

**GRANT COUNTY/SILVER CITY AIRPORT COMMERCIAL SERVICE TERMINAL
ASSESSMENT**

FOR

GRANT COUNT, NEW MEXICO

AIP PROJECT NO. 3-35-0039-019-2018

NMAD GRANT SVC-18-02

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Prepared for:

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LAS CRUCES NEW MEXICO

AND

ASA ARCHITECTS

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LAS CRUCES NEW MEXICO

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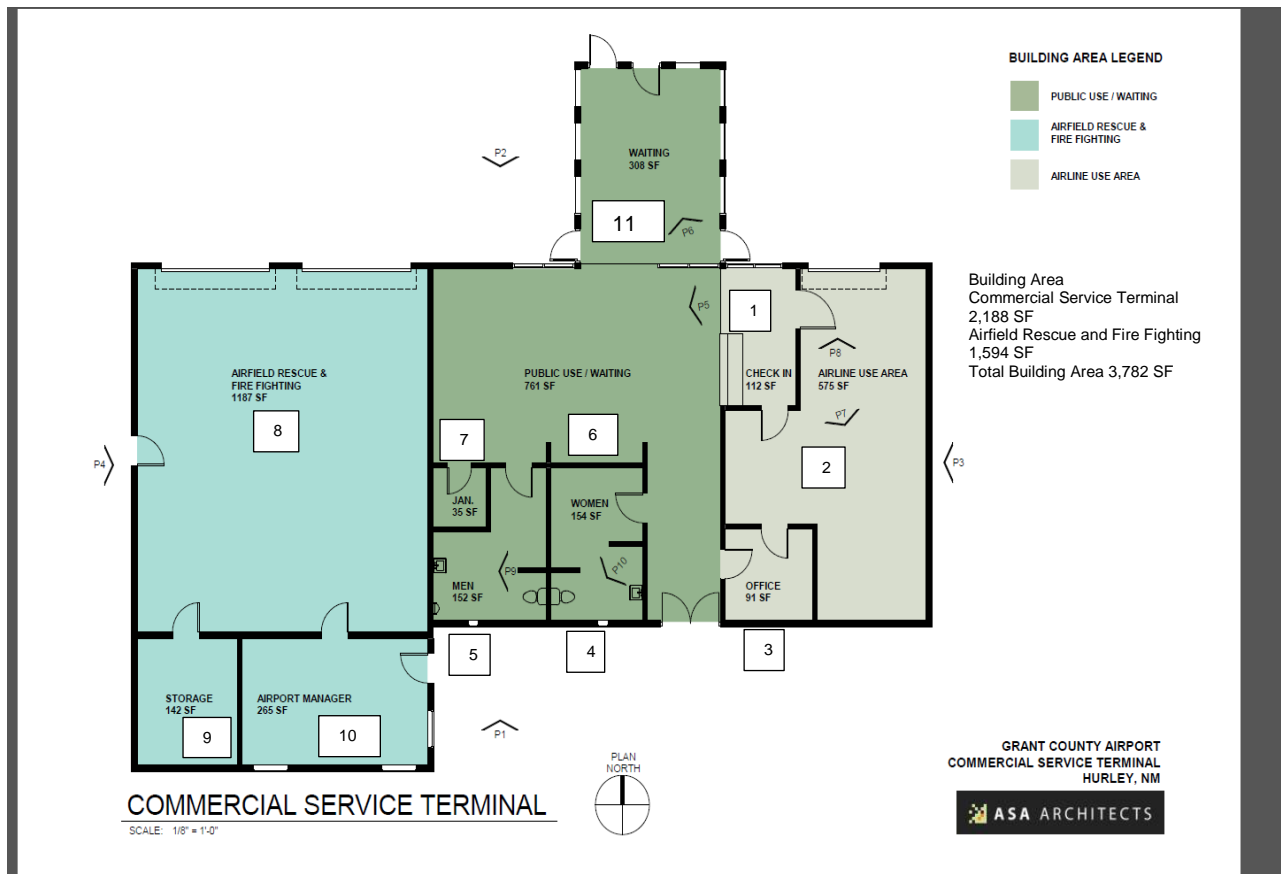
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I. INTRODUCTION

The Commercial Service Terminal Building is the main entrance to the Grant County/Silver City Airport for commercial passenger service, and where the commercial airline passenger service transactional business occurs. Most of the building was constructed in 1950. There was an addition approximately 10 years ago which the Aircraft Rescue and Fire Fighting equipment bay (space 8), equipment storage (space 9) and the ARFF/Airport Managers office (space 10) (ARFF Addition). The building is 3,782 sq. ft total. See **Figure 1** below for a numbered floor plan, numbers referenced correspond to the floor plan.



Space Number	Function	SF	Space Number	Function	SF
1	Airline Check In	112	7	Janitor	35
2	Airline Use Area	575	8	ARFF Equipment Bay	1,187
3	Airline Office	575	9	ARFF Storage	142
4	Women's Restroom	91	10	Airport Manager	265
5	Men's Restroom	154	11	Vestibule/Waiting	308
6	Lobby/Public Use/Waiting	761			

Figure 1: EXISTING FLOOR PLAN

The Public use area consisting of the passenger waiting areas and rest rooms is 1,410 sf, the airline use area is 778 sf and the ARFF addition is 1,594 sf.

The facade of the building is primarily CMU and plaster construction, and the interior is composed of the same. The roof structure is composed of wood framing, and a membrane roof with wood ceiling planks at the interior. The ARFF Addition is frame/stucco and shares a common wall with the commercial service terminal.

II. FIELD INSPECTION

The Commercial Service Terminal building was inspected in July 2018 with the following elements evaluated:

- Site drainage and site conditions
- Exterior building conditions
- Interior building conditions
- Special systems
- Structural
- Plumbing
- HVAC
- Electrical

III. EXISTING CONDITIONS

A. ARCHITECTURAL

A.1. ASSESSMENT APPROACH

Existing building conditions were visually analyzed to understand the renovations that need to be made to serve the needs of the employees and patrons of the building. Observations and findings are separated into exterior and interior as outlined below.

A.2. EXTERIOR

1. The stucco on the exterior in almost every place is worn and in need of replacement.
2. Caulking needs replacing as the walls attribute to the leaking problems found throughout the building, and there is likely less than adequate insulation.
3. The current windows appear to be composed of single glazing and are not only inefficient, but also allow water into the waiting room. For renovations they will need to be replaced.

4. The roof is composed of a very sun damaged aged membrane, which is the primary source of the leaks found throughout the building. It will need to be replaced.
5. The building elevation and surrounding grade allows for large amounts of water to pool around the building, which subsequently leaks into the interior spaces.
6. There is no site lighting in the parking lot and there is not an adequate amount of handicap parking spaces.
7. Re-grading will be required at the building perimeter to slope water away from the building
8. The building requires an updated security system due to recent incidences of vandalism.
9. Future renovations should include covered exterior spaces and seating near the entrance for guests.
10. The current landscaping allows for large amounts of water to pool around the building, especially on the north side of the building which subsequently leaks into the interior spaces.
11. Re-grading will be required at the building perimeter to slope water away from the building.
12. Drainage is a problem in north vestibule/waiting area (space 11) as the water pools heavily around the building when it rains and migrates into the entrance area and interior of the space.
13. There is no site lighting in the parking lot and there are not adequate amount handicap parking spaces.

A.3. INTERIOR

1. The carpet throughout the waiting area is in disrepair and will need to be replaced. The cause is primarily because many of the windows and walls in this space allow water in, which pools in the corners, which are on a slightly lower grade than the rest of the building.
2. The Vinyl Composition Tile (VCT) plank flooring in the Vestibule (space 11) and Lobby (space 6) is warped due to installation over the top of the existing carpet and will need to be replaced.
3. The ceilings leak, leading to water damage throughout the floor surfaces of the building.
4. The asbestos tile in the Janitorial Closet (space 7) will need to be abated and replaced with new VCT.
5. More fixtures are required for the bathrooms as the pre-flight rush is too large to be accommodated by the single fixture bathrooms. This will require a renovation of the restroom and possibly adjacent areas.

6. Windows throughout the building need to be replaced as they are inefficient and contribute to leakage.
7. Security Upgrades such as video cameras on the interior will need to be made as there have been various problems with vandalism.
8. All doors will need to be replaced and upgraded as they are inefficient and insecure.
9. Drainage is a problem in the airline service bay area as the water pools heavily around the building when it rains and migrates into the entrance area and interior of the space.
10. Given the age of the building, environmental testing may lead to additional findings of asbestos or lead containing material.

B. STRUCTURAL

B.1. ASSESSMENT APPROACH

The evaluation and review are based on the information available at the time of the site investigation.

B.2. TERMINAL BUILDING

The building is a concrete masonry unit (CMU) building with a stack bond configuration and wood roof framing. At the time of the investigation, no structural cracking or settling was seen in the CMU. The wood framing appeared to be adequate, structurally; however we did note wood rot at the exterior of the members, seen in Figure 20 and Figure 21. Figure 23 shows the interior condition of the roof wood framing, which does not have visual signs of weathering or rot. At the northwest corner of the building, we found a CMU column that was weathered and had chipping paint. Figure 22 shows the extent of the weathering of the CMU. It is our opinion that this condition is not a structural issue. We recommend that the area be maintained on a regular basis to avoid further damage. At the north vestibule/ waiting area of the terminal, we were informed that the building was experiencing water seepage through the CMU stem wall into the building. Figure 24 and Figure 25 show the areas of the building where the seepage was being reported. At the time of our investigation no cracks were visible in the CMU stem walls. It is our opinion the lack of maintenance and lack of a vapor barrier below grade could be the cause of this moisture intrusion onto the building. It is difficult to determine the location of the moisture intrusion at the time of our investigation due to dry conditions. If the moisture is penetrating through the CMU, the reinforcement becomes vulnerable to rusting which can cause a decrease in strength. This rusting of the reinforcement causes the reinforcement to swell and cause further damage to CMU.

C. HEATING, VENTALATING AND AIR CONDITIONING (HVAC)

The current terminal building is cooled by two evaporative coolers, one located near the center of the public use/waiting area and the other near the center of the airline use area See **Figure 2** below. Public Use/Waiting Area cooler will need to be replaced as it is aged, rusting, and ultimately affects the air quality administered to the zone. While the airline use area, cooler is much less worn and still viable, it would be beneficial to replace and upgrade both coolers at the same time as this will maintain a uniform life span of the HVAC system.



Figure 2: EXISTING COMMERCIAL TERMINAL EVAPORATIVE COOLERS

Heating in the terminal is provided by a single indoor furnace located in the airline use bay area. Though the furnace is elevated, it does not meet code requirements as there is no visible name plate, although this is a standard manufactured product. There is no separation of flammable stored items from the furnace housing. See **Figure 33** below.



Figure 3: EXISTING COMMERCIAL TERMINAL

Currently, the expanded waiting area has no existing heating, ventilation, or air conditioning. A split system is recommended to replace both heating and cooling systems. Four-way direct-expansion heat pump cassette air handlers with ground mounted condensers can replace the evaporative cooling diffusers. A wall mounted air handling unit can also be added to the expanded waiting area off this same heating and cooling system. The split system will eliminate the need for individual equipment for both heating and cooling and will not require installation of ducts thus reducing costs. These air handling units will provide the proper amount of outdoor air required for this occupancy. Further air flow analysis of the terminal could increase the number of units required. Exhaust vents and heaters are non-functional in the restrooms and will need to be replaced.

The well pump house that supplies potable water to the commercial service terminal currently uses a space heater plugged to an existing 120/240 VAC electrical outlet, there is 6 inches of R-13 insulation wrapped around the pressure tank to prevent the water from freezing.

Additional work should be done at the well house to improve operability and mitigate issues due to below freezing temperatures.

D. PLUMBING

Fixtures are fed via a well with a regulated pressure of 45 psi, by means of a pressure tank at the well head. A 40-gallon capacity water heater located in the janitor's supply closet delivers hot water in the system. The existing water heater has begun to rust, the name plate is becoming illegible, and is not adhering to proper code clearances. The source of water is not disinfected by any means.

The restrooms do not meet ADA standards, and the layout in the restrooms will need to be changed. The fixtures within these restrooms also do not meet ADA dimensional and material standards.

Water supply piping material appears to be copper tubing, but the overall condition was not analyzed during the site visit due to lack of access. Judging from the appearance of exposed piping (See Figure 44), it is possible the supply piping will need to be fully replaced.



Figure 4: EXISTING COMMERCIAL TERMINAL WATER HEATER

A septic tank with capacity of 1250 gallons is located underneath the terminal's parking lot near the North-West corner. The potential loading of this system needs to be verified to confirm it is sized adequately for the expected occupant use. The septic tank was replaced approximately three years ago after the original septic tank collapsed. The underfloor sewage piping and in-wall vent piping is likely cast-iron pipe and will be salvageable depending on new fixture loading and location.

A 500-gallon propane tank is present on the site, and there are currently no noticeable issues with the tank. The interior propane distribution piping will need to be pressure tested but likely will be salvageable.

E. ELECTRICAL

The commercial service terminal electrical supply is served from a 120/240 Volt 300 Amp service located on the exterior of the building adjacent to the ARFF equipment bay (space 8). The electrical service has been recently rebuilt with the addition of a new standby emergency generator and transfer switch.

The new main disconnect panel at the electrical service (Panel "DP") serves the airfield electrical vault and three sub-panels within the commercial service terminal. Sub-panel "C" is in the ARFF storage room (space 9) and is a modern electrical panel. There is a sub-panel with no ID label located in the Janitor Closet (space 7) located near the water heater and sink, and is an older electrical panel made by Federal Pacific. It does not have a manufacture date label but from its appearance it can be assumed that is was installed during a 1971 renovation.



Figure 5: UNNAMED PANEL

Sub-panel "A" is in the airline use area (space 2) and is also an older Federal Pacific Panel, it also appears to be from a 1971 renovation.



Figure 7: PANEL A

The interior lighting is ceiling mounted fluorescent fixtures in the ARFF section of the building in the ARFF addition (spaces 8, 9, and 10). The rest of the building is also lighted with fluorescent fixtures, many of which are non-functional especially in the airline use area (space 2). None of the fixtures provide life safety emergency egress lighting.



Figure 8: NON-FUNCTIONAL LIGHTING

Very few exterior wall or area lights are installed in the commercial service terminal facility. It appears these exterior fixtures are mostly non-functional and do not provide egress path lighting.

The communication systems are functional, and staff reported no complaints, but the installation appears to have been an install to fit design. (see Figure 98 below).



Figure 9: COMMUNICATIONS WIRING

IV. RECOMMENDATIONS

A. MECHANICAL SYSTEMS RECOMMENDATIONS

1. HVAC upgraded to a heat pump split system
2. Improve well house heating
3. Install new water heater and hot water circulation system
4. Install new plumbing fixtures
5. Install new restroom ventilation system

B. ELECTRICAL SYSTEM RECOMMENDATIONS

1. It is recommended that the sub-panels in original building (spaces 2 and 7) be replaced with modern units that are properly rated for available short circuit current from the utility.
2. The panel in the janitor's closet is quite close to the water sources and should be moved or replaced with a wet location rated panel.

3. Replace all receptacles and associated wiring and conduits in the original building (spaces 1 through 7 and 11).
4. Replace all interior lighting fixtures and associated switches, wiring and conduits in original building (spaces 1 through 7 and 11).
5. Install building egress perimeter lighting and parking area lighting.
6. Replace all power branch circuits including wiring and conduits in original building (spaces 1 through 7 and 11).

C. STRUCTURAL RECOMMENDATIONS

1. Based on visual observations during the structural site visit, the building is in fair condition, structurally. The biggest concern is the area outside of the terminal vestibule where water is being reported to migrate through the CMU stem wall into the building. This can cause the steel reinforcement to become rusted and begin to swell and damage the stem wall and footings.
2. A recommendation is a moisture barrier be placed between the CMU stem wall and the soil, as well as between the slab and the soil to reduce the risk of moisture intrusion through the masonry. This would include removal of the interior slab to allow for the installation of a vapor barrier and replacing the slab and reinforcement.
3. The weathered exterior portion of the glulam beams on the exterior of the building are of structural concern and will just need to be refinished to remove damaged portions and resealed. Also recommended is regular maintenance and reapplication of wood sealant on exterior conditions.

D. ARCHITECTURAL RECOMMENDATIONS

1. The site should be reworked to correct drainage issues and additional handicap parking added.
2. Exterior renovations should include stucco repair and re-finish, window and storefront replacement, roof replacement, and new exterior cover at the entry.
3. Roof decking and framing repairs should be made as associated with exterior renovations
4. Interior renovations should include flooring and base replacement, ceiling replacement related to roof leaking, abatement of Janitor floor material, and door and hardware replacement.
5. The existing restrooms should be enlarged to accommodate additional fixtures.
6. An interior and exterior building security system should be installed.

7. Further environmental testing should be performed to detect the presence of potentially hazardous materials.

V. COST ESTIMATE FOR RENOVATIONS

For purposes of this cost estimate for renovations the floor square footage of original building (spaces 1 through 7 and 11), totaling 2,188 square feet, have been used for this analysis. No renovations as needed in the ARFF addition.

Table 1 – COST ESTIMATE FOR CENTER RENOVATIONS

Discipline	Total Cost
Architectural exterior renovation -Exterior renovations including stucco repair / re-finish, window / storefront replacement, roof replacement, and new exterior cover at the entry	75,000
Interior renovations including flooring and base replacement, ceiling replacement related to roof leaking, abatement of Janitor flooring material, door and hardware replacement	60,000
Restroom renovations to enlarge the restrooms which may lead to renovations in adjacent spaces	50,000
Structural repair allowance for decking and other minor structural repairs which may become apparent once the exterior renovations are underway	15000
Allowance for the presence and abatement of other potentially hazardous materials	15,000
Site reworking to correct the drainage issues and the additional handicap parking	75,000
HVAC	\$55,000
Plumbing	\$45,000
Electrical – Power	\$33,000
Electrical – Lighting	\$33,000
Electrical – Special	\$22,000
Estimated renovation costs (excluding contingencies, NMGRT)	\$478,000
NMGRT 6.5625% (2018)	\$31,369
Total with NMGRT	\$509,369

For FAA cost-sharing purposes: Airport Improvement Program eligible area in the building less the ARFF is 1,410 sf (64%), non-eligible area in the building less ARFF is 778 sf (36%). The FAA will evaluate this space allocation for AIP eligibility and may or may not participate in this project.

Table 2 – FAA ELIGIBLE AREAS

Space Number	Function	SF	Public Use	Exclusive Use
1	Airline Check In	112		112
2	Airline Use Area	575		575
3	Airline Office	91		91
4	Women's Restroom	154	154	
5	Men's Restroom	152	152	
6	Public Use/Waiting	761	761	
7	Janitor	35	35	
11	Vestibule/Waiting	308	308	
		2,188	1,410	778
			64%	36%
			\$328,250	\$181,119

APPENDIX A – PHOTOS

EXTERIOR PHOTOS:



Figure 10: P2 NORTH VIEW



Figure 11: P3 WEST VIEW



Figure 12: P1 SOUTH VIEW



Figure 13: P4 EASTVIEW

COMMERCIAL SERVICE TERMINAL INTERIOR PHOTOS:



Figure 15: P6 WOMENS RESTROOM – note only one toilet



Figure 14: P5 MENSRESTROOM



Figure 16: P8 PASSENGER WAITING AREA – VESTIBULE AREA



Figure 17: P7 PASSENGER WAITING LOBBY



Figure 18: P9 AIRLINE BACK OFFICE

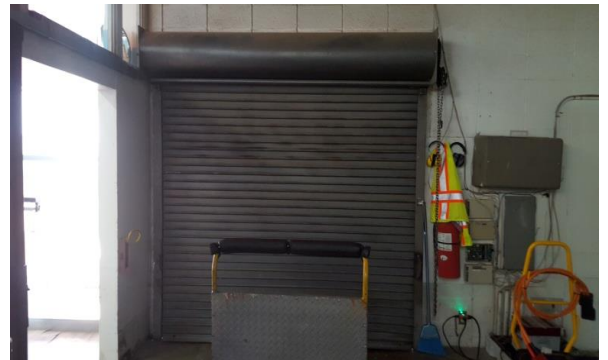


Figure 19: P10 AIRLINE SERVICE BAY DOOR



Figure 21: EXTERIOR
GLULAM BEAM –
WEATHERED DETAIL



Figure 20: EXTERIOR GLULAM BEAM



Figure 23: INTERIOR WOOD AND GLULAM BEAM
FRAMING – PASSENGER WAITING AREA



Figure 22: EXTERIOR CMU
COLUMN



Figure 24: EXTERIOR NW STEM
WALL AT VESTIBULE



Figure 25: EXTERIOR NW STEM WALL AT
VESTIBULE

APPENDIX B – BUILDING



Figure 26: COMMERCIAL SERVICE TERMINAL

FOR REVIEW
 07/10/18

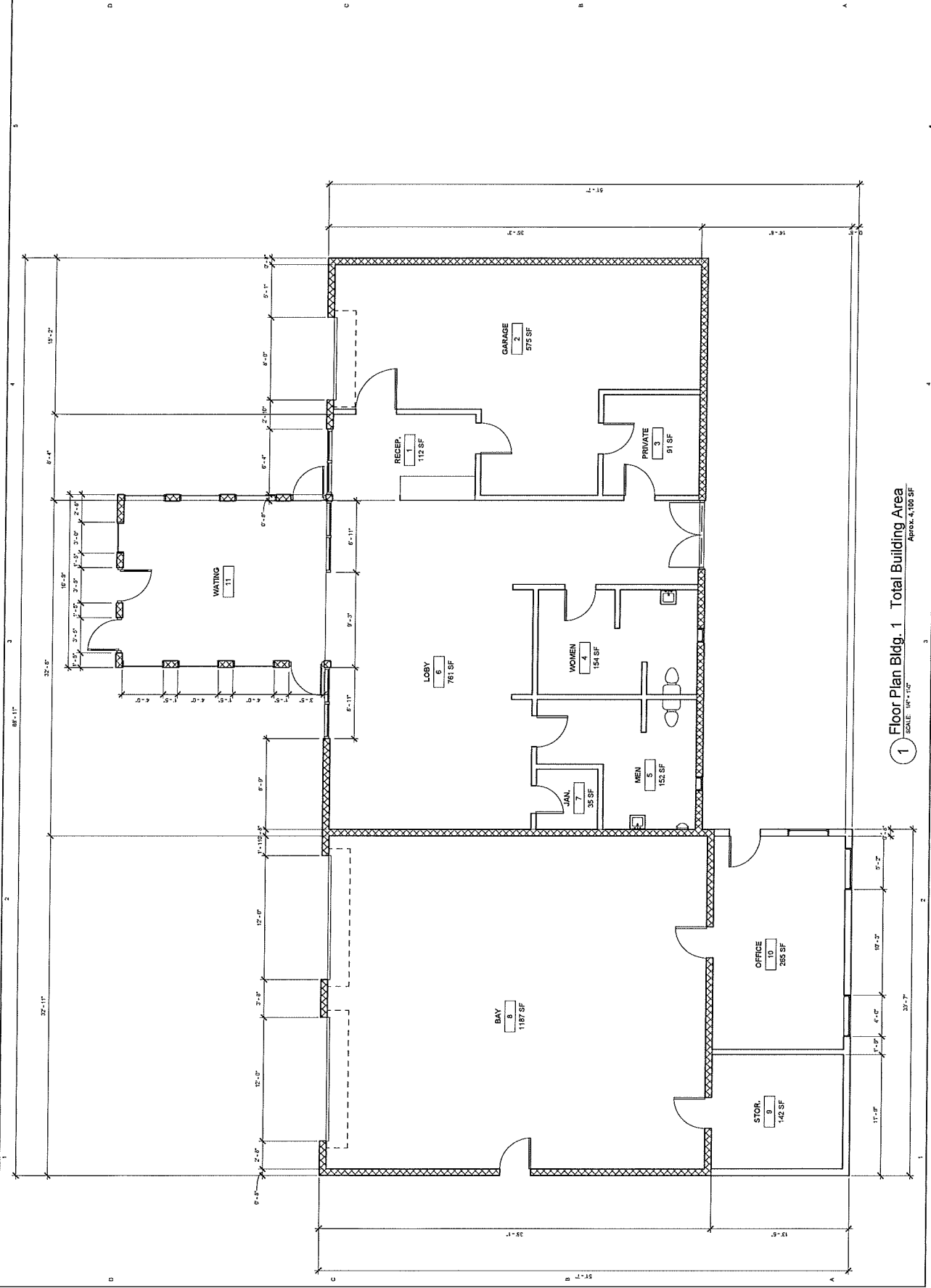
**FEASIBILITY STUDY
 FOR GRANT COUNTY AIRPORT**
 188 AIRPORT ROAD
 HURLEY, NEW MEXICO

MARK	DATE	DESCRIPTION

ISSUE

ASA PROJECT NO: Project Number
 PROJECT NO: 188A
 DRAWING NO: 188A-01
 CHECKED BY: [Signature]
 SHEET TITLE: FLOOR PLAN

FLOOR PLAN
 SHEET NO: **A102**



1 Floor Plan Bldg. 1 Total Building Area
 SCALE: 1/8" = 1'-0"
 Approx. 4,100 SF