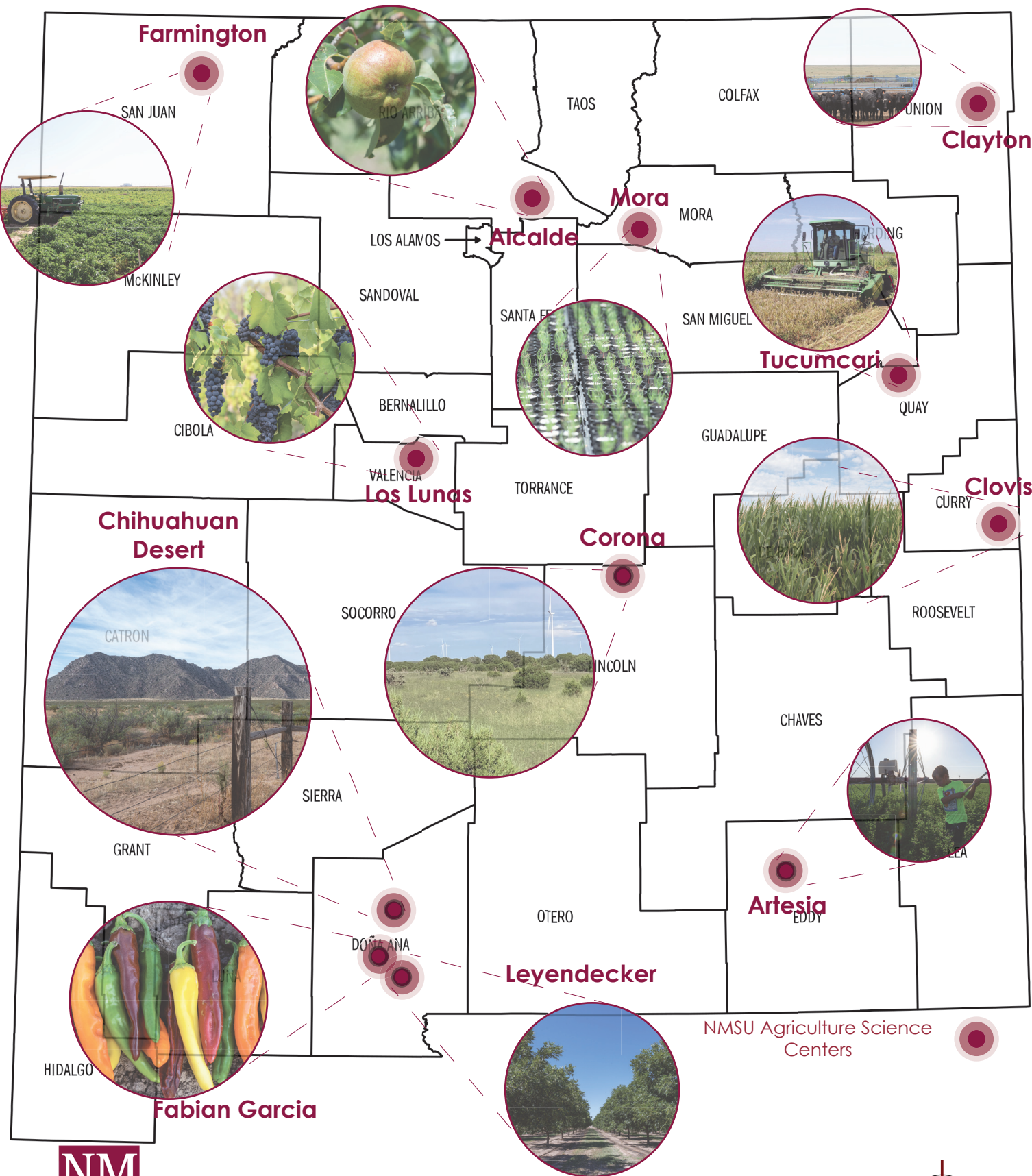


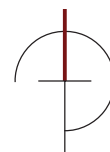
New Mexico State University

College of Agricultural, Consumer, and Environmental Sciences



BE BOLD. Shape the Future.
College of Agricultural,
Consumer and Environmental
Sciences.

Fabian Garcia & Leyendecker Plant
Science Research Center



BOOK 9 OF 12

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ACKNOWLEDGMENTS

*Dr. Rolando A. Flores Dean & Chief Administrative Officer College of Agricultural,
Consumer and Environmental Sciences*

*Dr. Leslie Edgar Associate Dean and Director of Agricultural Experiment Station
Brooke Boren AES Director of Land and Assets
Shad Cox AES Livestock Operations Director
Dave Lowry AES Farm Operations Director*

*Heather Watenpaugh University Architect Facilities and Services
Robert Herrera Executive Director Facilities and Services
Jose Loera Assistant Director Facilities and Services
Gary Martinez Project Manager Facilities and Services*

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Dr. Owen Burney- J. T. Harrington Forestry Research Center at Mora
Lara Phihodko- Alcalde Agricultural Science Center*

Planning Consultant

*Staff of NINE DEGREES ARCHITECTURE AND DESIGN, INC.
NMSU-ACES IT DEPARTMENT - Information Technology*

FACILITIES MASTER PLAN REPORT

Executive Summary | July 2023

OVERVIEW

New Mexico State University Facilities Group (NMSU) commissioned Nine Degrees Architecture and Design, Inc. (NDA&D) in the Fall of 2021 to perform a facility assessment study and master plan of the institution's agricultural research centers that are located throughout the State of New Mexico. As identified in this report, this consortium of twelve agricultural research facility locations is an integral part of the **College of Agricultural, Consumer, and Environmental Sciences (ACES) academic, research, and public service program** for the New Mexico State University System. These assessment efforts required NDA&D to complete this evaluation plan under an open and transparent methodology to ensure a fair data-driven **Facility Master Plan (FMP)** effort. The Facilities Master Plan is intended to inform NMSU of the College of ACES agricultural research facilities building conditions for operations, use, and future capital investment decisions that may be needed for these agricultural centers' next five years of operations. Together with the College of ACES administration, NMSU Facilities and Services Department Staff, and ACES research centers' staff, our architectural staff members undertook an assessment effort and outreach process that included extensive field visits and data gathering at all twelve research center locations.

The Facilities Master Plan (FMP) findings that informed our team of the specific recommendations are summarized in this document, thus providing NMSU with an outsider's snapshot of the state of operations, facilities conditions, and functional suitability to maintain the center's successful operations. Our team's expectations are that, as this plan is implemented, it will assist the staff at NMSU College of ACES to continue its educational and research vision and mission by having their centers equipped and capable of meeting the needs of their academic endeavors for upcoming research grants and being able to achieve a balance of their existing needs. Through this balance ACES will be able to increase capacity utilization, and by being able to improve their research programs – both being crucial and beneficial issues to all **New Mexico State University College of Agricultural Consumer Environmental Sciences** students today and in the future.

FINDINGS

After a series of on-site visits and through visual assessment of each facility, the findings included in this Facility Master Plan (FMP) begin to illustrate that many of the College of ACES research center facilities appear to be in relatively poor condition and/or declining conditions. These conditions can be attributed to the historically low level of state funding for critical maintenance and capital investment for basic building maintenance, structural repairs, facility erosion control, mechanical systems repairs, and roof replacement. In addition, based on the data that was discovered during our assessment process, it appears that all research centers, in some form or another, have suffered from issues such as a shortage of maintenance personnel, staff attrition, and financial cutbacks, which have exacerbated their poor facilities' conditions. The annual maintenance and operation budget awarded to each of the agricultural centers has directly impacted the number of repair projects required to improve and maintain each of the centers to perform to their optimal capabilities.

After evaluating demographic information for the State of New Mexico from 1990 to 2020, as reported in the annual assessment by the State of New Mexico Economic Development Department, the state increased its population by an average of 240,000 citizens per decade since the 1990s. It leveled off in 2020 for a total of 2.1 million citizens. Over the past three years since, the population has continued to grow but at a slower and smaller pace. Current assessment predicts a smaller but steady increase in population, with a projected student enrollment for the next 2 to 3 years that will continue to remain relatively level with smaller incremental growth. Additionally, the assessment describes that there will be growth and/or decline in specific geographic areas as the state experiences regional population immigration or interstate migration.

<i>NMSU ACES</i>	
FACILITY DEFICIENCY COST - PRESENT	\$17,604,854.00
5-YEAR LIFE CYCLE FORECAST- ESCALATION	\$6,402,251.14
TOTAL 5-YEAR NEEDED - OVERALL BUDGET	\$24,007,105.46

This facilities assessment has identified the need for a minimum expenditure of around \$24,007,105.46 million in projected Operations & Maintenance funding for facility-related needs within the next five years (in 2022 dollars), comprised of \$13,843,194.00 million for the repair of current deficiencies, and additional \$3,761,660.00 million for instructional technology infrastructure improvements. Furthermore, an add is anticipated over the next five years for end of life-cycle repairs

of \$6,402,251.14 million premium to the O&M Budget. This budget does not include any additional funding that may be required to transition each center to a renewable energy system as currently being studied by NMSU Facilities Team. Each agricultural center's physical condition and functional adequacy were determined by thoroughly inventorying all buildings and accessory structures against their current scheduled use. By comparing the operational capacity of each center against current and projected enrollment predictions based on existing utilization capacity, utilization percentages were developed to inform our assessment team on how to develop individual strategies for facility repair and replacement efforts. These strategies created the best use and value for all college of ACES research facilities. It is certain that continued degradation of the research facilities will financially strain NMSU College of ACES's academic and research mission. The operational expenditures, such as utilities, annual maintenance, and growing extensive repairs caused by buildings and operational systems reaching the end of their life-cycle, will become overwhelming and create greater difficulty to repair the existing buildings.

RECOMMENDATIONS

To determine whether an asset is critical to the continuation of the mission of the University, a needs assessment must be scheduled and performed every five-years and, in some facilities, even sooner, when regulations, curriculum shift, or just a change in the facilities conditions, warrants a new assessment. Our recommendations are based on a mixture of both basic general building systems performance and institutional priorities. Institutional priorities are based on academic necessities as they are balanced against the maintenance and maintenance budgets provided within the annual system's expenditure strategy. Our observations of the buildings' performance were based on assessing the life expectancy of the building systems as they are collectively beginning to reach their end of the life-cycle or by analyzing the systems' age.

Based on the field conditions and facility historical data, Nine Degrees Architecture and Design, Inc., recommends to the NMSU College of Agricultural, Consumer, and Environmental Sciences and NMSU Facilities Planning Team to begin taking additional operational and capital funding steps that will provide opportunities for improving each Ag Center and create the possibility for a more balanced utilization program for each of their research centers.

These additional operational and capital actions are detailed below.

OPTION ONE: Divest Surplus Landholdings.

Divesting surplus landholdings with strategic time-to-market transactions will replenish the NMSU College of Agricultural, Consumer, and Environmental Sciences funding budget and create additional resources for potential reinvestment into their current research center facilities. This recommendation directly aligns with research center staff recommendations towards enhancing the center's mission and vision.



OPTION TWO: Review Land Use for the Surplus Landholdings.

Rethinking and reallocating surplus landholdings with strategic lease transactions to the private sector to create wind farms, grazing farms, solar farms, or any other public-minded use that will allow for a cash flow increase while still retaining land ownership that should replenish NMSU College of Agricultural, Consumer, and Environmental Sciences fund balance and create financial resources for additional reinvestment into each research center facility and infrastructure. This recommendation directly aligns with each research center's mission and vision.



OPTION THREE: Explore Public Bond Support.

The evaluation team advises the institution to consider using non-state funding sources and develop a plan for a multi-million bond referendum to fund facility improvements at each of the twelve research centers. If approved by the voters, these funds would optimize the immediate safety concerns and modernization of the research centers while addressing top-priority facility repair and infrastructure needs in the near term. Consequently this would defer the remaining \$6,402,251.40 million in lower priorities for future implementation due to construction escalation over the next 5-year cycle. In an effort to assist the bond steering committee, the planning team defined a list of recommended high-importance/ high-impact enhancements for each research center focusing on critical facility replacements, repairs, and high technology needs.



OPTION FOUR: Explore Public-Private Partnership.

The evaluation team also recommends that the NMSU College of Agricultural, Consumer, and Environmental Sciences team and the institution consider identifying and developing specific strategic public partnerships aligned with their 5-year cycle to secure targeted sponsorship and ventures with key industry leaders that each center serves. This proposed association can work with donors or sponsors with a vested interest in the success of the research agenda of each center. This option will require a more detailed analysis to engage the private sector in identifying suitable candidates for each research center.



INTRODUCTION AND METHODOLOGY

In concurrence with the academic offering by New Mexico State University, the College of Agricultural, Consumer, and Environmental, the expected outcome for this assessment effort is to provide the New Mexico State University Planning and Design team with a snapshot assessment of the “present day” state of their existing facilities with the expectations of developing a sound strategy for the maintenance, upgrades, and/or replacement of their agricultural centers’ building facilities. This assessment also serves as an inventory of the building conditions of each center intended to inform the College of Agricultural, Consumer, and Environmental Science leadership as they continue to prioritize their needs for academic, research, and public service. In order for the system to help fulfill the NMSU College of ACES educational and research vision, the NMSU Board of Regents and Administration determined the necessity to develop the Facility Master Plan (FMP) and assessment that will inform and guide the potential of needed facility rehabilitation and capital investment decisions for the next 5-year cycle. Entrusted with first putting College of ACES research excellence in the forefront and then emphasizing the effective stewardship of the university’s assets, NDA&D engaged and undertook an exhaustive visual assessment of every research center facility, evaluated demographic studies, and facilitated a transparent assessment and planning process. This process included the participation of staff members from the NMSU team and administrative members of each agricultural center.

The Facility Master Plan findings and recommendations from our assessments and reviews are summarized within this document, providing the NMSU Board of Regents with an independent, unbiased snapshot and near-term forecast of all ACES facilities’ condition, suitability, and utilization. This document summarizes the results of a comprehensive assessment performed in the Fall of 2022 through the Summer of 2023, culminating in this Facility Master Plan with recommendations for NMSU College of ACES that identifies options for future investments in the enhancement and maintenance of its agricultural centers’. We have included a review of the entire facility portfolio, an educational/ research adequacy assessment, a facility condition assessment, a five (5) year life-cycle forecast, and a review of College of ACES’s current enrollment statistics.

NMSU ACES RESEARCH AT EACH SITE

FABIAN GARCIA and LEYENDECKER PLANT SCIENCE RESEARCH CENTER

FGRC - 113 W University Ave P.O. Box 30003, MSC 3Ley Las Cruces, N.M. 88003

LPSRC - 7200 Plant Science Circle, Las Cruces, NM 88003

The research mission of the Leyendecker Plant Science Research Center and the Fabian Garcia Science Center is to improve the lives of New Mexicans, the nation, and the world through research, teaching, and Extension. The Leyendecker Plant Science Research Center serves as the outdoor agronomic laboratory for researchers located on the NMSU main campus in Las Cruces; the Fabian Garcia Science Center is oriented toward horticultural research.

Fabian Garcia and Leyendecker Plant **Science Research Center -** **WAYFINDING**



Leyendecker Plant Science Research Center - WAYFINDING



Leyendecker Plant **Science**
Research Center



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Fabian Garcia Plant **Science Research Center - WAYFINDING**



Fabian Garcia Plant **Science Research Center**



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Fabian Garcia and Leyendecker Plant **Science Research Center -** **LOCATIONS**



Leyendecker Plant **Science Research Center - PROPERTY BOUNDARY**



Leyendecker Plant **Science Research Center**



NINE DEGREES
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Leyendecker Plant **Science Research Center - LOCATIONS**



Leyendecker Plant **Science Research Center**

- 1. Lab Trailer B 595 (FCI Score 0.212)
- 2. Shop Pesticide Storage 313A (FCI Score 0.254)
- 3. Weed Research 313 (FCI Score 0.295)
- 4. Greenhouse North 150A (FCI Score 0.032)
- 5. Greenhouse 150B (FCI Score 0.103)
- 6. Pump House 309 (FCI Score 0.071)
- 7. Office 306 (FCI Score 0.236)
- 8. Sup Residence 308 (FCI Score 0.270)
- 9. Gin/Drier Building 344 (FCI Score 0.049)
- 10. Field Research Lab 649 (FCI Score 0.010)
- 11. Field Acid Delinting Lab 77 (FCI Score 0.122)
- 12. Lab Building 345 (FCI Score 0.068)
- 13. Office Trailer A 394 (FCI Score 0.208)
- 14. Shop 310 (FCI Score 0.047)
- 15. Implement Shed 312 (FCI Score 0.045)
- 16. Pesticide Storage



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Fabian Garcia Plant **Science Research Center -PROPERTY BOUNDARY**



Fabian Garcia Plant **Science Research Center**



NINE DEGREES
Architecture + Design, Inc.

Fabian Garcia Plant **Science Research Center -LOCATIONS**



Fabian Garcia Plant **Science Research Center**

- 1. Storage Shed 28 (FCI Score 0.292)
- 2. Packing Shed (FCI Score 0.350)
- 3. Implement Shed 168 (FCI Score 0.076)
- 4. Fertilizer Storage 156 (FCI Score 0.076)
- 5. Office Seed Room 157 (FCI Score 0.202)
- 6. Office and Labs 158 (FCI Score 0.034)
- 7. Shade House 510
- 8. Green House 352 (FCI Score 0.621)
- 9. Green House 351 (FCI Score 0.010)
- 10. Green House B 420 (FCI Score 0.160)
- 11. Shade House A 509
- 12. Green House C 421 (FCI Score 0.869)
- 13. Pump House 508 (FCI Score 0.009)
- 14. Green House 584 (FCI Score 0.005)
- 15. Shade House C 511
- 16. Green House 353 (FCI Score 0.177)
- 17. Fermentation Lab 659 (FCI Score 0.067)
- 18. Restrooms 374 (FCI Score 0.022)



NINE DEGREES
Architecture + Design, Inc.

Leyendecker Plant **Science Research Center -** **DEFICIENCIES LIST**



Leyendecker Plant **Science Research Center -** Deficiencies **List**



OFFICE 306

The existing stucco coat over CMU is cracking and de-laminating throughout it needs the crack repaired and the exterior walls repainted. The soffit needs repairs and repaint and a concrete apron along exterior walls on areas where existing landscaping is next to house is needed along with the removal of all landscaping close to exterior walls. The building needs gutters and downleaders including the repair of the rotted fascia boards and then repaint,. The existing CMU garden walls needs refinishing and replace damaged sidewalk around house. Replace damaged screen doors and an ADA lockset are needed at all perimeter doors. In the interior South West corner of room 104 the existing floor is settling over crawlspace area, repair settlement crack in wall at closet, and replace broken glass at entry area.



SUPERINTENDENT RESIDENCE 308

The corrugated metal roof panels needs to be replaced and install roof decking along west side overhand. Outriggers and wood fascia need to be repaired and painted, need installation of gutters and downleaders. The building needs a concrete apron on all 4 sides and regrading to provide positive flow away from building. Existing stucco cracks needs repair and repainted. Replace rotted wood and repaint all exposed wood gable ends (including at roof step down). All exterior wood doors need to be repainted and the rotted wood trim at doors replaced. Need to seal all exterior wall conduit penetrations and at exterior mechanical room at West side replace the door assembly.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



WEED RESEARCH STORAGE SHED 313A

Repair wood fascia and outriggers are needed and paint, and the building needs gutters and downleaders. The building needs a concrete apron around all 4 sides and regrade site to provide positive flow away from building. The exterior facade needs the stucco cracks repaired and repaint. Replace rotted wood around doors and it needs for ADA lockset compliant at all doors, and replace all windows with double pane insulated. All exterior wall conduit penetrations need to be sealed, the water heater enclosure at North side of building needs replacement and a ADA ramp to one of the side doors.



OFFICE TRAILER A 394

The structure needs a new skirting along the base of the structure, and repair damaged exterior wall panels. The structure also needs and ADA accessible access and ramp and deck both at the entrance and rear door. The existing restroom is not ADA accessible, and it needs ADA hardware to entry and back. Site need to be regraded for erosion and add concrete apron all around.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



LAB TRAILER B 595

The structure needs a new skirting along the base of the structure, add new gutters and downleaders to manage soil erosion and repair damaged exterior wall panels. The structure also needs an ADA accessible access and ramp and deck both at the entrance and rear door. The existing restroom is not ADA accessible, and it needs ADA hardware to entry and back. Site need to be regraded for erosion and add concrete apron all around.



GREENHOUSE 150 B

The greenhouse needs an ADA compliant access concrete landing and equipped with ADA hardware. All exterior plastic corrugated fiber reinforced panels need to be replaced. The site needs to be regraded around the building to create positive drainage away from structure and prevent erosion.

Leyendecker Plant **Science Research Center** - Deficiencies **List**



IMPLEMENT SHED 312

Overhead doors needs to be replaced. The damaged exterior wall metal panels need replacement and the head and jambs at overhead doors need to be painted. Add concrete approach aprons at both overhead doors and add soil at eroded corners of the buildings. The building needs a concrete apron all around for drainage control, and regrade to provide positive drainage away from buildings. Gutters and downspouts need to be added, repaint entry main doors, and fix roof leak.



PUMPHOUSE 676.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



SHOP 310

Overhead doors needs to be replaced. The damaged exterior wall metal panels need replacement and the head and jambs at overhead doors need to be painted. Add a concrete approach aprons at both overhead doors and add soil at eroded corners of the buildings. The building needs a concrete apron all around for drainage control, and regrade to provide positive drainage away from buildings. Gutters and downleaders need to be added, repaint entry main doors, and fix roof leak.



GIN DRYER 344

Needs to add an ADA accessible door with ADA ramp and concrete landing. Need to replace damaged exterior wall panels, and needs roof repairs for metal panels leaks, replace existing sliding barn doors with new and all new hardware. Regrade all around to stop erosion and add a concrete apron all around, and a concrete drive approach to each large sliding barn doors.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



LAB BUILDING 345

Needs to replace overhead doors, and replace damaged exterior wall metal panels. Repaint the head and jambs at the overhead doors, and add a concrete aprons at both overhead doors. The site needs to add soil at eroded corners of the building and it needs a concrete apron all around. ,Two rusted hollow metal doors needs to be replaced, including adding new ADA hardware and concrete pad. The main door needs to be repainted and needs a concrete landings at all main doors for ADA compliance. Need to paint new overhead doors, repair existing roof leak, regrade site to provide positive drainage away from buildings. Interior work include repair gyp wall board cracks inside main hallway and re-paint, add needed LED lighting inside main hallway since space is too dark now.



PUMP HOUSE 309

The structure needs a new roof, all exterior wall faces needs to be repainted, an appropriate integrated heating unit need to be installed. The structure needs to be re insulated, rain gutters and down leaders added, and a concrete entry stoops and regrading for positive drainage.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



CHEMICAL STORAGE 313B

South side needs regrading for drainage and the stucco walls need all crack repaired and repainted. A new side walk and ramp along south side is needed. The door jambs/ trims need repaired and repainted, including adding ADA access hardware. The parapet metal cap needs reattachment, overhead door seals, needs repair, and door jambs and head on West doors need to be repaired and repainted.



COTTON SEED DELINTING GIN 77

Building needs to be resealed or apply paint to all exterior walls to protect wood, and repaint metal cage. A concrete stoop for safe entry and ADA access ramp, need to be installed including ADA hardware locks at double doors. Need to install gutters and downleaders, and the building needs concrete apron along three sides including grading the site to create positive drainage away from building.

Leyendecker Plant **Science Research Center -** Deficiencies **List**



FIELD RESEARCH LAB 649

Need to install gutters and downleaders, and the building needs concrete apron along all four sides including grading the site to create positive drainage away from building.



GREENHOUSE 150 A

Needs to replace broken door vision panels. Needs to install ADA access ramp concrete sidewalk, including ADA hardware to entrance door.

Fabian Garcia Plant **Science Research Center -** **DEFICIENCIES LIST**



Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



OFFICE AND LABS 158

Stucco cracking and de-laminating throughout, needs crack repairs and new exterior wall repaint, needs soffit repairs and repaint, roof shingles flown off (needs re-roofing), needs concrete apron along exterior walls on 4 sides of building and greenhouse, needs removal of all landscaping close to exterior walls, needs regrading to create positive drainage away from building, needs gutters and downleaders, greenhouse perimeter pony walls, repair west greenhouse wall moisture damage interior and exterior.



OFFICE SEED ROOM 157

Stucco cracking and de-laminating throughout, needs crack repairs and new exterior wall repaint, needs soffit repairs and repaint, roof shingles flown off (needs re-roofing), needs concrete apron along exterior walls on 4 sides, needs removal of all landscaping close to exterior walls, needs regrading to create positive drainage away from building, needs gutters and downleaders, need ADA access landing and entry to building, need ADA restroom, replace lights to LED, repair cracked plaster at front door jambs, repair excessive cross slope on inside to meet ADA

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



GREENHOUSE B 420

Needs to replace all exterior plastic corrugated fiber reinforced panels, Need downleaders for existing gutters, need repaint entry door, Needs ADA access and landing at front door, regrade around building to create positive drainage away from building on two end elevations and add soil to long elevation along North to fight erosion.



GREENHOUSE 352

Needs ADA access ramp to front door, Ada hardware to entry door, needs repaint frames of exhaust hood, Need to replace rusted metal panels around head house, concrete apron around headhouse exterior walls, regrade around building to create positive drainage away from building, need gutters and downleaders at the headhouse.

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



GREENHOUSE 351

Needs ADA access ramp to front door, Ada hardware to entry door, needs repaint frames of exhaust hood, Need to replace rusted metal panels around head house, concrete apron around headhouse exterior walls, regrade around building to create positive drainage away from building, need gutters and downleaders at headhouse



GREENHOUSE 584

Needs to replace rotted wood trim around Southern entry door and pressure relief ports.

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



IMPLEMENT SHED 168

Stucco cracking and delaminating throughout, needs crack repairs and new exterior wall repaint, needs soffit repairs and repaint, roof shingles flown off (needs re-roofing), needs concrete apron along exterior walls on 4 sides, needs removal of all landscaping close to exterior walls, needs regrading to create positive drainage away from building, needs gutters and downleaders.



GREENHOUSE 353

Needs to replace all exterior plastic corrugated fiber reinforced panels, Needs ADA access ramp to front door, Ada hardware to entry door, needs concrete apron around headhouse exterior walls, regrade around building to create positive drainage away from building, need gutters and downleaders at headhouse.

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



PACKING SHED 155

Repaint/ repair wooden roof monitors/ dormers/ vent enclosures, Stucco cracking and de-laminating throughout, needs crack repairs and new exterior wall repaint, needs soffit and outrigger repairs and repaint, roof coating needs removal and replace with metal R panel roof, needs concrete apron along exterior walls on 4 sides of building, needs regrading to create positive drainage away from building, needs gutters and downleaders, replace rotted wood below sliding barn doors, repair and repaint sliding barn doors, replace all rotted wood at West elevation deck fascia, repaint concrete base wall at West dock area, replace rotted wood at North entry stairs, repaint all exposed wood at North sliding doors and repaint, replace all rotted vertical shade drapes, replace all vertical wire mesh along dock perimeters.



STORAGE SHED 28

Rebuild roof vents and paint, replace corrugated metal roof panels, repair wood fascia and outriggers and paint, need gutter and downleaders, concrete apron on all 4 sides, regrade to provide positive flow away from building, repair stucco at entry door jambs, repair stucco cracks and repaint, replace rotted wood and repaint all exposed wood gable ends, replace broken window at upper level, ADA ramp needed at entry door, repaint all exterior wood doors and window trims, seal all exterior wall conduit penetrations.

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



FERTILIZER STORAGE 156

Stucco cracking and de-laminating throughout, needs crack repairs and new exterior wall repaint, needs soffit repairs and repaint, roof shingles flown off (needs re-roofing), needs gutters and down-leaders, needs concrete apron along exterior walls on 4 sides, needs removal of all landscaping close to exterior walls, needs regrading to create positive drainage away from building.



TRAILER 478

Need new skirting, new gutters and downleaders, repair damaged exterior wall panels, replace rotted wood on rear deck and repaint, trim branches over roof, need ADA access ramp and deck at entry and rear door, reinstall electrical disconnect for condensing unit, restroom not ADA accessible need replace door and complete renovation, need ADA hardware to entry door and deck door.

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



GREENHOUSE C 421

Needs to replace hollow metal entry door and frame, paint new door and frame, Need downleaders for existing gutters.



PUMP HOUSE 508

Need gutter and downleader, repaint overhead door jambs and header and steel outriggers at soffit, concrete apron along back side, regrade rear of building to provide positive drainage away from building

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



RESTROOMS 374

Replace rotted wood fascia and repaint, paint entire soffit, Need entry door ADA access by creating entry door relocation to face of wall, EIFS repairs, repaint eifs, concrete apron along exterior walls on 3 sides, need gutters and downleaders, replace interior lights to LED



SHADEHOUSE 510

No work not considered a building

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



SHADEHOUSE C 511

No work not considered a building.



SHADEHOUSE A 509

No work

Fabian Garcia Plant **Science Research Center -** Deficiencies **List**



FERMENTATION LAB 659

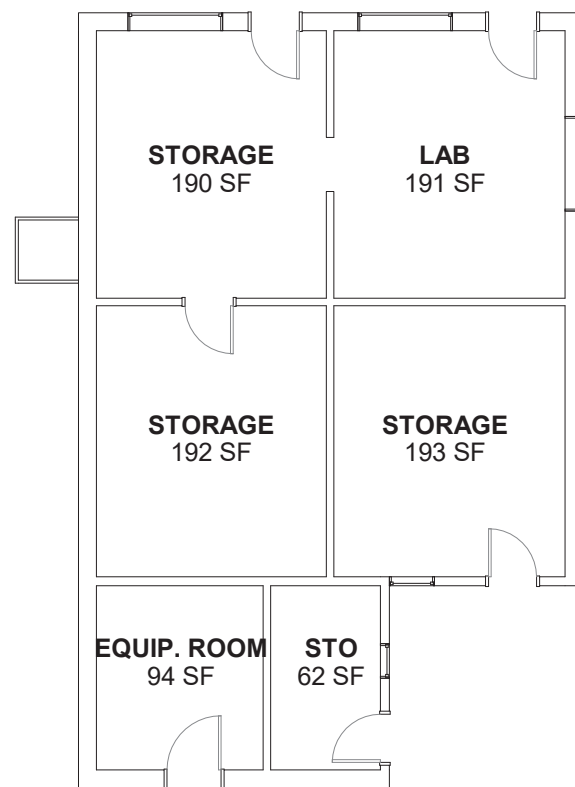
Replace damaged metal wall panels, replace door vision panel in rear door, replace two windows with insulated windows, needs new exterior wall repaint, needs interior repairs (wall/ ceiling tiles, repaint), needs repaint of exterior doors, needs ADA hardware locks at double doors, needs concrete apron around exterior walls along 3 sides.

Fabian Garcia and Leyendecker Plant **Science Research Center -** **FLOOR PLANS**

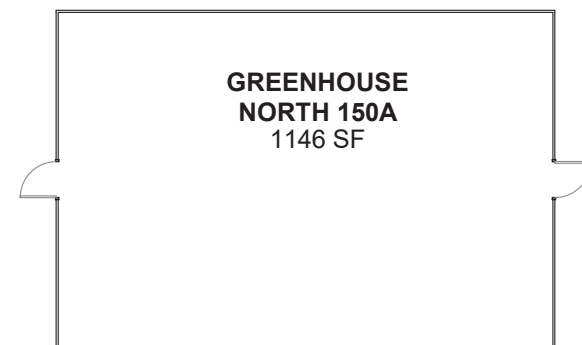




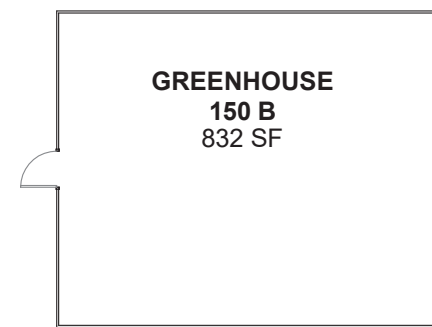
595 LAB TRAILER B
SCALE 3/32" = 1'-0"



313 WEED RESEARCH LAB
SCALE 3/32" = 1'-0"



150A GREENHOUSE NORTH
SCALE 1/16" = 1'-0"



150B GREENHOUSE
SCALE 1/16" = 1'-0"

Leyendecker Plant **Science** Research Center

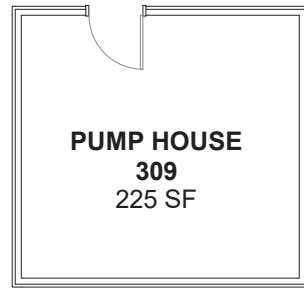
- 1- Lab Trailer B **595**
- 3- Weed Research Lab **313**
- 4- Greenhouse North **150A**
- 5- Greenhouse **150B**



Key Map



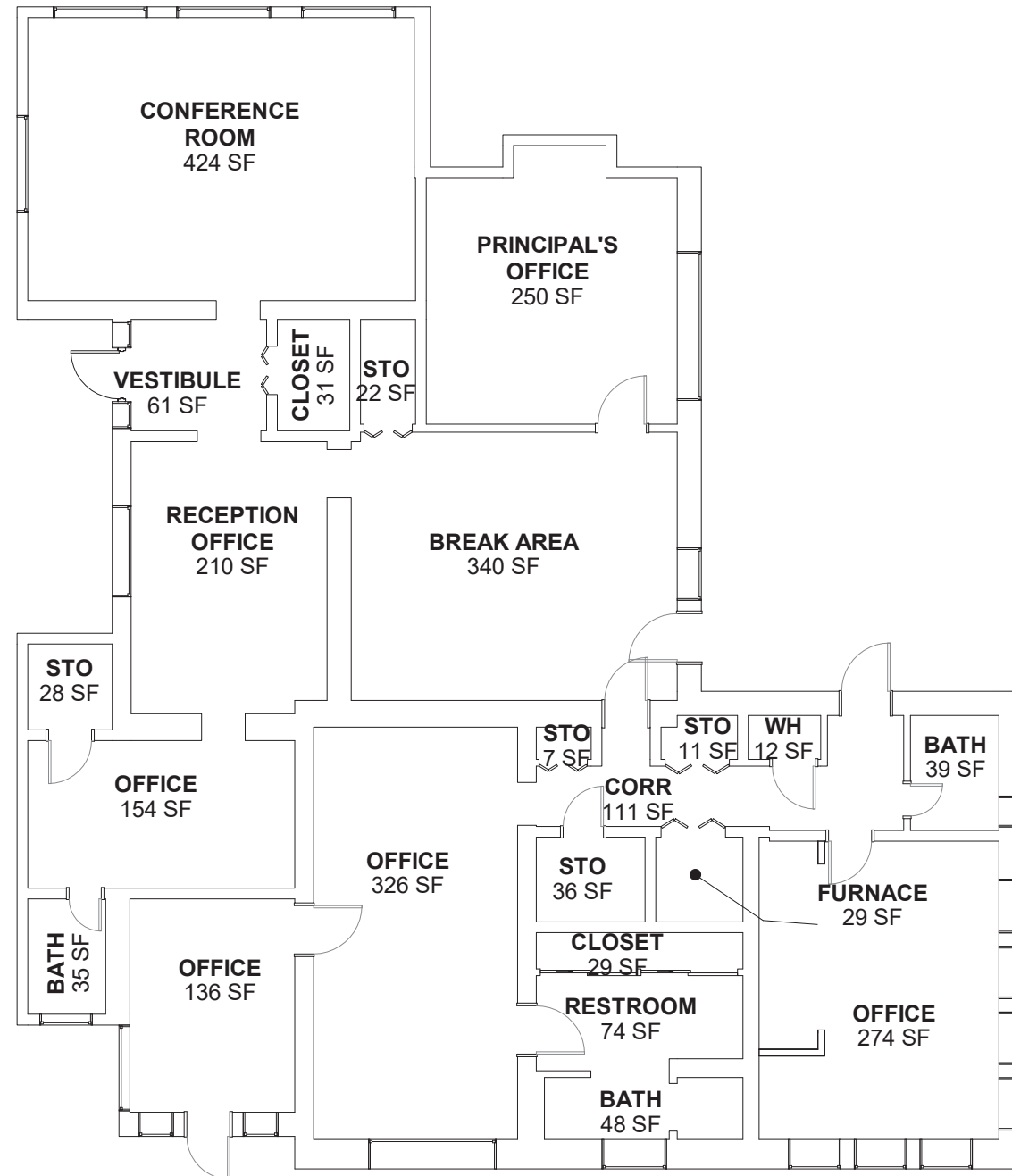
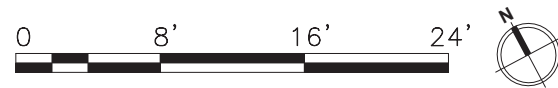
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Architecture + Design, Inc.



**PUMP HOUSE
309**
225 SF

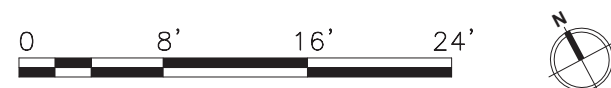
309 PUMP HOUSE

SCALE 3/32" = 1'-0"



306 MAIN OFFICE BUILDING

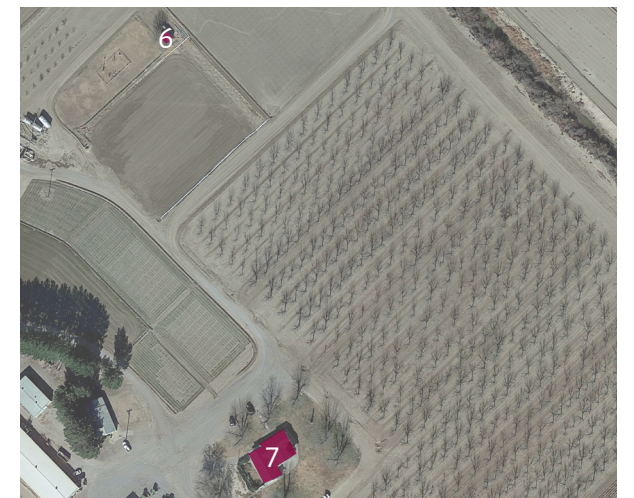
SCALE 3/32" = 1'-0"



Leyendecker Plant **Science** Research Center

6- Pump House 309

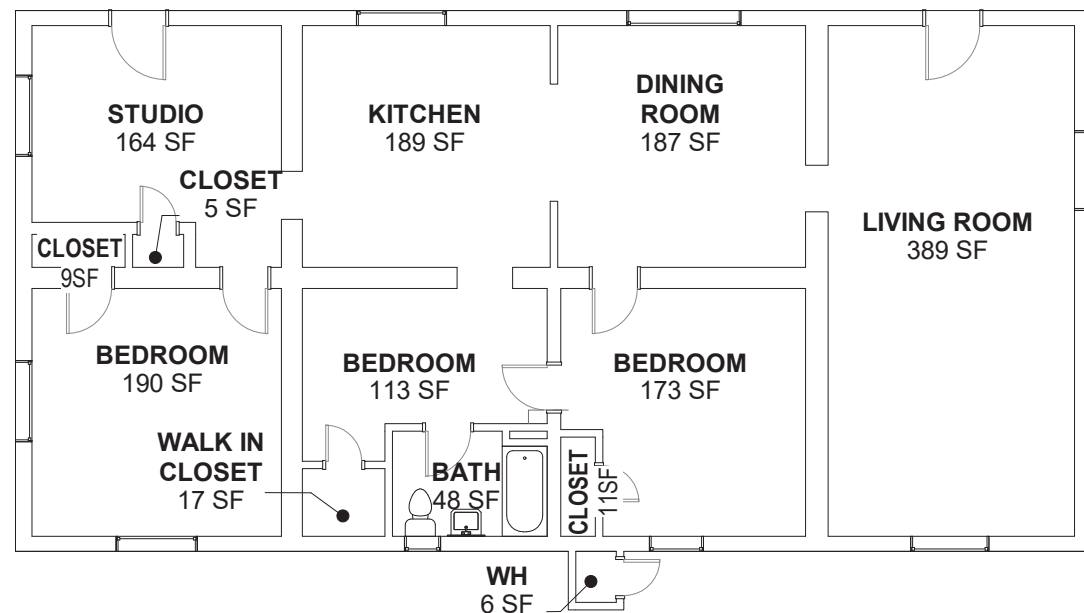
7- Office 306



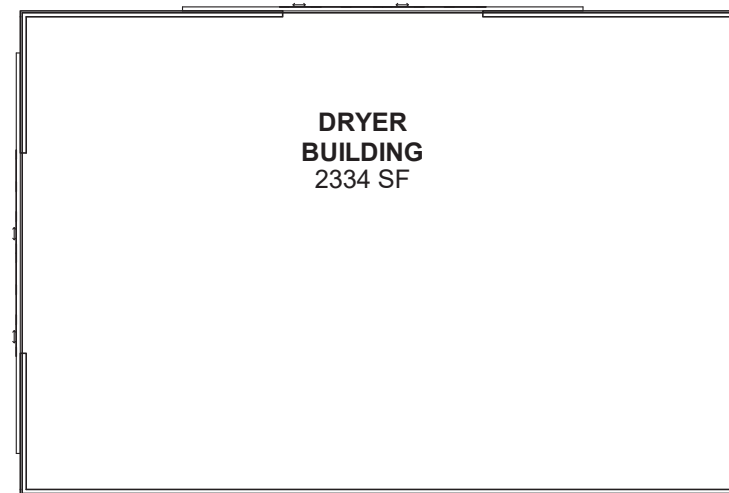
Key Map



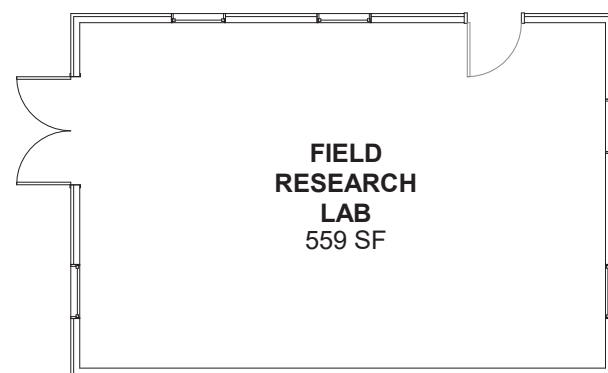
NINE DEGREES
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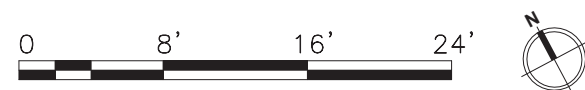
308 SUPERINTENDENT'S RESIDENCE
SCALE 3/32" = 1'-0"



344 DRYER BUILDING
SCALE 1/16" = 1'-0"



649 FIELD RESEARCH LAB
SCALE 3/32" = 1'-0"

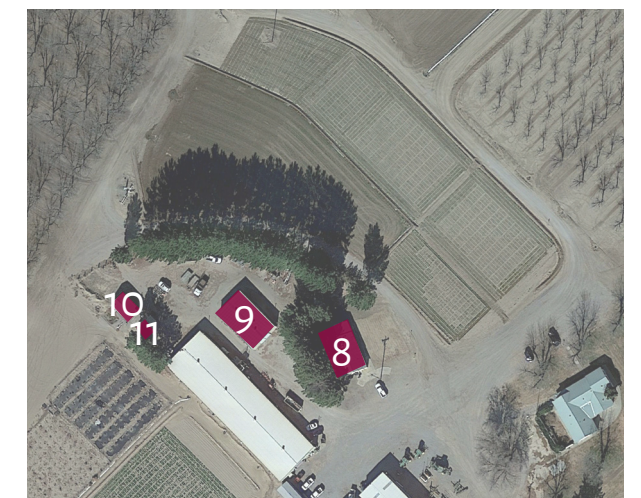


77 COTTON SEED DELINTING GIN
SCALE 1/8" = 1'-0"



Leyendecker Plant **Science** Research Center

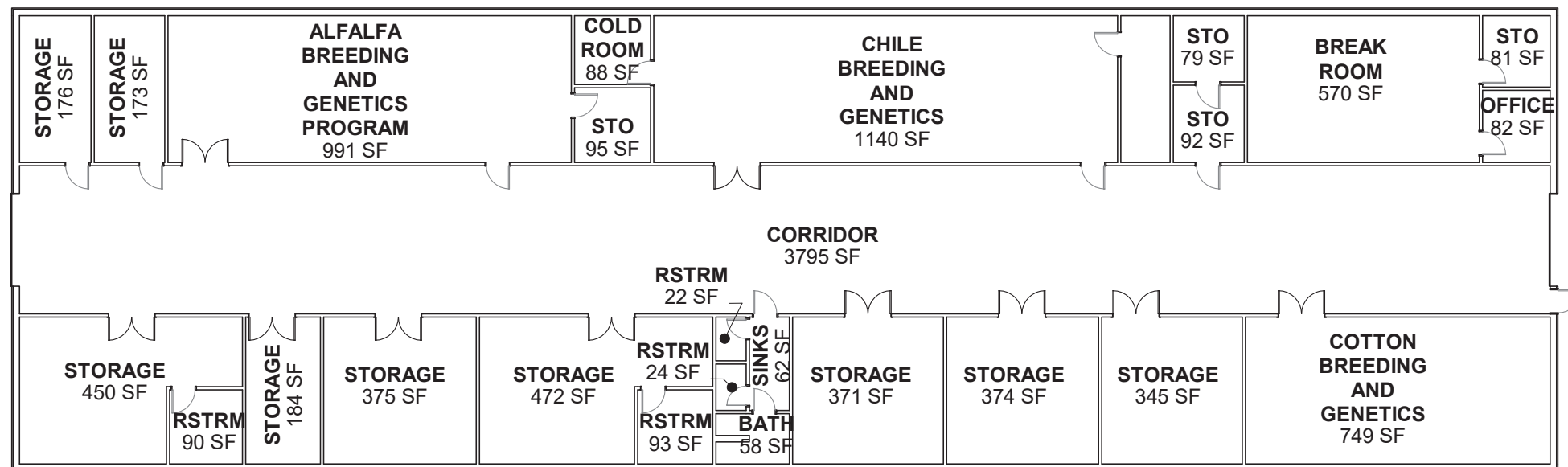
- 8- Supt Residence **308**
- 9- Gin/Drier Building **344**
- 10- Field Research Lab **649**
- 11- Cotton Sedz Delinting Gin **77**



Key Map

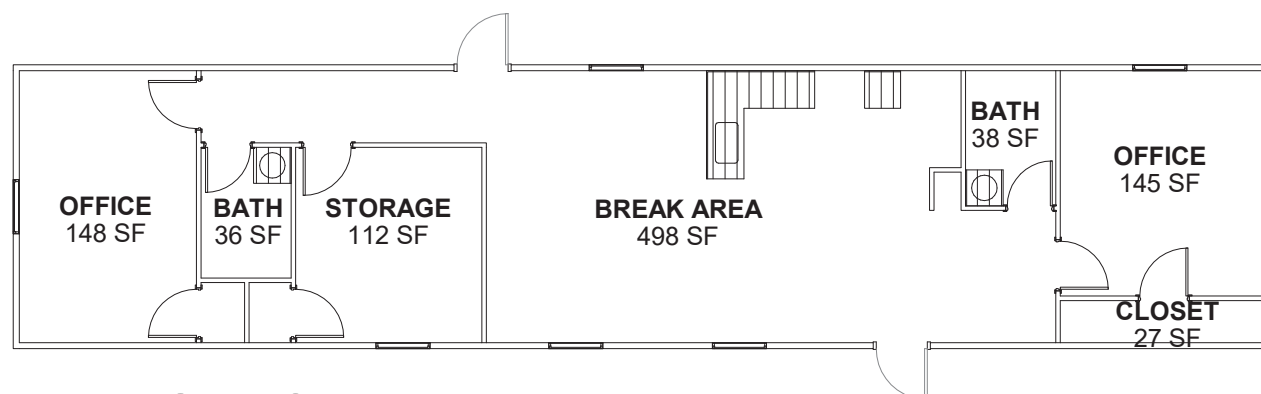


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345 LAB BUILDING

SCALE 1" = 20'-0"



394 OFFICE TRAILER A

SCALE 3/32" = 1'-0"



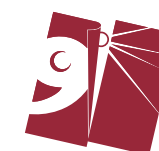
Leyendecker Plant **Science** Research Center

12- Lab Building **345**

13- Office Trailer A **394**



Key Map

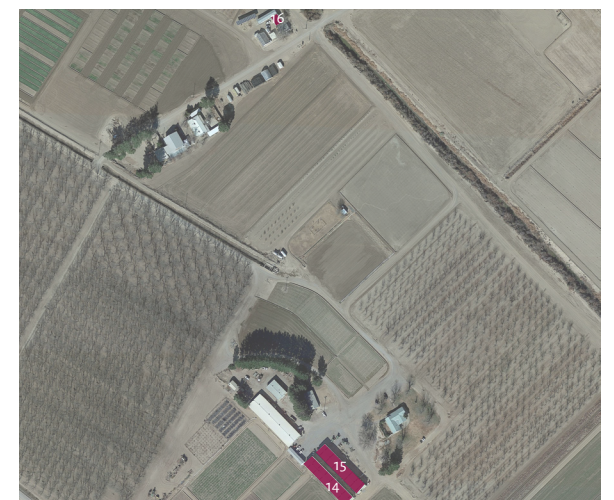


NINE DEGREES
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Leyendecker Plant **Science**
Research Center

- 14- Shop 310
- 15- Office Trailer A 394
- 16- Shop/Pesticide Storage



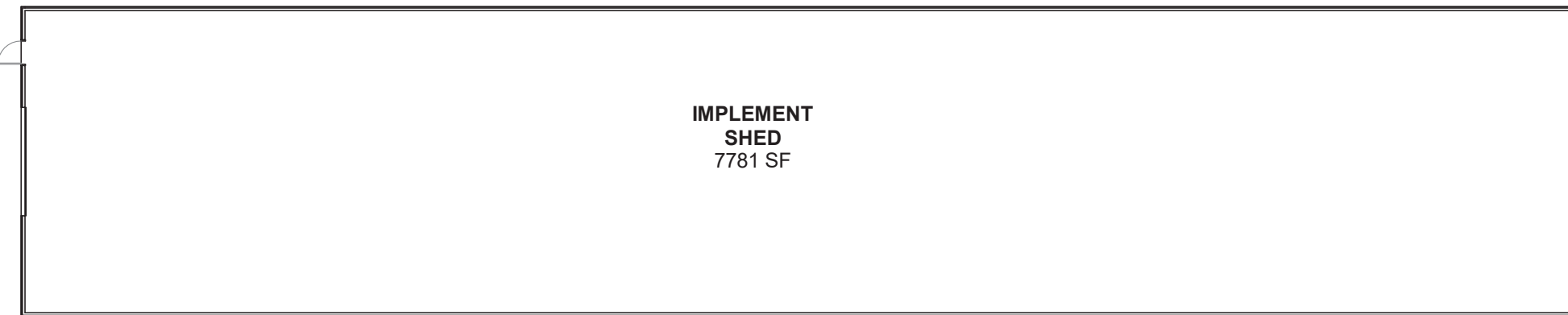
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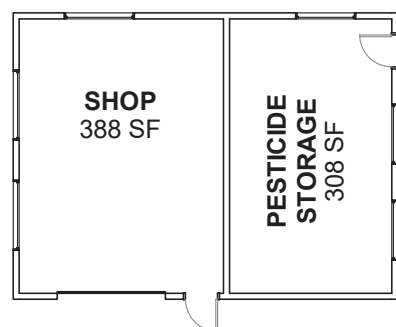
NINE DEGREES
Architecture + Design, Inc.



310 SHOP
SCALE 1" = 20'-0"

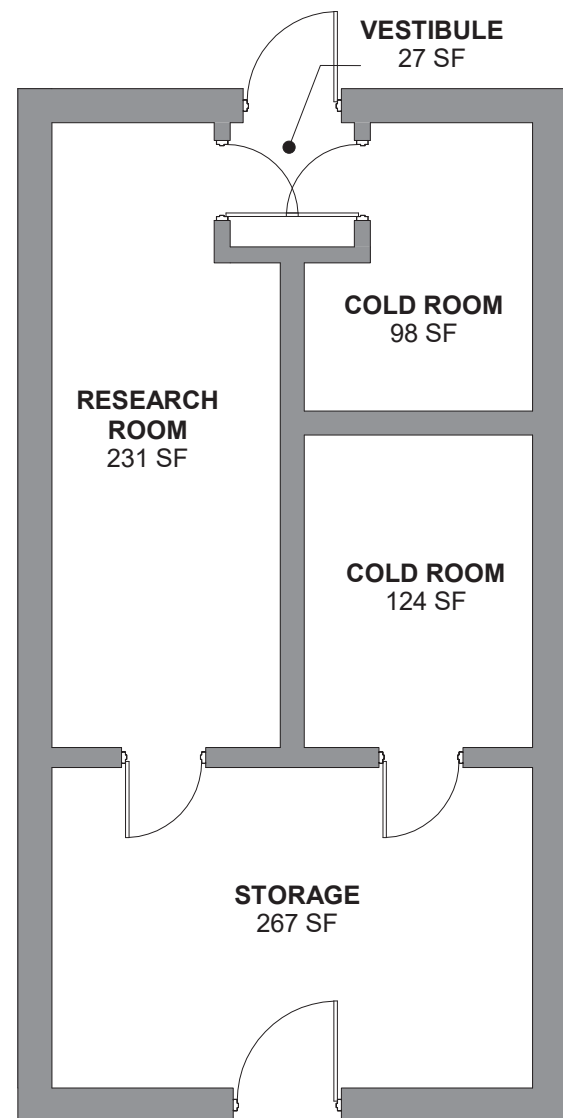


312 IMPLEMENT SHED
SCALE 1" = 20'-0"

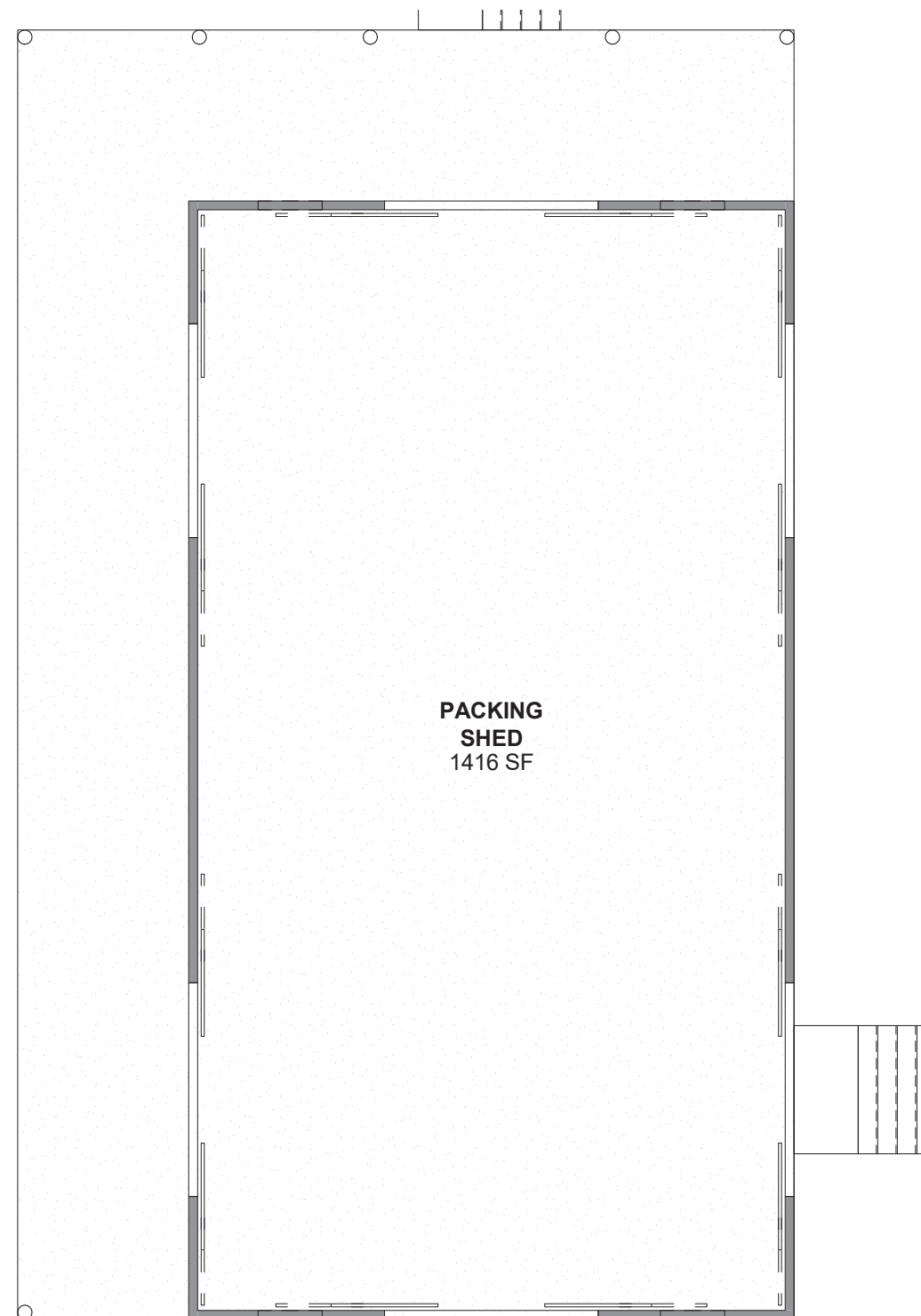


SHOP / PESTICIDE STORAGE
SCALE 1/16" = 1'-0"





28 STORAGE SHED
SCALE 1/8" = 1'-0"



155 PACKING SHED
SCALE 1/8" = 1'-0"



Fabian Garcia Plant **Science** **Research Center**

- 1- Storage Shed **28**
- 2- Packing Shed **155**



Key Map



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Fabian Garcia Plant **Science**
Research Center

3- Implement Shed 168

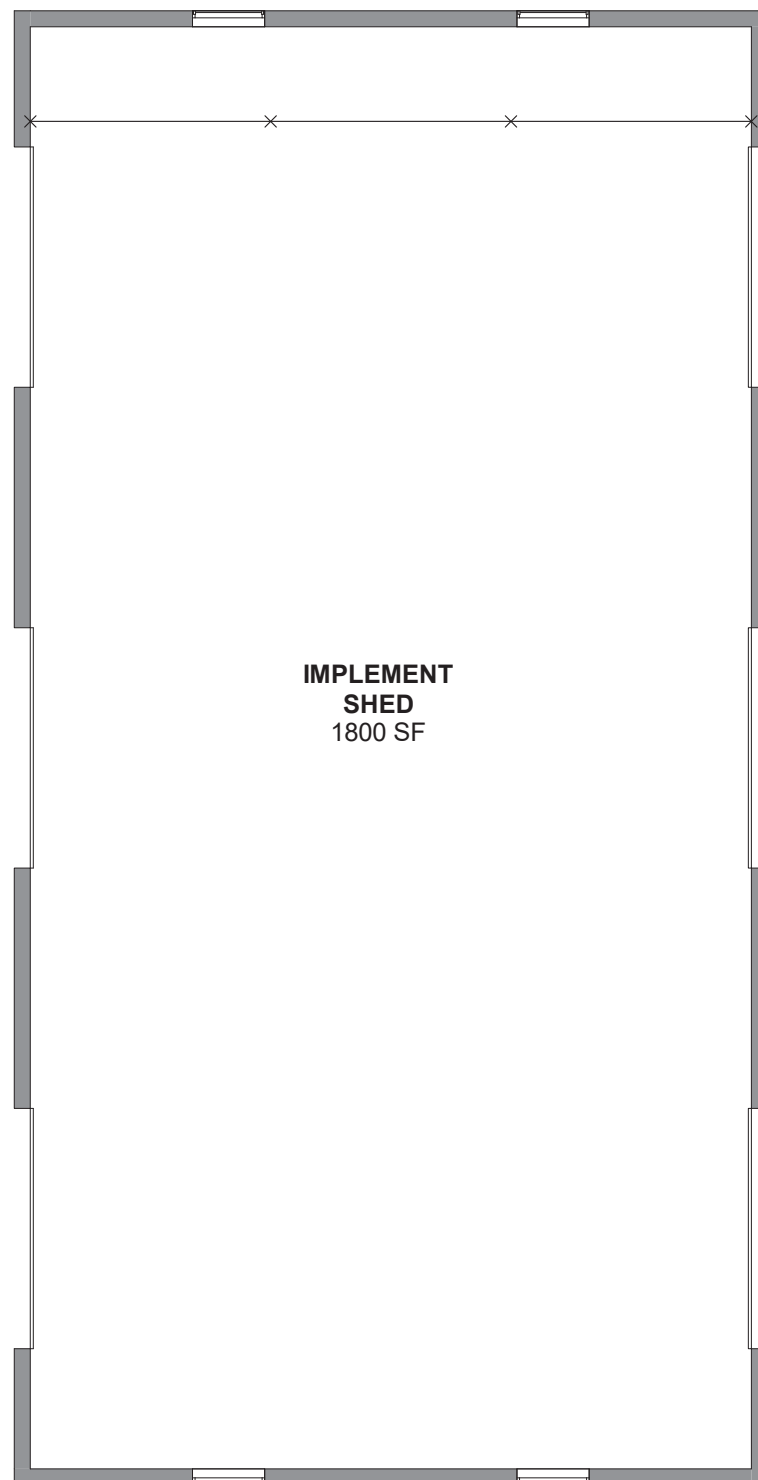
4- Fertilizer Storage 156



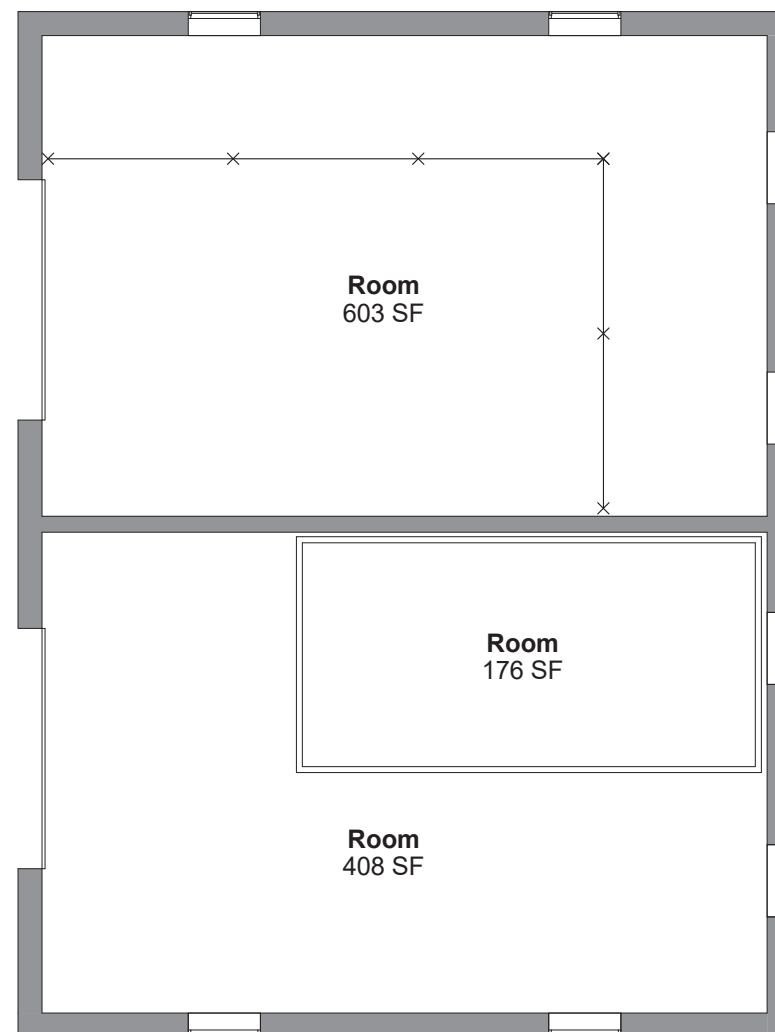
Key Map



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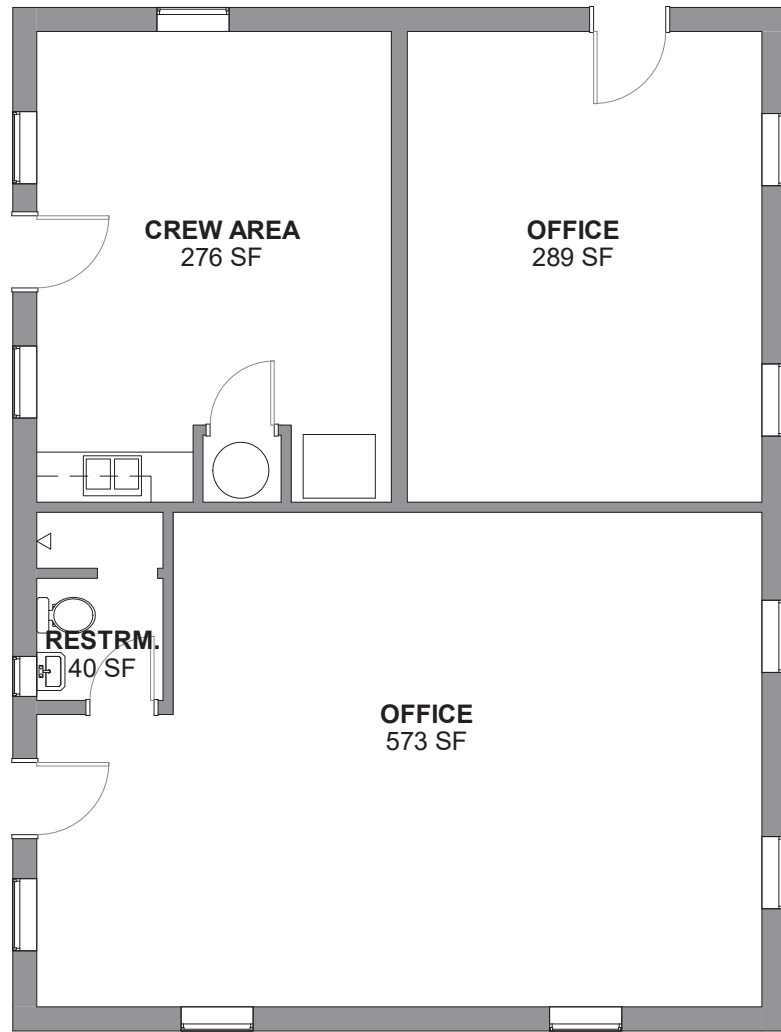


168 IMPLEMENT SHED
SCALE 1/8" = 1'-0"

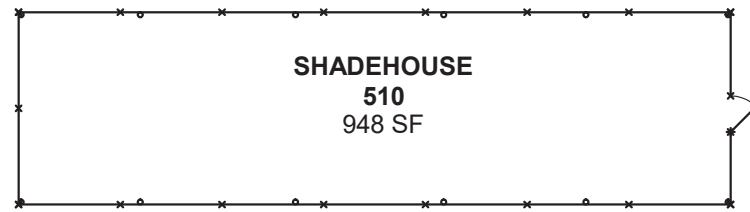
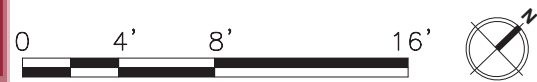


156 FERTILIZER STORAGE
SCALE 1/8" = 1'-0"

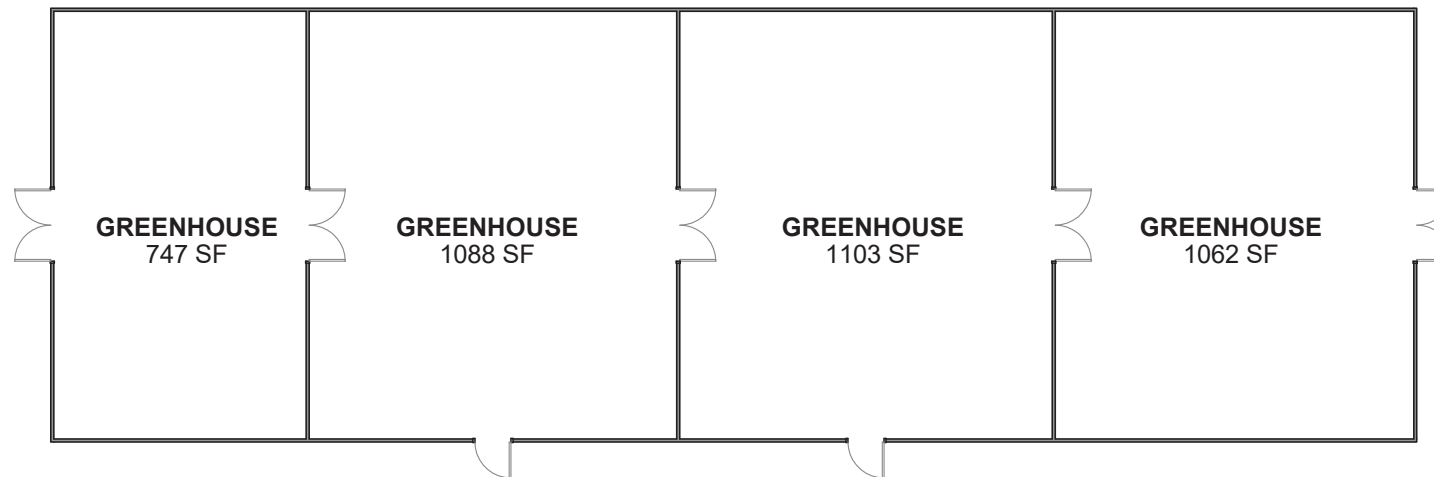




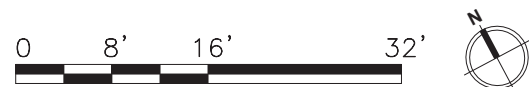
157 OFFICE SEED ROOM
SCALE 1/8" = 1'-0"



510 SHADEHOUSE
SCALE 1/16" = 1'-0"



352 GREENHOUSE
SCALE 1/16" = 1'-0"



Fabian Garcia Plant **Science** **Research Center**

5- Office Seed Room **157**

7- Shade House **510**

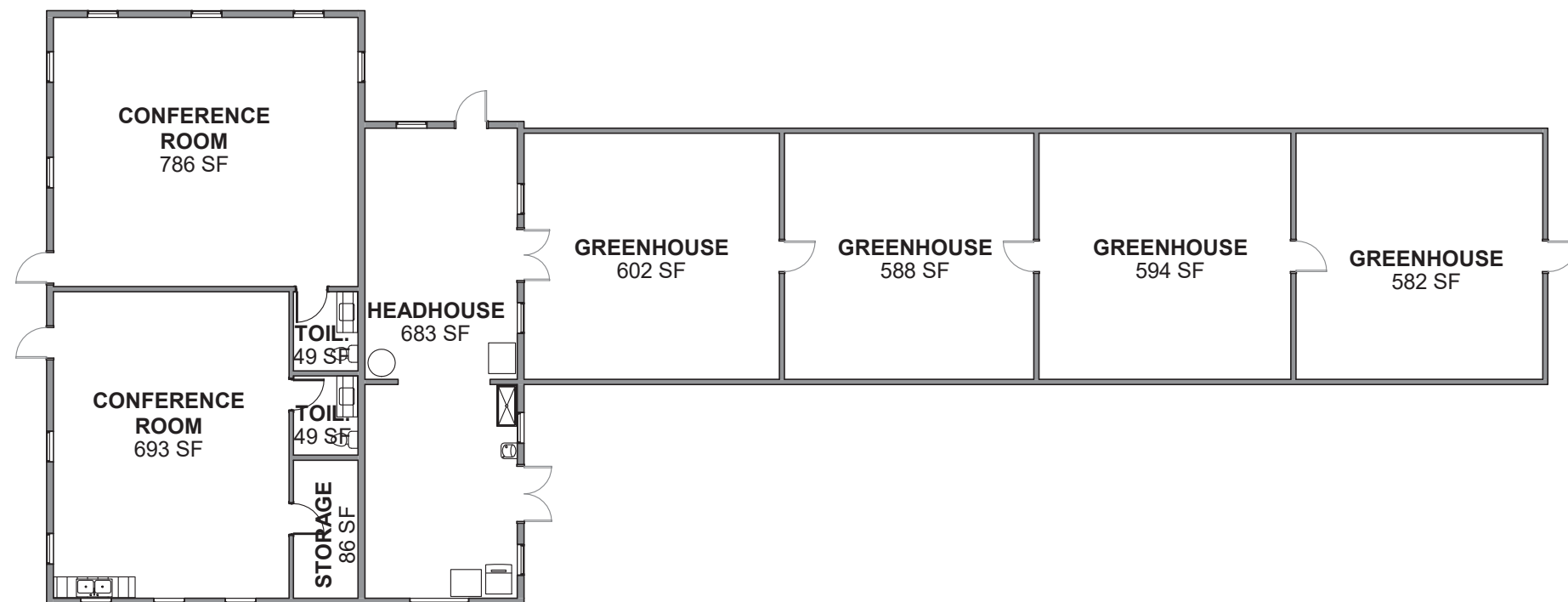
8- Greenhouse **352**



Key Map



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158 OFFICE & LABS

SCALE 1/16" = 1'-0"



Fabian Garcia Plant **Science** Research Center

6- Office and Labs 158



Key Map



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Fabian Garcia Plant **Science**
Research Center

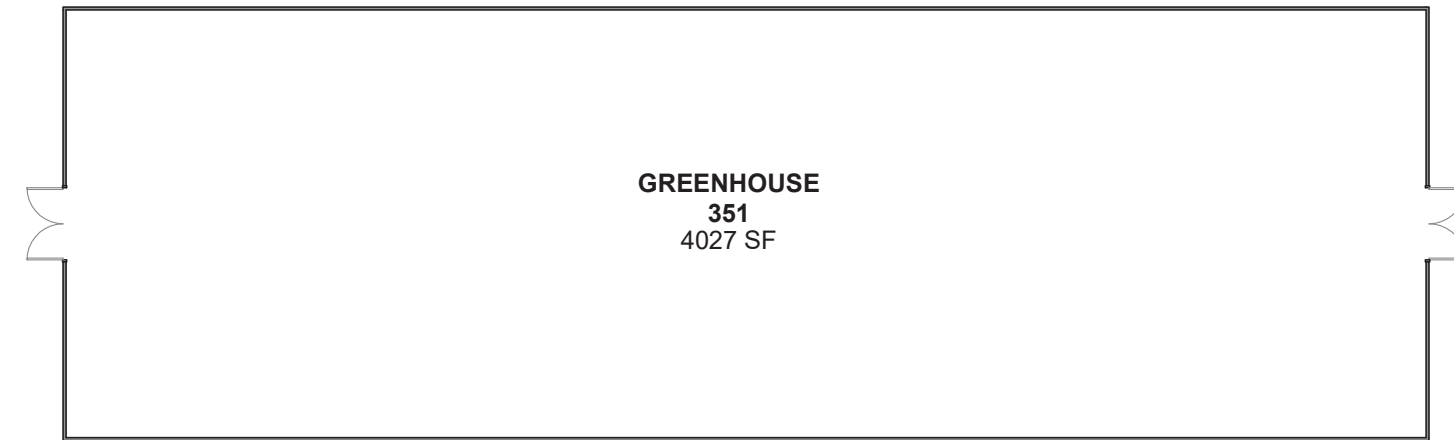
- 9- Greenhouse 351
- 10- Greenhouse B 420



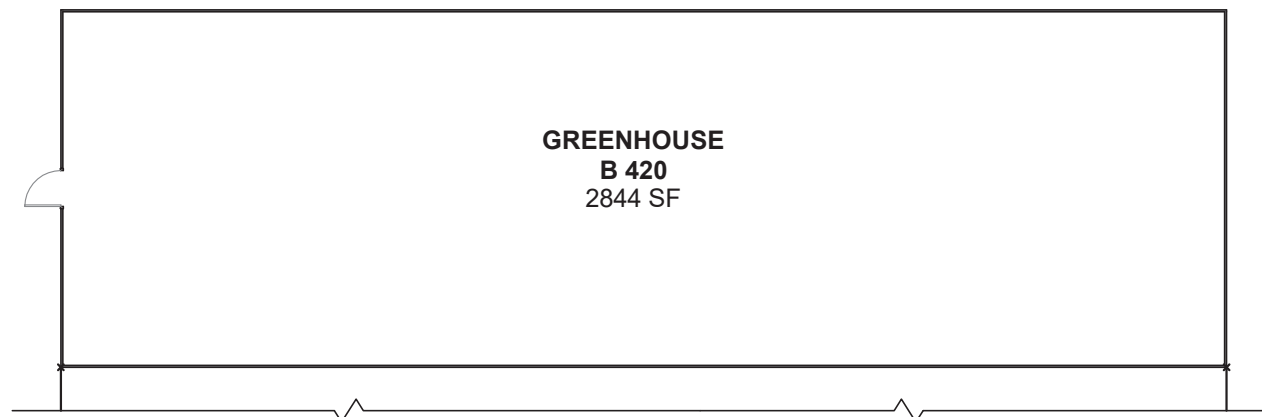
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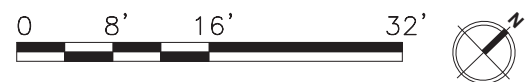
NINE DEGREES
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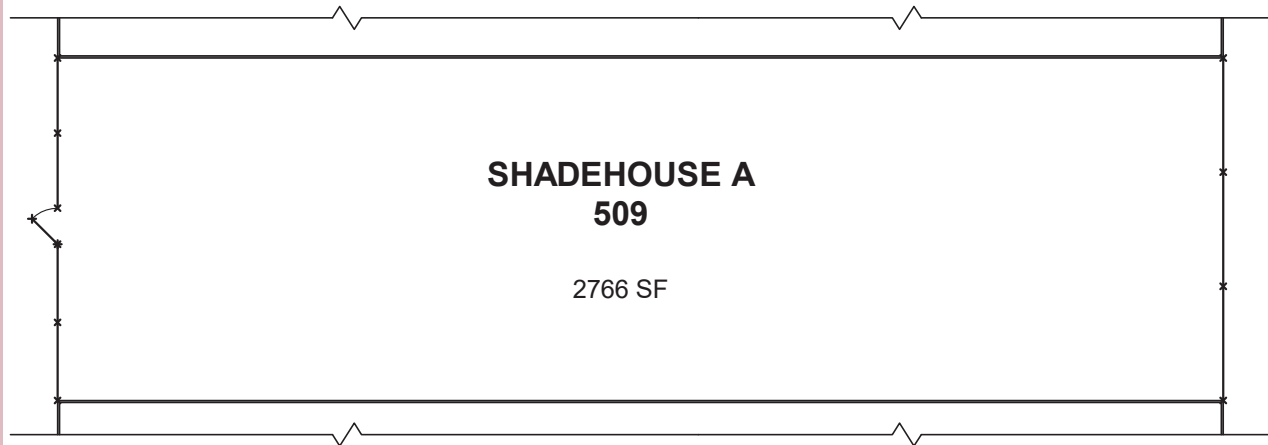


351 GREENHOUSE
SCALE 1/16" = 1'-0"

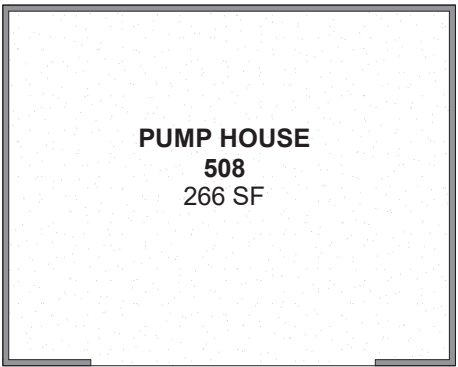


420 GREENHOUSE B
SCALE 1/16" = 1'-0"

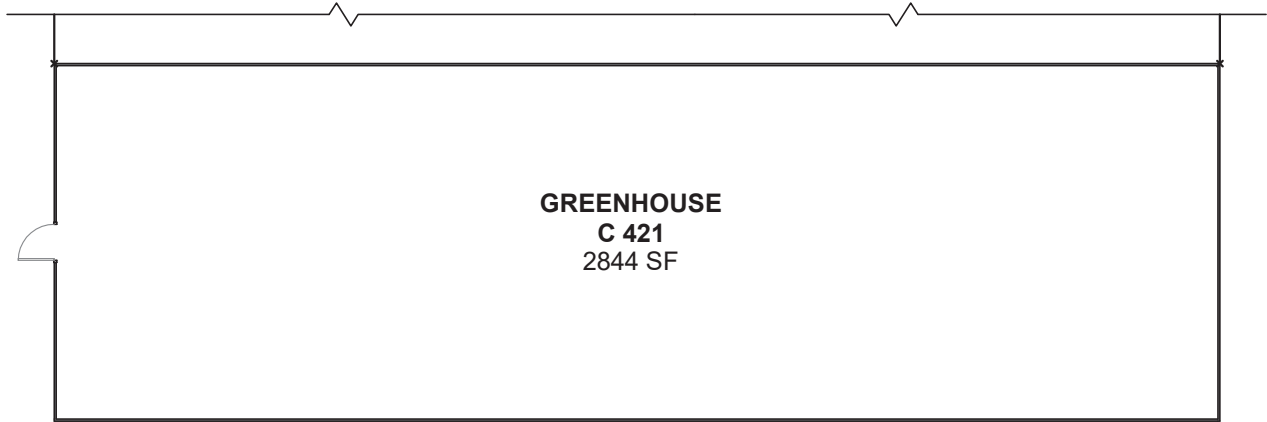




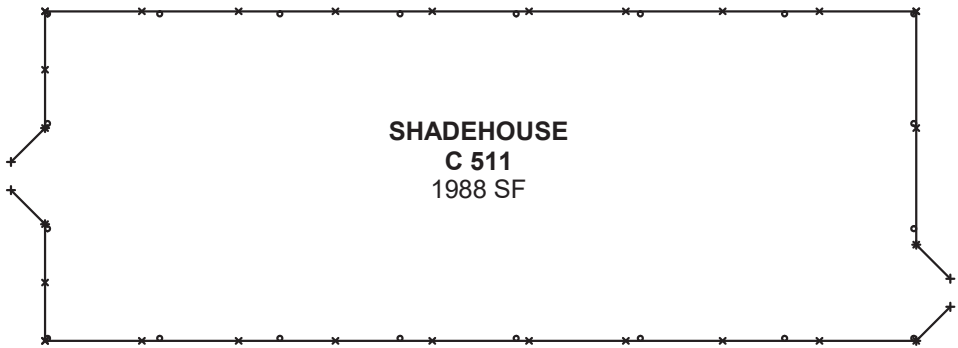
509 SHADEHOUSE A
SCALE 1/16" = 1'-0"



508 PUMP HOUSE
SCALE 1/8" = 1'-0"



421 GREENHOUSE C
SCALE 1/16" = 1'-0"



511 SHADEHOUSE C
SCALE 1/16" = 1'-0"



Fabian Garcia Plant **Science**
Research Center

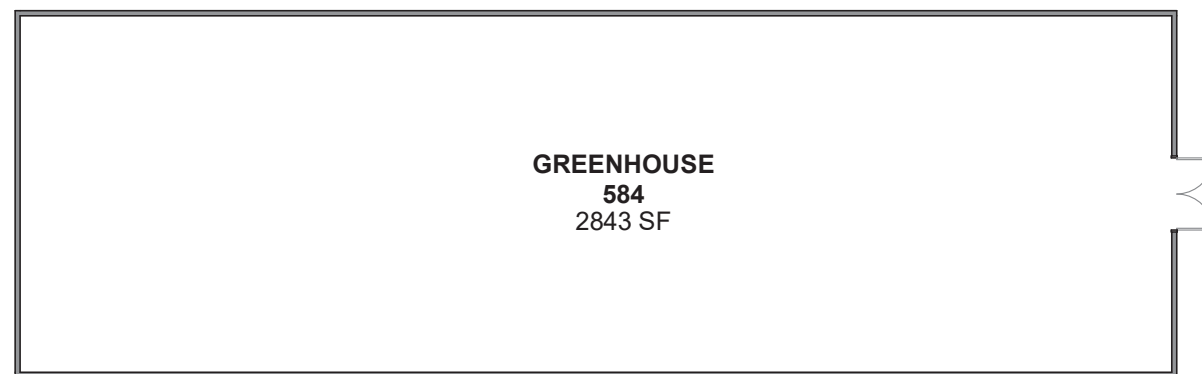
- 11- Shade House A 509
- 12- Green House C 421
- 13- Pump House 508
- 15- Shade House C 511



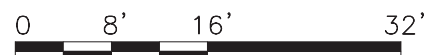
Key Map



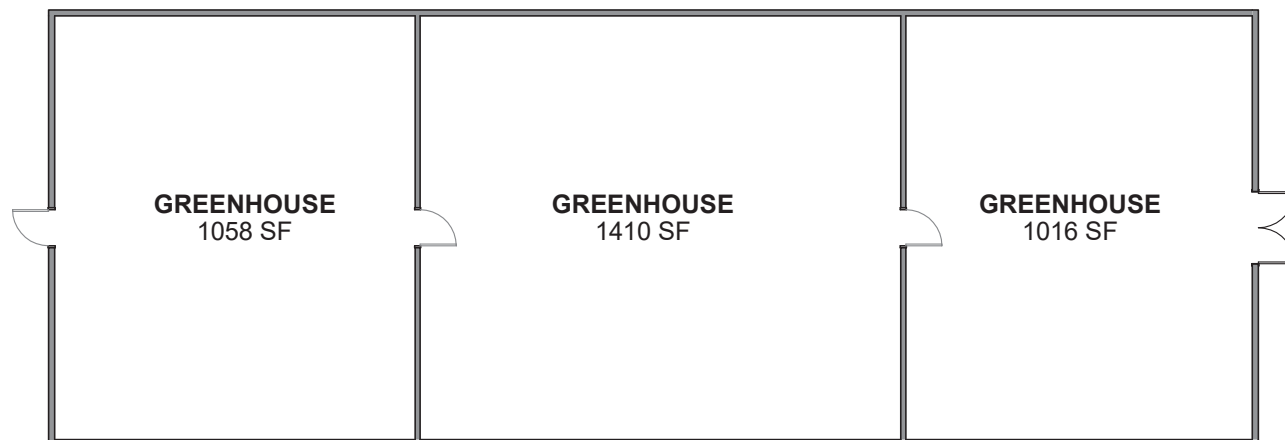
NINE DEGREES
Architecture + Design, Inc.



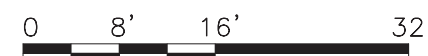
584 GREENHOUSE
SCALE 1/16" = 1'-0"



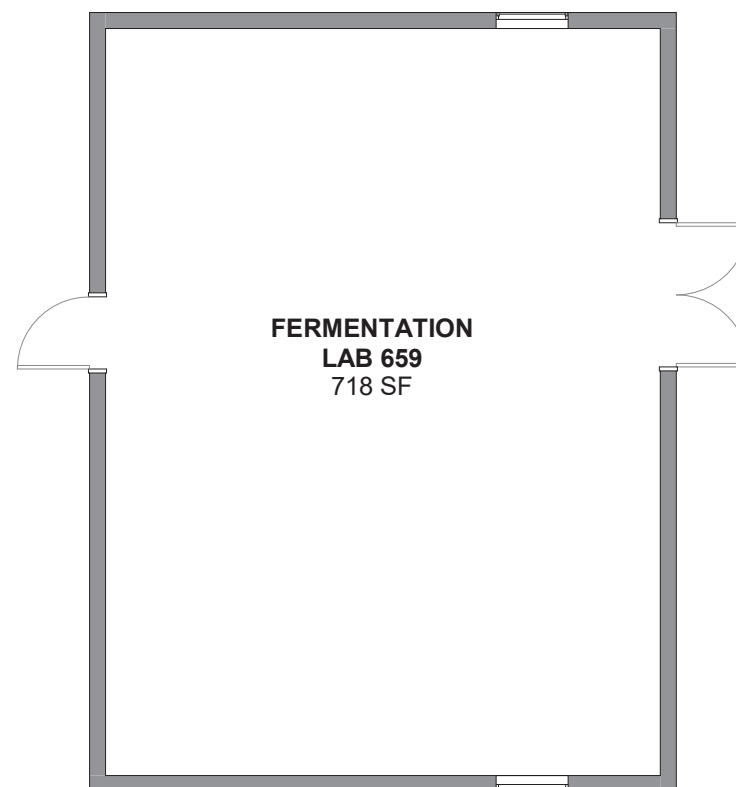
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NORTH



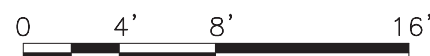
353 GREENHOUSE
SCALE 1/16" = 1'-0"



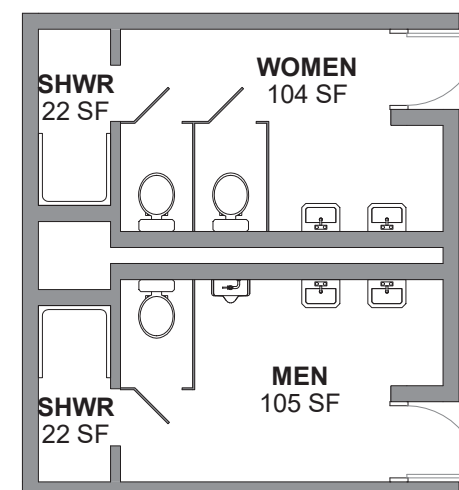
TRUE
NORTH



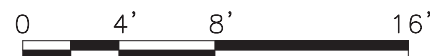
659 FERMENTATION LAB
SCALE 1/8" = 1'-0"



TRUE
NORTH



374 RESTROOMS
SCALE 1/8" = 1'-0"



TRUE
NORTH



Fabian Garcia Plant **Science** **Research Center**

- 14- Greenhouse 584
- 16- Greenhouse 353
- 17- Fermentation Lab 659
- 18- Restrooms 374



Key Map



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Fabian Garcia and Leyendecker Plant **Science Research Center -** **CANDIDATES FOR DEMOLITION**



LEYENDECKER

The following buildings are candidates for replacement:



Weed research shade canopy:

- ☒ Wood column and connections to the shade structure are weak and allows structure to rock laterally. A steel structure is a better alternative to stabilizing structure.

FABIAN GARCIA

The following buildings are candidates for replacement:



- ☒ Small storage building has rusted roof panels and damage to door assembly. Building beyond feasible repair





- ☒ Storage building has missing roof in sections. Building beyond feasible repair.

Fabian Garcia and Leyendecker Plant **Science Research Center -** **INVENTORY COMPARISON**



LEYENDECKER

The following structures are not included in the current inventory for this site:



Pump house:

Needs: New roof, repaint all exterior wall faces, appropriate integrated heating unit, reinsulate interior, rain gutters and down leaders, concrete entry stoops, regrade for positive drainage.



Weed research tool storage/ supply shed:
Needs: New metal roof panels.



Metal storage shed:
Needs: Gutter and down leaders.



Weed research Pesticide storage/ equipment storage:

Needs: regrade South side, stucco crack repairs and repaint, new side walk along south side and ramp, repair door jambs/ trims and repaint, ADA access hardware, parapet metal cap reattachment, overhead door seals, repair/ repaint door jambs and head on West doors.



Weed research storage shed:

Needs: Repaint exterior siding, concrete entry stoop, ADA door hardware, rain gutters and down leaders.



Weed research pot storage box:

Needs: Repaint exterior wood and plaster surfaces, replace rotted door, new roof.

FABIAN GARCIA

The following structures are not included in the current inventory for this site:



Boxcar mechanical room:
Needs: repainting.



Boxcar Storage:

Needs: Repainting, concrete stoop at entry.



Gazebo:

Needs: Reseal all wood columns, railings and perimeter wood fascias, replace rotted wood shakes.



Metal storage shed:
Needs: none detected.



Metal storage shed:
Needs: none detected.



Storage shed East of Pump House:

Needs: Rain gutters and down leaders, regrade 3 sides for positive drainage, concrete entry stoop, metal cover plate protection for exposed platform faces all four sides.



Pesticide Storage:

Needs: Repaint all siding, replace one warped door, Rain gutters and down leaders.



Tuff shed Storage 1:

Needs: Replace warped doors, new shingle roof, repair damaged wall siding, repaint all exterior surfaces, rain gutters and down leaders, concrete entry ramp, regrade 2 sides for positive drainage.



Tuff shed Storage 2:

Needs: Replace damaged doors, replace rotted accent corner trim, new shingle roof, rebuild attached shade structure along North side, repaint all exterior surfaces, rain gutters and down leaders.



Dual Metal Storage Units:

Needs: Rain gutters and down leaders, concrete entry stoops, regrade for positive drainage.

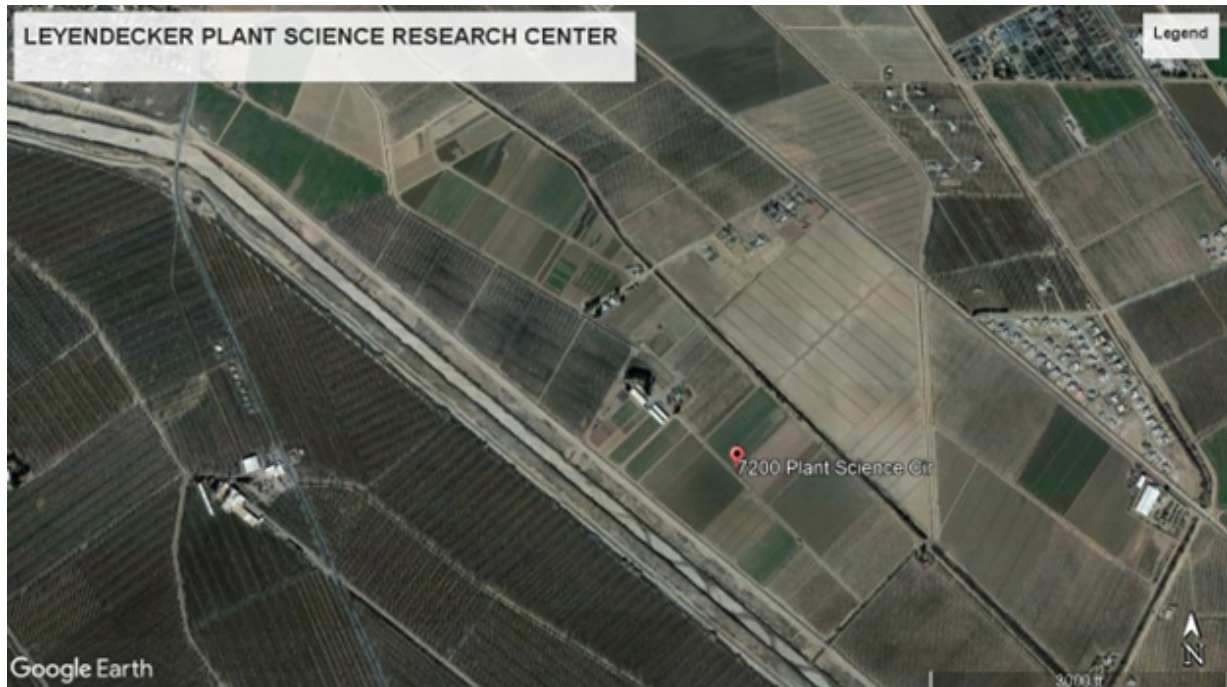
Fabian Garcia and Leyendecker Plant **Science Research Center -** **UTILITY OVERVIEW**



Leyendecker Plant Science Research Center

Address: 7200 Plant Science Circle, Las Cruces, NM 88003-8003

Contact: Dave Lowry, Superintendent – (575) 646-2281
Trey17@nmsu.edu



Description:

As described by the NMSU System the Leyendecker headquarters is nestled among pecan trees. The land was purchased by the University in 1969 and consists of 203.00 acres. Projects occurring at the Leyendecker Plant Science Center include: cotton, chile, alfalfa and onion plant breeding, precision farming, pecan research, drip irrigation research, and a multitude of other projects and programs.

Findings

Water System:

Based on the information provided, the Leyendecker Plant Science Research Center is meeting its water needs by connecting to six (6) existing wells. Currently, the existing building and greenhouse use two domestic wells while the remaining four wells meet the Agricultural use needs. The existing wells are supervised and regulated by the NM Office of the State Engineer. Their well is registered as LRG 03929-S, LRG 03929-POD7, LRG 03929-S-2, LRG 03929-POD6, LRG 03929-S-3 and LGR 03929. In addition, this facility has no plans for any additional increase in water needs, and they have no future plans for expanding the existing building complex.

Electrical System:

Based on the information provided, the Leyendecker Plant Science Research Center is connected to the El Paso Electric (EPE) Grid. The facility had a major enhancement in 2019 when the campus replaced a high-voltage line that served the Laboratory Building. The management of the service is under the El Paso Electric Grid oversight. Currently, the campus is not planning any additions to its facilities that may require an increase in its electrical system or demands.

Solar Power System:

Based on the information provided by the recent 2023 EEA Energy Master Plan, NMSU School of Agriculture Science Centers located across the state are centers of excellence in agriculture research and experimentation. These centers offer the University, as well as the State of New Mexico, a diverse and unique test ground for using climate technologies. The twelve locations are not just geographically diverse; they represent three of the most abundant climate zones in the United States. Still, each center location conducts agricultural research differently from each other. As part of the 2023 EEA Energy Master Plan study, the Leyendecker Agricultural Center was considered a potential candidate for integrating solar power into its operations.

Waste Water System:

Based on the information provided, the Leyendecker Plant Science Research Center manages its waste and sewer requirements through five (50 separate septic tanks on site. Systems. There are no unique needs or requirements at this facility at this time. The quality and impact of the waste generated by the facility are under the New Mexico Environment Department (NMED) oversight. As reported, there are no apparent proposals to enlarge or increase the sewer capacity of waste generated by the campus due to the possible addition of more facilities.

Agricultural Center	Well Designation	Information and Descriptions	Google Map Coordinates	
Leyendecker Plant Science Research Center				
Well Number 1	LRG 03929-S		32°12'06.6"N	106°44'42.2"W
Well Number 2	LRG 03929-POD7		32°12'01.9"N	106°44'34.0"W
Well Number 3	LRG 03929-S-2		32°11'59.2"N	106°44'37.1"W
Well Number 4	LRG 03929-POD6		32°11'41.9"N	106°44'16.2"W
Well Number 5	LRG 03929-S-3		32°12'02.3"N	106°44'35.1"W
Well Number 6	LRG 03929		32°12'18.4"N	106°45'05.9"W

Fabian Garcia Research Center

Address: 113 W University Ave P.O. Box 30003, MSC 3Ley Las Cruces, N.M. 88003-8003

Contact: Dave Lowry, Superintendent – (575) 646-2281
Trey17@nmsu.edu



Description:

As described by the NMSU System the he first deed signed for Fabian Garcia Research Center happened in 1906 and was for 23.16 acres. Currently the center has 41.10 acres of land available. 11.15 acres were purchased from H.B. Machen in 1924, 12.72 acres were purchased from C.T. Turney in 1928, with 7.33 acres going to Interstate 10, and the last 1.40 acres were purchased in 1991 from B.J. Crump. Fabian Garcia, a professor of Horticulture from 1906-1945, once provided rooms right here on this farm to house poor Mexican-American students during their studies at NMSU. Fabian Garcia was named the first director of the State Agricultural Experiment Station in 1913. As a horticulturist he produced the first reliable chile pod, which was the beginning of the hot "Sandia" pepper. Fabian Garcia Research Center not only houses the Chile Pepper Institute, but includes, and is not limited to research plots and greenhouses supporting alfalfa breeding and genetics, viticulture, cotton, horticulture, nematology, micro-plot, turf grass water management, IR-4, and onion research. The NMSU onion breeding program is one of the only two active, public onion breeding programs in the United States that is releasing cultivars and germplasm lines. NMSU was recently granted \$450,000 to research algae for bio diesel. The viticulture program has recently planted many grape varieties which you will see on the east side of farm. If wine is your thing, you can look into signing up for a Wine Making class which takes place right here at the farm.

Findings

Water System:

Based on information provided, the Fabian Garcia Facility is connected to both the city water system as well as to water wells. The City of Las Cruces provides water services to the campus buildings as well as for the greenhouse. The existing wells are utilized to service the fields as part of their irrigation system. The wells are under the supervision and they are regulated by NM Office of the State Engineer. Their well is register as LRG 00033- POD3. In addition, this facility has no plans for any additional increase in water needs and they have no future plans for expanding the existing building complex.

Electrical System:

Based on information provided, the Fabian Garcia Facility is connected to the El Paso Electric (EPE) Grid. The facility has not required any improvement to their service and has no expectation of mayor enhancement to their power needs. The management of the service is under the El Paso Electric oversight. The campus is not planning any additions to their facilities that may require an increase of their electrical system and or demands.

Waste Water System:

Based on information provided, the Fabian Garcia Facility is managing their waste and sewer requirements through a tie-in to the City of Las Cruces Sewer and Waste Systems. The quality and impact of the waste generated by the facility is under the oversight of the Las Cruces Utility Department. As reported, there is no apparent proposals to enlarge or increase the capacity of sewer of waste generated by the campus due to the addition of more facilities.

Fabian Garcia Research Center

All domestic water needs are supplied by the Las Cruces Water Infrastructure

Well Number 1	LGR00033 LGR000331	Service the irrigation needs of the campus	32°16'51.0"N	106°46'29.8"W
Well Number 2	LGR00033 POD2		32°16'47.7"N	106°46'29.2"W
Well Number 3	LGR00033 POD3	Open Field well	32°46'51.6"N	106°46'30.0"W
Domestic Water		Provided by the City of Las Cruces		

Fabian Garcia and Leyendecker Plant **Science Research Center -** **INFORMATION TECHNOLOGY**

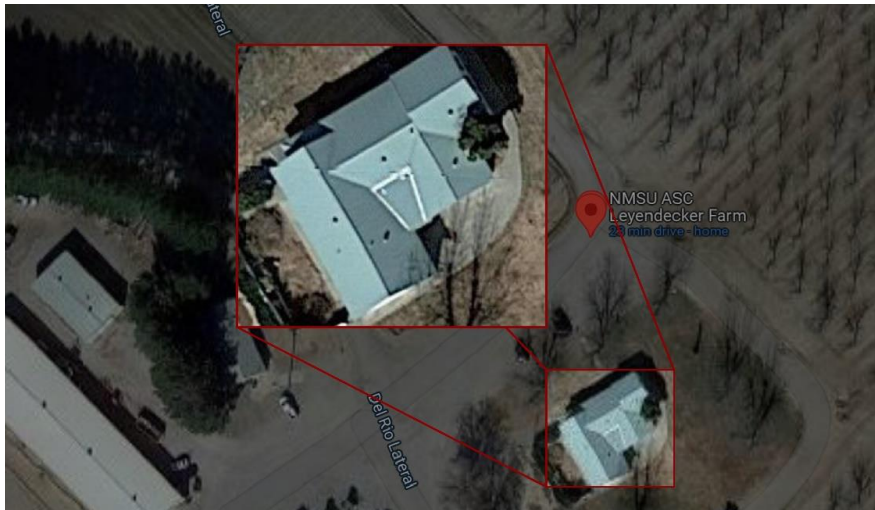


Leyendecker Plant **Science Research Center -** Information **Technology**

Network and Wireless LAN

Wireless Network Coverage	Main Building, Weed Research Building, and Aux Buildings
Condition of Physical Cabling	Decent Condition
Distribution Closet	Closet and Office
Central Tower	No
Monthly Estimates	
Registered Devices	100
Upload	267.24 GB
Download	382.97 GB

This location is unique because it has two separate INTERNET lines. First, the DMARC comes in from the north side of the Main Office (White Building) to the center of the building into a distribution closet. There is a secondary DMARC in the Weed Research building, that comes in from the east side of a trailer into one of the offices and then is distributed from that office. Wireless coverage is good in the main office, the Weed Research building and requested Auxiliary buildings.



IT Spaces/Network Closets

Recommended:

Network space is needed at this ASC and needs to meet standards. It is our recommendation to build out an IT/network space for this ASC. If there is no room that can be modified into this space, it is our recommendation to build a separate IT/network space outside, close to the existing DMARC, that is cooled, isolated only for IT needs, has proper lighting, floor loading, power, network racks and equipment, airflow, and meets standards.

UPS

Recommended:

Multiple, 2 minimum, network UPS's are needed for the network equipment at the Leyendecker ASC.

Network Tower

Recommended:

70 - 80 ft network tower erected to provide broadband INTERNET to different parts of the center. This network tower would also need to be installed with power to provide power to the network devices on the tower.

Leyendecker Plant **Science Research Center -**

Information **Technology**

The location of the tower can be close to the main building on the site where the DMARC is to allow the easier network access to be broadcast. If that is not possible, another location can be determined by the availability of line of site from the main building to the tower.

POP/PtMP

Recommended:

Leyendecker ASC needs one PtMP, point to multi point, and at the minimum four to five POPs, point of presence, to help saturate different parts of the center with wireless. The POPs are mobile and can be moved and adjusted as needed.

Cable Plan

Recommended:

Existing cabling, jacks, ports, patch cables and patch panels be upgraded to Category 6, at minimum. Connectivity between buildings can be accomplished by trenching and laying conduit, or to create wireless bridges through line of sight wireless broadband devices.

There are multiple buildings at the center that need cable that has not yet been installed, the research building, the weed research building, and the supervisor's trailer. The main building needs the cable to be updated.

VoIP

Recommended:

It is recommend replacing antiquated phone systems and currently, the standard is VoIP. VoIP phones will tie into the network infrastructure and allow us to control the phones off of one system, and gives us the availability to manage the phone systems from each ASC remotely.

Conference Room/Collaboration Spaces

Recommended:

Smart screens, interactive touch displays, conference room cameras, speakers and mics, etc. can all be implemented to help bring these conference room spaces into the modern era and allow them to be utilized on a moments notice.

This conference room should include one smart interactive display, either Dell or Samsung, laptop or mini computer to be mounted on the display, a wall mount or portable mount, at least one Stem wall speaker/mic and Stem Hub, one Huddly camera, a Logitech Swytch for BYOD (bring your own device), a PoE Ethernet switch, and an AV station/equipment rack.

Security & Surveillance Systems

Recommended:

This ASC should have a minimum of four cameras, one showing the entrance/exit when vehicles arrive, and minimum one on the main office building. This ASC would benefit from multiple cameras across the center to deter theft and increase visibility. Different locations at the center would allow for cameras to be installed and configured.

Leyendecker Plant Science Research Center - Information Technology



UBIQUITI ROCKET 5AC PMP (2)
 INSTALLATION HEIGHT: 8 M (26 FT)
 OUTPUT POWER: 28 dBm
 CHANNEL WIDTH: 40 MHz
 ANTENNA GAIN: 22 dBi

UBIQUITI ROCKET 5AC



- SPECS:
- 5GHz WIDE BAND OPERATING FREQUENCY
 - POINT-TO-MULTIPOINT LINKS (PTMP)
 - DEDICATED MANAGEMENT RADIO



UBIQUITI ISOSTATION 5AC
 INSTALLATION HEIGHT: 3 M (10 FT)
 OUTPUT POWER: 25 dBm
 CHANNEL WIDTH: 40 MHz
 ANTENNA GAIN: 15.5 dBi

UBIQUITI ISOSTATION 5AC



- SPECS:
- 45° ISOLATION ANTENNA
 - SUPERIOR THROUGHPUT UP TO 450 MBPS
 - HIGH CAPACITY AND SCALABILITY
 - CAPABLE OF HIGH-SPEEDS



UBIQUITI MESH PRO
 INSTALLATION HEIGHT: 2 M (6 FT)
 MAXIMUM POWER: 20 dBm
 POWER SUPPLY: 24 V, 0.5A
 ANTENNAS: 2.4 GHz, 5 GHz

UBIQUITI MESH PRO ACCESS POINT



- SPECS:
- OMNIDIRECTIONAL 360° COVERAGE
 - LONG RANGE SYMMETRICAL TRANSMISSION UP TO 183 METERS
 - 802.11AC WAVE 1 WIFI
 - 2.4 GHz (802.11N) BAND WITH A 450 MBPS THROUGHPUT RATE
 - 5 GHz (3X3 MIMO) BAND WITH A 1.3 GBPS THROUGHPUT RATE



Fabian Garcia Plant **Science Research Center -** Information **Technology**

Network and Wireless LAN

Wireless Network Coverage	Main Building
Condition of Physical Cabling	Decent
Distribution Closet	Enclosed in Open Space
Central Tower	Yes
Monthly Estimates	
Registered Devices	90
Upload	402.32 GB
Download	683.71 GB

Fabian Garcia has a classroom on the site, multiple research buildings, multiple research areas, and a main office. There is a great deal of research that goes on at Fabian Garcia, and multiple IoT, INTERNET of things, devices and sensors that needs network connection to communicate with main campus servers. Some up-grades have been made, but better network equipment, cabling, network devices, wireless devices, and a dedicated network closet is required to fulfill the need at Fabian Garcia.



IT Spaces/Network Closets

Recommended:

A dedicated network closet is needed for this site. Currently the network equipment is in the research building, and is on a wall above a door on a shelf. It is our recommendation to build out an IT/network space for this ASC. If there is no room that can be modified into this space, it is our recommendation to build a separate IT/network space outside, close to the existing DMARC, that is cooled, isolated only for IT needs, has proper lighting, floor loading, power, network racks and equipment, airflow, and meets standards.

UPS

Recommended:

Multiple, 2 minimum, network UPS's are needed for the network equipment at the Fabian Garcia ASC.

Network Tower

Recommended:

70 – 80 ft network tower erected to provide broadband INTERNET to different parts of the center. This network tower would also need to be installed with power to provide power to the network devices on the tower.

Fabian Garcia Plant **Science Research Center -**

Information **Technology**

The location of the tower can be close to the main building on the site where the DMARC is to allow the easier network access to be broadcast. If that is not possible, another location can be determined by the availability of line of site from the main building to the tower.

POP/PtMP

Recommended:

Fabian Garcia ASC needs one PtMP, point to multi point, and at the minimum four to five POPs, point of presence, to help saturate different parts of the center with wireless. The POPs are mobile and can be moved and adjusted as needed.

Cable Plan

Recommended:

Existing cabling, jacks, ports, patch cables and patch panels be upgraded to Category 6, at minimum. Connectivity between buildings can be accomplished by trenching and laying conduit, or to create wireless bridges through line of sight wireless broadband devices.

VoIP

Recommended:

It is recommend replacing antiquated phone systems and currently, the standard is VoIP. VoIP phones will tie into the network infrastructure and allow us to control the phones off of one system, and gives us the availability to manage the phone systems from each ASC remotely.

Conference Room/Collaboration Spaces

Recommended:

Smart screens, interactive touch displays, conference room cameras, speakers and mics, etc. can all be implemented to help bring these conference room spaces into the modern era and allow them to be utilized on a moments notice.

This conference room should include one smart interactive display, either Dell or Samsung, laptop or mini computer to be mounted on the display, a wall mount or portable mount, at least one Stem wall speaker/mic and Stem Hub, one Huddly camera, a Logitech Swytch for BYOD (bring your own device), a PoE Ethernet switch, and an AV station/equipment rack.

Security & Surveillance Systems

Recommended:

This ASC should have a minimum of two cameras, one showing the entrance/exit when vehicles arrive, and one on the main office building. This ASC would benefit from multiple cameras across the center to deter theft and increase visibility. Different locations at the center would allow for cameras to be installed and configured.

Fabian Garcia Plant Science Research Center - Information Technology



UBIQUITI ROCKET 5AC P1MP (2)
INSTALLATION HEIGHT: 8 M (26 FT)
OUTPUT POWER: 28 dBm
CHANNEL WIDTH: 40 MHz
ANTENNA GAIN: 22 dBi



UBIQUITI ISOSTATION 5AC
INSTALLATION HEIGHT: 3 M (10 FT)
OUTPUT POWER: 25 dBm
CHANNEL WIDTH: 40 MHz
ANTENNA GAIN: 15.5 dBi



UBIQUITI MESH PRO
INSTALLATION HEIGHT: 2 M (6 FT)
MAXIMUM POWER: 20 dBm
POWER SUPPLY: 24 V, 0.5A
ANTENNAS: 2.4 GHz, 5 GHz



UBIQUITI ROCKET 5AC



- SPECS:**
- 60HZ WIDE BAND OPERATING FREQUENCY
 - POINT-TO-MULTIPOINT LINKS (PTMP)
 - DEDICATED MANAGEMENT RADIO

UBIQUITI ISOSTATION 5AC



- SPECS:**
- 45° ISOLATION ANTENNA
 - SUPERIOR THROUGHPUT UP TO 450 MBPS
 - HIGH CAPACITY AND SCALABILITY
 - CAPABLE OF HIGH-SPEEDS

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Fabian Garcia - Leyendecker Plant **Science Research Center -** **Energy Report**



Fabian Garcia - Leyendecker Plant **Science Research Center -** **Energy Report**

Energy Audit:

For detail information regarding conservation strategies for the Fabian Garcia and Leyendecker Agricultural Centers please refer and review the AAE Energy Master Plan study.