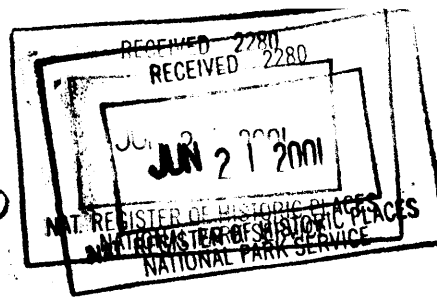


United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form

766



This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Minnesota State Sanatorium for Consumptives

other names/site number Ah-Gwah-Ching

2. Location

street & number 7232 Ah-Gwah-Ching Rd. NW not for publication

city or town Shingobee Twp. (Ah-Gwah-Ching) Walker vicinity

state Minnesota code MN county Cass code 21 zip code 56430

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Ian R. Stewart 6/13/01
Signature of certifying official/Title Ian R. Stewart Date
Deputy State Historic Preservation Officer
State or Federal agency and bureau Minnesota Historical Society

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of certifying official/Title _____ Date _____

State or Federal agency and bureau _____

4. National Park Service Certification

I hereby certify that the property is:

- entered in the National Register. See continuation sheet.
- determined eligible for the National Register See continuation sheet.
- determined not eligible for the National Register.
- removed from the National Register.
- other, (explain): _____

Signature of the Keeper

Date of Action

Edson H. Beall

7.25.01

Name of Property

County and State

5. Classification

Ownership of Property (Check as many boxes as apply)

Category of Property (Check only one box)

Number of Resources within Property (Do not include previously listed resources in the count.)

- private, public-local, public-State, public-Federal

- building(s), district, site, structure, object

Table with 2 columns: Contributing, Noncontributing. Rows for buildings, sites, structures, objects, Total.

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

Number of contributing resources previously listed in the National Register

N/A

0

6. Function or Use

Historic Functions (Enter categories from instructions)

Current Functions (Enter categories from instructions)

HEALTH CARE/hospital

HEALTH CARE/sanitarium

7. Description

Architectural Classification (Enter categories from instructions)

Materials (Enter categories from instructions)

LATE 19th & 20th CENTURY REVIVALS/ Colonial Revival, Tudor Revival, Mission/Spanish Colonial Revival

foundation STONE, walls STUCCO, BRICK, roof TILE, other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- Criteria A, B, C, D with checkboxes and descriptions.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- Criteria A-F with checkboxes and descriptions.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- Documentation checkboxes: preliminary determination, previously listed, landmark, survey, engineering.

Areas of Significance

(Enter categories from instructions)

HEALTH/MEDICINE

ARCHITECTURE

Period of Significance

1906-1946

Significant Dates

1906

Significant Person

(Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Johnston, Clarence, H.

Sund, Englebret & Dunham, Arthur

Schmidt, Garden & Erikson

Primary location of additional data:

- Location checkboxes: State Historic Preservation Office, Other State agency, Federal agency, Local government, University, Other.

Name of repository:

10. Geographical Data

Acreege of Property 176.2

UTM References

(Place additional UTM references on a continuation sheet.)

Walker, Minn., 1972

1

1	5
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3	8	0	3	2	0
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5	2	1	4	5	8	0
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Zone Easting Northing

3

1	5
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3	8	1	2	6	0
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5	2	1	3	1	8	0
---	---	---	---	---	---	---

Zone Easting Northing

2

1	5
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3	8	1	3	3	0
---	---	---	---	---	---

5	2	1	4	5	2	0
---	---	---	---	---	---	---

4

1	5
---	---

3	8	0	2	6	0
---	---	---	---	---	---

5	2	1	3	2	4	0
---	---	---	---	---	---	---

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Rolf T. Anderson

organization _____ date September 27, 1996

street & number 212 West 36th Street telephone 612/824-7807

city or town Minneapolis state MN zip code 55408

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Department of Human Services

street & number 444 Lafayette Road telephone _____

city or town St. Paul state MN zip code 55155

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Cass County, Minnesota

Description

The Minnesota State Sanatorium for Consumptives, commonly known as Ah-Gwah-Ching, is located in north central Minnesota off State Highways 200 and 371, three miles south of Walker, in Cass County. The 176 acre site is located on a high bluff overlooking Shingobee Bay on the south shore of Leech Lake. The facility is situated on a picturesque tract of land with a park-like setting amid stands of white and Norway pine, oak, birch, and maple trees, and acres of lawn.

The State Sanatorium opened in 1907 as the first state operated facility for the treatment of tuberculosis.¹ It continued to grow and expand through the 1930s until it had developed into an extensive complex resembling a self-contained community. The earliest buildings were two and three story stucco-clad structures with red-tile roofs designed by state architect Clarence H. Johnston. These were followed by all brick buildings whose overall massing and detailing were consistent with the earlier structures. The latest of these were designed by the firm of Sund and Dunham which had emerged as the state's leading designers of sanatorium facilities. The primary buildings were all connected with one another with ancillary service and support buildings in close proximity to the main complex. In time, the Minnesota State Sanatorium for Consumptives came to include not only its primary medical facilities, but also residences for staff, water treatment and power plants, a large farming operation, and even its own train station.

After the word consumption fell into disuse as a term to describe tuberculosis, the facility was officially referred to as simply the State Sanatorium. However, it has been commonly known as Ah-Gwah-Ching since 1922 when the name of the sanatorium's post office was officially changed to Ah-Gwah-Ching, Minnesota. The term is an Ojibwe word for out-of-doors, considered a more appropriate term for the facility and in keeping with the treatment philosophy from the period.

¹A sanatorium is a hospital for the treatment of chronic diseases. A sanitarium is an institution for the promotion of health; i.e., health resort.

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The Minnesota State Sanatorium for Consumptives is defined as an historic district including 22 contributing buildings and structures and 8 non-contributing resources.

1. Building: West Wing Date: 1906-07
Architect: Clarence H. Johnston

The West Wing is a two story U-shaped building oriented toward the southwest. It was the first major building constructed at Ah-Gwah-Ching and incorporated the primary facilities necessary for the operation of the sanatorium. Built on a raised basement with a split-stone foundation, the overall dimensions of the building are 105'4" by 77'6" which includes the 55' by 39'7" central portion of the building and the flanking wings, each 77'6" by 25'. The cream-colored stucco clad building is trimmed with brown brick and capped with a red-tile gable roof.

The central portion of the south-facing principal facade is organized into three bays by brick piers that extend the full height of the building and originally consisted of porches which ran the full length of both stories. The main entrance was located in the center bay and was reached by a flight of six steps. Large screened openings in the outer bays flanked the entrance. The second story consisted of three large screened openings. The top of each brick pier is decorated with a raised brick ornament in a cruciform shape and capped with a round arch. The projecting end bays of each wing of the south facade also originally incorporated porches with a large screened opening on each story. Brick corner piers feature the same ornamentation found in the central bay. The gable end of each bay is stuccoed and includes an oculus window trimmed in brick. The pedimented gables are decorated with large ball-shaped ornaments positioned to each side. Spandrels with recessed brick panels separate the first and second stories along the entire facade. Beyond the porches, the exterior walls of the building were faced in stucco and included evenly spaced double hung-sash and paired doorways that opened onto the porches.

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Cass County, Minnesota

The inner walls of the U-shaped building are identical and include basement windows set within the brick-faced foundation wall and double-hung sash spaced along the stuccoed walls of the first and second stories. The sills are joined with a brick belt course. Corner quoins are executed in brick.

The east and west facing side walls of the West Wing are also nearly identical with exposed basement windows and double-hung sash spaced along the first and second stories of the stuccoed walls. The north elevation is organized into three bays with a central bay flanked by both the east and west wings which project slightly from the facade. The middle bay incorporated an exterior stairway which descended to the basement that was later modified to a walk-out entrance. Otherwise, treatment of the facade remained consistent with evenly spaced window openings positioned along all floors. The end bays featured three double-hung sash on both the first and second stories, brick corner quoins, and pedimented gable ends with an oculus window and ball-shaped ornaments, similar to the treatment on the south facade. However, by 1915 both end bays had been modified and obscured by subsequent additions.

The basement of the building contained the kitchen, the serving pantry with a dumb waiter to transport meals to the dining room, and the laundry, all located in the west wing; the boiler room and coal bin were located in the east wing; while the central portion apparently remained unfinished except for toilet facilities and a second dumb waiter to carry meals to the diet kitchens on the first and second stories. The central portion of the first floor included the main entrance hall, a stairway to the second floor, bath and toilet facilities, and a diet kitchen; the west wing contained the physician's office just off the entrance hall, the dining hall, and the serving pantry; and the east wing included a locker room, an examining room, and a large ward for female patients. The second floor contained a ward for male patients as well as a locker room, examining room, diet kitchen, and bath and toilet facilities, all corresponding to the same spaces on the floor below. The west wing of the second story contained living quarters for staff and included a reception room and parlor, nine bedrooms, and two bathrooms.

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Cass County, Minnesota

This stand-alone structure was referred to as the West Wing because it had been envisioned as part of a larger complex. However, because of funding limitations, the West Wing was the first building completed and was built as a multi-function structure to include facilities which were intended to have been located in other parts of the complex.

Interior changes to the West Wing began shortly after the building was constructed as functions were shifted to newly completed structures. Major exterior modifications include the installation of stairways in the end bays of the each wing where porches had been located, as well as the infill of the first story bays, which may have been completed as late as the 1980s, and the enclosure and partial infill of the porches in the central bay. However, these changes do not adversely affect the integrity of the building.

2. Building: Administration Building Date: 1910-12
Architect: Clarence H. Johnston

The Administration Building is a two-story L-shaped structure connected to and built immediately to the east of the West Wing. Built on a raised basement, the eastern portion of the building, represented by the base of the "L", is 103' long and 42' wide, while the projecting leg of the "L" is 60' long and 42' wide and connects to the West Wing at the northern end of the east facade. Stylistically, the Administration Building is nearly identical to the earlier West Wing with stuccoed walls trimmed with brick and a red-tile gable roof.

With the construction of the Administration Building, the sanatorium's main entrance shifted from the West Wing to the east facade of the new building. This entrance is centered on the east facade and features a brick-faced portico with a slight projection which is capped by a pedimented gable. Brick piers flank the entrance bay and each is decorated with a cruciform-shaped ornament capped with a round arch identical to those found on the West Wing. An oculus window is centered in the gable end and ball-shaped ornaments are positioned to each side. The flanking bays include four evenly spaced double-hung sash joined with brick

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belt courses at the sill level on both the first and second floors. The original porte-cochere which extended from the entrance has been removed. Each end wall is flanked by brick piers with identical ornamentation to that of the entrance bay. A stepped brick band separates the second story from the gable above and from which two decorative brick pilaster strips descend just over a story. Double-hung sash are spaced along the facades of both the first and second stories. A round-arched window is centered in each gable end. The west facade also includes a series of double-hung sash on each story. The projecting leg of the L-shaped building, which joins the West Wing, includes a series of paired sash on both floors. The north facade of this wing also includes double-hung sash spaced along the elevation.

The first floor of the eastern section of the building included administrative and medical facilities organized around a central corridor which ran nearly the full length of the building. Offices for the superintendent, matron, and steward, as well as a general office with a vault, were all located to the south of the central entry. Just to the north of the entrance was a large reception room with a beamed-ceiling and fireplace which was once furnished with craftsman-style chairs and rockers. The pharmacy, laboratory, examination room, treatment room, and two additional offices were also located in the north end of the first floor. The second floor was reached from a central stairway and included living quarters for staff, all organized around a central corridor which opened onto porches running the full-width of the building on both the north and south ends. It contained eight single bedrooms, two bathrooms, and two suites each with a living room and bedroom. The second story did not connect to the second floor of the projecting wing of the Administration Building which provided space for patients.

The first floor of the projecting wing joined the West Wing and included three small wards and a locker room, all organized off a corridor located along the north facade. A porch ran the length of the south facade. The floor above was identical except the overall width of the second story was about 7' less than the floor below and this difference was reflected in a narrower porch.

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Changes to the Administration Building include the removal of the porte-cochere at some time during the modern era and the enclosure of the porches which ran the width of the building in the second story staff quarters. The porches on both floors of the projecting wing have also been enclosed. A basement entrance was also added to the north end, probably in the early 1940s. An adjacent stair tower was constructed in the 1980s.

3. Building: Dining Hall and Service Building Date: 1914-15
Architect: Clarence H. Johnston

Completed in early 1915, the Dining Hall and Service Building consists of a 25' by 22' two story section which connects the building to the north facade of the West Wing and which matches both its width and roofline; the main two and one-half story building which is 135' long and 52' wide; and finally a 70' by 79' one story extension to the north. Both the main building and the connecting section feature exposed brick-faced basements, upper stories which are faced with stucco and trimmed with brick, and red-tile gable roofs. Principal features of the east facade of the main building are an off-center projecting entrance bay with a gable roof to the north, which also incorporates a stairway, and four pairs of round-arched windows with brick quoins and keystones which correspond to the location of the first floor dining room. The remaining window openings on both the floors above and below consist of double-hung sash organized in pairs or single elements. Six dormer windows with paired sash project from the gable roof. Decorative elements on the east facade include brick corner quoins and brick belt courses which link the sills of all window openings on the first and second stories. The west facade is nearly identical although the entrance bay is omitted and seven dormers project from the roof. This elevation also includes a corresponding set of four pairs of round-arched windows that again reflect the position of the Dining Hall which extends the full width of the building.

The interior of the section of the building providing the link to the West Wing included a stairway, storage space on each floor, and an entrance to the first floor of the west facade. The walk-

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out basement of the main building included storerooms for the steward and matron, the help's sitting room, the farmer's dining room and adjacent serving pantry, the farmer's smoking room, the farmer's toilet room, the bakery, a room for laundry supplies, and a room for refrigeration machinery. The first floor included the 50' by 65' dining room with plastered beams and cornice, a serving room, the kitchen, the cook's pantry, a cold storage room, the servant's dining room, an office, and two large coat rooms. The second story included seventeen staff bedrooms, a sewing room, linen closet, and two bathrooms. The third story included fourteen staff bedrooms and two bathrooms.

The one story extension to the north consisted of three rooms for the laundry including a receiving room, washing room, and ironing room, all located along the west facade. The boiler and engine rooms were located along the east side of the building. A subbasement included additional space for the boiler room and space for coal and wood storage. A 100' chimney that was located along the east elevation has been removed.

Modifications to the interior of the West Wing were also made in conjunction with the construction of the Dining Hall and Service Building as a result of the shift in certain functions to the newly created spaces. The main stairway was removed, the old dining room was converted into a ward for patients, and the partitions which formed the staff bedrooms on the second floor were removed to create another ward.

4. Building: Plumbing Wing
Architect: Clarence H. Johnston

Date: 1914-15

Built at the same time as the Dining Hall, this 42' by 26' two story extension off the north facade of the West Wing matches both the width and roofline of the earlier building. The building features an exposed basement faced with brick while the upper stories are faced with stucco with brick trim. The east facade contained an entry with one window opening to the south and four evenly spaced openings to the north. Each of the upper stories contained six window openings. The west facade features staggered sash at the south end which correspond to the stairwell and three

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evenly spaced window openings to the north on both the first and second floors. The north end wall originally included paired entrance doors on the basement level and a single window opening on both the first and second stories. Decorative elements include brick belt courses which define each floor, corner quoins executed in brick, and an oculus window in the gable end.

The interior of the walk-out basement level included an entrance lobby, the stairwell and elevator, the morgue, which could also be entered directly through an exterior doorway in the north end wall, and a space called the fumigating room. The floor plans for the first and second floors were identical and contained the stairway and elevator and a three room bath including a wash room with eight basins, a bathroom with four partitioned tubs, two showers, and a toilet room. The building was apparently called the Plumbing Wing because its primary function was to provide new wash room facilities.

The Plumbing Wing was extensively remodelled as a result of a Works Progress Administration (WPA) project in 1938. The first floor was converted into a library and the second story was converted into a chapel with Gothic windows with stained glass installed along the side walls. A new stair tower located at the intersection of the west side wall and the West Wing was also added as part of the WPA project. At some point the window openings on the north end wall were infilled.

5. Building: Kitchen and Laundry Date: 1940
Architect: Sund and Dunham

New kitchen and laundry facilities were added to the Dining Hall and Service Building in 1940 as the result of a two-story addition to the west. This brick faced structure features a flat roof, with the exception of a projecting penthouse for the elevator, and irregularly spaced double-hung sash along the facades. The first floor contained new laundry facilities, while the new kitchen was located on the second floor. (The floors correspond to the basement and first floor of the Dining Hall and Service Building.)

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6. Building: Infirmary I
Architect: Clarence H. Johnston

Date: 1922

When first constructed, the Infirmary I Building was a stand-alone structure located to the southwest of the main complex and perpendicular to the West Wing. The rectangular building is 127' long and 36'6" wide and consists of two stories constructed on a raised basement as well as a small third story set back from the primary facade. Stylistically, the Infirmary I represents a departure from the earlier buildings of the main complex in that it features brick construction rather than stucco-clad walls.

The east facing principal facade is organized into nine bays by brick pilaster columns which extend from the basement to the top of the second story windows. The central bay features an entrance reached by a broad stairway while each remaining bay includes one double-hung sash at the basement level and large openings on both the first and second stories which were originally screened with canvas. The second story openings are capped with low segmental brick arches which rest on the pilaster columns. Spandrel panels between the first and second stories feature brick headers set at a 45 degree angle. The building was originally completed with a brick parapet wall with alternating sections of stone balusters. Details include decorative tile set within each pilaster column and stone trim for the water table, sills, and the top of each column. Set back from the main facade is an outer bay to both the north and south which includes one single sash on each floor.

The west facade includes various-sized windows, sometimes arranged in groups of two, along all floors. The prominent feature of this facade is the centrally located stair-bay with a large, round-arched window opening which extends from the first into the third story. Decorative trim includes a stone water table and a band which links all first story window sills. The small 28'8" by 36'6" third story, referred to as the "Roof House", is flush with the west elevation but remains set back from the east facade. An east-west facing red-tile gable roof covers the "Roof House".

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The basement originally included a laboratory, drug room, x-ray room, dark room, and office, all located in the southeast section of the building; a dishing washing room and morgue; as well as a locker room, storage room, mechanical space for the elevator, and a toilet. A tunnel connected the building with the West Wing.

The first floor originally included a porch which ran the full length of the east facade. The building's central entrance crossed the porch and entered a reception room, beyond which was the main hallway from which all rooms on the floor opened. Four rooms for patients were located to each side of the reception room and each opened directly onto the corridor as well as the porch. A single room for patients was located in each end bay but which did not have direct access to the porch. To the west of the corridor were three additional rooms for patients, the doctor's room, a kitchen, a dining room, the nurse's room with its own toilet facilities, as well as a utility room, the toilet room, and bathroom.

The second floor was identical to the first except a patient's room was placed in the location of the reception room on the floor below and another patient's room took the place of the doctor's room. The third floor consisted of a separate men's and women's dressing rooms, each with their own toilet facilities. Both dressing rooms opened onto large screened wooden platforms where the patients could receive heliotherapy (sun treatment). The men's platform was located on the north side of the third story and the women's to the south.

New patients were admitted to the Infirmary I for observation to determine where they should be placed within the institution based on their condition. The more advanced cases were also treated in the building.

The porches were enclosed as part of a WPA project and the doors leading from the patients rooms to the porch were removed. However, partitions were later installed in the porches in the modern era to create separate rooms. The parapet has also been replaced and the balusters removed.

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7. Building: Infirmary II Date: 1931-32
Architect: Sund and Dunham

Infirmary II is a three-story building connected to the West Wing at the southeast and to Infirmary I through an above-ground passage. The 124' by 40' brick building is constructed on a raised basement and is covered with a red-tile gable roof with cross-gables at each end. The first and second stories are defined by projecting end bays with three pairs of double-hung sash with eight-light transoms positioned on each floor. The central bay includes seven pairs of sash on each story. The third story steps back to provide space for a broad terrace with a brick parapet wall which originally included alternating sections of stone balusters. Each end bay of the third story projects in a similar manner to the bays below and is further defined with the gable ends of the cross-gable roof. Each end bay includes single sash flanking paired sash which replaced French doors that originally opened onto the terrace. The central bay includes seven single sash which also replaced doors to the terrace. Decorative elements include a stone water table, a stone band linking all first story sills, stone sills on all remaining floors, a stone coping, and tile inserts similar to those found on the Infirmary I building. Window openings on the north facade are spaced evenly along the facades although they are generally organized as single sash except at the west end where the sash are paired. The third story is flush with the lower floors while the cross-gables extend through the north slope of the gable roof.

The construction of the Infirmary II building reflects the introduction of modern medical practices at Ah-Gwah-Ching as demonstrated by the facilities located on the lower level. Located from west to east along the south facade was the major operating room; the scrub room and sterilizing room, both of which could be entered from the major operating room as well as the adjacent minor operating room; the eye, ear, and nose treatment room; the pneumo(thorax) room which was used for collapse therapy, a very common method for treating tuberculosis in which a diseased lung was collapsed and allowed to heal; a work room; and an instrument room. Located along the north facade was the two room dental suite; a utility room; a nurses room with adjoining locker

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room and toilet and shower room; the stair hall and elevator; the doctor's room and library with adjoining locker room and toilet and shower room. A morgue was located a half-story below, just off the tunnel which linked the Infirmary I with the West Wing. Although the spaces are now used for different purposes, the lower level still retains design integrity with even original cabinets in place.

The first floor included thirteen rooms for patients, all located along the south facade and reflecting the thirteen pairs of sash. To the north of the floor's central corridor were two additional rooms for patients, the dining room, diet kitchen, stair hall and elevator, linen closet, utility room, and a three room toilet, wash, and bath room. This floor was connected with both the Infirmary I and the West Wing. The second floor was identical but only connected with the West Wing. The third story contained one large room in each end bay from which the rooftop terrace could be accessed through paired French doors. The center bay included seven rooms for patients, also with access to the terrace. To the north of the central corridor were two additional rooms for patients, the diet kitchen, the nurse's room, the stair hall and elevator, the utility room, and the toilet, wash, and bath rooms.

Changes to the building include the replacement of the parapet on the third story terrace, including the removal of the stone balusters, and the removal of all the doors providing access to the terrace. By 1974 day rooms had been constructed between Infirmaries I and II on both the first and second stories. The one-story passage which had previously connected the buildings served as the rear facade for the addition. At the same time day rooms were also constructed between Infirmary II and the Dining Hall and Service Building on both the first and second stories.

The Infirmary II was the first building at Ah-Gwah-Ching designed by the firm of Sund and Dunham which had emerged as the state's leading designers of sanatorium facilities. It represents a sensitive design incorporating features of both the West Wing to the east and the Infirmary I to the west.

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8. Building: Indian Building Date: 1934-35
Architect: Schmidt, Garden, and Erikson
Sund and Dunham

Known historically as the Indian Building, this building was constructed as a result of an agreement between the federal government and the State of Minnesota under which the federal government purchased an acre of sanatorium land and constructed a building for the treatment of tubercular Indians from nearby reservation lands that would be operated by the state. Construction was funded by the Federal Emergency Administration of Public Works, commonly known as the Public Works Administration (PWA), the major construction agency of the New Deal.

The three and one-half story brick building is 180' long and 40' wide and is covered by a red-tile cross-gable roof. The overall massing and proportion of the building is similar to that of the Dining Hall and Service Building constructed immediately to the south. A projecting pavilion is centered on the east facade which is framed by brick corner quoins and capped with a gable roof with an oculus window centered in the gable end. The first story of the pavilion includes an entrance with adjacent window openings that opens onto a terrace. Both the second and third stories feature a group of three window openings flanked by single sash. The long flanking elevations on all three floors include seven double-hung sash that are evenly spaced along the facades. The stone-faced basement level becomes exposed as the hillside upon which the building is constructed slopes away to the north. Trim includes a stone band separating the first and second stories and stone sills. Six dormers project from the east slope of the roof. Treatment of the west facade is very similar although the window openings tend to be less regular. In addition, a small balcony is located off the central pavilion on each floor.

The basement included a diet kitchen, a dish washing room, and a dish storage room. There was also space for an operating room, scrub room, sterilizing room, and laboratory, although these spaces may not have been used for these purposes because it appears that a portion of the PWA appropriation was used to purchase equipment for the existing surgical suite in the Infirmary II building. The basement also included the dental

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office with a laboratory and waiting room, and five rooms for patients. The south end of the first floor included the main entrance with a waiting room off which three offices opened. Seven rooms for patients, two wards, the nurse's station, and a day room were located off the central corridor along the east facade. To the west were located two patients rooms, one ward, the dining room and diet kitchen, utility and linen rooms, two washroom and toilet rooms, and a bath and shower room. The second and third floors were identical although each included two extra wards that were located above the offices on the first floor.

Ownership of the land and building was transferred back to the state in 1962 when the sanatorium closed. Modifications include the addition of a stair tower on the north facade in the modern era and a small one-story connection built between the building and the Dining Hall and Service Building in the early 1970s. Today the attic of the building includes a museum on the history of Ah-Gwah-Ching with records, medical equipment, and artifacts from the period, and a collection of WPA artwork collected at the sanatorium during the New Deal.

9. Building: New Power Plant Date: 1923-25
Architect: Clarence H. Johnston

Located to the north of the main complex, this building was constructed to replace the power plant built in 1915 as part of the Dining Hall and Service Building. The overall dimensions of this brick building are 67' by 82', but the structure is defined by three distinct components representing the engine room, the boiler room, and the coal bunker. The engine room is positioned to the south and occupies slightly less than half the building's footprint. Located to the north and separated from the engine room by a brick partition wall, the boiler room occupies the remaining space but its floor area is roughly four feet lower from that of the engine room. The interior spaces of both rooms feature different ceiling heights with the boiler room rising about three stories while the engine room is two stories high. The coal bunker is a 15' square projection on the east facade which rises roughly six stories.

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The entrance to the engine room is centered on the south facade and consists of a projecting entry that includes paired doors with the words "Power House" placed above the doorway in low relief. Paired lanterns and low brick side walls also flank the entrance. Two large window openings with industrial steel sash are positioned to each side of the entry creating the building's only symmetrical facade. Large industrial sash are spaced along the remaining facades and another set of paired doors is located on the west facade providing access to the boiler room. Decorative elements include stone sills, an ornamental band with diamond-shaped green tile insets placed above the window openings, and a broad stone band placed above. The roof of the main building is supported by steel trusses and is built with a slight pitch which is concealed behind brick parapet walls with a brick sawtooth course and a tile coping. The coal bunker is capped with an east-west facing gable roof covered with red tile and trimmed with a stone coping. Window openings are located at both the base and the top of the tower. A circular design is centered in the gable end.

The building's original chimney, which had been located off the north facade, has been removed. Two large modern fuel storage tanks are located just to the north of the Power House.

10. Building: Engineer's Cottage
Architect: Clarence H. Johnston

Date: 1925

Located just to the south of the New Power Plant, this frame residence was constructed at the same time in order to provide living space for the engineer. The Engineer's Cottage is a two-story, four-square structure covered by a hip roof. A one story porch extends across the east facade. The interior originally included a living room, dining room, and kitchen on the first floor and four bedrooms and a bath on the second story. The building currently houses the offices for a local social service agency.

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11. Building: Garage Date: 1915
Architect: Clarence H. Johnston

Located adjacent to the Engineer's Cottage, this single-stall garage is a one-story frame building covered by a hip roof. The garage was moved a short distance across the road to its present location in 1958. The building had been located adjacent to the the Staff Residence. Because of the very short distance involved in the move, complimented by the fact that the building retains its original function, the Garage is considered a contributing resource.

12. Building: Garage Date: 1934
Architect: Schmidt, Garden, and Erikson
Sund and Dunham

This garage is a one-story rectangular brick building with overall dimensions of 86' by 50'. The facades are organized with brick pilaster columns which divide the sidewalls into six bays and the end walls into three bays. Paired doors on a sliding track are centered on the east facade and provide vehicular access. These original doors feature cross-bracing and an eight-light window opening. The entrance is completed with a flat, segmental brick arch with a stone keystone. A rectangular panel is located over the entrance and features a herringbone pattern executed in brick and a circular stone ornament which seems to recall a similar detail on the Power House. A single window opening is centered in each flanking bay as well as the bays along the north and south facades. A round-arched roof is supported by five lattice trusses, although its appearance is somewhat obscured by a stepped brick parapet on both the east and west facades. Alterations include the installation of garage doors in the two end bays of the north facade and a frame addition along the west facade.

Built for employees, the Garage was constructed in conjunction with the Indian Building and was also funded by the PWA. Although not located on the land purchased by the federal government, a garage on the site of the Indian Building was demolished to make way for the new building and this garage was built to replace it.

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13. Building: Garage Date: 1959
Architect: Unknown

This 30 stall T-shaped garage building was constructed to the west of the Dining Hall in 1959. The building is covered with a hip roof. It was constructed with brick and other materials salvaged from the Recreation Hall built on the grounds in 1915. A number of the stalls have been combined to form office and work space for the maintenance department. A small frame addition was constructed along a portion of the west facade in 1996. Because the building was constructed outside the period of significance, it is considered non-contributing.

14. Building: Garage Date: 1965
Architect: Unknown

This eight stall vehicle garage is located to the west of the Indian Building. The rectangular stucco faced building is covered with a gable roof. Because the building was constructed outside the period of significance, it is considered non-contributing.

15. Building: Staff House Date: 1915
Architect: Clarence H. Johnston

The Staff House is a rectangular two-story, stucco-clad building covered by a medium-pitch hip roof with broad overhanging eaves. The east facade is symmetrical with a central entrance covered by a narrow canopy supported by columns. Flanking multi-pane window are organized in groups of two or three. The remaining facades feature regularly spaced window openings. Alterations include the construction of a small addition to the west facade to enclose the central entry.

When first constructed the Staff House provided living quarters for the sanatorium's assistant superintendent and steward. In 1930 the building was remodelled as the superintendent's home. Then in 1955 after the new superintendent's residence was built,

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the Staff House was remodelled into three apartments and two guest rooms. In recent years the building has provided space for a day program for the developmentally disabled.

16. Structure: Retaining Wall Date: c1918 &
Architect: Unknown 1933-34

A broad three-tier field stone retaining wall with a central stairway is located on a steep hillside which descends to east of the Staff House. It was first built in about 1918 with timbers which were replaced with stone in 1933-34.

17. Building: Garage Date: 1958
Architect: Unknown

This two stall vehicle garage was built by the sanatorium maintenance crew. The stucco-clad building is covered with a hip roof. At the time of construction, the original one-stall garage was moved a short distance to the Engineer's Cottage. Because the garage was constructed in the modern era, it is considered non-contributing.

18. Building: Nurse's Home Date: 1930
Architect: Clarence H. Johnston

The Nurse's Home is an I-shaped, two-story brick building which served as a residential facility for nurses employed at the sanatorium. With overall dimensions of 99' x 59', the building is characterized by evenly spaced, eight over eight-light double-hung sash on all facades. Decorative elements include a stone band which links all first story window sills, a second band which forms the cornice, and pairs of brick pilaster columns that frame the projecting end bays of both the east and west facades. The formal stone-trimmed entrance features columns, a dentil course, and a cornice. A window opening above the entrance is set in a round-arched stone surround with a circular medallion and features a wrought-iron railing. The first floor included a large reception room with a fireplace and French doors that open to the

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east, 14 bedrooms, a two room apartment with bath and kitchenette, and two bathrooms. The second story contained 19 bedrooms, some of which were double rooms that could accommodate two nurses, and two bathrooms. The basement, which opens out on the north facade, included a classroom, a party room with kitchenette, a trunk room, and a laundry.

Today the Nurse's Home is called "Lakeside", and serves as a chemical dependency treatment center.

19. Building: New Superintendent's Residence Date: 1954
Architect: C.P. Erickson

This one and one-half story rectangular frame building is covered by a gable roof. A shed-dormer projects from the east slope and the basement level is exposed along the east facade. Because the building was constructed outside the period of significance, it is considered non-contributing.

Today the residence serves as a day care center.

20. Building: Garage Date: 1954
Architect: C.P. Erickson

This two stall rectangular frame garage is covered with a gable roof and was built in conjunction with the Superintendent's Residence. Because the building was constructed outside the period of significance, it is considered non-contributing.

21. Structure: Observation Station Date: 1923
Architect: Unknown

Resembling a gazebo, the Observation Station is a small square structure covered by a hip roof. The partially enclosed walls are built with small dimension field stone and mortar which is tinted a deep pink. The Observation Station contained equipment for recording statistics about the weather.

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22. Building: Hall Memorial Pavilion Date: 1927-28
Architect: Clarence H. Johnston

Originally called the Children's Cottage and later named in memory of Dr. Pearl M. Hall who served as the superintendent of the sanatorium from 1918 to 1928, this building was constructed specifically for treating tubercular children. The long, two-story rectangular brick building consists of a section to the south which is 104' long and 25' wide and a slightly wider northern section which is 69' long and 37' long. Window openings generally consist of evenly spaced single sash which are organized within recessed spandrels that extend from the first through the second stories. Decorative elements consist of stone sills and a stone band above the second story windows. The finely detailed projecting entrance features a second story bay window with details from the Jacobean revival style including inset panels of brick in a herringbone pattern.

The first floor included an assembly room, a bedroom and bath for staff, and a locker room with adjoining toilet and bath and shower rooms. The long wing is divided equally to include an open dormitory and a screened porch along the east facade. Interestingly, the original architectural plans locate the beds on the porch, which would have been in keeping with the treatment philosophy of the period. The second story was identical except the staff bedroom was replaced by a solarium for heliotherapy.

The Hall Memorial Pavilion replaced two frame buildings located just to the west which were known as the children's cottages. Clarence Johnston's plans for the new building even anticipated the need for a future wing to the north; however, within a few years of construction it was determined that children with primary tuberculosis did not require hospitalization and the need for such a large building diminished. As a result, the building began to be used for ambulatory patients and later for employees. In 1947 the porches were enclosed and glazed and the space partitioned into individual rooms. Today the building is used as an alternative school.

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23. Building: Garage Date: 1939
Architect: Unknown

This single-stall rectangular frame garage is covered by a gable roof and was probably built in conjunction with an adjacent residence that was removed from the site.

24. Structure: Water Tower Date: 1986
Architect: Unknown

This 100' high water tower features a spheroid tank 29'6" in diameter which can hold 100,000 gallons of water. The architectural plans note that the lettering "Ah-Gwah-Ching" should "face southeast so it can be seen from Highway 371." Because the structure was constructed in the modern era, it is considered non-contributing.

25. Building: Garage/Shop Date: c1920s
Architect: Unknown

This square-shaped building is one of three structures which survives from the sanatorium's once extensive farming operation. The building consists of three sections which were likely built at different times. The eastern portion is a rectangular frame structure covered by a gable roof and includes various sized window openings and a single garage door with cross-bracing. A rectangular extension to the west is also covered by a gable roof that intersects the roofline of the adjacent section. Finally, this L-shaped structure became square-shaped by infilling the "L" with a flat-roofed addition which provided space for three garage stalls.

26. Building: Machine Shed Date: c1920s
Architect: Unknown

Built to the east of the Garage/Shop, the Equipment Shed is sited on the crest of the bluff overlooking Shingobee Bay. The partially enclosed rectangular frame building includes 10 stalls

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without doors. The building is covered by a gable roof with an off-center ridge which slopes toward the lake. The Machine Shed may have been built prior to 1923 because it appears this building is identified on a site plan completed by the landscape architectural firm of Morell and Nichols in that year.

27. Structure: Root Cellar Date: c1930s
Architect: Unknown

Located just to the northwest of the Machine Shed, the Root Cellar is a large bermed structure built with reinforced concrete. The structure is probably at least 100' long. The Root Cellar may have been built as a WPA project of the 1930s since sanatorium records indicate that such a request was made although no information has been found concerning its completion. The entrance has been infilled, probably to prevent access for safety reasons, although tall roof vents are still visible.

28. Building: Pump House Date: 1919
Architect: Clarence H. Johnston

The Pump House is a two story brick building located along the shore of Shingobee Bay. Built into a hillside, the building features paired entrance doors on the east end wall and a series of double-hung sash with round-arched openings on the remaining facades. A one-story extension to the south constructed with reinforced concrete appears to have been built somewhat later.

29. Building: Water Treatment Plant Date: 1963
Architect: Bonestroo, Rosene & Assoc.

Located near Shingobee Bay, the Water Treatment Plant is a large bermed concrete building with significant portions of the structure located below grade. A two story section is exposed to the north while an entrance that is cut into the berm is visible to the south. Because the Water Treatment Plant was constructed outside the period of significance, it is considered non-contributing.

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30. Building: Lime Storage Building Date: 1967
Architect: Unknown

Located adjacent to the Water Treatment Plant, the Lime Storage Building is a rectangular building constructed with concrete block and a poured concrete roof. Large garage doors are located on the south end wall while the remaining facades feature evenly spaced window openings without sash. (Lime is used in the water purification process.) Because the Lime Storage Building was constructed outside the period of significance, it is considered non-contributing.

The Minnesota State Sanatorium for Consumptives retains a high level of historic integrity. Remarkably, no major non-contributing buildings have been introduced to the site. Those which have been built include four garages, one residence, the water tower, and two buildings associated with the water treatment plant which are located some distance from the main complex. However, it should be noted that a number of buildings have been removed from the complex. Interestingly, the majority of the removals occurred during the period of significance and were merely a reflection of changes in treatment philosophy. About a dozen frame cottages had all been demolished by the early 1930s, or portions thereof were dismantled and used at the sanatorium farm. The cottages reflect the era when only fresh air, good food, and a healthy environment could be offered as treatment. However, as modern medical techniques were developed, patients, with few exceptions, only resided in the main complex in a more hospital-like setting. Thus the removal of the cottages is associated with the evolving nature of Ah-Gwah-Ching and the treatment of tuberculosis rather than a loss of integrity. Several residences were also removed, including an impressive Craftsman-style building, although two examples of residences still remain. The sanatorium's train station was also removed by 1930 after passengers no longer arrived by train near the lake. Also, the majority of the farm buildings were demolished or removed during the 1950s when such activities were phased out at the state's institutions. Yet, remarkably three buildings still

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survive which are rare and interesting reminders of the farming operation. One major loss was the demolition of the Auditorium/Recreation Building in 1955.

Another change has been the reduction in total acreage which had grown to over 800 and is now at 176. Land to the west was transferred to the city of Walker and new uses were introduced, although it is believed those lands had only been associated with the sanatorium's farming operation. A large parcel on Leech Lake, which contained the sanatorium's former waste treatment plant built by the WPA, was transferred to the Minnesota Department of Natural Resources which also introduced new uses to the lands. Moreover, the developed lands associated with the main complex and its primary function remain remarkably intact and still retain the feel of a self-contained community. Only minor changes have been made to the historic buildings such as the addition of stair and elevator towers and the infill of a number of the porches.

When the sanatorium closed on January 1, 1962, the facility was converted into a state nursing home for geriatric patients from state hospitals and institutions and community based facilities. Thus, perhaps most remarkably, Ah-Gwah-Ching continues to function as a health care facility and the majority of its buildings retain their original use in that administrative activities still take place in the same building, patients reside in the same areas, and the dining hall and kitchen are still in use. A number of the ancillary buildings are now used by social service organizations for a variety of programs. Today the former State Sanatorium is called Ah-Gwah-Ching Center.

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Statement of Significance

The Minnesota State Sanatorium for Consumptives, commonly known as Ah-Gwah-Ching, is historically significant under National Register Criterion A in the context of Health and Medicine as Minnesota's most significant site in the state's history of the treatment of tuberculosis. Its construction in 1906-07 marked the state's acceptance of the responsibility for the treatment and prevention of tuberculosis which had become one of the state's most serious diseases. The expansion of the site over a 30 year period clearly reflects the history of the disease and the evolution of its treatment from the early days when Ah-Gwah-Ching could only offer fresh air and a healthy environment to its development into a modern medical facility offering emerging medical and surgical treatments and ultimately antibiotic therapies. Working in conjunction with the state's subsequent fourteen county sanatoriums, a comprehensive, state-wide program was implemented which resulted in nearly the complete eradication of the disease. Until it closed on January 1, 1962, Ah-Gwah-Ching continued to serve as the only state-owned facility operated solely for the treatment of tuberculosis, offering a variety of epidemiological services throughout Minnesota. Ah-Gwah-Ching remains the state's only surviving intact large-scale facility built for the treatment of tuberculosis.

Ah-Gwah-Ching is architecturally significant under National Register Criterion C for its ability to depict the state's philosophy of institutional care from a time when such facilities were located in pastoral rural settings containing large complexes of buildings that became self-contained communities with even power plants, residential complexes, and farms and gardens. Most remarkably, through design elements such as the sanatorium's siting, southerly orientation, extensive porches, and rooftop terraces, all facilitating exposure to fresh air and sunlight, Ah-Gwah-Ching is significant for its ability to represent the relationship between architectural design and the prevailing philosophy of the treatment of tuberculosis from the period.

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Tuberculosis, or consumption as it was commonly called, was primarily a lung disease, although it could actually infect nearly every part of the body. The disease had been identified in Minnesota as early as 1834, and ironically by the 1850s word had spread that there was an elixir in the air of Minnesota that would cure consumption, bronchitis, and other diseases of the chest. This quality was attributed to the extraordinary purity and dryness of the air, the richness of the ozone content, as well as to the cold, stimulating winters, and the pleasant summers at Minnesota's innumerable streams and lakes.¹ The concept of the curative power of climate and fresh air was somewhat European based and was later promoted in the United States by Dr. Edward Trudeau, who founded the famous Saranac Lake Sanatorium in New York after finding his own tuberculosis had subsided while living in the Adirondack Mountains. In fact, Trudeau had visited Minnesota in the hope of finding a cure. Another famous visitor with tuberculosis was Henry David Thoreau who visited the state in 1861. Thoreau spent several weeks in Minnesota but after his return to Massachusetts he wrote that he was "considerably, yet not essentially, better."

Thousands of invalids were said to have visited the state from the 1850s-1870s but by 1880 Minnesota's day as a health resort was just about over and the tide of health-seekers turned further to the west following the opening of the Union Pacific Railroad. The year 1882 brought a milestone in the history of tuberculosis when Dr. Robert Koch of Germany startled the world when he announced that he had isolated the tubercle bacillus. This established the contagious nature of the disease, which earlier had been thought to result from a hereditary predisposition. Moreover, his discovery marked the beginning of the modern medical treatment for TB. Unfortunately, the medical community was slow to accept Koch's discovery.

¹J. Arthur Myers, Invited and Conquered - Historical Sketch of Tuberculosis in Minnesota. (St. Paul: Webb Publishing Company, 1949), p18.

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By the turn of the century tuberculosis was becoming a serious problem in Minnesota. The State Board of Health reported that between 1887 and 1899 over 20,000 Minnesotans had died of TB and it had become clear that the state had to assume a role in the treatment and prevention of the disease. As a result, in 1901 the state legislature authorized an executive investigation to study the advisability of establishing a state sanatorium for the treatment of tuberculosis, and if so to select a site.

A three member Advisory Commission was appointed which consisted of Drs. J.L. Camp of Brainerd, G.S. Wattam of Warren, and H.L. Taylor of St. Paul, who had long campaigned for the establishment of sanatoriums and the need to isolate infected individuals. The commission visited sanatoriums in the United States and Canada and concluded that the essential elements in the successful cure of tuberculosis were "fresh, pure air, free from dust or other impurities, properly used under the semi-military discipline of institution life, good food and hygienic living." The cold of a northern winter was thought to be a valuable stimulant and a site with well-drained soil, a good water supply, and a southern exposure located above the surrounding country was considered indispensable.²

After traveling extensively throughout the state, the Commission recommended a 700 acre site overlooking Shingobee Bay on the south shore of Leech Lake near Walker. The Commission noted:

The location at Walker has been selected for the following reasons: It is in the pine region. It has immense forests of pine upon the Chippewa reservation all around it and under the Morris Bill a great deal of this must be reseeded with pine, thus insuring the presence of pine forests. It is in a sparsely populated region, one not well adapted to agriculture, and hence the atmosphere cannot become contaminated as it always is to a greater or less extent in thickly populated districts.

²Myers, pp. 398-400.

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It slopes toward the south, away from the lake, thus at once securing protection from the cold winter winds and from the humidity of the lake shore...

The soil...guarantees good drainage. A good supply of pure water is assured. The location is reached by lines of the Great Northern and Northern Pacific railways and is not far north of the geographical center of the state. The Commission feels that it is a source of mutual congratulations that such an ideal place can be secured for the erection of a sanatorium.³

A bill was approved by the 1903 legislature authorizing construction of the facility and the Board of Control of State Institutions, along with the approval of the Advisory Commission, was empowered to purchase the site and begin plans for construction. By mid-1904, 616 acres had been purchased in sections 34 and 35, township 142, range 31, at a cost of \$7,565., of a total appropriation of \$75,000.⁴ The initial construction included the West Wing, which contained all major facilities necessary for the operation of the sanatorium, two cottages intended for patients but which were initially used for staff, the caretaker's cottage which was later remodelled for the superintendent's residence, a cattle barn, and a spur track and railroad station. Dr. William J. Marcley was hired as superintendent with an annual salary of \$2,500. Marcley had served as the first superintendent of the Massachusetts Hospital for Consumptives, the first state sanatorium for tuberculosis in the United States which was constructed in 1895.

The Minnesota State Sanatorium for Consumptives officially opened on December 28, 1907 with the admission of two male patients. Eighteen additional patients were admitted in January 1908 and in a short period of time the institution's capacity of 55 was reached. By August 1, 1908 a total of 126 patients had been admitted, 72 had been discharged, and 54 remained in the

³Myers, pp. 400-401.

⁴Board of Control of State Institutions, Second Biennial Report, p. 17.

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sanatorium. The majority of the admissions were from Hennepin and Ramsey counties, which include the cities of Minneapolis and St. Paul.

Yet, there was a critical need for additional space. Only the West Wing had been built even though it was only intended to have been a portion of a larger complex. However, the appropriation requested by the Advisory Commission of the Minnesota State Sanatorium had been reduced by the legislature and there were only sufficient funds to construct one building. All major facilities were thus installed in the West Wing when it had only been intended to provide space for patients.

[The reduced appropriation].....made it necessary to build a part of one of the wings instead of the administration building. The contract for this building is about \$39,252. This made it necessary to put in a temporary heating plant, kitchen, laundry, gas plant and so forth. One of the wards has been adapted to the requirements of a dining room. Temporary quarters have been arranged for the personnel of the institution in another ward.....It has also restricted the capacity of the institution to a comparatively small number of patients...

It is not necessary to say that the greatest and most urgent need is the appropriation of \$100,000 with which to put up the administration building in order to have a sanatorium large enough to relieve, to an appreciable extent, the suffering of the poor of Minnesota caused by consumption, and to be able to conduct it properly and economically.⁵

By 1910 six sleeping cottages had been added to the institution, two with a capacity of sixteen beds each, and four with a capacity of eight beds, increasing the total capacity of the sanatorium to 110, although two of the cottages were temporarily occupied by employees. The cottages were typically simple frame structures, usually in a cruciform design, with large screened window

⁵Board of Control of State Institutions, Third Biennial Report, pp. 448-450.

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openings, and covered with cross-gable roofs. They were generally sited to the east of the West Wing along the crest of the hill overlooking the lake. In the early years only the central bathrooms were heated and their design and construction reflects the use of fresh air as the prevailing treatment philosophy for tuberculosis.

During the biennium ending July 31, 1910 a total of 338 patients had been admitted to the sanatorium, 314 had been discharged, and 78 remained in the institution. For the biennium ending July 31, 1912, 443 were admitted. Until late 1911 there had been a list of patients waiting for admission, but with the completion of the Administration Building in 1911-12 all were admitted. Attention turned to the construction of a much needed service building to include a new kitchen and dining room, laundry, power house, and additional space for employees. After the building was completed in early 1915 it was noted that:

.....a total of 769 patients were admitted during the biennial period (ending July 31, 1916) and that the rapid increase in the number of patients under treatment, which was noted in the report two years ago, has continued. Indeed, there has been no time during the past two years when we did not have applicants enough to fill from 50 to 100 more beds, if we had had buildings to receive them. This steady increase in population was made possible,--first, by further crowding of our present quarters; second, by the buildings that were completed during this biennial period. The service building, which was ready for use early in 1915, allowed us to remove employees from four cottages and one ward, which are now used by patients. The old dining room (in the West Wing) has also been transformed into one of our most cheerful and well-ventilated wards. These improvements, together with the construction of a children's pavilion, permitted us to care for about 70 additional patients, and these new beds were filled as rapidly as the applicants on our waiting list could be sent for.⁶

⁶Board of Control of State Institutions, Eighth Biennial Report, pp. 222-223.

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The Plumbing Wing was also added during the biennium, a large recreation hall was built to the southwest of the main complex, a residence for employees called Staff House was constructed, and steam heating was being extended to the cottages. An important medical advance was made with the installation of x-ray equipment. "The Pine Knot", a monthly newsletter published by sanatorium patients, completed its third year. The farming operation continued to expand with 65 acres cleared and under cultivation. A horse barn, silo, and an addition to the cow barn were also constructed. It was noted that, "Up to the present time the dairy has been the most successful division of our farming activities. It has given us a supply of excellent fresh milk, which would otherwise have been impossible to procure outside."

During the biennial period ending July 31, 1918 a total of 793 patients were admitted to Ah-Gwah-Ching. The report commented that the largest portion of the patient population had been classified as having tuberculosis which was advanced or moderately advanced, when it had been anticipated that Ah-Gwah-Ching would generally serve those in the beginning stages of the disease.

The character of the population brings to mind forcibly the greatest need of the institution, that is an infirmary for the bed patients. The experience of this, as all other state sanatoria, shows that the incipient class has the smallest representation. As a matter of fact, clinically, the patients are divided into three groups, the bed patients, those who are confined to their bed at all times, those who have a limited amount of exercise; and the more hopeful type who seek the added advantage of life in the cottages. The greatest need, therefore, of the institution at the present time is an infirmary, built somewhere near the main building, connected with it by tunnel, so that bed patients may be easily handled and cared for. It is a discouragement for new patients to be shown into a ward filled, or partially so, with bed patients, in a more or less hopeless condition.⁷

⁷Board of Control of State Institutions, Ninth Biennial Report, p. 237.

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In fact, a system of county sanatoriums had begun to develop that were built to help ease the burden on Ah-Gwah-Ching and it was intended that these facilities should accept the more advanced cases while, "The function of the State Sanatorium should be for the training in "taking the cure" of the incipient (beginning) case.....In that way a large number of early cases would be given the necessary educational training and enable them to go home and resume their usual vocations." In reality, it did not appear that this distinction between the facilities was always possible.

The facility continued to grow and expand and in 1922 construction began on the Infirmary I building where patients could be observed upon admission and for advanced cases. Its construction increased the capacity of Ah-Gwah-Ching by 20%. In 1922 the name of the sanatorium's post office was officially changed to Ah-Gwah-Ching, Minnesota, a name by which the institution has been commonly known since. That same year the Board of Control authorized the purchase of 200 acres located about ten miles from the sanatorium to be used for farm and garden purposes. By 1923, in addition to the major buildings, there were a total of 9 cottages on the grounds and over a dozen buildings on the sanatorium farm which was located south of the main complex. A greenhouse was built and a new power plant was completed in 1925. Total capacity of the institution had increased to 325, the grounds totaled 866 acres, and there were 103 acres under cultivation.

During the biennium ending June 30, 1926, 577 patients were admitted, 528 were discharged, and 39 died. The average daily population for the year ending June 30, 1926 was 267, the highest in the history of the institution. There were 124 employees. As part of the sanatorium's field work, one of the physicians held 25 chest clinics in various part of the state. The immediate result of the clinics was to fill the institution and create a waiting list which lasted into the spring of 1926. The new Infirmary was already considered overcrowded. A new road from the Sanatorium to Walker was also completed. Originally, the entrance road had entered the grounds from the west but with the completion of a new highway along Leech Lake to the east, a new entrance was constructed.

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A new children's building was completed in 1928 that replaced two frame buildings located nearby. It was first called the Children's Cottage but was later renamed Hall Memorial Pavilion in memory of Dr. Pearl M. Hall who had served as the superintendent of the sanatorium from 1918 until his death in 1928. A request was made for an appropriation to construct a new 120-bed infirmary which would allow the sanatorium to abandon the antiquated cottages so that patients could be treated in a more hospital-like setting. The cottages reflected the early days at the sanatorium when the only treatment that could be offered was fresh air and a healthy environment, which was often adequate to help the patient's own immune system affect a cure.

November 1930 brought the completion of a new women's residence called the Nurse's Home. It had often been difficult to attract staff to Ah-Gwah-Ching because of its remote location and because employees would be working with an infectious disease. Another problem was that on-site residential facilities were not always sufficient or adequate. The construction of the Nurse's Home and the Hall Pavilion displaced a number of the cottages built on the crest of the hill overlooking the lake. On July 1, 1930 meals began to be served to ambulatory patients cafeteria style rather than by waitress in order to reduce waste. The pasteurization of milk also began on that date.

During the biennium ending June 30, 1932 there were 526 patients admitted, 395 were discharged, and 86 died. The average daily population was 261. The charge for board and treatment was \$1.40 per day (the charge in earlier days had been \$1.00), and if the patient was unable to make the payment it was paid by the county of residence. The sanatorium lands had reached 881 acres and consisted of 77 acres of field crops, 7 acres of garden, 125 acres of meadow, 60 acres of pasture, 50 acres of lawn and buildings, and 562 acres of woodland. Livestock included 3 work horses, 4 mules, 58 dairy cows, 33 calves and heifers, 228 sheep, and 87 pigs.

The Infirmary II building opened in June 1932 which increased the capacity of the institution to 350 patients. This was the first building at Ah-Gwah-Ching designed by the firm of Sund and Dunham

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and it marked the introduction of more modern medical practices with the inclusion of a complete surgical suite and other treatment facilities on the lower level. The first floor was for female patients with male patients located on the third and fourth floors. The heliotherapy department was also located on the top floor with access to the building's south facing terrace.

Upon occupying the new infirmary, a contagious control technique was established throughout the institution to protect nurses and other employees as well as patients who had negative sputum. (Positive sputum is a contagious combination of saliva, phlegm, and discharge from the lungs.) Procedures were developed for wearing masks, caps, and gowns and for washing after treating patients. Another concern was the ambulatory positive sputum patients who could mix with employees and the negative sputum patients in the dining room. As a result of this situation, a dining room was established in Infirmary I for all ambulatory patients with positive sputum. The food was brought from the main kitchen and served cafeteria style but all dishes were washed and sterilized in an adjacent dish washing room. Ultimately, the dishes of all patients (including bed patients) with positive sputum were sterilized in this room rather than the main kitchen. Discussions also occurred about whether steps could be taken to prevent the transfer among patients of tubercle bacilli of varying virulence.

In 1932-33 the sanatorium's train station, a log building located near the lake and one of the first buildings constructed on the site, was torn down as trains carrying patients began to go through Walker. On March 1, 1933 the Northland Bus line began to stop at the sanatorium and daily service to the Twin cities was available. Use of the Hall Pavilion for treating children was discontinued. Studies had shown that children with Hilum's disease, an initial form of tuberculosis generally associated with juveniles, did not need to be institutionalized. The large building was no longer needed and the remaining children were transferred to a building called Camp House. From 1914 through 1933 a total of 420 children had been treated at Ah-Gwah-Ching. The laboratory of the sanatorium had prepared and distributed tuberculin for Mantoux tests at the request of the State Board of Health. A total of 23,424 children were tested statewide.

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The New Deal brought the last period of expansion to the Minnesota State Sanatorium with the construction of a number of buildings, including the Indian Building under the sponsorship of the Public Works Administration (PWA), and dozens of remodeling and improvement projects, usually through the Works Progress Administration (WPA). In 1932 discussions had begun between the state of Minnesota and the federal government concerning whether the state could care for tuberculous Indians at Ah-Gwah-Ching. The appropriate state and federal legislation was passed and one acre of sanatorium land was deeded to the federal government upon which to construct the building. A \$250,000 appropriation was made through the PWA and an agreement was reached that the maintenance of Indian patients would be paid by the federal government through the Indian Bureau at the same rate as was paid by state patients. Construction began in early November 1934 but on January 29, 1935, before the new building was completed, the nearby Indian sanatorium at Onigum was destroyed by fire. The 22 patients at Onigum were moved into one of the cottages at Ah-Gwah-Ching until the new building was completed on August 1, 1935. Through December 31, 1936 a total of 325 Indian patients had been admitted to Ah-Gwah-Ching. Of these, 192 were discharged, 31 died, and there were 102 remaining in the institution.

The PWA appropriation also paid for a 24 car garage to replace a garage building that had been demolished to make way for the new building. Other New Deal efforts from 1933-34 included tree planting and landscaping under the State Emergency Relief Administration (SERA), repairing and moving buildings, painting, hauling stone for the retaining wall by Staff House, and a tuberculosis survey all by the Civil Works Administration (CWA).

With the creation of the WPA in 1935 dozens of additional projects were implemented. By the end of 1936 the WPA had remodelled the wards and porches of the West Wing, poured a cement slab on the roof of Infirmary I, installed many terrazzo floors throughout the complex, including some with decorative designs, and extended the laboratory space. A tunnel was begun between Infirmary I and the Recreation Building and an employee's picnic ground and tennis court were built. Later WPA projects included the remodeling of the Plumbing Wing to include a chapel, library, and space for

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occupational therapy, and a new elevator tower was constructed. The WPA also built a sewage treatment plant (now razed) along the shore of Leech Lake. The open porches of Infirmary I were glazed and the French doors between the inside rooms and porches were made into archways. For the years 1936 through 1938 state and federal expenditures for WPA projects totaled \$112,005.37.

Extensive federal relief projects were contemplated which never reached fruition. A dramatic bird's-eye perspective drawing by Sund and Dunham from March 1935 depicts an impressive administration building located between the Indian Building and the north end of the Service Building. The seven story building was to include administrative office space, a laboratory, a 50 bed surgical ward, a 50 bed admission ward with facilities for quarantine and isolation, and an 85 bed ward for patients changing from a positive to a negative sputum status. Three of the upper floors were to include residential space for nurses. The building was capped with a tower and spire, reminiscent of what Sund and Dunham were to design for the Minnesota State Hospital for Mental Diseases at Moose Lake from about the same time.

Also proposed and shown on the perspective drawing were greatly enlarged facilities for Indian patients including another building for patients as well as what was called a craft building. These plans appear to have been scaled back and just an addition was proposed on the north facade of the Indian Building to include vocational training and craft work shops, teaching facilities, recreational space, and a chapel. However, this addition was never built.⁸

Meanwhile, in 1935 the patient population began to climb with the construction of the Indian Building and with surplus patients admitted from Minneapolis, St. Paul, and Duluth who could not be accommodated in their respective county sanatoriums. Between July 1, 1935 and December 31, 1936 a total of 1,017 patients were

⁸The focus of the perspective drawing by Sund and Dunham is the proposed administration building with the Indian Building and proposed additions to the north essentially appearing as mirror images of the existing buildings to the south resulting in a formal symmetrical plan

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admitted⁹, 504 were discharged, 112 died, and 401 remained in the institution. The sanatorium also continued to provide epidemiological services to the 46 counties in Minnesota without their own sanatoriums. The epidemiologist at the sanatorium worked with the doctors in these counties by assisting them in obtaining the hospitalization of active cases, conducting Mantoux tests and X-rays, and rendering any further service to the family physicians. A tuberculosis survey was also conducted in all state institutions. A complete surgical service was installed in 1937 and the sanatorium was fully approved by the American College of Surgeons.

The sanatorium farm continued to serve an important function as seen in the following figures which list farm production from one year: 2,300 bushels of potatoes, 5,858 pounds of cabbage, 2,275 pounds of cauliflower, 711,026 pounds of milk, 24,151 pounds of fresh pork, 4,018 pounds of fresh beef. Seventy gallons of watermelon pickles were also canned.

The population of Ah-Gwah-Ching peaked in 1939 when a total 436 patients were undergoing treatment.

Even shortly after its initial construction, it was soon realized that Ah-Gwah-Ching would be unable to handle the large influx of patients and it was also noted that patients were sometimes reluctant to be hospitalized long distances from friends and family. As a result, the state legislature of 1913 appropriated \$500,000 for the construction and maintenance of county sanatoriums under state supervision. A county could construct its own sanatorium or form a partnership to build a joint facility. The Advisory Commission had originally been appointed for the purpose of establishing the state sanatorium, however, the 1913 legislature also gave it the responsibility for the entire county sanatorium system. If a county did not have its own facility, it would continue to send its patients to Ah-Gwah-Ching.

⁹A certain number of the admissions were readmissions in that relapse could be fairly common.

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By 1918 Minnesota had one state, fourteen county, one city (Hopewell Hospital in Minneapolis), and two private sanatoriums (Pokegama and Thomas).¹⁰ Only four years after the county sanatorium system had begun, an article dated March 1917 in Modern Hospital by Dr. John A. Hornsby stated:

Minnesota has provided institutional care for a larger proportion of her tuberculous population than any other state in the Union. She has not merely provided this care; she has brought it to the doors of her citizens. Realizing that sanatoriums can accomplish nothing unless patients can be induced to enter them, and that separation from the patients' families is generally the greatest deterrent, Minnesota has devised and put into operation a system of county hospitals. Over 60 per cent of the population of the state thus has sanatorium facilities within easy reach, and we have no doubt that provision will be made in the near future for the remaining 40 per cent.

In construction, equipment and management, these county tuberculosis hospitals have been kept on a uniformly high plane.....

Apparently, a second article appeared in the same issue by Dr. J.W. Pettit, the President of the American Sanatorium Association in which he noted, "So far as I know, your State (Minnesota), through its Advisory commission, has worked out the best scheme of standardization and is producing the best results of any State in the Union."

¹⁰In time there were also facilities for treating tuberculosis at the Anoka State Hospital for the mentally ill and the Veteran's Administration Hospital in Minneapolis. Another facility was the Lymanhurst School for Tuberculous Children which opened in Minneapolis in 1921. It consisted of a day school where children with tuberculosis could be taught as in regular school and provided with special food, rest periods, etc. A hospital section was added in 1922.

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Like Ah-Gwah-Ching, the majority of the county sanatoriums were located in pastoral rural settings, often on lakes or rivers, which are reflected in their picturesque names such as Sunnyrest, Mineral Springs, Fair Oaks Lodge, Sand Beach, Buena Vista, Oakland Park, and Riverside. The smaller facilities typically included a main hospital building, a nurse's residence, several service and support buildings, and in some cases a superintendent's residence. Stylistically, the early buildings were usually Craftsman Style designs with stucco exteriors, exposed rafter tails, and columned entrances. Later construction often included classically inspired designs and elements of the Georgian Revival Style.

While the majority of the state's sanatoriums remained relatively small, several grew into immense medical complexes which could treat hundreds of patients. These included Ah-Gwah-Ching, Hennepin County's Glen Lake Sanatorium, and the St. Louis County facility near Duluth called Nopeming. The modest structures of earlier days gave way to large hospital buildings, extensive staff quarters, power plants, and separate buildings for treating children. Glen Lake expanded dramatically throughout the 1920s until it became the state's largest sanatorium with space for over 700 patients. Even a children's summer camp was constructed which was the only element of the facility to survive the county's 1993 demolition of the site. Farms and gardens were also common at many of the facilities. Ah-Gwah-Ching even had its own train station.

The state and county sanatoriums are listed below along with admission figures and the county alignments as of January 1948.

<u>Sanatorium</u>	<u>Date Opened</u>	<u>Admissions</u>	<u>Counties Served</u>
Ah-Gwah-Ching	12/27/07	10,833	44 Counties
Nopeming	5/22/12	8,392	St. Louis
Otter Tail Co.	11/04/13	1,238	Otter Tail
Ramsey Co	09/00/14	7,880	Ramsey

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Mineral Springs	11/03/15	2,072	Goodhue, Dakota, Freeborn, Rice, Olmsted, Steele, Washington, Mower
Glen Lake	1/04/16	12,323	Hennepin
Sunnyrest	6/01/16	1,741	Polk, Norman
Lake Julia	7/07/16	1,803	Beltrami, Itasca, Koochiching, Hubbard
Sand Beach	12/06/16	1,026	Clay, Becker
Riverside	1/01/17	1,234	Chippewa, Yellow Medicine, Lac qui Parle, Renville
Buena Vista	2/01/17	950	Wabasha, Winona
Southwestern Minnesota	7/25/17	1,528	Murray, Lyon, Rock, Pipestone, Wantonwan, Blue Earth, Jackson, Nobles, Lincoln, Cottonwood
Oakland Park	1/01/18	949	Pennington, Red Lake, Roseau, Marshall
Fair Oaks Lodge	5/07/18	1,069	Todd, Wadena
Deerwood	10/07/18	829	Aitkin, Crow Wing ¹¹

¹¹Myers, pp. 434-445.

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When the Advisory Commission was abolished in 1925, the state and county sanatoriums remained under the jurisdiction of the Board of Control under 1939 when authority was transferred to the Department of Social Security of the Division of Social Welfare. From 1953-1962 the sanatoriums remained under the Department of Public Welfare.

In the early years the only treatment which could be offered for tuberculosis was fresh air, good food, and a healthy environment. The Advisory Commission commented that,

The cost of maintaining a sanatorium for tuberculosis is greater per capita than the ordinary state hospitals. This is due to the fact that it is expensive to have fresh air in the wards day and night. It costs much fuel, and makes extra blankets and robes necessary. It costs more to feed these patients than it does the others. They must have meats, eggs and milk in liberal quantities.¹²

As noted earlier, the site for Ah-Gwah-Ching was specifically selected because of its perceived healthy qualities. Building design also facilitated access to fresh air as seen in the West Wing and Administration Building with porches extending along all the south facing elevations where patients often slept. In the early days, the wings of the cottages remained unheated with only a wood stove provided for the central bathrooms. Patients could actually wake to find themselves covered with snow. While such extreme measures were soon abandoned, design features continued to play an important role in the treatment process. Both the Infirmary I and II buildings included rooftop terraces used for heliotherapy (sun treatment) which was used at least into the 1950s and considered particularly effective for treating extra-pulmonary tuberculosis such as tuberculosis of the bone. In 1924 it was noted that, "The sun porches on the roof of the infirmary are in constant use. Not a month has passed, even

¹²Board of Control of State Institutions, Third Biennial Report, p. 449.

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during the winter, when they have not been used. At this writing about 60 of the patients are regularly taking heliotherapy and deriving great benefit from it."

Surgical procedures were also being developed which would also facilitate the healing process. One of the earliest techniques was called artificial pneumothorax, also known as collapse therapy. In this procedure air is introduced into the pleural cavity between the lining of chest and the lung which causes the lung to collapse and stop functioning. The patient could adequately breathe with one lung while the diseased lung could remain inactive which would facilitate healing. Collapsing the diseased area would inhibit the proliferation of tubercle bacilli and was highly effective in converting an individual from contagious to noncontagious. Ah-Gwah-Ching had a special room in the Infirmary II building just for collapse therapy. The technique was highly successful and in 1941, for example, 50% of the patients at Ah-Gwah-Ching were receiving pneumothorax. Because in time the air in the pleural cavity would be naturally expelled, which would cause the lung to resume functioning, "refills" were necessary to keep a lung collapsed. In 1950 a "pneumo refill" at Ah-Gwah-Ching cost \$2.50.

Another procedure was called thoracoplasty in which a rib or ribs could be removed causing a permanent collapse of the diseased area of the lung. This would close a diseased cavity, facilitate healing, and again decrease the proliferation of tubercle bacilli. The rib would in fact grow back but the underlying portion of the lung would remain collapsed. Finally, surgical procedures were developed to remove all or part of the lung (pneumonectomy and lobectomy). On December 18, 1937 Dr. T.J. Kinsella was the first surgeon in Minnesota to successfully remove an entire lung for tuberculosis. Dr. Kinsella joined the staff at Ah-Gwah-Ching in 1941.

Chest surgery developed to a high degree at four of the sanatoriums, namely Glen Lake, Nopeming, Ramsey County and Ah-Gwah-Ching. The other sanatoriums sent their patients to one of the facilities equipped for surgery or to the University Hospital or the Mayo Clinic, neither of which had tuberculosis services but were available for surgery.

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Finally in the 1940s, the discovery of the "miracle drugs" began the final chapter in the treatment of tuberculosis at Minnesota's sanatoriums. On October 19, 1943, in the Department of Microbiology of the Agricultural Experiment Station at Rutgers University, Dr. Selman A. Waksman discovered streptomycin, the first effective drug treatment for tuberculosis. For years Waksman's research had been devoted to the search for anti-bacterial substances produced by soil inhibiting micro-organisms. Waksman called these substances by a name the world would instantly accept and recognize from then on - antibiotics.

However, two Minnesotans played a key role in the testing and implementation of streptomycin: Dr. William H. Feldman, a doctor of veterinary medicine, and Dr. H. Corwin Hinshaw, a consulting physician, both from the Mayo Clinic in Rochester, Minnesota. Feldman had played a part in a nationwide eradication of tuberculosis in cattle, a cause of fatal tuberculosis in children, and established a reputation for animal research. In the winter of 1938 he was returning from St. Paul following a meeting of the tuberculosis committee of the State Medical Association of Minnesota. With him was Dr. Hinshaw and the two discussed experiments to treat tuberculosis in animals with a drug called sulphanilamide. Hinshaw knew of a newer version of the drug and they decided that they would conduct the experiment themselves. Hinshaw's special research lay in pulmonary diseases and the two men spent five years testing hundreds of sulphonamides and other drugs with very limited success.

Unaware of the streptomycin discovery, Dr. Feldman visited Selman Waksman in November 1943 and offered the expertise of the Mayo Clinic in assessing any new and promising antibiotics against tuberculosis. Waksman lacked the facilities for detailed animal studies and had no access at all to testing human sufferers and he invited Feldman and Hinshaw to participate in a cooperative study of the drug's effectiveness. In early April 1944 the first supply of ten grams of streptomycin arrived at the Mayo Clinic. The drug was used on four infected guinea pigs, all of which were cured. A larger experiment was begun with guinea pigs at a facility several miles out of town, with much of the work by Feldman and Hinshaw

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occurring during their off hours. After their initial results in January 1945, they sent Waksman a telegram: "Long term crucial experiment with streptomycin terminated today. Incomplete results indicate impressive therapeutic effects." The results could only be described as sensational.

Meanwhile, human experimentation had begun. Streptomycin was first given to two men with tuberculosis at the Colonial Hospital in Rochester. Both were apparently terminally ill and died. However, the case usually cited is that of a 21 year old woman named Patricia from Austin, Minnesota who was admitted to the Mineral Springs Sanatorium near Cannon Falls just north of Rochester in July 1943. She was suffering from advanced tuberculosis affecting the upper lobe of her right lung. For a year she received the conventional sanatorium treatment and at first showed some improvement. However, by the summer of 1944 her condition was deteriorating and an emergency thoracoplasty was performed in which several ribs were removed from the right upper part of her chest on November 1, 1944. She continued to worsen and the disease spread to her left lung. Then Dr. Karl H. Pfuetze, the medical director at Mineral Springs, contacted Dr. Hinshaw and they discussed the situation with Patricia. She agreed to become the first human guinea pig.

Between November 20, 1944 and April 7, 1945, Patricia received five courses of streptomycin injections, each lasting 10 to 18 days. The treatment was interrupted because they kept running out of supplies of the drug but finally with larger doses with greater purity she was improving. Eventually she was so improved that surgeons could operate on the residual disease. In the words of Pfuetze, "It was a story book ending. The patient made a remarkable recovery. She led a very active life. After leaving the sanatorium, she married and became the mother of three fine children born in 1950, 1952, and 1954. The streptomycin miracle had begun."

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On June 12, 1945 Waksman received another telegram from Feldman and Hinshaw that stated, "Our streptomycin studies....were fully confirmed experimentally and clinically, establishing this as the first effective chemotherapeutic remedy for tuberculosis. Hearty congratulations." Drs. Feldman and Hinshaw were the first in the world to report the results of streptomycin in both animal and human experimentation.¹³

Within two years of its discovery, streptomycin was proven to be a breakthrough in the treatment of tuberculosis in virtually all of its manifestations, even for tuberculous meningitis which had been universally fatal. Not surprisingly, the drug remained in very short supply and for a time Dr. Hinshaw was in charge of approving all distributions of the drug. In a great humanitarian gesture, the George Merck Pharmaceutical Company of Rahway, New Jersey relinquished their exclusive rights for manufacturing streptomycin in order to encourage its production. Other drugs began to emerge as well. Shortly after streptomycin was discovered, Dr. Jorgen Lehman of Sweden discovered an aspirin derivative called para-aminosalicylic acid (PAS) which was also effective against tuberculosis. Another important development was the discovery that combination therapy with streptomycin and PAS was far more effective than either drug on its own, particularly in preventing drug resistance which had become almost an immediate problem.¹⁴ Other important drugs also emerged such as isoniazid, rifampicin, and ethambutol.¹⁵ Streptomycin was first used at Ah-Gwah-Ching in 1947.

¹³In December 1952 Dr. Waksman was awarded the Nobel Prize for Medicine for the discovery of streptomycin. Waksman expected that Drs. Feldman and Hinshaw would share the prize with him but such was not to be the case.

¹⁴Ironically, Dr. William Feldman developed tuberculosis in December 1948. He was treated at Methodist Hospital in Rochester and eventually at St. Louis County's Nopeming Sanatorium where he was treated with a combination of streptomycin and PAS. He made a slow but good recovery. Sadly, as new strains of tuberculosis are emerging in the modern era, many are resistant to the highly successful antibiotics of earlier days.

¹⁵Frank Ryan, The Forgotten Plague: How the Battle Against Tuberculosis was Won--and Lost, (Boston, Toronto, London: Little, Brown and Company, 1992), pp. 178-407.

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Clarence H. Johnston, Sr., who designed the majority of the buildings at Ah-Gwah-Ching, was born in 1859 and spent his youth in Hastings and St. Paul, Minnesota. After high school he apprenticed for three years with A.M. Radcliff and Edward Bassford. He attended the Massachusetts Institute of Technology along with his friend Cass Gilbert in 1877 and studied at the Ecole des Beaux Arts in 1878. Johnston later worked for the Herter Brothers, a prestigious decorating firm in New York City. While there he founded the New York Sketch Club which later became the Architectural League of New York. He returned to St. Paul in 1883 and opened an office in the Gilfillan Block next door to James Knox Taylor.

From 1901-31 he was retained by the Board of Control of State Institutions and in this role as state architect he and his staff literally designed hundreds of state-owned buildings. He employed a range of architectural styles and his firm was responsible for entire campuses of buildings at the Minnesota Home School at Sauk Center, the Cambridge State Hospital, the Women's Reformatory at Shakopee, and the second Stillwater State Prison at Bayport. He designed new buildings at almost every state institution established in the nineteenth century. He was also the architect for the Board of Regents of the University of Minnesota and designed Northrup Auditorium and many buildings along the University mall. In his home town of St. Paul he designed forty-two houses on Summit Avenue alone as well as many major public and commercial buildings such as the Minnesota Historical Society Building (1916-1918) and the Manhattan Office Building. In addition to Ah-Gwah-Ching, Johnston's additional sanatorium designs include the Ramsey County Pavilion, which was actually a wing of Ancker Hospital in St. Paul, as well as the associated Ramsey County Children's Preventorium on Lake Owasso. Johnston continued to practice architecture until his death in 1936. His son, Clarence H. Johnston, Jr. (1881-1959) maintained the practice until his own death.¹⁶

¹⁶Patricia Murphy, The Public Buildings of the State of Minnesota: An Architectural Heritage, (St. Paul: Peregrine Publications, 1986), pp. 6-7.

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The later buildings at Ah-Gwah-Ching were designed by the firm of Sund and Dunham which had emerged as the state's leading designers of sanatorium facilities. Englebret Sund, who was born in Norway in 1880, formed a partnership with Arthur Dunham sometime after 1911 when Dunham had graduated from the University of Illinois. The firm maintained their offices in the Essex Building in Minneapolis and often worked in conjunction with the engineering firm of Rose and Harris whose offices were in the same building. Sund and Dunham designed the Central Lutheran Church, a Gothic Revival Style structure in downtown Minneapolis, and also expanded the old Edina High School in 1935 under the sponsorship of the Public Works Administration.

However, hospital or institutional facilities appear to have become the firm's specialty. The firm was responsible for the design of 12 of Minnesota's 14 county tuberculosis sanatoriums which were built under state supervision. In fact the firm was under contract with the State Board of Control to design the county facilities. These included the Otter Tail County Sanatorium (1913-16), Mineral Springs (1914), Glen Lake (1914-31), Lake Julia (1916), Sunnyrest (1916-24), Sand Beech (1916-20), Riverside (1915-17), Oakland Park (1916-24), Fair Oaks Lodge (1916), Deerwood (1916-22), Buena Vista (1917), and Southwestern Minnesota (1917). These facilities typically included a main hospital building, a nurse's residence, several service and support buildings, and in some cases a superintendent's residence. The largest facility was the Glen Lake Sanatorium in Hennepin County which was expanded by Sund and Dunham from 1914 to 1931 until the facility became the largest in the state and served over 700 patients at its peak in the late 1920s. The firm's designs at Glen Lake included the Main Building, East and West Cottages, and the Power Plant (1914-16), the Administration Building (1922), East Wing (1924), West Wing (1925), Dining Hall and Auditorium (1924), the Children's Building (1922), the Nurse's Residence (1924), the Men's Residence (1924), the Power Plant (1923), the Superintendent's Residence (1924), the Children's Summer Camp (1925), and the Northeast Surgical and Vocational Rehabilitation Wing (1931). The only county sanatoriums which Sund and Dunham did not design were the Ramsey County Pavilion by Johnston, and

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Nopeming, the St. Louis County Sanatorium.¹⁷ One of the Sund and Dunham's largest projects was the Minnesota State Hospital for Mental Diseases (Moose Lake State Hospital), an immense complex built by the PWA from 1935-38. By 1941 the partnership had ended, although Dunham continued to practice at the same address until 1946.

The firm of Schmidt, Garden, and Erikson of Chicago worked in conjunction with Sund and Dunham on the Indian Building (#8) and a Garage (#12) at Ah-Gwah-Ching. It is not clear why the Chicago firm was involved, although because the Office of Indian Affairs of the Department of the Interior was involved in the construction of those two buildings, it is possible the firm had a prior relationship with that particular governmental agency.

In 1950 it was noted that the death rate from tuberculosis had continued to decline during the previous 30 years with a marked drop during the last five. The death rate had been 26.9 per 100,000 in 1944 and dropped to 13.6 in 1949. The population of the state's sanatoriums decreased from 3,808 in 1941 to 1,707 in 1950. Of these, 1,406 were at the state's five largest facilities with 301 at the remaining. The previous year the state legislature passed enabling legislation for the closure of the small county facilities. "Unless there is a drastic change.....tuberculosis will be eradicated in the very near future as a serious health menace."¹⁸ It was believed that two or three of the larger sanatoriums could serve the state adequately for another ten years.

The state's sanatoriums had achieved their goal and began to close after decades of commitment to the treatment and prevention of tuberculosis. Through the isolation of infected individuals, early diagnosis and admission, mass x-ray exams, tuberculin testing, improved care and surgical techniques, and finally antibiotic therapy, tuberculosis came under control. Even Ah-

¹⁷Some of the later buildings at Nopeming were designed by a firm from Duluth but the early work was done by a firm from Saranac Lake in New York state which was apparently associated with Edward Trudeau's famous facility.

¹⁸Division of Social Welfare, Annual Report, 1949 and 1950.

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Gwah-Ching closed on January 1, 1962 and the state's TB program was transferred to Glen Lake Sanatorium for its final years. The Minnesota State Sanatorium for Consumptives was converted into a state nursing home for geriatric patients and is now known as Ah-Gwah-Ching Center.

The majority of the state's facilities associated with the treatment of tuberculosis have been demolished or drastically altered for new uses. Some of the state's most important facilities have been destroyed such as Glen Lake and Mineral Springs, although the Children's Camp (National Register of Historic Places, 1999) is the one surviving component of Glen Lake Sanatorium (Hennepin County). As of the date of this nomination, plans are underway to demolish at least part of the Ramsey County Children's Preventorium (Lake Owasso), a branch of the Ramsey County Sanatorium. Portions of the following small-scale county facilities may survive: Sunnyrest (Crookston), Fair Oaks Lodge (Wadena), Oakland Park (Thief River Falls), and Southwestern Minnesota (Worthington). A portion of Nopeming (Duluth) survives and a building from the Pokegama Sanatorium (Pine City) may also remain extant.

Throughout its history, nearly 14,000 individuals were treated for tuberculosis at the Minnesota State Sanatorium for Consumptives. Its construction represents a turning point in the history of the treatment of tuberculosis in Minnesota and it depicts the history of one of the state's most serious diseases. Ah-Gwah-Ching remains the state's best reminder of Minnesota's once comprehensive system of tuberculosis facilities and the last surviving large-scale sanatorium.

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Major Bibliographical References

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St. Paul, Minnesota. Minnesota State Department of Administration. Architectural drawings for the buildings at the Minnesota State Sanatorium for Consumptives.

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Geographical Data

Verbal Boundary Description

The boundary for the Minnesota State Sanatorium for Consumptives is shown as the heavy line on the enclosed USGS map. It is defined as the E 1/2 of the SW 1/4 of Section 35, Township 142N, Range 31W, and that part of government lots 3 and 4 lying westerly of the centerline of State Highway 371 (117 acres), and

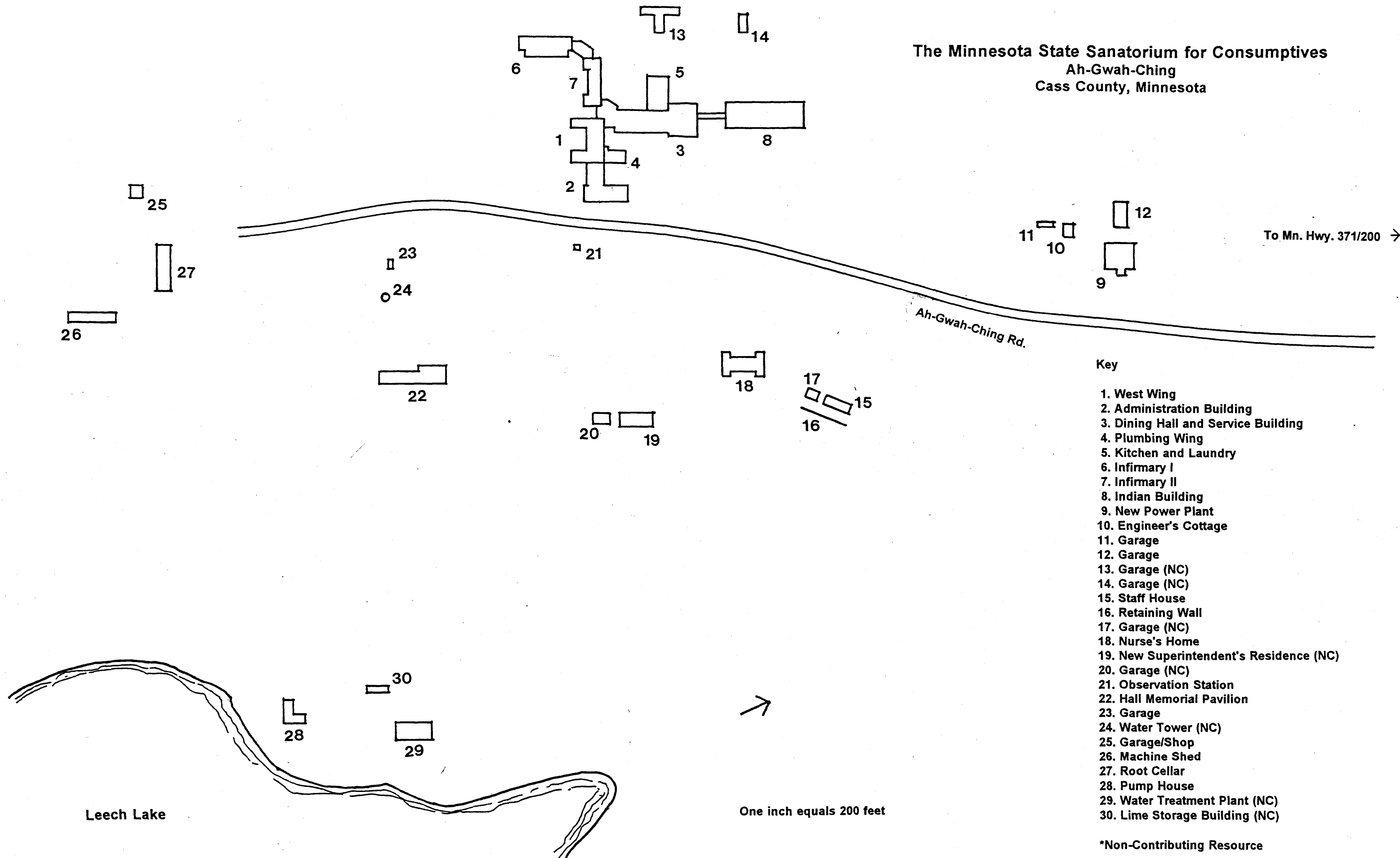
The W 1/2 of the SW 1/4 of Section 35, Township 142N, Range 31W, less the W 1/2 thereof and also less all that part of the West 1/2 described as follows: beginning at a point on the southline of said SW 1/4, N 89 degrees 41'20" E 659.00 feet from the southwest corner of said SW 1/4; thence N 89 degrees 41'20" E, along said southline, 341.00 feet; thence N 00 degrees 00' E 2000.00 feet; thence S 89 degrees 41'20" W 343.09 feet; thence S 00 degrees 05' 07" E 1999.99 feet to the point of beginning and there terminating (23.7 acres), and

All that part of Government Lot Six (6), Section Two (2), Township One Hundred Forty-one (141) N., Range Thirty-one (31) W. 5th P.M. west of a line starting at the midpoint on the South line of the Southwest Quarter of the Southwest Quarter in Section Thirty-five (35), Township One Hundred Forty-two (142) N., Range Thirty-one (31) W., thence southeasterly to a point where the South line of said Lot Six (6) intercepts the shore line of Shingobee Bay (35.5 acres).

Boundary Justification

The boundary includes all land and buildings still legally associated with the Minnesota State Sanatorium for Consumptives, all of which retains historic integrity.

The Minnesota State Sanatorium for Consumptives
 Ah-Gwah-Ching
 Cass County, Minnesota



Key

- 1. West Wing
- 2. Administration Building
- 3. Dining Hall and Service Building
- 4. Plumbing Wing
- 5. Kitchen and Laundry
- 6. Infirmary I
- 7. Infirmary II
- 8. Indian Building
- 9. New Power Plant
- 10. Engineer's Cottage
- 11. Garage
- 12. Garage
- 13. Garage (NC)
- 14. Garage (NC)
- 15. Staff House
- 16. Retaining Wall
- 17. Garage (NC)
- 18. Nurse's Home
- 19. New Superintendent's Residence (NC)
- 20. Garage (NC)
- 21. Observation Station
- 22. Hall Memorial Pavilion
- 23. Garage
- 24. Water Tower (NC)
- 25. Garage/Shop
- 26. Machine Shed
- 27. Root Cellar
- 28. Pump House
- 29. Water Treatment Plant (NC)
- 30. Lime Storage Building (NC)

*Non-Contributing Resource

Drawn by RTA 9/15/96