144 N. Orange Street, Orange, CA 92866 T 714.639.9860 aoarchitects.com

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February 4th 2025

Friends Church – Orange - The Hangar

New Location: 180 S Cypress/527 W Almond, Orange, CA

Re: Project Narrative

Friends Church Orange is proposing to move locations to the property directly across Almond Ave to the address noted above. The project consists of an adaptive re-use of the existing 1925 steel frame warehouse (West Building) and the use of a remodeled existing office building (East Building) with site improvements to the connecting plaza between the two buildings and refreshing the gated entry off Almond Ave. The remainder of the site is limited in scope and is proposed as existing to remain aside from minor code required improvements, utilities, New Trash enclosure and a refresh of the existing parking lot and striping to include two new ADA parking stalls.

The project will relocate all functions of the current church operations including church services, offices, ministries, youth programs, food pantry and supporting needs to this new location. The church will continue to serve as a community program support space for many current community programs and offer opportunity to continue their mission.

This property is located within the Santa Fe Depot Specific Plan and adheres to those objectives, policies and guidelines through thoughtful adaptive reuse, placemaking and community services and programs beyond church services, incorporating historic rehabilitation for the protection of the historic environment and implementing modern sustainable environmental practices.

The West Building or Warehouse is considered a Contributing Building of historical significance as it is located within the three City of Orange Historical District Overlays:

- Plaza Historic District
- Local Old Towne Historic District
- Old Towne Orange Historic District

All efforts will be taken in alignment with the City of Orange Historic Review and Historic Preservation Design Standards (HPDS) where applicable. An architectural historical consultant has been engaged to review and guide the project through the proper approach to historic renovations/rehabilitation for an adaptive re-use. Historically significant elements that contribute to the former use and historic past will be carefully considered, and the design solutions proposed will align to minimize impact to the historical property and historical features.

This document also includes our parking assessment narrative as well as overall existing condition narrative and basis of design to provide insight into our design approach. AO is very appreciative of the time the city has provided this team to ensure we are developing it with the City of Orange's departmental input leading the collective team to a successful project and addition to the Old Towne Orange historical community fabric.

Parking Narrative for current conditions at current location.

Friends Church Orange began in 2013 with a desire to be *In* the city, *For* the city and bring a spiritual, redemptive element to the renewal that has been taking place in this great city for the past couple decades. Since that is part of our foundational DNA, it is a key factor in the decisions that are made and how they are lived out regarding our partnerships, programs, and potential impact on our city and neighbors. As such, we work hard to love our city and be a good neighbor.

In 2016, when we moved from our original time and location, meeting Sunday nights at a rented facility in The Plaza to gathering on Sunday mornings in the Packing House at 426 W. Almond, we knew it would be important to mitigate the impact on the surrounding neighborhoods with traffic, noise, and parking issues. For the first few years, we were able to primarily use the 70 parking spaces available at the Packing House. As we grew, we were able to secure parking agreements for Sundays with our neighbors across Almond St: 40 spaces with Cibola Systems and 84 spaces with The Depot. This has given us Sunday access to 194 parking spaces, allowing us to grow during the peak parking time without creating disruption for our neighbors.

In the fall of 2020, we also began a partnership with TheHubOC hosting one of the programs they facilitate: The Youth Centers of Orange. The YCO provides free after school care primarily to kids whose families are living at or below the poverty line in our city. Even as the use of our space at the Packing House increased on a daily basis, we have worked hard and are mindful to create programming with staggered pick-ups and drop-offs during the week with Friends Church and The YCO, alleviating the impact on our surrounding neighbors and parking spaces.

As we look to the future and are hopeful to purchase and renovate The Hangar in an attempt to create a more permanent location to love and serve our city through Friends Church and partnerships with like-minded organizations such as TheHubOC, we are confident in maintaining our current parking arrangements for weekends with The Depot, the Packing House, as well as owning the spaces currently borrowed from Cibola. Any revision to current parking agreements with neighbors will be shared as a courtesy with the City of Orange, but as we understand will not be require review or submission to the city as pursuant to AB 2097, the City cannot impose any minimum parking standards on projects that are within ½ mile of a high quality transit stop (which is the train station in Old Towne), therefore, there is no minimum off-street parking requirement for this project.

Friends Church - Orange Use Narrative

From its inception in 2013, Friends Church has existed as a church desiring to be *in the city and for the city.* As we have lived out this mission over the past 11 years, we have attracted a larger congregation who shares this purpose and who wants to make an impact in our city, especially for those in Orange who are marginalized, who suffer from poverty and homelessness, and who need a community to support them both

physically and spiritually. The proposed Hangar project will provide a permanent space and foundation for us to continue to impact the city of Orange in this way for generations to come.

CURRENT USE OF SPACE- Weekends

As we consider the use of this new space, it is important to understand how we currently operate on a day-to-day basis.

One of our primary functions is to offer 1-hour worship services on Saturday and Sunday. Our average attendance is as follows:

Saturday 5pm- 150 Adults, 20 children
Sunday 9am- 240 Adults, 50 children
Sunday 11am- 270 Adults, 40 children

Average Total Fall 2024- 660 Adults, 110 children

Once a month, we run a food pantry on Saturday morning where we provide food for the month for 150 families. This lasts for 2 hours.

CURRENT USE OF SPACE- Weekdays

During business hours Monday-Friday we use the space in a large variety of ways. We set up and tear down for meetings and events; we meet with members of the congregation as we plan our worship services; we run Bible Studies; and we offer space to partner organizations such as The HubOC for their meetings and team development. This is also when we help operate and coordinate services such as our food pantry, after school programs for kids at or below the poverty line, and resources and donations for the unhoused.

We are also piloting an Early Learning Program for kids ages birth through 5 years old that is running from 9am-12pm with an average of 10 children and 4 staff. If this proves to meet a need in the city for parents, we will assess this program's future growth and make necessary adjustments to this schedule.

We have 6 full time employees and 4 part time employees. However, these staff work many hours from home or at our central church campus in Yorba Linda. Monday through Friday from the hours of 8am to 3pm, we have an average of 10 staff and volunteers working from the building. Once or twice a week we run a larger meeting or Bible Study that averages 20-30 people.

One day a week from 3 to 6pm, we host the Youth Centers of Orange for an after-school program, averaging anywhere from 20-60 kids.

Weekday evenings also vary from day to day. We offer meeting space for Life Groups, College and Young Adults, and Students, with groups starting at 20 people and getting as large as 80 people. These meetings often have live music which always ends by 9pm. We also offer childcare in our space downstairs as needed.

ADDITIONAL USE OF SPACE- The Hangar

The Hangar will provide ways for us to care for the surrounding community in new and exciting ways. In addition to continuing the current use of space, we hope to expand our reach to our neighbors through several new initiatives.

The property will include a café with a small playground which we hope will be a space where the community can bring their kids and have a safe space to gather. We will research how to make this most effective and affordable and will then determine hours of operation for the community at large. The café will also be open whenever a worship service is occurring. We will investigate partnering with an outside entity to operate this café, but Friends Church will be the owner.

The Hangar's large gathering space will be a multi-use facility that can be used for sports such as basketball and pickleball. We hope to offer recreational games for the community during after school hours. The office space could also be used for tutoring programs and skill-development programs.

PHASING FOR THE HANGAR

Ideally, we will be ready to support all our renovation plans so that when we occupy the space, it will be fully functioning with the intended design for function.

However, if planning and finances go beyond our expectations, we will implement phasing with the following in mind.

-The interior of the main gathering space will need to be safe and able to accommodate our congregation at the current numbers.
-Parking and path of travel must be completed.
-Roughly 80% of the courtyard must be completed and safe
-Additional project components like the café, storage areas and office areas could be completed in later phases if necessary.

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Existing Condition Assessment and Conversion Basis of Design Strategies for:

The Hanger – Warehouse – Friends Church – Orange

The assessment below is intended to provide data to assist construction ROM pricing for the conversion of a current warehouse into an A occupancy community worship and flex space for Friends Church, Orange.

General Building Information

Address: 527 W Almond

Approximate Build: 1925 (steel construction)

Building is in Old Towne Orange Historic District- Listed as a significant resource.

Parcel Assignment: Contributing Historic Building

Slab on grade

Fully sprinklered

Passive ventillation

Building Analysis

Building Area:	+/-14,800 s.f.
Type of Construction:	VB, sprinklered
Occupancy:	A-3

Building Conversion Considerations:

- Change of Use – CUP required
- Assembly over 500 occupants – Risk Category III
- Weather tight needs
  - Interior
  - Assumed exterior is historically significant.
- Acoustics
  - Worship gathering area – Internal.
  - Rail adjacency – External
- Historic compliance/considerations – 3 overlapping historic district overlays
  - Pending review on the national register
  - Exterior Look and Feel
  - Site issues regarding historic – district overlays
- Fire/Life Safety

Basis of Design Executive Narrative:

ARCHITECTURAL BASIS OF DESIGN NARRATIVE:

The thoughtful design will be based on the assessment and guidance provided by George Taylor Louden, AIA Historical Architecture Consulting with strict adherence to the Secretary of the Interior Historic rehabilitation Standards. George Taylor Louden has been approved by the City of Orange planning department for assessment of and reporting for this property. The report is contained herein.

Building (Historical) Rehabilitation:

Exterior Corrugated Steel Panels: The general look and feel from the exterior is to be protected/preserved or refreshed to preserve the historical look and use of the building. The exterior corrugation will be removed and either mapped for reinstallation or replaced in kind with identical metal corrugation material. The removal will allow for the interior wall to be constructed to achieve energy efficiency as well as appropriate waterproofing necessary for the new use. Where an new material is proposed it is aligned with the same vertical ribbed articulation but stands apart from the existing emphasizing new vs historic. All significant existing horizontal banding or seaming will be maintained.

Existing Windows:

The existing windows are narrow steel sill/frame industrial windows with steel muntins. At a much more recent time a 2x wood frame with metal mesh was added to the exterior for unknown reasons. This has not aged well and would be removed and replaced with a metal frame around the existing windows to seal the windows from weather intrusion.

South Elevation: (7: 4'x6') and lower windows (4: 5'x7')

West Elevation: (7: 4'x6')

North Elevation: (8: 4'-6')

East Elevation: (8: 4'-6') and lower windows (1: 5'x7')

The existing clearstory windows on **South elevation** (Almond), **West elevation** (Railway) and **North Elevations** (Parking Lot) will be preserved by cleaning, repairing, sealing and installing a new metal frame surround.

Existing Windows on the **East Elevation** will be modified with the introduction of the new entry portal; while 4 of the clerestory (4'x6') windows and the single lower (5'x7') window will be preserved, 4 clerestory windows will be removed to allow for the proposed entry structure and new modern operable windows at the NE mezzanine. Though the new windows are modern they will be in keeping with the metal/steel muntin pattern consistent with the existing.

A new insulated wall will be built on the interior side of the exterior skin with new double pane, single lite windows (muntin less) placed in the wall aligned with the existing window locations, so that the daylighting is preserved as well as the view of the existing historic windows from the inside. This is required for the conditioned space to meet T-24 requirements.

Existing Corrugated Sliding Doors: The existing sliding warehouse doors along the South Elevation (Almond) will be preserved as precedence has been set within the Old Town district. They are to be preserved in the 'Closed' position with the exterior slide rails intact. The operable door on the North Elevation will be replaced with a modern steel and glass overhead door. The southernmost sliding door on the East elevation will be preserved in the 'closed' position

with a new door installed. The center sliding door will be preserved in the 'closed' position with the new entry integrated into it.

Existing Louvers: The existing louvres were installed at a more recent time, they do not fit the original openings and plywood was used to seal the remaining gaps. New industrial louvers will be installed custom to the original openings. They can be false vents or tied to new HVAC system to allow for fresh-air intake. If not required for HVAC use; the new interior perimeter wall will cover them from view on the interior.

Metal Corrugated Roof: The existing corrugated roof diaphragm will be maintained, new continuous insulation will be installed over the corrugation with new corrugated material (painted) over the insulation. This material will match the existing curved corrugated material currently visible. An integrated gutter system will be installed in the roof overhang along Almond out of view and will be internally drained and tied to underground storm drains. Overflow outlets will be located on the West and East elevations.

Existing Steel Structure: The structure will be preserved and modified only where necessary to meet historical structural code. The change in occupancy requires the building to be upgraded to a seismic risk category III. This includes expansion of main structural column footings, additional truss bracing in the roof structure and added x-bracing in the exterior structural system for additional seismic lateral support. The approach will be careful use of materials to blend with the current structural steel members for the added wall x-bracing and added roof structure truss bracing. The expanded footings will be invisible to the eye as disrupted conditions will be replaced to match existing.

Existing Loading Dock: The proposed use requires an infill of the existing loading dock, The approach is to leave the dock sloped slab in place, infill with structural EPS geofoam with a new concrete topping slab to flush out with current finished floor level. The design takes into consideration the reversable criteria of being able to return the dock to its original form in the future if the opportunity presents itself.

New Design Elements Introduced:

The architectural design intent for modernization and adaptive reuse aims to honor the building's historic character while introducing contemporary industrial farmhouse elements.

Key features include:

• Barrel-Vaulted Aesthetic: The existing corrugated hangar style is preserved and enhanced inside and out. The open roof structure will remain exposed on the interior. The vertical steel structural columns and X-Bracing will remain visible on the interior. Internal overhead doors leading to the north space will remain open while in-filled with modern storefront glazing.

• New Prominent Entryway and Courtyard façade enhancements: A prominent entryway on the East elevation within the courtyard (The Yard) will bring an important welcoming ceremonial entry element balancing a contrast of old and new. An integrated cross in the storefront signifies the entry to God's house and worship.

New operable 2nd story windows on East elevation: The inclusion of modern steel or metal matching steel windows at the mezzanine level will be introduced to create greater transparency; allowing views from the interior balcony into the revitalized courtyard below.

A new faux steel storefront system will be integrated into the lower rear structure to accommodate a café, clad in standing seam metal panels that replace the existing damaged metal skin, maintaining a similar profile while incorporating a striking dark bronze finish for added contrast. These elements are implemented on the interior courtyard to enhance the guest experience within an important congregation area.

Exterior Enhancements and Canopy along Almond: Similar to the metal cladded finish on the interior courtyard façade, this finish will also be applied to eastern end of the Almond Street elevations with a metal eyebrow constructed of similar wide flange steel shapes found within the structure. This important feature highlights the new adaptive re-use and provides for signage and a more intuitive wayfinding identity to the main entry within the courtyard since no new access is proposed along Almond.

Overall, these minimal changes and thoughtful enhancements make a significant impact, celebrating the building's historical essence while infusing it with modern functionality. These thoughtful enhancements maintain the building's historical essence while introducing modern functionality, creating a welcoming and vibrant space within an important historically significant building preserving the important past industry within the Orange Historical District.

Acoustics:

It is suggested that an acoustical consultant be brought in to assess the proposed wall assembly to abate nuisance noises from the exterior and interior acoustic (light weight) panels provided on the interior to provide for an appropriate interior space experience.

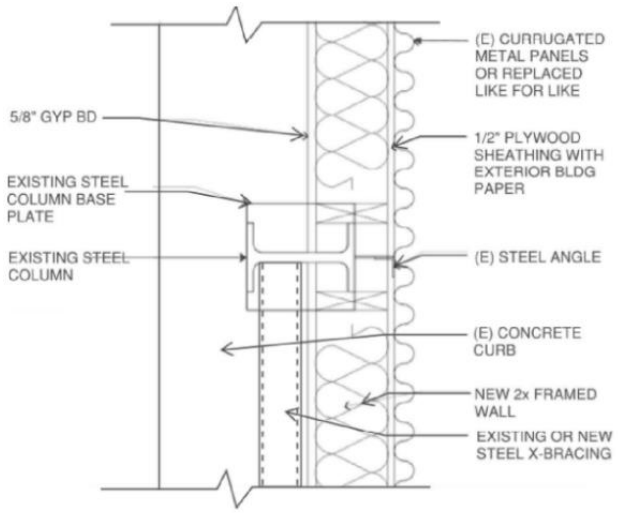
Restrooms:

Large multiple occupancy accessible restrooms will need to be installed to support final occupancy counts

Building Envelope:

Wall Assembly

Existing wall: Painted metal siding attached directly to metal building frame and steel angles.



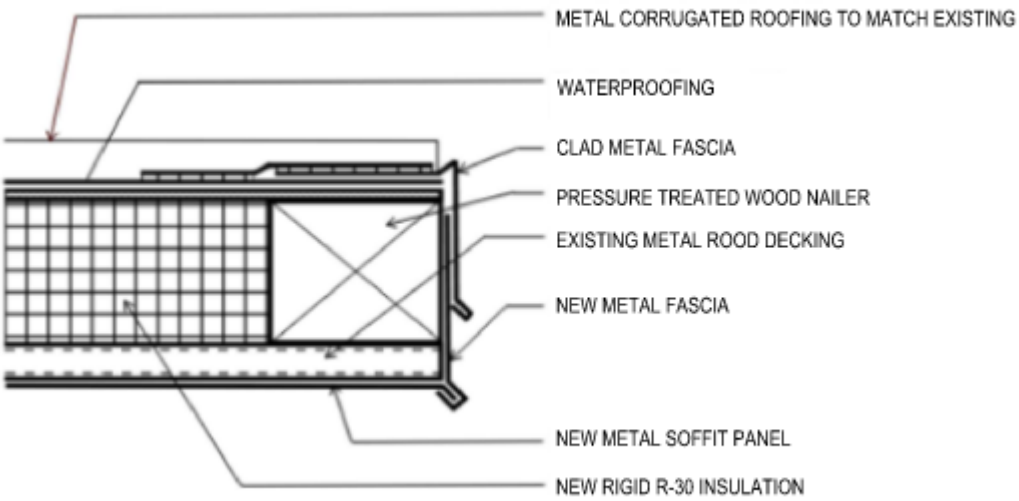
1 **EXTERIOR WALL ASSEMBLY**

Existing metal siding to remain, or be replaced in kind. Provide new insulated stud wall with plywood sheathing and air/vapor barrier on exterior side and gypsum wall board finish on interior side. Existing metal siding to be removed and reinstalled after new interior wall constructed. See detail below.

Entrances and Exits: New Exits will need to be considered around the perimeter to meet egress requirements of an A-3 of high occupancy, See Exhibit A. Consider standard storefront systems in these areas and steel insulated doors on the railway (west elevation) side. A continuous concrete curb existing around the exterior perimeter that would be demoed in entrance/egress locations only. (See Photo Exhibit C)

Roof Assembly

Existing Roof:	Painted metal deck
Proposed roof:	New corrugated metal roof panels to match existing roof system with decorative profile over new rigid insulation (R-30) over existing metal deck. See detail below.
Note:	Structural review of existing metal deck to confirm its reuse



STRUCTURAL BASIS OF DESIGN NARRATIVE:

1. Foundation System
   a. " The Sanctuary" is assumed to be supported on shallow foundations with pad footings supporting square steel columns around the perimeter. The foundation system will have to be upgraded bringing the existing structure to current code with a risk category III due to an increase in the design forces for seismic and wind design. This will require significant upgrades to the seismic support system including additional braced frames which require revisions to the existing pad footings at all four sides of the building. The existing footings are likely undersized and will need to be modified to increase the size of the footing utilizing epoxied rebar and concrete. The existing slab is concrete slab on grade, thickness and reinforcing is unknown.

2. Framing System
   a. The roof is constructed of full span steel bow trusses comprised of steel angles at top and bottom chords and webs. There are no interior columns or supporting members. The trusses are supported by steel columns at the exterior perimeter. The roof sheathing is corrugated metal panels.

3. Lateral Systems
   a. Introduction
   b. The primary lateral system is steel "X" braces at each side of the structure.

   c. Wind Loads: As Per the 2022 CBC, Section 1609A.
      i. Design Factors:
         - Basic Wind Speed: 102 MPH
         - Exposure Type: Type C
      ii. Method of Design: ASCE 7-16 Method 1 (Equivalent Lateral Force Procedure)
      iii. Load Combinations: Per the 2022 CBC, Section 1605A.2, 1605A.3, and 1605A.4.
   d. Seismic Loads: As Per the 2022 CBC, Section 1613A.
      i. Design Factors:
         - Ss: 1.358
         - S1: 0.483
         - SDS: 1.087
         - SD1: .585
         - Site Class: D
         - Importance Factor, I: 1.25
         - Soil Profile Type: Default
         - Seismic Design Category : D

4. Material Properties
   a. Concrete

      All Structural concrete mixes shall be Type II cement conforming to ASTM C595. All structural concrete shall have a minimum compressive strength at 28 days as follows:

      Footings and Grade Beams: f'c = 4,000 psi (145 pcf)

      Slab on Grade: f'c = 3,000 psi (145 pcf)
      Equipment Pad: f'c = 3,000 psi (145 pcf)

b. Reinforcement

Typical Reinforcement:	ASTM A615, Grade 60 (Fy = 60 ksi)
Welded Rebar:	ASTM A706 (Fy = 60 ksi)
Weld Wire Fabric (Cold Drawn Wire):	

c. Structural Steel

ASTM A185
(Fy = 65 ksi)

All Structural steel shall be ASTM A992, Grade 50, unless noted otherwise.

Steel Angles and Channels:	ASTM A36 (Fy = 36 ksi)
Structural Rectangular Tubes:	ASTM A500, Grade B (Fy = 46 ksi)
Structural Round Tubes:	ASTM A500, Grade B (Fy = 42 ksi)
Structural Pipes:	ASTM A53, Grade B (Fy = 35 ksi)
Wide Flange	ASTM A992, Grade 50

d. Structural Bolt: Bolt connections shall be A325X bolts unless noted otherwise.

Gravity Column Anchor Bolts:	ASTM F1554-Grade 36
Seismic Column Anchor Bolts:	ASTM F1554- Grade 36

e. Welding: In Conformance with AWS D1.1 and D1.4

Electrode Strength:	E80XX (Reinforcing Steel) E70XX (Structural Steel)

f. Masonry: f'm=2000psi

g. CalGreen requirement:
Structural steel, reinforcing steel and concrete material shall have GWP total 20% below published regional average value from each trade organization such as AISC and NRMCA.

MECHANICAL ELECTRICAL PLUMBING BASIS OF DESIGN NARRATIVE:

Mechanical:

Cooling/Heating: The existing warehouse appears to be passively ventilated, new cooling/Heating systems would be required to condition the space and will require high loads for the high occupancy space. Suggestion is to utilize a mechanical platform on the interior of the space, well ventilated to the exterior and insulated from noise and vibration to isolate and remove any nuisance to the rest of the space. Assume spiral duct distribution throughout. An engineer will be needed to calculate the appropriate tonnage needed and any additional ventilation once design is completed.

Plumbing:

Slab on grade will be easily sawcut to provide for new sanitary sewer and drain needs. New water service is anticipated. An engineer will be needed to calculate the appropriate water and waste needs once design is completed.

Grease interceptor:

It is not anticipated that a grease interceptor will be required so long as there is only a catering type kitchen without any cooking and the coffee concept is limited to coffee type offerings similar to Starbucks.

Gas: No current Gas service, may desire to have a new gas service depending on desire and design needs.

Electrical:

New Electrical service is anticipated. An engineer will be needed to calculate the appropriate electrical loads and service size. Assume an interior electrical room as well as an exterior nema enclosure type gear housing.

LANDSCAPE BASIS OF DESIGN NARRATIVE:

- Landscape: Two mature trees (*L. confertus*) along Almond Avenue will be replaced with Desert Museum Palo Verdes (*C. X 'Desert Museum'*) to provide a more welcoming entry into the courtyard. These will be anchored by Dwarf Olives and Mat Rushes to complement the landscaping that continues throughout the courtyard. In addition, three Marina Strawberry trees (*A. 'Marina'*) will shade the flexible common area and mitigate heat island. The planting specified has water requirements that range from very low to low, and are adapted the local climate to resist drought. All irrigation on-site will be on a drip system in an effort to maximize water conservation.

CIVIL BASIS OF DESIGN NARRATIVE:

EXISTING CONDITIONS:

Existing Site Improvements:

- Existing site is located at the northwest corner of Cypress Street and Almond Avenue and is bound by the AT&SF railroad to the west, Commercial office space and parking improvements to the north, Cypress Street and residential properties to the east, and Almond Avenue and additional commercial properties to the south.
- Two structures exist on the current property along with asphalt parking spaces, asphalt and concrete drive aisles, and courtyard paving and deck improvements located between the two structures.
- The westerly structure (527 W Almond Avenue) is a warehouse building with a truck dock located at the northwest corner of the structure.
- The easterly structure (180 Cypress Street) is an office building which is currently occupied
- The courtyard currently includes decking which is constructed atop the original truck dock, which was used to service the westerly hangar structure. The courtyard improvements were constructed in 2011 prior to which the entire area between the two structures was paved in asphalt and concrete pavement to support the hanger building.

Existing Site Drainage:

- Drainage Tributaries: Site drainage flows generally from north to south with three separate tributaries (westerly, central, and easterly).
    - ***Westerly Tributary***: The westerly tributary includes drainage from the parking field to the north of the warehouse as well as a portion of the courtyard drainage wich surface flows to the northerly drive aisle.

      CRITICAL: The westerly tributary also receives surface runoff from the northern property (160 N Cypress Street) via a surface opening in the northerly gate.

      All runoff from the westerly tributary is collected at the northwest corner of the warehouse building and discharged to Cypress Street via a 10” concrete pipe which runs along the westerly face of the structure and discharges to a catch basin on the northerly curb face of Almond Avenue near the center of he warehouse building.
    - ***Central Tributary***: The central tributary includes drainage from the courtyard area as well as a majority of the office building roof and a smaller portion of the warehouse roof. All drainage within this tributary is captured via roof drains or inlets and directed to the existing truck dock. Located within the truck dock is a recycled water system (2 – 5’ diameter by 3’ depth cisterns) as well as a 24”x 24” concrete catch basin placed at the southwest corner of the truck dock. Low flows are captured in the rainwater harvesting system whereas high flows are captured in the truck dock void space and pumped up to grade and discharged to the curb face on Almond Avenue.

- ***Eastern Tributary***: the eastern tributary is comprised of a small portion of the office roof (overhand area only) as well as the easterly surface parking lot. All drainage sheet flows to the existing curb and gutter on Almond Avenue or Cypress Street.

- Downstream Conditions: All runoff from the project site is captured in the catch basin located on the north curb face of Almond Avenue. Drainage is then conveyed in an 18" CMP Arch across the street to a shallow catch basin and subsequently conveyed westerly under the railroad tracks via a similar CMP arch culvert and discharged at grade to the curb and gutter of Almond Avenue to the west of the railroad tracks.

GRADING & DRAINAGE:

Proposed Grading:

- Westerly Tributary:
  - Asphalt grind and overlay will be required along the northerly face of the warehouse building to blend the expanded building footprint to the existing grades. Drainage patterns along the north of the structure will be maintained with surface runoff being directed to the westerly property line.
  - The FFE of the western egress doors will be raised by 8" in order to provide separation from the secondary overflow drainage course that is located along the railroad right of way. Egress paths will be raised above existing grade and join paths of travel along the north and south.
- Central Tributary:
  - Existing courtyard improvements will be fully removed with the truck dock protected in place to the maximum extent possible. Grated inlets, slot drains, and subdrain systems will be utilized to capture surface runoff and direct the runoff to a catch basin located at the southerly corner of the courtyard (see drainage and water quality section for further detail)
  - The FFE of the easterly office building is approximately 1.5' higher than the warehouse building. Stairs and ADA compliant ramps will be utilized to combine paths of travel from the easterly office building to the warehouse.
  - ADA parking stalls will be striped and designated at the northeast corner of the courtyard to service the proposed hanger structure. Grading and ADA compliance review will be conducted on the existing stalls to confirm if grading improvements are required to achieve required grads.
- Eastern Tributary:
  - No modifications or grading improvements are proposed within the eastern tributary
- Public Street improvements:
  - Existing sidewalk and curb and gutter will be removed and replaced along the entire frontage of Almond Avenue. New sidewalk will be constructed per Class I Parkway City of Orange Standards.
  - Existing driveway along Almond Avenue will be reconstructed per City Standards
  - Existing curb ramp at the northwest corner of Almond & Cypress will be reconstructed.
  - Existing street light on power pole will be removed and a new street light, pull box, and conduit will be installed on Almond Avenue per City Standards.

- Street improvements on Cypress Street will remain unchanged.

Proposed Drainage & Hydrology:

- Proposed site drainage will match existing drainage patterns and discharge all site runoff to the curb and gutter of Almond Avenue. Further hydrology and hydraulic studies will be required to verify adequacy of existing drainage systems and to confirm the HGL of anticipated large storm events. The concepts below outline the approach that will be taken within each tributary:
- Westerly Tributary:
  - Primary capture of drainage will be in existing 24" grated in let at western edge of property which flows to a 10" Concrete Pipe and subsequent 18"/21" CMP Arch culvert under the railroad.
  - Secondary capture and flood protection will be provided along the western property line with a high flow parkway drain connecting any runoff not captured in the storm drain to the curb and gutter along Almond Street.
- Central Tributary:
  - All drainage captured via inlets and roof drains will be directed to the 24" grated inlet located at the southern edge of the courtyard. Water quality flows will be diverted from this inlet to the ultimate water quality treatment system (see below).
  - Peak flow runoff from small and large storm events will then designed to spill out of the 24" grated inlet to the proposed 24" parkway drain towards Almond Avenue.
  - Depending on results of the hydrology report and pre/post runoff analysis, the existing truck dock void space may continue to be utilized for peak flow mitigation measures. Further studies are pending and will be submitted to the City.
- Eastern Tributary:
  - No modifications or grading improvements are proposed within the eastern tributary

Water Quality

- The proposed project will reconstruct and grade more than 5,000 SF of impervious area and will be subject to implementation of water quality improvements. A pWQMP is in progress and will be submitted. Schematic grading and drainage has assumed a project impact area of 10,000 SF for water quality purposes for which a design capture volume of 550 Cubic Feet is assumed.
- Geotechnical review and infiltration studies are pending. Preliminary review has indicated groundwater is approximately 20' below grade and may be feasible however, adequate clearance from existing structures and property lines may result in an infeasibility determination. For the purpose of this submittal, a schematic footprint for a 550 cubic foot, open bottom infiltration system has been shown.
- Should infiltration be deemed infeasible, proprietary flow based water quality treatment systems will be recommended with post treatment water quality flows being pumped directly to the curb face via a new curb drain.

SITE UTILITIES

Domestic Water System

- Both structures on the existing site are serviced by a single, 2" water meter located on Almond Avenue.
- Existing 2" services will be intercepted after the meter and will be directed to a new 2" backflow device. Services will then be rounted on site and reconnected to the two existing structures.

Fire Water System

- The hangar building is currently services by a direct fire water connection and underground check valve on Almond Avenue. The office building is currently sprinklered.
- Existing fire water services on Almond Avenue is proposed for abandonment per City Standards and a new 6" – 8" fire water connection is proposed on Cypress Street (pending final hydraulic analysis).
- A new double detector check and private fire hydrant will be constructed on site pre Orange Fire clearance requirements
- A dedicated fire water connection will be constructed for each building with associated PIV and FDC to services the proposed sprinkler systems.

Irrigation Water System

- No dedicated irrigation meter or backflow device currently exists on site.
- The proposed development will install a single, 1" irrigation meter and backflow devices to service the proposed landscaping improvements.

Sewer System

- The hangar building is currently services by a sewer lateral on Almond Avenue which connects to an existing 6" VCP sewer main that flows westerly.
- The Office building is currently services by a sewer lateral on Cypress Street which connects to an existing 8" VCP sewer main.
- Existing sewer laterals for both structures are proposed for reuse. Utility locating will be required to confirm the location and depth of the existing sewer laterals.
- Pending potential depth constraints, a new sewer lateral has been shown to connect the coffee shop plumbing to the existing sewer main on Cypress Street. The on-site sewer will connect to an existing sewer lateral for the site which was used to service prior improvements on the office property.