D/DRC Case

1402 Jim Hamilton Boulevard

National Register Structure

TMS: 13702-09-01A

DESIGN/DEVELOPMENT REVIEW COMMISSION

DESIGN REVIEW DISTRICT
CONSENT AGENDA

EVALUATION SHEET

Case #

ADDRESS: 1402 Jim Hamilton Boulevard, Curtiss-Wright Hangar

APPLICANT: Robert Lewis, managing owner

TAX MAP REFERENCE: TMS# 13702-09-01A

USE OF PROPERTY: Commercial

REVIEW DISTRICT: National Register Building

NATURE OF REQUEST: Request for Certificate of Design Approval for exterior changes and for preliminary certification for the Bailey Bill

FINDINGS/COMMENTS:

The Curtiss-Wright Hangar was the first building to be built at Columbia's Owens Field Municipal Airport in 1929. The hangar was built by the Curtiss-Wright Flying Service and was official opened in April 1930 with a large celebration, dedication, and air show. Although the hangar was initially used for passenger and airmail service, it was eventually also used for flight training, airplane storage, and airplane maintenance and repair. Of the approximately 35 hangars built by Curtiss-Wright Flying Service by the 1930s, Columbia's Curtiss-Wright Hangar is one of the last to remain standing and is largely unaltered from its original design.

The Curtiss-Wright Hangar consists of a large central hangar area with about twenty feet of clearance beneath a metal clad barrel roof. This central hangar area is flanked by one story flat roofed wings. The hangar's observation deck, located on top of one of the flat roofed wings, is accessed via an exterior masonry staircase. The spaces within the building's wings were once used for a number of purposes including offices, bathrooms, study rooms, and sales. Brick piers at the outer corners of each wing are used to support the large steel hangar doors and their sliding mechanisms. These piers are each topped by a concrete finial, which is the only purely decorative feature of the building. The Curtiss-Wright Hangar was listed in the National Register of Historic Places in the late 1990s for its contributions to air transportation in Columbia and throughout the state. Today the building is in need of many repairs and updates and the owners are applying for the Bailey Bill as part of the building's rehabilitation process.

The applicant is proposing to rehabilitate the building for use as a restaurant and brewery. Proposed work to be completed includes replacing glass in the windows, repointing brick, and replacing missing finials. The renovation will also include updating the mechanical, electrical, and plumbing systems. As this building is listed in the National Register of Historic Places, it is eligible for consideration of the Bailey Bill. The owners are also pursuing tax credits so the applicant and the City Staff are working closely with the State Historic Preservation Office on this project. Should

any additional site requirements, signage, or similar work arise, it will be reviewed per the Bailey Bill guidelines.

PERTINENT SECTIONS FROM GUIDELINES

Sec. 17-698. - Eligible rehabilitation.
(a) Standards for rehabilitation work. To be eligible for the special tax assessment, historic rehabilitations must be appropriate for the historic building and the historic district in which it is located. This is achieved through adherence to the following standards:
(1) The historic character of a property shall be retained and preserved; the removal of historic materials or alterations of features and spaces that characterize each property shall be avoided.
All historic features will be retained and preserved.

(2) Each property shall be recognized as a physical record of its time, place and use; changes that create a false sense of historical development shall not be undertaken.
There are no alterations that would cause a false sense of historical development.

(3) Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
Not applicable.

(4) Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property should be preserved.
The work proposed follows a maintenance and rehabilitation scope with an emphasis on repair. Therefore, all historic features will be retained and preserved. Work to preserve the steel windows, doors, and sliding door mechanisms of the building has already been completed.

(5) Deteriorated historic features shall be repaired rather than replaced; where the severity of deterioration requires replacement of a distinctive feature, the new should match the old in design, color, texture, and other visual qualities and, where possible, materials; replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
There are concrete finials that were in place on the top of the columns that support the hangar doors. Four of these finials are now missing or damaged. These finials will be replaced with concrete finials to match the historic finials that are still intact on four of the columns. The location of the finials is supported in pictorial and physical evidence.
The glass in the windows and doors will be replaced with glass that has been chosen for its physical and visual properties. The glass will be clear glass that is compatible with historic buildings.
There were a number of painted signs on the hangar, located above the hangar door and on the roof of the building. One sign, above the sliding hangar doors, originally said "Curtiss Wright" and "Flying Service". This Curtiss-Wright sign is in the process of being re-painted to match the original. Another sign will be painted on the opposite side of the building, facing Jim Hamilton Boulevard, to say "Hunter-Gatherer" and "Brewery & Alehouse". This new sign will match the lettering of the historic "Curtiss Wright" sign. Since the Curtiss-Wright Hangar historically included painted signage, adding a new painted sign that matches the historic and also gives indication of the building's usage is appropriate for the building.

(6) Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used; the surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
Sandblasting will not be used on the brick or steel elements of the building. If loose paint needs to be removed from the brick before painting it will be scraped off in the gentlest means possible. The steel elements within the building have already been cleaned with a wire brush and treated. No other cleaning methods have been proposed at this time.

(7) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property; the new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the historic property and its environment.
The addition of the concrete finials will restore the building to its historic design and will not destroy any historic material.
The new painted signs on the building will match the historic signs and will be appropriate to the building. Any additional signage will be reviewed by staff.

(8) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.
Not applicable.

The above items are the parameters for review for projects that receive the Bailey Bill. If any future work is proposed beyond the scope of what is presented here then it will be reviewed.

STAFF RECOMMENDATIONS:
Staff recommends granting a Certificate of Design Approval and preliminary certification for the Bailey Bill for 1402 Jim Hamilton Boulevard based on its conformance with Sec. 17-698 of the City Ordinance with the following conditions:

- Any additional signage to be reviewed by staff,
- The project meeting or exceeding the 20% investment threshold requirements for qualified rehabilitation expenses,
- All work meeting the standards for work as outlined in Section 17-698,
- All details deferred to staff.

Curtiss-Wright Hangar, Front Façade (photo by staff)

Curtiss-Wright Hangar (Image from Google)

Curtiss-Wright Hangar, staircase leading to observation deck (photo by staff)

Historic Curtiss-Wright sign being repainted (photo by applicant)

HISTORIC PRESERVATION CERTIFICATION APPLICATION
PART 2 – DESCRIPTION OF REHABILITATION

Property name Curtiss-Wright Hangar NPS Project Number

Property address 1402 Jim Hamilton Ave Columbia Richland SC 29205

5. Detailed description of rehabilitation work Use this page to describe all work or create a comparable format with this information. Number items consecutively to describe all work, including building exterior and interior, additions, site work, landscaping, and new construction.

Number 1 **Feature** Hangar Doors **Date of Feature** 1929

Describe existing feature and its condition

The north and south elevations feature two large sets of sliding steel doors. Each of the doors is comprised of eight separate segments, and the top two-thirds of each segment is made up of a block of four windows. On the north elevation there is a pedestrian door, which was cut into the steel, although it is not certain whether this feature is original or a later addition.

Photo numbers 1-5, 38 Drawing numbers A3.0, A4.0, Attachment A

Describe work and impact on feature

The proposed work includes removing the rust from all of the doors with Rust Converter, a product that chemically neutralizes rust into a neutral organic layer and dries as a tough, protective coating on the metal (see attachment A). Strengthening of the sliding door mechanism and column system will also be done. The remnants of the "US ARMY" sign on the south elevation will remain. The windows along the top of the doors will be reglazed (see #3 below).

Number 2 **Feature** Roof **Date of Feature** 1929

Describe existing feature and its condition

The hangar's corrugated metal roof features a distinguishing rounded design and is supported by metal framing in the interior. Metal panels overlap across the roof beneath the corrugated metal roof and asbestos insulation rests between the outer roof and the panels.

Photo numbers 6, 7, 9, 33, 40 Drawing numbers A1.2, A1.3 detail N & O, Attachment B

Describe work and impact on feature

The roof will be completely replaced due to substantial deterioration and to remove asbestos. This new roof will retain its unique shape and the original interior framing to preserve the character of the original character. The roof will be laid with 1 1/2" metal interior panel, with a 3 1/2" middle insulating panel, and finished with similarly shaped rounded corrugated metal roof (see comparison of new and original roofing panel and proposed new metal roofing panel-photo 33. Also see A1.3 N & Attachment B). The roof color will be gray. All of this be laid on top of the original interior roof frame.

Number 3 **Feature** Windows **Date of Feature** 1929

Describe existing feature and its condition

Most of the windows of the hangar are generally the same size except for the east elevation windows, which are larger. The window frames are all composed of steel as are the muntins.

Photo numbers 8-10 Drawing numbers A3.0

Describe work and impact on feature

The glass window panes will be replaced and reglazed. These new windows, which are detailed in the attachment A3.0 , will be single pane hard coated low-E panes which have

low reflectivity so as not to detract from the historic character of the building. The current muntins will be kept, but will be hand cleaned with wire brushes and sandpaper, and then restored with Rust Converter, the same product described in Number 1.

Number 4 **Feature** Historic Brick **Date of Feature** 1929

Describe existing feature and its condition

The hanger bricks are spalling in a number of locations, but are otherwise in good condition. Scratch-cut brick is used on the exterior while the interior features smooth brick. The south façade in the east corner has some damaged bricks from the sliding doors.

Photo numbers 11-13, 21, 39 Drawing numbers A3.0, Attachment D

Describe work and impact on feature

Repointing of the mortar joints is needed in various locations where the mortar has deteriorated. Previous repairs have been made to the brick columns, but do not match, and will be removed and the new or locally salvaged scratch-cut brick will be used to rebuild the columns to match the existing brick. The interior bricks will be cleaned with a non-abrasive cleanser such as ProSoCo Enviro Klean Restoration or a similar product. The paint on the exterior brick will be removed using an environmentally friendly paint stripping product and a low pressure power wash (see Attachment D).

Number 5 **Feature** Fire Doors & Mechanisms **Date of Feature** 1929

Describe existing feature and its condition

The hangar has three fire doors throughout, each of them comprised of Keystone Copper Steel and attached to a wooden door. Two 1" central steel straps help strengthen the door at the base. There are two or three hangers attaching the door to the steel sliding system as well as doorstops, which are located on the left side of each doorway stop the fire door.

Photo numbers 14-16 Drawing numbers A1.0, A4.0

Describe work and impact on feature

The original fire doors will be retained. However, these doors will be secured so as not to be operable. The fire doors will be sealed with a clear coat of polyurethane or similar product for their finish. Otherwise, the fire doors will be left as is.

Number 6 **Feature** Historic Room Divisions **Date of Feature** 1929/1940s

Describe existing feature and its condition

Although now it is open space, the east wing of the hangar was originally divided into five separate rooms. According to a 1945 magazine, these rooms included a bathroom, pilot's ready room, lounge, manager's office, and a cafeteria and shop, although these spaces might have had different uses prior to 1945. Some distinctive features such as the flooring and baseboards may remain, depending on the amount of trenching that may be done for new plumbing.

Photo numbers 17-19 Drawing numbers A1.0, EQ1.0, G1.0

Describe work and impact on feature

The east lean-to was originally divided into five distinctive sections and will loosely resemble these divisions in the new plan. The north and south ends of the east wing will feature an entry lobby, with the men's and women's rest room and the kitchen filling in

the center three rooms. The original flooring, chair rails, and baseboards will be reconstructed to help identify the separate spaces.

Number 7 **Feature** Interior Light Fixtures **Date of Feature** 1929

Describe existing feature and its condition

There are two different types of light fixtures within the hangar, and they are identical in both shape and color. However, they are different sizes with the larger of the two, which are 16 inches, being in the hangar space and the smaller, 14 inches, in the lean-tos. The fixtures are made out of metal with a reflective white color inside of them and a matte green exterior.

Photo numbers 18, 19 Drawing numbers Lighting Plan & Details

Describe work and impact on feature

These fixtures, which could be original, will be retained and kept as closely to their original placement as possible. They will require rewiring, but not much else is needed for restoration. More lighting is needed, but the new lights will be simple and functional in design, without attempting to replicate the originals (see Attachment E).

Number 8 **Feature** Former Usage Signs **Date of Feature** 1929-1940s

Describe existing feature and its condition

A number of features on the hangar reflect its previous usage. The "Curtiss-Wright Flying Service" logo on the south gable has almost faded away as has the "Owens Field Municipal Airport" sign on the north gable. "US ARMY" was once painted across the south hangar doors and is still faintly visible. "FLYING…DUCTIONS" is also slightly discernible across the south hangar doors.

Photo numbers 2, 5, 20, 38, 41 Drawing numbers A3.0

Describe work and impact on feature

The historic signs will be reproduced as best as possible. The "US ARMY" sign will remain. The "Curtiss Wright Flying Service" sign will be reproduced on the south elevation gable. The owners propose adding tenant signage on the north gable to resemble the historic signage in color, size, and letter style.

Number 9 **Feature** Brick Columns **Date of Feature** 1929

Describe existing feature and its condition

The columns of the hangar are both a design and structural feature, primarily to support the door mechanisms. The four columns at the corners of the building are smaller than the columns which frame the sliding doors.

Photo numbers 21, 22 Drawing numbers A3.0,

Describe work and impact on feature

Years of wear and tear have impacted the columns, particularly the outermost columns nearest to the doors. Necessary repairs were made, but with improper materials, including brick that does not match the historic scratch-cut brick. These bricks will be removed and replaced with more appropriate bricks that match the scratch-cut original bricks. The

final finish of these bricks will be consistent with the rest of the columns.

Number 10 **Feature** Concrete Finials **Date of Feature** 1929

Describe existing feature and its condition

Each brick column was originally topped with a concrete ball finial which served as the sole decorative feature on the hangar. They are designed of a square base and curved neck which leads to the ball shape. They finials seem to be cast in a single piece, and are attached to the columns by an interior steel bar. Some of them appear to have remnants of yellow paint, which is not historic.

Photo numbers 23, 24 Drawing numbers A3.0

Describe work and impact on feature

Currently, there are only four unharmed finials, and they appear on the four innermost columns. The finials atop the four outer corners are either missing or severely damaged. The remaining finials will have the yellow paint removed from them, and the new finials will be replaced with new concrete reconstructions. It is important to recreate these features since they were the only purely decorative addition to the hangar as well as the only Curtiss-Wright hangar to have this embellishment.

Number 11 **Feature** Observation Deck **Date of Feature** 1929

Describe existing feature and its condition

The observation deck is situated above the east wing and originally gave a clear view of both the hangar and airfield. It features a concrete floor and three foot high brick wall around the exterior. A concrete cap tops the walls. On the southeast end of the deck is a tar pad, which was used to support an observation tower, which is no longer standing.

Photo numbers 25 Drawing numbers A1.1, A1.2 (J-M), A3.0, G1.1

Describe work and impact on feature

The observation deck only requires minor repairs such as repairing or replacing concrete caps along the brick walls and ensuring that the floor is level. It will be necessary to provide a higher railing to keep visitors safe, but these changes will be made in the least invasive manner possible, which is seen on the architectural plan A1.2(J-M). The deck is an integral part of the hangar's history as it was a pivotal piece of all Curtiss-Wright hangars across the country.

Number 12 **Feature** Manager's Office Door **Date of Feature** 1929

Describe existing feature and its condition

The Manager's Office Door is a wooden exterior door comprised of four windowpanes along the top half and three horizontal panels at the bottom half. The door's hardware is a recent replacement.

Photo numbers 26 Drawing numbers A3.0, A4.0

Describe work and impact on feature

Since the door remains in salvagable condition, it will be restored. The windows will feature the same glass panes as in Number 3 above and will be reglazed. The door frame is also in good condition and will be repaired. Since this is the only remaining historic door aside from the steel doors, it is crucial that it be preserved and repaired. See

note about door details in A3.0.

Number 13 **Feature** Exterior Light Fixtures **Date of Feature** 1929

Describe existing feature and its condition

Two cone-shaped exterior lights are situated near the center of each gable. The inside of the light is a shiny white and the outside of the light is a matte green, which is consistent with other lights throughout the hangar, both on the interior and exterior.

Photo numbers 27, 38 Drawing numbers

Describe work and impact on feature

Due to their historic nature, the lights will be rewired and reinstalled. These lights will be repaired and used to light the signage on the two gables. The fact that these are original and demonstrate the functional and basic style of the hangar is important and therefore imperative to keep and use.

Number 14 **Feature** Electrical Outbuilding **Date of Feature** 1940s

Describe existing feature and its condition

This 1940 outbuilding is a small, square-shaped building situated about ten feet from the west side of the hangar. It is laid in common bond, except for a decorative soldier course about the doorway. The only entrance to this building is on the east side, facing the hangar for easy access, and is the only elevation to retain two sets of metal bolts. There are two steel grates about 2 ½ feet from the roof. The original roof was flat and deteriorated. It has since been replaced by roofing steel as a temporary measure.

Photo numbers 28, 29 Drawing numbers EQ1.0, G1.0

Describe work and impact on feature

The roofing steel will be removed and replaced with a new roof as shown in drawing Additionally, the building will have a new wooden door installed that is consistent with the existing door in Number 12 above. This door will match the original door as discussed in Number 12. There are electrical insulators in the interior corners of the building, which will be retained as references to the building's historic use. Since this was the Hangar's only outbuilding, it is extremely important to keep the building where it stands.

Number 15 **Feature** Historic Brick - Outbuilding **Date of Feature** 1940s

Describe existing feature and its condition

This structure is composed of Richtex scratch-cut brick very similar to the bricks used on the hangar's exterior. The bricks vary in color from deep red to black and gray as a result of variable firing temperature and access to oxygen during the brickmaking process.

Photo numbers 30 Drawing numbers

Describe work and impact on feature

Some repointing of mortar joints may be necessary, but overall the brick is in good condition. If new bricks are required, locally salvaged Richtex brick would be the best option. Maintaining the original appearance of the 1940s structure is significant to preserve the architectural and historical integrity.

Number 16 **Feature** Open Space/Exposed Trusses **Date of Feature** 1929

Describe existing feature and its condition

The openness of the hangar is one of its defining features. The lack of divisions in the main double height hangar area allows the steel beams and trusses to be viewed freely and help maintain the original intended use of the building.

Photo numbers 31, 32 Drawing numbers EQ1.0, EQ1.1, A1.0, G1.0, G1.1

Describe work and impact on feature

The open space of the interior double height area will be maintained to keep its historic and architectural integrity. The beams will be treated with Rust Converter to remove the current rust. The loss of the interior space and covering the trusses would negatively impact the character of the building. This area of the hangar is the most important since it is where the planes were stored. Although brewery equipment will be installed in the interior double height area, such equipment is removable if the Hangar were to have a different usage.

Number 17 **Feature** Interior Concrete Floor **Date of Feature** 1929

Describe existing feature and its condition

The interior of the Hangar is primarily composed of concrete flooring. This concrete flooring remains to the present.

Photo numbers 32 Drawing numbers

Describe work and impact on feature

The concrete floor in the main Hangar area and the west wing will be maintained where it is currently. It appears to be in good condition and does not seem to need any treatment other than cleaning and resealing. The concrete floor in the east wing will be trenched or removed and re-poured to accommodate the bathroom and kitchen water and sewer piping and drainage.

Number 18 **Feature** Steel Airplane Fuselage Cradle **Date of Feature** 1990/2000s

Describe existing feature and its condition

An airplane fuselage cradle is found on the west side of the building near the electrical outbuilding.

Photo numbers 34 Drawing numbers

Describe work and impact on feature

The airplane fuselage cradle is non-historic, having been installed in the 1990s.

Number 19 **Feature** Bathroom Sinks **Date of Feature** 1929/1940s

Describe existing feature and its condition

The bathrooms inside the hangar have two wall-mounted, porcelain American Standard sinks, which feature the beveled corners of the brand, as well as three-hole drains in each. The metal fixtures are similar to the originals, but do not date back to the renovation of the bathrooms under Hawthorne Aviation.

Photo numbers 35 Drawing numbers A2.0

Describe work and impact on feature

The sinks will be retained and restored to be used in the restrooms. Additionally, new sinks for the restrooms will match the historic ones stylistically, but will be distinguished from the originals.

Number 20 **Feature** Bathroom Light Fixtures **Date of Feature** 1940s

Describe existing feature and its condition

There are currently three light fixtures on the bathroom ceiling, but none of them contain their original glass globes. Two of the fixtures are undecorated, but the third contains a floral and leaf pattern, which could demonstrate the differences between the men's and women's restrooms.

Photo numbers 36 Drawing numbers

Describe work and impact on feature

These fixtures will be restored and retained as they are and will contain glass globes that are consistent with those of the same period. The new use of the building may prohibit the lights from remaining in their original locations, so they may be moved, and used elsewhere.

Number 21 **Feature** Exterior Concrete & Paving **Date of Feature** 1929/1940s

Describe existing feature and its condition

The Hangar is currently surrounded by concrete and pavement on all sides. There are concrete slabs in front of the hangar doors on both the north and south ends as well as concrete sidewalks along the east and elevations. Paved asphalt makes up an access road from the northwest corner along the north elevation, around the east elevation, to a large parking lot to the south of the Hangar.

Photo numbers 37 Drawing numbers SP1.1

Describe work and impact on feature

The biggest change to the Hangar's landscape is the removal of the asphalt access drive on the east side of the building. This space will be replaced by a lawn area, but the existing concrete sidewalk will remain, although there will be small pockets removed for landscaping. Much of the sidewalk on the west elevation will be removed and landscaped. The pavement south of the Hanger will have an asphaltic top coat added over it and used as parking. The concrete slab north of the Hangar will remain, but the asphalt north of it will be removed and replaced by a lawn area.

The Curtiss-Wright Hangar currently stands as a monument to Columbia and South Carolina's achievements in air transportation during the twentieth century. Built in 1929 at Owens Field, the Curtiss-Wright Hangar was only the second airport in South Carolina at the time behind the Spartanburg Airport, which opened in 1927. Like Spartanburg, Columbia's Curtiss-Wright started out primarily serving as an airmail aircraft operation, but also provided passenger service, storage space for passenger planes, and was later the home of multiple flying schools. Named for both the Columbia Mayor Lawrence B. Owens and the Curtiss-Wright Flying Service, the hangar was erected just three miles south of the city's center. Over the years, its use changed with the needs of the area while always retaining an association with aviation.

Not only has the structure been used for the purposes of flying, but it also entertained Columbians. Curtiss-Wright held airshows during the 1930s, which thousands of locals attended, but it even hosted celebrities such as Amelia Earhart, Bill Winston, who was Charles Lindbergh's flying instructor, and President Franklin Delano Roosevelt. The South Carolina Aeronautics Commission built its headquarters just north of the Hangar at Owens Field in 1937, making the Hangar a more prominent space in aeronautics. In 1939, the Hawthorne Flying Service began using Curtiss-Wright as the location for its flight school. This program resided at the Hangar until 1954 and featured both men and women pilots. Along with the Hawthorne Flying Service, the 108th Squadron also utilized the Hangar. However, by 1940, the military outgrew Curtiss-Wright and began building a larger airport that could grow with the times, unlike Owens Field. By the end of 1941, all military operations had been moved to the Lexington County Airport, renamed Columbia Metropolitan Airport in 1949. While larger operations such as the military and passenger planes left Owens Field for larger spaces and newer technology, Curtiss-Wright served as a space for personal aircraft maintenance and storage until 1986, indicating that individuals in the area maintained a need for this space and remained interested in aviation as a hobby.

The Hangar also represents one of the few extant hangars from this period that has remained unchanged. While Curtiss-Wright constructed roughly thirty-five hangars across the country during the 1920s and 1930s, many have been demolished or rehabilitated beyond recognition. The Columbia hangar remains a simplified version of other hangars, but a timeless one. The simple design, by engineer D. H. Reed, most likely reflects the sudden crash in the stock market in 1929, thus having little adornment and a basic design. Therefore, the Hangar is a superb representative of both Columbia's aviation history, but also its commitment to flight during the Great Depression.

While the occupants of the building have changed throughout the years, the building has remained the same. It helps to tell the story of the development and growth of recreational, commercial, and military aviation in Columbia and South Carolina as a whole during the twentieth century. The integrity of the original design remains and leaves hope for the hangar's continued presence in Columbia.

Curtiss-Wright Hangar Part II

Photo Log

Photo 1 – Hangar doors, north elevation

Photo 2 – Hangar doors, north elevation

Photo 3 – Detail, hangar doors, south facade

Photo 4 – Pedestrian door, north elevation

Photo 5 – "US ARMY" signage on south façade

Photo 6 – View of roof, east elevation

Photo 7 – View of roof, northeast oblique

Photo 8 – Window detail

Photo 9 – Clerestory windows

Photo 10 – Hopper windows

Photo 11 – Exterior painted brick detail

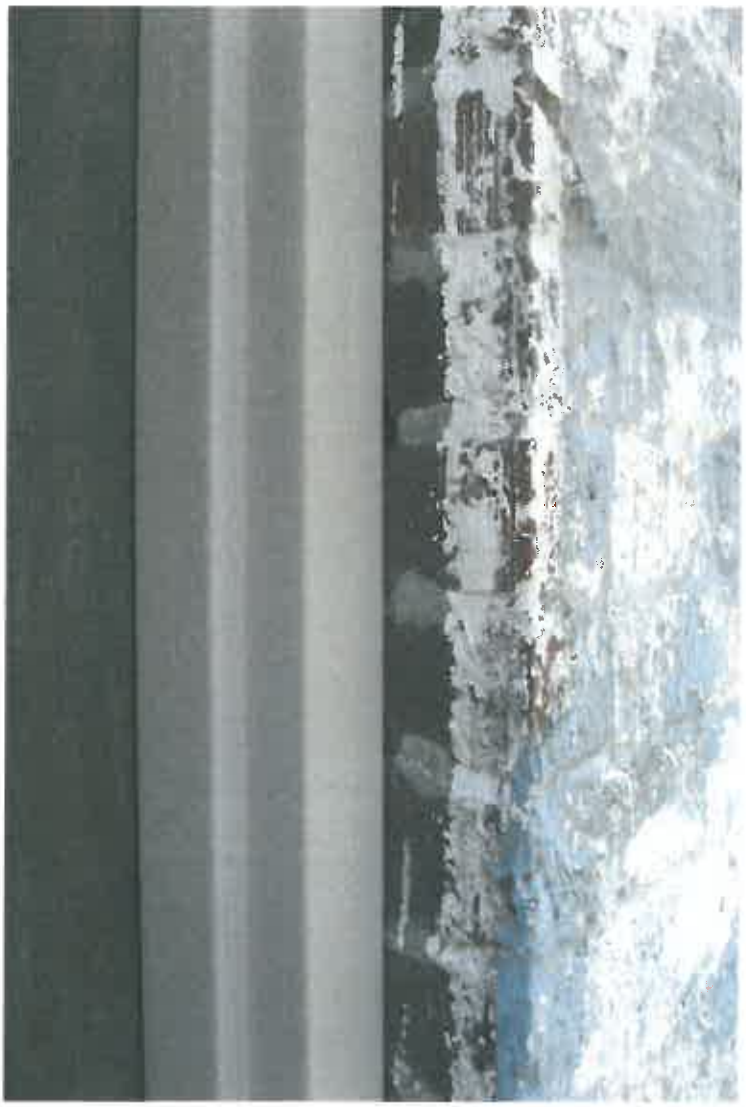


Photo 12 – Exterior brick detail

Photo 13 – Interior brick detail, repointing needed

Photo 14 – Interior fireproof door

Photo 15 – Interior fireproof door

Photo 16 – Interior fireproof door

Photo 17 – Historic room divisions, east lean-to

Photo 18 – Open west lean-to

Photo 19 – West lean-to with interior light fixtures

Photo 20 – Faded "Curtiss-Wright Flying Service" on south gable, with exterior light fixtures

Photo 21 – Corner brick with truss

Photo 22 – Southeast corner columns

Photo 23 – Concrete finial, southwest corner

Photo 24 – Concrete finial, northeast corner

Photo 25 – Observation desk, looking southeast

Photo 26 – Manager's office door, east elevation

Photo 27 – Two exterior light fixtures, north gable

Photo 28 – Electrical outbuilding

Photo 29 – Electrical outbuilding at west elevation

Photo 30 – Electrical outbuilding brick detail

Photo 31 – Roof deterioration and exposed trusses

Photo 32 – Open space and exposed trusses

Photo 33 – New roofing panel compared with existing

Photo 34 – 1990's Airplane fuselage cradle

Photo 35 – Bathroom sinks

Photo 36 – Bathroom light fixtures

Photo 37 – Aerial view of Hangar landscape

Historic Photographs

Photo 38 – Curtiss-Wright Flying Service c. 1934

Photo 39 – Opening Day at Owens Field, 1930

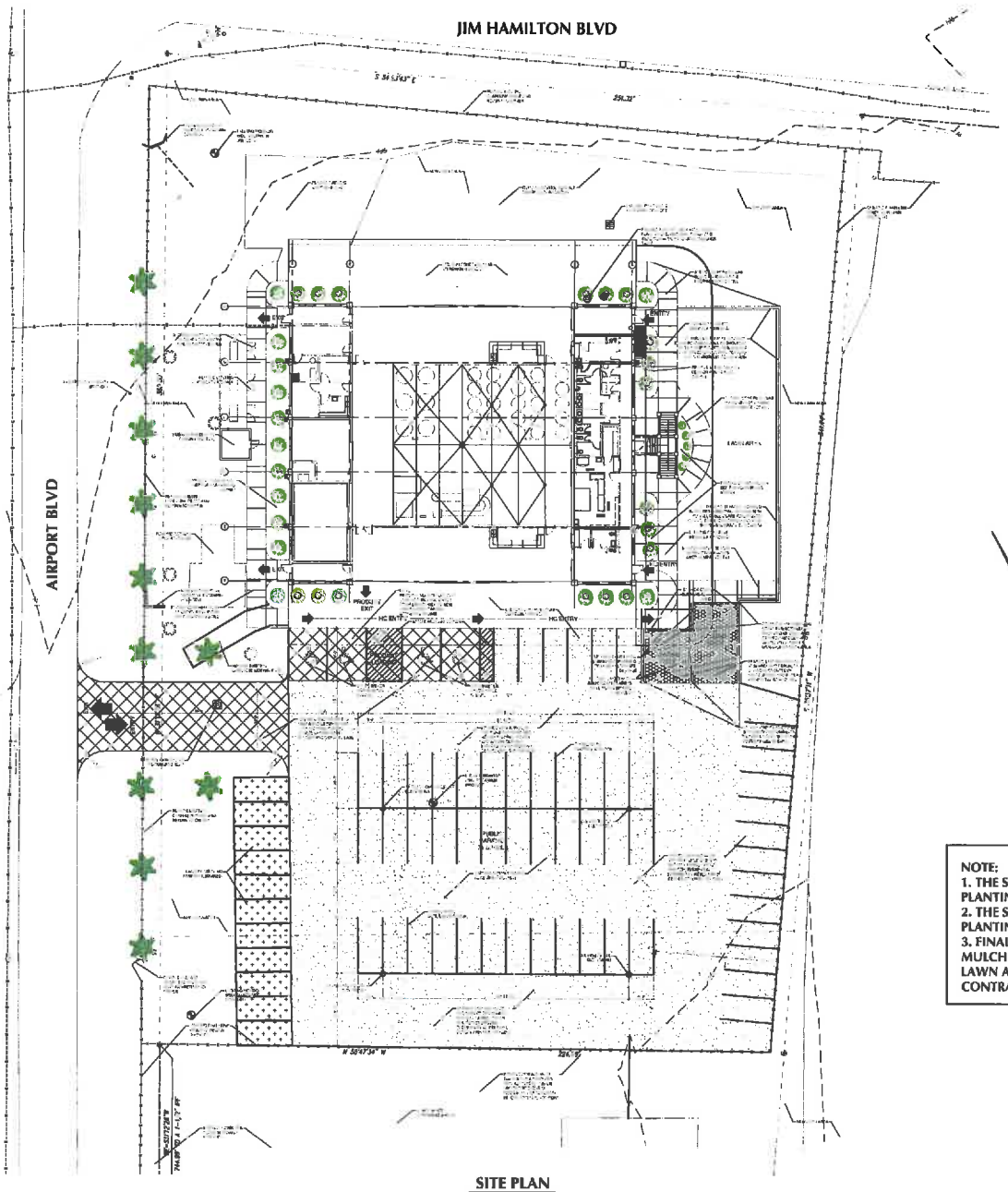
Photo 40 – Aerial View, 1930

Photo 41 – Hangar, c. 1940

*Photos 1-36 taken by Jennifer Betsworth

Site Plan

Site plan featuring two contributing buildings, Curtiss-Wright Hangar and Electrical Outbuilding



SITE PLAN
SCALE 1/16" = 1'-0"

NOTE:
REMOVE ALL EXISTING TREES AND STUMPS FROM SITE

NOTE:
MAXIMUM SLOPE OF HANDICAPPED PARKING SPACES 2% OVER LENGTH OF INDIVIDUAL HC SPACE

NOTE:
1. THE SUPPLYING AND PLANTING OF TREES ARE NIC
2. THE SUPPLYING AND PLANTING OF SHRUBS ARE NIC
3. FINAL GRADING, TOP SOIL, MULCHING AND SEEDING OF LAWN AREAS ARE IN THIS CONTRACT

BRENNAN DESIGN, LLC

◆ COMPANY SEALS

◆ PROJECT TITLE
Curtiss-Wright Hangar Renovation

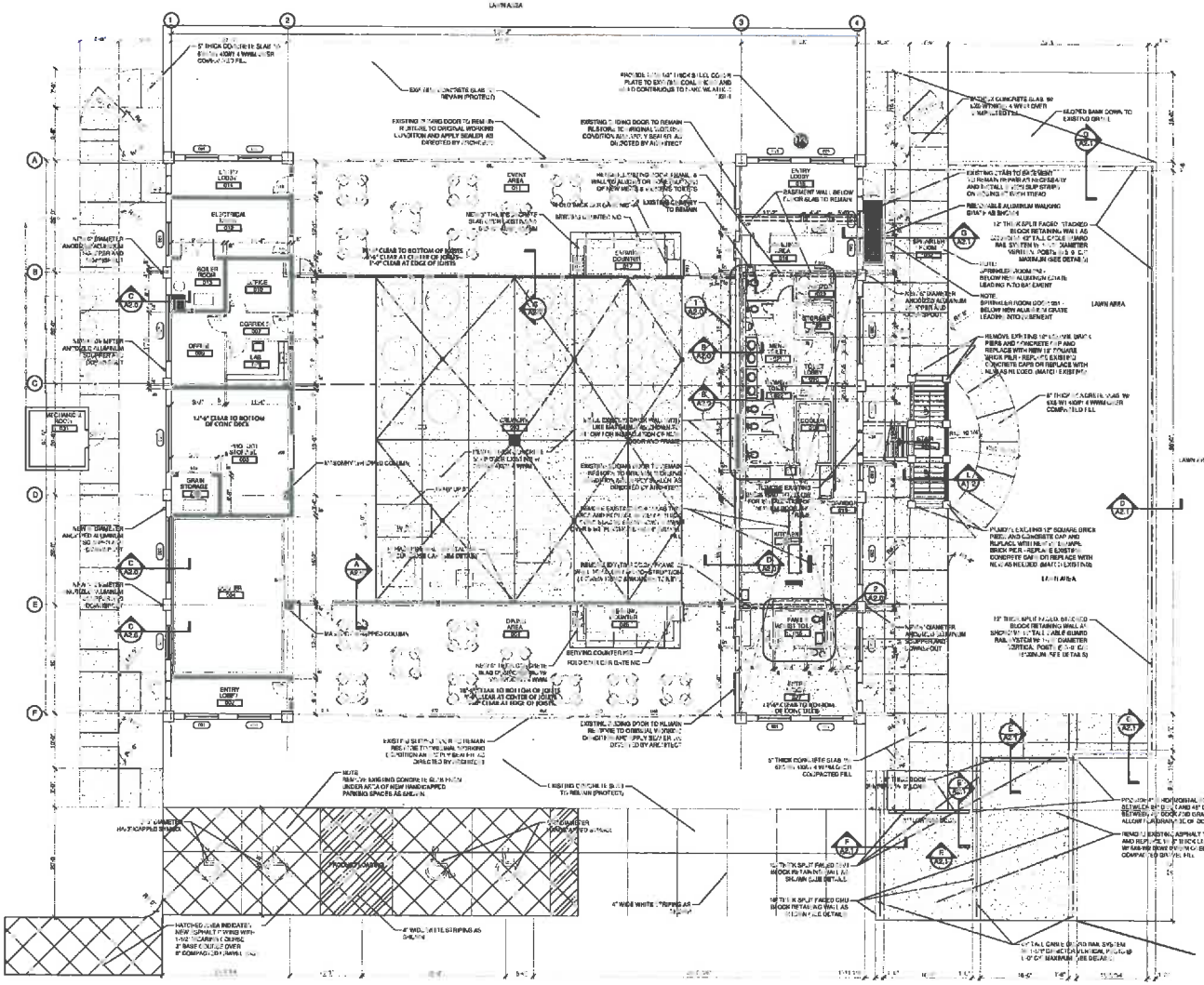
◆ PROJECT NUMBER
16-00

◆ REVISIONS

◆ DATE
May 18, 2016

◆ SHEET TITLE
SITE PLAN

◆ SHEET NUMBER
SP1.1



FIRST FLOOR PLAN
SCALE 1/8" = 1'-0"

BRENNAN DESIGN, LLC

◆ COMPANY SEALS

◆ PROJECT TITLE

Curtiss-Wright Hangar Renovation

◆ PROJECT NUMBER

16-00

◆ REVISIONS

◆ DATE

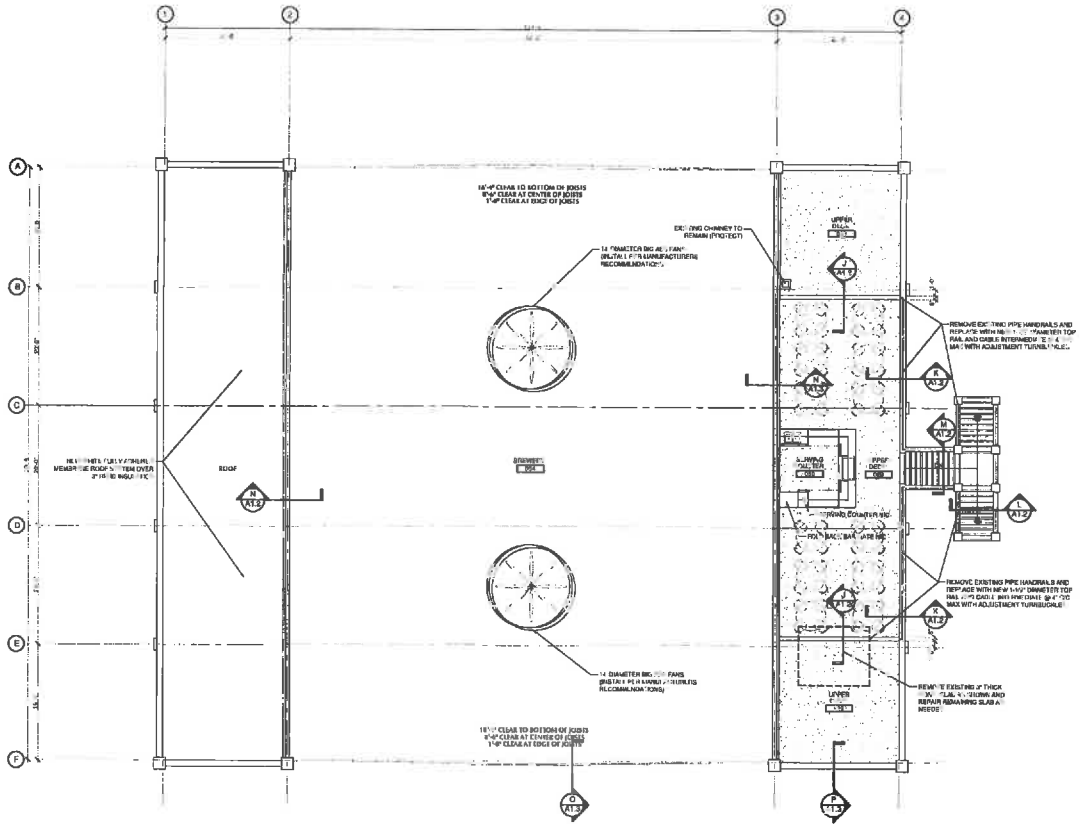
May 18, 2016

◆ SHEET TITLE

FIRST FLOOR PLAN

◆ SHEET NUMBER

A1.0



MEZZANINE FLOOR PLAN
SCALE 1/8" = 1'-0"

BRENNAN DESIGN, LLC

COMPANY SEALS

PROJECT TITLE
Curtiss-Wright Hangar Renovation

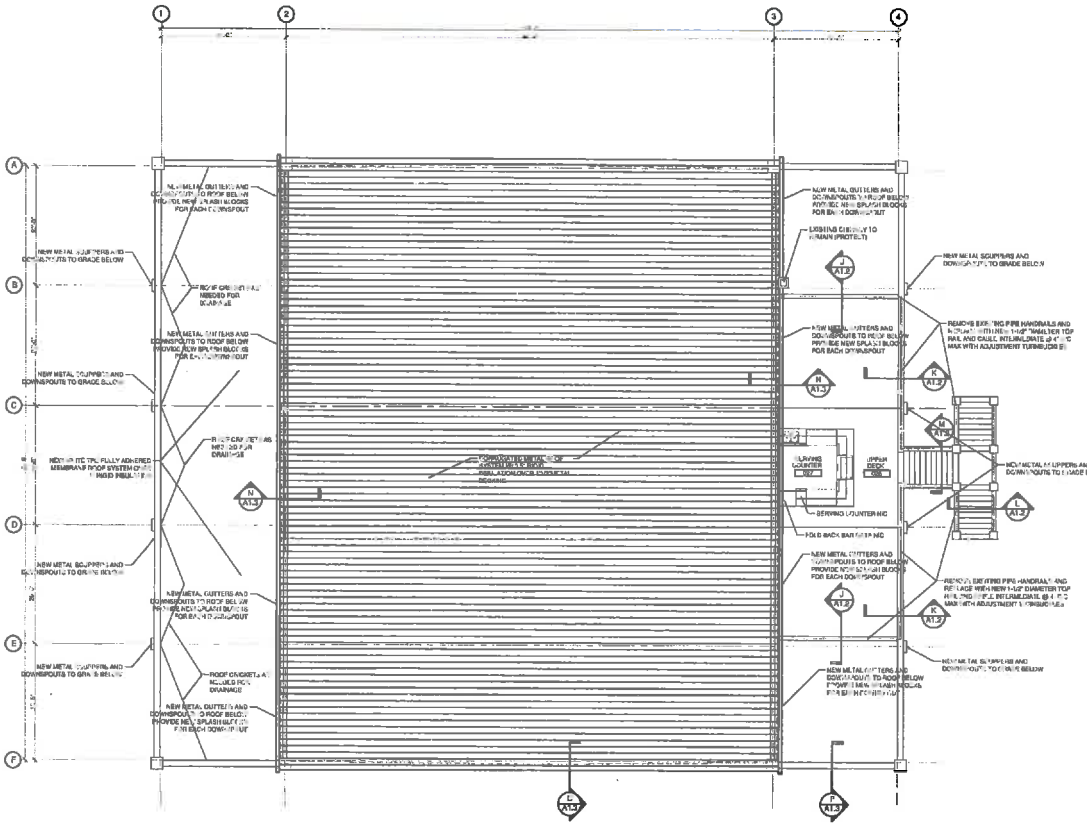
PROJECT NUMBER
16-00

REVISIONS

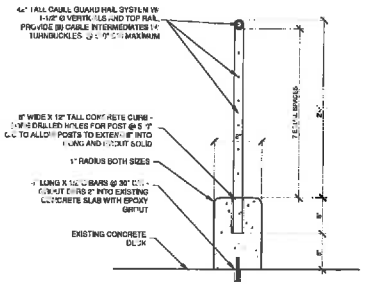
DATE
May 18, 2016

SHEET TITLE
UPPER DECK FLOOR PLAN

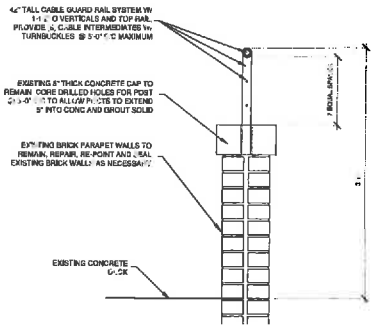
SHEET NUMBER
A1.1



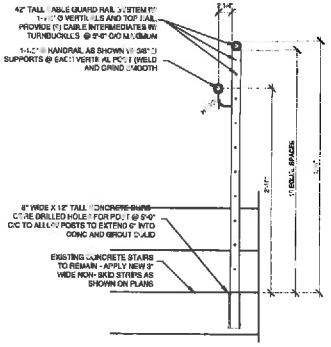
ROOF PLAN
SCALE 1/8" = 1'-0"



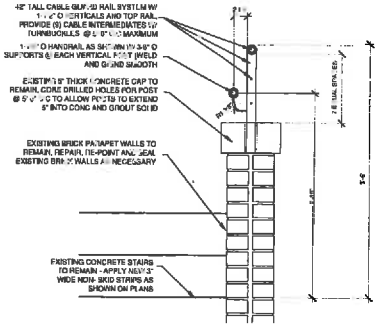
J/A1.2 DETAIL OF UPPER DECK GUARDRAIL
SCALE 1-1/2" = 1'-0"



K/A1.2 DETAIL OF UPPER DECK GUARDRAIL
SCALE 1-1/2" = 1'-0"



L/A1.2 DETAIL OF UPPER DECK GUARDRAIL
SCALE 1-1/2" = 1'-0"



M/A1.2 DETAIL OF UPPER DECK GUARDRAIL

BRENNAN DESIGN, LLC

◆ COMPANY SEALS

◆ PROJECT TITLE

Curtiss-Wright Hangar Renovation

◆ PROJECT NUMBER

16-00

◆ REVISIONS

◆ DATE

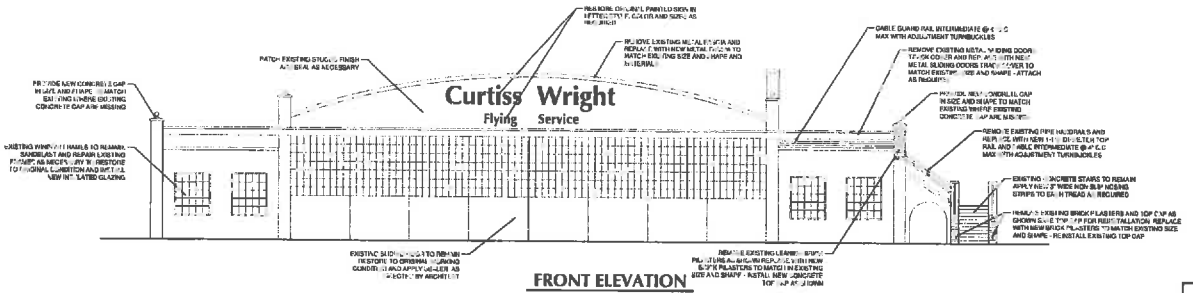
May 18, 2016

◆ SHEET TITLE

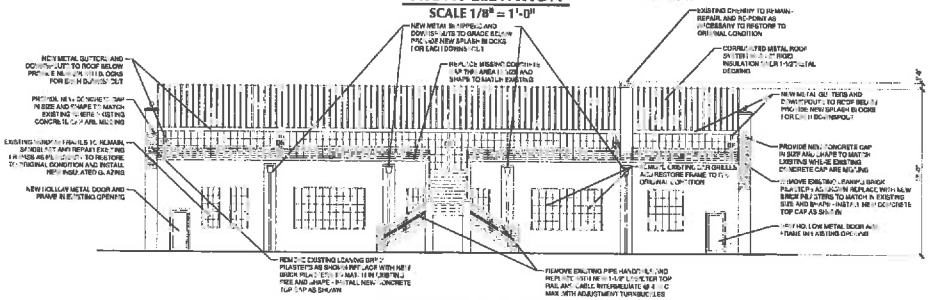
ROOF PLAN AND EXTERIOR DETAILS

◆ SHEET NUMBER

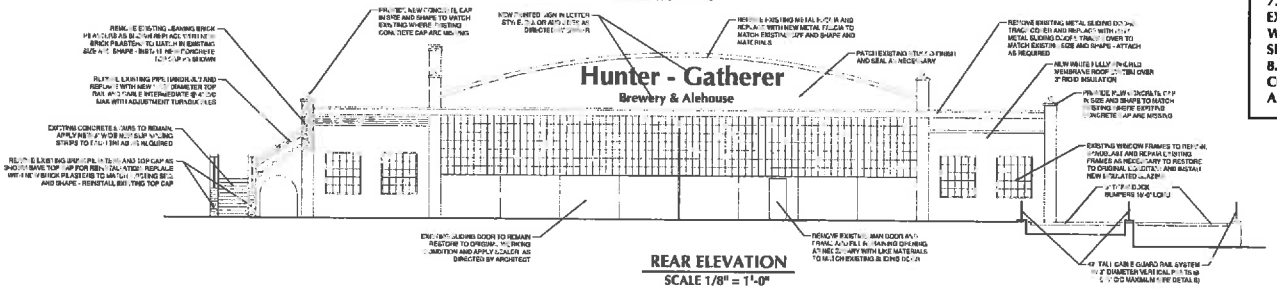
A1.2



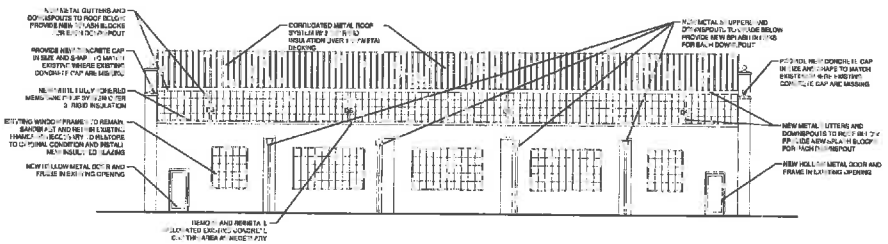
FRONT ELEVATION
SCALE 1/8" = 1'-0"



RIGHT SIDE ELEVATION
SCALE 1/8" = 1'-0"



REAR ELEVATION
SCALE 1/8" = 1'-0"



LEFT SIDE ELEVATION
SCALE 1/8" = 1'-0"

NOTE:
1. PRESSURE WASH EXISTING EXTERIOR BRICK
2. PATCH ALL HOLES IN EXTERIOR BRICK TO MATCH EXISTING
3. RE-POINT EXISTING BRICK JOINTS AS NECESSARY TO INSURE MOISTURE TIGHT BUILDING
4. DEMO ALL LEANING BRICK PILASTERS AND REPLACE WITH NEW BRICK PILASTER AS REQUIRED TO MATCH EXISTING
5. WHERE ALL BRICK WORK HAS BEEN REPLACED, REPAIRED OR RE-POINTED - (PAINT BRICK TO MATCH EXISTING AND SEAL.
6. REMOVE AND REPLACE ALL INTERIOR AND EXTERIOR CAULKING AND REPLACE WITH NEW.
7. SANDBLAST ALL INTERIOR AND EXTERIOR STEEL DOORS, FRAMES, WINDOWS, COLUMNS ETC AND SEAL
8. REPLACE ALL MISSING CONCRETE CAPS AND OR RESET ALL LOOSE CONCRETE CAPS

BRENNAN DESIGN, LLC

COMPANY SEALS

PROJECT TITLE
Curtiss-Wright Hangar Renovation

PROJECT NUMBER
16-00

REVISIONS

DATE
May 18, 2016

SHEET TITLE
ELEVATIONS

SHEET NUMBER
A3.0

EXHIBIT "B"

LANDLORD IMPROVEMENTS

The rehabilitation to the Curtiss-Wright Hangar will be performed in accordance with the U.S. Secretary of Interior's Standards for Rehabilitation. The primary focus of the landlord improvements will be to rehabilitate and restore the exterior envelope of the building. This will include upgrading the walls, windows, hanger doors, roof, and terrace features. In addition to work on the exterior of the building, the landlord will provide interior renovations sufficient to allow the building to be approved for occupancy pursuant to § 306.3 (Low Hazard Factory Industrial, Group F-2) of the International Building Code. Landlord will also provide required mechanical, electrical, and plumbing service to the building. The improvements to the building grounds will also be part of this package and will include parking for a minimum of 65 parking spaces. Other interior up-fit work will be the responsibility of the tenant, and a tenant allowance of $30,000 will be paid to tenant before Lease Commencement Date. The Landlord improvements to be provided are set forth in further detail in the bids attached hereto, and the Landlord improvements shall be performed in substantial conformity with such bids. In the event any bids for Landlord improvements are outstanding at the time of the execution of this Lease, Landlord shall provide a written description of the work to be provided, which description shall be subject to the reasonable approval of Tenant.

The scope of work to be provided by the landlord will include the following:

Stairs, Deck and Railing	Upgraded as Required by Code For Usage by Customers
Lighting for Stairs and Deck	As Required by Code Requirements
Fire Sprinkler System	As described in bid from Armstrong & Johnston
Landscaping/Irrigation	As described in bid from Gregory Landscape Services
Paving/Exterior Lighting/Misc.	As Described in bid from James Able Paving; Including Parking for a Minimum of 65 Cars
Brick/Concrete/Structural	As Described in bid from Garris Masonry. Including All Necessary Structural Repairs.
Roof Replacement	As described in bid from Aqua Seal using R-20 Rigid Iso Board
Painting	As described in bid from Moses Lozano
Windows	As described in bid from Ace Glass using double pane glass
Doors	Exterior Doors Repaired as Required by Code and Use
Mechanical, Electrical, Restrooms	
600 amp 3 Phase Service	As Described in Bid from Cayce Mechanical
6" Sewer Service	
2" Water Service	As Described in Bid from Cayce Mechanical
Utility Service Tap Fee	
40 Tons of HVAC	As Described in Bid from Cayce Mechanical
Men's Restroom	ADA Compliant Restroom with 1 stall and 2 urinals
Women's Restroom	ADA Compliant Restroom with 3 stalls
Mop Sink	As Described in Bid from Cayce Mechanical
20 G. Water Heater	As Described in Bid from Cayce Mechanical
One Water Fountain	As Described in Bid from Cayce Mechanical
Two Industrial Fans	As Described in Bid from Cayce Mechanical
Convenience Receptacles	As Described in Bid from Cayce Mechanical
Interior Emergency & Exit Lights	As Required for Code Requirements
Exterior Lights at Exit Doors	As Required for Code Requirements
20 Pendant Style Bay Lights	Lighting to meet all Code Requirements

ACE GLASS
RESIDENTIAL•COMMERCIAL•AUTOMOTIVE

Date: 8/26/15
Project Name: **Curtiss- Wright Hangar, Hamilton- Owens Airport**
Project Location: Columbia, SC

SCOPE INCLUSIONS

New Insulated Glass Panels installed in all existing Steel Sash Windows

Glass Makeup:
1/8" Clear Energy Advantage Low-E / ½" airspace/ 1/8" Clear

Installation will require running a 1/16" x 3/8" butyl tape, and fill the gap between the glass and metal frame on the interior with black sealant.

We require that all asbestos abatement, sandblasting, welding/ frame repair, and final painting be completed before glass can be installed.

Total Price $91,079.00

Price to Use Monolithic (non-insulating) Glass

Total Price $47,539.50

SCOPE EXCLUSIONS

- **Preparation of openings**
- **Final cleaning**
- **Asbestos abatement**
  Engineered Shop Drawings and P/E Stamp
  IECC 2066 Building Energy codes

Respectfully,

Trey Price
Ace Glass Company

Ace Glass Co. Commercial Division
5506 Two Notch Rd. Columbia, SC 29204
(803) 754-2911 (803) 454-6100

Robert

I wanted to get you this # today, as we discussed a full scope of work will have to be worked up once scope is fully ironed out. A quick overview of scope:

Removal and disposal of all ACM @ roof areas and throughout with licensed ACM contractor and methods as per Terracon supplied report furnished by you. (Credit of $3,000.00 if only roof related items treated)

Barrel roof area to include:

Provide and install New 22ga primed decking over entire roof surface @ barrel roof ($1,122 credit if G60 22 gauge used in lieu of primed decking)

Provide and install R20 rigid ISO over entire barrel roof area (if lesser R value acceptable credit can be established)

Provide and install ice and water shield over ISO @ barrel roof (entire roof)

Provide and install 1x4 PT battens over ISO and ice & water to receive new metal roof

Provide and install u-panel or M-Cor panel in Galvalume Finish

Provide and install wood nailers to receive new facia, gutter and downspout from like Galvalume material

Provide and install all related trim @ metal roof, hangar door covers and associated trims to create watertight condition from like Galvlume material.

Roof @ left from parking lot with existing wood deck to include:

Removal of old deck to existing joists

Provide and install new 22 gauge primed metal decking @ entire area in this section. ($246.00 credit if 22Ga G60 in lieu of primed deck)

Provide and install R20 ISO to entire roof area, install crickets to provide flow to existing scuppers. (Slope in deck exists thus requiring only cricket type material, price does not include full taper system)

Provide and install new .060 TPO membrane to achieve 20 year MFG warranty. (credit may exist if you choose 10 or 15 year warranty TBD)

Provide and install all associated wood nailers, scupper sleeves through existing penetrations, Leader heads, downspouts and necessary counter flashing from galvalume materials to achieve MFG warranty.

Roof @ right concrete plaza deck substrate:

Clean, power wash and Prep roof surface to achieve acceptable substrate for traffic coat system. (standard colors TBD)

Prep area under existing widows to receive coating system. (flashing heights are constricted in this area due to window elevation @ deck. Will have to receive variance for height from MFG for warranty)

Provide and install primer, foundation coat and finish coat to HydroStop specs to achieve MFG Specs (warranty TBD)

Provide and install all associated metal trim, counterflashing leader heads and down spouts from galvalume materials to provide watertight seal.

This roof area is a concrete deck and appears to have minimal slope, price does not include a full taper system. Aithough we believe most water will drain from roof, some ponding may be present.

Out bldg 11.5 x 11.5 existing 5V roof:

Provide and install like roof system TBD, included in price. Not to exceed $ 3,850.00 Aqua Seal cost.

Proposal Price

$234,940.00

Let me know your thoughts.

Sincerely,

Dominic Como

Aqua Seal Mfg. & Roofing, Inc.

and Decker Associates, LLC

P.O. Box 2238

West Columbia, SC 29171

803-936-0420 (Office)

Cayce Company, Inc., 307 Dooley Road, Lexington, SC 29073 Phone (803) 808-3724 FAX (803) 808-6275

Brennan Works, LLC
Jim Brennan, AIA
1233 Washington Street Suite 500
Columbia, South Carolina 29201

Re: Curtiss Wright Hanger, Owens Field August 21, 2015

Dear Jim,
Cayce Company is pleased to submit a proposal for mechanical and electrical improvements for your Owens Field project. Scope is as follows:

Electrical:
Cayce Company proposes to provide and install one 600 amp service utilizing aluminum entry cable.
The main panel shall have capacity to accept no less than six main breakers with two of those circuits being dedicated to serve provided HVAC, lighting and convenience receptacles.
General plant lighting will be accomplished utilizing approximately twenty pendant style bay fixtures.

Please note: No funds have been included for exterior lighting

HVAC:
Cayce Company proposes to provide and install four 10 ton split system air conditioners with supplemental electric heat.
Each air handler will be configured in an up flow arrangement and serve a short air distribution system fabricated from rectangular lined duct with side diffusers.
Provide and install 2-168" Big Ass Fans

Each unit shall be controlled with local loop electronic thermostats and non-networked smoke detectors.
Each condensing unit shall be placed no more than 50' from its associated air handler

Plumbing:
Plumbing shall consist of 2" inlet service with one domestic water back flow preventer.
Water shall then be piped to provide service to the following provided components:

Three women's toilets
One men's toilet with two urinals
One hand sink in men's and women's restrooms
One water fountain
One 20 gallon water heater
One mop sink

Per our discussions I have deducted all coring and concrete. It is my understanding an elevated floor will constructed to provide a plumbing chase for drains
We have excluded all engineering fees.

However, it is essential we have control of the design to meet the budgets as set forth.

The above scope can be accomplished for the sum of:
Two Hundred Fifty Six Thousand, Nine Hundred Seventy Three Dollars ($256,973.00)

Should you elect, Cayce Company can provide third party mechanical, electrical and plumbing engineering for an additional Fourteen Thousand, One Hundred Thirty Three Dollars ($14,133.00)

Not included in our budgets:
Bond (add 1-1/2% if needed)
Overtime, night or weekend work
Temporary heating and cooling
Controls other than those specified above,
Control valves other than those specified above,,
Asbestos abatement if discovered,
Upgrading any existing system to meet code requirements that may be in effect at time of renovation,
Engineering or Drawings unless included specifically in quote.

Respectfully Submitted,

Robert

Robert Wolfe
Cayce Company

Date: 5/27/15

GREGORY
LANDSCAPE SERVICES

Robert Lewis
(803)606-1545
rlewis@rogerslewis.com

RE: Curtiss-Wright Hangar Landscape Renovation

Dear Mr. Lewis,

Thank you for allowing me the opportunity to provide the following proposal for the landscape renovation of the Curtiss-Wright Hangar Project. Our estimated pricing and scope of work is outlined below. This pricing is contingent on the final landscape design.

Gregory Landscape Services, Inc. can provide the following landscape installation services:

1. Demolition, Grading, and cleaning — $2,659.38
   - Includes removal of unwanted plant material
   - Includes dumping fees for hauling off Trash
   - Includes removal of stumps
   - Includes grading of areas to be sodded

2. Installation of an Irrigation System — $5,940.50
   - 100% of all installed plant material and turf will be adequately watered
   - Includes installation of an automatic timer
   - Includes a rain sensor
   - Approximate 10 zone system

3. Installation of Shrubbery and Trees — $9,781.71
   - Approx. 25 3 gallon shrubs, 25 1 gallon shrubs
   - Approx. 10 B&B Trees
   - Varieties and Arrangements TBD

4. Fine Grading and Installation of Bermuda Sod — $7,482.61
   - Approx. 10,000 sq. ft.

5. Installation of Pine Straw / Mulch and Clean up — $1,269.78

Total Installation	**$27,133.98**

Thank you for allowing us the opportunity to provide you with this proposal. Please feel free to call us with any questions at 803-356-5959.

Sincerely,

Gregory Landscape Services, Inc.

Ben Snyder

Armstrong & Johnston
Fire Protection Contractors, Inc.

August 27, 2015

15-343

Will Brennan
Brennan Design, LLC
1233 Washington Street Suite 500
Columbia, SC 29201

Ph 803.788.7717
Fax 803.788.7671

RE: Curtiss-Wright Hangar Renovations
Fire Sprinklers

We are pleased to submit our proposal for furnishing and installing a fire sprinkler system for the above referenced project. This proposal is based on drawings received 6/24/2015, site visit, and a standard AIA contract. The scope of work consists of providing a wet system to cover approximately 12,500 square feet of open warehouse space and miscellaneous office/bathrooms.

The total cost for the base bid project starting at 1'-0" above finished floor is $Thirty-Five Thousand Five Hundred Dollars and no cents ($35,500.00).

Work/Items Included:

1. Sprinkler system design & installation per NFPA 13
2. Sprinkler Permits
3. Approvals from authority having jurisdiction
4. Materials including tax
5. Detailed shop drawings and equipment submittals
6. Assumes adequate water supply to meet sprinkler demand
7. Testing per NFPA 13
8. Supervision and labor
9. Alarm & Supervisory devices where wired by others
10. One year warranty

Armstrong & Johnston

Fire Protection Contractors, Inc.

Work/Items Excluded:

1. Exterior work associated with underground piping (i.e. tap, hydrants, post indicator)
2. Fire Caulking
3. Demo of ceilings or repair/patchwork to facilitate the installation of sprinkler piping
4. Electrical wiring of any devices
5. Painting or labeling of any pipe
6. Payment and performance bond
7. Heat Tracing or freeze protection of any kind
8. Fire extinguishers or other special extinguishing systems
9. Handling/Cutting of ceiling tile/grid to facilitate installation of system
10. Any costs associated with obtaining electronic CAD files to provide shop drawing

*This price is good for 30 days. If you have any questions or comments feel free to call our office at one of the numbers listed below.

Regards,

Jason Johnston
Estimator
SC Company License #FSC1153

Moses Lozano
Paint Contractor
200 Arnold Rd., South Carolina 29044
803 348-6692 e-moepaint@aol.com
South Carolina Licensed and Insured
Employees e-verified
5/29/15

We hereby propose to furnish the material and labor necessary for the application and completion of exterior removal of existing rusted metal paint and epoxy restoration system to re-prime, paint and water base urethane to protect weathering to metal substrates. Clean, paint and recondition brick and stucco.
Curtis-Wright Hanger Renovations
Attention: Robert Lewis
Re: Preliminary Estimates

- Apply antifungal / mold inhibitor /cleaning solution to all substrates, then power wash clean. Approximately 23,200 sq. ft.
- Lightly scrape all exterior substrates of loose paint and debris, as necessary.
- Sand substrates of loose paint and debris around metal columns, as necessary.
- Remove existing or unnecessary wall debris.
- Move (if possible) obstacles to prep. and paint substrates.
- Caulk all joints and cracks
- Patch minor holes with and cracks with stucco.
- Stucco and brick approx. 11,000 sq. ft.
- Identify any stucco problems to contractor. Any additional work not included in original estimate is considered "add on charge".
- Sandblast rust material from all interior and exterior sliding metal door and window frames, metal window frames, interior sliding metal doors. Approx.12, 170 sq.
- Apply Sherwin Williams 2 part conditioner, primer and sealant to all identified metal substrates.
- Paint 5 exit doors.
- Identify any potential repairs or problem areas to contractor.
- Remove and store in secure container all debris.

All material guaranteed as specified by manufacture and the above work to be performed in accordance with any drawing and specifications submitted for the above work. Labor is guaranteed for 12 months of completion of work. Completed in a workmanlike manner for the sum of:

$75,260.00 Seventy five thousand two hundred sixty dollars

Any alterations or deviation from above specifications involving extra cost or labor will become an extra charge

Sincerely, Moses Lozano, Owner

Mr. Parker Garris
Garris Masonry and Concrete Inc.
360 Shore Road
Gilbert, SC 29054
(803) 920-0421

RE: Curtiss – Wright Hangar, Jim Hamilton Blvd. and Airport Road, Columbia, SC

Garris Masonry Inc. proposes to do the following work:

(1) Rebuild three (3) of the four exterior columns
(2) Replace concrete caps on each column to match the existing/original concrete caps
(3) Repair all brick and concrete stairway treads and risers as needed on the exterior stairs. Replace the metal railing on exterior stairway.
(4) Replace concrete caps around lower level roof as needed. Match original/existing
(5) Repoint approximately 150 linear feet of mortar joints to match existing
(6) Construct brick wall at border of concrete pad in front of the building. Approximately 36 inches in height.
(7) Patch and repair concrete pads in front and rear of building and sidewalks as needed.
(8) Remove and re-pour concrete as per owner's instructions.

Construction Budget $10,000 to $12,000 depending on man hours needed.

_____

Parker Garris
Garris Masonry and Concrete Inc.

EXHIBIT C

LANDLORD IMPROVEMENTS

OVERVIEW:

The rehabilitation to the Curtiss-Wright Hangar will be performed in accordance with the U.S. Secretary of Interior's Standards for Rehabilitation. The primary focus of the landlord improvements will be to rehabilitate and restore the exterior envelop of the building. This will include upgrading the walls, windows, hanger doors, roof, and terrace features. In addition to work on the exterior of the building, the landlord will provide interior renovations sufficient to allow the building to be approved for occupancy pursuant to § 306.3 (Low Hazard Factory Industrial, Group F-2) of the International Building Code. Landlord will also provide required mechanical, electrical, and plumbing service to the building. The improvements to the building grounds will also be part of this package and will include parking for a minimum of 65 parking spaces.

All other interior up-fit work will be the responsibility of the tenant. The scope of work to be provided by the landlord will include the following:

Curtiss-Wright Hangar Construction Budget

8_24_15

Bid Package	Scope of Work	Sub-contractor	Amount
One	Landscaping/Irrigation	Gregory Landscape Services	$ 27,134.00
Two	Paving/Exterior Lighting/Misc.	Able Paving	$ 30,000.00
Three	Brick/Concrete/Structural	Parker Garris	$ 12,000.00
Four	Roof Replacement	Aqua Seal MFG & Roofing, Inc.	$ 234,940.00
Five	Painting	Moses Lozano	$ 75,260.00
Six	Windows/Hangar Door Glazing	Ace Glass	$ 105,000.00
Seven	HVAC	Cayce Mechanical Contractors	$ 271,106.00
Eight	Electrical	Cayce Mechanical Contractors	Included Above
Nine	Plumbing	Cayce Mechanical Contractors	Included Above
Ten	Fencing & Equipment Rental	Allowance	$ 10,000.00
Eleven	Fire Sprinkler	Armstrong & Johnston	$ 35,500.00
Twelve	Utility Service Tap Fee	Allowance	$ 40,000.00
Thirteen	Tenant Upfit Allowance	Allowance	$ 30,000.00
Fourteen	General Contractor Fee	K Square International, LLC	$ 45,000.00
Fifteen	Overages/Contingency	Allowance	$ 20,000.00
Sixteen	Interior Carpentry/Sheet Rock	K Square International, LLC	$ 20,000.00
			$ 955,940.00