FEASIBILITY STUDY

FOR THE

RAIL YARDS' BLACKSMITH SHOP

PREPARED FOR THE

CITY OF ALBUQUERQUE

BY

CHERRY/SEE/REAMES ARCHITECTS, LLP

September 12, 2012

Note: The following sections of the study were removed at the discretion of the City of Albuquerque:

Executive Summary (Pages 1-4)

Part V: Temporary Development Schemes and Cost Estimates (Pages 45-61)

Appendix E: Notes on Code and Safety Meeting, August 6, 2012 (Pages 78-79)

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PART I: INTRODUCTION

A. Purpose of the Study

The purpose of this study is to examine the feasibility of rehabilitating the Blacksmith Shop at the Albuquerque Rail Yards for interim public uses such as growers', art, and other markets, a variety of exhibits, and performances and other special events. The intention of this use is to introduce the citizens of Albuquerque to the Rail Yards and the wonderful assets we have at the site. The study examines temporary improvements, those that can be accomplished for less than the $1,000,000 City Council has approved for the Rail Yards. It also looks at more permanent improvements.

B. Study Area Boundaries

The area boundaries for this study are set to include the Blacksmith Shop and to allow examination of the potential for parking for the public events. The setting of this boundary should not be seen as any official planning designation, but more as a practical matter of determining the feasibility of vehicle access to the Blacksmith Shop from public streets. The boundary also allows for access to the buildings to the west of the Blacksmith Shop for continued interim use by the movie industry.

C. Potential Uses

The potential uses are all temporary; no long-term tenants are considered because the building may be designated for some other purpose in upcoming development efforts. The uses fall into three categories, determined by their classification in the applicable building codes, the International Building Code of 2009 (IBC 2009), and the International Existing Building Code of 2009 (IEBC 2009). The reason for arranging potential uses according to the "Occupancy" categories of the building codes is because each occupancy type has its own building requirements that the rehabilitation of the building would have to meet.

The events would be scheduled by the City of Albuquerque or its designee, and would come and go. There might, of course, be repeat users. There might be some historical elements/exhibits that remain. For example, the forge that is located in the southeast corner of the building should remain as a historical exhibit.

Following are the three categories of use and occupancy classifications according to the IBC and IEBC and examples, in no order of priority:

Retail Sales (Mercantile Occupancy, M)

1. Art Market
2. Growers' Market
3. New Mexico Product Market
4. Swap Meets and Flea Markets

Exhibits (Assembly Occupancy, A-3)

1. Art Exhibits
2. Car Shows
3. Motorcycle Shows
4. Bicycle Shows and events
5. Toy Shows
6. Animal Shows

Performances and Other Assembly Events (Assembly Occupancy A-3, no fixed seating)

1. Musical performances
2. Theatrical performances (with limited stage sets)
3. Dances
4. Roller Skating Events
5. Amateur Athletic Events
6. Small Traveling Shows
7. Banquets
8. Wedding Receptions and Parties
9. Community Meetings

D. Brief History of the Rail Yards

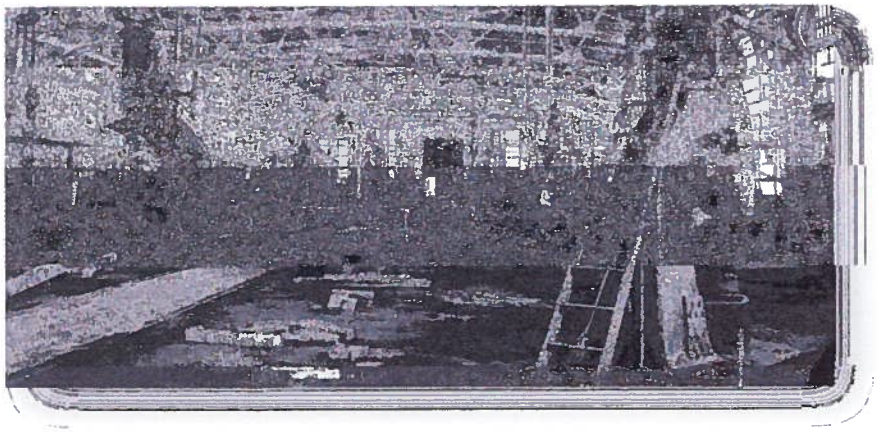
Architectural historian, Chris Wilson, states:

> "The single most important factor in the development of Albuquerque between 1880 and 1930, in its transformation from a farming village into a commercial and industrial center, and its emergence as the leading city in New Mexico was the railroad. Throughout this period, the Santa Fe Railway was the city's leading employer. In addition, its buildings were viewed with community pride as signs of progress and prosperity. Because of the railroad's leading role, these structures are prominent reminders of this important period in Albuquerque's history." (Wilson, 1986)

The Blacksmith Shop, also known as Central Works Equipment (CWE) Shop 4, was constructed in 1916. This building, and others in the complex, were built at a time when industrial architecture was making a shift nationwide from large masonry load bearing walls with timber roof construction to steel structures with thinner walls of brick veneer or a structure of reinforced concrete. Both steel and concrete structures allowed for much larger window openings, and therefore, better interior day lighting and ventilation. The Blacksmith Shop is an excellent example of this transitional architecture, with its steel frame, brick veneer walls, and large windows.

The Albuquerque shops serviced an average of 40 locomotives per month. Workers in the Blacksmith Shop could repair breaks in the frame, patch the boiler or fire box with steel plate, or make replacement parts from scratch. Locomotives could be moved from the Machine Shop, the building directly south of the Blacksmith Shop, onto the Transfer Table, the recessed area between the Blacksmith Shop and the Machine Shop. The Transfer Table would then move the locomotive into place at the south door of the Blacksmith Shop. The locomotive would travel northward into the Blacksmith shop on the rails that still remain in place to the spot where it needed to be repaired or where parts were to be installed. The Locomotive could then move north out of the Blacksmith Shop or back to the Transfer Table and back to the Machine Shop.

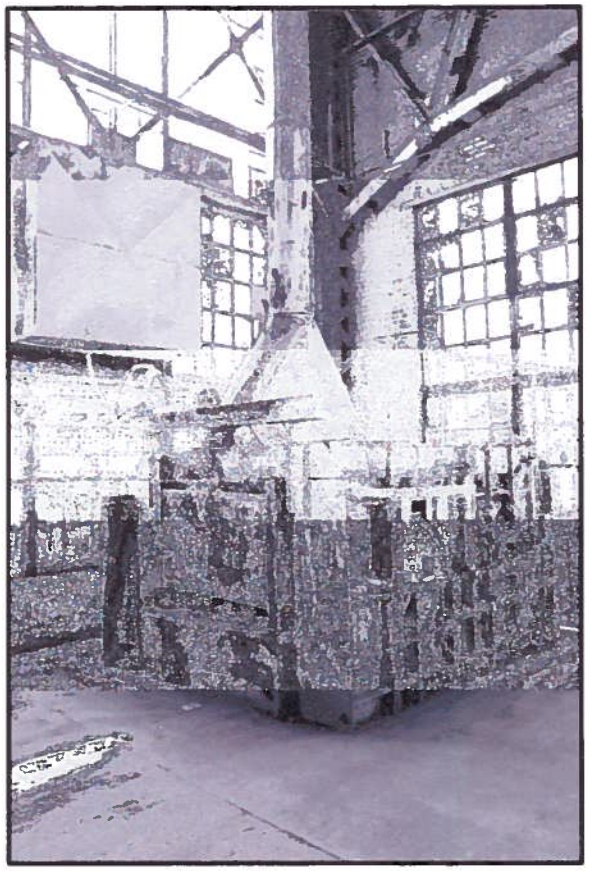
One of the original forges remains in place in the southeast corner of the building. This piece of equipment should be cleaned and displayed. Interpretive signs with photographs explaining the history and purpose of the building could be installed in this area. The central rails for moving locomotives into the building are also in place and run outside to the north. These rails should remain and serve as a focus to bring people into the building from the parking lot to the north.



Left Top: Blacksmith Shop looking north

Left Bottom: Draw Bar and Hammer

Right: Existing Forge presently located in the southeast corner of the Blacksmith Shop



E. Recent Planning for the Rail Yards

The Barelas Neighborhood Commercial Area Revitalization Plan, approved by the City of Albuquerque on September 30, 1991, sought to evaluate and identify opportunities to revitalize this important historic Albuquerque neighborhood. While the Rail Yards were not part of this study area, this document called attention to the area and spurred interest in the potential of the area.

In 2007, the City of Albuquerque purchased the Rail Yards in order to be able to control the redevelopment process and future uses of the site, and to preserve this unique and valuable asset for the City of Albuquerque.

The Rail Yards property was rezoned by the City Council's adoption of the new Barelas Sector Development Plan on April 28, 2008. Prior to this change, the Rail Yards were zoned SU-HM (Heavy Manufacturing). The intentions of the rezoning the Rail Yards, SU-2 HLS (Historic Locomotive Shops) was to allow mixed use development, require historic preservation and maximum benefits for the neighborhood.

The City of Albuquerque has selected a developer for the site, Samitaur/Smith Constructs (Samitaur). Samitaur's first charge is to prepare a Master Plan for the entire Rail Yards site. Phases of development by Samitaur are described in the Master Plan Agreement as follows:

- Phase 1 Selection of Developer (accomplished)
- Phase 2 Creation of the Master Plan for Rail Yards Development (in process)
- Phase 3 The Design and City Approval of the Master Plan
- Phase 4 Disposition, Financing, Construction and Management of the Rail Yards Redevelopment.

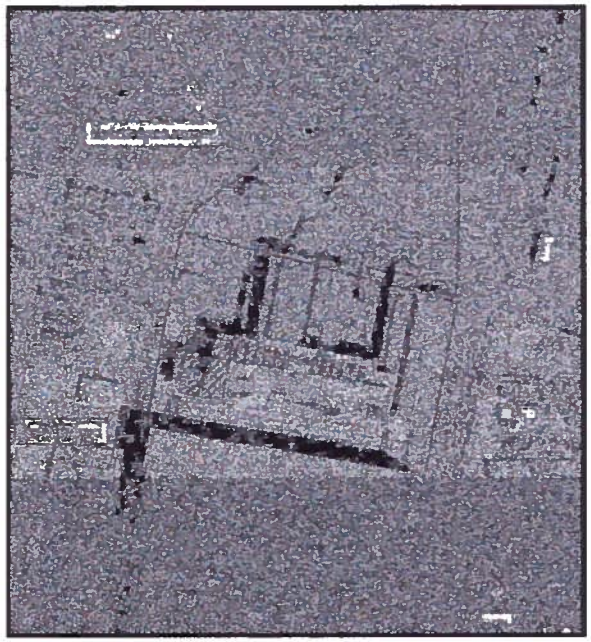
The City Council approved the Master Planning preparation on June 4, 2012. This agreement, in Section 2.1.4, and the Barelas Sector Development Plan both require that a Master Plan must be approved by the Environmental Planning Commission (EPC) before a building permit is issued for any portion of the site. Even though the work proposed in this feasibility study is interim in nature, it will require a building permit. At its May 17, 2012 hearing, the Environmental Planning Commission (EPC) voted to forward a recommendation of Approval to the City Council to amend the text of the Barelas Sector Development Plan (BSDP) for the Historic Locomotive Shops (HLS) Zone, to allow that building permits may be issued for interim uses before the Master Development Plan Approval. The Land Use Planning and Zoning (LUPZ) commission gave the motion a "Do Pass" at the August 15, 2012 hearing. City Council will take action on September 17, 2012.

PART II: SITE AND BUILDING CONDITIONS

A. Site

1. Environmental Studies

The previous uses of the Rail Yards and concern over remaining contaminants have resulted in over 14 studies and remediation work since 1991 and perhaps earlier. The vast majority of these specific sites are south of the major buildings. However, there are a few sites in the open area north of the Blacksmith Shop, referred to in the studies as Area A (also called Tract A). There had been battery storage to the north and immediately west of the Blacksmith Shop, and a sand blasting area about 300 feet north of the Blacksmith Shop. Soil borings, monitoring well installation, and remediation have taken place. Three monitoring wells (MW-6, MW-8, and MW-9) are in the area proposed for parking. It is anticipated that these wells could be capped with markers at grade level as are other monitoring wells on site, so as not to interfere with the parking layout.



Tract A as Noted in the Huang & Associates Environmental Report

Monitoring Well North of Blacksmith Shop

On page 10 of a` report prepared for the U.S. Army Corps of Engineers by Huang & Associates, Inc, page 10, (see Appendix for reference) in June 2010, makes five recommendations for further work in the area where the parking is proposed. In February, 2011, the Environmental Protection Agency (EPA) published information on the AT&SF Albuquerque Superfund Site stating that there had been a final inspection "on January 12, 2011, and the EPA is currently drafting the Preliminary Close-Out Report. This report is scheduled for completion in March 2011 and will document the completion of remedial action construction." It is not clear from the EPA publication if Area A is included in the boundary of the work to which this publication refers.

A summary of a final report prepared for the City by INTERA of Albuquerque, (summary dated 8-29-12, report dated 7/27/2012) describes testing that was done on the site north of the Blacksmith Shop by Acme Environmental, also of Albuquerque. The summary states that "...limited soil contamination is present at the Site from the ground surface to a depth of 10 feet bgs", (below ground surface). Later the summary states, "These contaminated soils may be a source of soil vapor and therefore a passive soil gas (PSG) survey may be needed to assess the potential for vapor migration." The summary also reported that there is lead based paint within the structure of the Blacksmith Shop. It recommends that at a minimum the floors should be cleaned using wet methods and proper disposal of the contaminated water.

A report by Kells + Craig Architects in May of 2005 states that the glazing putty in the windows contains asbestos and will have to be abated.

As part of the project that is the subject of this study, an environmental consultant should be hired to review the status of the Huang & Associates recommendations, and other appropriate studies to determine if any further remediation work is required within the project area prior to construction.

2. General Site Conditions

The entire site is fenced with chain link in various conditions. Currently, pedestrian access to the site is limited as would be expected based upon the historic uses of the site. Vehicle access to the open area north of the Blacksmith Shop is through a gate in the chain link fence toward the north end of the study area, off First Street. First Street is a two-way street at that point. Recently, the First Street extension to the south that connected to Second Street has been closed off. Second Street is currently one-way north in this area. The intention of the work in this area is to return Second Street to a two-way street as a way of slowing down traffic through the residential area.

Within the site, there are no designated drive paths or parking areas. Several tracks run through this portion of the site that delivered train cars to various buildings on the north end of the Rail Yards. There are some power poles and monitoring wells that should be avoided in the parking layout, if possible. Also, currently, this area of the site is being used by movie set constructors both inside and outside of various buildings on this north end.

The following report on Site Drainage was prepared by Jeffrey Mortensen, PE of High Mesa Consulting Group, Civil Engineers. **The figures that are referenced are included in Appendix B.**

DRAINAGE EVALUATION

I. INTRODUCTION AND EXECUTIVE SUMMARY

This project, located in the Downtown of the Albuquerque Metropolitan Area, represents a modification to an existing historic site within an infill area. The site previously supported industrial activities of the Santa Fe Railroad and as such is partially developed with buildings and unpaved staging areas. The drainage concept for this site and its subsequent redevelopment will be the controlled discharge of developed runoff to existing public storm drainage infrastructure, the City of Albuquerque Municipal Separate Storm Sewer System (MS4), located within Second Street SW.

II. PROJECT DESCRIPTION

The site consists of the approximate northerly one third of Tract A, A.T. & S.F. Railway Company Machine Shop as platted by document #96008744 filed in the Office of the County Clerk of Bernalillo County, New Mexico, January 25, 1996, Book 96C, page 44. The site is bounded on the west by Second Street SW, on the north by First Street SW, on the east by the lands of the Atchison Topeka & Santa Fe Railway Co. presently occupied by active railroad bed and tracks. The portion of the overall site being considered by this study is the existing Blacksmith Shop, the Boiler Shop, adjacent sheds and outbuildings and the unpaved yard situated to the north of those buildings. The primary focus of this study is the ability for redevelopment of the Blacksmith Shop and the areas immediately adjacent, plus the development of paved parking within the unpaved yard at the north end of the site. While a detailed plan for the development of these areas requires a comprehensive boundary and topographic survey presently not available, this Study will present guidelines and concepts, future design and development should follow.

III. RESEARCH AND INVESTIGATION

The preparation of this Study relied upon the following activities and efforts:

- Review of Plat of Tract A, A.T. & S.F. Railway Company Machine Shop filed in the Office of the County Clerk of Bernalillo County, New Mexico, January 25, 1996, Book 96C, Page 44, document #96008744. This document

provides the legal description of the property, confirms the status of the adjacent rights-of-ways, and identifies the size of the overall parcel as 27.3169 acres, more or less

- Plan of A.T.S.F. Railway Shops, undated. This original plan document identifies building names for reference in the preparation of this Study
- Plate K14, Albuquerque Master Drainage Study (AMDS) published by the City of Albuquerque, January 1981. This drainage study indicates that the site does not lie within an historic flood hazard zone.
- City of Albuquerque GIS website. This resource identifies that the site is not impacted by a FEMA designated flood hazard zone and suggests that Second Street SW is not impacted by a FEMA designated flood hazard zone. A FEMA designated flood hazard zone does lie along the east side of the railroad tracks that border the east side of the site. The railroad bed appears to adequately protect the site from the designated flood hazard zone.
- Mid-Valley Drainage Master Plan (Draft) by Smith Engineering Company, October 31, 2011. This draft study verifies the presence of a 42-inch public storm drain within Second Street SW and concludes there is no street flooding adjacent to the site in Second Street SW.
- Review of the City of Albuquerque Hydrology Sections drainage files in the City Engineer's Office indicates that there are no prior drainage submittals for this site. As a result, there are no plans of record to provide drainage guidance for the future development of this site
- City of Albuquerque Storm Drainage Facilities Maps published by the City of Albuquerque. These maps identify that the site is potentially served by public storm drainage facilities within Second Street SW. A 42-inch RCP storm drain lies within Second Street SW immediately adjacent to the study area.
- Predesign Conference with City Hydrologist conducted 04-12-2012. The predesign conference, attached hereto for reference, identified critical site constraints and requirements associated with the Downtown Area. The primary outcome of this meeting is the requirement for controlled discharge with a maximum aggregate release rate of 2.75 CFS/acre
- Visual Site Inspection conducted April 10, 2012. This site visit provided a qualitative assessment of site conditions supported by photo-documentation attached hereto for reference.

IV. EXISTING CONDITIONS

The Study Area is characterized by three distinct drainage basins. The North Basin, the largest of the three, consists mainly of the unpaved yard area plus the northerly portion of the Boiler Shop roof area and a few outbuildings. The South Basin consists of the west half of the Blacksmith Shop roof area and the southerly portion of the Boiler Shop roof area. The East Basin, the smallest of the three, consists of the east half of the Blacksmith Shop roof area. Existing Conditions are illustrated by the photo-documentation attached hereto.

The North Basin, due to its relative flatness, is characterized by ill-defined drainage. Based upon visual observation, the North Basin appears to trend slightly from east to west toward Second Street SW. The flatness, however, is conducive to surface ponding and puddling. This is further aggravated by the presence of existing railroad tracks running north-south thereby representing a significant grade constraint illustrated by Figures 1, 2, 5, 9 and 10. Presently, the yard portion of the North Basin is being used for the manufacture of movie props depicted by Figures 4, 12 and 13. Those areas north of the Boiler Shop and west of the Blacksmith Shop lack positive drainage and pond runoff resulting in apparent structural damage to one of the outbuildings documented by Figures 6 through 8.

The South Basin is largely impervious consisting of building roof areas and concrete paved surfaces. The portion of the South Basin that lies to the west of the Blacksmith Shop is a narrow alley that does not drain freely. Visual evidence suggests that runoff entering this area simply ponds. Area drains and roof drains in this space are unmaintained and doubtful that they connect to a working storm drain. The south edge of the South Basin is a concrete dock area along the south sides of the Blacksmith Shop and the Boiler Shop. A series of manholes are located in this area, but unknown if the manholes are for storm drainage or sanitary sewer. It is unknown if these manholes connect to a functioning pipe, or series of pipes, that drains offsite. The conditions of the narrow alley and south dock are illustrated by Figures 14 through 24.

The East Basin consists of the east half of the Blacksmith Shop roof. As shown by Figures 26 and 27, the east half of the roof drains east and discharges via roof drain leaders to the east perimeter of the building. At this point, the roof drain leaders discharge below grade, probably to a dry well or similar feature. Figure 28 depicts this condition of discharge below grade.

There are no apparent offsite flows impacting this site. The railroad bed that lies to the east of the site and shown by Figure 3 effectively blocks offsite flows from the east serving as a de facto berm. First Street SW lies to the north and appears to be topographically lower. First Street SW appears to drain from northeast to southwest to Second Street SW. Second Street SW lies to the west and is also topographically lower than the site. Second Street is fully improved with asphalt paving and curb and gutter. Furthermore, a 42-inch public storm drain lies beneath Second Street SW. Figures 23 and 25 depict several of the public storm inlets within Second Street SW in the proximity of the intersection with Santa Fe Avenue SW. From this point, runoff is carried away from the site to the west within the street network and public storm drain system. The streets are very flat with limited hydraulic capacity. For the most part the Downtown storm drain is "old" and at times undersized and flat thereby possessing minimal hydraulic capacity.

V. DEVELOPED CONDITIONS

The proposed plan for development consists of the renovation of this historic property. The first phase will focus on the Blacksmith Shop.

The proposed development of the North Basin will largely consist of paved parking. In recognition of limited downstream capacity, the detention of developed runoff is required. Designing landscaped planters within the new parking lot will double as water harvesting and storm water detention. The water harvesting component will serve to capture the first flush and thereby treat storm water quality, a growing concern for the City of Albuquerque MS4 and a required element for compliance with its EPA MS4 Permit. Excess runoff can be accommodated on the surface of the proposed parking lot. Ponding within the parking lot should not be a long term concern because the pond will drain at a controlled rate via private storm drain to Second Street SW. The maximum rate of discharge is limited to 2.75 CFS/acre. Locating overflow inlets in each planter area connected by private storm drain piping will work toward these goals. In addition, the new private storm drain should extend into the area north of the Boiler Shop and west of the Blacksmith Shop to mitigate the conditions leading to the damage illustrated by Figures 6 through 8. The private storm drain should extend west to connect to the existing 42-inch public storm drain within that public street. Grade and capacity will likely dictate a manhole connection. A manhole connection will require design and construction via the City Work Order process.

Grading of the parking lot in the North Basin will also need to respect the constraints presented by the existing railroad tracks appearing in Figures 1, 2, 5, 9 and 10; these tracks must remain. Further attention is required at the north entry to the Blacksmith Shop to promote positive drainage away from this area. As documented by Figure 2, it appears that the upstream land may gently slope toward this entry. If the manufacture of movie props is to continue, a dedicated washout area complying with EPA requirements and the Clean Water Act must be incorporated.

The redevelopment of the Blacksmith Shop should address the drainage deficiencies of the South Basin. It is recommended to re-grade and repave the narrow alley for positive drainage. A series of storm inlets located at the low points, commonly referred to as sumps, and connected by private storm drain piping will work toward this goal. The private storm drain should drain to the south toward the south dock along the south face of the Blacksmith Shop and the Boiler Shop. From this point, the private storm drain should drain west beneath the south dock toward Second Street SW. Along this route, the roof drains from the Boiler Shop should be intercepted and connected. Prior to the design and construction of the private storm drain improvements, a comprehensive investigation of the

existing storm drainage system should be conducted. This effort would determine if the manholes, inlets and roof drain leaders documented by Figures 16 through 22 are connected to a viable existing system. If existing improvements are in adequate condition and sized appropriately, retrofitting into the redevelopment design may be feasible. Regardless, an effort should be made to collect the surface and roof runoff discharging into this area and safely conveying it to a public storm drainage outfall.

The East Basin has limited opportunity for change as it consists of the east half of the Blacksmith Shop roof area. Presently, as illustrated by Figures 26 through 28, the east roof area drains via existing roof drain leaders to discharge below grade at the east face of the building. It is recommended that this existing condition not be changed unless there is a compelling structural reason. If changing the method of roof drain discharge is necessary, the drainage must be diverted to the North or South Basins; surface discharge per the Predesign Conference recap will not be allowed as it would result in discharging runoff onto an adjacent private property.

VI. ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST

(Note: These estimates are incorporated into the construction cost for the Blacksmith Shop in Part V: Recommendations and Estimates.)

The Preliminary Engineer's Estimates that follow are based upon schematic level investigations and not based upon a comprehensive design effort that would include a boundary survey, a topographic survey, subsurface utility engineering, drainage studies and preliminary and final design review. Instead, a concept has been identified based upon reasonable assumptions for required private drainage infrastructure. Drainage items and unit prices are based upon the City Engineer's Estimated Unit Prices for Contract Items 2009. Quantities are scaled from a preliminary sketch. Total estimated construction costs incorporate a 20% contingency and 7% NMGRT. The totals for each Basin have not been combined in the event that the recommended improvements are phased.

<u>The Preliminary Engineer's Estimate for the North Basin is based upon the following assumptions:</u>

- Each of the four landscaped planters in the proposed parking lot will contain a to receive overflow runoff above the water harvesting level
- The area north of the Boiler Shop and west of the Blacksmith Shop will contain a single 'D' storm inlet to provide positive drainage
- Each of the above storm inlets will be connected by 18-inch RCP, Class III, storm drain pipe at a minimum slope of S = 0.0050

- The above referenced 18-inch RCP storm drains will connect to a 24-inch RCP, Class III, backbone storm drain that flows west to connect to Second Street SW
- The connection of the 18-inch storm drains to the 24-inch storm drain will be accomplished by a -foot diameter storm drain manhole
- The connection of the 24-inch storm drain to the existing public 42-inch storm drain in Second Street SW will be accomplished by a 6-foot diameter storm drain manhole
- A lump sum $10,000.00 has been allotted for the street cut and restoration

The Preliminary Engineer's Estimate for the South Basin is based upon the following assumptions:

- The narrow alley along the west side of the Blacksmith Shop will be drained by three single 'D' storm inlets
- The single 'D' storm inlets will be connected by 18-inch RCP, Class III, storm drain pipe at a minimum slope of S = 0.0050
- The 18" RCP will drain south from the narrow alley to the south dock where it will change direction and flow west toward Second Street SW; the change in direction will be accomplished by a 4-foot diameter storm drain manhole
- The 18-inch RCP, Class III, storm drain will continue west under the concrete dock surface toward Second Street SW at a minimum slope of S = 0.0050
- An additional 4-foot diameter storm drain manhole is required between the narrow alley and Second Street SW because the total length of run exceeds 450 feet
- The connection of the 18-inch storm drain to the existing public 42-inch storm drain in Second Street SW will be accomplished by a 6-foot diameter storm drain manhole
- A lump sum $10,000.00 has been allotted for the street cut and restoration
- A lump sum $15,000.00 has been allotted for connecting the existing roof drain leaders to the new 18-inch RCP storm drain
- The installation of the 18-inch RCP storm drain beneath the south dock surface will require neatly sawcutting, removing and disposing existing concrete paving, approximately 6-inches thick, for a width of 4-feet
- The above referenced removal of concrete paving will be replaced with 6-inches of 3000 psi concrete

No Preliminary Engineer's Estimate has been prepared for the East Basin as no changes are recommended as part of this Drainage Evaluation.

VII. CONCLUSIONS

The following conclusions related to drainage have been established as a result of this evaluation:

- The site does not lie within a FEMA designated flood hazard zone
- Site is located in the Downtown Area and as such is limited to a maximum allowable discharge rate of 2.75 CFS (cubic feet per second)/acre in the aggregate
- Direct discharge to the existing public storm drain in Second Street SW is recommended
- Discharge to the existing public storm drain in Second Street SW can be accomplished via Work Order for connection to the 42-inch RCP (reinforced concrete pipe) via manhole connection or Special Order #19 (permit) for connection to an existing storm inlet
- The ability to connect to an existing storm inlet will be limited by grade; discharge via manhole connection should be anticipated
- The detention of developed runoff in then parking lot with controlled discharge to Second Street SW is permissible
- Water harvesting within landscaped planter areas is required to address storm water quality issues
- The use of permeable pavements is encouraged and should be investigated in an effort to address storm water quantity and quality
- Concrete washout areas, if included as part of the Plan, must conform with EPA requirements and must be contained onsite; discharge of concrete washwater to the City of Albuquerque MS4 is prohibited
- A boundary survey, topographic and utility survey, and subsurface utility engineering consultation to establish detailed existing conditions data are required to support subsequent design efforts
- A Master/Conceptual Drainage Plan conforming to DPM requirements is required for Site Plan approval
- A Grading and Drainage Plan conforming to DPM requirements is required for Grading and Paving Permit approval
- Special Order (SO) #19 Permit approval is required for connections to public storm inlets in public right-of-way
- Work Order approval is required for storm drain connections to public storm drain lines or manholes within public right-of-way
- A Grading and Drainage Plan conforming to DPM requirements is required for Building Permit approval

B. Building

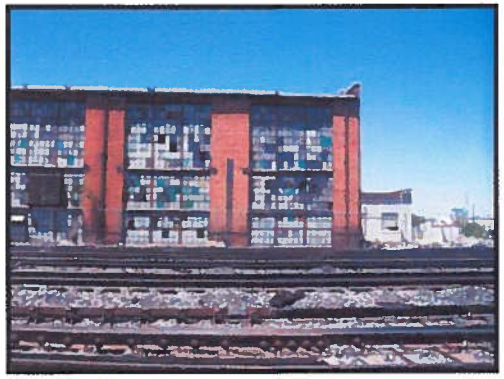
1. Architectural

The Blacksmith's Shop is a basic rectangle, 80 x 306 feet. It covers a total of 24,480 square feet. The interior area is 23,150 +/- square feet. No drawings of the Blacksmith Shop have been located in Albuquerque. City Preservation Planner, Ed Boles, has drawings of some of the Rail Yard buildings, but none of the Blacksmith Shop. The structural system is steel trusses on steel columns with brick infill on either side of the columns. Large window openings with small paned frames are a predominant feature of the building. The floor is exposed concrete. (See the Structural System section below for more information on the building shell).

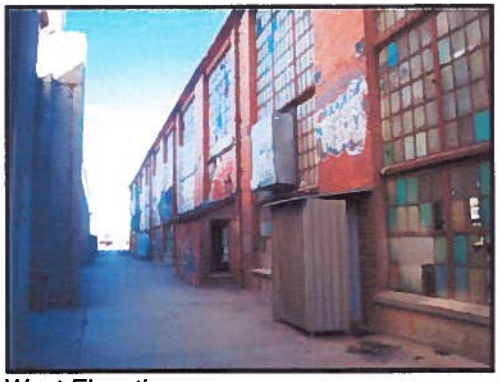
North Elevation

South Elevation

Several features of the original use are in place and should remain as historic features. A small office is located on the center of the west wall and opens to both the interior and the exterior. A forge is located in the southeast corner of the building. Two of the original exterior urinals are intact on the west wall.

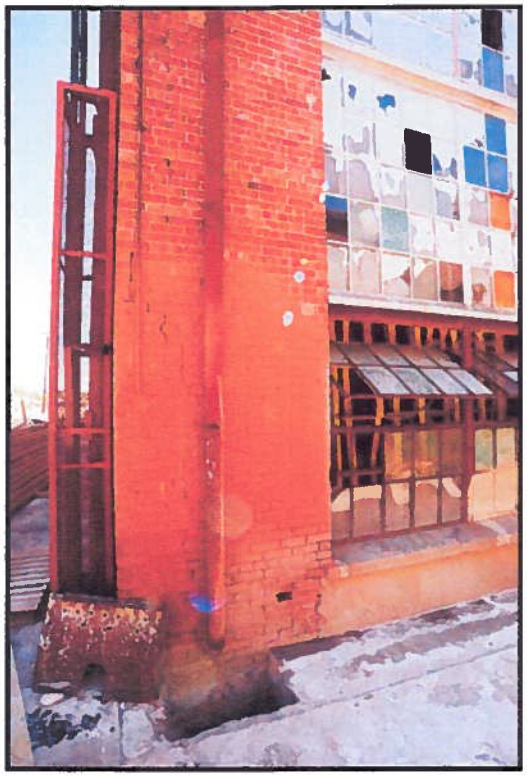


Partial East Elevation



West Elevation

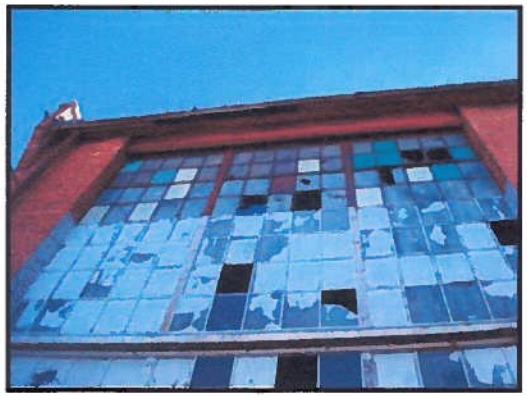
The condition of the building shell is remarkably good considering its age and years of neglect. The brick on the north façade has been grafittied and the parapet caps have been removed. The original central window has been removed on the north façade, and the circle has been filled in with brick. This feature is intact on the south facade.

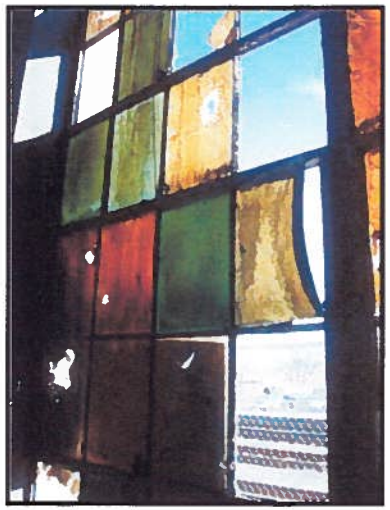


The northwest corner of the building has been damaged by the drain at that corner. Some brick on the west side has been damaged at the sill. Much of the brick throughout the building needs cleaning and repointing. The removal of the parapet caps on the north wall have left the brick cavity open to weather damage.

The age of the roof is not known. Originally, the building had a raised light monitor running north-south. That monitor was removed. The existing roofing is cracked in several places. Since the deck needs repairs, the entire roof will need to be replaced, this is a good opportunity to add insulation, and restore the light monitor.

There are fibers showing in the roofing materials that need to be checked for asbestos.





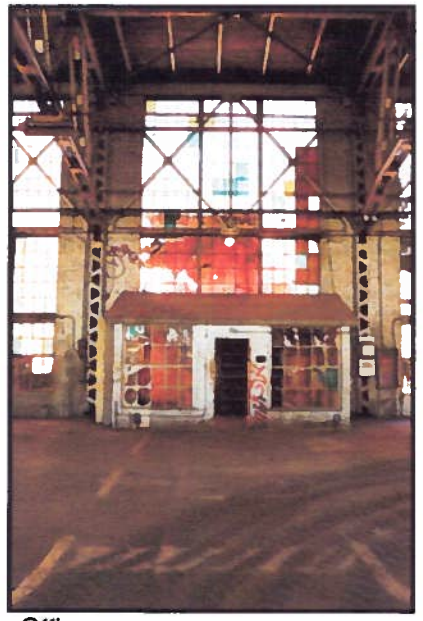
The window panes have been broken and replaced in some cases with plastic in a variety of colors. Some panes are missing completely. It has been reported that the window putty contains asbestos. If asbestos is confirmed, it will have to be mitigated.

The window frames are metal and need refurbishing. Some of the pivoting windows still operate. It is estimated that approximately 20 percent of the panes need to be replaced (assuming retention of intact plastic panes).

The interiors of the building are virtually unchanged from the original layout. The former office is damaged, but its original layout is clear. It allowed access to both the operating floor and the west passageway. The original railroad service tracks run north-south down the center of the building.

Interior Looking South

Interior Looking North



Office

ADA and other code accommodations will be required for permanent occupancy. They will include the installation of toilets and drinking fountains. The floor at the railroad tracks must be leveled to the top surface of the tracks to avoid a trip hazard. Accommodations for other code issues are addressed in Part III: Code Analysis.

Much of the walls, floor, and structure are grimy and in need of power washing. Many generations of now dysfunctional mechanical and electrical items are mounted in various locations.

2. Structural Systems

The following report was prepared by George Bradley, PE, Chavez-Grieves Engineers. Estimates with that report are included in Section V: Recommendations and Estimates

STRUCTURAL EVALUATION

I. STRUCTURAL SYSTEM DESCRIPTION

Roof: The roof structure is constructed of wood planks and wood beams supported by steel purlins. The steel purlins are supported by steel truss frames spaced at 23'-4" +/-. See Sheet S-101 in the Appendix for the roof framing plan and sheet S-102 in the Appendix for a typical elevation of the steel truss frames.

Exterior Walls: The exterior walls are constructed of unreinforced fired clay brick. There are numerous openings for windows and doors throughout the structure.

Foundation: The foundation is most likely concrete spread footings and/or concrete pile caps supported by driven wood or steel piles.

Lateral System: The lateral system (used to resist seismic and wind loads) consists of the exterior walls transferring the lateral load to the roof, truss, and foundation. In the east/west direction, the roof lateral load is then distributed through the steel horizontal braces to steel truss frames and into the foundation. In the north/south direction, the roof load is distributed through the steel horizontal braces to vertical steel bracing adjacent to the east and west exterior walls, then into the vertical legs of the truss frames, and then into the foundation. Although difficult to quantify, the exterior walls also provide some additional lateral stability.

II. STRUCTURAL SYSTEM CONDITION

The overall structural condition of the building is fair. The current conditions of the structural components are as follows:

Roof Deck: The roof decking is constructed of wood planks that are supported by wood beams. There are a number of rotted planks that will need to be replaced. A rough estimate is that 10% of the planks and beams will need to be replaced due to rot and deterioration. The primary reason for the deterioration of the decking appears to be water leaking through the built-up roof over an extended period of time. The structural condition of the roof decking is poor to fair.

Steel Truss Frames: The majority of the steel components, including the trusses, bridging, bracing, and beams are galvanized, and therefore, are in good condition – especially considering their age. However, there are some areas that are showing some minor corrosion and rust. We recommend that all of the trusses be power washed to remove the dirt, grime, and any loose scale. The cleaning will uncover the areas of corrosion and rust that will need to be repaired. Re-galvanizing of these areas will be required.

Exterior Walls: The exterior walls are constructed of unreinforced fired clay brick. There are numerous areas where the mortar between the bricks has deteriorated. Also, some of the bricks are damaged and/or deteriorated and the concrete parapet caps at the north and south walls are in poor condition or are completely gone. A number of these items will need to be replaced and/or repaired. The structural condition of the exterior walls is poor to fair.

Slab-on-Grade: The slab-on-grade is in good structural condition. However, there are some existing railroad tracks running the length of the building. Depending on the final use of the structure, some areas around the tracks may need to be leveled to avoid tripping hazards. Also, the finish on the slab is rough, which may cause an issue with placement of some floor coverings.

Foundations: The foundations are not visible. However, there are no signs of any significant settlement of the structure. Based on this, the foundation system appears to be performing well and therefore appears to be in good condition.

III. CODE ANALYSIS

A structural building code analysis has been performed on the existing building.
The applicable building code references in effect at the time of this assessment are as follows:

2009 International Building Code (IBC)
2009 International Existing Building Code (IEBC)
ASCE (American Society of Civil Engineers) 7-05: Minimum Design Loads for Building and Other Structures
AISC (American Institute of Steel Construction) Steel Construction Manual, 13th Edition

Based on information provided by the Architect, this structure can be analyzed as a Historic Building. The building code provides specific requirements for the repair, alteration, or change of occupancy of Historic Buildings. These requirements are typically more lenient than the requirements for non-Historic Buildings. This is primarily because it is the intent of the code to provide a means for the preservation of Historic Buildings, while still assuring that the buildings are safe.

Based in Chapter 9 of the IEBC, "CHANGE OF OCCUPANCY", any building that is changing uses to a higher occupancy category or a higher hazard category shall comply with the current seismic requirements of the IBC. The occupancy category is proposed to change from level II to level III, which is more restrictive. Also, the use of this building is being proposed to change from an occupancy classification F-2 (Factory Industrial – Low Hazard) to occupancy classification A (Assembly). Based on Table 912.4 of the IEBC, occupancy classification A is a more hazardous category than occupancy classification F-2. Based on these items, the code requires the building to be upgraded to current code seismic provisions.

However, there is an exception for Historic Buildings. Chapter 11 of the IEBC, "HISTORIC BUILDINGS", section 1101.2, states that a Historic Building that is undergoing a change of occupancy, shall be investigated and evaluated. A report shall be prepared and filed with the code official by a registered design professional describing which safety features of the building are in compliance with the current code, and which current code safety features would damage historic features of the building. In addition, if the building is in a Seismic Category D, E, or F, a structural evaluation is required describing, at a minimum, a complete lateral load path and other earthquake resistant features of the building. Based on our past experience in the downtown Albuquerque area, we would anticipate that this building will be in a Seismic Design Category D, therefore requiring this structural evaluation.

Section 1106 of Chapter 11 of the IEBC also states that if the code official (presumably per the recommendation of design professional) determines that a structural component or portion of the building is dangerous as defined in Chapter 5 of the IEBC, it shall be repaired. Dangerous conditions are not allowed by the building code.

From our site observations of the building, we have determined that 1) there is a lateral load path and 2) there are no current dangerous structural conditions. However, if the roof wood planking is allowed to continue to deteriorate, it will eventually develop into a dangerous condition.

As part of the proposed renovations of the building, the existing roof will be removed and replaced with a new roof and new mechanical units may be placed on the roof. The original building apparently had a clerestory structure on the roof that was removed. The weight of this clerestory structure is likely similar to any proposed mechanical units, as long as they are smaller units distributed over the roof area. Preliminary calculations of the roof truss gravity load capacity shows that there is additional capacity above the actual roof dead and design roof live loads. In addition, Chapter 6 of the IEBC, section 606, states that if additional dead load from a new roof or new mechanical equipment does not increase the force in a structural element by more than 5 percent, then the structural element does not need to be analyzed or upgraded. The proposed new roof will weigh less than the existing roof and it is highly unlikely that the mechanical units would increase the forces in the roof support members by more than 5 percent if the units are smaller units distributed over the roof. If a single, large boxcar type mechanical unit is to be proposed to be placed on the roof, the chances of structural upgrades of the roof elements will increase substantially, and therefore is not recommended. Large mechanical units should be placed on the ground.

Chapter 6 of the IEBC, section 606.3.1, requires bracing of unreinforced masonry bearing wall parapets in a Seismic Design Category D, E, or F. Since this is a Historic Building, the bracing is not technically required. However, since the roof bracing would be hidden from view, and in our opinion would not affect the historic fabric of the building, we recommend that the bracing be installed. The bracing would consist of a continuous steel angle bolted to the back of the parapets, with steel angle diagonal braces at 48" on center, connected to the continuous angle and to the roof structure.

Therefore, based on our interpretation of the building code as related to Historic Buildings, upgrades to the existing structural system of the building are not required. However, there are some required repairs and modifications.

IV. REQUIRED STRUCTURAL REPAIRS/MODIFICATIONS:

1. Replacement of deteriorated wood roof components (planks and beams).
2. Replacement of deteriorated brick, re-pointing of mortar, and replacement of parapet caps.
3. Power washing of exposed steel components.
4. Re-galvanizing of rusted/corroded areas.
5. Leveling of slab-on-grade at railroad tracks.
6. Repair of roof horizontal bracing at three locations. See Sheet S-101 in Appendix C.
7. Steel framing for mechanical openings for new roof top units or new wall openings for on-ground mechanical units.
8. Parapet bracing, north and south walls.

3. Plumbing & Mechanical Systems

The report on the plumbing, HVAC, and site utilities follows. It was prepared by Dan Harmeyer, PE, of Harmeyer Nellos Engineering, Inc. See Appendix D for Site Drawing.

PLUMBING AND MECHANICAL SYSTEMS DESCRIPTION

I. OVERVIEW

A. This section will provide assessment of the site and building plumbing and mechanical systems including existing conditions of the building's plumbing and mechanical systems; existing site water, sewer and natural gas utilities; building development plumbing systems needs; and building heating, ventilating and cooling system needs. Expected future development of the building would be for a special events center such as a growers' market, art market, or musical performances and rental space.

II. EXISTING SYSTEMS

A. BUILDING PLUMBING SYSTEMS

1. There are no existing restroom facilities in the building. There are several outdoor urinal stations along the west side of the building. These discharge to below ground. It is unclear whether they discharge into sewer piping, to dry well type receptors, or other. These facilities are unusable.

2. External roof drain piping discharges to below ground. It is assumed that they drain to a storm drainage system. See civil site drainage section for more information.

3. There appears to be no sanitary sewer system or piping inside the building. All interior fixtures with drain connections that were found drain to outside the building above ground, possibly into the same drainage system as the external urinals or roof drains.

4. There is a small amount of domestic water piping inside the building. Most fixtures have been removed. The piping is inactive and in very bad condition. None of the existing piping or fixtures is useable.

5. There is extensive natural gas piping throughout the building. Most of the appliances and equipment that were supplied by the piping has been removed or disconnected. Natural gas piping also extends from this building to other buildings to the west and north. The natural gas piping appears to all be inactive. A natural gas meter site was not located; it appears the entire Rail Yard had been served from a central meter.

6. There is also steam and condensate piping that enters the building from the southeast corner overhead and extends through the building and to other buildings to the west and north. The steam system piping appears to be inactive.

7. None of the existing plumbing piping or systems is useable for future development of the building. It will all need to be removed.

B. EXISTING HEATING AND COOLING SYSTEMS

1. Heating for the building was provided by high intensity natural gas fired radiant heaters. There are approximately 43 of them distributed throughout the building at approximately 20' above the floor. They are in very poor condition and are probably not useable.

2. Cooling was provided by eight large (approximately 48" diameter) sidewall mounted propeller ventilation fans with evaporative cooler sections added on the exterior of the building. The evaporative cooler media, pumps, piping, etc. have been removed. The large propeller fans remain. They are in very poor condition. It is probably not feasible to reuse or refurbish them for future building development.

C. EXISTING SITE WATER, SANITARY SEWER AND NATURAL GAS UTILITIES

1. A very old site plan that was provided indicates an existing 8" water line on site north of the building from 2nd Street, and continuing extended to the north. Connection to the building from this water line is not clearly shown on the drawing. During site observation I was not able to determine the source of the domestic water to the building. The existing water piping and service is expected to be in very poor condition and unusable.

2. A line of manholes extend from southwest of the building toward Second Street, however they do not appear to extend all the way to Second Street. It is unclear if the manholes are for a sanitary sewer system or storm drainage system. If it is a sanitary sewer system it is expected that the piping is in very poor condition and unusable.

3. A 4 inch natural gas line enters the building at the southeast corner. No other natural gas piping is evident on site outside the building. The future development plan for the building would indicate that a new separate gas service and meter will be required.

III. NEW DEVELOPMENT

A. SITE WATER AND SANITARY SEWER UTILITIES

1. Any existing sanitary sewer or water utilities on the site are considered unusable. New services will need to be extended to the building. A Water and Sanitary Sewer Availability Statement (#111202) has been provided by the Albuquerque Bernalillo County Water Utility Authority. This document states that water and sanitary sewer services are available at Second Street.

2. Domestic water service for the intended special events center as an assembly occupancy will require a 2-3 inch water line if the building requires permanent restroom facilities.

3. Sanitary sewer service will require a minimum of a 4 inch sewer line.

4. If the future development will require that the building be provided with a fire suppression sprinkler system a separate 4-6 inch water line extended from a public line will be required. If new fire hydrants will be required on the site the building fire sprinkler system would be extended from the same source. See the civil section for further information on required fire hydrants.

5. Connections to the existing services in Second Street will require approximately 510 feet of piping in a utility trench. Attached is a site map indicating the expected routing of the sanitary sewer, domestic water and fire suppression water services.

B. NATURAL GAS SERVICE

1. New natural gas service, including a new meter, will need to be provided. New Mexico Gas Company stated that gas service is available from Second Street. New Mexico Gas Company will provide service up to the building and set the new meter. The development contractor will extend natural gas from there into the building.

A. HEATING VENTILATING AND COOLING

1. A constant supply of ventilation outside air will need to be delivered to the space during occupied periods. The intended future development of the building as a special events center would require approximately 8000 cfm of ventilation air for the approximately 24,000 square foot building. The ventilation air could be supplied from new ventilation air systems at some of the existing ventilation exterior openings. Flexible air ducts (Duct Sox) could be used to distribute the ventilation air evenly throughout the building.

2. Heating could be provided to the expected open space plan with low intensity natural gas fired radiant tube heaters. They would be suspended at approximately 12' above the floor. Approximately 800,000 Btuh of heating would be required for the approximately 24,000 square foot building, dependent on the thermal characteristics of the new development construction and building type designation. Temperature control devices and occupancy sensors would be provided to control the comfort environment.

3. Evaporative cooling would be a logical cooling system type for the intended future development as a special events center as an open area assembly space. Exterior sidewall evaporative coolers with large propeller fans similar to the existing coolers could be provided at the existing ventilation building openings to duplicate the historic system type. Alternately a mister type system could be utilized. Either system would include roof mounted powered relief fans to exhaust the air

4. Electrical Systems

The power needs for the building were based upon the power that is currently provided at Civic Plaza for special events. The following report was prepared by Al Pielhau of The Response Group, our electrical engineering consultants. The estimates for the work can be found in Part IV: Recommendations and Estimates.

ELECTRICAL BUILDING ASSESSMENT/FEASIBILITY STUDY

A. Building Electrical Condition Assessment

1. There is not electrical service to the building.
2. The existing panelboards have been gutted.
3. The existing conduit system is old and damaged and not supported from structure as required per recent NEC.
4. All of the feeder and branch circuit conductors have been removed.
5. No emergency lighting exists.
6. The existing high bay lighting fixtures are old and damaged. Could not tell if the fixtures will operate. Fixture ballast may have to be checked for PCBs (Polychlorinated Biphenals).
7. All the existing equipment is old and missing major items and could not be renovated and meet UL listing requirements.

B. Electrical Construction Upgrade

1. A new PNM electrical service will have to be extended to the Blacksmith Shop from 2nd Street SW. The existing electrical pole line that runs North to South along the West fence is owned by Burlington Northern & Santa Fe railroad and is not energized. The new service would include the extension of a new pole line for the PNM primary service, pole riser, underground conduit to transformer location and a pad mounted transformer.

2. The new service size is calculated using 2- 400 amps services disconnect switch for performance connection points. 39 – 250 watt Metal Halide high bay fixtures with restrike lamps. 1000 amps distribution panel with two 100 amp branch circuit panels. Mechanical equipment connections.

3. The lighting package would include 39 high bay fixtures, 10 exit signs, 10 emergency battery egress fixtures, 8 exterior fixtures with emergency battery backup for egress lighting, conduit, conductors and control switching.

4. General receptacles, mechanical equipment connections and miscellaneous electrical items.

5. Exterior lighting package would include 7 – 15' pole fixtures at sidewalk entrance to building and 9 – 25' parking lot fixtures, pole base, conduit, conductors and controls.

6. Fire alarm detection system would include main fire alarm panel, pull stations, horn/strobes, laser type smoke detectors, exterior horns/strobes, conduit and cabling.

7. Intercom system as needed with includes speakers, amplifier, microphones, conduit and cabling.

A less costly approach to new electrical service is described below:

Electrical Construction Upgrade (Cost Savings Model Dated 7-25-2012)

1. A new PNM electrical service would have to be extended to the building site. Cost not included in the project.

2. The new service size is calculated using 120/208 volt, 400 amps services disconnect switch with a 400 amp circuit breaker panel, 14 – 250 watt Metal Halide high bay fixtures with restrike lamps. 4 – 30 amp & 2- 50 amps 120/240 volt receptacle for bands (size of load is based on small local bands, not large performances) general receptacles and mechanical equipment connections. Estimated Cost: **$12,300**

3. The lighting package would include 14 high bay Metal Halide fixtures, 10 exit signs, 10 emergency battery egress fixtures, 8 exterior fixtures with emergency battery backup for egress lighting, conduit, conductors and control switching. Estimated Cost: **$10,500**

4. General receptacles, mechanical equipment connections and miscellaneous electrical items. Estimated Cost: **$9,500**

PART III: CODE ANALYSIS

In this section, we present the basic code information. Any code analysis prior to the specific design of a building is limited by the fact that many code requirements relate to specific design arrangements. Therefore, this code analysis will only cover the major issues that lead to limitations on uses. Specific interpretations on code requirements will occur during the design phase of the project.

The major applicable codes governing the Blacksmith Building are the International Building Code, 2009, (IBC 2009) and the International Existing Building Code, 2009 (IEBC 2009). Other codes apply regarding the Americans with Disabilities Act (ADA). Plumbing codes, electrical codes, and others also apply. Some of these codes are discussed in the engineering reports in Part II.

The Blacksmith Shop meets the definition of a Historic Building (see IEBC 2009, Section 309).

A. Pertinent Building Data

- The building's dimensions are 80 x 306 feet. It covers a total of 24,480 square feet. The interior area is 23,150 +/- square feet.

- The original "Use and Occupancy Classification" is presumed to be F-2, Factory Industrial, Low-hazard Occupancy that mentions "Foundries" specifically.

B. Proposed New Uses

- Art or growers' markets are considered to be Mercantile Group, M Occupancy. Occupant load is calculated at 30 gross square feet per occupant for at grade floors (IBC 2009 Table 1004.1.1). Maximum occupant load for art or grower's market will be 771 occupants.

- Performance space without fixed seats is defined as Assembly, A-3 Occupancy. Occupant load is calculated depending on space layout. For the purposes of this report, we use 15 net square feet per occupant. Assume 1,500 occupants. (Note: Refer to Sections G and H below for limitations on this number due to number of exits provided.)

Note: There is an Assembly, A-2 Occupancy, that would allow for a standing room concert at 7 square feet per occupant. This occupancy type would allow for 3,308 people. This type of use is **not recommended** because providing exits for that number of people would be very difficult given the location on the property (see discussion below) and the changes

necessary to the historic building. While the parking requirements (see Zoning requirements) do not apply to a building of this age, practically speaking there is not sufficient site for parking for A-2 Occupancy. In summary the A-2 Occupancy is too dense for this building and study area site.

C. Specific Code Issues

1. Change of Occupancy for Historic Buildings

When an existing building is being remodeled to accommodate a change of occupancy, the change triggers the requirement that the remodeled building must meet the current code requirements of the new occupancy (IEBC, Chapter 9, Change of Occupancy). Because the building is eligible for the National Register of Historic Places (NRHP), the Building Official (IEBC 2009, Section 308, Historic Buildings and IEBC Section 1105.1) may make exceptions, provided "such buildings are judged by the building official to not constitute a distinct life safety hazard."

2. Type of Construction

Based upon its steel frame, brick walls, and heavy timber roof deck, the building is Type IIB (see IBC 2009, Section 602.4.5). The roof deck, in order to comply with the exceptions will require the addition of 5/8" plywood, nailed to the existing wood deck. The roof deck will need to be protected by an automatic sprinkler system.

3. Allowable Building Heights and Areas

Table 503 of the IBC 2009 for Type IIB allows:
A-3 Occupancy 9,500 square feet, 2 stories, maximum height 55'
M Occupancy 12,500 square feet, 2 stories, maximum height 55'

The building is compliant with these allowable heights, but the areas are less than the area of the Blacksmith Shop. However, if the building is sprinkled, the allowable areas can be increased by 300% (Table 506.3, IBC 2009). The addition of sprinklers allows areas as follows:
A-3 Occupancy 28,500 square feet
M Occupancy 37,500 square feet

Therefore, the addition of sprinklers allows for an area increase beyond that needed for this building. The building may not be heated when not in use (see Energy Code), therefore the sprinkler system should be a "dry pipe" system (the system is not charged with water until activated).

4. Location on the Property

The east edge of the building is almost on the east property line. Active train tracks are adjacent. The north edge of the building is open to the north where parking and major public access is proposed. The south edge of the building is approximately 24 feet from the edge of the Transfer Table, an area recessed about 4 feet. The west edge of the building is approximately 17 feet from the building located to the west, called the Flue Shop.

Access to the Blacksmith Shop for fire trucks is currently limited to the north side. There can never be fire truck access to the east side of the building because of the active railroad tracks. For the temporary use that is being considered here, this single access may possibly be negotiated with the Fire Marshall. However, this limited fire truck access will have to be expanded in the future when adjacent areas of the Rail Yards are developed. It may be possible to negotiate access to the south side of the Blacksmith Shop for a fire truck along the walkway south of the Transfer Table, provided there is an area for the truck to turn around. Perhaps, when the larger Master Plan is being negotiated with the Fire Marshall and the State Historic Preservation Officer, a portion of the east end of the Transfer Table can be filled enough to allow for a fire truck to turn around, or cross to the south side of the Transfer Table. This crossover should include a designated pedestrian exit path to reach the south side of the Transfer Table.

The Flue Shop to the west is 17 +/- feet away from the Blacksmith Shop. Neither building has fire-protected walls. That distance is closer than current codes would allow in new buildings (IBC 2009, Table 602: 30 feet of separation is currently required without fire-rated walls). The reason for this required separation is to prevent fire from traveling from one building to another. In a preliminary meeting with representatives of the Fire Marshall and Code Official's offices one possibility discussed was to sprinkle the space between the two buildings. The sprinkler would be activated by a fire alarm in either building. Addressing the protection of buildings this close together would be a Prescriptive Compliance (see IEBC 1105.B). Another alternative is to add roll-down fire shutters at openings in both buildings, and the addition of a fire detection system in the building to the west. Both of these solutions are far more expensive than the temporary budget allows.

5. Exiting

The north exit of the Blacksmith Shop is open to sufficient area to allow access to an Area of Safe Dispersal and/or a public street. The south exit must conduct occupants to an established "Public Way" that connects to 2nd Street. The east

wall can have no exits because of the railroad tracks. The west wall has doors, but these doors open to an unprotected passage noted in Item F above.

If an Area of Safe Dispersal is required for 1,500 occupants, it would need to be 7,500 square feet (IBC 1027.6), and it cannot be in a parking lot. It would have to be designated in the open area adjacent to the west parking lot.

Exiting to the south of the Blacksmith Shop requires negotiation with the Fire Department. The existing walk to the south of the building is approximately 22 feet wide. But, it narrows down to 10 feet for a distance of about 25 feet in one place. This narrowing is a concrete block addition that does not appear to be part of the historic building. The required "Public Way" must be a minimum of 10 feet away from an unprotected wall, which applies to the south wall of all the buildings to the west of the Blacksmith Shop. This walk has many tracks crossing it. The adjacent concrete would need to be leveled to prevent a trip hazard.

For temporary use of the Blacksmith shop, it may be possible to negotiate the existing walk on the north side of the Transfer Table as a Public Way to 2nd Street with Code Officials and the Fire Department. There will have to be a railing installed for the full length of the pathway along the Transfer Table to 2nd Street. If the Blacksmith Shop is used at night, the exit path would have to be lit. However, for long term use and future development, this exiting path and fire truck access to the area of the site will require a permanent solution.

6. Numbers of Exits

The maximum number of occupants allowed for retail uses is 771 (see proposed new uses). The number of occupants for assembly, that will govern in this case, is 1500. Table 1021.1 of the IBC 2009 dictates a minimum of 3 exits for an occupant load of over 500 and 4 exits for an occupant load over 1000. If only two exits are provided in a temporary scheme, then the maximum occupancy will have to be less than 500.

7. Exit Width

Section 1005 requires a total exiting width for 1500 occupants of 309 inches. Eight 42" doors provide 336 inches. Each of the 4 exits would have 2 x 42 inch wide doors. The existing north and south entrances would be refurbished as is, and are not suitable for emergency exits. The lower section of existing windows on the edges of the north and south façades can be converted to these required exits with the SHPO's approval. Note that the existing exits on the west wall cannot meet the requirements for emergency exits because that passage way is not fire rated (refer to discussion of this corridor Item F above). Also, the existing large east and west doors do not meet emergency requirements. They will have to be open whenever the building is occupied if no other new doors are installed.

8. Openings

Openings such as windows, cannot be located in a wall on the property line according to code. This provision is to prevent fire at one property from moving to another property. The Blacksmith Shop has many windows on the east side on the property line, adjacent to active tracks, and an equal amount of windows to the west. The large windows are a major feature of the building and should remain in place. On the east side, there will never be another building because the railroad track is immediately adjacent to the east, although a fire in a railroad car could present a threat to this building, but that event seems rather unlikely. Whether these windows could be allowed to remain as openings as an exception to the Code would be up to the designated Code Official.

As a mediating feature, fire rated, roll-down shutters could be added to all the windows on the property line and the west side. To preserve the historic appearance of the building, these roll-down shutters should be applied to the interior of the building. They could be controlled by the fire detection system. For temporary use, this solution would be far too expensive.

9. ADA Issues

Given that the two desired occupancy types are open to the public, all ADA codes must be met (Section 310). The building entrances are at grade. The existing tracks that should remain to reinforce the historic nature of the building do need to have the adjacent concrete floor leveled and patched to avoid a trip hazard. New restroom facilities and drinking fountains should be installed, and are discussed later in this chapter.

10. Energy Code

It may be difficult to meet the current energy code because the building is un-insulated and has many windows. Possible negotiating points that might address the intentions of the current energy code would be that the building would only be heated and cooled when occupied; that the heating would be radiant heating (heating the people and not the space), and cooled with air handlers with evaporative cooling, the most energy efficient type. Heating and cooling could be manually operated or by occupancy sensors.

11. Restroom And Other Plumbing Facilities Requirements

According to IBC 2009, Table 2902.1, the following numbers of plumbing fixture accounts.

Occupancy	W.C. and Urinals	W.C.	Lavatories	Lavatories	Drinking Fountains	Other
	Male	Female	Male	Female		
M (Mercantile) 771 Occupants (half male and half female)	1 per 500: 2	1 per 500: 2	1 per 750: 2	1 per 750: 2	1 per 1000: 1	1 service sink
A-3 Assembly without fixed seating; 1500 (half male and half female)	1 per 125: 6	1 per 65: 12	1 per 200: 4	1 per 200: 4	1 per 500: 3	1 service sink

In addition to the above fixtures, a handicapped accessible Family Restroom will be required for A-3 Occupancy.

Note that the Assembly occupancy numbers are based upon what the building can hold by building code.

12. Fire Hydrants

For permanent use the following are required: Two hydrants that must be within 300 feet from the farthest portions of the building. This requirement is as the truck rolls.

For temporary use and special event use, approvals will be given on a case-by-case basis. The Fire Marshal will make a determination on required standby depending upon the event.

On August 2, 2012, a site visit of the Blacksmith Shop was conducted by Mayor Berry to allow City Fire and Code Officials to become familiar with the condition of the building. On August 6, 2012, there was a meeting to discuss possible ways to meet fire and safety requirements with a temporary solution. The notes from that meeting are included in Appendix E.

For Temporary Scheme 1, the Event Sponsor will have to work with the City Fire Marshall to determine the type of emergency equipment required at the site. There are two fire hydrants on the adjacent streets to the west, but both are more than the required 300 feet from the farthest portion of the Blacksmith Shop (this requirement is as the truck rolls). Depending upon the type of event and the expected occupancy, there may need to be a fire truck (pumper) at the site for the event.

PART IV: PRESERVATION AND CITY ZONING REQUIREMENTS

A. Preservation Legal Requirements

At this time the Santa Fe Rail Yard Shops are not listed in the State Register of Historic Places or the National Register of Historic Places, but there is general agreement at the City and State levels that the property would be eligible for both historic designations. The City Council has funded the preparation of the National Registration nomination. This nomination can be used to apply to both Federal and State registers. Ed Boles, AIA, of the City Planning Department is well versed in these legal requirements.

The Fire House, built in 1920, is located near the west edge of the site on the segment of First Street that has been closed to traffic. This building is an Official City of Albuquerque Landmark. Any alterations to that building would need permission of the City of Albuquerque Landmarks and Urban Conservation Commission (LUCC). The Blacksmith Shop project does not propose any changes to the Fire House.

Should the site or individual buildings ever be determined officially eligible for historic registration, which could be a possibility if private developers wished to take advantage of federal and state tax credits for appropriate improvements, then the following laws would be applicable:

1. If Federal funds, licenses or permits are part of a project or development of the property, then the State Historic Preservation Office (SHPO also known as HPD) would be consulted according to Section 106 of the National Historic Preservation Act as amended. The implementing federal regulation is 36 CFR 800.
2. If City funding, and no federal funding, is part of a project or development of the property, then the City of

Albuquerque would consult with the SHPO according to the Cultural Properties Protection Act [18-6A-1 through 6, NMSA 1978], to determine if cultural resources are present and *"to exercise due caution to ensure that cultural properties are not inadvertently damaged or destroyed"* (Section 5). The City is considered a subdivision of the State under State law.

3. Because this is public land within the City of Albuquerque and City of Albuquerque has an Archaeological Ordinance, any project or development may require review, and Matt Schmaeder, Archaeologist for the City of Albuquerque would be the person to contact.

It is prudent for any development, or project, at the Rail Yards to consult with SHPO because if at any time there may be federal funds, licenses or permits, such as federal EPA permits, for the property, the regulations noted above become applicable. Also the City would want to avoid inadvertently approving work that would disqualify any of the buildings for the State and Federal Tax Credits or the Preservation Loan Fund, programs that a developer may wish to utilize for rehabilitation.

If the property is listed in the State Register of Cultural Properties, since it is owned by a subdivision of the State, any project would be reviewed by SHPO (and the City) under Section 8.1 of the Cultural Properties Act [18-6-1-17, NMSA 1978] and Section 7 of the Prehistoric and Historic Sites Preservation Act [18-8-1 through 8, NMSA 1978].

B. City Zoning Regulations

The Rail Yards property was rezoned by the City Council's adoption of the new Barelas Sector Development Plan on April 28, 2008. Prior to this change, the Rail Yards were zoned SU-HM (Heavy Manufacturing). The intentions of the rezoning the Rail Yards was to allow mixed use development, require historic preservation and maximum benefits for the neighborhood.

1. Uses

Current Zone: SU-2 HLS (Historic Locomotive Shops)
The new zoning, SU-2 HLS (Historic Locomotive Shops) corresponds to the City's M-1 Light Manufacturing zone, although it does have some differences. (See Appendix B for the SU-2 HLS Zone description from the Barelas Sector Development Plan and applicable permissive and conditional uses from the the Albuquerque Zoning Ordinance.) The SU-2 HLS zone allows M-2 Heavy Manufacturing activities as conditional uses and also incorporates landscaping requirements at property lines that abut residential areas. It allows previous legal non-conforming uses, and requires site development plan review and approval by the Environmental Planning Commission (EPC).

As indicated below, the Barelas Sector Development Plan and the referenced Albuquerque Zoning Ordinance sections appear to allow the use categories that would include markets (retaining, including food production and serving), and an entertainment venue (see "C-2, Applicable Permissive Uses" below. If there were a use where a retail business included manufacturing of a product a Conditional Use permit might be required (see C-2, Conditional Uses, (B),17. Below), but is probably unlikely given the temporary aspects of the proposed uses. However, temporary production of crafts might require clarification with Zoning Officials.

There are zoning regulations on any sign associated with this project; however, in the interest of brevity, sign regulations should be addressed with the architectural design project and are not included herein.

The sections referred to in the Barelas Sector Development Plan, C-2, Community Commercial and IP, Industrial Park that have to do with the desired uses of the Blacksmith Shop follow:

C-2: Applicable *Permissive Uses*

(13) Retailing of any consumer product and provision of any customer, personal, or business service, except adult amusement establishments and adult stores, hospitals for human beings and transit facilities, provided it is not listed as a conditional use in this zone, or as a permissive or conditional use listed for the first time in the C-3 zone, and with the following limitation (see Code for all limitations):
  - (a) Alcoholic drink sales for consumption off premises; except the sale of alcoholic drink (see Code for exceptions)
  - (e) Circus or Carnival operation outdoor or in a tent provided... (see Code for provisions)
  - (h) Flowers and plants, including out-door sales
  - (r) Stand or vehicle selling fruit, vegetables, or nursery stock, provided it is limited to a period of 90 days in any calendar year. However, one renewal for an additional 90 days may be permitted by the Planning Director.

(16) Uses or activities in a tent, if the uses or activities are listed elsewhere in this subsection, provided...(see Code for provisions).

C-2 *Conditional Uses*:

(B) *Conditional Uses*

(17) Retail business in which products may be manufactured, compounded, processed, assembled, or treated, as an accessory use, including carpentry, [and others], catering, baking, confectionery making, or jewelry or curio making, provided:

(a) All activities are conducted within a completely enclosed building.
(b) The number of persons engaged in the manufacturing, processing, assembling, or treating of products is limited to ten, excluding office, clerical or delivery personnel.
(c) Activities or products are not objectionable due to odor, dust, smoke, noise, vibration, or other cause.

(20) Uses or activities in a tent, if the uses or activities are listed elsewhere in this section, provided there is sufficient paved off-street parking available on the premises to meet parking requirements for all uses on the premises, including the activity in the tent, and provided that the Fire Marshal [i.e., the Chief of the Fire Prevention Bureau] or his designated representative gives prior approval of the tent as meeting the requirements of Chapter 14, Article 2, Fire Code.

IP: Applicable Permissive Uses.

(3) Auditorium, place of assembly.
(22) Retail sales of the following goods, plus incidental retailing of related goods and incidental service or repair:
(a) Books, magazines, newspapers, except adult book store.
(d) Flowers and plants.
(e) Food and drink, for consumption on premises.

2. Parking

The first paragraph of the City "Off-Street Parking Regulations (Section 14-16-3-1) states, "In zones where off-street parking is required, off-street parking shall be provided for all uses and buildings, except buildings constructed before October 22, 1965 need supply such parking only to the extent on-premise ground space is available." The Blacksmith Shop will be a special case to be reviewed with Zoning Officials prior to the design of the site to determine if the area of the Rail Yards to the south of the major buildings is considered available "on-premise ground space." Other regulations that may have an impact determining adequate parking are included below based upon requirements for buildings built later than 1965.

The 2008 Barelas Sector Development Plan identifies parking as an issue in the Barelas area. Overflow parking from Downtown and special events at the Zoo and the National Hispanic Cultural Center have been a problem for the residents. It would follow that the parking for the Blacksmith's Shop activities should be adequately sized to avoid adding to this problem.

Section 14-16-3-1 Off-Street Parking Regulations govern the numbers of parking spaces required for this project. Of the project types that may be applicable to the use of the Blacksmith Shop the following are noted in this section:

(A) Parking spaces for automobiles and light trucks...:

(13) Flea market, outside: one space for each 200 square feet of stall space and customer circulation area.

(22) Public assembly place, such as auditorium, mortuary, sports arena, stadium, or theater: one space for each four seats (each 30 inches of bench space is considered one seat).

(27) Retail and service uses unless otherwise specified in this section: one space per 200 square feet for the first 15,000 square feet of net leasable area; then, one space per 250 square feet for the next 45,000 square feet of net leasable area; then, one space per 300 square feet for the net leasable area that exceeds 60,000 square feet.

Based upon the above, the most stringent requirement is for assembly.

Activity	Minimum Parking Spaces
Public Assembly Place	
Seating for 664	166
Retail (Interior Markets)	108

Parking as a Limiting Factor: Assembly uses produce the need for more parking spaces than any other use. In the Code Analysis we learned that the building can hold up to 1500 occupants in an assembly occupancy. As shown below in the Off-Street Parking Regulations, 1500 occupants as one space per 4 people would result in 378 parking spaces. The parking layout shown in Part V, Recommendations and Estimates only 164 spaces are posed north of the Blacksmith Shop. If this area is the only Off-Street Parking available, assemblies will be limited to 664 people. If shuttles are provided from parking elsewhere, or when other areas of the Rail Yards are developed, if parking is included in some of the buildings or on the south part of the Rail Yards, the number of attendees can be expanded.

Section 14-16-3-1 Off-Street Parking Regulations continues with requirements for other parking:

(B) Parking for bicycles shall be provided on-site or on a site within 300 feet of the use, measured along the shortest public right-of-way, as follows:
(3) Nonresidential uses: one bicycle space per each 20 parking spaces required for automobiles and light trucks, but not less than two spaces per premises, ...:

Total Parking Spaces	Minimum Bicycle Parking
151-300	8 – 15

Note: More bicycle parking than the minimum is recommended.

(C) Parking for motorcycles, mopeds, and motor scooters shall be provided on-site as follows:
(1) Non-residential uses:

Total Parking Spaces	Minimum Motorcycle Parking
151-300	5

Parking Reductions for proximity to transit routes: The site is not within 300 of a regular Albuquerque Transit System route. Therefore, no reduction of parking is allowed.

Handicapped Spaces:

Total Parking Spaces	Minimum Handicapped Parking
101-300	8

3. Landscaping Regulations

Section 14-16-3-10 Landscaping Regulations Applicable to Apartment and Non-Residential Development applies to this project. Some of the critical sections are included below. At the beginning of the design project, there should be a conversation with Zoning to agree on the "property line" (or "project boundary") for this particular project since the actual property line is much larger than the project boundary. The temporary nature of the project may allow the zoning official to consider exceptions. The conversation should be documented in a letter signed by both parties.

(E) *Landscaping Area Requirements.*
(1) The total landscaped area required for each development shall equal not less than 15% of the net lot area. For the purposes of this section, ***NET LOT AREA*** means the total area of the lot minus:

(a) The area of the lot covered by buildings;
(b) The portions of the lot that are not required for off-street parking or a parking lot and which are fully screened from view from any adjacent lot or public right-of-way by an opaque wall or fence at least six feet high, in which no landscaping will be required except required buffer landscaping; chain link fence with slats does not constitute acceptable full screening; and
(c) The area of any approved landscaping that the property owner installs and maintains in the adjacent public right-of-way, exclusive of the area of any existing or planned public sidewalk.

(3) Standard Landscape Buffers. Landscape buffer areas are required to separate off-street parking and circulation areas from front, side, and rear boundaries of premises. On sites controlled by the shopping center regulations (§ 14-16-3-2) and planned development areas controlled by site development plans, these requirements shall be based on the entire area of the planning site unless otherwise approved by the Planning Commission. Landscape buffers may be crossed by driveways connecting to adjacent land. No parking is permitted within a required landscape buffer area. Landscaping approved within adjacent public right-of-way may be counted toward this requirement if there is no existing or planned public sidewalk between such landscaping and the premises, but in no case shall the width of the on-site landscape buffer be less than five feet. Specific required landscape buffer locations and minimum widths shall be as follows:

(a) Front - Ten feet for sites of three acres or less, increasing at the rate of one foot in width per two-acre increase in site size to a maximum required width of twenty feet.

(b) Side - Six feet. The landscape buffer may be relocated if the lot line is within a common access easement.

(c) Rear - Six feet. The landscape buffer may be relocated if the lot line is within a common access easement.

(G) *Special Landscaping Standards.*

(1) Off-Street Parking Area Landscaping. Trees are required in and around off-street parking areas to provide shade and relieve the adverse visual impact of large expanses of pavement and parked cars. Quantity and distribution of trees shall be as follows:

(a) One tree is required per ten parking spaces;

(b) No parking space may be more than 100 feet from a tree trunk;

(c) The minimum size of tree planters within off-street parking areas shall be 36 square feet per tree;

(d) At least 75% of the required parking area trees shall be deciduous canopy-type shade trees, capable of achieving a mature canopy diameter of at least 25 feet.

(2) Street Trees. Street trees meeting the requirements of §§ 6-6-2-1 et seq., Street Trees, are required along all arterial and collector street frontages.

(3) Required Vegetative Ground Cover. All required landscape areas 36 square feet in size or larger shall be covered with living, vegetative materials, such as grasses, vines, spreading shrubs, or flowers, over at least 75% of the required landscape area. Coverage will be calculated from the mature spread of the plants. To minimize water consumption, the use of vegetative ground cover other than turf grass is encouraged. Any non-living ground cover areas not intended as mulch around spreading plants must be clearly delineated on the landscaping plan.

APPENDIX A: SOURCES AND RESOURCES

HISTORY

no author cited , 1922, "Santa Fe Completes Modern Shops At Albuquerque," Railway Age, August 5, 1022, Vol.73, No. 6, page 237.

Wilson, Chris, 1986, "The Historic Railroad Buildings of Albuquerque, an Assessment of Significance," prepared for the Redevelopment Division, Planning Department, City of Albuquerque.

ENVIRONMENTAL STUDIES

Huang & Associates Inc., June 2010. "Final Phase II Environmental Site Assessment Report, Targeted Brownfields Assessment, Albuquerque Locomotive Shops (AREA A), Albuquerque, Bernalillo County, New Mexico." Prepared for the U.S. Army Corps of Engineers, Albuquerque District. Available at City of Albuquerque.

INTERA, July, 2011, "Data Evaluation/Remediation Options – Albuquerque Locomotive Shops Area B, C, and Tract A, Albuquerque, New Mexico." Prepared for the City of Albuquerque, Department of Family and Community Services.

Environmental Protection Agency, February 2011, "AT&SF Albuquerque Superfund Site" EPA Region 6, ID# NMD980622864, Site ID: 0600879. Contact: Katrina Higgins-Coltrain, 214-665-8143. Publication also available at City of Albuquerque.

INTERA, August 29, 2012, "Blacksmith Shop Lead Report, Railyard Blacksmith Shop Report v2."

APPENDIX B: DRAINAGE PLAN SCHEMATIC AND PHOTOGRAPHS

FIGURE 1: North entrance to the Blacksmith Shop as viewed from the north – existing tracks at center must remain thereby representing an important constraint with respect to future grading and drainage.

FIGURE 2: View of the area immediately north of the Blacksmith Shop as seen from the north entry to the building. Based upon visual site inspection, the existing land appears to gently slope toward the building entrance.

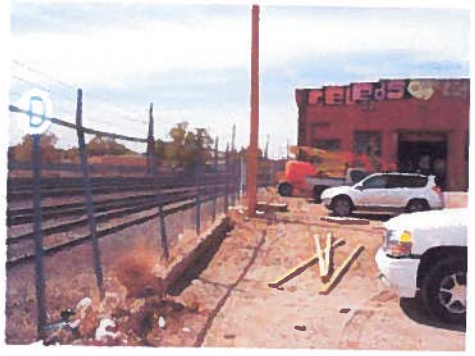


FIGURE 3: The existing railroad tracks and bed situated to the east of the Blacksmith Shop, left edge of photograph, are topographically higher thereby representing a de facto berm to block offsite flows from the upstream properties to the east of the site.

FIGURE 4: The yard north of the Blacksmith Shop and other buildings on the site is relatively flat with poorly defined drainage. This area is presently used for the fabrication and storage of movie props.

FIGURE 5: The grading and drainage of the northerly portion of the site is complicated by the existing railroad tracks that represent a significant constraint.

FIGURE 6: The area between the buildings also exhibits poorly defined drainage; the Boiler Shop appears in the background.

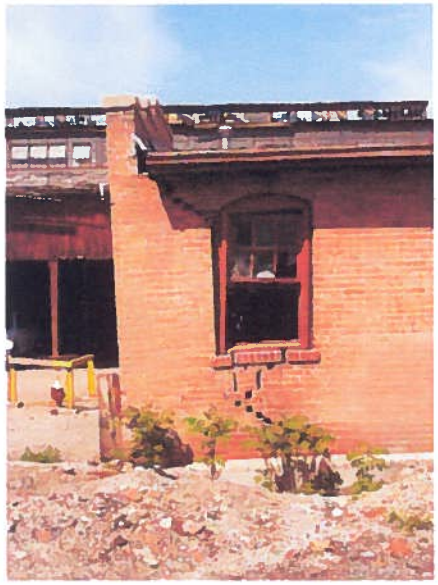


FIGURE 7: The brick outbuilding seen to the left of Figure 6 exhibits structural damage at its southeast corner, the apparent cause being lack of positive drainage away from the structure.

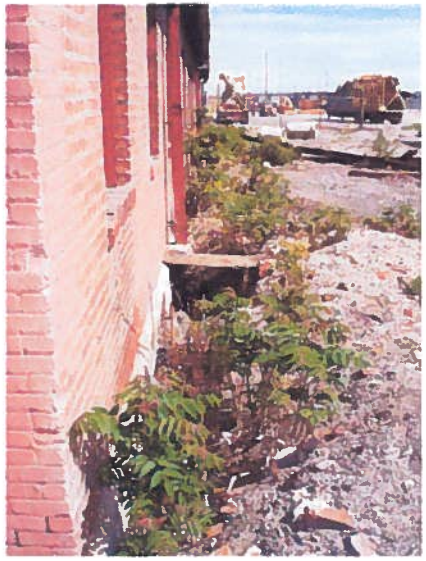


FIGURE 8: The southeast corner of the brick outbuilding shown in Figure 7 looking north. An existing roof drain leader appears to discharge underground into the soils immediately adjacent to the structure. This may have contributed to the damage observed in Figure 7.

FIGURE 9: The north entry to the Boiler Shop also relies upon existing tracks. This area is also quite flat making future grading and development a challenge.

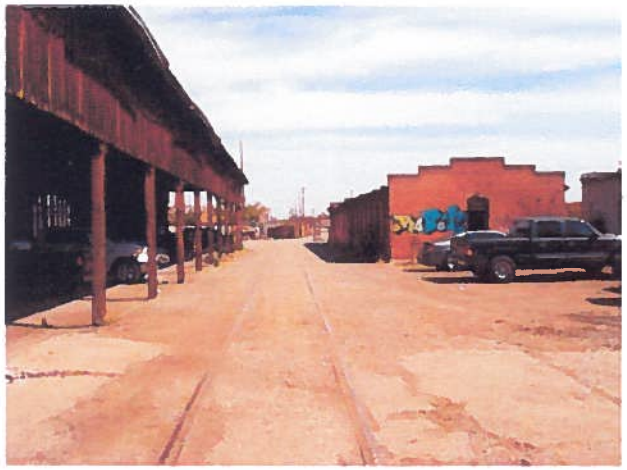


FIGURE 10: The existing tracks leading to the Boiler Shop are seen at the center of this photograph with the brick outbuilding of Figures 7 and 8 at the right and the Sheet Metal Shed to the left. Again, this area is flat with poorly defined drainage. Plans for future development should take into account the need to better drain developed runoff from this area.

FIGURE 11: An existing fire hydrant, status unknown, located at the southwest corner of the brick outbuilding is partially buried, an apparent lack of adequate grade control.

FIGURE 12: Another view of the yard north of the Blacksmith and Boiler Shops where the land is topographically flat with little to no apparent relief. The assumed trend in drainage is east to west (right to left) toward Second Street SW.

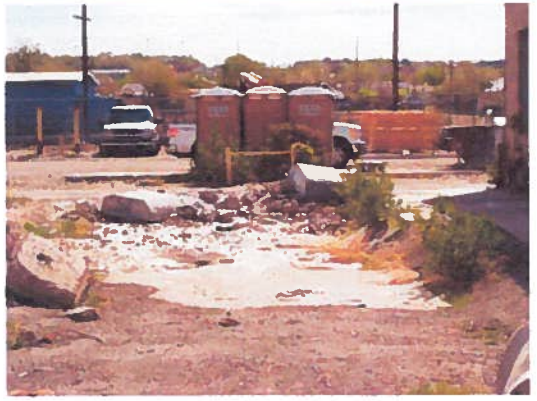


FIGURE 13: The manufacture of movie props onsite creates waste materials that are being discharged to an unlined pit near the northwest corner of the Blacksmith Shop. If the site is to continue to support the movie industry, these sorts of discharges must comply with the City of Albuquerque MS4 Permit prohibiting illicit discharges

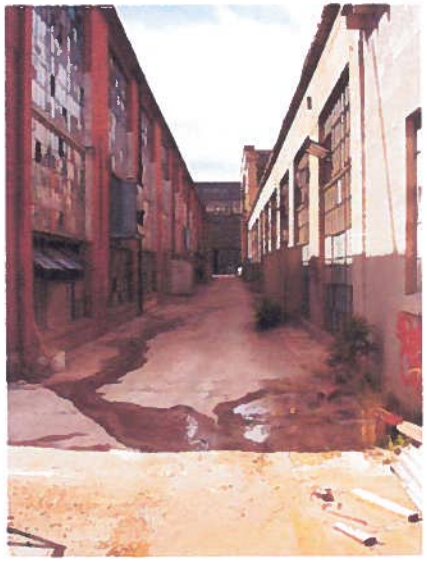


FIGURE 14: A narrow alley lies between the Blacksmith Shop and a CMU Warehouse to the west. This area lacks positive surface drainage. Surface drainage appears to discharge to an antiquated storm drain system and/or French drains. In either case, the existing facilities appear to be unmaintained and in disrepair. Replacement with a private storm drain connecting to Second Street SW is recommended.

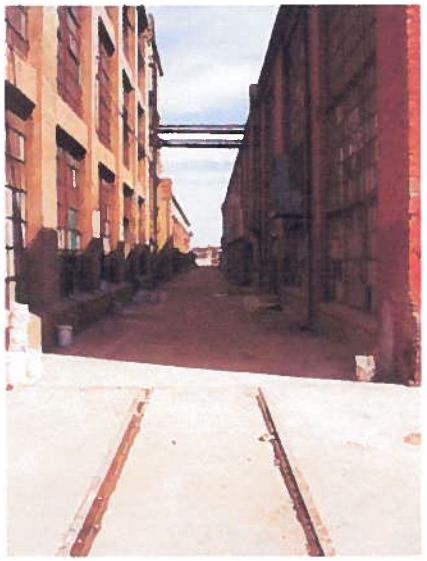


FIGURE 15: The narrow alley as viewed from the south continues to depict a condition absent of positive drainage. An outdoor urinal is located at the midpoint of the east (right) side of this space. It is unknown where this abandoned facility drained or drains.

FIGURE 16: Existing roof drain near the northwest corner of the Blacksmith Shop appears to discharge below grade. This location is a de facto sump; the high water mark is observed on the face of the building. The white chalky residue is believed to be washout from the manufacture of movie props.

FIGURE 17: Several small diameter area drains are observed within the alley. These appear to be in poorly maintained condition with limited capacity.

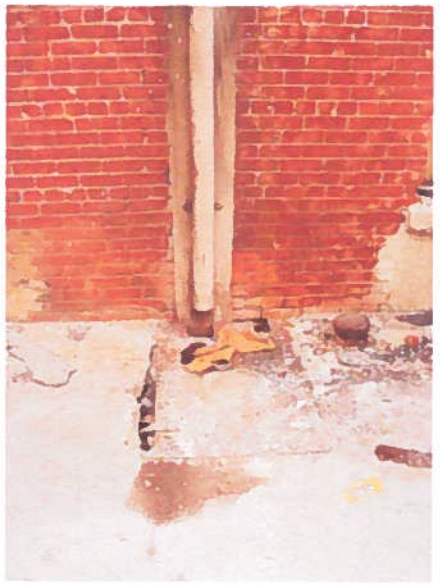


FIGURE 18: Existing roof drain near the southwest corner of the Blacksmith Shop also appears to discharge below grade. It is unknown if the roof drains connect to an underground storm drain system or simply discharge to a dry well or French drain.

FIGURE 19: A series of manholes are located on the "dock" area south of the Blacksmith Shop and Boiler Shop. These manholes appear to be storm drain features that may drain west toward Second Street SW.

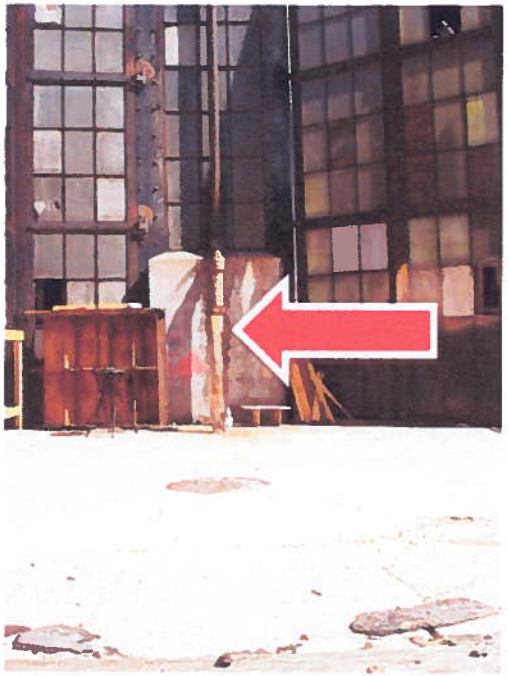


FIGURE 20: This manhole south of the Boiler Shop appears to align with a roof drain on the south face of the Boiler Shop.

FIGURE 21: Several different styles of manhole cover are seen on the south side of the Boiler Shop. Further investigation is required to determine if these are interconnected or serve separate facilities such as sanitary sewer or industrial waste.

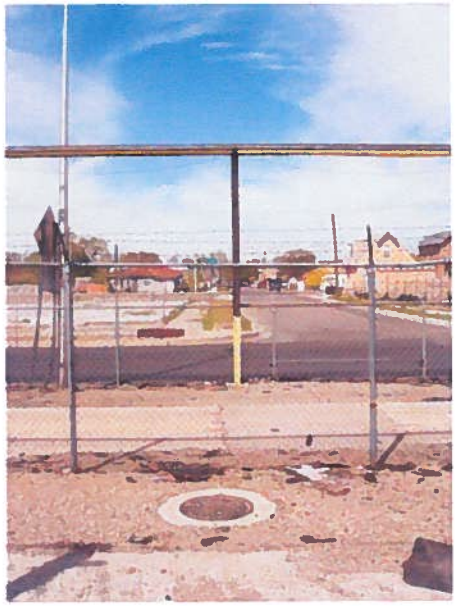


FIGURE 22: The westernmost manhole is located just east of Second Street SW where a 42-inch public storm drain is located. It is unknown if this is a storm drain manhole or if it is somehow connected to public storm drain facilities within Second Street SW.

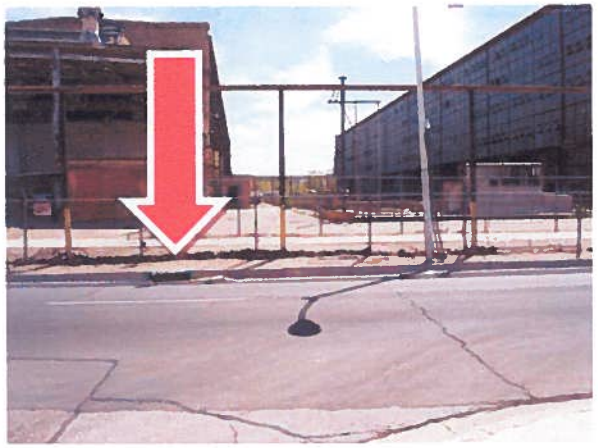


FIGURE 23: View of the south side of the Boiler Shop as seen from the intersection of Second Street SW and Santa Fe Avenue SW, looking east. A public storm inlet in the east curb line of Second Street SW is seen at center right

FIGURE 24: A closer view of the south side of the Boiler Shop with the manhole pictured in Figure 22 visible just beyond the second chain link fence. The storm inlet pictured in Figure 23 is located to the left, just beyond the frame. The debris in the gutter line, left edge of the frame, provides a reference point.

FIGURE 25: Another view of the public storm inlet in the east curb line of Second Street SW as viewed from the south looking north with a second inlet located upstream.

FIGURE 26: The east face of the Blacksmith Shop abuts the railroad right-of-way. Several roof drains are seen on the east face discharging below grade. The roof drains appear to drain the east half of the roof area of the building. The west half discharges to the narrow alley seen in Figures 14 through 18.

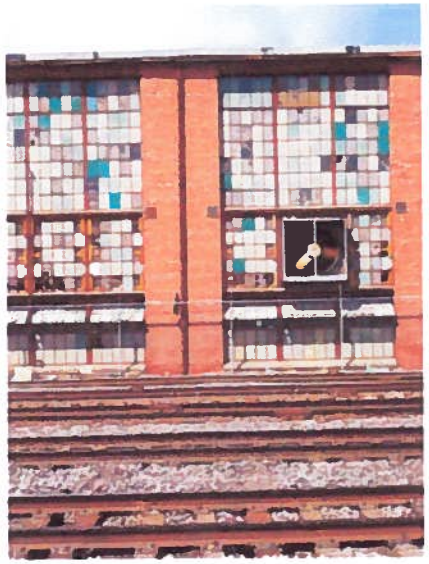
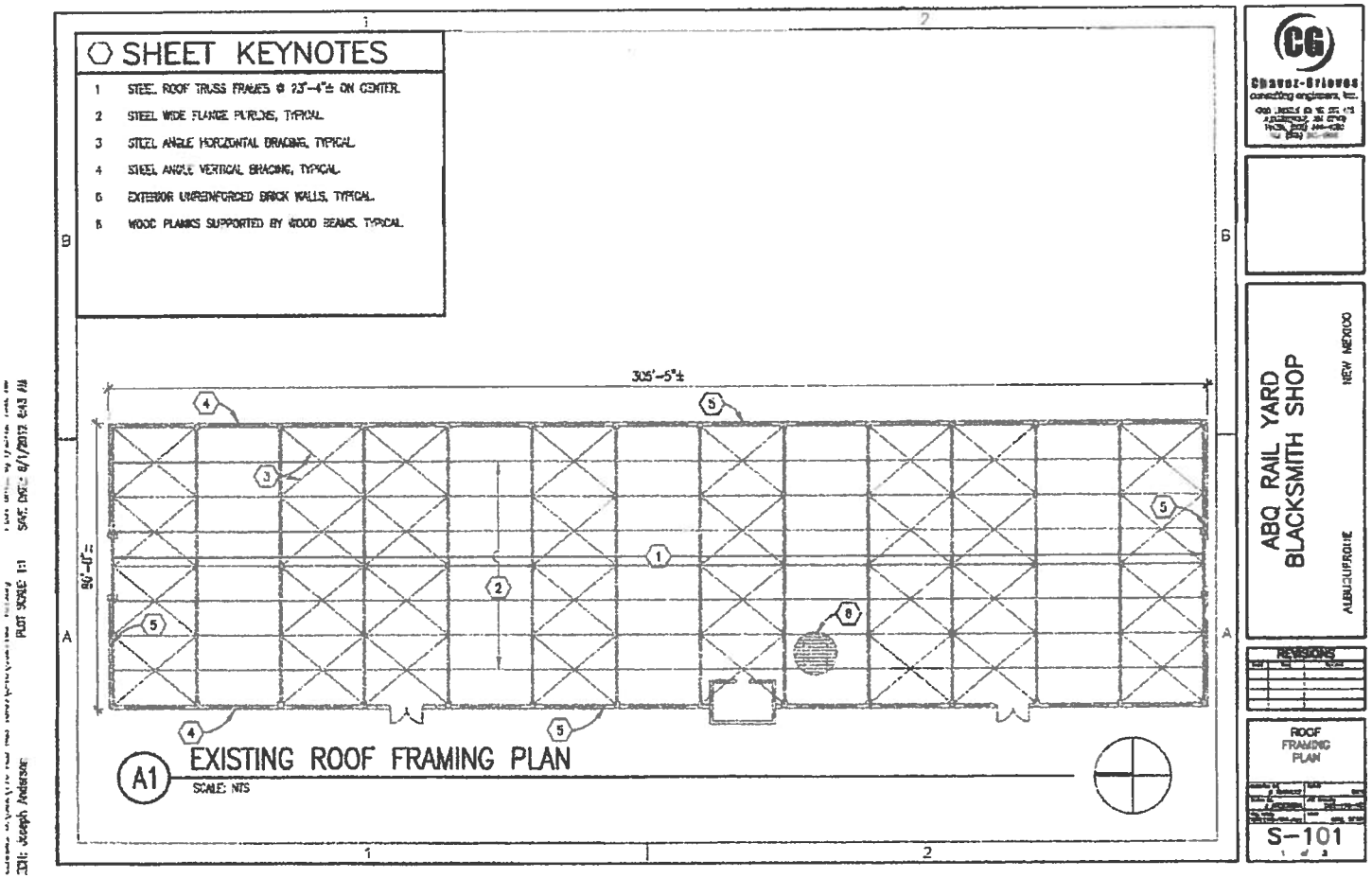


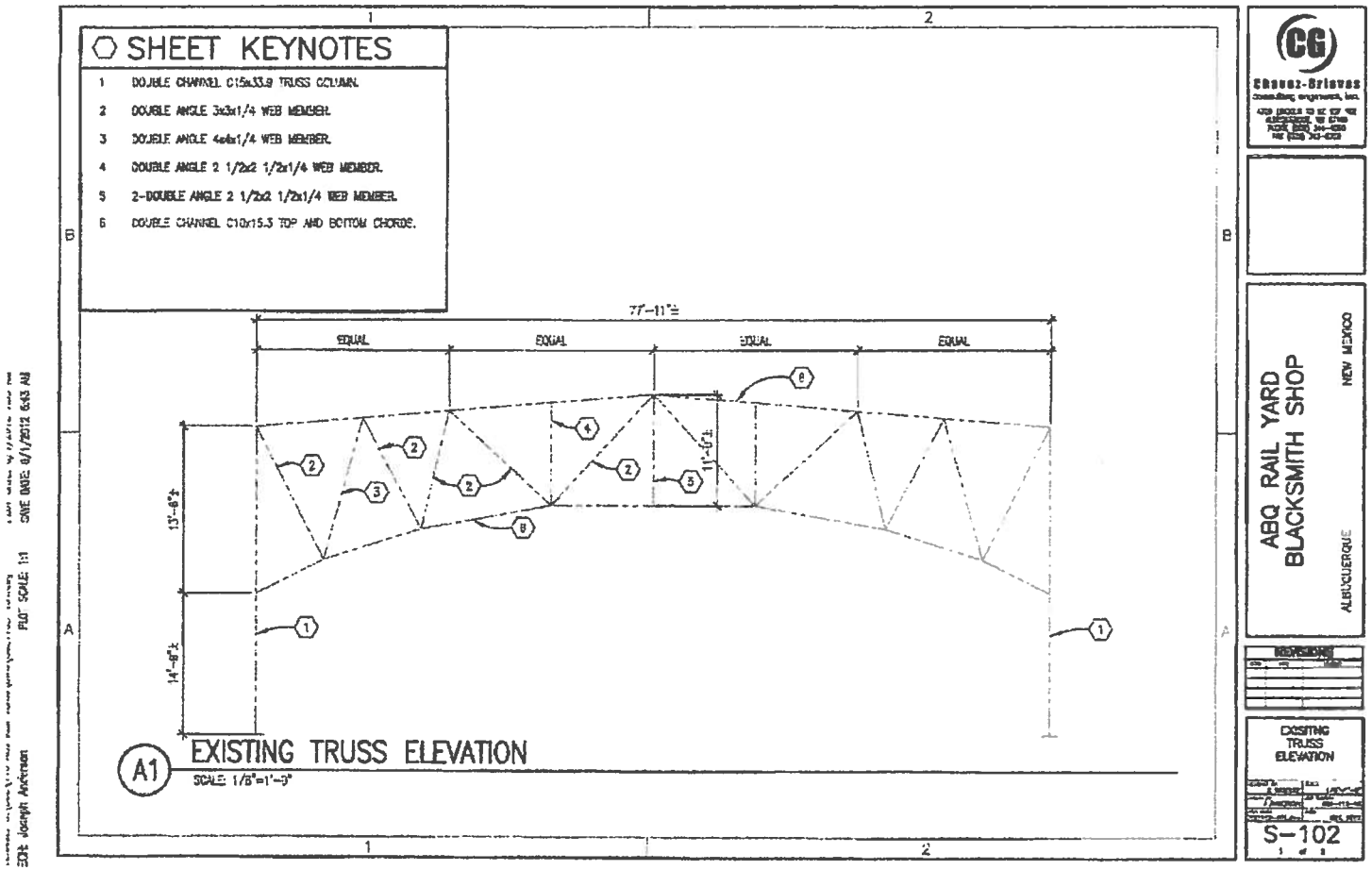
FIGURE 27: A closer view of the east face of the Blacksmith Shop more clearly illustrates the condition of a roof drain discharging to below grade.

FIGURE 28: Another view of a roof drain on the east face of the Blacksmith Shop as seen through an existing window in the building. It is unknown if this pipe connects to an underground system or a simple dry well. Regardless, this is an existing condition that has likely been serving the site for many decades.

APPENDIX C: STRUCTURAL DRAWING

The following drawings are illustrations for the Structural Condition report by Chavez-Grieves Engineering.




SHEET KEYNOTES
1 DOUBLE CHANNEL C15x33.9 TRUSS COLUMN.
2 DOUBLE ANGLE 3x3x1/4 WEB MEMBER.
3 DOUBLE ANGLE 4x4x1/4 WEB MEMBER.
4 DOUBLE ANGLE 2 1/2x2 1/2x1/4 WEB MEMBER.
5 2-DOUBLE ANGLE 2 1/2x2 1/2x1/4 WEB MEMBER.
6 DOUBLE CHANNEL C10x15.3 TOP AND BOTTOM CHORDS.
77'-11"±
EQUAL
EQUAL
EQUAL
EQUAL
13'-6"±
11'-10"±
14'-6"±
A1
EXISTING TRUSS ELEVATION
SCALE: 1/8"=1'-0"
Chavez-Grieves
ABQ RAIL YARD
BLACKSMITH SHOP
ALBUQUERQUE
NEW MEXICO
EXISTING
TRUSS
ELEVATION
S-102

APPENDIX D: SITE UTILITIES

mapquest

Map of:
1100 2nd St SW
Albuquerque, NM 87102-4192

Notes