6" lap over its top end and screwed in place. Two applications of TopCoat Flashing Grade and one finish coat of regular TopCoat were applied over the flashing to insure the water would stay out and the flashing will stay down. The other leaks were all around the valley flashing at the three dormers on the East slope of the roof. Close inspection revealed the asphalt tar at the top of each valley had dried out. The tar was probably applied after the roof was installed to compensate for the minimal amount of length the flashing extends under the shingles. We cleaned the area, scraped the old loose tar away, and replaced it, in kind.

2-36. Northwest elevation of North Slave Quarter's prior to stabilization work.



6-19. North Slave Quarter's. Chimney propped up and being dismantled and stored.

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3) *Roof Drainage System.* The gutter was full of holes and leaking throughout its length. Many of the leaders were missing or disconnected. Aluminum Flashband, a product similar to Ice & Water Shield, was used to line the gutter where holes were present. Two applications of TopCoat Flexseal were applied over the Flashband product. The loose eave tubes were reset, one was replaced, and new 3x4" temporary aluminum leaders (downspouts) were installed to replace the missing ones. The existing units were re-secured. We extended the leaders at their bottom with an additional 10' length making sure the water shed away as far as possible.

4) *Windows.* We installed a louvered plywood blank over the window on the West side of the kitchen addition. The unit was failing. We left the window in place.

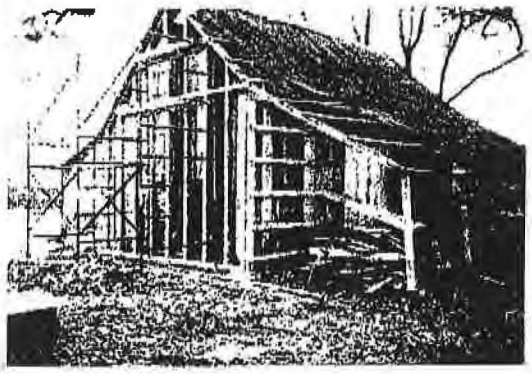
East Pigeoneer

1) *Exterior Walls.* The siding was loose and riddled with holes. It required the full 2x4, plywood and vent system as previously stated. This was the first structure and when we selected vents we chose small 3" circular soffit vents which turned out to be too small. We later supplemented them with 4x8" aluminum vented units. We purchased dark bronze paint and spray painted each of the vents to minimize the bright color. A 2x4 and plywood door was constructed and installed over the existing door along with a new hasp and padlock.

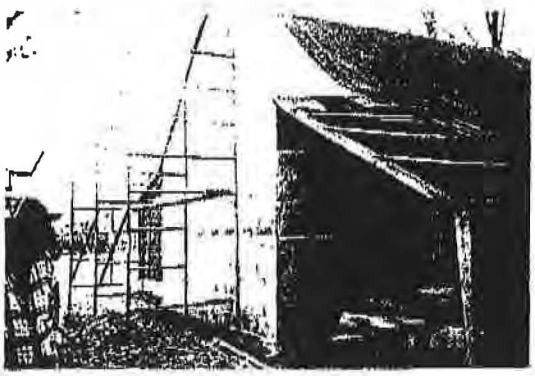
2) *Roof Cover.* The framing, sheathing, and wood shingles are decayed and have lost any of their structural integrity. We worked carefully on the roof and installed a temporary roof cover over the existing. It was constructed as stated above out of 2x4's, plywood, and 36" 90# mineral surface roofing. No venting was installed on the roofs but the eaves are all open and along with the wall vents should be adequate to ventilate the interior spaces of the structure.

West Pigeoneer

1) *Exterior Walls.* The siding was loose and riddled with holes. It required the full 2x4, plywood and vent system as previously stated. The existing diagonal bracing on the West side of the structure was removed while we applied the wall treatment to this side. It was replaced when we were finished. 8x16" painted, aluminum louvered vents were installed into the walls between each of the new studs. A pair of 2x4 and plywood doors was constructed and



12-37. North Slave Quarter's. Chimney clean and stored, wall being framed in.



12-33. North Slave Quarter's. Wall framing, sheathing, vents and roof complete.

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installed over the existing doors along with a new hasp and padlock.

2) *Roof Cover*. The framing, sheathing, and wood shingles are decayed and have lost any of their structural integrity. We worked carefully on the roof and installed a temporary roof cover over the existing. It was constructed as stated above out of 2x4's, plywood, and 36" 90# mineral surface roofing. No venting was installed on the roofs but the eaves are all open and along with the wall vents should be adequate to ventilate the interior spaces of the structure. There was some sort of wood hip feature extending out of the top of the roof. It was not moved and a temporary enclosure was fabricated around it. The lower shed roof over the double doors on the East side of the structure was enclosed with a new temporary roof.

The Wagon Shed

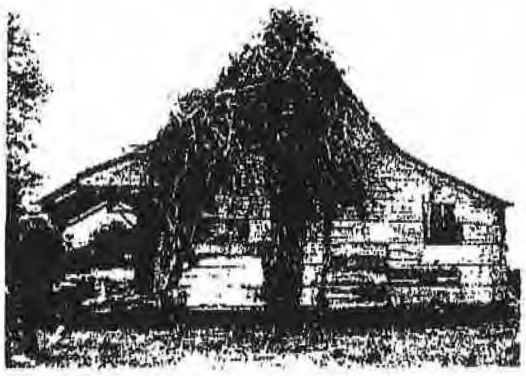
1) *Structural System*. The open timber framed structure was near collapse. The rafter plates, rafters, collar ties, roof sheathing, and many of the posts are decayed. However the structure is still standing. We installed a diagonal cribbing system to support the structure from leaning on the East side. We then installed temporary walls along its length to support the rafter plates and eaves. The failing rafter system required augmentation and we fabricated and installed wood trusses throughout to assist with keeping the roof from further collapse.

2) *Roof Cover*. When we were convinced we had a sound platform from which to work, we installed 2x4 and 2x6" temporary rafters on edge over the existing rafters, roof sheathing, and corrugated metal roof cover. The rest of the work was the typical plywood and mineral surface cover as previously stated. However on this roof we extended the rakes and eaves several inches over the existing roof cover so as to shed water as far away as possible.

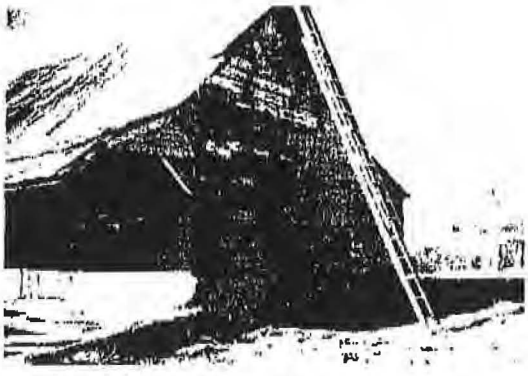
3) *Vegetation*. We removed a couple small branches and some brush from around the site so we could work on it. We also cut away a limb that was leaning on the structure.

South Slave Quarter's

1) *Exterior Walls*. Most of the exterior wall on the South side of the building had collapsed and fallen into the yard. The fabric was collected and stored inside the building. A new wood



3-11. South Slave Quarter's showing the poison ivy growing on the north elevation.



6-20. South Slave Quarter's showing poison ivy removed and stabilization in progress.

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framed wall was installed which we extended to cover the remaining side. We covered the wall with our typical plywood and vent treatment. The West wall received the same treatment and we installed extra vents over the windows for light and ventilation. A temporary 2x4 and plywood door was built and installed over the West side existing door.

2) *Poison Ivy.* The poison ivy, which encompassed the North side of the building, was removed. It actually came off easier than we thought but it had migrated behind much of the asphalt siding and that came off with it. We installed a temporary stud and plywood wall as previously stated to cover and protect the exposed wood sheathing.

3) *Roof Cover.* The corrugated metal roofing was refastened where it had become loose. Overall it was in good condition.

4) *East Porch.* Some of the porch decking was missing and/or decayed. The floor framing members in contact with grade were lifted and placed on pressure treated pads. Temporary columns were installed to prop up and secure the porch roof.

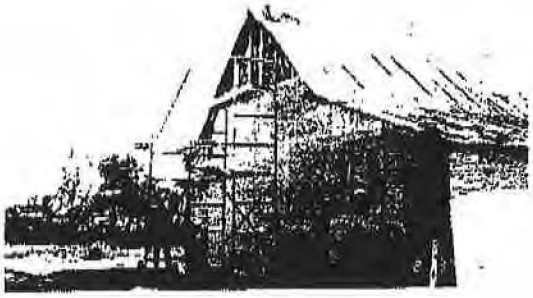
North Slave Quarter's

1) *Chimney.* The chimney was propped up so it wouldn't fall down when we dismantled it. It was taken down, the stray bricks collected and stored inside the building.

2) *Exterior Walls.* We applied pressure treated plywood to the bottom 20" of the north wall, covered it and a few other openings with roll roofing, and built and installed a temporary door to replace the missing one. We installed pressure treated 2x4's and plywood on eight feet of the south wall that was not covered with the South porch roof and put louvered vents between the studs. The east wall was patched with new roll roofing and tar was applied at the top of the wall to keep water from penetrating the existing asphalt siding.

3) *Roof Cover.* We replaced several sections of corrugated roofing on the man roof and covered the chimney opening with additional pieces of the same material.

4) *South Porch.* The material on the porch was re-organized and several temporary porch posts were installed to prop up the sagging roof. Floor framing members in contact with grade were



8-11. South Slave Quarter's, north elevation wall studded and plywood being applied.

9-24. South Slave Quarter's, north elevation wall complete. Note poison ivy on ground.

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lifted and placed on pressure treated pads.

5) *Tree Limb*. We cut and removed parts of a tree limb that was hanging over the ridge of the structure. We only took the part of the limb that was actually threatening the roof.

The Overseer's House

1) *Exterior Walls*. The North and East walls received patching to the asphalt siding. The South and West walls received to full 2x4 and plywood treatment. We installed additional venting over the windows for light and ventilation. A temporary 2x4 and plywood door along with a new hasp and padlock was installed over the existing West entry door.

2) *East Porch*. The porch was missing a couple of columns and they were replaced with temporary 4x4" CCA pressure treated yellow pine posts.

3) *Collapsed Roof Section*. The section of porch and house roof at the Northeast corner of the structure had previously collapsed when a tree fell onto the building. There was a wind blown tarp installed to temporarily close in the opening. We removed the old tarp and replaced it with a new one. The pieces of the house were picked up and placed on the front porch.

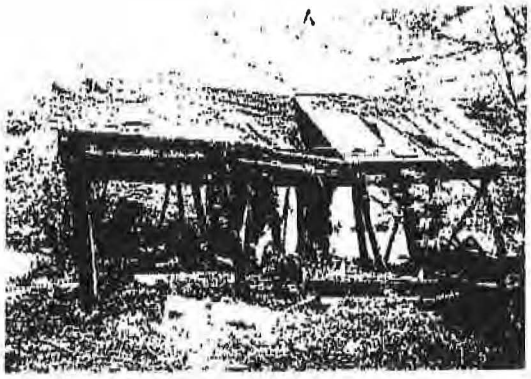
The Square Crib

1) *Roof Cover*. The corrugated metal roof cover was in good condition. Some refastening of the roof and gable panels were needed and they were taken care of.

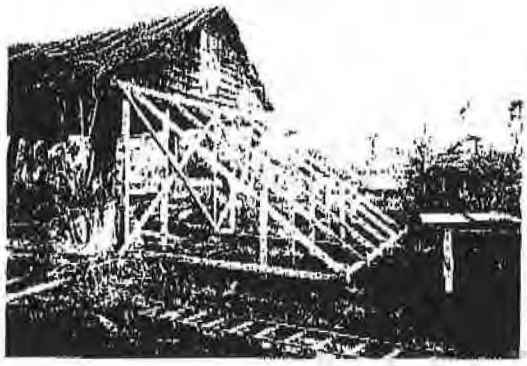
2) *Structural Repair*. We installed a half dozen temporary pressure treated 4x4" posts to replace the ones that had failed or were missing.

The Cook's House

1) *Roof Cover*. The few sections of loose corrugated metal roofing were refastened as part of the storm damage work.



3-18. The Wagon Shed prior to stabilization work. Note the deteriorated condition.



5-1. The Wagon Shed during structural stabilization work. Note diagonal cribbing.

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2) *Exterior Walls*. We installed 2x4" vertical nailers on the west wall and covered them with ½" pressure treated plywood. The loose wall on the East side was re-framed in place to keep it from falling. The six extra sheets of ½" pressure treated plywood were laid on the open porch joists. They are not fastened and can be used for other things if they are needed.

3) *Framing Members*. The sill on the West wall was dug out of the ground and propped up on a pressure treated pad.

4) *Porches*. We picked up the porch joists lying on grade and set them on CCA pressure treated blocks. Ten, pressure treated 4x4" posts were used to prop up the failing porch roof.

The Store and Post Office

1) *Exterior Walls*. We removed the air conditioning units from the south and west walls. The modern air conditioners were disposed of in the Dumpster. Two windows on the south elevation and two windows on the west elevation were covered with plywood blanks. Painted aluminum louvered vents (4x12", 2 each) were installed in each of the window blanks.

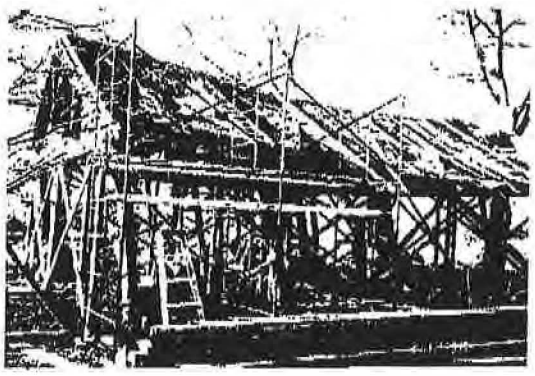
2) *East Porch*. The framing members on the front (east) and back (west) porch decks which were in contact with grade were lifted and set on pressure treated pads. We re-supported some existing cribbing on the North wall.

Storm Damage

On February 11, severe high wind and rain passed through the site causing damage to many of the structures. Steve Fortin, BCB CARI Stabilization Site Foreman, and Randall Conrad, DSC Project Job Captain, inspected the buildings. After the inspection, Mr. Conrad developed a scope of work and cost estimate. The work has been accomplished. Following is a list of these additional tasks:

1) *Carriage House*. Reattach the lifting roof cover at the upper west corner of the south roof over the center entry.

7-5. The Wagon Shed, south slope of roof during structural stabilization work.



7-19. The Wagon Shed, north slope of roof during stabilization. Note int. augmentation.

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2) *Wash House.* Reattach the loose roofing at the east edge.

3) *Carpenter's Shop.* Reattach the loose roofing at south edge of east porch and west edge of south roof.

4) *Tractor Shed.* Sister the decayed roof rafter at the west edge of the center of the structure. Realign and reattach the loose roof panel at the east edge of the north end of the structure.

5) *Square Crib.* Reattach the lifting roof panel at the lower east edge.

6) *North Slave Quarters.* Replace the missing roof panel at the east edge.

7) *South Slave Quarters.* Reattach the lifting roof panels at north and south edges of the east roof slope over porch. Install plywood over missing section of asphalt roll siding on the north side of the house.

8) *Overseer's House.* Install plywood over the missing asphalt roll siding on the south side of the house.

9) *Little Chicken Coop.* Reattach the loose roofing on the north and south slopes of the roof.

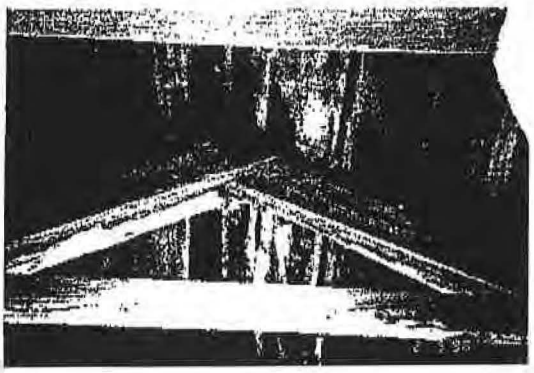
10) *Big Chicken Coop/Setting Coop.* Reattach the loose roofing at the east edge of the north roof.

11) *Fattening Pen.* Reattach the loose roofing near the south edge of the west slope of the roof.

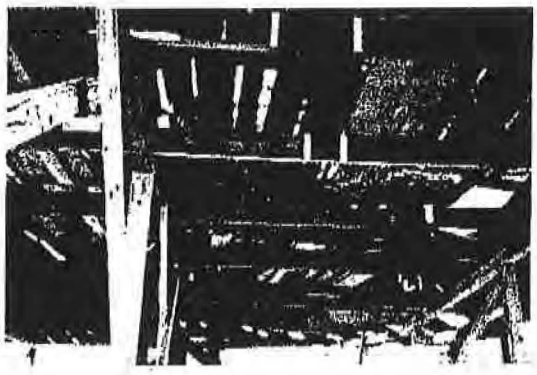
12) *Storage Shed.* Reattach the loose roofing.

13) *Cook's House.* Reattach the lifting roofing on all slopes of the roof.

Storm damage was accomplished in conjunction with our stabilization repair. Pedro Deleon, Exhibits Specialist at the BCB, and Randall Conrad, Job Captain for DSC together worked up the costs and a scope of work.



7-23. The Wagon Shed. Interior truss fabricated to support roof during stabilization.



7-29. The Wagon Shed. Notice temp. Interior cribbing and bracing supporting roof.

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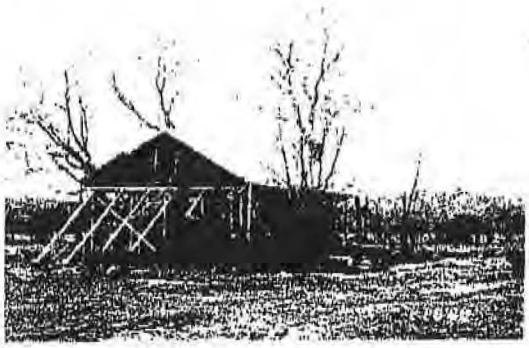
Recommendations

1) *Main House Roof Cover*. Although we repaired all the areas on the roof that were leaking, there are several other spots where water staining and mold exist. We would recommend that the cover receive a high priority in the restoration scheme for the Plantation. The existing asbestos cement shingles have reached their serviceable life. They are brittle and beginning to become friable. Also, the flashing detail at the dormers on the East slope of the roof will require a redesign so as to be effective. A new gutter system will also be needed.

Archeology

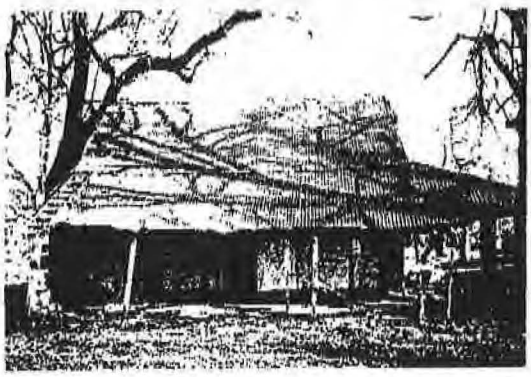
Evaluate the site as soon as possible. Some of our work could not be accomplished, specifically cleaning out and disinfecting the Pigeonner Buildings. We found numerous artifacts in abundance about the site.

10-10. The Wagon Shed. Asphalt roof cover on south slope almost cmplete.



10-14. The Wagon Shed. Plywood sheathing on the north slope ready for asphalt cover.

3-35. The Cook's House. Northeast elevation prior to stabilization work.



8-4. The Cook's House. South elevation prior to stabilization work.

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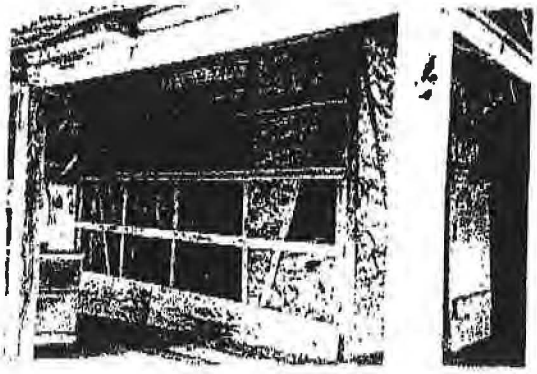
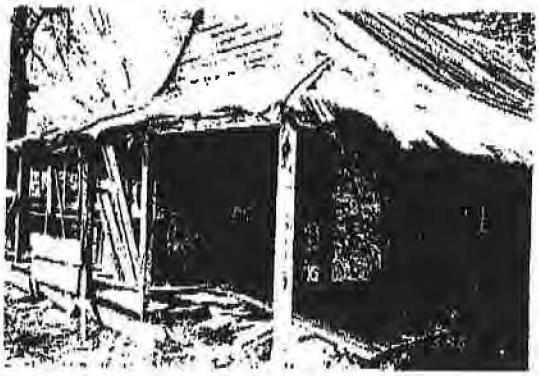
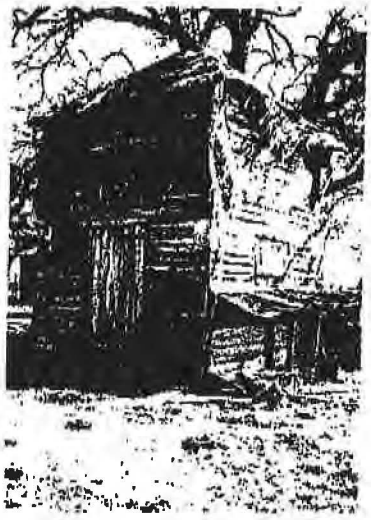


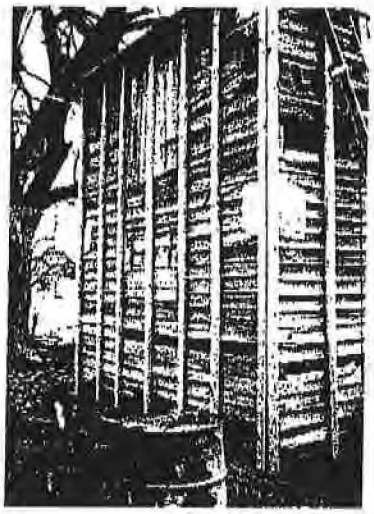
11-38. The Cook's House. Note temporary wall framing in progress.



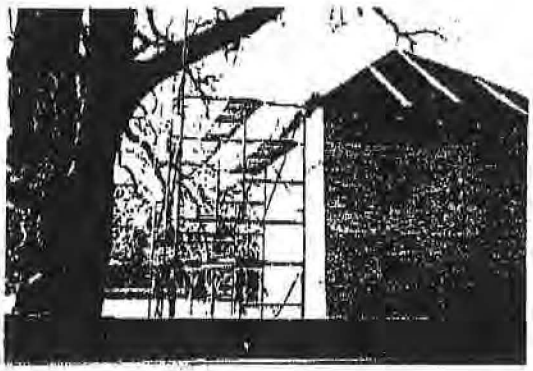
11-35. The Cook's House. Temporary plywood wall almost complete.



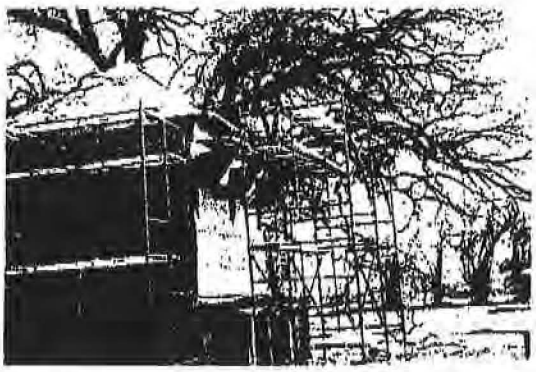
5-4. The East Pigeoneer prior to emergency stabilization.



5-3. The East Pigeoneer during installation of the studs.



4-26. East Pigeoneer during installation of the wall sheathing. Note studs on roof.



6-21. East Pigeoneer during installation of the roof sheathing. Note shed roof below.

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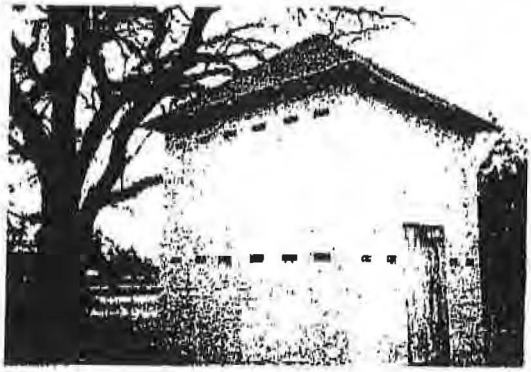
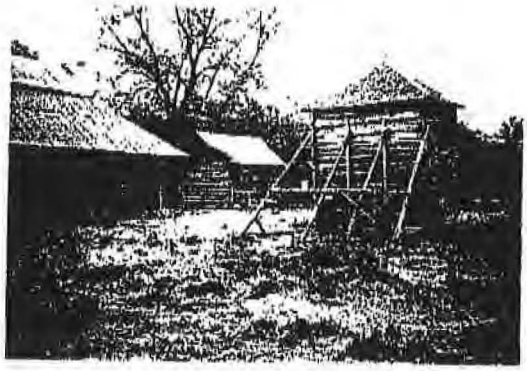
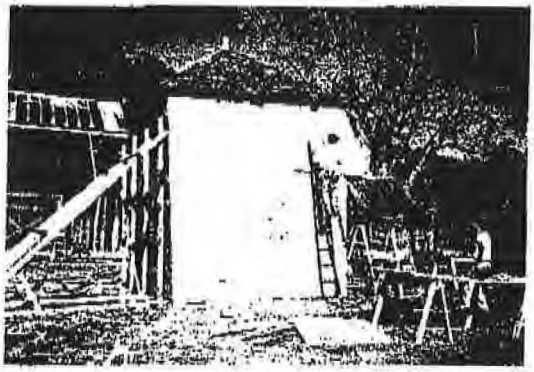


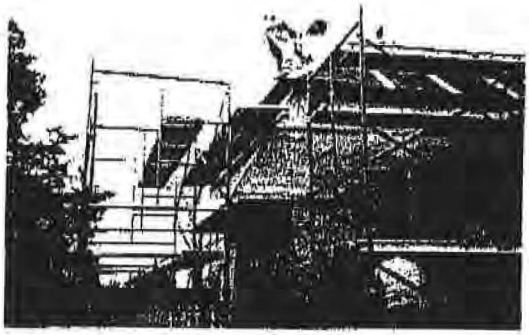
8-22. The East Pigeoneer. Complete except for the temporary plywood door.



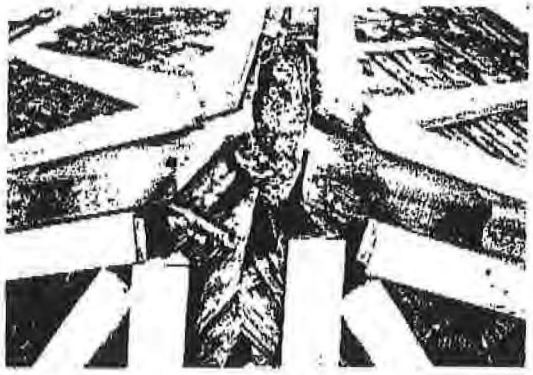
2-17. The West Pigeoneer prior to stabilization work. Note existing diagonal bracing.



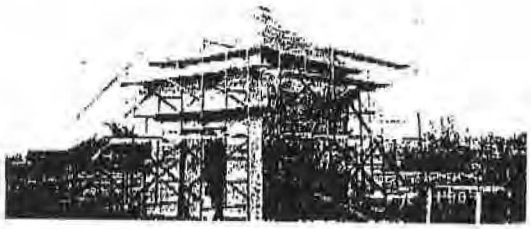
5-2. West Pigeoneer during installation of the wall studs and plywood sheathing.



6-24. West Pigeoneer during installation of roof cover. Note cover over existing dr roof.



8-23. West Pigeoneer roof studs. Note finial remains. We build cover to protect it in situ.



8-15. West Pigeoneer showing the completed temp. roof cover. Note finial cover.

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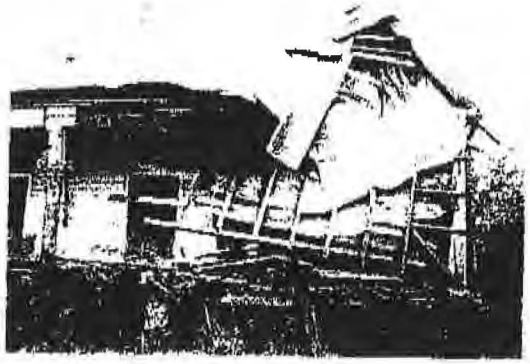
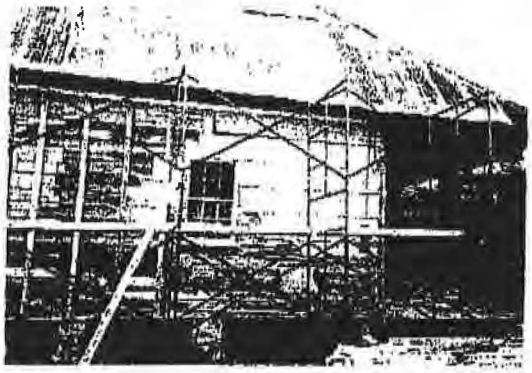
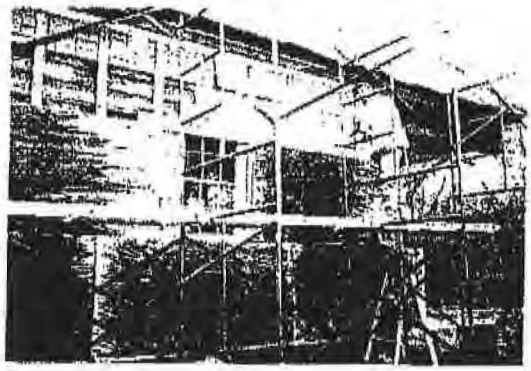
13-6. Complete West Pigeoneer. Notice asphalt, venting, and temp double doors.



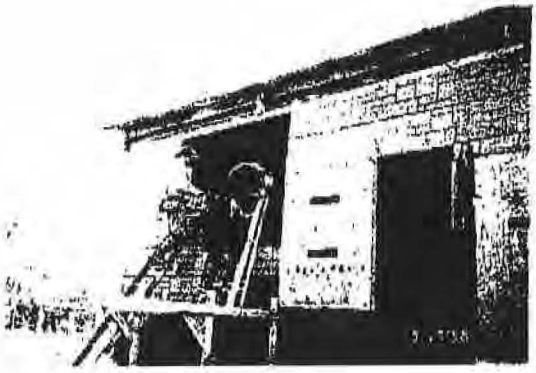
2-27. The Overseer's House. Prior to stabilization. Tree fell on NW corner of house.



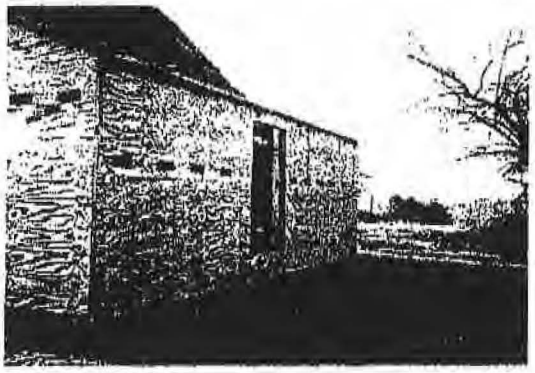
9-37. The Overseer's House during installation of wall studs to hold and vent plywood.



9-36. The Overseer's House during installation of the protective temporary wall covers.



12-18. The west elevation of the Overseer's House during installation of temp wall cover.



9-25. The Overseer's House showing completed west elevation wall enclosure less door.

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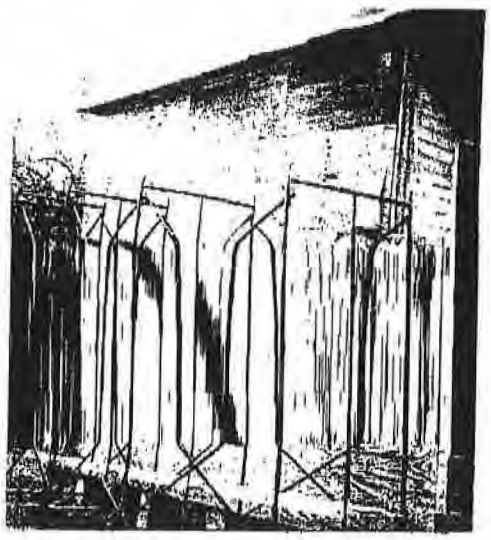
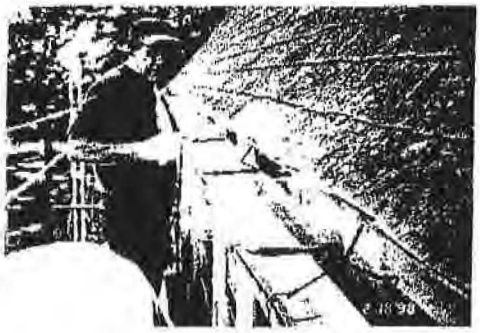
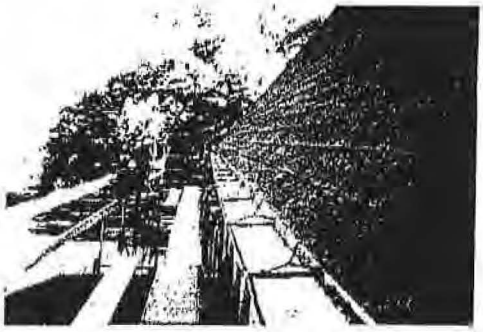


9-30. The Overseer's House, south elevation wall complete. Notice the louvered vents.

9-17. The wrap around gutter on the Main House during the patching process.



9-19. The wrap around gutter on the Main House during the patching process.



9-14. The wrap around gutter on Main House complete after final TopCoat application.

11-21. West elevation of the Main House showing the stabilized window complete.

10-16. "The Gator". John Deere Tractor owned by Park was invaluable to our work.

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PROJECT PARTICIPANTS

The following people have performed some service on the project. It is felt that they could provide valuable information about the products, material, methods, and techniques used in accomplishing the project. Personal telephone numbers have not been provided however you should be able to get in touch with everyone through their place of employment.

National Park Service, North East Cultural Resources Center

Administration (978) 970-5170

Linda Conte, Administrative Officer
Janice Gaudreau, Contracting Officer
Deborah MacDougall, Personnel Specialist

Building Conservation Branch (978) 970-5170

Stephen Spaulding, Branch Chief
Lisa Sasser, Project Manager, Historical Architect
Barbara Yokum, Architectural Conservator
Michael Fortin, Senior Exhibits Specialist
Maire Pendergast, Administrative Technician
Tom Ballos, Exhibits Specialist
Pedro Deloen; Exhibits Specialist
Frank Rivera, Woodcrafter
Steve Fortin, Woodcrafter
Scott McDowell, Carpenter
Kevin Monthie, Carpenter
Nick Diamandtaupolis, Carpenter Worker

National Park Service, Denver Service Center

Amy Schneckenburger, Project Manager (303) 987-6629
Randall Conrad, Job Captain (303) 969-2572

National Park Service, Cane River Creole National Historical Site (381) 352-0383

Kate Richardson, Superintendent
Lee Jordan, Program Coordinator
Wanda Anderson, Administrative Technician
Ron Bolton II, Maintenance Mechanic

National Park Service, National Center for Preservation Technology and Training

John Robbins, Director (318) 357-6464

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National Park Service, South East Support Office (404) 562-3124

Richard Ramsden, SESO, Chief of Architecture and Cyclic Division

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VENDORS

The following Vendors have provided material or services assisting us in accomplishing the project. The project files that are stored in the BCB – Lowell Archives contain specific information on quantities and specifications of consumed items.

Abatron, Incorporated 5501 – 95th Avenue Kenosha, Wisconsin 53144 USA Phone 414 653-2000 fax 414 653-2019	Wood restoration kits. Liquid Wood, Wood Epox, and Solvent. Accessory items such as pumps and bottles and a couple lengths of structural fiberglass rod. (Good source for later)
Apahauser Access Systems 31 Thorpe Road Needham, Massachusetts 02194 Phone 617 449-6900 fax 617 449-6908	They provided us with the locksets.
Castall, Incorporated Weymouth Industrial Park East Weymouth, Massachusetts 02189 Phone 617 337-6075 fax 617 337-2820	Marine grade structural adhesive epoxy, Castall E552 Epoxy. Wood epoxy consolident, Castall Seep N Seal Epoxy. Faring compound, Castall F-733. (Good source for later)
Clinton Sparks Post Office Box 806 Provencal, Louisiana 71468 Phone 318 352-3357	Rented us a fully furnished house located at 130 Francis Street in Natchitoches, LA.
Natchitoches Lumber Yard 814 Washington Street Natchitoches, Louisiana 71457-4728 Phone (318) 352-1995	They provided us with most of the building material and supplies.
Natchitoches Septic Service Route #2 Box 102 Natchitoches, Louisiana 71457 Phone 318 352-2545	Provided us with a portable toilet.
Residex Corporation 11 Clearbrook Road Elmsford, New York 10523 Phone 800 526-4222	Bora-Care wood preservative. Good source for later
Roofing Supply, Incorporated of New Orleans 3940 Barron Street Metaire, Louisiana 70002 Phone 504 455-6161	Our local source for TopCoat products Rene Daigle, Sales
Superior Scaffold Services, Incorporated 520 Est Luzerne Street Philidelphia, Pennsylvania 19124-2200 Phone 215 743-2200	Bob Robinson, Contact We purchased the scaffold from this GSA Contractor.
Tremont Nail Company 8 Elm Street Wareham, Massachusetts 02571 Phone 508 295-0038	Reproduction nails, cut spikes and common cut nails, all galvanized. Good source for later.

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HISTORIC PHOTOGRAPHS

Carrie Helaire with her charges and the rest
of the Prud'homme family, 1932.
From the Prudhomme Family Collection

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Image 65: Oakland Plantation. South Tenant Cabin, date unknown (photograph courtesy of Cane River Creole National Historic Park Archives). The South Cabin as seen through the ruins of "Gabe Nargot's Cabin.".

ALLOWABLE FLOOR LOAD CALCULATIONS

HARTRAMPF

CALCULATION SHEET

PROJECT NAME: **CANE RIVE CREOLE NHP SOUTH TENANT HOUSE**

Project No. 02111.06 Sheet 1 of 1

Calculated by: C. Tran Date: 2/20/2003

SUBJECT: Structural Analysis

Structural Analysis Criteria

Building Code: International Building Code (IBC) 2000
National Design Specification for Wood Construction 1997

Chapter 16: Design Loads:

Table 1604.3: Deflections shall be limited to: L/240 for Live load on floor beams

Deflection is not a safety concern. The limits on deflection are for the comfort of the occupants. The code calls for deflection to be limited to L/240. However, since the house is a historical structure and deflection is not a safety concern, the allowable deflection was increased to make sure that if the floor system would have to be strengthened, it would be for strength and not deflection.

§1605.3.1: Load Combinations, Allowable Stress Design:
1) Dead
2) Dead + Live

§1606: Dead loads: 10 psf

§1607.1: Live loads: 100 psf (At porch area)
60 psf (Inside house)

§1607.9: Live Load Reductions: Not taken

In the *Visual Analysis* program, the dead and live loads were entered into the model. The floor system was analyzed to meet flexure, shear, and deflection criteria.

§1609: Wind Loads: None, since only the floor system is being analyzed.

From NDS 1997, Design Values Southern Pine:
F_b=1500 ksi; F_b'=1725 psi (F_b can be multiplied by the repetitive member factor C_r=1.15)
F_v=90 ksi
E=1440 ksi

$f_b = M/S$
$f_v = 3V/2bd$
Δ_{actual}= Given in *Visual Analysis* results

Each beam was checked for failure using the following criteria:

$f_b < F_b$
$f_v < F_v$
$\Delta_{actual} < \Delta_{allow.}$

Improvements were made to all failed beams until the beams were adequate.

See attached *Visual Analysis* output and calculations.

Roof Rafters:

The roof rafters were also analyzed for compliance with current building codes for strength.

Per the IBC, the roof would have to support a live load of 12 psf. The existing rafters are 2x6 spaced approximately 3'-0" o.c. Since the rafters are not in good condition, a 25% material reduction was taken to account for the deterioration of the material.

The existing roof rafters would not be able to support the required roof loads. Even if the rafters were in excellent condition, they would not be able to support the required roof loads because the spacing of the members are too far apart.

A new 2x6 SYP member would have to place between every existing roof rafter for the roof system to comply with current building codes.

See attached calculations.

HARTRAMPF, Inc.
Engineers, Surveyors & Architects
180 Allen Road NE / Suite 217-N
Atlanta, Georgia 30328-4842
Telephone 404-252-2063

JOB NAME Cane River Creole NHP North & South Tenant Houses
JOB NO. 02111.05 / 02111.06 SHEET NO 1 OF
CALCULATED BY C. Tran DATE 20 Feb 2003
CHECKED BY DATE
SUBJECT Roof Rafters

CALCULATION REPORT

HARTRAMPF

Roof Load: $L_R = 20 R_1 R_2$ (2000 IBC Eq 16-4)

$A_L = (22.58')(11.5') = 260\ FT^2$

$R_1 = 1.2 - 0.001 A_L$ when $200\ FT^2 < A_L < 600\ FT^2$ (Eq 16-6)

$= 1.2 - 0.001(260)$

$= 0.94$

Roof Slope = 45°

F = 12 (number of inches of rise/foot)

$R_2 = 0.6$ for $F \geq 12$ (Eq. 16-10)

$L_R = 20 R_1 R_2 = 20(0.94)(0.6) = 11.3\ PSF \rightarrow$ 12 PSF MIN. ALLOW

Existing Roof Rafter: 2x6 L = 16' Spacing = 3'-0"

Properties: $A = 8.25\ in^2$

$S_x = 7.56\ in^3$

- Since Rafters Are Not In Good Condition, A 25% Reduction of Material Will Be Taken For Deterioration.

$w = (12\ PSF)(3') = 36\ PLF$

$M = \frac{(36\ PLF)(16')^2}{8} = 1152\ FT\text{-}LB$ $\quad V_{MAX} = 288\ LBS$

Check Existing Rafters (25% Reduction):

$f_b = \frac{M}{S_x} = \frac{(1152\ FT\text{-}LB)(12")}{0.75(7.56\ in^3)} = 2438\ PSI > F_b = 1650\ PSI$ N.G

$f_v = \frac{1.5V}{A} = \frac{1.5(288^{\#})}{0.75(8.25\ in^2)} = 69.8\ PSI < F_v = 90\ PSI$ OK

HARTRAMPF, Inc.
Engineers, Surveyors & Architects
180 Allen Road NE / Suite 217-N
Atlanta, Georgia 30328-4842
Telephone 404-252-2063

JOB NAME Cane River Creole NHP North & South Tennant Houses

JOB NO. 02111.05 / 02111.06 SHEET NO 2 OF 2

CALCULATED BY C. Tran DATE 20 Feb 2003

CHECKED BY _____ DATE _____

SUBJECT Roof Rafters

CALCULATION REPORT

HARTRAMPF

Check Existing Rafters As If They Were In New Condition:

$f_b = \frac{M}{S_x} = \frac{(1152\ FT\text{-}LB)(12")}{7.56\ IN^3} = 1829\ psi > F_b = 1650\ psi$ N.G

∴ Supplemental Rafters Needed

Add New 2x6 Rafters Between Existing Rafters

Spacing = 1'-6"

$w = (12\ PSF)(1.5') = 18\ PLF$

$M = \frac{(18\ PLF)(16')^2}{8} = 576\ FT\text{-}LB$ $V_{max} = 144\ \#$

New Rafter:

$f_b = \frac{(576\ \#)(12")}{7.56\ IN^3} = 914\ psi < F_b = 1650\ psi$ OK

$f_v = \frac{1.5V}{A} = \frac{1.5(144\ \#)}{8.25\ IN^2} = 26\ psi < F_v = 90\ psi$ OK

Existing Rafters:

$f_b = \frac{(576\ \#)(12")}{0.75(7.56\ IN^3)} = 1220\ psi < F_b = 1650\ psi$ OK

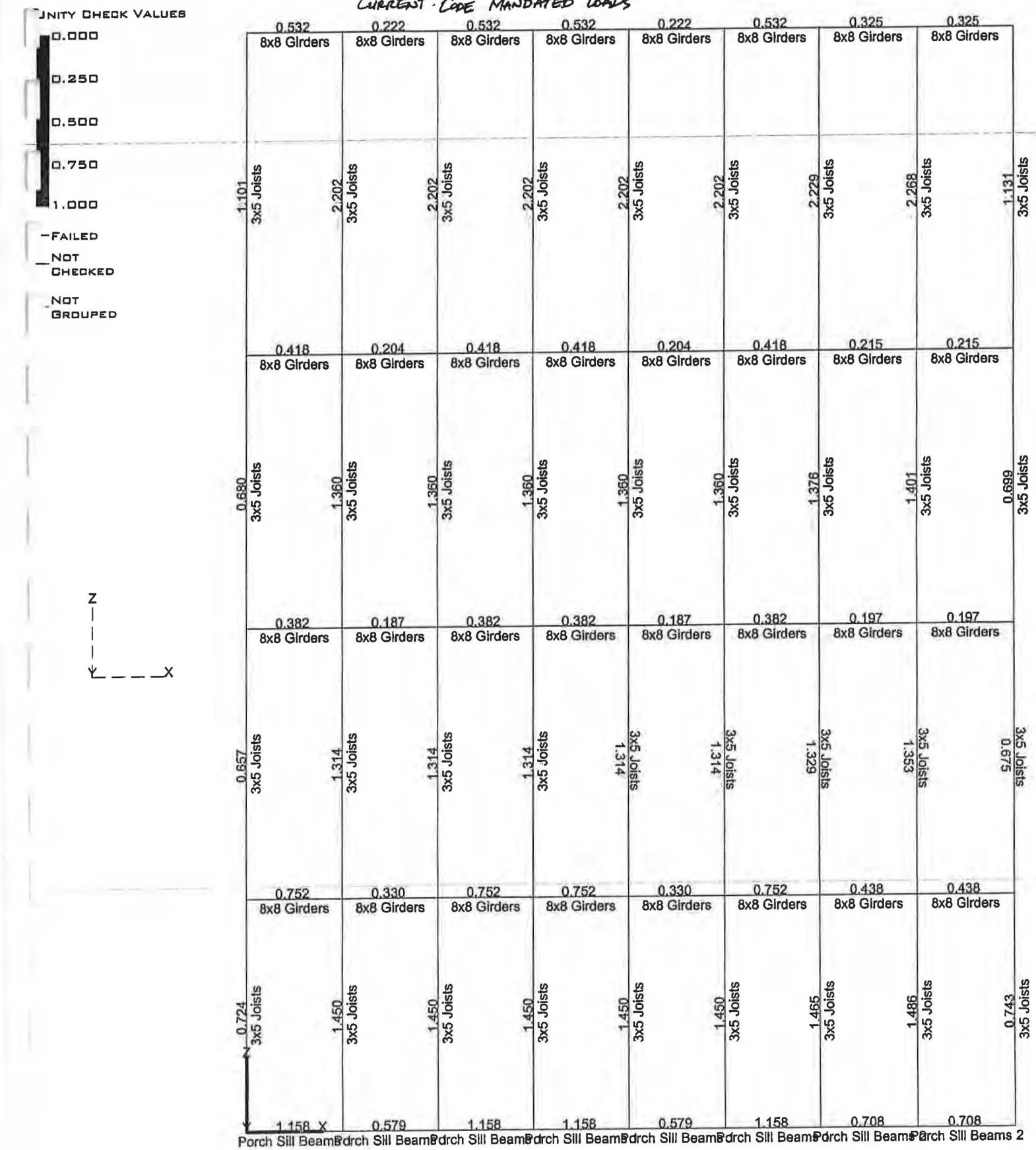
$f_v = \frac{1.5V}{A} = \frac{1.5(144\ \#)}{0.75(8.25\ IN^2)} = 35\ psi < F_v = 90\ psi$ OK

New 2x6 Rafters Should Be Placed Between Existing Roof Rafters

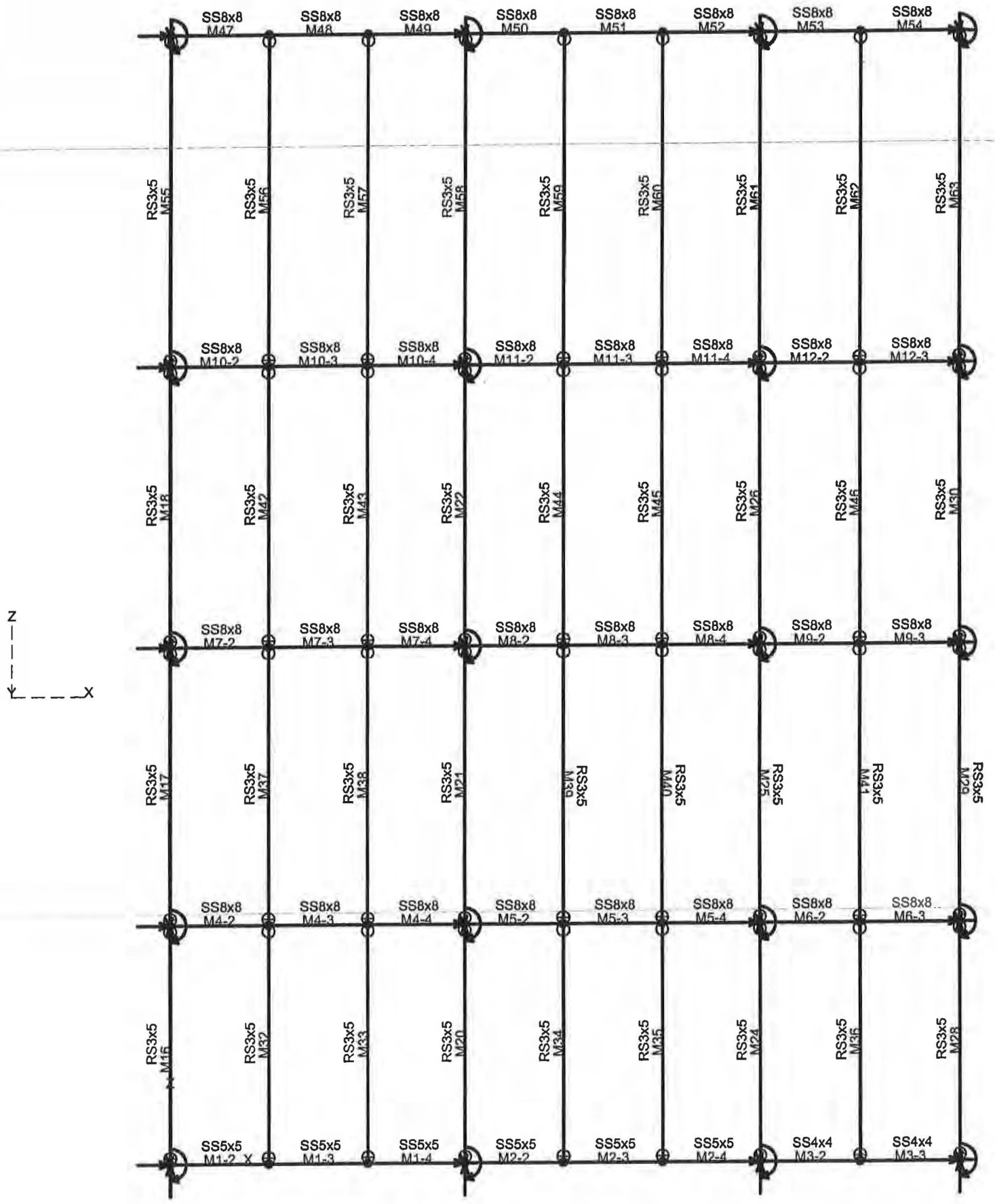
Analysis Results of Existing Condition

VisualAnalysis (version 5.00) -
Cane River NHP SouthTenant House, Wed Feb 19 13:28:28 2003
XISTING CONDITION, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
artrampf Inc., Chau Tran, 02111.05
Design Results

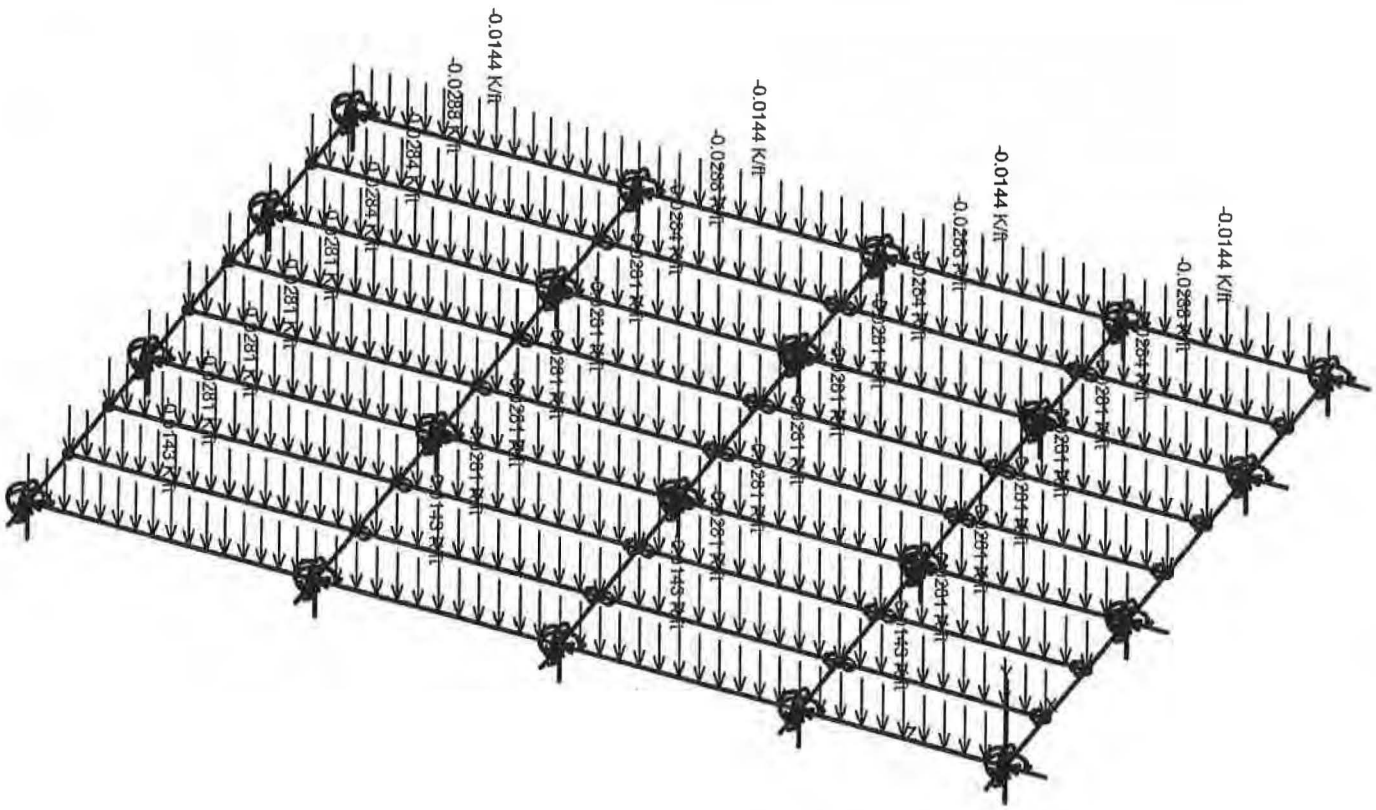
ALL BEAMS & JOISTS WITH VALUES > 1.0 HAVE FAILED USING CURRENT CODE MANDATED LOADS



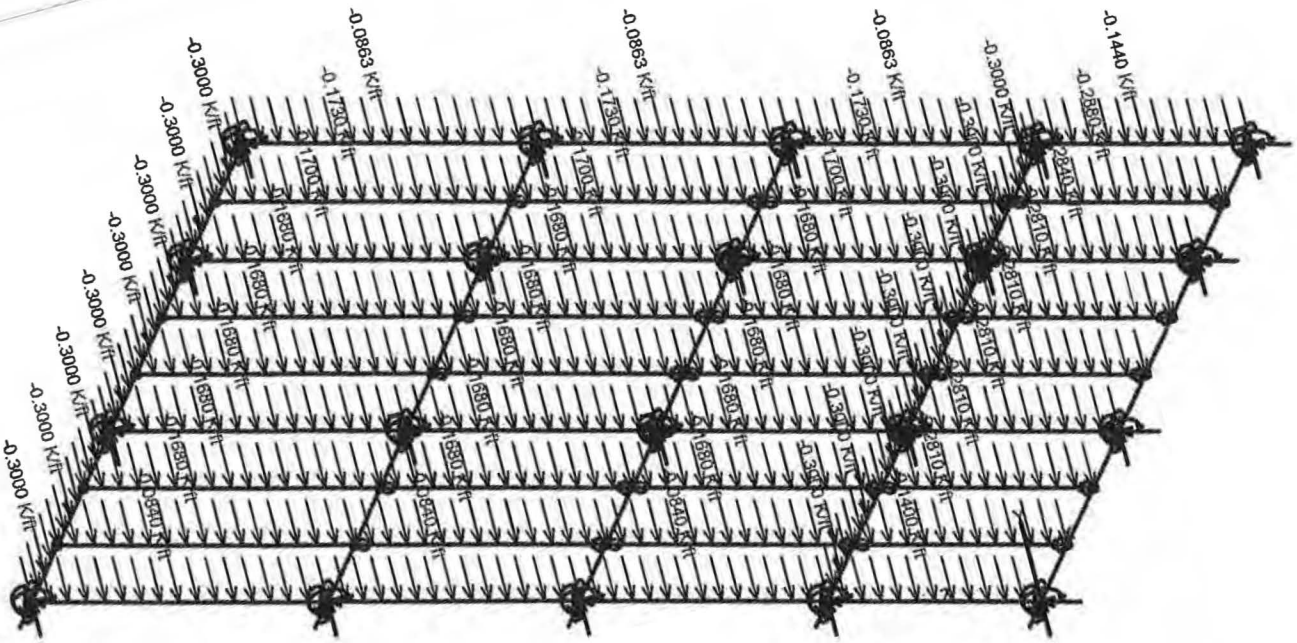
VisualAnalysis (version 5.00) -
Cane River NHP SouthTenant House, Wed Feb 19 13:28:44 2003
EXISTING CONDITION, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
Hartrampf Inc., Chau Tran, 02111.05
Dead loads



VisualAnalysis (version 5.00) -
Cane River NHP SouthTenant House, Wed Feb 19 11:43:48 2003
KISTING CONDITION, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
ertrampf Inc., Chau Tran, 02111.05
Dead loads



n 5.00) -
hTenant House, Wed Feb 19 11:43:56 2003
N, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
Tran, 02111.05



Cane River NHP SouthTenant House

VisualAnalysis 5.00 Report
Company: Hartrampf Inc. Engineer: Chau Tran Billing: 02111.05
Project File: stenant

Load Case Summary

2 Service Load Cases
1 Equation Combinations

Load Cases

Load Case	Strength	Service	Results
(1)Dead loads	No	Yes	1st Ord
(2)Live loads	"	"	"
(3)IBC2000 16.8	Yes	No	"
(4)Mode #1-0.016 Sec,61.	"	Yes	"
(5)Mode #2-0.016 Sec,61.	"	"	"
(6)Mode #3-0.011 Sec,87.	"	"	"

Load Combination Summary

Equation Combination: IBC2000 16.8
Combination: D+L
Contributing Cases & Source
Dead loads (D)
Live loads (L)

Design Groups

Name	Elements	LL Factor	Parameters	Unity	Final Shape
3x5 Joists	36	1.0000	Yes	2.2678	-NA-
8x8 Girders	32	1.0000	"	0.7522	SS8x8
Porch Sill Beams 1	6	1.0000	"	1.1579	-NA-
Porch Sill Beams 2	2	1.0000	"	0.7079	SS4x4

Design Group Results

Design Load Cases

Strength ID Number	Service ID Number	Load Case Name
-	1	Dead loads First Order
-	2	Live loads First Order
1	-	IBC2000 16.8 First Order

NDS Wood Design

Design Group: 3x5 Joists, Group Report, Checked As: RS3x5

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.
BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Continuous
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.
DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.
WOOD PARAMETERS:
Member Type = Visually Graded Dimension Lumber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform

Moisture conditions: Dry
No shear stress factor used
Buckling stiffness factor not used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

Extreme Checks Only
Axial Check:

Member Name	Section Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Section Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cr	Cf	Fb' psi	fb psi	Unity Check
M16	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1155	0.70
M17	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1008	0.61
M18	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1031	0.62
M20	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2313	1.40
M21	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2010	1.22
M22	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2057	1.25
M24	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2338	1.42
M25	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2034	1.23
M26	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2081	1.26
M28	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1185	0.72
M29	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1032	0.63
M30	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1056	0.64
M32	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2313	1.40
M33	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2313	1.40
M34	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2313	1.40
M35	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2313	1.40
M36	RS3x5	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2371	1.44
M37	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2010	1.22
M38	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2010	1.22
M39	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2010	1.22
M40	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2010	1.22
M41	RS3x5	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2069	1.25
M42	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2057	1.25
M43	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2057	1.25
M44	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2057	1.25
M45	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2057	1.25
M46	RS3x5	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2117	1.28
M55	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1422	0.86
M56	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2837	1.72
M57	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2837	1.72
M58	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2837	1.72
M59	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2837	1.72
M60	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2841	1.72
M61	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2870	1.74
M62	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	2919	1.77
M63	RS3x5	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1457	0.88

Shear Check (Strong Axis):

Member Name	Section Name	Load Case #	Offset ft	Fv psi	CD	CM	Ct	Fv' psi	fv psi	Unity Check
M16	RS3x5	1	0	90	1.00	1.00	1.00	90	65.13	0.72
M17	RS3x5	1	0	90	1.00	1.00	1.00	90	48.56	0.54
M18	RS3x5	1	0	90	1.00	1.00	1.00	90	49.13	0.55
M20	RS3x5	1	0	90	1.00	1.00	1.00	90	130.5	1.45
M21	RS3x5	1	0	90	1.00	1.00	1.00	90	96.87	1.08
M22	RS3x5	1	0	90	1.00	1.00	1.00	90	98.00	1.09
M24	RS3x5	1	0	90	1.00	1.00	1.00	90	131.9	1.47
M25	RS3x5	1	0	90	1.00	1.00	1.00	90	98.01	1.09
M26	RS3x5	1	0	90	1.00	1.00	1.00	90	99.15	1.10
M28	RS3x5	1	0	90	1.00	1.00	1.00	90	66.86	0.74
M29	RS3x5	1	0	90	1.00	1.00	1.00	90	49.75	0.55
M30	RS3x5	1	0	90	1.00	1.00	1.00	90	50.33	0.56
M32	RS3x5	1	0	90	1.00	1.00	1.00	90	130.5	1.45
M33	RS3x5	1	0	90	1.00	1.00	1.00	90	130.5	1.45
M34	RS3x5	1	0	90	1.00	1.00	1.00	90	130.5	1.45
M35	RS3x5	1	0	90	1.00	1.00	1.00	90	130.5	1.45
M36	RS3x5	1	0	90	1.00	1.00	1.00	90	133.7	1.49
M37	RS3x5	1	0	90	1.00	1.00	1.00	90	96.87	1.08

M38	RS3x5	1	0	90	1.00	1.00	1.00	90	96.87	1.08
M39	RS3x5	1	0	90	1.00	1.00	1.00	90	96.87	1.08
M40	RS3x5	1	0	90	1.00	1.00	1.00	90	96.87	1.08
M41	RS3x5	1	0	90	1.00	1.00	1.00	90	99.69	1.11
M42	RS3x5	1	0	90	1.00	1.00	1.00	90	98.00	1.09
M43	RS3x5	1	0	90	1.00	1.00	1.00	90	98.00	1.09
M44	RS3x5	1	0	90	1.00	1.00	1.00	90	98.00	1.09
M45	RS3x5	1	0	90	1.00	1.00	1.00	90	98.00	1.09
M46	RS3x5	1	0	90	1.00	1.00	1.00	90	100.9	1.12
M55	RS3x5	1	0	90	1.00	1.00	1.00	90	57.69	0.64
M56	RS3x5	1	0	90	1.00	1.00	1.00	90	115.1	1.28
M57	RS3x5	1	0	90	1.00	1.00	1.00	90	115.1	1.28
M58	RS3x5	1	0	90	1.00	1.00	1.00	90	115.1	1.28
M59	RS3x5	1	0	90	1.00	1.00	1.00	90	115.1	1.28
M60	RS3x5	1	0	90	1.00	1.00	1.00	90	115.3	1.28
M61	RS3x5	1	0	90	1.00	1.00	1.00	90	116.4	1.29
M62	RS3x5	1	0	90	1.00	1.00	1.00	90	118.4	1.32
M63	RS3x5	1	0	90	1.00	1.00	1.00	90	59.10	0.66

Deflection Check (Strong Axis):

Member Name	Section Name	[a]Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M16	RS3x5	1	3.42	-0.02	0.27	0.08
M16	RS3x5	2	3.42	-0.19	0.27	0.68
M17	RS3x5	1	4.00	-0.04	0.32	0.13
M17	RS3x5	2	4.00	-0.21	0.32	0.66
M18	RS3x5	1	4.04	-0.04	0.32	0.13
M18	RS3x5	2	4.04	-0.22	0.32	0.68
M20	RS3x5	1	3.42	-0.04	0.27	0.15
M20	RS3x5	2	3.42	-0.37	0.27	1.37
M21	RS3x5	1	4.00	-0.08	0.32	0.24
M21	RS3x5	2	4.00	-0.42	0.32	1.31
M22	RS3x5	1	4.04	-0.08	0.32	0.25
M22	RS3x5	2	4.04	-0.44	0.32	1.36
M24	RS3x5	1	3.42	-0.04	0.27	0.15
M24	RS3x5	2	3.42	-0.38	0.27	1.39
M25	RS3x5	1	4.00	-0.08	0.32	0.24
M25	RS3x5	2	4.00	-0.43	0.32	1.33
M26	RS3x5	1	4.04	-0.08	0.32	0.25
M26	RS3x5	2	4.04	-0.45	0.32	1.38
M28	RS3x5	1	3.42	-0.02	0.27	0.08
M28	RS3x5	2	3.42	-0.19	0.27	0.70
M29	RS3x5	1	4.00	-0.04	0.32	0.13
M29	RS3x5	2	4.00	-0.22	0.32	0.67
M30	RS3x5	1	4.04	-0.04	0.32	0.13
M30	RS3x5	2	4.04	-0.23	0.32	0.70
M32	RS3x5	1	3.42	-0.04	0.27	0.15
M32	RS3x5	2	3.42	-0.37	0.27	1.37
M33	RS3x5	1	3.42	-0.04	0.27	0.15
M33	RS3x5	2	3.42	-0.37	0.27	1.37
M34	RS3x5	1	3.42	-0.04	0.27	0.15
M34	RS3x5	2	3.42	-0.37	0.27	1.37
M35	RS3x5	1	3.42	-0.04	0.27	0.15
M35	RS3x5	2	3.42	-0.37	0.27	1.37
M36	RS3x5	1	3.42	-0.04	0.27	0.15
M36	RS3x5	2	3.42	-0.38	0.27	1.40
M37	RS3x5	1	4.00	-0.08	0.32	0.24
M37	RS3x5	2	4.00	-0.42	0.32	1.31
M38	RS3x5	1	4.00	-0.08	0.32	0.24
M38	RS3x5	2	4.00	-0.42	0.32	1.31
M39	RS3x5	1	4.00	-0.08	0.32	0.24
M39	RS3x5	2	4.00	-0.42	0.32	1.31
M40	RS3x5	1	4.00	-0.08	0.32	0.24
M40	RS3x5	2	4.00	-0.42	0.32	1.31
M41	RS3x5	1	4.00	-0.08	0.32	0.24
M41	RS3x5	2	4.00	-0.43	0.32	1.35
M42	RS3x5	1	4.04	-0.08	0.32	0.25
M42	RS3x5	2	4.04	-0.44	0.32	1.36
M43	RS3x5	1	4.04	-0.08	0.32	0.25
M43	RS3x5	2	4.04	-0.44	0.32	1.36
M44	RS3x5	1	4.04	-0.08	0.32	0.25
M44	RS3x5	2	4.04	-0.44	0.32	1.36
M45	RS3x5	1	4.04	-0.08	0.32	0.25
M45	RS3x5	2	4.04	-0.44	0.32	1.36
M46	RS3x5	1	4.04	-0.08	0.32	0.25
M46	RS3x5	2	4.04	-0.45	0.32	1.40
M55	RS3x5	1	4.75	-0.08	0.38	0.22

M55	RS3x5	2	4.75	-0.42	0.38	1.10
M56	RS3x5	1	4.75	-0.15	0.38	0.40
M56	RS3x5	2	4.75	-0.84	0.38	2.20
M57	RS3x5	1	4.75	-0.15	0.38	0.40
M57	RS3x5	2	4.75	-0.84	0.38	2.20
M58	RS3x5	1	4.75	-0.15	0.38	0.40
M58	RS3x5	2	4.75	-0.84	0.38	2.20
M59	RS3x5	1	4.75	-0.15	0.38	0.40
M59	RS3x5	2	4.75	-0.84	0.38	2.20
M60	RS3x5	1	4.75	-0.15	0.38	0.40
M60	RS3x5	2	4.75	-0.84	0.38	2.20
M61	RS3x5	1	4.75	-0.15	0.38	0.40
M61	RS3x5	2	4.75	-0.85	0.38	2.23
M62	RS3x5	1	4.75	-0.15	0.38	0.41
M62	RS3x5	2	4.75	-0.86	0.38	2.27
M63	RS3x5	1	4.75	-0.08	0.38	0.22
M63	RS3x5	2	4.75	-0.43	0.38	1.13

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: Porch Sill Beams 1, Group Report, Checked As: SS5x5

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Unbraced
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Timber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

Extreme Checks Only
Axial Check:

MemberName	Section Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

MemberName	Section Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cf	Fb' psi	fb psi	Unity Check
M1-2	SS5x5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	-1561	1.16
M1-3	SS5x5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	780.3	0.58
M1-4	SS5x5	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	-1561	1.16
M2-2	SS5x5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	-1560	1.16
M2-3	SS5x5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	780.2	0.58
M2-4	SS5x5	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1348	-1560	1.16

Shear Check (Strong Axis):

MemberName	Section Name	Load Case #	Offset ft	Fv psi	CD	CM	Ct	Fv' psi	fv psi	Unity Check
M1-2	SS5x5	1	0	110	1.00	1.00	1.00	110	78.23	0.71
M1-3	SS5x5	1	0	110	1.00	1.00	1.00	110	0	0.00
M1-4	SS5x5	1	0	110	1.00	1.00	1.00	110	78.23	0.71
M2-2	SS5x5	1	0	110	1.00	1.00	1.00	110	78.23	0.71
M2-3	SS5x5	1	0	110	1.00	1.00	1.00	110	0	0.00

M2-4	SS5x5	1	0	110	1.00	1.00	1.00	110	78.23	0.71

Deflection Check (Strong Axis):

Member Name	Section Name	[a]Load Case #	Offset ft	dy in	Limit in	Unity Check
M1-2	SS5x5	1	0.84	0.00	0.11	0.02
M1-2	SS5x5	2	0.84	0.02	0.11	0.16
M1-3	SS5x5	1	1.40	-0.00	0.11	0.03
M1-3	SS5x5	2	1.40	-0.03	0.11	0.27
M1-4	SS5x5	1	1.96	0.00	0.11	0.02
M1-4	SS5x5	2	1.96	0.02	0.11	0.16
M2-2	SS5x5	1	0.84	0.00	0.11	0.02
M2-2	SS5x5	2	0.84	0.02	0.11	0.16
M2-3	SS5x5	1	1.40	-0.00	0.11	0.03
M2-3	SS5x5	2	1.40	-0.03	0.11	0.27
M2-4	SS5x5	1	1.96	0.00	0.11	0.02
M2-4	SS5x5	2	1.96	0.02	0.11	0.16

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: Porch Sill Beams 2, Group Report, Designed As: SS4x4

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Continuous
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Dimension Lumber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Buckling stiffness factor not used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

SS4x4 INFORMATION:
b = 0.292 ft
d = 0.292 ft
A = 12.2500 in^2
Ix = 12.5050 in^4
Iy = 12.5050 in^4
Sx = 7.14600 in^3
Sy = 7.14600 in^3

Extreme Checks Only

Axial Check:

Member Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cr	Cf	Fb' psi	fb psi	Unity Check
M3-2	1	0	1850	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1845	-1306	0.71
M3-3	1	2.88	1850	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1845	-1306	0.71

Shear Check (Strong Axis):

Member Name	Load Case #	Offset ft	Fv psi	CD	CM	Ct	Fv' psi	fv psi	Unity Check

M3-2	1	0	100	1.00	1.00	1.00	100	66.27	0.66
M3-3	1	0	100	1.00	1.00	1.00	100	66.27	0.66

Deflection Check (Strong Axis):

Member Name	[a]Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M3-2	1	2.30	0	0.12	0.01
M3-2	2	0.57	0.01	0.12	0.07
M3-3	1	0.57	0	0.12	0.01
M3-3	2	0.57	-0.01	0.12	0.07

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: 8x8 Girders, Group Report, Designed As: SS8x8

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Unbraced
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Timber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

SS8x8 INFORMATION:
b = 0.625 ft
d = 0.625 ft
A = 56.2500 in^2
Ix = 263.672 in^4
Iy = 263.672 in^4
Sx = 70.3130 in^3
Sy = 70.3130 in^3

Extreme Checks Only

Axial Check:

Member Name	Load Case #	Offset *ft*	State	Ft/Fc *psi*	CD	CM	Ct	CF	CP	Ft'/Fc' *psi*	ft/fc *psi*	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset *ft*	Fb *psi*	CD	CM	Ct	CL	CF	Cf	Fb' *psi*	fb *psi*	Unity Check
M10-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-550.6	0.41
M10-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	275.3	0.20
M10-4	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-550.6	0.41
M11-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-550.4	0.41
M11-3	1	2.80	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	275.4	0.20
M11-4	1	2.80	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-550.6	0.41
M12-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-217.7	0.16
M12-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	217.7	0.16
M47	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-599.6	0.44
M48	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.8	0.22
M49	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-599.6	0.44
M50	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-599.3	0.44
M51	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.7	0.22
M52	1	2.80	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-599.5	0.44

M53	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-258.6	0.19
M54	1	2.88	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-258.6	0.19
M9-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	199.1	0.15
M9-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-199.1	0.15
M8-4	1	2.80	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-503.3	0.37
M8-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	251.6	0.19
M8-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-503.3	0.37
M7-4	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-503.5	0.37
M7-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	251.8	0.19
M7-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-503.5	0.37
M6-3	1	2.88	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-372.8	0.28
M6-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-372.8	0.28
M5-4	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-889.5	0.66
M5-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	444.8	0.33
M5-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-889.5	0.66
M4-4	1	2.81	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-889.7	0.66
M4-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	444.8	0.33
M4-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-889.7	0.66

Shear Check (Strong Axis):

Member Name	Load Case #	Offset *ft*	Fv *psi*	CD	CM	Ct	Fv' *psi*	fv *psi*	Unity Check
M10-2	1	0	110	1.00	1.00	1.00	110	45.99	0.42
M10-3	1	0	110	1.00	1.00	1.00	110	0	0.00
M10-4	1	0	110	1.00	1.00	1.00	110	45.99	0.42
M11-2	1	0	110	1.00	1.00	1.00	110	46.00	0.42
M11-3	1	0	110	1.00	1.00	1.00	110	0.010	0.00
M11-4	1	0	110	1.00	1.00	1.00	110	46.02	0.42
M12-2	1	0	110	1.00	1.00	1.00	110	23.66	0.22
M12-3	1	0	110	1.00	1.00	1.00	110	23.66	0.22
M47	1	0	110	1.00	1.00	1.00	110	58.51	0.53
M48	1	0	110	1.00	1.00	1.00	110	11.22	0.10
M49	1	2.81	110	1.00	1.00	1.00	110	58.51	0.53
M50	1	0	110	1.00	1.00	1.00	110	58.50	0.53
M51	1	0	110	1.00	1.00	1.00	110	11.23	0.10
M52	1	2.80	110	1.00	1.00	1.00	110	58.52	0.53
M53	1	0	110	1.00	1.00	1.00	110	35.78	0.33
M54	1	2.88	110	1.00	1.00	1.00	110	35.78	0.33
M9-3	1	0	110	1.00	1.00	1.00	110	21.64	0.20
M9-2	1	0	110	1.00	1.00	1.00	110	21.64	0.20
M8-4	1	0	110	1.00	1.00	1.00	110	42.06	0.38
M8-3	1	0	110	1.00	1.00	1.00	110	0	0.00
M8-2	1	0	110	1.00	1.00	1.00	110	42.06	0.38
M7-4	1	0	110	1.00	1.00	1.00	110	42.06	0.38
M7-3	1	0	110	1.00	1.00	1.00	110	0	0.00
M7-2	1	0	110	1.00	1.00	1.00	110	42.06	0.38
M6-3	1	2.88	110	1.00	1.00	1.00	110	48.19	0.44
M6-2	1	0	110	1.00	1.00	1.00	110	48.19	0.44
M5-4	1	2.81	110	1.00	1.00	1.00	110	82.73	0.75
M5-3	1	0	110	1.00	1.00	1.00	110	11.22	0.10
M5-2	1	0	110	1.00	1.00	1.00	110	82.73	0.75
M4-4	1	2.81	110	1.00	1.00	1.00	110	82.74	0.75
M4-3	1	2.81	110	1.00	1.00	1.00	110	11.22	0.10
M4-2	1	0	110	1.00	1.00	1.00	110	82.74	0.75

Deflection Check (Strong Axis):

Member Name	[a]Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M10-2	1	0.84	0	0.11	0.01
M10-2	2	0.84	0.00	0.11	0.03
M10-3	1	1.40	-0.00	0.11	0.01
M10-3	2	1.40	-0.01	0.11	0.05
M10-4	1	1.96	0	0.11	0.01
M10-4	2	1.96	0.00	0.11	0.03
M11-2	1	0.84	0	0.11	0.01
M11-2	2	0.84	0.00	0.11	0.03
M11-3	1	1.40	-0.00	0.11	0.01
M11-3	2	1.40	-0.01	0.11	0.05
M11-4	1	1.96	0	0.11	0.01
M11-4	2	1.96	0.00	0.11	0.03
M12-2	1	2.30	0	0.12	0.00
M12-2	2	0.57	0	0.12	0.01
M12-3	1	0.57	0	0.12	0.00
M12-3	2	0.57	0	0.12	0.01
M47	1	0.84	0	0.11	0.00
M47	2	0.84	0.00	0.11	0.03
M48	1	1.40	0	0.11	0.01

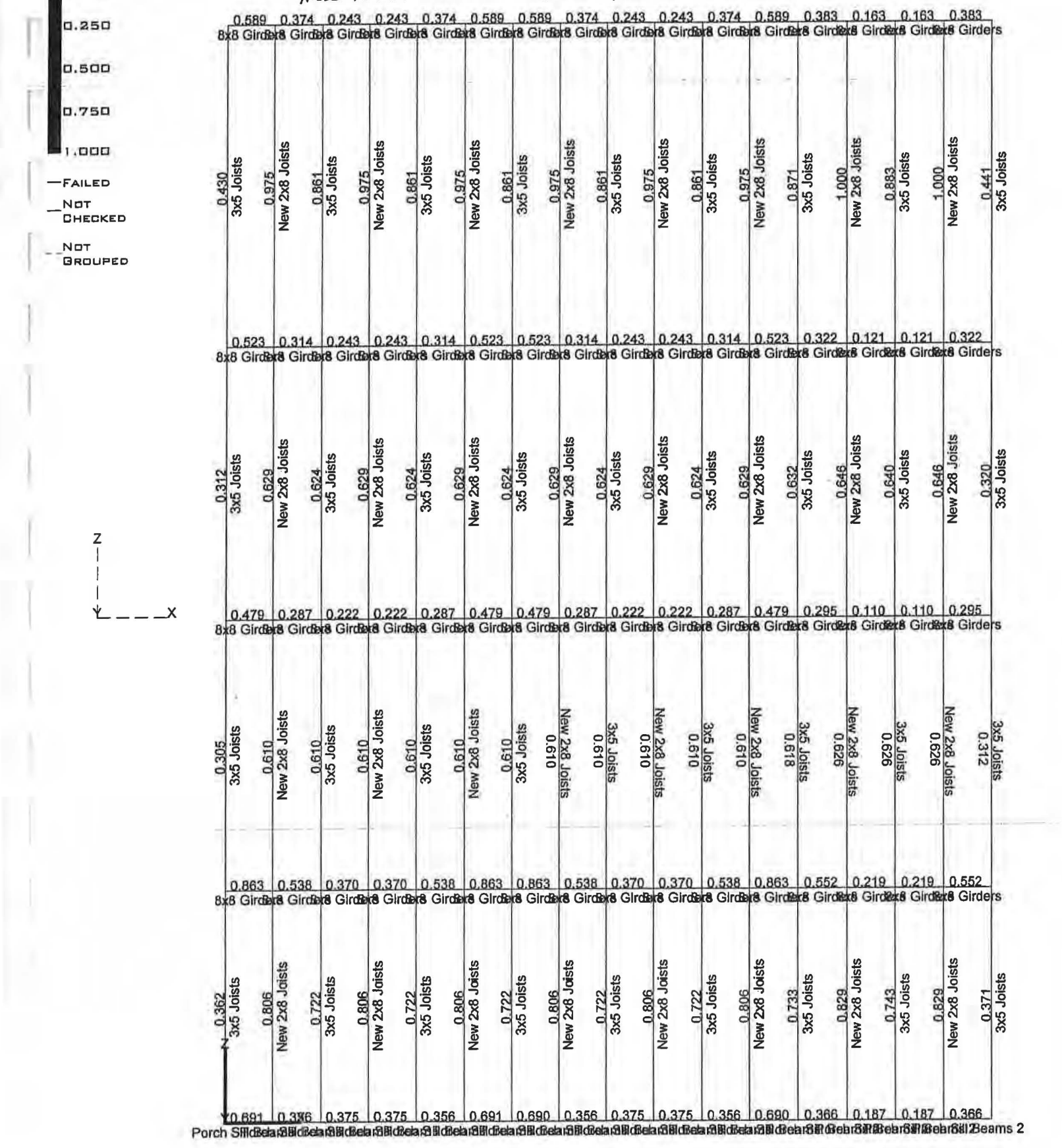
M48	2	1.40	-0.01	0.11	0.06
M49	1	1.96	0	0.11	0.00
M49	2	1.96	0.00	0.11	0.03
M50	1	0.84	0	0.11	0.00
M50	2	0.84	0.00	0.11	0.03
M51	1	1.40	0	0.11	0.01
M51	2	1.40	-0.01	0.11	0.06
M52	1	1.96	0	0.11	0.00
M52	2	1.96	0.00	0.11	0.03
M53	1	2.30	0	0.12	0.00
M53	2	2.16	0	0.12	0.01
M54	1	0.57	0	0.12	0.00
M54	2	0.72	0	0.12	0.01
M9-3	1	0.57	0	0.12	0.00
M9-3	2	0.57	0	0.12	0.01
M9-2	1	2.30	0	0.12	0.00
M9-2	2	0.57	0	0.12	0.01
M8-4	1	1.96	0	0.11	0.01
M8-4	2	1.96	0.00	0.11	0.03
M8-3	1	1.40	-0.00	0.11	0.01
M8-3	2	1.40	-0.01	0.11	0.05
M8-2	1	0.84	0	0.11	0.01
M8-2	2	0.84	0.00	0.11	0.03
M7-4	1	1.96	0	0.11	0.01
M7-4	2	1.96	0.00	0.11	0.03
M7-3	1	1.40	-0.00	0.11	0.01
M7-3	2	1.40	-0.01	0.11	0.05
M7-2	1	0.84	0	0.11	0.01
M7-2	2	0.84	0.00	0.11	0.03
M6-3	1	0.57	0	0.12	0.00
M6-3	2	0.72	-0.00	0.12	0.01
M6-2	1	2.30	0	0.12	0.00
M6-2	2	2.16	-0.00	0.12	0.01
M5-4	1	1.96	0	0.11	0.01
M5-4	2	1.82	0.01	0.11	0.05
M5-3	1	1.40	-0.00	0.11	0.01
M5-3	2	1.40	-0.01	0.11	0.09
M5-2	1	0.84	0	0.11	0.01
M5-2	2	0.98	0.01	0.11	0.05
M4-4	1	1.96	0	0.11	0.01
M4-4	2	1.82	0.01	0.11	0.05
M4-3	1	1.40	-0.00	0.11	0.01
M4-3	2	1.40	-0.01	0.11	0.09
M4-2	1	0.84	0	0.11	0.01
M4-2	2	0.98	0.01	0.11	0.05

[a]In deflection checks, load case #'s refer to serviceability cases.
Torsion checks are NOT performed!
Maximum torsional moment was 0.00 K-ft

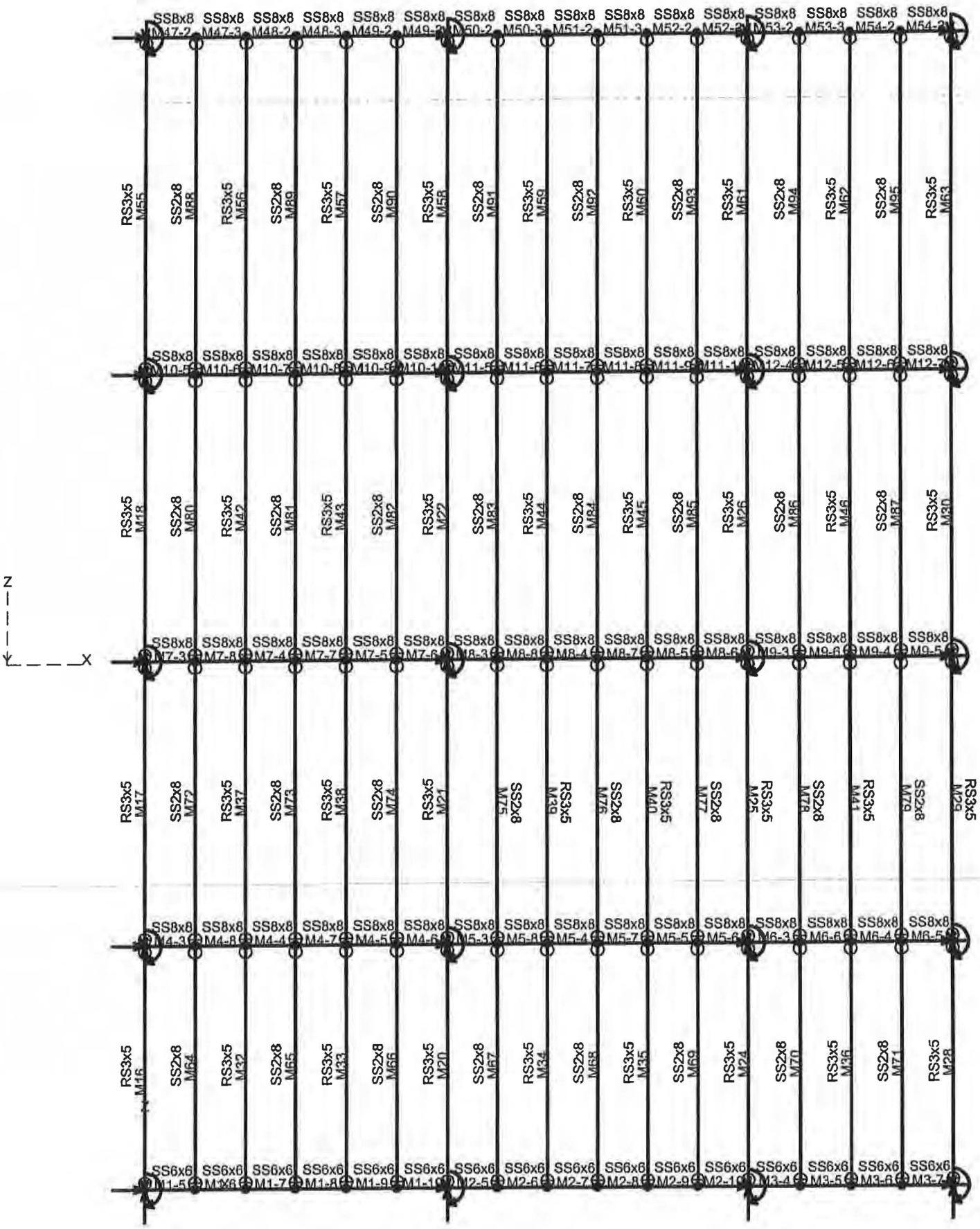
Analysis Results with Modifications

VisualAnalysis (version 5.00) -
Cane River NHP South Tenant House, Wed Feb 19 14:08:24 2003
MODIFICATIONS, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
Hartrampf Inc., Chau Tran, 02111.05
Design Results

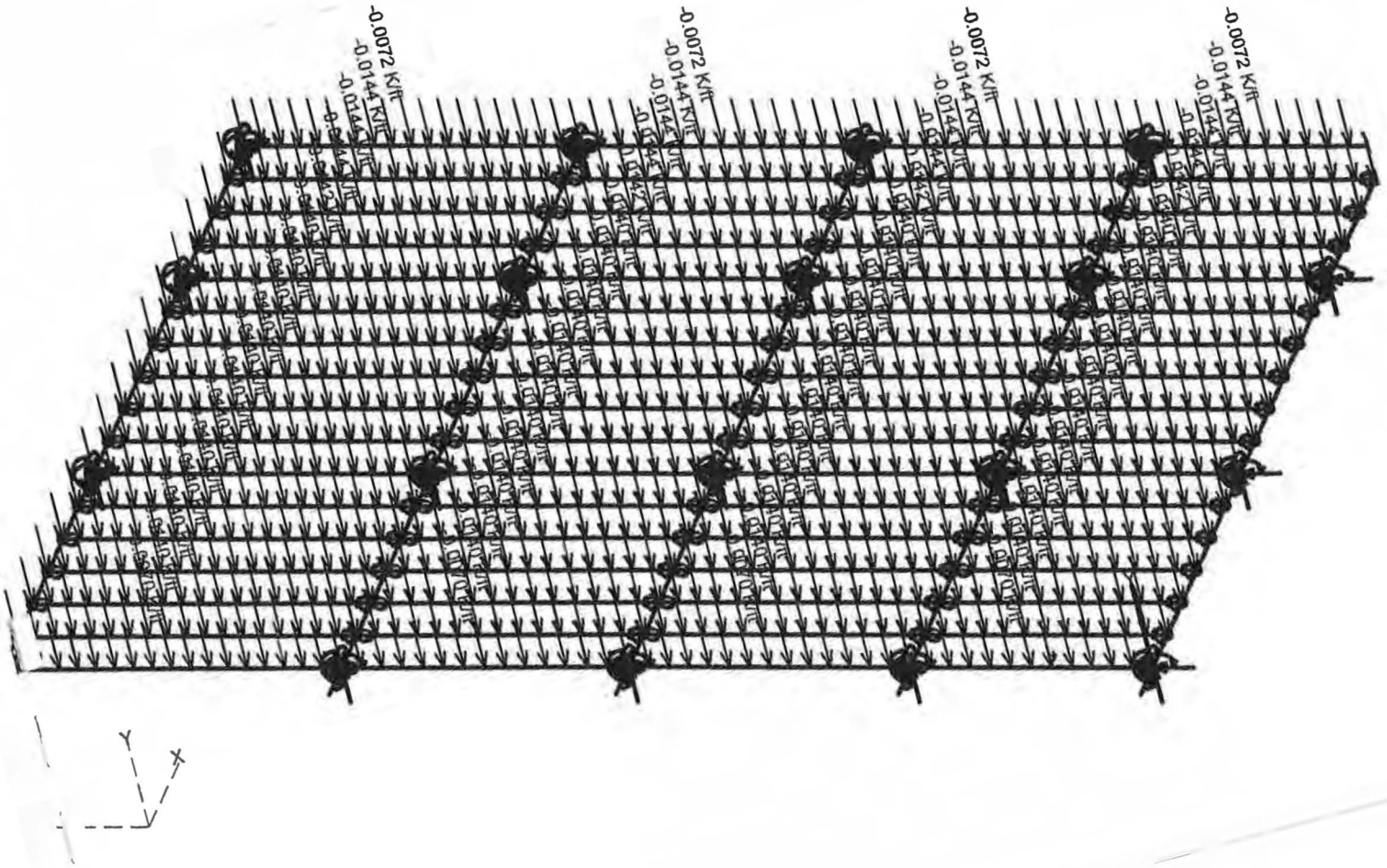
NEW 2x8 JOISTS ARE TO BE ADDED BETWEEN EXISTING 3x5 JOISTS.
NEW PORCH SILL BEAMS ARE TO BE ADDED.
THESE MODIFICATIONS WILL MAKE ALL MEMBERS ADEQUATE. UNITY VALUE <1.0



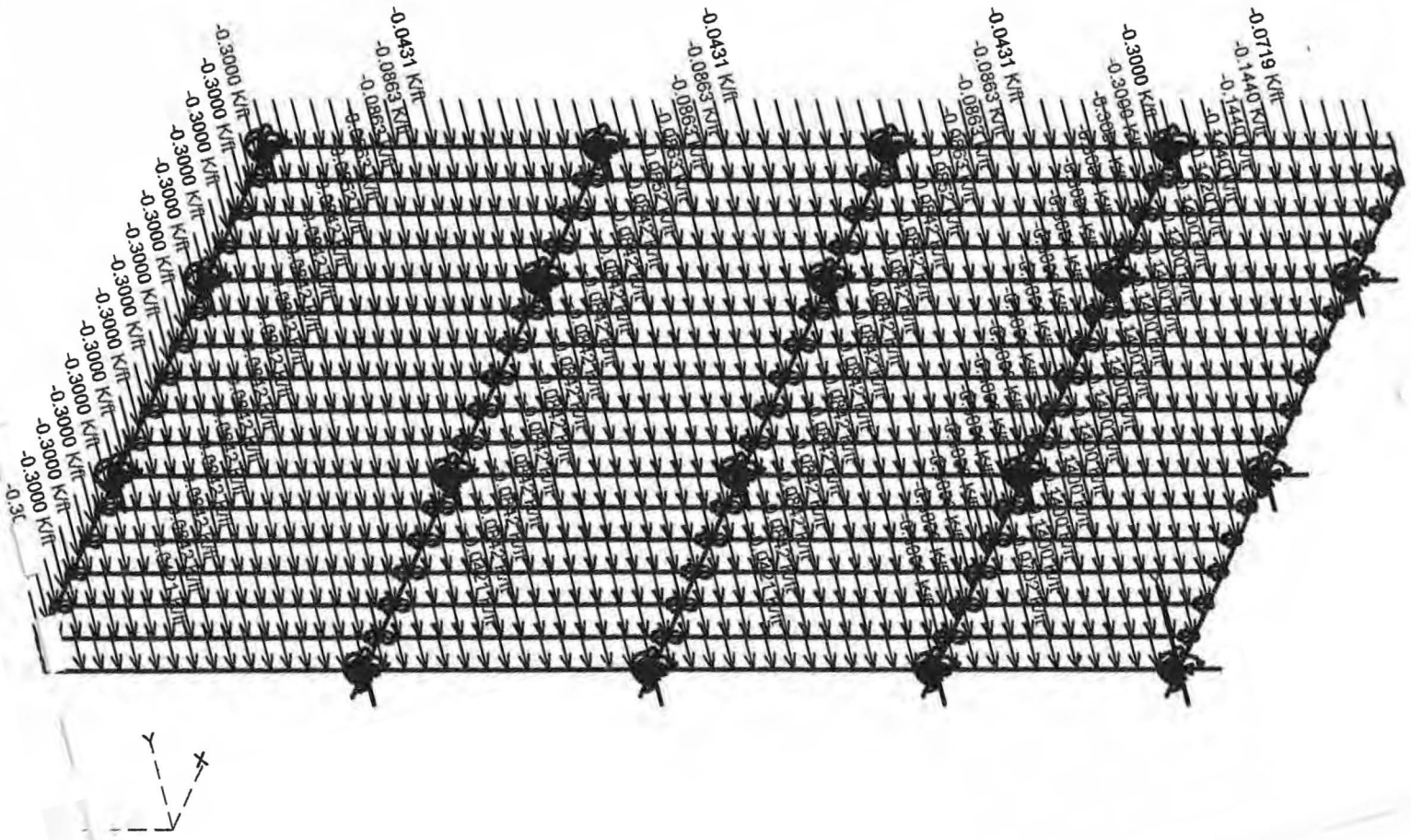
VisualAnalysis (version 5.00) -
ne River NHP South Tenant House, Wed Feb 19 13:58:07 2003
)DIFICATIONS, DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
Hartrampf Inc., Chau Tran, 02111.05
Dead loads



on 5.00) -
uth Tenant House, Wed Feb 19 14:16:09 2003
DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
au Tran, 02111.05



on 5.00) -
uth Tenant House, Wed Feb 19 14:16:18 2003
DL=10 PSF, LL=60 PSF INSIDE HOUSE, LL=100 PSF AT PORCH
u Tran, 02111.05



Wed Feb 19 14:32:26 2003

Cane River NHP South Tenant House

VisualAnalysis 5.00 Report
Company: Hartrampf Inc. Engineer: Chau Tran Billing: 02111.05
Project File: stenant3

Load Case Summary

2 Service Load Cases
1 Equation Combinations

Load Cases

Load Case	Strength	Service	Results
(1)Dead loads	No	Yes	1st Ord
(2)Live loads	"	"	"
(3)IBC2000 16.8	Yes	No	"
(4)Mode #1-0.016 Sec,63.	"	Yes	"
(5)Mode #2-0.016 Sec,63.	"	"	"
(6)Mode #3-0.013 Sec,79.	"	"	"

Load Combination Summary

Equation Combination: IBC2000 16.8
Combination: D+L
Contributing Cases & Source
Dead loads (D)
Live loads (L)

Material Properties

Material	Strength *Ksi*	Elasticity *Ksi*	Poisson	Density *K/ft^3*	Therm. Coeff. *in/in/deg-F*
Doug Fir	-NA-	1700.00	0.36	0.05	1.700
No. 1	-NA-	1500.00	0.36	0.03	0.000
Wood	-NA-	1500.00	0.36	0.03	0.000
"	-NA-	1700.00	0.36	0.05	1.700

Section Properties

Category	Section	Ax *in^2*	J *in^4*	Iy *in^4*	Iz *in^4*	Sz(+y) *in^3*	Sz(-y) *in^3*	Sy(+z) *in^3*	Sy(-z) *in^3*
-NA-	SS2x8	10.875	7.093	2.039	47.635	13.141	13.141	2.719	2.719
-NA-	SS6x6	30.250	128.719	76.255	76.255	27.729	27.729	27.729	27.729
-NA-	SS8x8	56.250	445.605	263.672	263.672	70.313	70.313	70.313	70.313
NDS Wood	RS3x5	9.358	0.000	18.000	6.971	9.358	5.312	21.641	5.312
"	SS6x6	30.250	128.719	76.255	76.255	27.729	27.729	27.729	27.729

Design Groups

Name	Elements	LL Factor	Parameters	Unity	Final Shape
3x5 Joists	36	1.00	Yes	0.88	RS3x5
8x8 Girders	64	1.00	"	0.86	SS8x8
New 2x8 Joists	32	1.00	"	1.00	SS2x8
Porch Sill Beams 1	12	1.00	"	0.69	SS6x6
Porch Sill Beams 2	4	1.00	"	0.37	"

Design Group Results

Design Load Cases

Strength ID Number	Service ID Number	Load Case Name
-	1	Dead loads First Order
-	2	Live loads First Order
1	-	IBC2000 16.8 First Order

NDS Wood Design

Design Group: 3x5 Joists, Group Report, Designed As: RS3x5

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.
BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Continuous
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.
DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/120.00.
Weak deflections not checked.
WOOD PARAMETERS:
Member Type = Visually Graded Dimension Lumber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Buckling stiffness factor not used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
RS3x5 INFORMATION:
b = 0.219 ft
d = 0.385 ft
A = 12.14 in^2
Ix = 21.64 in^4
Iy = 6.971 in^4
Sx = 9.358 in^3
Sy = 5.312 in^3

Extreme Checks Only
Axial Check:

Member Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cr	Cf	Fb' psi	fb psi	Unity Check
M16	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	577.8	0.35
M17	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	503.3	0.31
M18	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	515.1	0.31
M20	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1153	0.70
M21	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1007	0.61
M22	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1030	0.62
M24	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1169	0.71
M25	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1019	0.62
M26	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1043	0.63
M28	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	591.9	0.36
M29	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	515.5	0.31
M30	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	527.6	0.32
M32	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1153	0.70
M33	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1153	0.70
M34	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1153	0.70
M35	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1153	0.70
M36	1	3.42	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1185	0.72
M37	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1007	0.61
M38	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1007	0.61
M39	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1007	0.61
M40	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1007	0.61
M41	1	4.00	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1032	0.63
M42	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1030	0.62
M43	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1030	0.62
M44	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1030	0.62
M45	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1030	0.62

M46	1	4.04	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1056	0.64
M55	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	710.3	0.43
M56	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1421	0.86
M57	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1421	0.86
M58	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1421	0.86
M59	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1421	0.86
M60	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1421	0.86
M61	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1438	0.87
M62	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	1457	0.88
M63	1	4.75	1650	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1650	727.5	0.44

Shear Check (Strong Axis):

Member Name	Load Case #	Offset *ft*	Fv *psi*	CD	CM	Ct	Fv' *psi*	fv *psi*	Unity Check
M16	1	0	90	1.00	1.00	1.00	90	32.59	0.36
M17	1	0	90	1.00	1.00	1.00	90	24.26	0.27
M18	1	0	90	1.00	1.00	1.00	90	24.54	0.27
M20	1	0	90	1.00	1.00	1.00	90	65.00	0.72
M21	1	0	90	1.00	1.00	1.00	90	48.51	0.54
M22	1	0	90	1.00	1.00	1.00	90	49.08	0.55
M24	1	0	90	1.00	1.00	1.00	90	65.93	0.73
M25	1	0	90	1.00	1.00	1.00	90	49.10	0.55
M26	1	0	90	1.00	1.00	1.00	90	49.68	0.55
M28	1	0	90	1.00	1.00	1.00	90	33.38	0.37
M29	1	0	90	1.00	1.00	1.00	90	24.84	0.28
M30	1	0	90	1.00	1.00	1.00	90	25.13	0.28
M32	1	0	90	1.00	1.00	1.00	90	65.00	0.72
M33	1	0	90	1.00	1.00	1.00	90	65.00	0.72
M34	1	0	90	1.00	1.00	1.00	90	65.00	0.72
M35	1	0	90	1.00	1.00	1.00	90	65.00	0.72
M36	1	0	90	1.00	1.00	1.00	90	66.86	0.74
M37	1	0	90	1.00	1.00	1.00	90	48.51	0.54
M38	1	0	90	1.00	1.00	1.00	90	48.51	0.54
M39	1	0	90	1.00	1.00	1.00	90	48.51	0.54
M40	1	0	90	1.00	1.00	1.00	90	48.51	0.54
M41	1	0	90	1.00	1.00	1.00	90	49.75	0.55
M42	1	0	90	1.00	1.00	1.00	90	49.08	0.55
M43	1	0	90	1.00	1.00	1.00	90	49.08	0.55
M44	1	0	90	1.00	1.00	1.00	90	49.08	0.55
M45	1	0	90	1.00	1.00	1.00	90	49.08	0.55
M46	1	0	90	1.00	1.00	1.00	90	50.33	0.56
M55	1	0	90	1.00	1.00	1.00	90	28.81	0.32
M56	1	0	90	1.00	1.00	1.00	90	57.63	0.64
M57	1	0	90	1.00	1.00	1.00	90	57.63	0.64
M58	1	0	90	1.00	1.00	1.00	90	57.63	0.64
M59	1	0	90	1.00	1.00	1.00	90	57.63	0.64
M60	1	0	90	1.00	1.00	1.00	90	57.63	0.64
M61	1	0	90	1.00	1.00	1.00	90	58.33	0.65
M62	1	0	90	1.00	1.00	1.00	90	59.10	0.66
M63	1	0	90	1.00	1.00	1.00	90	29.51	0.33

Deflection Check (Strong Axis):

Member Name	[a]Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M16	1	3.42	-0.01	0.68	0.02
M16	2	3.42	-0.09	0.68	0.14
M17	1	4.00	-0.03	0.80	0.03
M17	2	4.00	-0.11	0.80	0.13
M18	1	4.04	-0.03	0.81	0.03
M18	2	4.04	-0.11	0.81	0.14
M20	1	3.42	-0.02	0.68	0.03
M20	2	3.42	-0.19	0.68	0.27
M21	1	4.00	-0.04	0.80	0.05
M21	2	4.00	-0.21	0.80	0.26
M22	1	4.04	-0.05	0.81	0.06
M22	2	4.04	-0.22	0.81	0.27
M24	1	3.42	-0.02	0.68	0.03
M24	2	3.42	-0.19	0.68	0.28
M25	1	4.00	-0.04	0.80	0.05
M25	2	4.00	-0.21	0.80	0.27
M26	1	4.04	-0.05	0.81	0.06
M26	2	4.04	-0.22	0.81	0.28
M28	1	3.42	-0.01	0.68	0.02
M28	2	3.42	-0.10	0.68	0.14
M29	1	4.00	-0.03	0.80	0.03
M29	2	4.00	-0.11	0.80	0.13

M30	1	4.04	-0.03	0.81	0.03
M30	2	4.04	-0.11	0.81	0.14
M32	1	3.42	-0.02	0.68	0.03
M32	2	3.42	-0.19	0.68	0.27
M33	1	3.42	-0.02	0.68	0.03
M33	2	3.42	-0.19	0.68	0.27
M34	1	3.42	-0.02	0.68	0.03
M34	2	3.42	-0.19	0.68	0.27
M35	1	3.42	-0.02	0.68	0.03
M35	2	3.42	-0.19	0.68	0.27
M36	1	3.42	-0.02	0.68	0.03
M36	2	3.42	-0.19	0.68	0.28
M37	1	4.00	-0.04	0.80	0.05
M37	2	4.00	-0.21	0.80	0.26
M38	1	4.00	-0.04	0.80	0.05
M38	2	4.00	-0.21	0.80	0.26
M39	1	4.00	-0.04	0.80	0.05
M39	2	4.00	-0.21	0.80	0.26
M40	1	4.00	-0.04	0.80	0.05
M40	2	4.00	-0.21	0.80	0.26
M41	1	4.00	-0.04	0.80	0.06
M41	2	4.00	-0.22	0.80	0.27
M42	1	4.04	-0.05	0.81	0.06
M42	2	4.04	-0.22	0.81	0.27
M43	1	4.04	-0.05	0.81	0.06
M43	2	4.04	-0.22	0.81	0.27
M44	1	4.04	-0.05	0.81	0.06
M44	2	4.04	-0.22	0.81	0.27
M45	1	4.04	-0.05	0.81	0.06
M45	2	4.04	-0.22	0.81	0.27
M46	1	4.04	-0.05	0.81	0.06
M46	2	4.04	-0.23	0.81	0.28
M55	1	4.75	-0.05	0.95	0.05
M55	2	4.75	-0.21	0.95	0.22
M56	1	4.75	-0.09	0.95	0.09
M56	2	4.75	-0.42	0.95	0.44
M57	1	4.75	-0.09	0.95	0.09
M57	2	4.75	-0.42	0.95	0.44
M58	1	4.75	-0.09	0.95	0.09
M58	2	4.75	-0.42	0.95	0.44
M59	1	4.75	-0.09	0.95	0.09
M59	2	4.75	-0.42	0.95	0.44
M60	1	4.75	-0.09	0.95	0.09
M60	2	4.75	-0.42	0.95	0.44
M61	1	4.75	-0.09	0.95	0.09
M61	2	4.75	-0.42	0.95	0.45
M62	1	4.75	-0.09	0.95	0.09
M62	2	4.75	-0.43	0.95	0.45
M63	1	4.75	-0.05	0.95	0.05
M63	2	4.75	-0.21	0.95	0.23

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: Porch Sill Beams 1, Group Report, Designed As: SS6x6

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Unbraced
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Timber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular

Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

SS6x6 INFORMATION:
b = 0.458 ft
d = 0.458 ft
A = 30.25 in^2
Ix = 76.25 in^4
Iy = 76.25 in^4
Sx = 27.73 in^3
Sy = 27.73 in^3

Extreme Checks Only

Axial Check:

Member Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cf	Fb' psi	fb psi	Unity Check
M1-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-931.6	0.69
M1-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	346.0	0.26
M1-7	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	505.7	0.37
M1-8	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	505.7	0.37
M1-9	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	346.0	0.26
M1-10	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-931.6	0.69
M2-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-931.5	0.69
M2-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	346.0	0.26
M2-7	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	505.7	0.37
M2-8	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	505.7	0.37
M2-9	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	346.0	0.26
M2-10	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-931.5	0.69

Shear Check (Strong Axis):

Member Name	Load Case #	Offset ft	Fv psi	CD	CM	Ct	Fv' psi	fv psi	Unity Check
M1-5	1	0	110	1.00	1.00	1.00	110	65.22	0.59
M1-6	1	0	110	1.00	1.00	1.00	110	39.13	0.36
M1-7	1	0	110	1.00	1.00	1.00	110	13.04	0.12
M1-8	1	0	110	1.00	1.00	1.00	110	13.04	0.12
M1-9	1	0	110	1.00	1.00	1.00	110	39.13	0.36
M1-10	1	0	110	1.00	1.00	1.00	110	65.22	0.59
M2-5	1	0	110	1.00	1.00	1.00	110	65.22	0.59
M2-6	1	0	110	1.00	1.00	1.00	110	39.13	0.36
M2-7	1	0	110	1.00	1.00	1.00	110	13.04	0.12
M2-8	1	0	110	1.00	1.00	1.00	110	13.04	0.12
M2-9	1	0	110	1.00	1.00	1.00	110	39.13	0.36
M2-10	1	0	110	1.00	1.00	1.00	110	65.22	0.59

Deflection Check (Strong Axis):

Member Name	[a]Load Case #	Offset ft	dy in	Limit in	Unity Check
M1-5	1	0.56	0	0.06	0.01
M1-5	2	0.56	0.00	0.06	0.07
M1-6	1	0.84	0	0.06	0.00
M1-6	2	0.84	0	0.06	0.02
M1-7	1	0.70	0	0.06	0.01
M1-7	2	0.70	-0.00	0.06	0.06
M1-8	1	0.70	0	0.06	0.01
M1-8	2	0.70	-0.00	0.06	0.06
M1-9	1	0.56	0	0.06	0.00
M1-9	2	0.56	0	0.06	0.02
M1-10	1	0.84	0	0.06	0.01
M1-10	2	0.84	0.00	0.06	0.07
M2-5	1	0.56	0	0.06	0.01
M2-5	2	0.56	0.00	0.06	0.07
M2-6	1	0.84	0	0.06	0.00
M2-6	2	0.84	0	0.06	0.02
M2-7	1	0.70	0	0.06	0.01

M2-7	2	0.70	-0.00	0.06	0.06
M2-8	1	0.70	0	0.06	0.01
M2-8	2	0.70	-0.00	0.06	0.06
M2-9	1	0.56	0	0.06	0.00
M2-9	2	0.56	0	0.06	0.02
M2-10	1	0.84	0	0.06	0.01
M2-10	2	0.84	0.00	0.06	0.07

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: Porch Sill Beams 2, Group Report, Designed As: SS6x6

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Continuous
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Timber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

SS6x6 INFORMATION:
b = 0.458 ft
d = 0.458 ft
A = 30.25 in^2
Ix = 76.25 in^4
Iy = 76.25 in^4
Sx = 27.73 in^3
Sy = 27.73 in^3

Extreme Checks Only

Axial Check:

Member Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cf	Fb' psi	fb psi	Unity Check
M3-4	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-420.8	0.31
M3-5	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1350	252.5	0.19
M3-6	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1350	252.5	0.19
M3-7	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-420.8	0.31

Shear Check (Strong Axis):

Member Name	Load Case #	Offset ft	Fv psi	CD	CM	Ct	Fv' psi	fv psi	Unity Check
M3-4	1	0	110	1.00	1.00	1.00	110	40.25	0.37
M3-5	1	0	110	1.00	1.00	1.00	110	13.42	0.12
M3-6	1	0	110	1.00	1.00	1.00	110	13.42	0.12
M3-7	1	0	110	1.00	1.00	1.00	110	40.25	0.37

Deflection Check (Strong Axis):

Member Name	[a]Load Case #	Offset ft	dy in	Limit in	Unity Check

M3-4	1	0.57	0	0.06	0.00
M3-4	2	0.57	0.00	0.06	0.03
M3-5	1	0.72	0	0.06	0.00
M3-5	2	0.72	-0.00	0.06	0.02
M3-6	1	0.72	0	0.06	0.00
M3-6	2	0.72	-0.00	0.06	0.02
M3-7	1	0.86	0	0.06	0.00
M3-7	2	0.86	0.00	0.06	0.03

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: 8x8 Girders, Group Report, Designed As: SS8x8

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Unbraced
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/300.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Timber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
CL = 0.504
Cr = 1.150

SS8x8 INFORMATION:
b = 0.625 ft
d = 0.625 ft
A = 56.25 in^2
Ix = 263.7 in^4
Iy = 263.7 in^4
Sx = 70.31 in^3
Sy = 70.31 in^3

Extreme Checks Only

Axial Check:

Member Name	Load Case #	Offset ft	State	Ft/Fc psi	CD	CM	Ct	CF	CP	Ft'/Fc' psi	ft/fc psi	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset ft	Fb psi	CD	CM	Ct	CL	CF	Cf	Fb' psi	fb psi	Unity Check
M10-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-603.1	0.45
M10-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	224.0	0.17
M10-7	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.4	0.24
M10-8	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.4	0.24
M10-9	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	224.0	0.17
M10-10	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-603.1	0.45
M11-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-602.8	0.45
M11-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	223.9	0.17
M11-7	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.2	0.24
M11-8	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.2	0.24
M11-9	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	223.9	0.17
M11-10	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-602.8	0.45
M12-4	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-271.6	0.20
M12-5	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	163.0	0.12
M12-6	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	163.0	0.12

M12-7	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-271.6	0.20
M47-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-628.0	0.47
M47-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	221.7	0.16
M48-2	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	328.0	0.24
M48-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	328.0	0.24
M49-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	221.7	0.16
M49-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-628.0	0.47
M50-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-627.6	0.47
M50-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	221.6	0.16
M51-2	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.7	0.24
M51-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	327.7	0.24
M52-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	221.6	0.16
M52-3	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-627.6	0.47
M53-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-287.8	0.21
M53-3	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	158.5	0.12
M54-2	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	158.5	0.12
M54-3	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-287.7	0.21
M6-4	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	244.2	0.18
M6-5	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-430.5	0.32
M6-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-430.5	0.32
M6-6	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	244.2	0.18
M5-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	339.0	0.25
M5-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-943.7	0.70
M5-4	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	499.4	0.37
M5-7	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	499.4	0.37
M5-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-943.7	0.70
M5-8	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	339.0	0.25
M4-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	339.1	0.25
M4-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-943.9	0.70
M4-4	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	499.4	0.37
M4-7	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	499.4	0.37
M4-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-943.9	0.70
M4-8	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	339.1	0.25
M7-8	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	204.9	0.15
M7-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-551.6	0.41
M7-7	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.4	0.22
M7-4	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.4	0.22
M7-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-551.6	0.41
M7-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	204.9	0.15
M8-8	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	204.8	0.15
M8-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-551.3	0.41
M8-7	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.3	0.22
M8-4	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	299.3	0.22
M8-6	1	1.40	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-551.3	0.41
M8-5	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	204.8	0.15
M9-6	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	149.0	0.11
M9-3	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-248.4	0.18
M9-5	1	1.44	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	-248.4	0.18
M9-4	1	0	1350	1.00	1.00	1.00	1.00	1.00	1.00	1349	149.0	0.11

Shear Check (Strong Axis):

Member Name	Load Case #	Offset *ft*	Fv *psi*	CD	CM	Ct	Fv' *psi*	fv *psi*	Unity Check
M10-5	1	0	110	1.00	1.00	1.00	110	57.58	0.52
M10-6	1	0	110	1.00	1.00	1.00	110	34.55	0.31
M10-7	1	0	110	1.00	1.00	1.00	110	11.52	0.10
M10-8	1	0	110	1.00	1.00	1.00	110	11.52	0.10
M10-9	1	0	110	1.00	1.00	1.00	110	34.55	0.31
M10-10	1	0	110	1.00	1.00	1.00	110	57.58	0.52
M11-5	1	0	110	1.00	1.00	1.00	110	57.58	0.52
M11-6	1	0	110	1.00	1.00	1.00	110	34.55	0.31
M11-7	1	0	110	1.00	1.00	1.00	110	11.52	0.10
M11-8	1	0	110	1.00	1.00	1.00	110	11.52	0.10
M11-9	1	0	110	1.00	1.00	1.00	110	34.55	0.31
M11-10	1	0	110	1.00	1.00	1.00	110	57.58	0.52
M12-4	1	0	110	1.00	1.00	1.00	110	35.43	0.32
M12-5	1	0	110	1.00	1.00	1.00	110	11.81	0.11
M12-6	1	0	110	1.00	1.00	1.00	110	11.81	0.11
M12-7	1	0	110	1.00	1.00	1.00	110	35.43	0.32
M47-2	1	0	110	1.00	1.00	1.00	110	64.76	0.59
M47-3	1	0	110	1.00	1.00	1.00	110	41.10	0.37
M48-2	1	0	110	1.00	1.00	1.00	110	17.44	0.16
M48-3	1	1.40	110	1.00	1.00	1.00	110	17.44	0.16
M49-2	1	1.40	110	1.00	1.00	1.00	110	41.10	0.37
M49-3	1	1.40	110	1.00	1.00	1.00	110	64.76	0.59
M50-2	1	0	110	1.00	1.00	1.00	110	64.75	0.59

M50-3	1	0	110	1.00	1.00	1.00	110	41.09	0.37
M51-2	1	0	110	1.00	1.00	1.00	110	17.44	0.16
M51-3	1	1.40	110	1.00	1.00	1.00	110	17.44	0.16
M52-2	1	1.40	110	1.00	1.00	1.00	110	41.09	0.37
M52-3	1	1.40	110	1.00	1.00	1.00	110	64.75	0.59
M53-2	1	0	110	1.00	1.00	1.00	110	42.13	0.38
M53-3	1	0	110	1.00	1.00	1.00	110	17.88	0.16
M54-2	1	1.44	110	1.00	1.00	1.00	110	17.88	0.16
M54-3	1	1.44	110	1.00	1.00	1.00	110	42.13	0.38
M6-4	1	1.44	110	1.00	1.00	1.00	110	24.08	0.22
M6-5	1	1.44	110	1.00	1.00	1.00	110	60.75	0.55
M6-3	1	0	110	1.00	1.00	1.00	110	60.75	0.55
M6-6	1	0	110	1.00	1.00	1.00	110	24.08	0.22
M5-5	1	1.40	110	1.00	1.00	1.00	110	59.19	0.54
M5-6	1	1.40	110	1.00	1.00	1.00	110	94.92	0.86
M5-4	1	0	110	1.00	1.00	1.00	110	23.47	0.21
M5-7	1	1.40	110	1.00	1.00	1.00	110	23.47	0.21
M5-3	1	0	110	1.00	1.00	1.00	110	94.92	0.86
M5-8	1	0	110	1.00	1.00	1.00	110	59.19	0.54
M4-5	1	1.40	110	1.00	1.00	1.00	110	59.20	0.54
M4-6	1	1.40	110	1.00	1.00	1.00	110	94.92	0.86
M4-4	1	0	110	1.00	1.00	1.00	110	23.47	0.21
M4-7	1	1.40	110	1.00	1.00	1.00	110	23.47	0.21
M4-3	1	0	110	1.00	1.00	1.00	110	94.92	0.86
M4-8	1	0	110	1.00	1.00	1.00	110	59.20	0.54
M7-8	1	0	110	1.00	1.00	1.00	110	31.59	0.29
M7-3	1	0	110	1.00	1.00	1.00	110	52.66	0.48
M7-7	1	0	110	1.00	1.00	1.00	110	10.53	0.10
M7-4	1	0	110	1.00	1.00	1.00	110	10.53	0.10
M7-6	1	0	110	1.00	1.00	1.00	110	52.66	0.48
M7-5	1	0	110	1.00	1.00	1.00	110	31.59	0.29
M8-8	1	0	110	1.00	1.00	1.00	110	31.59	0.29
M8-3	1	0	110	1.00	1.00	1.00	110	52.66	0.48
M8-7	1	0	110	1.00	1.00	1.00	110	10.53	0.10
M8-4	1	0	110	1.00	1.00	1.00	110	10.53	0.10
M8-6	1	0	110	1.00	1.00	1.00	110	52.66	0.48
M8-5	1	0	110	1.00	1.00	1.00	110	31.59	0.29
M9-6	1	0	110	1.00	1.00	1.00	110	10.80	0.10
M9-3	1	0	110	1.00	1.00	1.00	110	32.40	0.29
M9-5	1	0	110	1.00	1.00	1.00	110	32.40	0.29
M9-4	1	0	110	1.00	1.00	1.00	110	10.80	0.10

Deflection Check (Strong Axis):

Member Name	Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M10-5	1	0.56	0	0.06	0.01
M10-5	2	0.56	0.00	0.06	0.03
M10-6	1	0.84	0	0.06	0.00
M10-6	2	0.84	0	0.06	0.01
M10-7	1	0.70	0	0.06	0.01
M10-7	2	0.70	-0.00	0.06	0.03
M10-8	1	0.70	0	0.06	0.01
M10-8	2	0.70	-0.00	0.06	0.03
M10-9	1	0.56	0	0.06	0.00
M10-9	2	0.56	0	0.06	0.01
M10-10	1	0.84	0	0.06	0.01
M10-10	2	0.84	0.00	0.06	0.03
M11-5	1	0.56	0	0.06	0.01
M11-5	2	0.56	0.00	0.06	0.03
M11-6	1	0.84	0	0.06	0.00
M11-6	2	0.84	0	0.06	0.01
M11-7	1	0.70	0	0.06	0.01
M11-7	2	0.70	-0.00	0.06	0.03
M11-8	1	0.70	0	0.06	0.01
M11-8	2	0.70	-0.00	0.06	0.03
M11-9	1	0.56	0	0.06	0.00
M11-9	2	0.56	0	0.06	0.01
M11-10	1	0.84	0	0.06	0.01
M11-10	2	0.84	0.00	0.06	0.03
M12-4	1	0.57	0	0.06	0.00
M12-4	2	0.57	0	0.06	0.01
M12-5	1	0.72	0	0.06	0.00
M12-5	2	0.72	0	0.06	0.01
M12-6	1	0.72	0	0.06	0.00
M12-6	2	0.72	0	0.06	0.01
M12-7	1	0.86	0	0.06	0.00

M12-7	2	0.86	0	0.06	0.01
M47-2	1	0.56	0	0.06	0.00
M47-2	2	0.63	0.00	0.06	0.04
M47-3	1	0.84	0	0.06	0.00
M47-3	2	0.91	0	0.06	0.01
M48-2	1	0.70	0	0.06	0.00
M48-2	2	0.70	-0.00	0.06	0.03
M48-3	1	0.70	0	0.06	0.00
M48-3	2	0.70	-0.00	0.06	0.03
M49-2	1	0.56	0	0.06	0.00
M49-2	2	0.49	0	0.06	0.01
M49-3	1	0.84	0	0.06	0.00
M49-3	2	0.77	0.00	0.06	0.04
M50-2	1	0.56	0	0.06	0.00
M50-2	2	0.63	0.00	0.06	0.04
M50-3	1	0.84	0	0.06	0.00
M50-3	2	0.91	0	0.06	0.01
M51-2	1	0.70	0	0.06	0.00
M51-2	2	0.70	-0.00	0.06	0.03
M51-3	1	0.70	0	0.06	0.00
M51-3	2	0.70	-0.00	0.06	0.03
M52-2	1	0.56	0	0.06	0.00
M52-2	2	0.49	0	0.06	0.01
M52-3	1	0.84	0	0.06	0.00
M52-3	2	0.77	0.00	0.06	0.04
M53-2	1	0.57	0	0.06	0.00
M53-2	2	0.57	0	0.06	0.01
M53-3	1	0.72	0	0.06	0.00
M53-3	2	0.79	0	0.06	0.01
M54-2	1	0.72	0	0.06	0.00
M54-2	2	0.65	0	0.06	0.01
M54-3	1	0.86	0	0.06	0.00
M54-3	2	0.86	0	0.06	0.01
M6-4	1	0.72	0	0.06	0.00
M6-4	2	0.65	-0.00	0.06	0.02
M6-5	1	0.86	0	0.06	0.00
M6-5	2	0.86	0.00	0.06	0.02
M6-3	1	0.57	0	0.06	0.00
M6-3	2	0.57	0.00	0.06	0.02
M6-6	1	0.72	0	0.06	0.00
M6-6	2	0.79	-0.00	0.06	0.02
M5-5	1	0.56	0	0.06	0.00
M5-5	2	0.49	0	0.06	0.01
M5-6	1	0.84	0	0.06	0.01
M5-6	2	0.77	0.00	0.06	0.06
M5-4	1	0.70	0	0.06	0.01
M5-4	2	0.70	-0.00	0.06	0.04
M5-7	1	0.70	0	0.06	0.01
M5-7	2	0.70	-0.00	0.06	0.04
M5-3	1	0.56	0	0.06	0.01
M5-3	2	0.63	0.00	0.06	0.06
M5-8	1	0.84	0	0.06	0.00
M5-8	2	0.91	0	0.06	0.01
M4-5	1	0.56	0	0.06	0.00
M4-5	2	0.49	0	0.06	0.01
M4-6	1	0.84	0	0.06	0.01
M4-6	2	0.77	0.00	0.06	0.06
M4-4	1	0.70	0	0.06	0.01
M4-4	2	0.70	-0.00	0.06	0.04
M4-7	1	0.70	0	0.06	0.01
M4-7	2	0.70	-0.00	0.06	0.04
M4-3	1	0.56	0	0.06	0.01
M4-3	2	0.63	0.00	0.06	0.06
M4-8	1	0.84	0	0.06	0.00
M4-8	2	0.91	0	0.06	0.01
M7-8	1	0.84	0	0.06	0.00
M7-8	2	0.84	0	0.06	0.01
M7-3	1	0.56	0	0.06	0.01
M7-3	2	0.56	0.00	0.06	0.03
M7-7	1	0.70	0	0.06	0.01
M7-7	2	0.70	-0.00	0.06	0.02
M7-4	1	0.70	0	0.06	0.01
M7-4	2	0.70	-0.00	0.06	0.02
M7-6	1	0.84	0	0.06	0.01
M7-6	2	0.84	0.00	0.06	0.03
M7-5	1	0.56	0	0.06	0.00

M7-5	2	0.56	0	0.06	0.01
M8-8	1	0.84	0	0.06	0.00
M8-8	2	0.84	0	0.06	0.01
M8-3	1	0.56	0	0.06	0.01
M8-3	2	0.56	0.00	0.06	0.03
M8-7	1	0.70	0	0.06	0.01
M8-7	2	0.70	-0.00	0.06	0.02
M8-4	1	0.70	0	0.06	0.01
M8-4	2	0.70	-0.00	0.06	0.02
M8-6	1	0.84	0	0.06	0.01
M8-6	2	0.84	0.00	0.06	0.03
M8-5	1	0.56	0	0.06	0.00
M8-5	2	0.56	0	0.06	0.01
M9-6	1	0.72	0	0.06	0.00
M9-6	2	0.72	0	0.06	0.01
M9-3	1	0.57	0	0.06	0.00
M9-3	2	0.57	0	0.06	0.01
M9-5	1	0.86	0	0.06	0.00
M9-5	2	0.86	0	0.06	0.01
M9-4	1	0.72	0	0.06	0.00
M9-4	2	0.72	0	0.06	0.01

[a]In deflection checks, load case #'s refer to serviceability cases.

NDS Wood Design

Design Group: New 2x8 Joists, Group Report, Designed As: SS2x8

SIZE CONSTRAINTS:
Depth is unconstrained.
Width is unconstrained.

BRACING INFORMATION:
Lateral bracing at top flange (+y): Pattern = Unbraced
Lateral bracing at bottom flange (-y): Pattern = Unbraced
Strong axis bracing (parallel to y): Pattern = Unbraced

Inflection points are not used as brace points.

DEFLECTION LIMITS:
No absolute deflection limit.
Span ratio deflection limited to L/120.00.
Weak deflections not checked.

WOOD PARAMETERS:
Member Type = Visually Graded Dimension Lumber
Species = Southern Pine
Grade = No. 1
Beam Type = Simply Supported
Temperature conditions: T < 100 F
Cross Section = Rectangular
Loading Pattern = Uniform
Moisture conditions: Dry
No shear stress factor used
Buckling stiffness factor not used
Not eligible for incising factor
Weak buckling length coefficient = 1.00
Strong buckling length coefficient = 1.00
Manually specified adjustment factors:
Cr = 1.150

SS2x8 INFORMATION:
b = 0.125 ft
d = 0.604 ft
A = 10.88 in^2
Ix = 47.63 in^4
Iy = 2.039 in^4
Sx = 13.14 in^3
Sy = 2.719 in^3

Extreme Checks Only
Axial Check:

Member Name	Load Case #	Offset *ft*	State	Ft/Fc *psi*	CD	CM	Ct	CF	CP	Ft'/Fc' *psi*	ft/fc *psi*	Unity Check

Check was not performed.

Flexure Check (Strong Bending):

Member Name	Load Case #	Offset *ft*	Fb *psi*	CD	CM	Ct	CL	CF	Cr	Cf	Fb' *psi*	fb *psi*	Unity Check
M64	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67
M65	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67

M66	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67
M67	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67
M68	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67
M69	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	820.7	0.67
M70	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	844.2	0.69
M71	1	3.42	1500	1.00	1.00	1.00	0.81	1.00	1.00	1.00	1222	844.2	0.69
M72	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M73	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M74	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M75	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M76	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M77	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	716.9	0.64
M78	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	735.1	0.65
M79	1	4.00	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.00	1129	735.1	0.65
M80	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M81	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M82	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M83	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M84	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M85	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		733.6	0.65
M86	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		752.3	0.67
M87	1	4.04	1500	1.00	1.00	1.00	0.75	1.00	1.00	1.001121.01		752.3	0.67
M88	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M89	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M90	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M91	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M92	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M93	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1012	1.00
M94	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1037	1.03
M95	1	4.75	1500	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1011	1037	1.03

Shear Check (Strong Axis):

Member Name	Load Case #	Offset *ft*	Fv *psi*	CD	CM	Ct	Fv' *psi*	fv *psi*	Unity Check
M64	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M65	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M66	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M67	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M68	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M69	1	0	90	1.00	1.00	1.00	90	72.57	0.81
M70	1	0	90	1.00	1.00	1.00	90	74.64	0.83
M71	1	0	90	1.00	1.00	1.00	90	74.64	0.83
M72	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M73	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M74	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M75	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M76	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M77	1	0	90	1.00	1.00	1.00	90	54.16	0.60
M78	1	0	90	1.00	1.00	1.00	90	55.54	0.62
M79	1	0	90	1.00	1.00	1.00	90	55.54	0.62
M80	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M81	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M82	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M83	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M84	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M85	1	0	90	1.00	1.00	1.00	90	54.79	0.61
M86	1	0	90	1.00	1.00	1.00	90	56.18	0.62
M87	1	0	90	1.00	1.00	1.00	90	56.18	0.62
M88	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M89	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M90	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M91	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M92	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M93	1	0	90	1.00	1.00	1.00	90	64.34	0.71
M94	1	0	90	1.00	1.00	1.00	90	65.98	0.73
M95	1	0	90	1.00	1.00	1.00	90	65.98	0.73

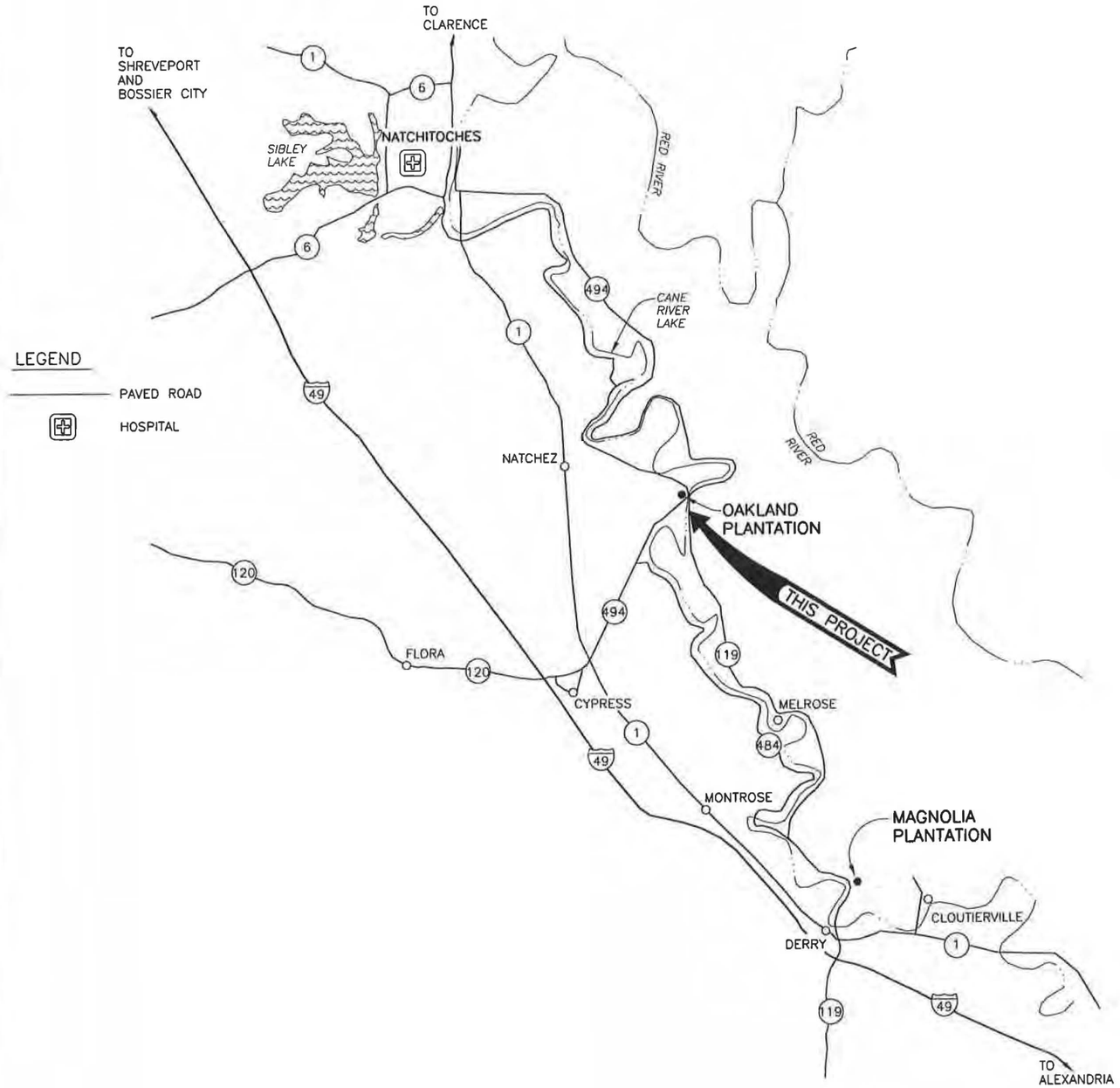
Deflection Check (Strong Axis):

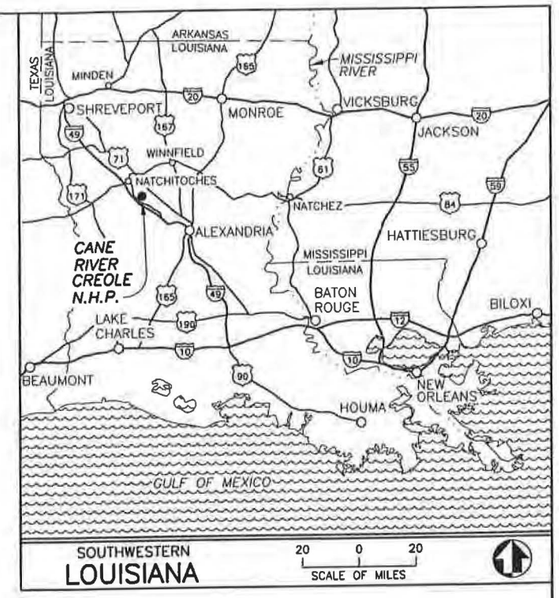
Member Name	Load Case #	Offset *ft*	dy *in*	Limit *in*	Unity Check
M64	1	3.42	-0.01	0.68	0.02
M64	2	3.42	-0.08	0.68	0.12
M65	1	3.42	-0.01	0.68	0.02
M65	2	3.42	-0.08	0.68	0.12
M66	1	3.42	-0.01	0.68	0.02
M66	2	3.42	-0.08	0.68	0.12

M67	1	3.42	-0.01	0.68	0.02
M67	2	3.42	-0.08	0.68	0.12
M68	1	3.42	-0.01	0.68	0.02
M68	2	3.42	-0.08	0.68	0.12
M69	1	3.42	-0.01	0.68	0.02
M69	2	3.42	-0.08	0.68	0.12
M70	1	3.42	-0.01	0.68	0.02
M70	2	3.42	-0.09	0.68	0.13
M71	1	3.42	-0.01	0.68	0.02
M71	2	3.42	-0.09	0.68	0.13
M72	1	4.00	-0.02	0.80	0.03
M72	2	4.00	-0.10	0.80	0.12
M73	1	4.00	-0.02	0.80	0.03
M73	2	4.00	-0.10	0.80	0.12
M74	1	4.00	-0.02	0.80	0.03
M74	2	4.00	-0.10	0.80	0.12
M75	1	4.00	-0.02	0.80	0.03
M75	2	4.00	-0.10	0.80	0.12
M76	1	4.00	-0.02	0.80	0.03
M76	2	4.00	-0.10	0.80	0.12
M77	1	4.00	-0.02	0.80	0.03
M77	2	4.00	-0.10	0.80	0.12
M78	1	4.00	-0.02	0.80	0.03
M78	2	4.00	-0.10	0.80	0.12
M79	1	4.00	-0.02	0.80	0.03
M79	2	4.00	-0.10	0.80	0.12
M80	1	4.04	-0.02	0.81	0.03
M80	2	4.04	-0.10	0.81	0.12
M81	1	4.04	-0.02	0.81	0.03
M81	2	4.04	-0.10	0.81	0.12
M82	1	4.04	-0.02	0.81	0.03
M82	2	4.04	-0.10	0.81	0.12
M83	1	4.04	-0.02	0.81	0.03
M83	2	4.04	-0.10	0.81	0.12
M84	1	4.04	-0.02	0.81	0.03
M84	2	4.04	-0.10	0.81	0.12
M85	1	4.04	-0.02	0.81	0.03
M85	2	4.04	-0.10	0.81	0.12
M86	1	4.04	-0.02	0.81	0.03
M86	2	4.04	-0.10	0.81	0.13
M87	1	4.04	-0.02	0.81	0.03
M87	2	4.04	-0.10	0.81	0.13
M88	1	4.75	-0.04	0.95	0.04
M88	2	4.75	-0.19	0.95	0.20
M89	1	4.75	-0.04	0.95	0.04
M89	2	4.75	-0.19	0.95	0.20
M90	1	4.75	-0.04	0.95	0.04
M90	2	4.75	-0.19	0.95	0.20
M91	1	4.75	-0.04	0.95	0.04
M91	2	4.75	-0.19	0.95	0.20
M92	1	4.75	-0.04	0.95	0.04
M92	2	4.75	-0.19	0.95	0.20
M93	1	4.75	-0.04	0.95	0.04
M93	2	4.75	-0.19	0.95	0.20
M94	1	4.75	-0.04	0.95	0.04
M94	2	4.75	-0.20	0.95	0.21
M95	1	4.75	-0.04	0.95	0.04
M95	2	4.75	-0.20	0.95	0.21

[a]In deflection checks, load case #'s refer to serviceability cases.

ALLOWABLE FLOOR LOAD DRAWINGS





INDEX OF DRAWINGS:

GENERAL

G1 COVER SHEET AND INDEX OF DRAWINGS

STRUCTURAL

S1 EXISTING FRAMING PLAN
S2 FRAMING PLAN MODIFICATIONS

CANE RIVER CREOLE NATIONAL HISTORICAL PARK

SCALE OF FEET
1,000 0 1,000 2,000
250 0 250 500
SCALE OF METERS

PROJ. NO. XXXXX

BASIC DATA:

QUALITY DESIGN CERTIFICATION
- ☐ Prepared in Accordance with Design Development (Title I) ____ Drawing No.
  OR
- ☐ Variance from Design Development (Title I) Approved by Superintendent on ____ Date
  OR
- ☐ Construction Drawing Not Preceded by Design Development (Title I)

Project Manager ____ Date

SCHEMATIC DESIGN

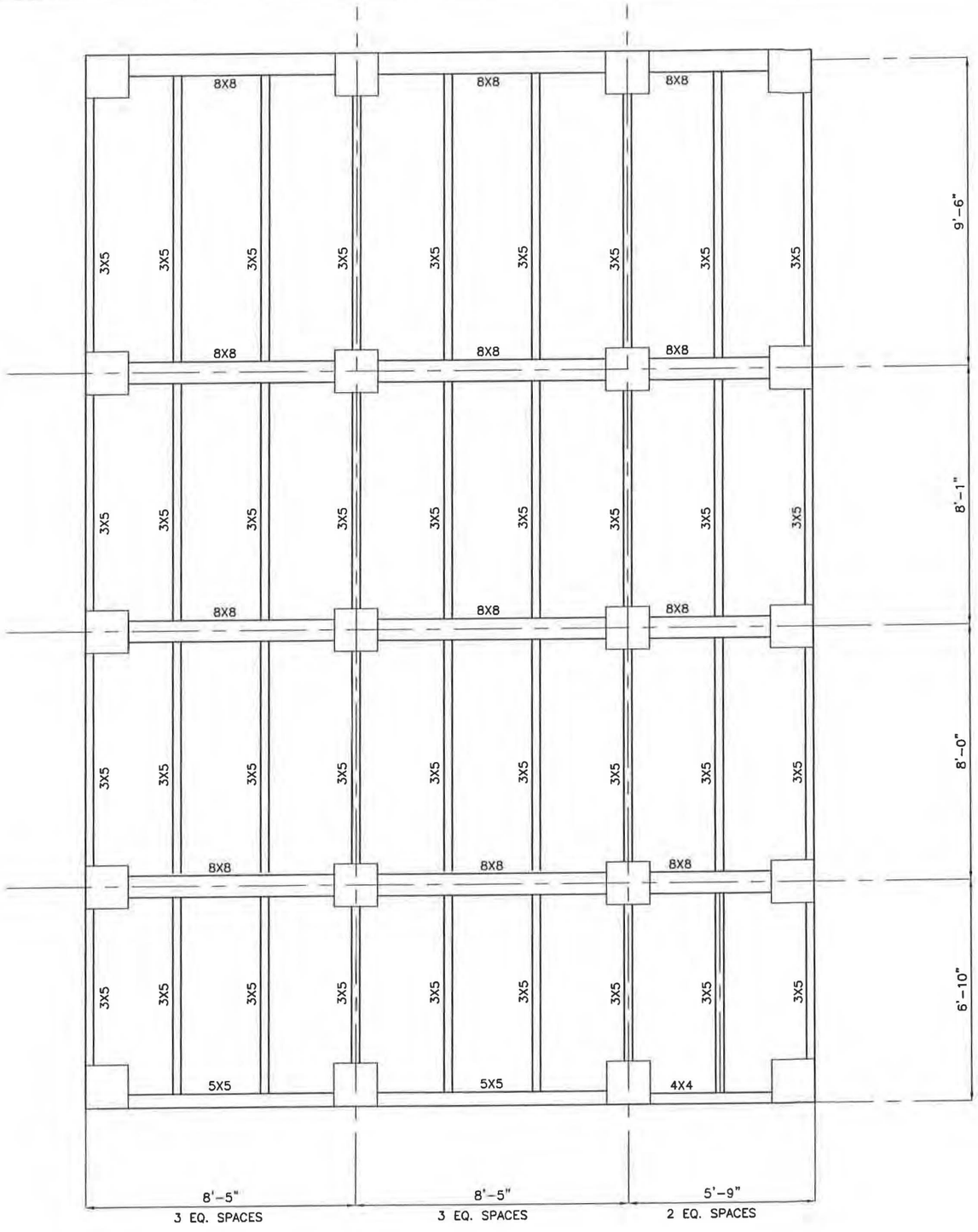
UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
SOUTHEAST SUPPORT OFFICE
DIVISION OF CULTURAL RESOURCES

TITLE OF DRAWING
SOUTH TENANT HOUSE
LOCATION WITHIN PARK
OAKLAND PLANTATION
NAME OF PARK
CANE RIVER CREOLE N.H.P

REGION SOUTHEAST | COUNTY NATCHITOCHES | STATE LOUISIANA

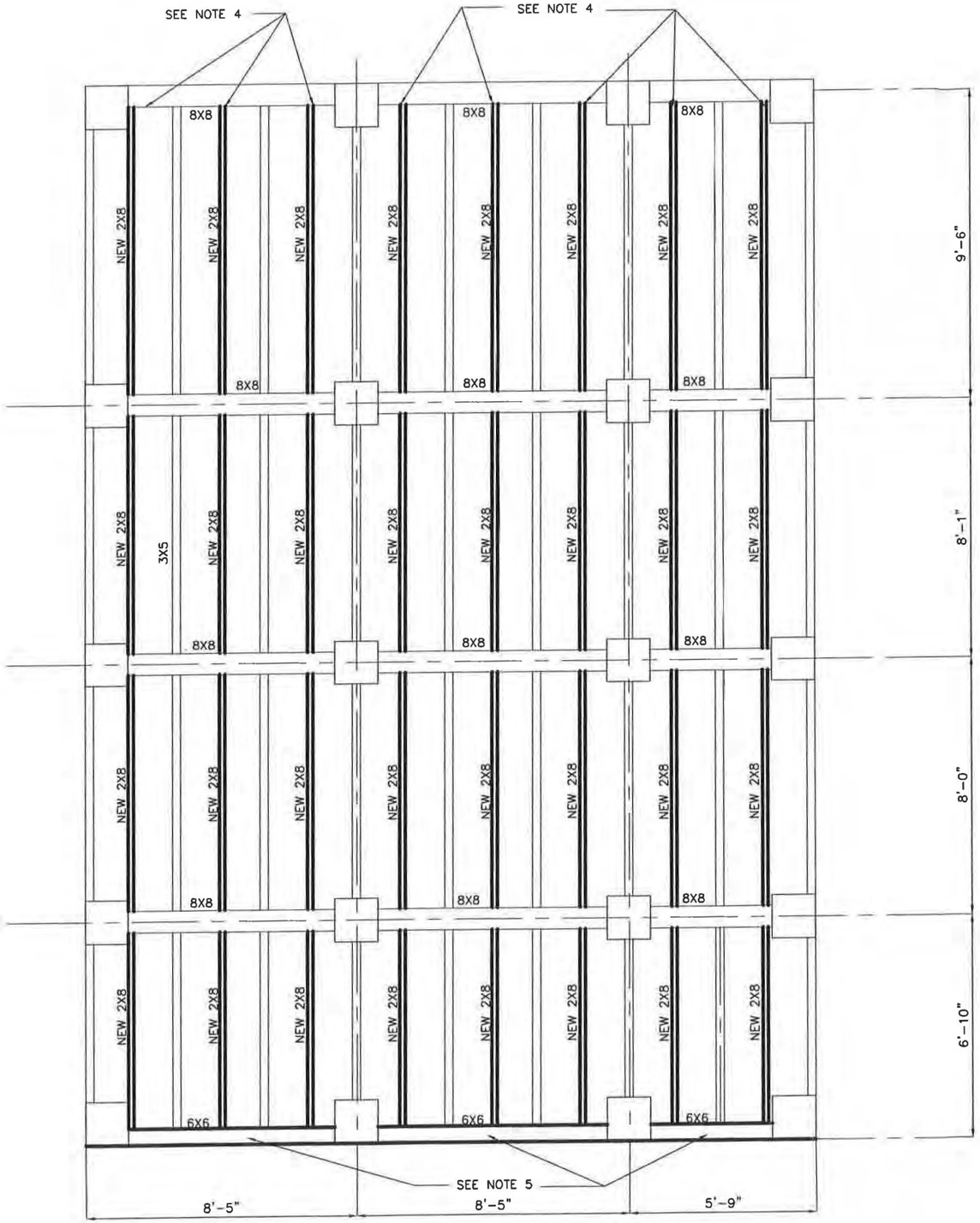
DRAWING NO. XXX / XX
PKG. NO. XXX / XXX
SHEET 1 OF ____



1/S1 EXISTING FRAMING PLAN

2 0 2 4
SCALE OF FEET

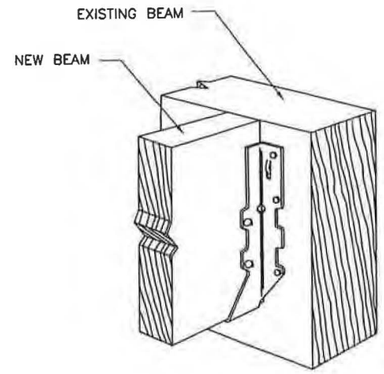
DESIGNED: CT DRAWN: EK TECH. REVIEW: RAB DATE: 2004 MAR	SUB SHEET NO. S1	TITLE OF SHEET SOUTH TENANT HOUSE EXISTING FRAMING PLAN CANE RIVER CREOLE NATIONAL HISTORICAL PARK	DRAWING NO. PKG. NO. SHEET OF



1 / S2 FRAMING PLAN MODIFICATIONS

NOTES:

1. NEW WOOD SHALL BE CYPRESS OR PRESSURE-TREATED SOUTHERN PINE NO. 1 GRADE.
2. FIELD CUT NEW BEAMS. FIELD VERIFY DIMENSIONS PRIOR TO CUTTING.
3. FLOOR BOARDS ARE TO BE REMOVED AT LOCATIONS WHERE NEW BEAMS ARE TO BE INSTALLED. ONCE THE NEW BEAMS HAVE BEEN PLACED, BOARDS SHOULD BE PLACED IN THEIR ORIGINAL LOCATIONS & RE-NAILED TO JOISTS.
4. FURNISH & INSTALL NEW NEW 2X8 JOIST AT MIDWAY POINT BETWEEN EXISTING JOISTS. ATTACH TO EXISTING WOOD GIRDERS WITH SIMPSON STRONG TIE LUS 28 FACE MOUNTED HANGERS. SEE DETAIL A/S2.
5. REMOVE EXISTING PORCH SILL BEAMS AND REPLACE WITH NEW 6X6 BEAM WITH IN-KIND MATERIAL. ALL JOISTS FRAMING INTO PORCH SILL BEAMS ARE TO BE TEMPORARILY SUPPORTED WHILE CONSTRUCTION IS IN PROGRESS.



TYPICAL FACE-MOUNT HANGER
SIMPSON STRONG-TIE

A / S2 TYPICAL DETAIL
NO SCALE

2 0 2 4
SCALE OF FEET

DESIGNED: CT CADD: EK TECH. REVIEW: RAB DATE: 2004 MAR	SUB SHEET NO. S2	TITLE OF SHEET SOUTH TENANT HOUSE FRAMING PLAN MODIFICATIONS CANE RIVER CREOLE NATIONAL HISTORICAL PARK	DRAWING NO. — PKG. NO. — SHEET — OF —

INTERIOR AND EXTERIOR FINISHES STUDY AND PHOTOGRAPHS

Image 65: Oakland Plantation. South Tenant Cabin, date unknown (photograph courtesy of Cane River Creole National Historic Park Archives). The South Cabin as seen through the ruins of "Gabe Nargot's Cabin.".

Image 66: Oakland Plantation. South Tenant Cabin, east elevation, 2002.

Image 67: Oakland Plantation. South Tenant Cabin, south elevation, 2002.

Image 68: Oakland Plantation. South Tenant Cabin, Room 104, east wall, 2002. The original *bousillage* walls can be seen behind the protective plywood sheathing.

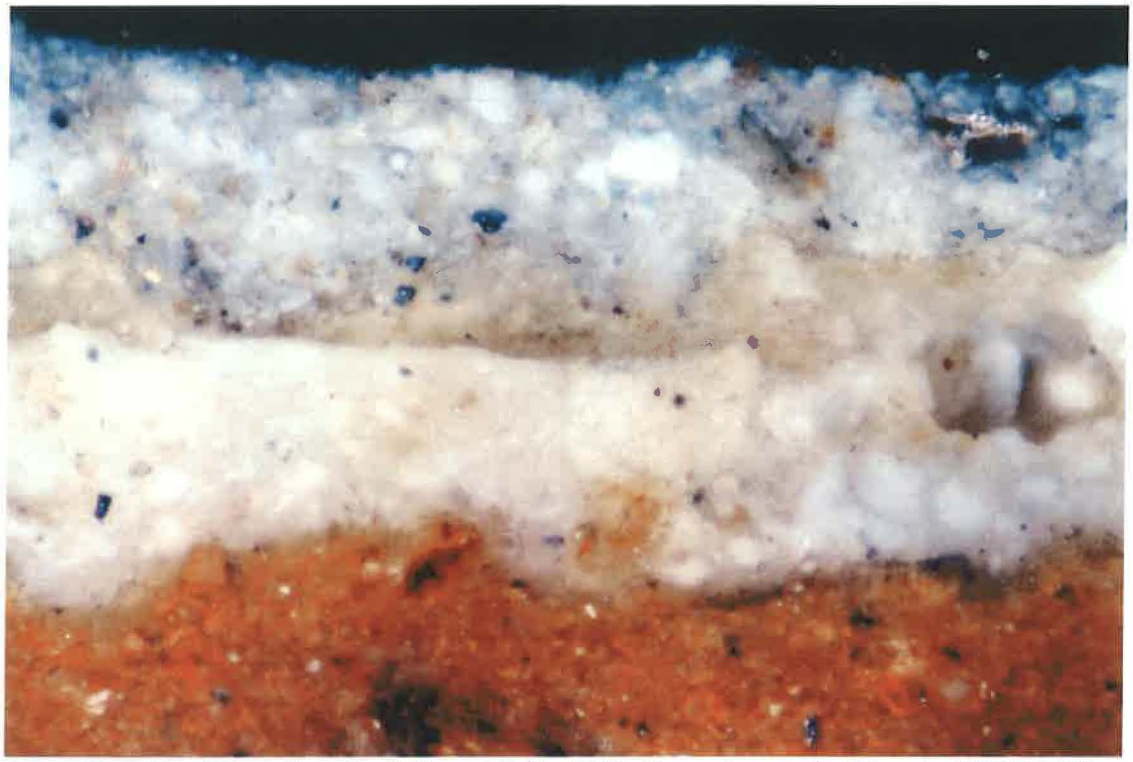


Image 69: Oakland Plantation. South Tenant Cabin, 2002. Photomicrograph of Sample #OPST.1 (10x mag.) showing the layers of limewash on the original *bousillage* on the east wall of Room 104.

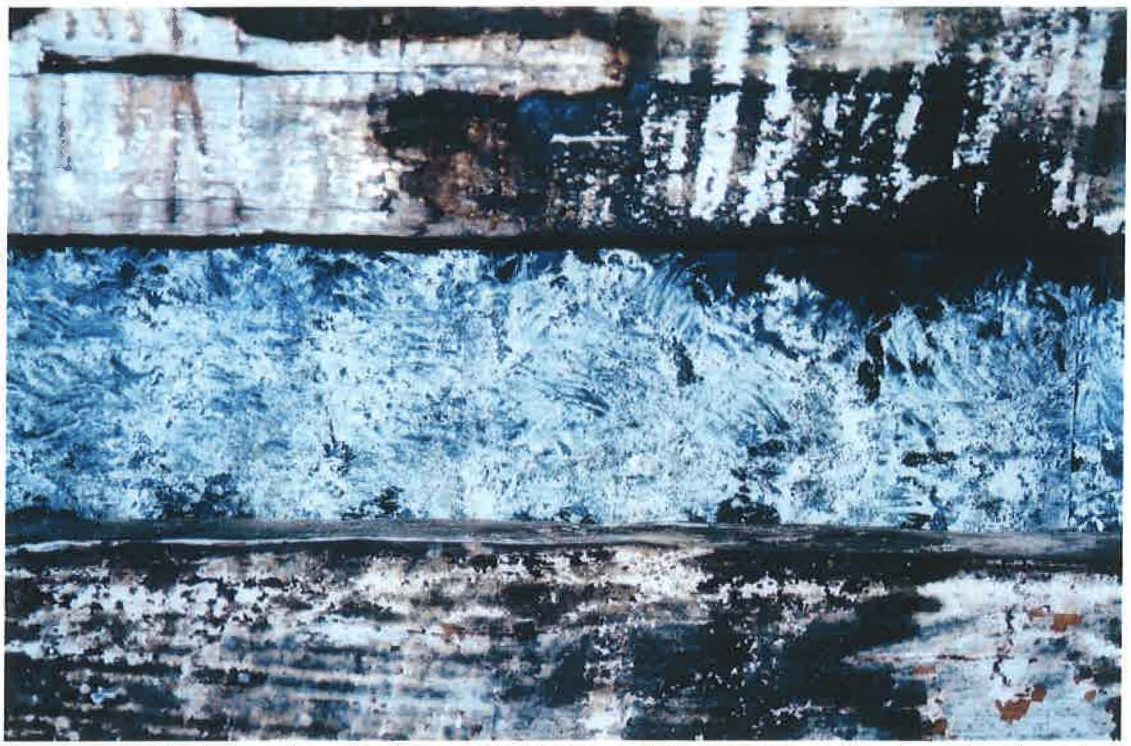


Image 70: Oakland Plantation. South Tenant Cabin, Room 104, 2002. The ceiling (or underside of the roof and rafters) of Room 104 was limewashed white.

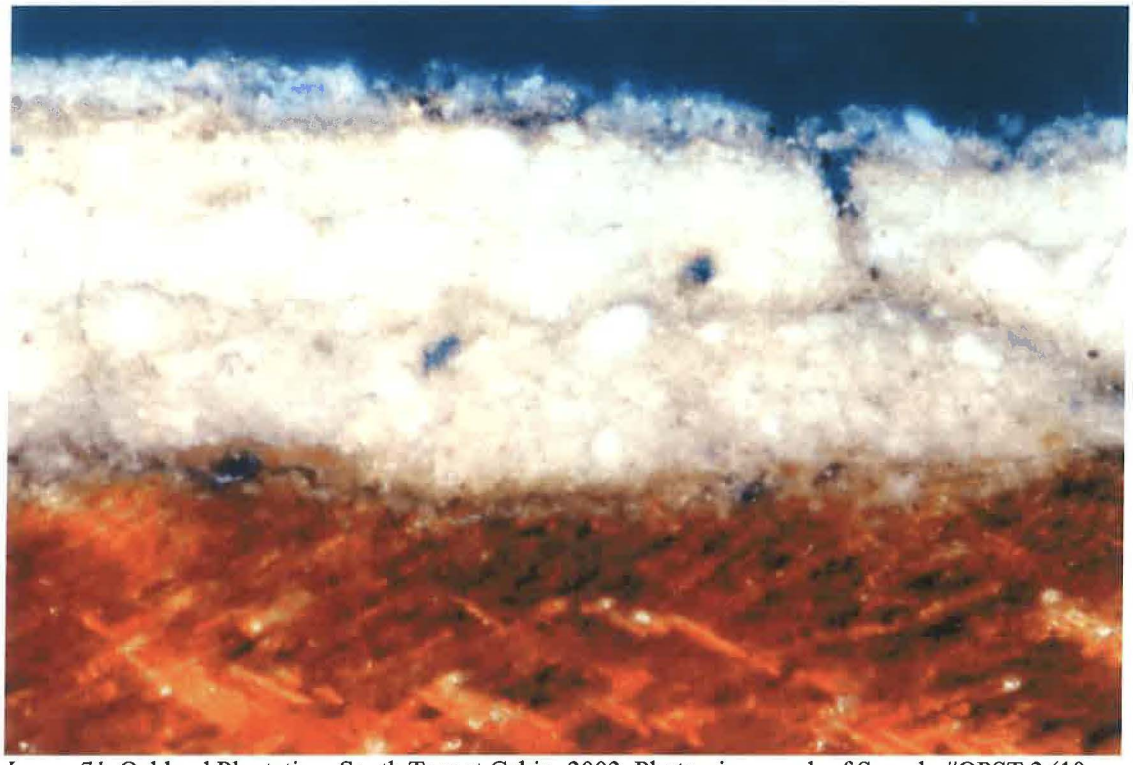


Image 71: Oakland Plantation. South Tenant Cabin, 2002. Photomicrograph of Sample #OPST.2 (10x mag.), which was removed from the ceiling rafter of Room 104, has two layers of whitewash on it.

Image 72: Oakland Plantation. South Tenant Cabin, Room 102, north wall, 2002. The original whitewashed *bousillage* behind the sheathing and wallpaper.

Image 73: Oakland Plantation. South Tenant Cabin, Room 102, 2002. Photomicrograph of Sample #OPST.14 (10x mag.) showing the whitewash layers on the *bousillage* of the north wall.

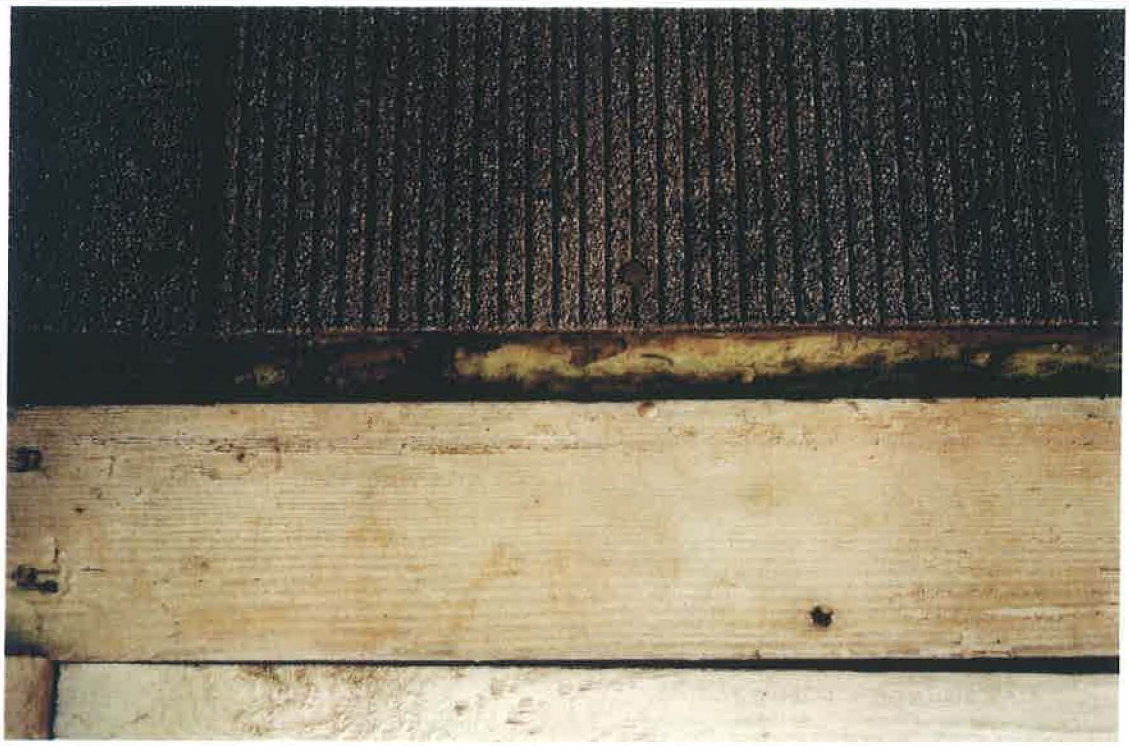


Image 74: Oakland Plantation. South Tenant Cabin, east elevation, 2002. *Bousillage* preserved behind sheathing and asphalt paper.

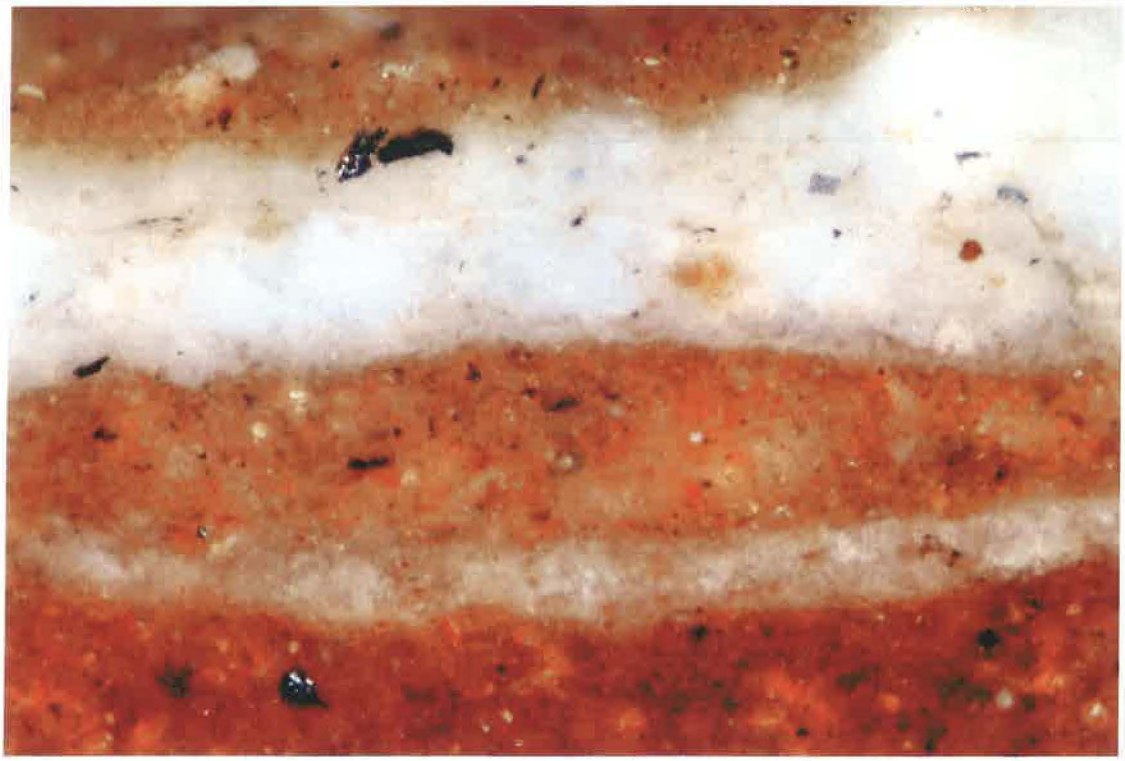


Image 75: Oakland Plantation. South Tenant Cabin, east elevation, 2002. Photomicrograph of Sample #OPST.49 (10x mag.) showing two campaigns of limewashed *bousillage* on the building's east elevation.

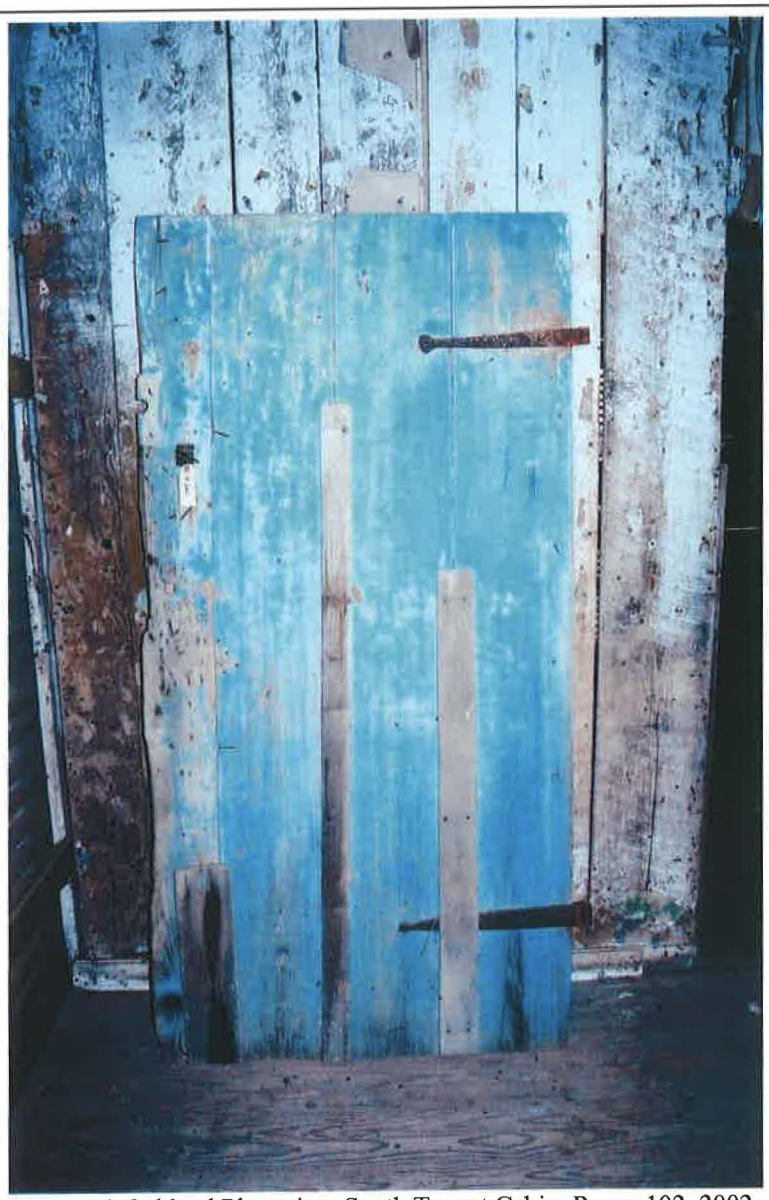


Image 76: Oakland Plantation. South Tenant Cabin, Room 102, 2002. Interior face of Door D1.

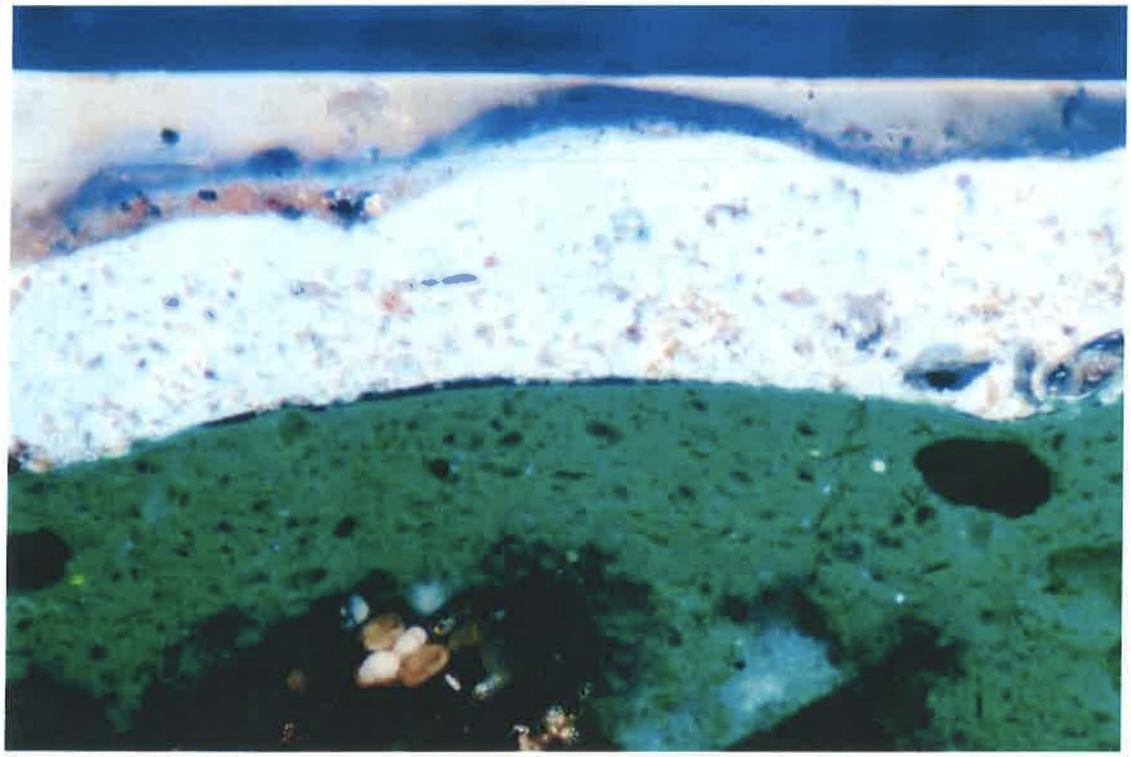


Image 11: Oakland Plantation. South Tenant Cabin, Room 102, 2002. Photomicrograph of Sample #OPST.24 (10x mag.) showing the painted finishes of the interior side of D1.

Image 78: Oakland Plantation. South Tenant Cabin, Room 102, south wall, 2002. Door D2.

Image 80: Oakland Plantation. South Tenant Cabin, Room 104, 2002. Door D3.

Image 81: Oakland Plantation. South Tenant Cabin, Room 104, 2002. Door D4.

Image 82: Oakland Plantation. South Tenant Cabin, west elevation, 2002. Remnants of Door D5.

Image 83: Oakland Plantation. South Tenant Cabin, west elevation. Photomicrograph of the three layers of limewash found on a fragment of Door D5. (Sample #OPST.57, 10x mag.).

Image 84: Oakland Plantation. South Tenant Cabin, Room 103, 2002. Window surround on east wall.

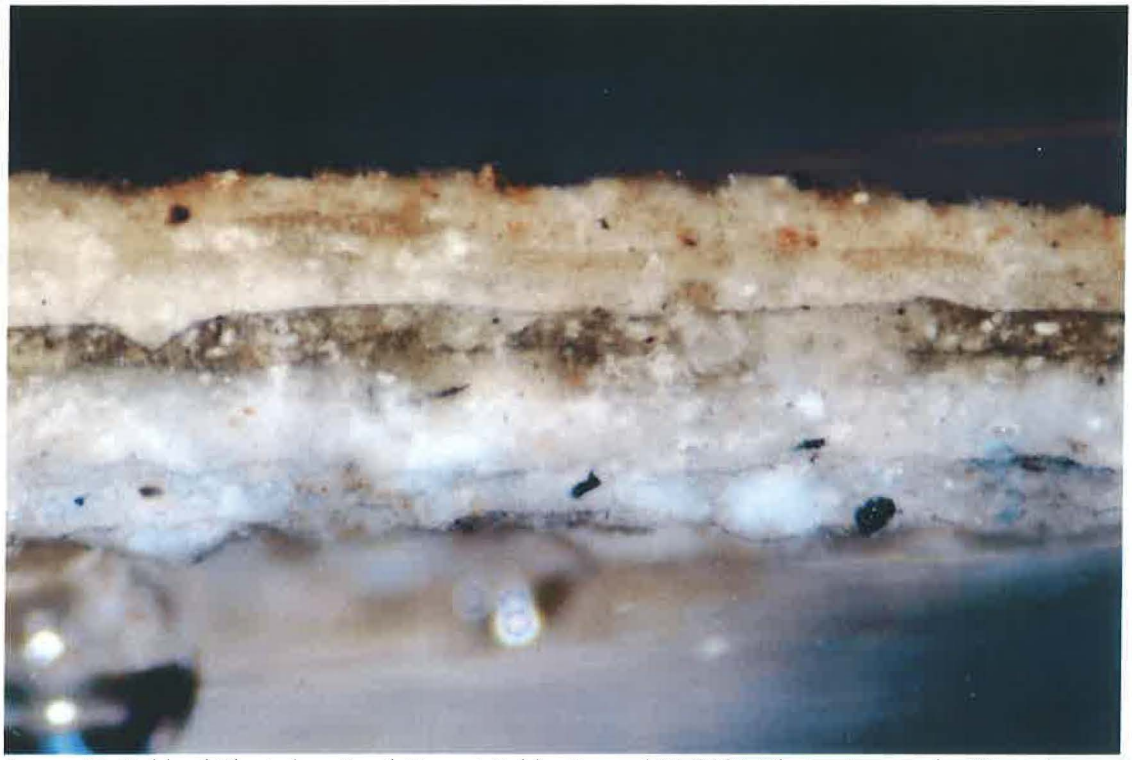


Image 85: Oakland Plantation. South Tenant Cabin, Room 103, 2002. Photomicrograph of Sample #OPST.38 (10x mag.), removed from window surround on east wall.

Image 86: Oakland Plantation. South Tenant Cabin, east elevation, 2002. Recycled board-and-batten sheathing under asphalt paper (and over *bousillage)*.

Image 87: Oakland Plantation. South Tenant Cabin, Room 102, 2002. The chimney has *bousillage* plaster on it while the mantle is made of hard cement with modern blue paint.

Image 88: Oakland Plantation. South Tenant Cabin, Room 104, 2002. Remnants of one of the wallpapers and earlier whitewashed framing under the plywood sheathing.

Image 89: Oakland Plantation. South Tenant Cabin, Room 103, 2002. A newspaper applied onto the wall provides a date (September 1962) for the wallpaper sequence.

SUPPLEMENTARY PHOTOGRAPHS

This copy does not contain supplementary photographs.
See Master copy for photographs and negatives.