FINAL

Building 148/149
Ancillary Building

Historic American Buildings Survey
Level II/III

2701 North Harbor Drive,
San Diego, California 92101

Prepared for

San Diego Unified Port District (SDUPD)
San Diego County Regional Airport Authority

April 2010

CH2MHILL

HISTORIC AMERICAN BUILDINGS SURVEY

RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT

BUILDING 148/149 - ANCILLARY BUILDING

Location: 2701 North Harbor Drive, San Diego, CA 92101, USA

Present Owner/Occupant: San Diego County Regional Airport Authority

Present Use: Vacant

Significance: Buildings 148/149 are located within the boundaries of the Ryan Aeronautical Company Historic District, a 46-acre complex containing 17 contributing resources and 30 non-contributing resources. The district is eligible on the local and national levels for the National Register of Historic Places (NRHP) under Criteria A, B, and C and for the California Register of Historical Resources (CRHR) under Criteria 1, 2 and 3. The historic district is eligible under NRHP Criterion A (CRHR 1) for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production. It is also eligible for its association with Cold War research, development projects, and defense manufacturing. Under Criterion NRHP B (CRHR 2) the district is eligible for its association with aviation pioneer T. Claude Ryan and his aircraft aerospace manufacturing businesses. Ryan Aeronautical Company, under Mr. Ryan's leadership, made significant contributions to national defense production during World War II, as well as important developments in aerospace research and development in the 1950s and 1960s. The historic district is eligible under NRHP Criterion C (CRHR 3) for its representation of industrial architecture associated with the 1930s and World War II. The district embodies the distinctive architectural characteristics of aircraft manufacturing buildings of the period in Southern California. The building and structures in the district illustrate the design fabrication concepts common to aircraft manufacturing plants from the 1930s to the 1960s. During this period, the aerospace industry played a dominant role in the economy of the region (URS Corporation, 2008).

Buildings 148/149 are non-contributing resources to the Ryan Aeronautical Company Historic District.

Historian: Megan Venno

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1945

2. Architect: Frank Hope Jr. & Associates

3. Original and subsequent owners: Ryan Aeronautical Company signed a 50-year lease in 1939. Ryan Aeronautical Company sold to Teledyne Inc. in 1969, and the combined company became Teledyne-Ryan Aeronautical Company (TDY Industries). TDY Industries merged with Allegheny Ludlum Corporation in 1996, and Northrop Grumman Corporation acquired TDY Industries from Allegheny in 1999. Presently, the property is leased by the San Diego County Regional Airport and is under the Jurisdiction of the San Diego Unified Port District.

4. Original plans and construction: Buildings 148 and 149 are attached square buildings. Building 148 is three stories in height and approximately 40 feet square. Building 149 is a one-story building measuring approximately 50 feet by 37 feet. Building 148 is a wood and steel-framed building and Building 149 is a wood-framed building. Buildings 148/149 feature lath-and-plaster/stucco exterior walls and have built-up roofs. The west wall of Building 148 is shared with Building 147 and the east wall is shared with Building 149. The north walls of Building 148/149 are shared with Building 140. The south elevations of the buildings are the only walls that are not shared with another building. The exterior walls of Building 148 are built of 2-inch-by-6-inch studs at 16 inches on center. A row of 6-inch-by-8-inch wood columns is placed across the center of the building. The roof framing at Building 148 consists of 2-inch-by-12-inch roof rafters which frame the top of an interior 8-inch-by-14 inch wood girder and exterior walls. Floor sheathing is plywood with the exception of the north section of the third floor, which is sheathed with 1 inch by 6 inch diagonal sheathing. Building 149 has exterior lath-and-plaster walls and at least one steel-pipe column that support the roof framing and the interior structure. Building 148 has no windows. Building 149 has two multi-paned steel-framed awning windows along the south elevation and one aluminum replacement window along the east elevation. The exterior of the windows on the south elevation have been painted over and the interior have been covered over by wall finishes (San Diego County Regional Airport Authority, 2005).

5. Alterations and additions: The roofs on both Buildings 148 and 149 have been replaced (dates unknown). The two multi-paned steel-framed awning windows along the south elevation of Building 149 have been painted over and the interior of these windows has been covered over by wall finishes. The window on the east elevation of Building 149 is an aluminum replacement (San Diego County Regional Airport Authority, 2005).

B. Historical Context:

1. San Diego's Aviation History:

During the first three decades of the 20th century, the aviation industry was established in San Diego and it became a focal point of San Diego's activities and reputation. In 1912, the Army founded an air base and the first year-round military aviation school at Rockwell Field on Naval Air Station North Island, San Diego (Macaulay, 1928; Moore, 1960). The creation of the military air bases helped establish aviation in the region during the industry's pioneering years. In 1928, the Army and Navy had invested $5,500,000 in the air bases at North Island (Macaulay, 1928). The high profile attained by aviation in the local community during these years resulted in an awareness of the potential future of the industry by the inhabitants of the region. San Diego became the first U.S. city to establish a Municipal Board of Air Control in 1926, and was also the first to issue a complete set of air ordinances (Macaulay, 1928).

In 1922, T. Claude Ryan, an aviation pioneer who began his career as an Army pilot, left the Army and moved to San Diego, where he began giving airplane rides and flying instructions.

He soon established the Ryan Flying Company at the Dutch Flats Airfield in San Diego, which later became Ryan Airport. Dutch Flats Airfield was located at present-day Barnett Avenue and Midway Drive, off the current San Diego airport site and not within the current historic district boundaries. In the 1920s, Ryan Airport was the focal point for Ryan's expanding aeronautical enterprises (flying school, flying service, and an airplane manufacturing company). In the late 1920s, the use of the airport expanded as civil aviation came of age with other companies using Ryan's field to operate air services. With the help of T. Claude Ryan, civilian aviation flourished in San Diego County during these decades.

In the mid-1920s, the Chamber of Commerce promoted San Diego as the "Air Capital of the West." The development of what is now Lindbergh Field would be the central effort in this campaign. The committee realized that in order to maintain a leadership role in aviation, San Diego must have an adequate municipal airport. They wanted the location of the airport to be a place that would combine facilities for the operation of land and seaplanes, and be as near to the city of San Diego as possible. They selected an area at the north end of San Diego Bay on City-owned tideland; however, this area did not contain enough area to meet government requirements. Negotiations were made with the United States Navy to provide portions of the Marine Corps-owned tidelands for the airport expansion (URS Corporation, 2009).

Ryan was instrumental in the development of Lindbergh Field, San Diego's nascent municipal airport, which was established in 1928. In 1929, 4,755 planes and over 20,000 passengers arrived or departed from the Dutch Flats Airfield (Leiser, 2000). Within a few years, the majority of these activities would move to Lindbergh Field. In 1939, Ryan established a manufacturing site on airport grounds, which is the location of the historic district.

2. Ryan Aeronautical Company:

T. Claude Ryan was born in Parsons, Kansas in 1898, but moved with his family to Orange, California in 1912. Ryan began a lifelong relationship with the aviation industry when, around the age of 19, he enrolled at the American School of Aviation in Los Angeles. In 1919, Ryan began studying mechanical engineering at Oregon State College. While in school, he applied to the Army for aviation cadet training and was accepted, but left the Army by January 1922 in hopes of flying as a civilian (National Aviation Hall of Fame, 2009). Ryan moved to San Diego to establish the Ryan Flying Company. The Ryan Flying Company changed its name to Ryan Airlines, Inc. when it was reorganized in 1924 to begin operating the first year-round, scheduled airline service in the United States from Dutch Flats (URS Corporation, 2009). Around the same time, in the mid-1920s, Ryan entered the aircraft manufacturing business with partner Frank Mahoney and created the Ryan M-1 Monoplane, which became one of the best-known air mail carriers in the country. A modified Ryan Monoplane became the *Spirit of St. Louis*, the plane Charles Lindbergh flew from New York to Paris in May 1927 on the first solo flight across the Atlantic Ocean. Ryan sold the company to Mahoney in 1926 and established the Ryan Aeronautical Corporation for the sale and manufacture of aircraft engines. The company changed its name to the Ryan Aeronautical Company in 1934.

Ryan Aeronautical Company signed a 50-year lease, starting in 1939, on land at the southeastern edge of Lindbergh Field along North Harbor Drive. Three buildings from the site of the previous company were relocated to this new location. The Ryan plant was one of several aircraft manufacturers located at Lindbergh Field that contributed to the nation's war effort in the 1940s. At peak wartime production, the Ryan plant had 8,500 employees and annual production exceeded $55 million. Following the war, workforce was reduced to 1,200 and annual production to $8 million (URS Corporation, 2009).

The Korean conflict provided the Ryan Aeronautical Company the opportunity to work with electronics for aerospace applications. The role in aerospace electronics led to the development of a variety of aircraft navigation and positioning equipment, including helicopter hovering devices, altimeters, and remote sensors (URS Corporation, 2009).

In 1947, the United States Navy awarded Ryan a contract to research the feasibility of reaction controls for jet aircraft. With jet engines and reaction controls handled by remote control, a Ryan vertical test rig lifted itself off the ground for the first time in 1950. In 1953, the Air Force awarded Ryan a contract to design and build two manned vertical takeoff jet research planes and 2 years later, the Ryan X-13 Vertijet was constructed. In the 1960s, Ryan continued target drone and electronic systems production and vertical takeoff and landing research (URS Corporation, 2009).

In 1969, the company was sold for $128 million to Teledyne Inc. and became known as Teledyne-Ryan Aeronautical Company (TDY Industries). T. Claude Ryan remained with the company as chairman until his death in 1982. In 1996, TDY Industries merged with Allegheny Ludlum Corporation, and then later became a subsidiary of that company. In 1999, Northrop Grumman Corporation acquired TDY Industries from Allegheny and relocated the plant to a site in Ranch Bernardo, California, leaving the former plant site vacant. The site continues to be mostly vacant, with only a small portion of Building 100 used for administrative offices and several other buildings used for storage.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character: Buildings 148/149 lack distinctive features and characteristics (URS Corporation, 2009).

2. Condition of Building Material: Buildings 148/149 are in fair condition.

B. Description of Exterior:

1. Overall Dimensions: Building 148 is 4,401 feet square and measures approximately 40 feet by 40 feet. Building 149 is 1,817 square feet and measures approximately 50 feet by 37 feet (San Diego County Regional Airport, 2005).

2. Foundations: Buildings 148/149 sit on concrete (San Diego County Regional Airport Authority, 2005).

3. Walls: The exterior walls of Building 148 are built of 2-inch-by-6-inch studs at 16 inches on center and are sheathed in stucco. The walls of Building 149 are wood-framed lath and plaster sheathed in stucco (San Diego County Regional Airport Authority, 2005).

4. Structural System: Building 148 is a wood- and steel-framed building and Building 149 is a wood-framed building. The west wall of Building 148 is shared with Building 147 and the east wall is shared with Building 149. The north walls of Buildings 148/149 are shared with Building 140. The south elevations of the buildings are the freestanding. A row of 6-inch-by-8-inch wood columns across the center of the building supports the structural system of

Building 148. Building 149 has at least one steel-pipe column that supports the roof framing and the interior structure (San Diego County Regional Airport Authority, 2005).

5. Openings:

   a. Doorways: Building 148 has a single-entry personnel door along the south elevation featuring square, glass insets. It has interior hollow-core wood doors with wood frames on the first floor. Entry doors to the restrooms remain on the second floor. Building 149 has two single-entry personnel doors along the south and east elevations, and an interior door that connects it to the north to Building 140. There are two doors connecting Building 148 and Building 149 (San Diego County Regional Airport Authority, 2005).

   b. Windows: Building 148 has no windows. Building 149 has two multi-paned steel-framed awning windows along the south elevation. The exterior of these windows have been painted over and the interiors have been covered over by wall finishes. Building 149 has one replacement aluminum window along the east elevation (San Diego County Regional Airport Authority, 2005).

6. Roof: Buildings 148/149 have flat roofs. The roof on Building 148 is a smooth surfaced, built-up roof on a wood deck. The roof on Building 149 has a mineral surfaced cap sheet, built-up roof over a wood deck (San Diego County Regional Airport Authority, 2005). The roof framing on Building 148 consists of 2-inch-by-12-inch roof rafters that frame the top of an interior 8-inch-by-14-inch wood girder and exterior walls.

C. Description of Interior:

Floor Plans: Building 148 is three stories, and each floor is divided up differently. The first floor is partitioned into several rooms with gypsum board partitions. The second floor has walls and partitions consisting of lath and plaster. The third floor of Building 148 is open. Building 149 is separated into two areas. The western smaller area of the building has no partitions. The larger eastern area is separated into three spaces by partitions and doors. All interior walls are plaster.

Site:

Historic Landscape Design: None

PART III. SOURCES OF INFORMATION

A. Early Views: N/A

B. Interviews: N/A

C. Bibliography

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San Diego Unified Port District. 1977. *San Diego Unified District Annual Report: 1976-77.* Carl Reupsch Collection, San Diego Historical Society, San Diego, CA.

Buildings 148/149- Ancillary Buildings, South Elevation, Building 148 is on the left and Building 149 on the right, San Diego, California, October 2009.

Building 148- Ancillary Building, South Elevation, San Diego, California, October 2009.

Building 148- Ancillary Building, Southeast Oblique, San Diego, California, October 2009.

Building 149 - Ancillary Building, South Elevation, San Diego, California, October 2009.

Buildings 148/149 - Ancillary Buildings, Southeast Oblique, Building 149 is in foreground with Building 148 in background, San Diego, California, October 2009.

Buildings 148/149 - Ancillary Buildings, East Elevation of Building 148 with Building 149 in background, San Diego, California, October 2009.

Building 148- Ancillary Building Interior, 1st Floor, facing West, detail of reception area, San Diego, California, October 2009.

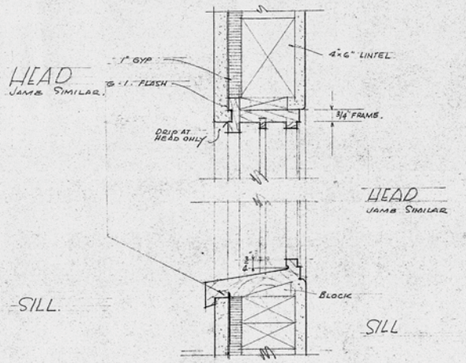
Building 148- Ancillary Building Interior, 1st Floor, facing West, detail of hallway, San Diego, California, October 2009.

Building 148- Ancillary Building Interior, 2nd Floor, facing South, San Diego, California, October 2009.

Building 148- Ancillary Building Interior, 2nd Floor, facing North, San Diego, California, October 2009.

Building 149 - Ancillary Building Interior, facing Southwest, San Diego, California, October 2009.

Building 149 - Ancillary Building Interior, facing Southeast, San Diego, California, October 2009.



TYP. WINDOW DET.
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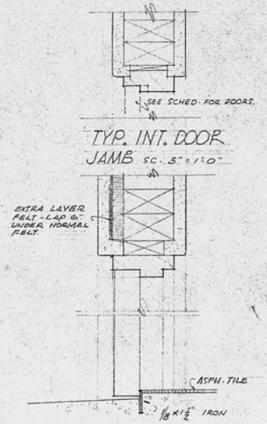

TYP. INT. DOOR JAMB
SC. 3"=1'-0"

EXT. DOOR DET.
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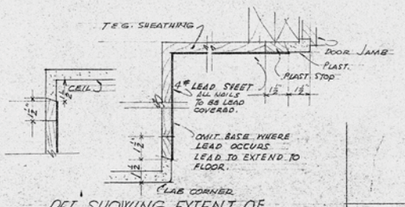

DET. SHOWING EXTENT OF LEAD SHEET IN X-RAY RM.
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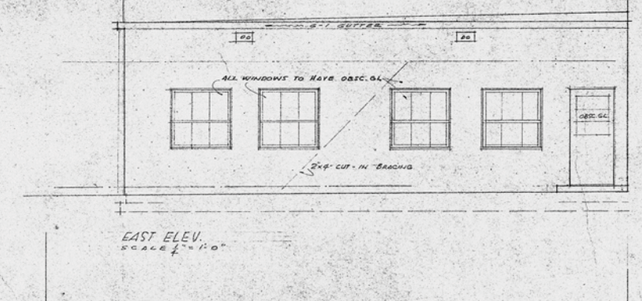

EAST ELEV.
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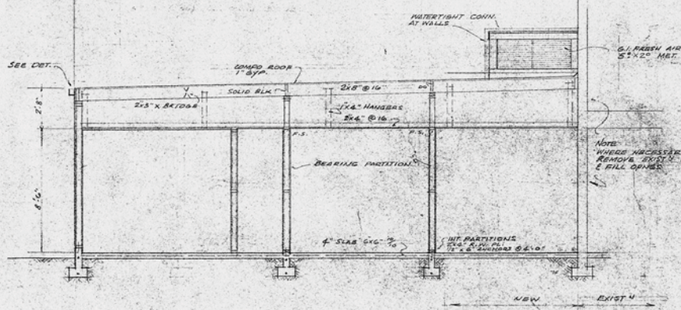

SECTION A-A.
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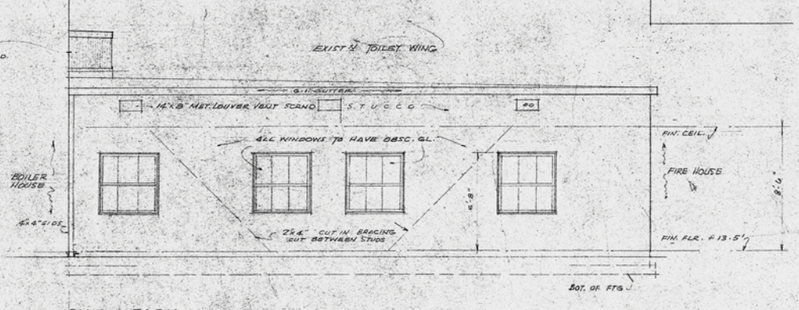

SOUTH ELEV.
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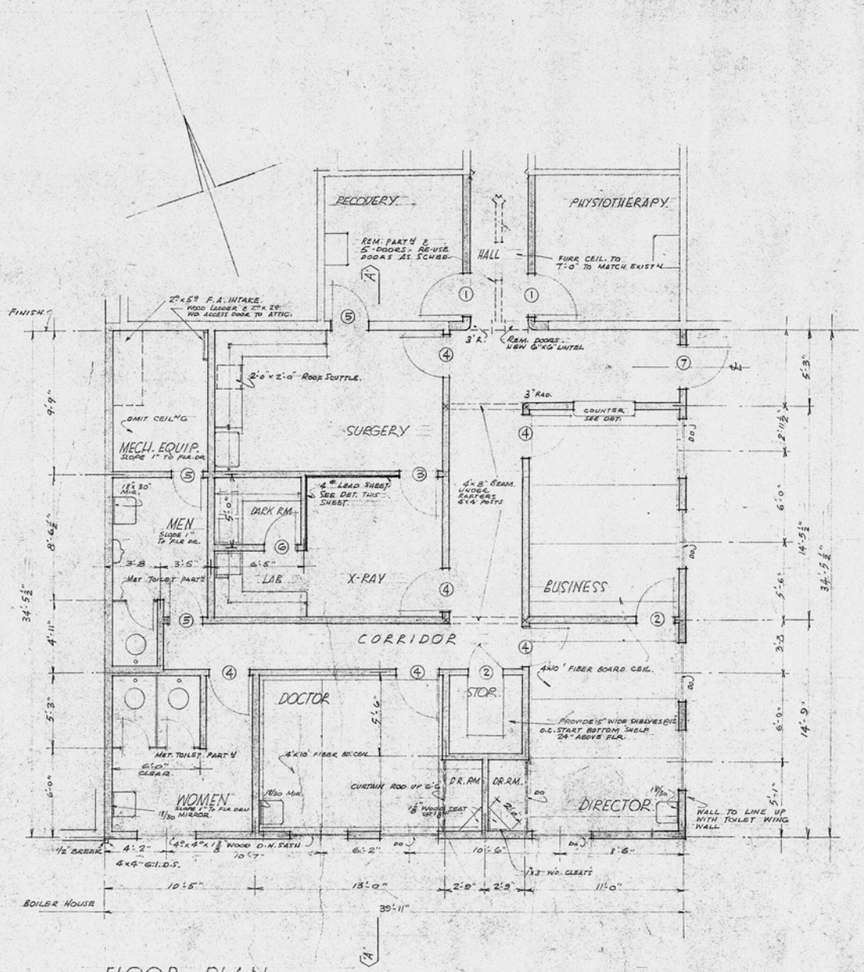

"FLOOR" PLAN
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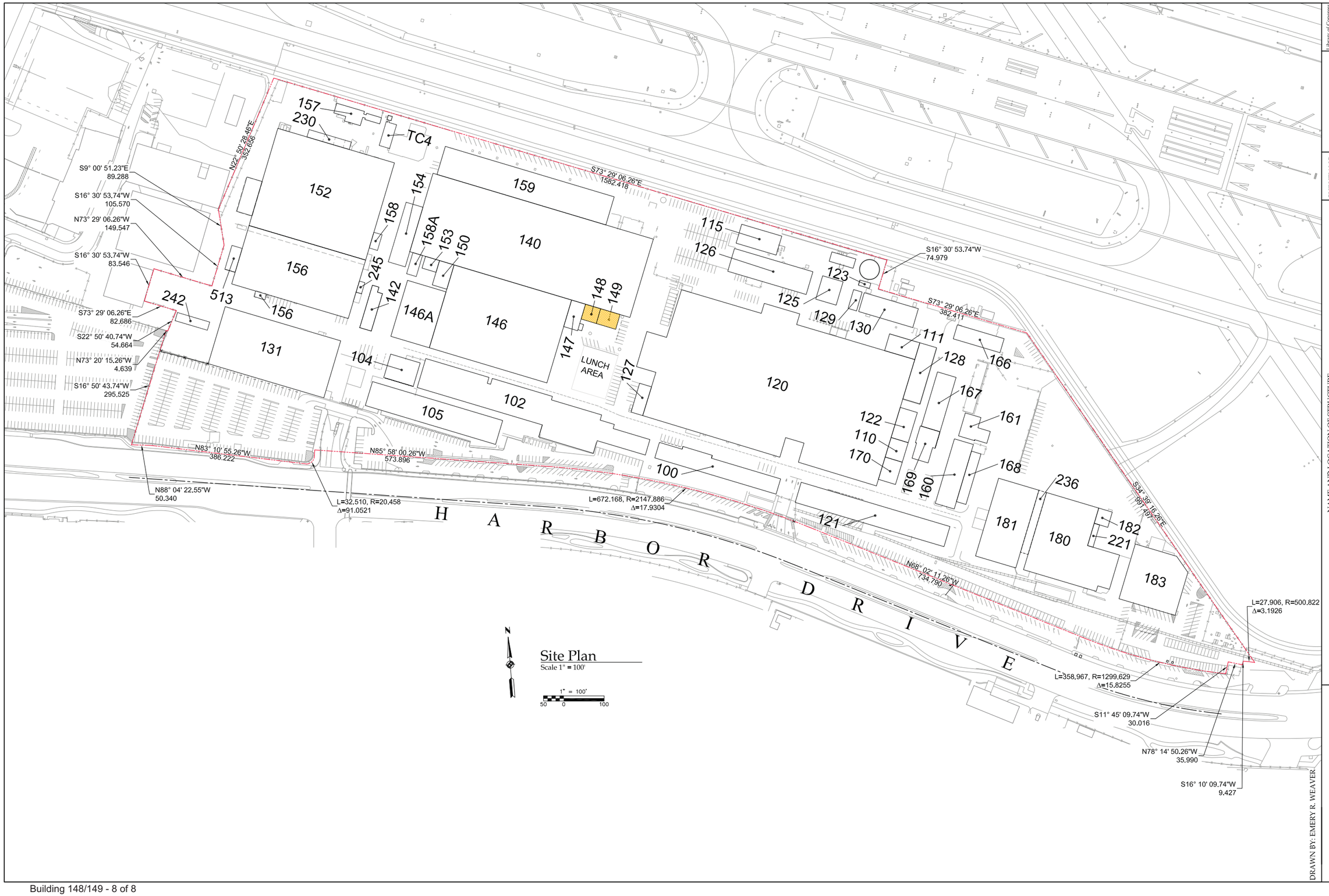
ALL STUDS 2"x4" @ 16" UNLESS OTHERWISE NOTED

EXTENSION OF FIRST AID

JOB 579	CONTRACT NO. 1049 PLANT FACILITIES RYAN AERONAUTICAL CO. SAN DIEGO CALIFORNIA	SH. 4
DATE July 15 42	FRANK L. HOPE, JR., ARCHITECT APPROVED OFFICER IN CHARGE OF CONSTRUCTION	OF 13



Library of Congress Index Number

HISTORIC AMERICAN BUILDINGS SURVEY

SURVEY NO.

SHEET 1 OF 4 SHEETS

NAME AND LOCATION OF STRUCTURE

BUILDINGS 148/149 - ANCILLARY BUILDINGS

SAN DIEGO COUNTY

SAN DIEGO, CALIFORNIA

2701 N. HARBOR DRIVE

RYAN AERONAUTICAL COMPANY
HISTORIC DISTRICT
JANUARY 2010

DRAWN BY: EMERY R. WEAVER