



**McKinney York Architects**

**City Of Austin**

**Parks and Recreation Department**

**Austin Memorial Park Cemetery**

**2800 Hancock Dr, Austin, TX 78731**

COA #CLMP251 2019 & MA PA190000071 / MYA #1907-3

Maintenance Facility & Columbarium

Feasibility Study

July 26, 2023

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# I. Program and Conceptual Design Contributors

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The following individuals are acknowledged for their time and contributions to the production of this document.

## City of Austin Representatives

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# II. Abbreviations and Definitions

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PARD	Parks and Recreation Department: This City department has been the steward of the City of Austin's public lands since 1928. They protect and maintain parkland and urban forests. Cemetery Operations is a division of PARD.
AMP	Austin Memorial Park cemetery
CoA	City of Austin

## III. Executive Summary

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### Background and Purpose of the Feasibility Study

Cemetery Operations is a division of the City of Austin (CoA) Parks and Recreation Department (PARD) and is responsible for operating five municipal cemeteries and maintenance of two small family cemeteries. Cemetery Operations is headquartered at Austin Memorial Park Cemetery (AMP) and from this location, cemetery staff manages the grounds, administrative operations, burials, and historic resources for all the aforementioned properties. In 2015, City Council approved a Historic Cemeteries Vision Plan which provides a long-term framework for the management and rehabilitation of the five municipal cemeteries. The goals identified for AMP within the Vision Plan are to improve the exterior appearance of the cemetery, improve internal viewsheds, expand visitor services, and expand burial options to include a columbarium and scatter garden. The Plan also identified the need to relocate the maintenance yard to another location on the AMP property to accomplish the above goals.

The goal of this project is to provide the Parks and Recreation Department with a feasibility study for a new maintenance yard and building, including a program of required spaces which identifies current and anticipated needs for Cemetery Operations over the next 20 years. The study will include conceptual site plans and floor plans for the new maintenance yard and building. The site plans will also identify proposed locations for columbarium and scatter gardens, as well as a vision board with conceptual rendering. An Opinion of Probable Construction Cost (OPCC) will be prepared for the scope of work.

At the beginning of the project, McKinney York Architects and PARD representatives toured the existing maintenance building and service yard to understand how the facility functions and assess the department's needs. The consultants walked undeveloped portions of the cemetery and viewed the northern boundary of the site via Northwest Recreation Center. McKinney York Architects then held a programming session with Cemetery Operations leadership. To inform the concept design, the consultants reviewed the Cemeteries Vision Plan, researched the restrictions for the site relative to the land development code, analyzed existing site surveys, and researched precedents. The consultants interpolated data received on burial rates in recent years to meet the anticipated needs of a columbarium and scatter garden now and an additional 20 years from now. The consultants developed two options for the conceptual site design and building layout and the designs were presented to the project stakeholders. PARD identified a preferred option for the site design and building layout; the preferred concept is included in the Appendices of this report.

A construction start date has not been established, however, a Fall 2026 construction start date is assumed for assigning an escalation rate for the Preliminary Opinion of Probable Cost.

## IV. Program

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The existing maintenance building at Austin Memorial Park was constructed in 1928 as the cemetery office. This small limestone building contains office space, a restroom, staff break room, and storage area. It has been modified and added onto over time, but is undersized for current operations. Additional elements in the maintenance yard include several prefabricated carports to shelter maintenance equipment, a pre-fabricated modular Morgan Building, and three CONEX containers of varying sizes used for storage.

The proposed maintenance building will house the majority of Cemetery Operations staff, with only a handful of staff members continuing to office in the former caretaker's cottage. The new building will provide office space, a meeting room, break room, and other administrative support spaces. The building will also include unconditioned, covered work areas and storage for equipment, tools, and miscellaneous items. The maintenance yard will contain storage areas for bulk material and spoils; miscellaneous storage areas for interment operations; monument foundation fabrication and monument storage; and covered and uncovered parking areas for both fleet and staff vehicles. The facility is designed to meet space needs for a project that starts construction in Fall 2026.

The columbarium is sized to accommodate nearly 300 niches, which is the number of spaces projected to be needed over the next 20-year period. The scatter garden will be located between portions of the columbarium and its circulatory pathways. A pedestrian circulation pathway will extend to the existing roadway, however, no additional parking will be provided for the columbarium or scatter garden. Parking for these elements will be along the existing roadway edge, consistent with the current arrangement.

Reference Appendix A for the program document prepared for the conceptual design.

## V. General Project Requirements

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### Architectural & Engineering Considerations

#### Maintenance Building and Grounds Maintenance Equipment Shelter

Both the Maintenance Building as well as the Grounds Maintenance Equipment Shelter are planned to be constructed as pre-engineered metal buildings with a structural steel frame. The OPCC includes mass timber structural framing system as an alternate, which can achieve similar long spans while offering an option with lower embodied carbon. The roof for both buildings is recommended to be a standing seam metal roof, with a high solar reflectance index (SRI) to minimize the heat island effect and provide a substrate to easily attach future photovoltaic panels. A metal roof is also the preferred roofing type for rainwater collection. Metal roof shingles in a terracotta color which are more residential in style and approximate the appearance of the historic cemetery structures may also be considered by the design team. This aesthetic will likely have a higher initial cost and the OPCC reflects the higher cost material.

The exterior walls on the south, east, and west sides are not anticipated to be subject to impact from the maintenance yard and it is recommended that the metal roofing transition to form the wall cladding on these sides of the building. The metal panels may also serve as cladding on the north side, however, a wainscot of smooth faced or burnished concrete block with integral water repellent is recommended for at least the bottom 48 inches above grade for durability, as this side of the building is more likely to be subject to impact from equipment in the maintenance yard. Alternately, a limestone veneer wainscot on CMU backup may be considered by the design team if the materials palette of the historic cemetery structures needs to be adhered to. The OPCC reflects the higher cost material of a limestone veneer wainscot.

The administrative and supporting spaces within this building will be fully conditioned. Interior finishes will be durable, maintainable and of institutional quality suitable for a CoA facility. High use areas may have polished or stained concrete floors.

Windows and glazing systems will be air- and weather-tight, thermally broken, with insulated, low-e glass. Bird safe glazing is also appropriate if budget allows. Due to the parklike setting, windows will be located to take advantage of daylight and views for the occupants, minimize potential for bird strike, and provide surveillance of the maintenance yard as needed.

The walls separating the administrative and maintenance storage functions will likely be constructed of concrete block where subject to impact (with a thermal barrier), and metal stud framed where impact is less of a concern. The workshop and storage functions within this building will be unconditioned and passively ventilated to the greatest extent possible. The floor finish will be the sealed concrete foundation slab. In conjunction with building orientation to provide shade and take advantage of prevailing breezes, suspended heaters and large overhead fans will be used to provide a comfortable work environment. Floors will be concrete for durability and ease of maintenance.

Design strategies to reduce energy consumption should be prioritized, and the design should also utilize high-quality and durable materials to minimize maintenance efforts. Further, PARD prefers materials which are locally sourced to the extent possible.

The Grounds Maintenance Equipment Shelter will be open to the elements on all sides except for the west side which faces AMP. It is suggested to have the metal roof transition down to form the wall cladding on the west side of the building only.

#### Building Foundations and Pavement Considerations

While a geotechnical report for the adjacent Northwest Recreation Center was provided, a geotechnical report for the AMP site was not available for the conceptual design phase. Per the Cemeteries Vision Plan, the soil conditions in the area where the program elements are to be located are classified as Tarrant soils. These

types of soils typically consist of approximately 8" of clay underlain with limestone. While clay typically has a high potential vertical movement (PVR), options to mitigate the damaging effects of high PVR values are to:

- Suspend the foundation above the soils to allow for movement without affecting the structural system.
- Remove the existing expansive soils and replacing with non-expansive material.

We anticipate the foundations for the buildings will be constructed with poured-in-place, mild reinforced concrete systems. We do not anticipate that post-tensioned systems will be utilized due to the limited ability to alter these foundations for any future alterations to the buildings. For these lightly loaded buildings, structural loads may be supported by spread footings. Should some small amount of differential movement be acceptable, foundations may be comprised of stiffened slabs supported on select fill. To keep the PVR of these shallow foundations, the Geotech engineer may require the removal of any expansive clays and replacement with compacted select fill.

New parking areas for fleet vehicles and equipment, as well as entry and exit drives, should be designed to withstand use from heavy-duty fleet vehicles, trash trucks, and fire apparatus. Heavy duty 8" reinforced concrete pavement with 8" of lime stabilized subgrade is anticipated for these areas. Improvements to the existing driveways within AMP are not anticipated, however, a line item is included in the OPCC.

## **LEED**

The LEED scorecard indicates that as many as 65 points may be achieved if all applicable credits are successfully awarded. The majority of the potential credits to be earned are in the Water Efficiency and Energy and Atmosphere categories, but there are significant opportunities for credits within the Materials and Resources and Indoor Environmental Quality categories, and these can be readily achieved if careful attention is paid to product selection. Finally, importance should be given to achieving Regional Priority points as these have special significance for our climate. Reference Appendix I for the LEED Scorecard.

## **Special Requirements**

- AIPP: This project is required to provide and allocate funding for works of art in accordance with the Art in Public Places (AIPP) Ordinance, which requires 2% of eligible capital improvement project budgets be allocated to commission or purchase art for the project. The budget for this participation is not included in the OPCC within this report. The city will budget separately for AIPP in preparing their overall budget recommendations.
- LEED: City Resolution #20210902-042 requires minimum USGBC LEED Silver (or AEGB 3-star) in addition to feasibility analysis for Rooftop Solar Installation, Avoidance of Natural Gas, Use of Auxiliary Water Supply, and Provision of EV Charging Stations.
- Lighting: The facility requires appropriate light levels for safe operations and security. Lighting should be arranged and selected to minimize light pollution and the impact on surrounding neighbors (light trespass), comply with local codes, ordinances, and sustainability requirements including IECC, Subchapter E, and LEED.
- Noise: Operations within the workshops and maintenance yard may be noisy. Noise levels are restricted by city zoning compatibility standards and mechanical equipment noise levels should not exceed 70 decibels on the east side of the property adjacent to the SF-2 zoning. Strategies such as building siting, fencing and landscaping may be employed to reduce the impact on the surrounding residential area.
- Wage compliance: CoA manages and administers a wage compliance program. All laborers and mechanics working on City projects must be paid at least the prevailing wage for their trade, as set by the U.S. Department of Labor, or CoA minimum wage as established by City Ordinance, whichever is higher.

## VI. Site Analysis

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### Project Location

The proposed program elements for the new maintenance area will be located within AMP, at 2800 Hancock Drive in northwest Austin. AMP abuts several small single-story businesses and SF-2 zoned residential areas to the south and east, Shoal Creek to the northeast, a church and CoA Northwest Recreation Center to the north, and the MoPAC (Loop 1) freeway to the west.

### Summary Description

The project site is an 84-acre tract of land which is primarily located in the Shoal Creek watershed and classified as Urban watershed within CoA's Desired Development Zone. The extreme western edge of the site is located within the Taylor Slough North watershed and classified as Water Supply Suburban within CoA's Drinking Water Protection Zone. Due to development restrictions within the Drinking Water Protection Zone, project-related development within this western portion of the cemetery should be avoided.

A full tree survey was not available for the conceptual design phase. From visual observation and review of aerial photography, the east and northeast portion of the site is heavily wooded. This provides a valuable visual buffer between the existing adjacent residential uses in this area and cemetery activities. However, it is anticipated that there will likely be many protected or heritage trees within this area that should be protected when siting the proposed maintenance building and yard. A tree survey identifying species and size around the limits of construction will be required in order to proceed into further design phases and properly locate the proposed improvements. The intent will be to minimize tree removal in areas to be developed.

The design team met with PARD and Cemetery Operations to review the site assessment diagrams, reference Appendix B.

### Site Development Requirements

The design, permitting, and construction of the improvements for the site shall be performed in accordance with CoA's Land Development Code, Technical Criteria Manuals, Standards, and Specifications. CoA's regulatory requirements include but are not limited to the following:

- The project shall comply with the City's Land Development Code, including building constraints as established by zoning, subdivision, and site development regulations.
- The project shall comply with applicable restrictive covenants.
- The project shall comply with environmental regulations such as:
  - Watershed Protection regulations and Criteria Manuals, including the Environmental and Drainage Criteria Manuals. These manuals include provisions for an Environmental Resource Inventory report and compliance with Subchapter B – Tree and Natural Area Protection.
  - Texas Commission on Environmental Quality (TCEQ) Aquifer Protection regulations.
  - Implementation of a Storm Water Pollution Prevention Plan (SWPPP) using the standard City template.
  - Floodplain regulations, including floodplain and creek setbacks.
- The project shall comply with Subchapter E – Commercial Design Standards, including enhanced Subchapter E requirements based on the 2007 Council Resolution (20071129-046). Resolution

No. 20071129-046 also requires City Projects to present to Design Commission. Coordination with CoA's Development Services Department will be required to identify whether full, partial, or alternative compliance is applicable. The development should endeavor to meet Subchapter E requirements, including building orientation, internal circulation routes, shading, and sidewalk standards, while avoiding other requirements that are not applicable to the use. Project may seek Alternative Equivalent Compliance to the Subchapter E regulations for requirements that are not conducive to the maintenance facility use.

- The project shall comply with CoA's Building Technical Codes (Chapter 25-12), which contains regulations for Building, Electric, Mechanical, Plumbing, Fire, and Energy.
- Per CoA Resolution 20210902-042 which updates Green Building Policy, the project must meet same Performance Standards as CIP projects, including mandatory analysis of feasibility for rooftop solar installation, use of non-potable water, avoidance of natural gas use, and EV charging.
- Per CoA Resolution 20120112-058, the project will comply with CoA's MBE/WBE Ordinance through the Minority-Owned and Women-Owned Business Enterprise Procurement Program.
- The project shall be designed as barrier-free in accordance with the Americans with Disabilities Act, Texas Accessibility Standards, and all applicable laws and regulations.
- The project shall be designed per water and wastewater service requirements of the Utilities Criteria Manual and Uniform Plumbing Code as adopted by the CoA. A Service Extension Request (SER) with Austin Water will be required to connect to the existing wastewater line.

A Transportation Impact Analysis and Traffic Control Plan is not anticipated to be required as the project is replacing an existing facility and use.

### **Site Development Permitting**

The limit of construction for the proposed maintenance area is 2 acres which exceeds the size limits for either a site plan exemption or a small project site plan. A site development permit is required for the proposed maintenance area and shall include the entire 84 acres of the Austin Memorial Park cemetery. Site development permits can only be approved for legal tracts. Within the 84 acre boundary, the limit of construction will be defined as the 2 acre area limiting the review and authorized construction to the limit of construction only. The site plan is required to be approved by the Land Use Commission due to the Public (P) zoning designation.

The site development application submitted for permit can be a C-permit application which consolidates the land use and construction elements of the permit as one application. Alternatively, the site development application can be broken up into two separate applications, A-permit and B-permit applications for the land use and construction elements, respectively.

A consolidated site development (C-permit) application submittal includes 90-100 percent complete site construction documents. The hearing for Land Use Commission approval is scheduled after all staff comments on the construction documents are addressed. There is significant time invested in documents at this level of completion. At the hearing, the Commission will either affirm the P zoning regulations assumed by the design team or request changes. In addition, the public may comment on the entire set of site development plans which may require additional changes. Changes to site documents are much more cumbersome when made at higher levels of completion.

The A-permit application for land use is the only component required to be approved by the Land Use Commission. The A-permit is roughly 20 to 30 percent complete site construction documents. The plans submitted for the construction element (B-permit) are 100 percent complete site documents and are administratively approved.

Given the considerable time investment in developing construction elements, A and B permit applications are beneficial when there are undefined development regulations as with P zoning district or public opposition is anticipated. At this early stage, the project is still nimble enough during the A-permit to respond to site changes more easily than 90-100 percent complete documents.

Benefits of the A and B-permit applications are

- Development regulations for P zoning are established by commission earlier in the design process when the plans are about 20-30 percent complete. (Project is heard by the Commission earlier in the design process than if the project is submitted a consolidated C-permit application)
- Documents at the public hearing for the A-permit do not need to provide construction level plans and details.
- B-permit application which develops the construction level detail is administratively approved.

The two-step process of A and B permit applications may ultimately take longer than the single consolidated C-permit process, but the A permit allows the project to get through the Commission approval earlier in the overall design, confirm the P zoning regulations, and the B-permit is an administratively approved application.

The P zoning regulations are discussed in the Zoning and Building Height Restrictions below.

## **Site Surveys, Easements & Analysis**

A boundary survey for Austin Memorial Park dated July 14, 2014 was provided by PARD. There are no easements indicated on the property, utility, access, or otherwise. No deed restrictions were provided or indicated in the legal description of the property. The survey does not include tree, topographic, or site improvement information.

## **Zoning & Building Height Restrictions**

Austin Memorial Park is currently zoned as Public (P). According to Land Development Code 25-2-625 - Public (P) District Regulations, for sites of one acre or more, the site development regulations are established by the Land Use Commission at a public meeting for approval of a conditional use site plan. Although the use of the project is maintenance and service facilities, which is a land use permitted in Limited Industrial (LI) zoning, it is an accessory use in support of the principal cemetery land use and is permitted in the P zoning district. Building regulations should comply with the most restrictive of the compatibility requirements set forth in Chapter 25-2, Subchapter C, Article 10 of the Land Development Code, and any zoning restrictions for Public land use adjacent to single family.

Pending finalization of P zoning requirements at the Land Use Commission, building heights should not be taller than what is allowed for the adjacent SF-2 structures. Given the adjacency to Single Family (SF-2) zoning to the east, a 50' side and rear building setback are anticipated to be required. Zoning compatibility requirements in relation to the SF-2 zoning includes some additional height restrictions for different distances from the SF-2 lots. For a distance of 50' the height is limited to 30' and 2 stories, in the next 50' in distance the height is limited to 40' and 3 stories, and the for the next 200' in distance the height can be increased by a foot for every 10' in distance, for a maximum height of 60' at 300' from the SF-2 lots. Due to ongoing concerns regarding noise and activity by Cemetery Operations from residents of the adjacent SF-2 properties, PARD and AMP staff shared during the conceptual site planning process that their preference would be to impose a more restrictive setback of 100' from the east property line for all buildings, parking, storage, access drives, and maintenance yard activities.

Impervious cover should be limited to the extent possible and be compatible with the adjacent SF-2 zoning which has a maximum of 45 percent impervious cover. Given the size of AMP (84 acres) relative to proposed development (less than 2 acres), and even considering existing development, it is not expected that total site impervious cover would exceed 45 percent.

Given the minimal area of both buildings existing on the site and proposed with the Vision Plan, zoning regulations for maximum building coverage and Floor to Area Ratio for restrictive residential zoning districts exceed what is anticipated for the site per the Vision Plan.

## **Environmental Site Assessment**

### **Critical Environmental Features**

An Environmental Site Assessment (ESA) was not provided by PARD. While GIS indicates some environmental features along Shoal Creek to the north of AMP with required CEF setbacks, those features are wholly within the setbacks already restricting the building site.

### **Edwards Aquifer Recharge Zone**

The Edwards Aquifer Recharge Zone boundary covers a portion of the 84-acre Austin Memorial Park (approximately ten percent) along the Mopac Blvd. frontage. There are existing grave sites in this area and the Vision Plan proposes layered planting for screening from the highway. This area is outside the scope of this project.

The majority of the AMP site is within the Edwards Aquifer Recharge “Verification Zone” which means that a geologic assessment to determine the presence of karst or other recharge features is required prior to development within the Verification Zone. The Vision Plan anticipates additional roadways, burial sites, and columbarium in the Verification Zone. A Phase I ESA and Geologic Assessment is recommended to be performed prior to beginning further design studies within the Verification Zone.

Approximately 25 percent of the eastern portion of the site lies outside of the Verification Zone and development in this area does not require a geologic assessment. The maintenance project is located entirely within this eastern portion of the site and outside of the Recharge Zone and Verification Zone.

## **Stormwater**

### **Drainage**

Most of the AMP site is within the Shoal Creek watershed. A small portion, directly adjacent to Mopac Blvd., is within the Taylor Slough watershed. Stormwater runoff from the majority of the site drains directly to Shoal Creek located adjacent to the north and east sides of the property line. A portion of the 100-year floodplain encroaches on the site at the northeast corner.

Temporary erosion controls during construction activity should include silt fence or mulch berms to provide a barrier for sediment runoff during construction. This barrier should extend around the limits of construction on all downstream locations and around any spoils storage areas. Utility work within floodplain will require a rock berm and approximately 500 SY of erosion matting to ensure adequate revegetation of the area. Revegetation seeding adjacent to the floodplain should be native seeding per the City Standard Specifications. In addition, tree protection fencing is required around any trees within the limits of construction and along the construction boundary.

### **Water Quality**

Runoff from the proposed maintenance project will drain into Shoal Creek. Treating the quality of the stormwater runoff is required as part of the proposed improvements and shall be designed in accordance with the requirements of the Environmental Criteria Manual.

The proposed 2-acre area for development includes a 1.25 acre drainage area with approximately 85 percent of new impervious cover requiring +/-5,500 cubic feet of water quality volume. An area of 4,500 square feet is set aside for the water quality control pond which could include a rain garden or sedimentation/filtration type controls and shown on the Conceptual Site Plan in Appendix D.

### **Detention**

Detention for the increased stormwater runoff from the proposed project will be required. Participation in CoA Regional Stormwater Management Program is not available for portions of Shoal Creek upstream of 38<sup>th</sup> St. Therefore, onsite detention is required. Approximately 16,000 cubic feet of detention volume is estimated and an area of 12,000 square feet is set aside for a shallow detention basin. Stormwater control locations for water quality and detention are shown on the Conceptual Site Plan in Appendix D.

## **Utility Service**

### **Water and Wastewater**

This property is located within CoA's water and wastewater service area. Water and wastewater service connections will need to be confirmed by a property survey.

Austin Water records show an existing 12-inch cast iron water line, constructed in 1954, along the eastern property line (W-1954-0016). Typical water line pressure is 87 psi.

A portion of this line near Hancock Dr. was replaced in 2016 with ductile iron. However, the section of water line where the project will connect for fire protection is the original cast iron. The cast iron sections on each side of the proposed connection will need to be replaced with full joints of ductile iron pipe and restrained. This work will require a water line shut out of the existing line between Shoal Creek Blvd. and Hancock Dr.

An existing 8-inch concrete wastewater line (WW A3050) constructed in 1954 is located within the adjacent 3-acre tract owned by CoA east of the cemetery. This line currently serves several single-family residences at the end of Turnabout Ln. The proposed wastewater service would connect at an existing manhole upstream of where the existing line connect to an existing 24-inch wastewater transmission main.

The existing wastewater line is approximately 200 feet east of the site and will require a Service Extension Request to make a connection. This request should be made prior to submittal of the Site Development Application.

The existing manhole for connection is within the 100-year floodplain. The connecting manhole is 8 to 10 feet deep and its rim will need to be raised above the flood elevation, have a waterproof interior coating applied, and a bolted and gasketed cover installed. An inspection of the existing manhole can be made to determine if it can remain in service. If the condition of the manhole has deteriorated, the entire manhole may require replacement. Given the age of the manhole, it likely warrants replacement.

Refer to Appendix D for a conceptual utility layout. The proposed water lines shall be C900 DR-14 and wastewater lines shall be SDR-26 PVC. The proposed manhole shall have a bolted and gasketed cover.

### **Fire Flow Requirements**

The proposed building, approximately 5,400 square feet and Type V construction, will require 2,000 gpm of required fire flow from a hydrant without a fire suppression system. The existing 12-inch diameter water line can provide that type of flow but would require a 10-inch diameter line be extended to the proposed driveway with a primary hydrant and a secondary hydrant on a 10-inch diameter line extended from the existing 12-inch line to the existing driveway.

The addition of a fire suppression system will reduce the required fire flow to 1,000 gpm and require only one hydrant to be installed near the proposed building. This minimizes the required water infrastructure to provide fire protection. For this reason and the super protection offered, building sprinklers are recommended. A conceptual utility layout is shown in Appendix D.

### **Electric and Gas**

Austin Energy will provide Electric Service. Existing three phase overhead lines are located along the east property line. A transformer will be required that is open to the sky and accessible per Austin Energy standards. Gas service connection will need to be confirmed by a property survey. However, the proposed facility will seek to avoid natural gas usage in accordance with Green Building Policy Resolution No. 20210902-042.

## **Detention & Water Quality**

CoA drainage policy regulates the planning and design of storm drainage facilities within CoA.

For all levels of impervious cover, projects in the Urban Watersheds must provide water quality controls when the cumulative total of both new and redeveloped impervious cover exceeds 8,000 square feet. Water quality controls must be added for 100 percent of the area of development containing new impervious cover or redeveloped impervious cover. The area of development containing base impervious cover does not require water quality controls unless it is redeveloped. Water quality and detention will be provided for the project.

Both water quality and detention controls are required for the new impervious cover of this project. Estimated volumes are 5,000 cubic feet for water quality and 15,000 cubic feet for detention. Approximate areas are shown on the Conceptual Site Plan.

## **Floodplain & Erosion Hazard Zone Analysis**

On November 14, 2019, the Austin City Council adopted an ordinance amending regulation of development in the floodplain. These amendments were recommended by CoA Watershed Protection Department (WPD) as interim measures responsive to the Atlas 14 Study by the National Weather Service. The WPD recommended using the existing FEMA 500-year floodplain as the interim 100-year floodplain. Based on the 500-year floodplain shown on the FEMA map and the FloodPro map, the site will not be located in the future 100-year regulatory floodway.

## **Site Access**

The site is accessed by a single existing entrance and exit driveway located at the intersection of Hancock Drive and Bull Creek Road and served by a four-way traffic signal. Vehicle access is controlled via a manually operated gate which is accessible from 7am-7pm, 365 days per year.

The existing entry drive to AMP is approximately 25 feet wide with four to five angled parking spaces near the historic Caretaker's Cottage. The driveways throughout the site are approximately 18 to 20 feet wide with some internal driveways at 15 feet. Access to the proposed maintenance building is via the outer driveway.

## **Circulation and Parking**

The design of the vehicular and pedestrian facilities shall conform to CoA's Transportation and Environmental Technical Standards and construction specifications. The location and design of driveway approaches and internal circulation driveways shall meet the requirements of the vehicle types expected on the site. Special design consideration for the turning paths and clearances in the maintenance yard is needed to ensure functionality during normal operations. Internal circulation drives shall be designed to achieve this goal.

The existing digital files provided to this design team appear to indicate that the existing cemetery circulation roads do not meet the width requirements for fire apparatus access, with road widths in many places less than 20' wide. The civil engineer reached out to Austin Fire Department (AFD) regarding the existing asphalt drives leading to the maintenance facility and the potential need to rebuild them to accommodate a fire apparatus. Anne Borland with AFD communicated that after review, AFD will not require the existing drives to be modified. However, the fire apparatus access route needs to be clear of tree limbs or branches over the existing drives such that there is an unobstructed vertical clearance of 14'-0" per 2021 IFC section 503.2.1 (as amended by CoA). It is recommended that the design team reconfirm with AFD during Schematic Design to confirm that the existing drives can remain as-is. A line item to rebuild the drives is included in the OPCC in the event that this determination is revoked.

The minimum number of accessible parking spaces are based on the total number of required parking spaces. For every six or fraction of six accessible spaces provided, at least one space must be van accessible. Accessible parking spaces are calculated based only on staff parking requirements, not fleet vehicle requirements.

The minimum required motor vehicle parking shall be determined from Land Development Code §25-6, Appendix A. Appendix A for the civic use of 'Cemetery' stipulates that per Schedule B, the off-street vehicle parking and loading requirements shall be determined by the director. A minimum of one bicycle parking space is required. The location of bicycle spaces must comply with § 25-6-477(D). The LEED credit for Reduced Parking Footprint will not be pursued for this project as it would limit parking to less than the number of spaces required for staff and fleet vehicle parking needs.

## **Existing Documentation**

PARC provided the design team with the following existing information at the outset of the project:

- Drawings for existing maintenance building, caretaker's residence, tower, and gate buildings
- Legal Description and Boundary Survey for AMP dated July 17, 2014
- Partial Tree & Topographic Survey for SE portion of AMP dated Jan 27, 2014
- GIS exports in Autocad (DWG) format for AMP base, cemetery data, contours, and tree survey
- Existing Building Plans & Geotechnical report for the Northwest Recreation Center, located on the north boundary of AMP
- Austin Water Utilities Map & Flood Pro Map for eastern portion of AMP
- Existing Irrigation Drawings for 2001 & 2006 Irrigation Work

## VII. Conceptual Feasibility Site Plan & Building Layout

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### Design Narrative for Conceptual Site Plan

The design team presented two conceptual site plan options for the maintenance yard and buildings. The selected design option is included as Appendix D and is summarized below:

- To minimize impact on the densely wooded area to the northeast of the cemetery, this option locates the maintenance yard and building in a clearing in the northeast portion of the cemetery.
- The main design strategy for siting the maintenance yard and buildings is one of concealment. The buildings are sited within an existing clearing in the northeast portion of the cemetery. This location has sufficient open space to accommodate the program, and allows parking and buildings to nestle into voids in the tree canopies while avoiding disturbance to their critical root zones. This approach eliminates the need to clear the wooded portions of the site as indicated in the Vision Plan, while also utilizing these wooded areas to screen the maintenance yard and buildings from the neighboring properties. Existing trees to the south and west will also remain to screen the building from the viewsheds within the cemetery, and will be supplemented with understory vegetative screening.
- The buildings themselves are arranged to screen activities within the maintenance yard as well as the parking areas from the rest of the cemetery. Utilizing the buildings as screening elements uses their mass to minimize noise and also reduces the amount of perimeter fencing needed around the maintenance yard.
- The Maintenance Building is sited with its long axis running east-west, which allows for the potential installation of rooftop solar on its south facing roof. The unconditioned workshop areas face north, remaining shaded throughout the day for cooler working conditions and the mass of the administrative portion of the building buffering the heat load. The administrative offices and communal areas face south, allowing daylighting to penetrate into the building beneath the roof overhangs which shade the building.
- The columbarium and scatter garden are proposed to be at the edge of the wooded area and just north on the main loop road which runs east-west across the cemetery, at the eastern edge of the future burial area. This location does not constrict the development of burial sites around the columbarium, and also allows the columbarium to expand to the east, north, or west if needed.

It is important to note that neither of the conceptual site plan options the design team presented align with the location recommended by the 2015 Vision Plan. The Vision Plan identified a location deep within the wooded area in the northeast portion of AMP. While this area is well screened from the rest of the cemetery, locating the program here would necessitate removal of large swaths of trees which may have protected or heritage status under CoA's tree ordinance. Additionally, there would be much higher initial costs to extend roadways and utility services to this remote portion of the site.

### Design Narrative for Conceptual Building Layout

The design team presented two conceptual maintenance building layouts. The selected design option is included as Appendix E and is summarized below:

- The building is a single structure containing both the administrative functions and the workshop and storage functions, with a clean separation between the two. Acoustic and thermal separation between the two space types will be important to maintain. The administrative portion will be conditioned, and the workshop and storage space will be unconditioned. A secondary means of egress is provided from both portions of the building. The gross building area is 5,450 SF.

- The Break Room has been configured to serve as the main entry point for the building. Cemetery Operations stated during programming that they will not require a lobby or receptionist. This is a shared social space which all staff will access on a daily basis. It can be used for breaks and lunches, as well as all staff or team meetings; it is sized to accommodate all 31 staff when the Hoteling space is used as overflow seating area. To minimize unnecessary foot traffic and reduce maintenance, the functions which are commonly accessed by grounds crews, such as the lockers, restrooms, shower, are located on one end of the building, as close to the Break Room as possible. Hoteling space and a small Conference Room are also located adjacent to the Break Room. The administrative staff workspaces are located towards the other end of the building, which is a little quieter for more focused work. All regularly occupied spaces, including the Break Room, have windows for natural daylight and views of nature. Given the wooded siting of the buildings, bird safe glass and other strategies to minimize bird strike should be strategically employed.
- The workshop and storage areas can be accessed through personnel doors at each end of the building. An interior door connects the workbenches to the storage areas. Overhead garage doors open to the maintenance yard and monument foundation fabrication area facilitate the movement of tools and equipment into and out of the building. High velocity low speed (HVLS) fans within the tall storage area facilitate ventilation, while smaller ceiling fans and suspended unit heaters provide air movement, cooling, and supplemental heat to the workbench area.
- The storage space is completely open and can be outfitted with industrial type pallet racks, M rack dividers, or shelving units as needed. The design should accommodate construction of a future mezzanine along the wall separating the storage area from the administrative area. The mezzanine will allow Cemetery Operations to increase the available storage area in the future. The mezzanine may be accessed via an alternating tread stair if it is limited to 250 sf, however for the Conceptual Design phase, assume mezzanine access will be via a standard pre-fabricated metal stair. If needed, wire cages or secure storage areas could easily be designed above or below the mezzanine.

The Grounds Maintenance Equipment Shelter is a carport type building with a roof and one side enclosed. The building's gross area is approximately 3,500 SF.

The Maintenance Building and the Grounds Maintenance Equipment Shelter Building will both be screened from the rest of AMP with a 6-foot-tall decorative steel fence and vegetation. The fence will enclose the entire maintenance yard and parking area. There will be an automatic sliding entry gate at the entrance and future exit to the maintenance yard.

## **Design Narrative for Columbarium and Scatter Garden**

The Columbarium will need to accommodate nearly 290 niches to meet the anticipated needs for the next 20 years. This could be built in several phases, added as needed. The columbarium may be limestone to match the existing historic elements, with the faces of the columbarium niches a more polished stone such as granite. The columbarium construction may include CMU backup walls, reinforced concrete foundations, and a sloped cast stone cap. The overall height of the columbarium walls is not recommended to exceed 5'-0". This not only provides greater visibility and security, but also enables visitors access to the face of a loved one's niche if they desire to make a monument rubbing or insert a flower into a niche vase. The design should include benches and a wood or steel trellis-like element to provide shade for visitors. The walkways to and around the columbarium and scatter garden shall be TAS compliant.

The scatter garden should be built in the first phase to accommodate that use as soon as possible. The scatter garden should be designed with native plantings which are drought tolerant and do well in sun. A flagpole to accommodate at least two 4'x6' flags should be included adjacent to the scatter garden and columbarium. Reference Appendix F for conceptual imagery for the columbarium and scatter garden.

## VIII. Technical Criteria

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### General Requirements & Applicable Codes

The design shall comply with all applicable laws, statutes, ordinances, and building codes currently adopted and amended by CoA. The list below includes currently adopted and amended codes at the time this document was written. References in the report refer to the code editions below and the applicable local amendments.

- 2021 Flood Hazard Areas - (Chapter 25-12, Article 3)
- 2021 International Building Code (IBC)
- 2021 International Energy Conservation Code (IECC)
- 2021 International Fire Code (IFC)
- 2020 National Electrical Code (NEC)
- 2021 Uniform Mechanical Code (UMC)
- 2021 Uniform Plumbing Code (UPC)
- Austin Land Development Code (LDC)
- CoA Criteria Manuals, including Environmental Criteria Manual (ACM), Transportation Criteria Manual (TCM), Drainage Criteria Manual (DCM), Utilities Criteria Manual (UCM), and Fire Protection Criteria Manual (FPCM)

All aspects of the design shall also comply with the 2012 Texas Accessibility Standards (TAS) and the 2010 Americans with Disabilities Act (ADA). The Maintenance Building will be considered an employee work area without public visitors. Individual work areas are not required to be fully accessible, but should be able to be approached, entered, and exited by a person in a wheelchair. The columbarium and scatter garden will be open to and accessible to the public.

### Building Code Considerations

#### Occupancy and special requirements based on occupancy

- Business Group B (general office areas, meeting rooms, break room)
- Moderate Hazard Storage, Group S-1 (workshops, storage)
- Low Hazard Storage, Group S-2 (workshops, storage)
- Utility and Miscellaneous Group U (carports, sheds, fences more than 7 feet in height)

#### Maintenance Building

Due to the type spaces and functions in the program, this building will include Group B (business) and Group S (workshops & storage) occupancies, and thus be a mixed use and occupancy building. Per IBC 303.1, because the Group B occupant load will be less than 50 persons, none of the rooms or spaces will be classified as an Assembly occupancy. The building will consist of non-separated occupancies, and therefore, the most restrictive size limitations found in IBC 504.2 will apply.

The building is allowed to be Type VB construction. Type VB buildings may be constructed of any materials permitted by code and are not required to have fire ratings for their key structural components other than those for exterior walls which might be triggered by proximity to adjacent buildings or property lines. As planned, exterior wall fire resistance ratings will not be triggered because the building will be sited more than 30' away from any adjacent structures (IBC Table 705.5).

Sprinklering the building is not required by code for the occupancies, height or area of the proposed building. However, the building should be sprinklered in order to significantly reduce the hydrant flow (from 2,200 gpm to 1,000 gpm) as well as to allow a potential increase in length for the fire lanes from 150' to 200'.

Programmatically, the building is well within the following size limitations for a sprinklered building as outlined in IBC Tables 504.3 & 504.4 for mixed occupancies: up to two stories, maximum height of 60', and maximum area of 36,000 sf. Group B and S-1 sprinklered both limit the building to this maximum height and area, while S-2 sprinklered limits the number of stories to two.

The administrative portion of the building is recommended to be a single-story space. Due to the functional needs for storage and the workshop, the maintenance portion of the building will need to be a one and a half story height space to accommodate a storage mezzanine. The mezzanine is allowed to be up to one-third of the floor area under IBC 505, if accessed by a standard pre-fabricated metal stair. An alternating tread stair would further reduce the mezzanine area to only 250 square feet per IBC 1011.14; this means of access is not PARD's preference.

The required minimum plumbing fixture counts for 31 proposed occupants include two toilets, two lavatories, one hi-lo drinking fountain (with a bottle filler for convenience), and one service sink. Restrooms will be configured as nongendered single-user restrooms (each including a single toilet and lavatory). While showering facilities are not required for these occupancies by code, Cemetery Operations have requested them. An accessible stall shower with an accessible changing bench will be provided within one of the single-user restrooms.

#### **Grounds Maintenance Equipment Shelter**

Maintenance equipment such as mowers, tractors, and small ATVs or golf carts will be parked beneath a covered structure, classified by the IBC as Utility and Miscellaneous, Group U, and considered to be a carport. The definition of carport in the IBC requires the carport to be open on not fewer than two sides. Carports open on fewer than two sides shall comply with the restrictions for private garages, however, Cemetery Operations does not require exterior walls on more than two sides of this building. The design team should plan for the structure to be closed on the side which faces AMP in order to screen the building contents from the public.

The scale of the equipment shelter is such that it could be constructed under the requirements for Group U occupancy and Type VB construction standards (one-story, maximum height of 40', and maximum area of 5,500 sf). Due to the planned size of the equipment shelter, an automatic sprinkler system will not be required.

Small amounts of hazardous materials, flammable and other, will be stored at the site. These materials are used in day-to-day cemetery groundskeeping operations. The conceptual design assumes that no control area within the building will have quantities of hazardous materials posing a physical hazard greater than those allowed by International Building Code [IBC 2021 TABLE 307.1(1)]. These are not anticipated to exceed amounts allowed by code which would require a Hazardous (H) occupancy. Per IBC Table 307.1 (1), exception p, liquid or gaseous fuel in fuel tanks on vehicles or motorized equipment operated in accordance with the IFC shall not be included in determining the maximum allowable quantities of hazardous materials stored. After discussion with PARD and Cemetery Operations during the conceptual design, these types of materials shall be stored within this building and not within the Maintenance building.

#### **Vehicle Parking**

Fleet vehicles and employee parking will be provided in an open parking lot without cover and are not subject to building code considerations.

## IX. Opinion of Probable Construction Cost

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An opinion of probable construction cost (OPCC) differs from a cost estimate. It does not represent a guarantee of construction cost based on the solicitation of bids, but rather an average construction cost based on the judgement of the design team. Published average construction cost data, the costs of previously completed projects, and information on specific material and labor costs provided by distributors and contractors are all applied to develop the OPCC.

The OPCC represents the following conditions. Departures from these conditions will result in unpredictable construction costs that exceed normal levels of uncertainty.

- The work will be executed by a contractor and subcontractors that are qualified and experienced in building similar projects.
- Competitive conditions will be present for bidding. A minimum of three bids will be received from general contractors, or in the case of a construction manager, a minimum of three bids will be received for each subcontract.
- Fair and stable market conditions will be present. The cost represents reasonably anticipated amounts for materials, labor, and profit. Also, shortages and economic disruptions will not significantly impact the project delivery.
- The work will be coordinated and executed in an efficient manner.
- Discounts will not be provided.

Construction costs for the noted work are broken down into a “menu” of line items corresponding to deficiencies illustrated in the report. In the appropriate column, each line item reflects the incorporation of the following costs.

- 15% General Conditions and General Requirements – This represents direct cost to the contractor, including but not limited to, site supervision, site personnel, temporary field offices, equipment, insurance, and bonds.
- 4% Contractor Fee (Overhead and Profit)
- 3.5% Bonds & Insurance
- 20% Design Contingency (Unenumerated Design Elements) – This includes a design contingency for unknowns, which is based on the level of definition in the design, the estimating methodology, discovery of project constraints, and changes in market conditions. This does not include the incorporation of Owner decisions related to the scope of the work.

As noted above, the OPCC represents an average construction cost. If the project design is almost entirely defined, and available data was utilized effectively, it would result in actual bidders being higher than the indicated cost approximately 50% of the time, and lower approximately 50% of the time. The expected range of actual construction cost is projected to be  $\pm 30\%$  for this Feasibility level effort, within a 95% level of certainty.

The OPCC reflects cost for a construction start date of Fall 2026, inclusive of escalation. If construction occurs after Fall 2026, additional escalation will be required. Reference the escalation worksheet within Appendix G – Preliminary Opinion of Probable Construction Cost (OPCC) for a detailed breakdown.

CoA has provided a summary sheet detailing the Total Project Budget Estimate as well as a Spending Plan Cost Escalation. These documents are included as Appendix H.

## X. Appendices

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**Appendix A - Program**

**Appendix B - Site Assessment**

**Appendix C - Existing Site Photos**

**Appendix D - Conceptual Site Plans & Stormwater Utility Concept Plan**

**Appendix E - Conceptual Floor Plan for Maintenance Building**

**Appendix F - Columbarium & Scatter Garden - Concept Imagery**

**Appendix G - Preliminary Opinion of Probable Construction Cost (OPCC)**

**Appendix H - AMP Total Project Budget, Total Project Budget Escalation**

**Appendix I - LEED Scorecard (LEED v4 for BD+C: New Construction & Major Renovation)**

## PARD AMP Program Summary

Division/Group	Cemetery Maintenance Division (Parks Grounds)
Employees (includes future projections)	31

Administrative Spaces	Comments	Totals (SF)
Enclosed Office	5 offices	600
Open Space (cubicle)	6 workstations (8'x8' cubicle)	384
Touchdown Space (hoteling)	6 hoteling stations (30"x60" desks)	120
Meeting Room	Seating for 8	120
Break Room	Seating for 31	435
Restrooms	1M & 1F	128
Custodial		50
Workroom	Copier, office supplies	80
Storage	Misc office storage	350
Personnel Lockers	10 double-tier lockers (20 total)	150
Mech/Elec/IT		175
Circulation (20%)		604
Administrative Building Walls (10%)		320
<b>Administrative Building Overall Totals</b>		<b>3,516</b>

Workshop & Storage Spaces	Totals (SF)
Grounds Maintenance Equipment	3,528
Workshop	400
Storage	1,500
Workshop Building Walls (5%)	271
<b>Total Workshop, Storage &amp; Work Areas</b>	<b>5,699</b>

Maintenance Yard	Totals (SF)
Bulk Materials	810
Yard Storage	1,264
<b>Total Maintenance Yard Areas</b>	<b>2,074</b>

Parking	# Parking Stalls	Totals (SF)
Fleet Parking	20	3,641
Staff Parking	25	3,689
<b>Total Parking</b>	<b>45</b>	<b>7,330</b>
Fleet Circulation		2,731
Staff Circulation		2,767
<b>*Total Parking with circulation</b>		<b>12,828</b>

*\*Does not include cemetery roads and circulation routes outside maintenance facility enclosure*

<b>Other Site Elements</b>	<b>Totals (SF)</b>
Trash Dumpster (8 yd)	36
Outdoor Break/ Picnic/ Gathering area	208

<b>Columbarium &amp; Scatter Garden</b>	<b>Totals (SF)</b>
Scatter Garden	600
Columbarium	200
Circulation	800
Parking parking	Existing public parking spaces to be utilized 0
<b>Total Columbarium &amp; Scatter Garden</b>	<b>1,600</b>

	<b>Total (Acres)</b>	<b>Totals (SF)</b>
Total Site Coverage (sum of program elements listed above)	0.6 acres	25,961
Area of existing maintenance yard to be revegetated	1.3 acres	55,000

PARD AMP Program Detail - Area Calculations					
<b>Administrative Spaces</b>					
Space Type	SF/Space or User	# Users	# Spaces	Total SF	Notes
<b>Workspaces</b>					
Enclosed Office	120	5	5	600	Parks Ground Staff
Open Space (cubicle)	64	6	6	384	Admin Staff
Touchdown Space (hoteling)	20	20	6	120	Field Crew at 1 station per 3 staff; 30"x60" desk + 25sf
Total # Users		31			
<b>Support Spaces</b>					
Meeting Room	120	8	1	120	at 15 sf per person
Break Room	(# Users*15) + 75	24	1	435	75sf+15sf/occ seat, incl cottage
Restrooms	64	-	2	128	Ch 29 IBC Group B: min 2 toilets, 1 sink, 1 service sink, 1 DF. 1 RR to also have a ADA stall shower, changing bench.
Custodial	50	-	1	50	
Workroom	80	-	1	80	
Storage	350	-	1	350	
Personnel Lockers	15	20	10	150	2 tier lockers for 20 field crew
Mech/Elec/IT		-		175	
<b>Circulation</b>				604	d
<b>Administrative Building Walls (10%)</b>				320	
<b>Total Administrative Building Spaces</b>				<b>3,516</b>	
<b>Other Spaces</b>					
Outdoor Break/ Picnic/ Gathering area	13'x16'	6	1	208	Shaded by vegetation, not a building; area = ADA picnic table w 4' accessible surround, all sides
<b>Workshop &amp; Storage Spaces</b>					
Item	Storage Type	Qty	SF	Notes	
<b>Grounds Maintenance Equipment</b>				Per NCA design guide p2.33-2.34 or actual dims	
John Deere 19F649 Back Hoe 310	Covered Parking	1	288	Per NCA design guide	
John Deere 19F653 Mini-Ex 35G	Covered Parking	1	170	6' x 16'	
John Deere 19F654 Mini-Ex 35G	Covered Parking	1	170	6' x 16'	
John Deere Mini-Ex 35G	Covered Parking	1	170	6' x 16', future	
John Deere Mini-Ex 35G	Covered Parking	1	170	6' x 16', future	
John Deere 13H640 Tractor	Covered Parking	1	170	8' x 14' 5075M	
John Deere 14F641 Skid Steer	Covered Parking	1	170	12' x 6'	
Wacker 19F652 Tipper D50	Covered Parking	1	170	75" x 174"	
Bobcat 13V642 ATV	Covered Parking	1	80	10' x 5'	
Bobcat 13V643 ATV	Covered Parking	1	80	10' x 5'	
Bobcat 13V644 ATV	Covered Parking	1	80	10' x 5'	
Bobcat ATV	Covered Parking	1	80	10' x 5', future	
Bobcat ATV	Covered Parking	1	80	10' x 5', future	
Bobcat ATV	Covered Parking	1	80	10' x 5', future	
Bobcat ATV	Covered Parking	1	80	10' x 5', future	
Torro Mower 13H632 60" mower	Covered Parking	1	80	on concrete base	
Torro Mower 13H634 60" mower	Covered Parking	1	80	on concrete base	

Torro Mower 17H875 60" mower	Covered Parking	1	80	on concrete base	
Torro Mower 17H876 60" mower	Covered Parking	1	80	on concrete base	
Torro Mower 22H787 60" mower	Covered Parking	1	80	on concrete base	
Torro Mower 22H788 60" mower	Covered Parking	1	80	on concrete base	
Torro Mower 60" mower	Covered Parking	1	80	on concrete base, future	
Torro Mower 60" mower	Covered Parking	1	80	on concrete base, future	
EZGO 22V157 S4 Golf Cart	Covered Parking	1	170	115" x 50"	
Wacker Tipper D50	Covered Parking	1	170	75" x 174", future	
Top Hat 14K288 Mower Trailer	Covered parking	1	170	7' x 16'	
Top Hat 14K289 Mower Trailer	Covered parking	1	170	7' x 16'	
Top Hat Mower Trailer	Covered parking	1	170	7' x 16', future	
Vehicle Maintenance Workspace	Covered parking	2	0	Shared parking space for vehicle maintenance	
Subtotal			3528		
<b>Workshop</b>					
Vehicle Bay	Covered	1	200		
Workbenches	Covered	1	200	2 workbenches, 100 sf per NCA design guide p2-31 (low)	
Subtotal			400		
<b>Storage</b>					
Tool Storage	Enclosed	1	450	per NCA design guide p2-32	
Burial Services FFE	Enclosed	1	500	tent, folding chairs, artificial grass carpet roll = 2 conex 10'x25'	
Chemical & Fuel Storage	Enclosed	1	100	per NCA design guide p2-30, ventilation needed, check code reqts	
Grounds Maintenance Storage	Enclosed	1	450	per NCA design guide p2-34	
Subtotal			1,500		
<b>Workshop Building Walls (5%)</b>			271		
<b>Total Workshop &amp; Storage (SF)</b>			<b>5,699</b>		
<b>Parking</b>					
Vehicle Group/Type	Stall Type	Stall Size	SF/Stall	# Stalls	SF
<b>Fleet Parking</b>					
Ford F250	Open	9' x 18'	162	1	162
Ford F250	Open	9' x 18'	162	1	162
Ford F350	Open	9' x 18'	162	1	162
Ford F350	Open	9' x 18'	162	1	162
Ford F350	Open	9' x 18'	162	1	162
Ford F350	Open	9' x 18'	162	1	162
Chev 550	Open	11' x 21'	231	1	231
Intl HV Series 13yd Dump Truck	Open	13' x 25'	325	1	325
Prius Toyota	Open	9' x 13'	117	1	117
Ford F350	Open (Future)	9' x 18'	162	1	162
Ford F350	Open (Future)	9' x 18'	162	1	162
Ford F350	Open (Future)	9' x 18'	162	1	162
Ford F350	Open (Future)	9' x 18'	162	1	162
Chev 550	Open (Future)	11' x 21'	231	1	231
Intl HV Series 13yd Dump Truck	Open (Future)	13' x 25'	325	1	325

Parker 14K637 Brush Trailer	Open	9' x 16'	144	1	144
Parker 14K638 Brush Trailer	Open	9' x 16'	144	1	144
Parker 14K639 Haul Trailer	Open	9' x 20'	180	1	180
Magnum 22K664 Haul Trailer	Open	9' x 18'	162	1	162
Magnum 22K665 Haul Trailer	Open	9' x 18'	162	1	162
Total Fleet Parking (SF)				20	3,641
<b>Staff Parking</b>					
Standard Parking Space (80% of 31 FTE)	Open	8.5'x17.5'	149	25	3,689
Total Staff Parking (SF, Standard Parking Space (80% of 31 FTE))				25	3,689
Total Parking					7,330
<b>Circulation</b>					
Fleet Circulation	=75% of Parking Stall Area				2,731
Staff Circulation	=75% of Parking Stall Area				2,767
Total Circulation Area					5,498
Fleet Parking w/ Circulation					6,372
Staff Parking w/ Circulation					6,456
<b>Total Parking with circulation</b>					<b>12,828</b>
<b>Maintenance Yard</b>					
Item	Stall Type	Stall Size	SF/stall	# Stalls	SF
<b>Bulk Materials</b>					
Road Base	Reinf. Conc.	32 yards	9' x 18' x 5.5' (33yds)	1	162
Gravel	Reinf. Conc.	32 yards	9' x 18' x 5.5' (33yds)	1	162
Sand	Reinf. Conc.	32 yards	9' x 18' x 5.5' (33yds)	1	162
Top Soil	Reinf. Conc.	32 yards	9' x 18' x 5.5' (33yds)	1	162
Mulch	Reinf. Conc.	32 yards	9' x 18' x 5.5' (33yds)	1	162
<b>Total Bulk Material Area (SF)</b>					<b>810</b>
<b>Yard Storage</b>					
Monument Fabrication Pad (w/ hoist mechanism)	Covered		20' x 30'	1	600
Monument Laydown/Storage adjacent to fabrication pad 20-30 monument pallets (std pallets 48"x40" ea)	Uncovered		48" x 40"	30	420
Concrete vault liners qty 12, stacked 2 high, 30"x86"ea	Uncovered		3' x 8'	6	144
Out of compliance storage yard	Uncovered		10' x 10'	1	100
Trash Dumpster (8 yd)	Uncovered		6' x 6'	1	36
<b>Total Yard Storage Area (SF)</b>					<b>1,264</b>
<b>Total Maintenance Yard Area (SF)</b>					<b>2,074</b>
<b>Area of maintenance yard to be revegetated</b>					<b>55,000</b>

Columbarium					
Item	Niches/unit	SF/ea	Qty	SF	Notes
Scatter Garden			1	600	12'x48' between columbaria aisles = 576sf
Columbarium	72	48	4	200	3Hx12L (double sided)=36x2=72/ea 12'x4'=48sf ea footprint
Circulation				800	12'w aisles btwn rows, 48'L=(4x48)*4
Parking				0	along cemetery drive
<b>Total Niches</b>			288		
<b>Total Area</b>				1,600	

Cremations incr 1.5% per year

C:B ratio	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
C	121	137	131	133	135	137.1	139.2	141.3	143.5	145.7	147.9	150.2	152.5	154.8	157.2
B	384	412	370	374	372	375.9	379.8	383.7	381.5	385.3	389.1	392.8	396.5	400.2	403.8
T	505	549	501	507	507	513	519	525	525	531	537	543	549	555	561
%	8.3	8.4	8.4	8.5	8.5	8.6	8.7	8.8	8.8	8.9	9	9.1	9.2	9.3	9.4
	1	1.012	1	1.012	1	1.012	1.012	1.011	1	1.011	1.011	1.011	1.011	1.011	1.011

% incr in death rate per 2021 NFDA report (Census Bureau projected data)

2035	2036	2037	2038	2039	2040	2041	2042	2043
159.6	162	164.5	167	169.6	172.2	174.8	177.5	180.2
407.4	411	414.5	418	421.4	424.8	422.2	419.5	422.8
567	573	579	585	591	597	597	597	603
9.5	9.6	9.7	9.8	9.9	10	10	10	10.1
1.011	1.011	1.01	1.01	1.01	1.01	1	1	1.01

Total spaces needed in 20 yrs

3265	264.5 # in columbarium
8397	

- 42% remains returned to families
- 35.2% cremains buried at cemetery
- 16% scattered
- 8.1% in columbarium
- 59.3% total cremains to cemetery

<b>PARD AMP Program Detail - Staff</b>				
<b>Cemetery Maintenance Division Full Time Employee List</b>				
	<b>Job Title</b>	<b>Current Location</b>	<b>Proposed Location</b>	<b>Office Type</b>
<b>Executive</b>				
	Division Manager	Caretaker Cottage	Caretaker Cottage	Large Office
<b>Admin / Other</b>				
	Program Manager II	Caretaker Cottage	Caretaker Cottage	Small Office
	Administrative Supervisor	Caretaker Cottage	Caretaker Cottage	Small Office
	Administrative Specialist	Caretaker Cottage	Caretaker Cottage	Open Space
	Administrative Specialist	Caretaker Cottage	Caretaker Cottage	Open Space
1	Environmental Program Coordinator	Caretaker Cottage	New Maint. Bldg	Cubicle/Workstation
2	IT Geospatial Analyst	PARD Annex A	New Maint. Bldg	Cubicle/Workstation
<b>Parks Grounds</b>				
3	Park Grounds Manager	Exist. Maint. Bldg	New Maint. Bldg	Office
4	<b>Crew 1</b> General Maintenance Supv II	Exist. Maint. Bldg	New Maint. Bldg	Office
5	Parks Grounds Crew Ldr	Morgan Bldg	New Maint. Bldg	Cubicle/Workstation
6	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
7	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
8	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
9	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
10	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
11	Parks Grounds Assistant	Morgan Bldg	New Maint. Bldg	None (Field Crew)
12	<b>Crew 2</b> General Maintenance Supv I	Exist. Maint. Bldg	New Maint. Bldg	Office
13	Parks Grounds Crew Ldr	Morgan Bldg	New Maint. Bldg	Cubicle/Workstation
14	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
15	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
16	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
17	Parks Grounds Assistant	Morgan Bldg	New Maint. Bldg	None (Field Crew)
18	<b>Crew 3</b> General Maintenance Supv II	Exist. Maint. Bldg	New Maint. Bldg	Office
19	Parks Grounds Crew Ldr	Morgan Bldg	New Maint. Bldg	Cubicle/Workstation
20	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
21	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
22	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
23	Parks Grounds Specialist	Morgan Bldg	New Maint. Bldg	None (Field Crew)
24	Parks Grounds Assistant	Morgan Bldg	New Maint. Bldg	None (Field Crew)
<b>Anticipated Additional Staff</b>				
25	<b>Crew 4</b> General Maintenance Supervisor		New Maint Bldg	Office
26	Parks Grounds Crew Ldr		New Maint Bldg	Cubicle/Workstation
27	Parks Grounds Specialist		New Maint Bldg	None (Field Crew)
28	Parks Grounds Specialist		New Maint Bldg	None (Field Crew)
29	Parks Grounds Specialist		New Maint Bldg	None (Field Crew)
30	Parks Grounds Specialist		New Maint Bldg	None (Field Crew)
31	Parks Grounds Specialist		New Maint Bldg	None (Field Crew)

## PARD AMP Program Detail - Vehicles

### Cemetery Fleet Vehicle List (Include trailers, fork lifts, skid steers, lifts,etc)

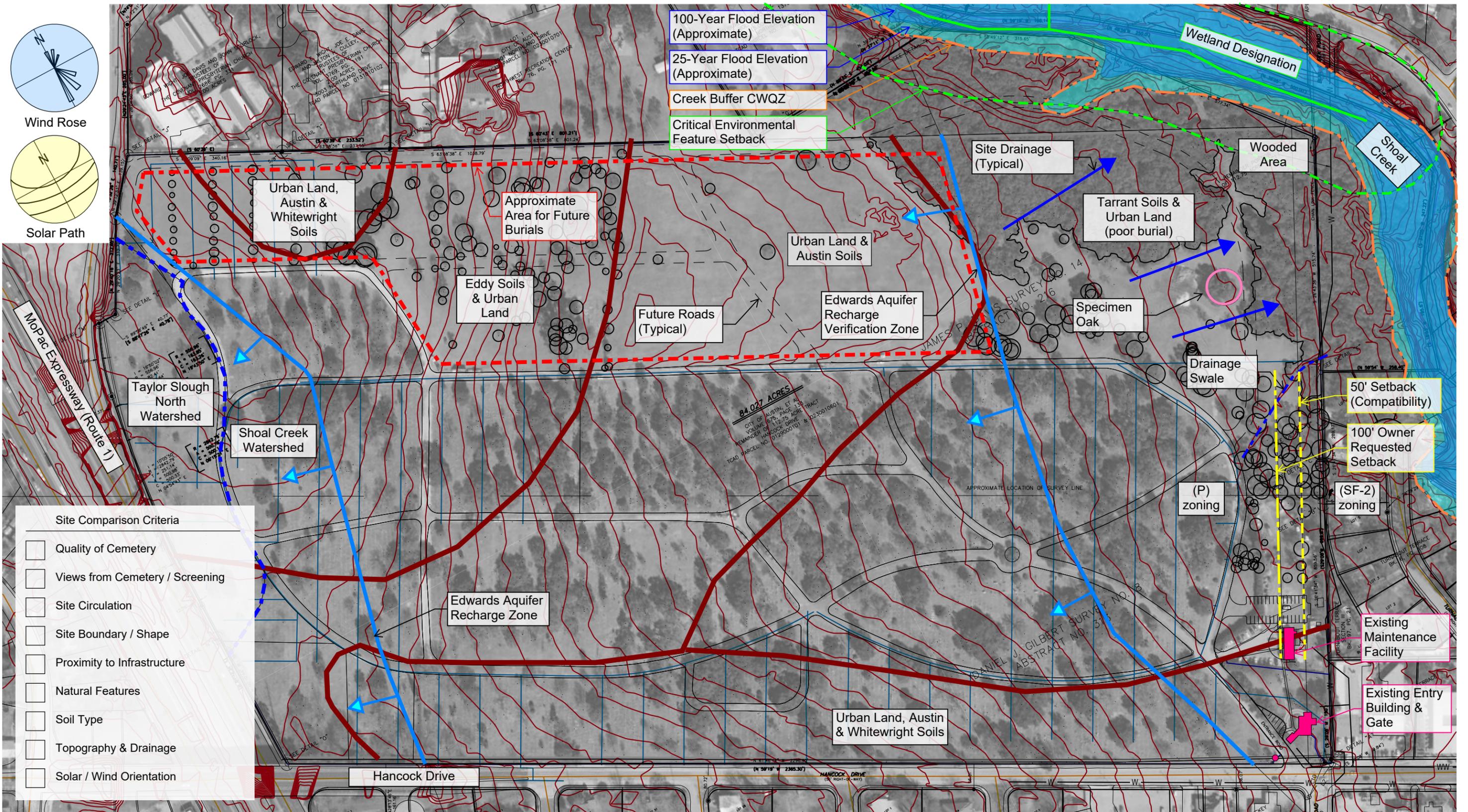
Vehicle #	Plate #	Make	Model	Primary Driver	Vehicle Size	Requested Parking Bay Size*	Notes
15B626	117 8733	Ford	F250	PGS	Ex -Cab	9' x 18'	
15B627	117 8734	Ford	F250	PGS	Ex -Cab	9' x 18'	
15B628	118 8622	Ford	F350	Crew Leader	Crew Cab	9' x 18'	
16B224	126 5629	Ford	F350	PGS	Crew Cab	9' x 18'	
16B233	126 5259	Ford	F350	PGS	Crew Cab	9' x 18'	
19B666	140 9142	Ford	F350	Crew Leader	Crew Cab	9' x 18'	4X4 w/ Wench
19Q655	142 9435	Chev	550	Monument Crew	Crew Cab	11' x 21'	
20G650	140 6536	Intl	HV Series	PGS	13yd Dump Truck	13' x 25'	
14A629	116 4790	Prius	Toyota	Admin Car	Mid-size	9' x 13'	
FUTURE		Ford	F350	PGS	Crew Cab	9' x 18'	4X4 w/ Wench
FUTURE		Ford	F350	PGS	Crew Cab	9' x 18'	4X4 w/ Wench
FUTURE		Ford	F350	PGS	Crew Cab	9' x 18'	4X4 w/ Wench
FUTURE		Ford	F350	PGS	Crew Cab	9' x 18'	4X4 w/ Wench
FUTURE		Chev	550	Monument Crew	Crew Cab	11' x 21'	4X4 w/ Wench
FUTURE	140 6536	Intl	HV Series	PGS	13yd Dump Truck	13' x 25'	

## PARD AMP Program Detail - Major Equipment

### Cemetery Major Equipment List (Items that need covered storage)

Name	Description	Size	Storage Type Needed	Notes
John Deere 19F649	Back Hoe 310	Large	Covered Parking	
John Deere 19F653	Mini-Ex 35G	Mid-size	Covered Parking	HoeRam (Impactor)
John Deere 19F654	Mini-Ex 35G	Mid-size	Covered Parking	Bellhole Bucket
John Deere 13H640	Tractor	Mid-size	Covered Parking	
John Deere 14F641	Skid Steer	Mid-size	Covered Parking	
Wacker 19F652	Tipper D50	Mid-size	Covered Parking	
Bobcat 13V642	ATV	Small	Covered Parking	
Bobcat 13V643	ATV	Small	Covered Parking	
Bobcat 13V644	ATV	Small	Covered Parking	
Torro Mower 13H632	60" mower	Small	Covered Parking	On concrete parking pad to protect blades
Torro Mower 13H634	60" mower	Small	Covered Parking	On concrete parking pad to protect blades
Torro Mower 17H875	60" mower	Small	Covered Parking	On concrete parking pad to protect blades
Torro Mower 17H876	60" mower	Small	Covered Parking	On concrete parking pad to protect blades
Torro Mower 22H787	60" mower	small	Covered Parking	On concrete parking pad to protect blades
Torro Mower 22H788	60" mower	small	Covered Parking	On concrete parking pad to protect blades
EZGO 22V157	S4 Golf Cart	small	Covered Parking	
Top Hat 14K288	Mower Trailer	Large	Covered Parking	16' Long
Top Hat 14K289	Mower Trailer	Large	Covered Parking	16' Long
Parker 14K637	Brush Trailer	Large	Uncovered parking	16' Long
Parker 14K638	Brush Trailer	Large	Uncovered parking	16' Long
Parker 14K639	Haul Trailer	Large	Uncovered parking	20' Long
Magnum 22K664	Haul Trailer	Large	Uncovered parking	18' Long
Magnum 22K665	Haul Trailer	Large	Uncovered parking	18' Long
John Deere	Mini-Ex 35G	Mid-size	Covered Parking	FUTURE/ HoeRam (Impactor)
John Deere	Mini-Ex 35G	Mid-size	Covered Parking	FUTURE/ Bellhole Bucket
Wacker	Tipper D50	Mid-size	Covered Parking	FUTURE
Bobcat	ATV	Small	Covered Parking	FUTURE
Bobcat	ATV	Small	Covered Parking	FUTURE
Bobcat	ATV	Small	Covered Parking	FUTURE
Bobcat	ATV	Small	Covered Parking	FUTURE
Torro Mower	60" mower	small	Covered Parking	On concrete parking pad to protect blades
Torro Mower	60" mower	small	Covered Parking	On concrete parking pad to protect blades
Top Hat	Mower Trailer	Large	Covered Parking	FUTURE, 16' Long

<b>PARD AMP Program Detail - Bulk Materials</b>				
<b>Cemetery Bulk Material List</b>				
<b>Name</b>	<b>Description</b>	<b>Size</b>	<b>Storage Type Need</b>	<b>Notes</b>
<i>Note: Material Yard must be on reinforced concrete slab to prevent waste and cross-contamination</i>				
Road Base		32 yards	Bins / Stall	Reinf. Conc.
Gravel		32 yards	Bins / Stall	Reinf. Conc.
Sand		32 yards	Bins / Stall	Reinf. Conc.
Top Soil		32 yards	Bins / Stall	Reinf. Conc.
Mulch		32 yards	Bins / Stall	Reinf. Conc.





1301 east seventh street  
 austin, texas 78702  
 ph 512 476 0201  
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City of Austin - PARD  
 Austin Memorial Park Cemetery  
 Existing Site Photos

Brian Carlson  
 Texas Registration #20143  
 These documents are incomplete  
 and may not be used for regulatory  
 approval, permit, or construction.

View to Proposed  
 Locations  
 Date: 07/21/2023  
 Scale: No Scale  
 Project Number: 1907-3



1. View to proposed access drive for maintenance yard from main road, looking north



2. View to proposed location for maintenance yard in existing clearing, with Specimen Oak beyond



3. View to proposed location for maintenance yard in existing clearing, with Specimen Oak beyond



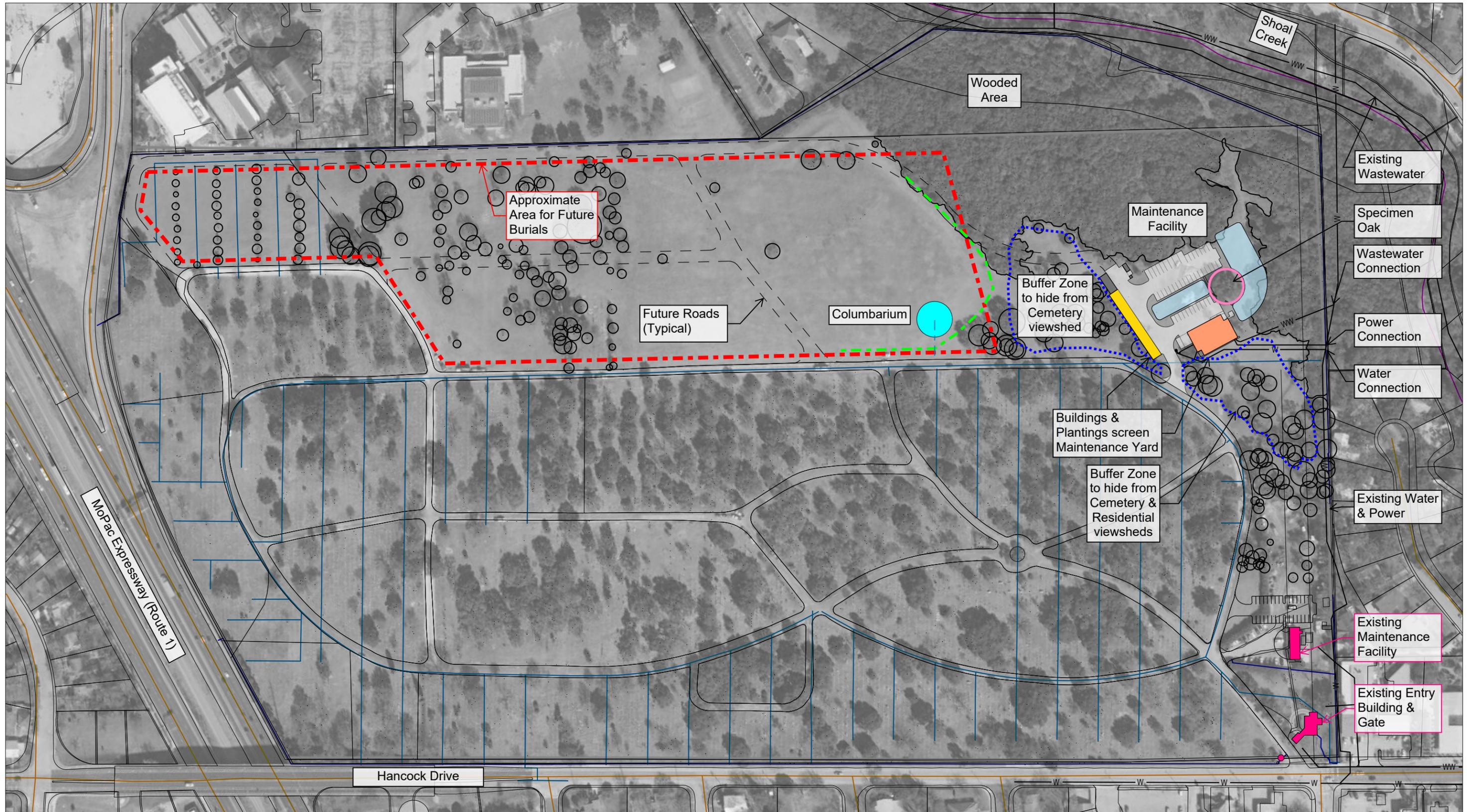
4. View to proposed location for columbarium and scatter garden from main road, looking northwest

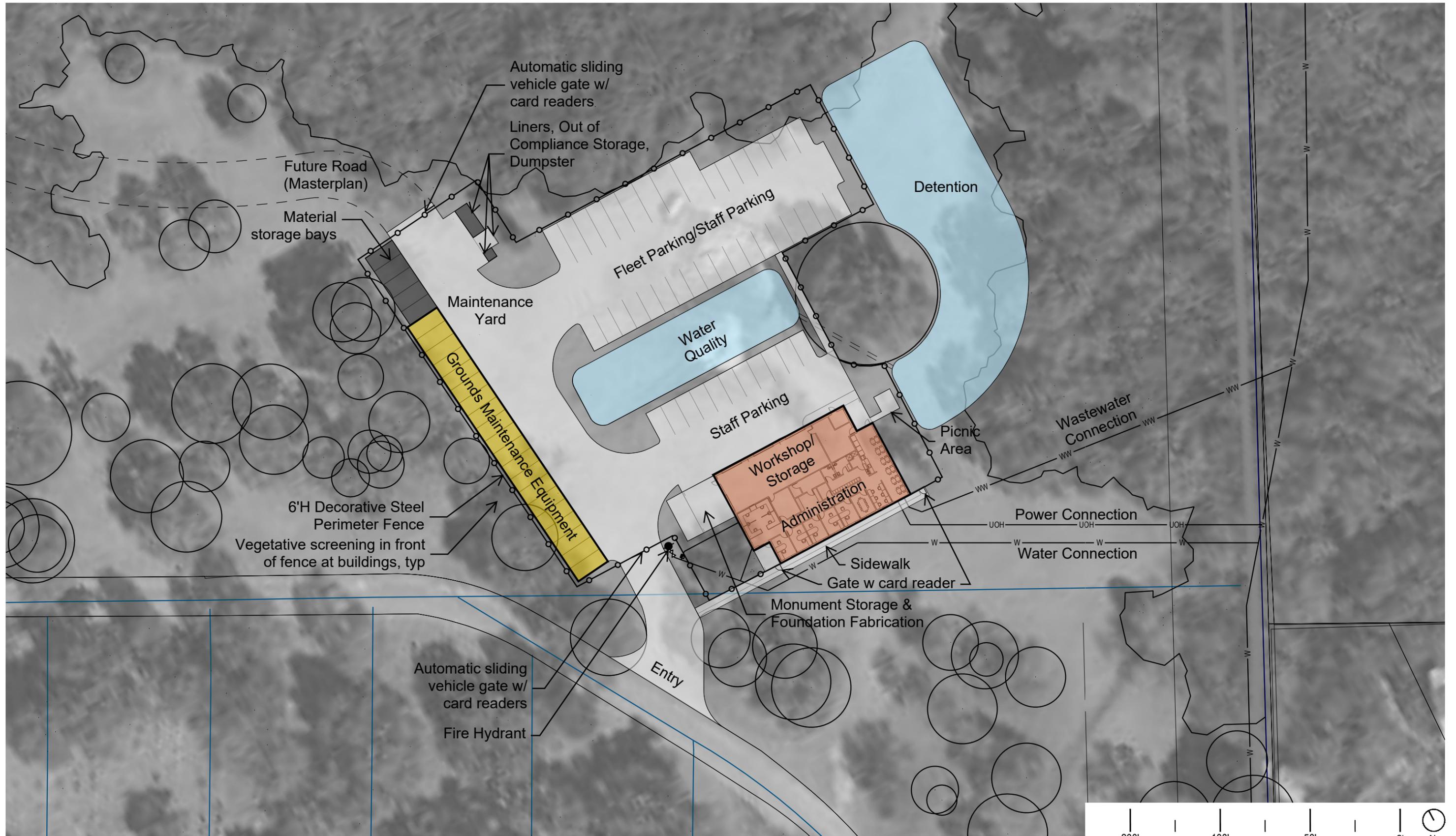


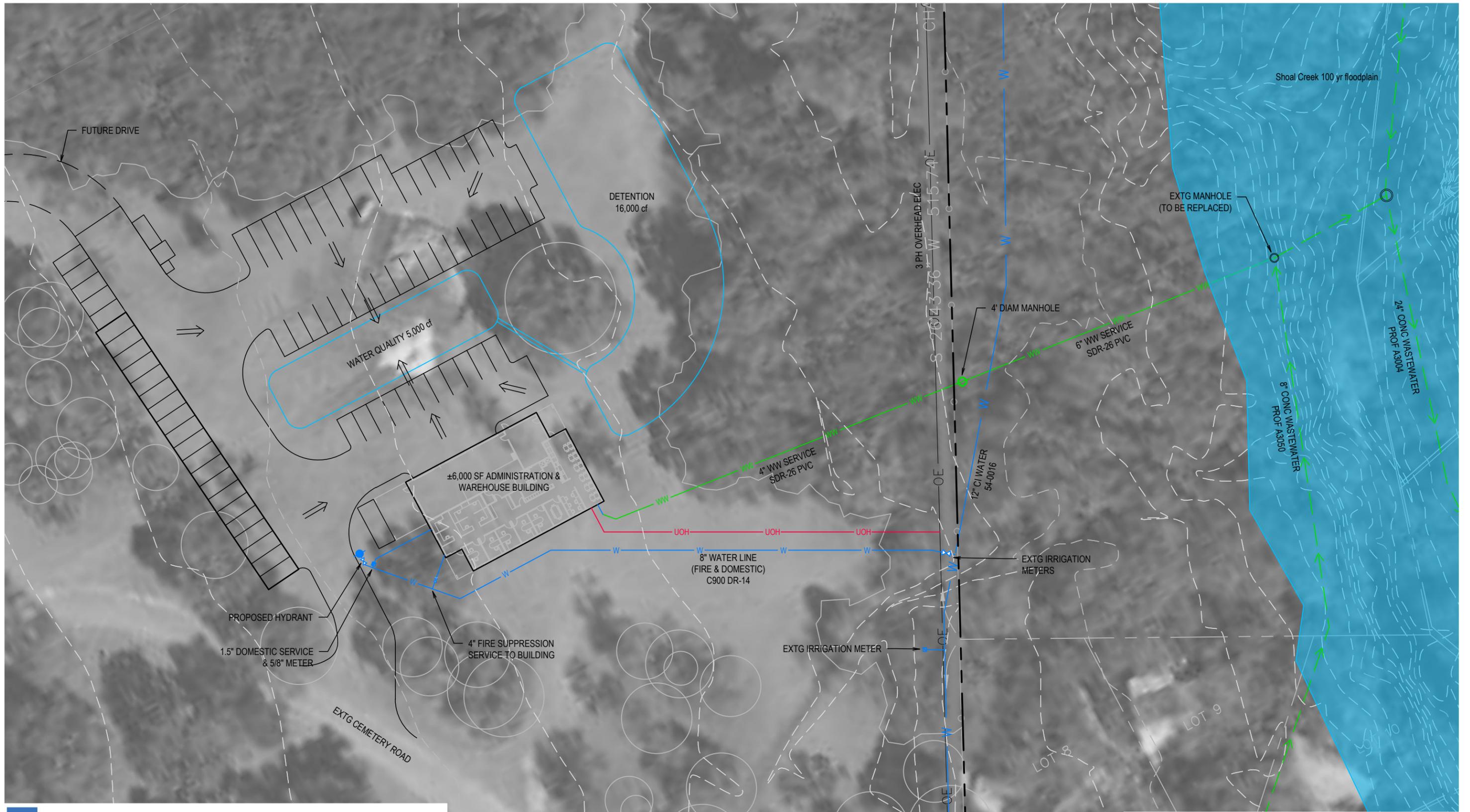
5. View to proposed location for columbarium and scatter garden from main road, looking northeast



6. View to proposed location for columbarium and scatter garden from main road, looking north







**stansberry engineering co.**



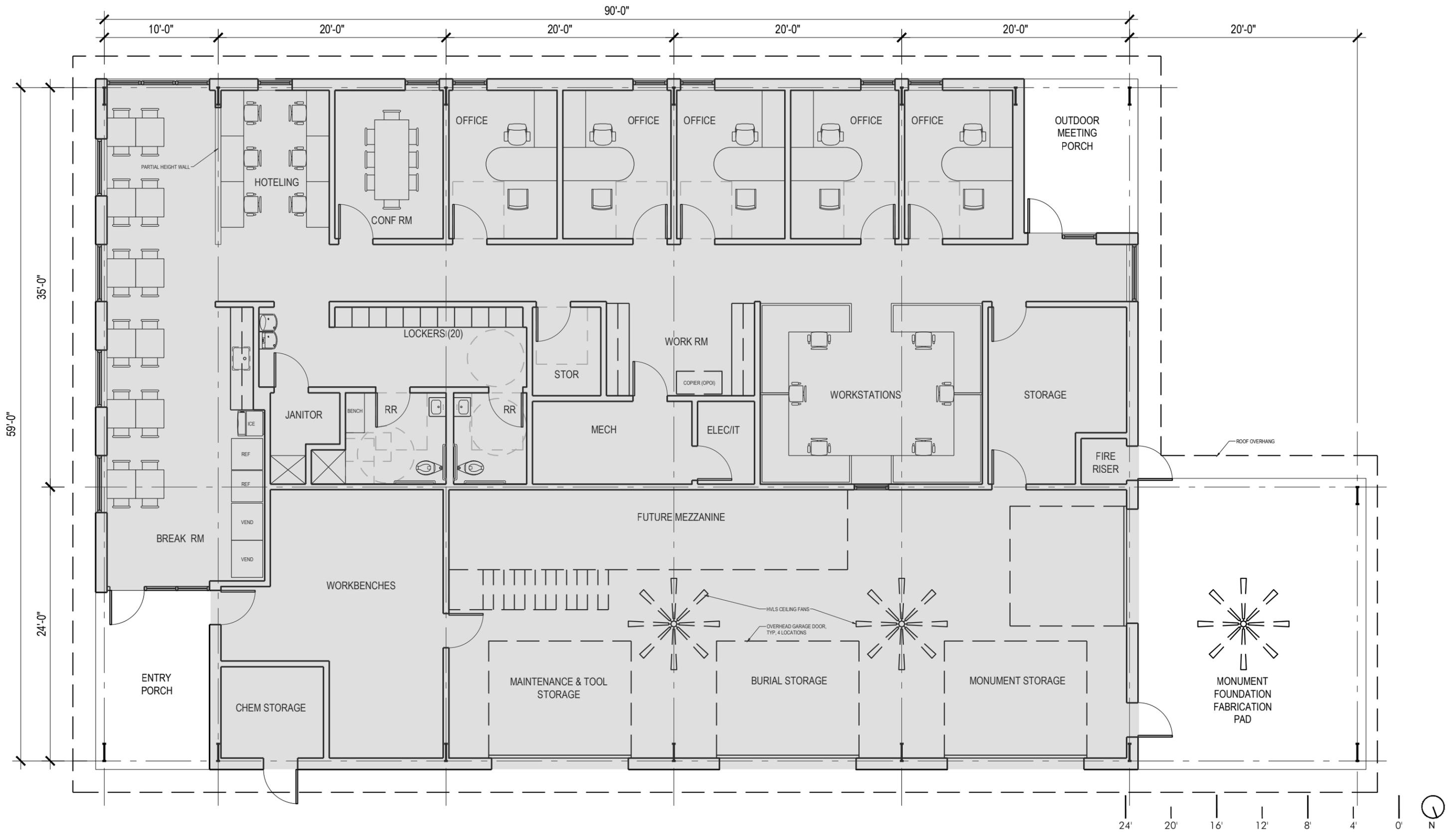
**m**  
**MCKINNEY YORK**  
 architects

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City of Austin - PARD  
 Austin Memorial Park Cemetery  
 Conceptual Site Plans

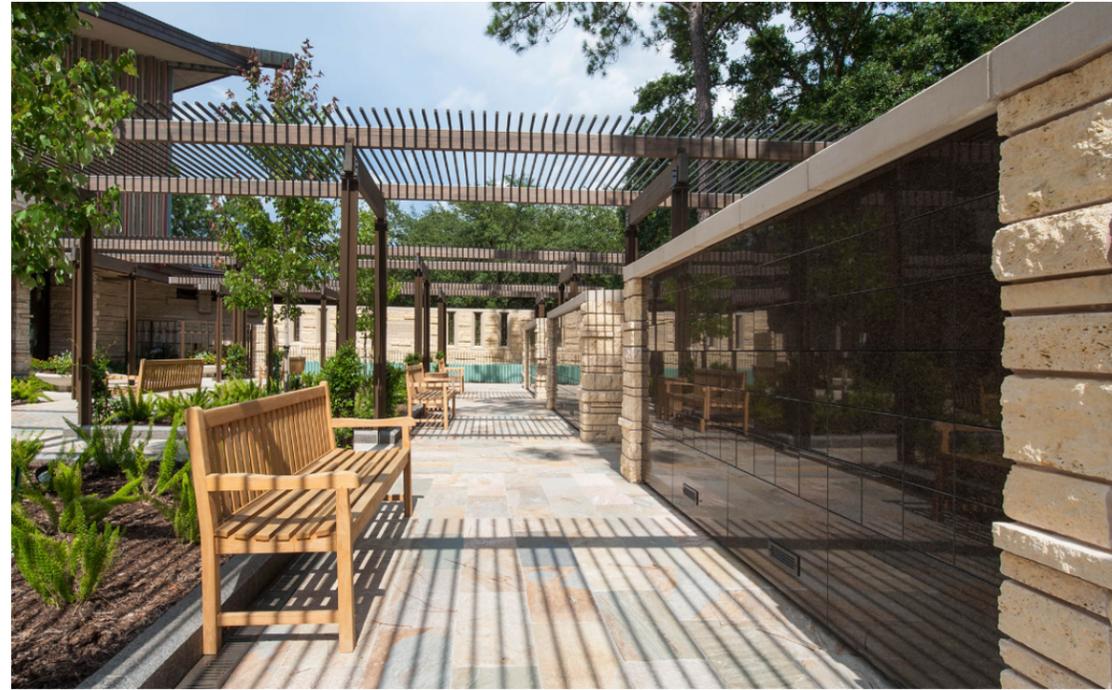
Blayne Stansberry, P.E.  
 Texas Registration #88646  
 These documents are incomplete and  
 may not be used for regulatory  
 approval, permit, or construction.

**Stormwater & Utility  
 Concept Plan**  
 Date: 07/26/2023  
 Scale: 1" = 50' (11x17)  
 Project Number: 1907-3





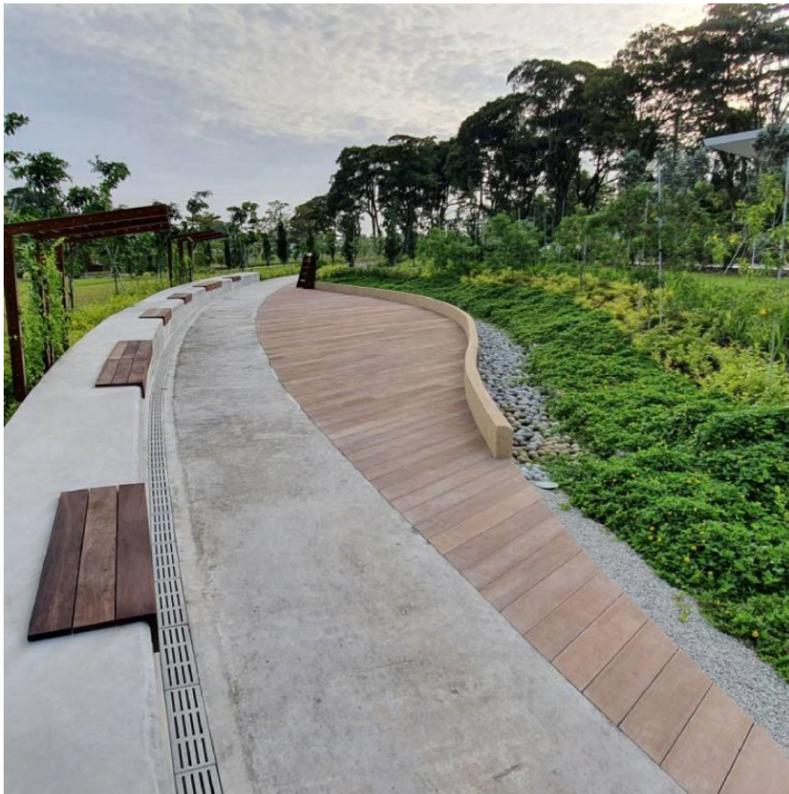
A circular design allows for two-sided traditional burial niches surrounded by scatter gardens, with lower walls bearing memorial plaques for scattered cremains. A circular design may also allow for future concentric expansion.



Columbarium designs may feature native stonework and plantings; trellis shading elements to protect the bereaved from the hot Texas sun; and seating elements which allow for visiting the departed.



Designs may employ plantings, shading elements, and columbarium massing to create different zones for interred or scattered cremains, or allow for privacy during visitation.



Design may incorporate seating, shading elements, or memorial plaques into site walls at the scatter garden. Gravel surfacing may be appropriate where cremains are placed. Consider an opportunity for placement of flowers by the bereaved within the scatter garden; a centralized element is easy to maintain and allows for expression of condolences.



Engraved pavers along pathways allow for permanent memorialization of those whose cremains are scattered rather than interred in the columbarium.

# COA PARD - Austin Memorial Park Cemetery Maintenance Facility & Columbarium

Rough Order of Magnitude Estimate

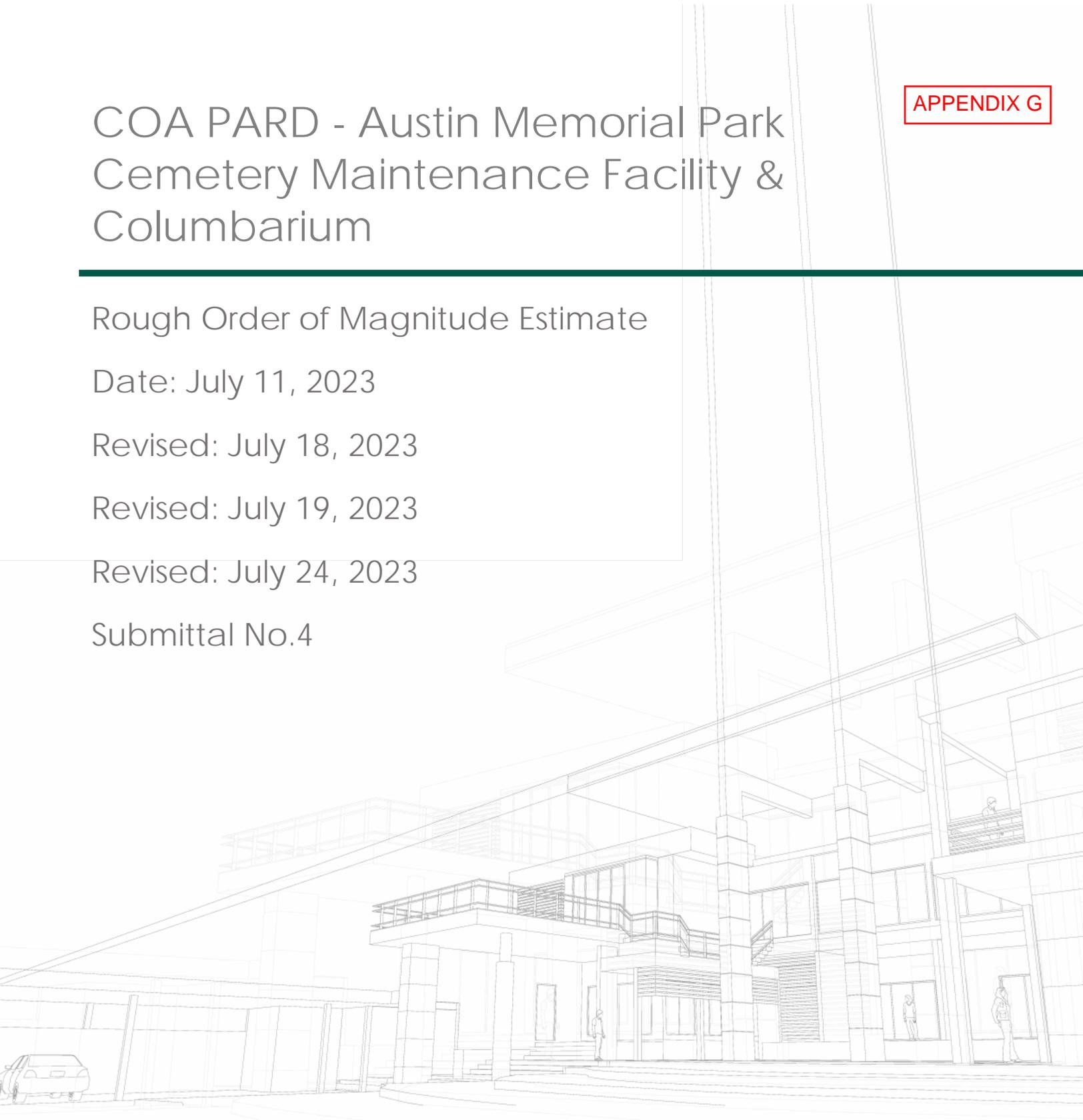
Date: July 11, 2023

Revised: July 18, 2023

Revised: July 19, 2023

Revised: July 24, 2023

Submittal No.4



Prepared by:

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85 NE Loop 410  
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Project # 2019054-06



# AMP Cemetery Maintenance Facility & Columbarium

## PURPOSE OF THE ESTIMATE

To provide a rough order of magnitude for the feasibility study performed by McKinney York for the cemetery maintenance facility and columbarium.

## PROJECT DESCRIPTION

This project involves the construction of a new metal building including site improvements and utilities connections. A columbarium, a scatter garden, a covered parking structure for equipment and site parking for vehicles, and quality control and detention ponds for storm water drainage. Also included in the estimate is a mass timber structural framing system for the main building as an alternate.

## BASIS OF ESTIMATE

This estimate was developed from the Cemetery Maintenance Facility & Columbarium Feasibility Study prepared by McKinney York Architects dated July 2023.

This estimate is based upon the measurement of quantities where possible. For the remainder, distinguishing features were utilized to establish a baseline measurement.

## BASIS OF PRICING

Pricing shown reflects probable construction costs obtainable in the local area, on the date of this statement of probable costs. This estimate includes the General Contractor's markup of 22.5%, which includes general conditions, overhead, profit, and bonds and insurances. This estimate includes escalation to Fall of 2026 at 15.5%. This estimate includes a contingency of 20%.

## CONTRACTOR MARKUPS

Subcontractors' markups have been included in each line item unit price. These markups cover the cost of field overhead, home office overhead, and profit and can range from 7.5% to 35% of the raw cost for that particular item of work.

## ITEMS AFFECTING THE COST ESTIMATE

Items, which may change the estimated construction cost, include, but are not limited to:

- Modifications to scope of work in estimate since the drawings were issued to Sunland Group
- Special Phasing requirements
- Restrictive technical specifications or excessive contract conditions
- Non-competitive bid conditions e.g. sole source contracting
- Bids delayed beyond the projected schedule

# AMP Cemetery Maintenance Facility & Columbarium

- Changes in Design Documents between Design Development and bid.

## GENERAL ITEMS EXCLUDED FROM THIS ESTIMATE

Items that are not in this estimate include, but are not limited to:

- Impact Fees and Permits
- Land acquisition and real estate fees
- Professional design and consulting fees
- Owner's field inspection costs
- General building permit
- Sales Tax
- Testing fees, except for testing and balancing
- Off-site work
- Special equipment not noted
- Artwork, unless incorporated into finishes

## STATEMENT OF PROBABLE COST

Sunland Group has no control over the cost of labor and material, the general contractor's or any subcontractor's method of determining prices, or competitive bidding and market conditions. This opinion of probable cost of construction is made through years of experience, qualifications, and best judgment of a professional construction consultant familiar with the construction industry. Sunland Group cannot and does not guarantee that proposals, bids or actual construction costs will not vary from this or subsequent cost estimates.

Sunland Group has no control over the quality, completeness, intricacy, constructability, or coordination of design documents, or over the amount of funds available for this project. Therefore, Sunland Group is not responsible for design revision costs in the event that the estimate is in excess of the established budget.

Sunland Group staff of professional cost estimating consultants have prepared this estimate in accordance with generally accepted principles and practices. This staff is available to discuss its contents with any interested party.

## RECOMMENDATIONS FOR COST CONTROL

Sunland Group recommends that the Owner, Architect and Engineers carefully review this entire document to ensure that it reflects their design intent. Requests for modifications of any apparent errors or omissions to this document should be made to Sunland Group within (5) business days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding further into design.

## Summary of COA - PARD - Austin Memorial Park Cemetery

	<b>Total Cost</b>
<b>Main headings:</b>	
<hr/>	
22-02 00 00 Existing Conditions	69,750.00
22-03 00 00 Concrete	150,166.00
22-04 00 00 Masonry	82,576.00
22-06 00 00 Wood, Plastics, and Composites	6,000.00
22-07 00 00 Thermal and Moisture Protection	450,062.00
22-08 00 00 Openings	150,800.00
22-09 00 00 Finishes	149,531.00
22-10 00 00 Specialties	31,085.00
22-11 00 00 Equipment	5,000.00
22-12 00 00 Furnishings	22,500.00
22-13 00 00 Special Construction	202,500.00
22-21 00 00 Fire Suppression	83,408.00
22-22 00 00 Plumbing	52,809.00
22-23 00 00 Heating, Ventilating, and Air-Conditioning (HVAC)	117,410.00
22-26 00 00 Electrical	563,951.00
22-27 00 00 Communications	21,000.00
22-28 00 00 Electronic Safety and Security	92,586.00
22-31 00 00 Earthwork	197,212.00
22-32 00 00 Exterior Improvements	1,432,510.00
22-33 00 00 Utilities	335,923.00
<b>Supplement:</b>	
<hr/>	
General Conditions	632,517.00
Overhead & Profits	193,972.00
Bonds & Insurance	176,514.00
Design Contingency	1,043,956.00
Escalation to Fall 2026	970,879.00
<b>Total amount</b>	<b>7,234,617.00</b>
<hr/>	

**Alternatives:**

Add Alternate #1 - Mass Timber Structural Framing System	150,000.00
Add Alternate #2 - Furnitures	53,800.00
Add Alternate #3 - Columbarium	500,000.00
Add Alternate #4 - Scatter Garden	100,000.00
Deduct Alternate #1 - No Sprinkler System	-83,408.00

## Estimate for COA - PARD - Austin Memorial Park Cemetery

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
	<b>COA - PARD - Austin Memorial Park Cemetery</b>					<b>7,234,616.75</b>
	General Conditions (15.00% of 4,216,779.00)					632,516.85
	Overhead & Profits (4.00% of 4,849,295.85)					193,971.83
	Bonds & Insurance (3.50% of 5,043,267.68)					176,514.37
	Design Contingency (20.00% of 5,219,782.05)					1,043,956.41
	Escalation to Fall 2026 (15.50% of 6,263,738.46)					970,879.46
1.	<b>Existing Conditions</b>	22-02 00 00				<b>69,750.00</b>
1.14.	<b>Demolition</b>	22-02 41 00		<b>1</b>	<b>69,750.00</b>	<b>69,750.00</b>
1.14.1.	Demo Existing Service Road and base		S.F.	32,375	2.00	64,750.00
1.14.2.	Demo Existing Sanitary Sewer Manhole in Flood Plain		Ea.	1	5,000.00	5,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
2.	<b>Concrete</b>	<b>22-03 00 00</b>				<b>150,166.25</b>
2.13.	<b>Cast-in-Place Concrete</b>	<b>22-03 30 00</b>		<b>1</b>	<b>93,166.25</b>	<b>93,166.25</b>
2.13.1.	Building Floor Slab - 5" Concrete Slab Reinf. w/ #4, EW Over 15 MIL Vapor Retarder Over Prepared Subgrade		S.F.	6,000	5.25	31,500.00
2.13.2.	Grounds Maintenance Building Floor Slab - 5" Concrete Slab Reinf. w/ #4, EW Over 15 MIL Vapor Retarder Over Prepared Subgrade		S.F.	3,365	5.25	17,666.25
2.13.3.	Admin/Warehouse Foundation - Concrete Footings - 5'L x 5'W x 1'-6"D Reinf. #6 @ 12" O.C. EW. Top & Bottom		C.Y.	21	550.00	11,550.00
2.13.4.	Admin/Warehouse Foundation - Concrete Grade Beam - Cast-in-Place Reinf. Concrete		C.Y	55	550.00	30,250.00
2.13.5.	Grounds Maintenance Foundation - Concrete Footings - 3'L x 3'W x 1'-6"D Reinf. #6 @ 12" O.C. EW. Top & Bottom		C.Y.	4	550.00	2,200.00
2.17.	<b>Concrete Finishing</b>	<b>22-03 35 00</b>		<b>1</b>	<b>57,000.00</b>	<b>57,000.00</b>
2.17.1.	Polished Concrete Finish		S.F.	6,000	9.50	57,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
3.	<b>Masonry</b>	<b>22-04 00 00</b>				<b>82,576.21</b>
3.6.	<b>Concrete Unit Masonry</b>	<b>22-04 22 00</b>		<b>1</b>	<b>66,756.14</b>	<b>66,756.14</b>
3.6.1.	8" Burnished Concrete Block - W/ Integral Water Repellent	4220.021	S.F.	1,820	36.68	66,756.14
3.16.	<b>Exterior Stone Cladding</b>	<b>22-04 42 00</b>		<b>1</b>	<b>15,820.06</b>	<b>15,820.06</b>
3.16.1.	Wainscot 4" Cast Stone Ashlar	4435.015	S.F.	320	49.44	15,820.06

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
4.	<b>Wood, Plastics, and Composites</b>	<b>22-06 00 00</b>				<b>6,000.00</b>
4.4.	<b>Rough Carpentry</b>	<b>22-06 10 00</b>		<b>1</b>	<b>6,000.00</b>	<b>6,000.00</b>
4.4.1.	Misc. Blocking		S.F.	6,000	1.00	6,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
5.	<b>Thermal and Moisture Protection</b>	<b>22-07 00 00</b>				<b>450,061.50</b>
5.4.	<b>Dampproofing and Waterproofing</b>	<b>22-07 10 00</b>		<b>1</b>	<b>3,000.00</b>	<b>3,000.00</b>
5.4.1.	Misc. Waterproofing		S.F.	6,000	0.50	3,000.00
5.26.	<b>Roof Panels</b>	<b>22-07 41 00</b>		<b>1</b>	<b>271,386.50</b>	<b>271,386.50</b>
5.26.1.	Administration/Warehouse Metal Clay Tile Roof Panel W/ Lamtec Insulation System		S.F.	6,705	26.95	180,699.75
5.26.2.	Grounds Maintenance Metal Clay Tile Roof Panel W/ Lamtec Insulation System		S.F.	3,365	26.95	90,686.75
5.27.	<b>Wall Panels</b>	<b>22-07 42 00</b>		<b>1</b>	<b>159,665.00</b>	<b>159,665.00</b>
5.27.1.	Administration/Warehouse Exterior Walls - Pre-Finished MTL Wall Panel , R-30 Energy Saver		S.F.	3,280	33.00	108,240.00
5.27.2.	Grounds Maintenance Exterior Walls - Pre-Finished MTL Wall Panel		S.F.	1,870	27.50	51,425.00
5.39.	<b>Flashing and Sheet Metal</b>	<b>22-07 60 00</b>		<b>1</b>	<b>2,000.00</b>	<b>2,000.00</b>
5.39.1.	Pre-Finished MTL Coping & Counter Flashing- Allowance		Allo	1	2,000.00	2,000.00
5.46.	<b>Roof Specialties</b>	<b>22-07 71 00</b>		<b>1</b>	<b>11,010.00</b>	<b>11,010.00</b>
5.46.1.	6" MTL Downspouts		L.F.	238	15.00	3,570.00
5.46.2.	MTL Gutter		L.F.	304	15.00	4,560.00
5.46.3.	MTL Ridge Vent		L.F.	192	15.00	2,880.00
5.53.	<b>Firestopping</b>	<b>22-07 84 00</b>		<b>1</b>	<b>3,000.00</b>	<b>3,000.00</b>
5.53.1.	Misc. Firestopping		S.F.	6,000	0.50	3,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
6.	<b>Openings</b>	<b>22-08 00 00</b>				<b>150,800.00</b>
6.4.	<b>Doors and Frames</b>	<b>22-08 10 00</b>		<b>1</b>	<b>70,000.00</b>	<b>70,000.00</b>
6.4.1.	Interior Wood Door - 3-0 x 7-0 Single		Ea.	15	1,500.00	22,500.00
6.4.2.	Exterior HM Door - 3-0 x 7-0 Single		Ea.	5	2,000.00	10,000.00
6.4.3.	Single HM Door Frame		Ea.	20	250.00	5,000.00
6.4.4.	Interior Door Hardware		Set	15	1,500.00	22,500.00
6.4.5.	Exterior Door Hardware		Set	5	2,000.00	10,000.00
6.15.	<b>Coiling Doors and Grilles</b>	<b>22-08 33 00</b>		<b>1</b>	<b>60,000.00</b>	<b>60,000.00</b>
6.15.1.	12'x8' Steel Overhead Coiling Door, Motorized		Ea.	4	15,000.00	60,000.00
6.27.	<b>Windows</b>	<b>22-08 50 00</b>		<b>1</b>	<b>20,800.00</b>	<b>20,800.00</b>
6.27.1.	Windows - Air and Weather Tight W/ Insulated, Low-e Glass		S.F.	320	65.00	20,800.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
7.	<b>Finishes</b>	<b>22-09 00 00</b>				<b>149,531.33</b>
7.13.	<b>Gypsum Board</b>	<b>22-09 29 00</b>		<b>1</b>	<b>82,685.40</b>	<b>82,685.40</b>
7.13.1.	Exterior Gypsum Wall - 6" Studs, 5/8" Gyp. Board One Side, BATT		S.F.	3,280	12.18	39,950.40
7.13.2.	Interior Gypsum Wall - 3-5/8" Studs, 5/8" Gyp. Board Both Sides, BATT		S.F.	3,300	12.95	42,735.00
7.14.	<b>Tiling</b>	<b>22-09 30 00</b>		<b>1</b>	<b>19,725.00</b>	<b>19,725.00</b>
7.14.1.	Restroom Wall Tiles - 4'H		S.F.	540	25.00	13,500.00
7.14.2.	Restroom Floor Tiles -		S.F.	150	25.00	3,750.00
7.14.3.	Shower Wall Tiles		S.F.	90	25.00	2,250.00
7.14.4.	Shower Floor Tiles		S.F.	9	25.00	225.00
7.20.	<b>Ceilings</b>	<b>22-09 50 00</b>		<b>1</b>	<b>15,185.93</b>	<b>15,185.93</b>
7.20.1.	Gypsum Ceiling - 5/8" GYP Board, Suspended, Tape & Float	9261.044	S.F.	150	4.16	623.49
7.20.2.	2-0X2-0 Susp Acoustic Ceiling 5/8" Mineral Tile	9510.052	S.F.	3,020	4.82	14,562.44
7.27.	<b>Flooring</b>	<b>22-09 60 00</b>		<b>1</b>	<b>2,020.00</b>	<b>2,020.00</b>
7.27.2.	4" Rubber Base			1,010	2.00	2,020.00
7.49.	<b>Painting</b>	<b>22-09 91 00</b>		<b>1</b>	<b>29,915.00</b>	<b>29,915.00</b>
7.49.1.	Interior Wall Paint		S.F.	9,880	2.00	19,760.00
7.49.2.	CMU Wall Paint		S.F.	3,640	2.00	7,280.00
7.49.3.	Gyp. Board Ceiling Paint		S.F.	150	2.50	375.00
7.49.4.	Misc. Paint		L.S.	1	2,500.00	2,500.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
8.	<b>Specialties</b>	<b>22-10 00 00</b>				<b>31,084.80</b>
8.8.	<b>Signage</b>	<b>22-10 14 00</b>		<b>1</b>	<b>4,500.00</b>	<b>4,500.00</b>
8.8.1.	Misc. Building Signage		S.F.	6,000	0.75	4,500.00
8.16.	<b>Toilet, Bath, and Laundry Accessories</b>	<b>22-10 28 00</b>		<b>1</b>	<b>11,747.13</b>	<b>11,747.13</b>
8.16.1.	24"x36" Mirror W/Shelf	10810.015	Ea.	2	449.30	898.60
8.16.2.	Soap Dispenser -Powder Bottom Plunger	10830.021	Ea.	2	496.04	992.08
8.16.3.	36" Grab Bar	10820.023	Ea.	4	667.97	2,671.89
8.16.4.	Toilet Tissue Holder Multi-Roll	10830.012	Ea.	2	349.96	699.93
8.16.5.	Seat Cover Dispenser Surface Mount Stainless Steel	10830.015	Ea.	2	536.72	1,073.44
8.16.6.	Waste Receptacles Surface Mount Stain- less Steel	10830.052	Ea.	2	1,184.07	2,368.13
8.16.7.	Sanitary Napkin Disposal Surface Mount Stainless Steel	10830.042	Ea.	2	744.93	1,489.85
8.16.8.	Shower Curtain	10820.045	Ea.	1	119.00	119.00
8.16.9.	24" Shower Rod	10820.04	Ea.	1	81.40	81.40
8.16.10.	Shower Seat	10820.042	Ea.	1	506.37	506.37
8.16.11.	Shower Grab Bars		Ea.	2	150.00	300.00
8.16.12.	Towel Hook	10820.046	Ea.	2	48.22	96.45
8.16.13.	Changing Bench		Ea.	1	450.00	450.00
8.23.	<b>Emergency Aid Specialties</b>	<b>22-10 43 00</b>		<b>1</b>	<b>500.00</b>	<b>500.00</b>
8.23.1.	Wall Mounted First Aid Kit		Ea.	2	250.00	500.00
8.24.	<b>Fire Protection Specialties</b>	<b>22-10 44 00</b>		<b>1</b>	<b>3,487.67</b>	<b>3,487.67</b>
8.24.1.	Fire Extinguisher & Cabinet Surface Mounted Alum W/Door	10520.03	Ea.	3	1,162.56	3,487.67
8.26.	<b>Lockers</b>	<b>22-10 51 00</b>		<b>1</b>	<b>10,850.00</b>	<b>10,850.00</b>
8.26.1.	2 Tier Metal Lockers		Ea.	10	1,050.00	10,500.00
8.26.2.	Locker Bench		Ea.	1	350.00	350.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
9.	<b>Equipment</b>	<b>22-11 00 00</b>				<b>5,000.00</b>
9.24.	<b>Residential Equipment</b>	<b>22-11 30 00</b>		<b>1</b>	<b>3,500.00</b>	<b>3,500.00</b>
9.24.1.	26.7 Cu. Ft. Side-by-Side Refrigerator - Stainless Steel		Ea.	2	1,750.00	3,500.00
9.34.	<b>Ice Machines</b>	<b>22-11 47 00</b>		<b>1</b>	<b>1,500.00</b>	<b>1,500.00</b>
9.34.1.	Commercial Ice Maker Machine - 110lb Storage		Ea.	1	1,500.00	1,500.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
10.	<b>Furnishings</b>	<b>22-12 00 00</b>				<b>22,500.00</b>
10.16.	<b>Casework</b>	<b>22-12 30 00</b>		<b>1</b>	<b>17,500.00</b>	<b>17,500.00</b>
10.16.1.	Break Room Lower Cabinets		L.F.	9	400.00	3,600.00
10.16.2.	Break Room Upper Cabinets		L.F.	9	300.00	2,700.00
10.16.3.	Work Room Lower Cabinets		L.F.	16	400.00	6,400.00
10.16.4.	Work Room Upper Cabinets		L.F.	16	300.00	4,800.00
10.21.	<b>Countertops</b>	<b>22-12 36 00</b>		<b>1</b>	<b>5,000.00</b>	<b>5,000.00</b>
10.21.1.	Break Room Solid Surface Countertop - W/ 4" Backsplash		L.F.	9	200.00	1,800.00
10.21.2.	Work Room Solid Surface Countertop - W/ 4" Backsplash		L.F.	16	200.00	3,200.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
11.	<b>Special Construction</b>	<b>22-13 00 00</b>				<b>202,500.00</b>
11.24.	<b>Fabricated Engineered Structures</b>	<b>22-13 34 00</b>		<b>1</b>	<b>202,500.00</b>	<b>202,500.00</b>
11.24.1.	Administration/Warehouse PEMB Structure - 6000 SF - Allowance		Allo	1	150,000.00	150,000.00
11.24.2.	Grounds Maintenance Equipment Shelter Structure - Allowance		Allo	1	52,500.00	52,500.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
12.	<b>Fire Suppression</b>	<b>22-21 00 00</b>				<b>83,408.41</b>
12.7.	<b>Facility Fire-Suppression Water-Service Piping</b>	<b>22-21 11 00</b>		<b>1</b>	<b>10,503.96</b>	<b>10,503.96</b>
12.7.1.	Fire Suppression Service Line - 4" Green-Tite PVC-Sdr 35 fittings - Trench & Backfill	2622.01	L.F.	20	29.51	590.18
12.7.2.	4" Fire Line Backflow Preventer-W/OS&Y Valves Double Check - Complete Assy	15112.035	Ea.	1	9,913.78	9,913.78
12.8.	<b>Fire-Suppression Standpipes</b>	<b>22-21 12 00</b>		<b>1</b>	<b>33,904.44</b>	<b>33,904.44</b>
12.8.1.	4" Dry Standpipe Riser W/Valve	15501.021	Ea.	1	25,792.11	25,792.11
12.8.2.	FIRE-Pipe, fittings & valves, steel, black, grooved joint, 4" diameter, schedule 40, incl coupling & clevis type hanger 10' OC	22-22 11 13 48	L.F.	20	147.43	2,948.59
12.8.3.	1" Test Drain Valve		Ea.	1	270.00	270.00
12.8.4.	Wet Alarm - Retard Chamber, Trim, Gauges, Alarm Line Strainer		Ea.	1	4,893.75	4,893.75
12.9.	<b>Fire-Suppression Sprinkler Systems</b>	<b>22-21 13 00</b>		<b>1</b>	<b>39,000.00</b>	<b>39,000.00</b>
12.9.1.	Wet Pipe Sprinkler System - Allowance		BDSF	6,000	6.50	39,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
13.	<b>Plumbing</b>	<b>22-22 00 00</b>				<b>52,808.70</b>
13.6.	<b>Plumbing Piping</b>	<b>22-22 10 00</b>		<b>1</b>	<b>9,148.94</b>	<b>9,148.94</b>
13.6.1.	1-1/2" Copper Pipe Type K	15030.016	L.F.	100	8.96	896.08
13.6.2.	1-1/4" Copper Pipe Type K	15030.015	L.F.	30	12.99	389.76
13.6.3.	3/4" Copper Pipe Type K	15030.013	L.F.	280	9.08	2,541.75
13.6.4.	1/2" Copper Pipe Type K	15030.012	L.F.	70	7.91	553.64
13.6.5.	Traps & Fittings		PCT	0.25	4,381.00	1,095.25
13.6.6.	Insulate 1-1/4" Pipe W/1" Fiberglass	15274.024	L.F.	100	8.19	818.60
13.6.7.	Insulate 1-1/2" Pipe W/1" Fiberglass	15274.025	L.F.	30	8.19	245.58
13.6.8.	Insulate 3/4" Pipe W/1" Fiberglass	15274.022	L.F.	280	7.33	2,052.24
13.6.9.	Insulate 1/2" Pipe W/1" Fiberglass	15274.021	L.F.	70	7.94	556.05
13.9.	<b>Facility Sanitary Sewerage</b>	<b>22-22 13 00</b>		<b>1</b>	<b>10,313.95</b>	<b>10,313.95</b>
13.9.1.	4" Cast Iron Drain Pipe - W/ Neoprene Joints	15021.004	L.F.	120	53.87	6,463.80
13.9.2.	3" Cast Iron Drain Pipe No Hub-Ss	15021.003	L.F.	10	41.45	414.45
13.9.3.	2" Cast Iron Drain Pipe No Hub-Ss	15021.002	L.F.	10	38.14	381.38
13.9.4.	2" Cast Iron Vent Pipe No Hub-Sv	15021.002	L.F.	26	38.14	991.58
13.9.5.	Traps and Fittings - Allowance		PCT	0.25	8,251.00	2,062.75
13.15.	<b>Electric Domestic Water Heaters</b>	<b>22-22 33 00</b>		<b>1</b>	<b>6,793.95</b>	<b>6,793.95</b>
13.15.1.	30 Gallon Water Heater Commercial 189 gpm 199990 Btu	15424.02	Ea.	1	6,144.72	6,144.72
13.15.2.	Water Heater Rough-In	15447.02	Ea.	1	649.23	649.23
13.18.	<b>Plumbing Fixtures</b>	<b>22-22 40 00</b>		<b>1</b>	<b>26,551.86</b>	<b>26,551.86</b>
13.18.1.	Water Closet Wall Mounted W/Seat Flush Valve Type W/Valve	15451.016	Ea.	2	995.74	1,991.47
13.18.2.	Water Closet Carrier - Single	15451.016	Ea.	2	2,079.00	4,158.00
13.18.3.	Lavatory-Wall Hung 24"X20" Premium-Complete	15453.015	Ea.	2	792.40	1,584.81
13.18.4.	Lav Faucet W/Pop-Up - Bottom Mounted	15460.012	Ea.	2	264.20	528.40
13.18.5.	Shower Head	15460.055	Ea.	1	160.92	160.92
13.18.7.	Bath Drain	15460.073	Ea.	1	143.65	143.65
13.18.8.	Kitchen Sink 31"X22" Single Stainless Steel - Complete	15454.022	Ea.	1	741.09	741.09
13.18.9.	Gooseneck Kitchen Sink Faucet W/Wrist Hdls & Pop-Up	15460.02	Ea.	1	578.09	578.09
13.18.10.	2" Kitchen Sink Drain	15460.07	Ea.	1	84.29	84.29
13.18.11.	Mop Sink Receptor Molded Stone 32"X32"	15457.04	Ea.	1	2,614.19	2,614.19
13.18.12.	Mop Sink Faucet - Wall Mounted	15460.017	Ea.	1	307.19	307.19
13.18.13.	2" Mop Sink Drain	15460.07	Ea.	1	84.29	84.29
13.18.14.	Stainless Steel Drinking Fountain - Wall Mounted, Dual Level, ADA Compliant		Ea.	1	2,700.00	2,700.00
13.18.15.	Hose Bibs		Ea.	2	195.75	391.50
13.18.16.	Plumbing Fixture Rough-In	15447.02	Ea.	10	649.23	6,492.31
13.18.17.	Restroom Floor Drain - Allowance		Ea.	2	1,000.00	2,000.00
13.18.18.	Ice Machine Floor Sinks - Allowance		Ea.	1	1,000.00	1,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
13.18.19.	Emergency Eye Wash Fountain Pedestal Mounted - Rough in Included	15457.061	Ea.	1	991.68	991.68

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
14.	<b>Heating, Ventilating, and Air-Conditioning (HVAC)</b>	<b>22-23 00 00</b>				<b>117,409.44</b>
14.4.	<b>Commissioning of HVAC</b>	<b>22-23 08 00</b>		<b>1</b>	<b>21,397.50</b>	<b>21,397.50</b>
14.4.1.	Commissioning		S.F.	3,170	3.38	10,698.75
14.4.2.	Test & Balance		S.F.	3,170	3.38	10,698.75
14.5.	<b>Instrumentation and Control for HVAC</b>	<b>22-23 09 00</b>		<b>1</b>	<b>650.00</b>	<b>650.00</b>
14.5.1.	Thermostat - Smart/Wi-Fi enabled		Ea.	3	150.00	450.00
14.5.2.	Six Strand Thermostat Wiring - Allowance		Allo	1	200.00	200.00
14.10.	<b>HVAC Piping and Pumps</b>	<b>22-23 20 00</b>		<b>1</b>	<b>1,350.00</b>	<b>1,350.00</b>
14.10.1.	ACR Copper Line Sets W/ Insulation - Allowance		Allo	1	675.00	675.00
14.10.2.	3/4" PVC Drain Pipe - Allowance		Allo	1	675.00	675.00
14.16.	<b>HVAC Air Distribution</b>	<b>22-23 30 00</b>		<b>1</b>	<b>39,119.70</b>	<b>39,119.70</b>
14.16.1.	Duct Work W/Insulation - Allowance	15840.002	BDSF	3,170	12.34	39,119.70
14.20.	<b>HVAC Fans</b>	<b>22-23 34 00</b>		<b>1</b>	<b>21,249.26</b>	<b>21,249.26</b>
14.20.1.	50 Cfm Restroom Exhaust Fan W/Grille	15829.01	Ea.	2	499.63	999.26
14.20.2.	8' Dia. HVLS Ceiling Fan		Ea.	3	6,750.00	20,250.00
14.23.	<b>Air Outlets and Inlets</b>	<b>22-23 37 00</b>		<b>1</b>	<b>9,396.00</b>	<b>9,396.00</b>
14.23.1.	24 X 24 Grilles - Rectangular 1 to 4 Way Blow	15870.048	Ea.	16	587.25	9,396.00
14.52.	<b>Convection Heating and Cooling Units</b>	<b>22-23 82 00</b>		<b>1</b>	<b>20,346.83</b>	<b>20,346.83</b>
14.52.1.	3 Ton Heat Pump Condenser	15775.011	Ea.	3	4,892.28	14,676.83
14.52.2.	3 Ton Fan Coil Unit	15801.023	Ea.	3	1,890.00	5,670.00
14.53.	<b>Radiant Heating Units</b>	<b>22-23 83 00</b>		<b>1</b>	<b>3,900.15</b>	<b>3,900.15</b>
14.53.1.	Unit Blower Heater 7.5Kw	16890.016	Ea.	3	1,300.05	3,900.15

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
15.	<b>Electrical</b>	<b>22-26 00 00</b>				<b>563,950.91</b>
15.2.	<b>Common Work Results for Electrical</b>	<b>22-26 05 00</b>		<b>1</b>	<b>163,071.50</b>	<b>163,071.50</b>
15.2.1.	Interior Lighting Feeder - Assume 25'/Fixture		L.F.	1,500	34.44	51,663.62
15.2.2.	Duplex Receptacles		Ea.	60	337.50	20,250.00
15.2.3.	Receptacle Feeder - Conduits & Cabling (Assume 25'/Receptacle)		L.F.	1,500	34.44	51,663.62
15.2.4.	Light Switch		Ea.	20	337.50	6,750.00
15.2.5.	Light Switch Feeder - Conduits & Cabling (Assume 25'/Switch)		L.F.	500	34.44	17,219.25
15.2.6.	Building Grounding System		BDSF	6,000	2.03	12,150.00
15.2.7.	Electric Power Meter		Ea.	1	3,375.00	3,375.00
15.4.	<b>Instrumentation and Control for Electrical Systems</b>	<b>22-26 09 00</b>		<b>1</b>	<b>10,100.16</b>	<b>10,100.16</b>
15.4.1.	Lighting Controls - Time Clock w/ Photocell Back-Up		Ea.	1	2,700.00	2,700.00
15.4.2.	Occupancy Sensors		Ea.	4	472.50	1,890.00
15.4.3.	Occupancy Sensor Feeder - Cabling & Conduits (Assume 40'/Sensor)		L.F.	160	34.44	5,510.16
15.13.	<b>Low-Voltage Transformers</b>	<b>22-26 22 00</b>		<b>1</b>	<b>5,906.25</b>	<b>5,906.25</b>
15.13.1.	Transformer - 480V/208V 75KVA NEMA 1		Ea.	1	5,906.25	5,906.25
15.15.	<b>Switchboards and Panelboards</b>	<b>22-26 24 00</b>		<b>1</b>	<b>20,925.00</b>	<b>20,925.00</b>
15.15.1.	Panelboard - 600A MCB - 480/277V/3P/125A/No-Fuses NEMA 3R		Ea.	1	20,925.00	20,925.00
15.18.	<b>Low-Voltage Distribution Equipment</b>	<b>22-26 27 00</b>		<b>1</b>	<b>3,375.00</b>	<b>3,375.00</b>
15.18.1.	48" Pullbox @ Existing Electrical Distribution Riser Pole		Ea.	1	3,375.00	3,375.00
15.19.	<b>Low-Voltage Circuit Protective Devices</b>	<b>22-26 28 00</b>		<b>1</b>	<b>20,182.50</b>	<b>20,182.50</b>
15.19.1.	Main Disconnect - 600V/3P/600A/600AF/NEMA 3R		Ea.	1	10,125.00	10,125.00
15.19.2.	HVAC Equipment Disconnect Switch - 600V/3P/30A/No-Fuses/N3R		Ea.	6	1,046.25	6,277.50
15.19.3.	HVLS Disconnect Switch - 20A-1P Motor Rated		Ea.	3	911.25	2,733.75
15.19.4.	WH Disconnect Switch - 240V/3P/30A/No-Fuses/NEMA 3R		Ea.	1	1,046.25	1,046.25
15.31.	<b>Lighting</b>	<b>22-26 50 00</b>		<b>1</b>	<b>32,373.00</b>	<b>32,373.00</b>
15.31.1.	4' Linear Strip Lights		Ea.	8	688.50	5,508.00
15.31.2.	LED Vanity Wall Sconce		Ea.	2	675.00	1,350.00
15.31.3.	TYPE C1 - 6" LED Down Light		Ea.	12	405.00	4,860.00
15.31.4.	TYPE D - 2x2 Lay-In Light Fixture		Ea.	30	688.50	20,655.00
15.34.	<b>Exit Signs</b>	<b>22-26 53 00</b>		<b>1</b>	<b>1,687.50</b>	<b>1,687.50</b>
15.34.1.	Illuminated Exit Signs		Ea.	5	337.50	1,687.50

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
15.37.	<b>Exterior Lighting</b>	<b>22-26 56 00</b>		<b>1</b>	<b>306,330.00</b>	<b>306,330.00</b>
15.37.1.	16' Light Pole - Foundation Included (assume 1 pole per 2500SF)		Ea.	13	20,250.00	263,250.00
15.37.2.	Light Pole Feeder (assume 50LF per light pole)		L.F.	650	43.20	28,080.00
15.37.3.	Misc. Exterior Lighting - Allowance		Allo	1	15,000.00	15,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
16.	<b>Communications</b>	22-27 00 00				21,000.00
16.9.	<b>Data Communications</b>	22-27 20 00		1	21,000.00	21,000.00
16.9.1.	Telecom & Data - Outlets, Conduits, Ca- bling, Junction Boxes		BDSF	6,000	3.50	21,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
17.	<b>Electronic Safety and Security</b>	<b>22-28 00 00</b>				<b>92,585.81</b>
17.5.	<b>Access Control</b>	<b>22-28 13 00</b>		<b>1</b>	<b>40,300.00</b>	<b>40,300.00</b>
17.5.1.	Pedestrian Gate Card Reader - Computerized System, Processor, Proximity Reader and Cards		Ea.	2	4,387.50	8,775.00
17.5.2.	Pedestrian Gate Magnetic Lock for Electric Access		Ea.	2	1,012.50	2,025.00
17.5.3.	Vehicle Gate Access Control System - Computerized System, Processor, Proximity Reader and Cards		Ea.	2	13,500.00	27,000.00
17.5.4.	Card Reader and Lockset Wiring - Cables and Conduits - Allowance		Allo	1	2,500.00	2,500.00
17.11.	<b>Fire Detection and Alarm</b>	<b>22-28 31 00</b>		<b>1</b>	<b>52,285.81</b>	<b>52,285.81</b>
17.11.1.	Fire Alarm Smoke Detector Ceiling	16721.029	Ea.	20	218.04	4,360.81
17.11.2.	General Alarm - Horn/Strobe		Ea.	10	1,012.50	10,125.00
17.11.3.	Fire Alarm Control Panel		Ea.	1	2,025.00	2,025.00
17.11.4.	Manual Pull Station - Double Action		Ea.	4	337.50	1,350.00
17.11.5.	Alarm System Wiring - Cables and Conduits - (assume 50LF per device)		L.F.	1,700	20.25	34,425.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
18.	<b>Earthwork</b>	<b>22-31 00 00</b>				<b>197,212.00</b>
18.6.	<b>Clearing and Grubbing</b>	<b>22-31 11 00</b>		<b>1</b>	<b>12,909.00</b>	<b>12,909.00</b>
18.6.1.	Site Clearing and Grubbing	2100.011	S.F.	65,000	0.20	12,909.00
18.12.	<b>Grading</b>	<b>22-31 22 00</b>		<b>1</b>	<b>7,130.50</b>	<b>7,130.50</b>
18.12.1.	Finish Site Grading	2260.01	S.F.	65,000	0.11	7,130.50
18.13.	<b>Excavation and Fill</b>	<b>22-31 23 00</b>		<b>1</b>	<b>159,172.50</b>	<b>159,172.50</b>
18.13.1.	Machine Excavate 8" Expansive Clay Topsoil - Waste Off-Site	2220.011	C.Y.	1,589	22.19	35,252.28
18.13.2.	Site Backfill & Compact - Select Fill	2222.057	C.Y.	1,589	65.46	104,011.01
18.13.3.	Machine Excavate - Building Foundation - Grade Beams & Footings	2220.011	C.Y.	82	22.19	1,819.19
18.13.4.	(4'Dia. x 8'D) Excavation for Manhole		C.Y.	4	30.00	120.00
18.13.5.	Water Quality Control Pond - Machine Excavate/Waste Off-Site	2220.011	C.Y.	217	22.19	4,814.19
18.13.6.	Detention Basin - Machine Excavate/Waste Off-Site	2220.011	C.Y.	593	22.19	13,155.82
18.15.	<b>Erosion and Sedimentation Controls</b>	<b>22-31 25 00</b>		<b>1</b>	<b>18,000.00</b>	<b>18,000.00</b>
18.15.4.	SWPPP		month	12	1,500.00	18,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
19.	<b>Exterior Improvements</b>	<b>22-32 00 00</b>				<b>1,432,509.10</b>
19.2.	<b>Common Work Results for Exterior Improvements</b>	<b>22-32 05 00</b>		<b>1</b>	<b>18,000.00</b>	<b>18,000.00</b>
19.2.1.	Existing Tree Protection		month	12	1,500.00	18,000.00
19.5.	<b>Base Courses</b>	<b>22-32 11 00</b>		<b>1</b>	<b>257,887.68</b>	<b>257,887.68</b>
19.5.1.	8" Cement Soil Stabilization Large Projects	2240.011	S.F.	28,505	4.24	120,747.18
19.5.2.	Service Road - 8" Cement Soil Stabilization Large Projects	2240.011	S.F.	32,375	4.24	137,140.50
19.7.	<b>Rigid Paving</b>	<b>22-32 13 00</b>		<b>1</b>	<b>862,115.59</b>	<b>862,115.59</b>
19.7.1.	8" Heavy Duty Reinforced Concrete Paving	2515.006	S.F.	28,505	14.16	403,656.45
19.7.2.	Service Road - 8" Heavy Duty Reinforced Concrete Paving	2515.006	S.F.	32,375	14.16	458,459.14
19.10.	<b>Curbs, Gutters, Sidewalks, and Driveways</b>	<b>22-32 16 00</b>		<b>1</b>	<b>39,851.23</b>	<b>39,851.23</b>
19.10.1.	6" X 12" Concrete Curb & Gutter	2525.011	L.F.	1,490	21.93	32,674.96
19.10.2.	4" Concrete Sidewalk Broom Finish	2510.01	S.F.	1,380	5.20	7,176.28
19.11.	<b>Paving Specialties</b>	<b>22-32 17 00</b>		<b>1</b>	<b>69,730.07</b>	<b>69,730.07</b>
19.11.1.	Parking Refl. Pavement Markings		L.F.	1,755	2.50	4,387.50
19.11.2.	Misc. Pavement Markings - Allowance		Allo	1	1,000.00	1,000.00
19.11.3.	Pre-Cast Concrete Wheel Stops		Ea.	45	250.00	11,250.00
19.11.4.	ADA Parking Sign - Incl. Concrete Foundation		Ea.	2	1,500.00	3,000.00
19.11.5.	Painted Handicap Symbol	2577.012	Ea.	2	46.28	92.57
19.11.6.	Bollards - Including Concrete Foundation		Ea.	20	2,500.00	50,000.00
19.13.	<b>Site Improvements</b>	<b>22-32 30 00</b>		<b>1</b>	<b>15,774.53</b>	<b>15,774.53</b>
19.13.3.	Revegetate / Hydromulch Area of Old Maintenance Yard	2480.012	S.Y.	6,111	0.47	2,897.84
19.13.4.	Revegetate / Hydromulch Area of Existing Maintenance Yard	2480.012	S.Y.	6,111	0.47	2,897.84
19.13.5.	30 Ft Alum Flagpole	10350.011	Ea.	1	9,978.86	9,978.86
19.14.	<b>Fences and Gates</b>	<b>22-32 31 00</b>		<b>1</b>	<b>169,150.00</b>	<b>169,150.00</b>
19.14.1.	6'H Decorative Steel Perimeter Fence		L.F.	1,010	115.00	116,150.00
19.14.2.	6'H Decorative Steel Pedestrian Gate		Ea.	2	1,500.00	3,000.00
19.14.3.	25'W Automatic Sliding Vehicle Gate - Metal Gate and Automatic System		Ea.	2	25,000.00	50,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
20.	<b>Utilities</b>	<b>22-33 00 00</b>				<b>335,923.37</b>
20.5.	<b>Water Utilities</b>	<b>22-33 10 00</b>		<b>1</b>	<b>49,544.15</b>	<b>49,544.15</b>
20.5.1.	Water Line - 8" Green-Tite PVC C900 - Trench & Backfill	2622.012	L.F.	340	74.25	25,245.00
20.5.2.	Domestic Water Service Line - 1.5" Green-Tite PVC C900 - Trench & Backfill	2622.01	L.F.	40	40.50	1,620.00
20.5.3.	Fittings & Connections - Allowance		PCT	0.25	24,073.18	6,018.30
20.5.4.	Water Meter - 5/8" Outlet	2640.02	Ea.	1	408.35	408.35
20.5.5.	1-1/2" Domestic Water Line Back-flow Preventer-W/Valves Double Check - Complete Assy	15112.032	Ea.	1	1,757.06	1,757.06
20.5.6.	Concrete valve box 6L'x4Wx4'DEEP		Ea.	1	6,000.00	6,000.00
20.5.7.	Connect To Water Main	2713.011	Ea.	1	1,001.42	1,001.42
20.5.8.	Fire Hydrant	2644.001	Ea.	1	7,494.03	7,494.03
20.18.	<b>Sanitary Sewerage Utilities</b>	<b>22-33 30 00</b>		<b>1</b>	<b>95,337.95</b>	<b>95,337.95</b>
20.18.1.	Waste Water Service Line - 4" Green-Tite PVC-Sdr 26 -Trench & Backfill	2622.01	L.F.	294	49.60	14,583.34
20.18.2.	Waste Water Service Line - 6" Green-Tite PVC-Sdr 26 -Trench & Backfill	2622.01	L.F.	246	55.57	13,670.27
20.18.3.	Waste Water Service Line - 8" Green-Tite PVC-Sdr 26 -Trench & Backfill	2622.01	L.F.	16	63.67	1,018.72
20.18.4.	4" Standard sdr Cleanout W/Southern Code Plug	15423.005	Ea.	1	864.37	864.37
20.18.5.	Connect To Waste Water Main	2713.011	Ea.	1	1,001.42	1,001.42
20.18.6.	Fittings & Connections - Allowance		PCT	0.25	16,799.36	4,199.84
20.18.7.	Sanitary Sewer Manhole		Ea.	1	25,000.00	25,000.00
20.18.8.	Sanitary Sewer Manhole in Flood Plain		Ea.	1	35,000.00	35,000.00
20.25.	<b>Storm Drainage Utilities</b>	<b>22-33 40 00</b>		<b>1</b>	<b>30,000.00</b>	<b>30,000.00</b>
20.25.1.	Water Quality Control Pond - Sedimentation/Filtration System Components - Allowance		Allo	1	30,000.00	30,000.00
20.40.	<b>Electrical Utilities</b>	<b>22-33 70 00</b>		<b>1</b>	<b>141,041.27</b>	<b>141,041.27</b>
20.40.1.	Primary Service Feeder - Underground Concrete Encased - Trench & Backfill		L.F.	210	337.50	70,875.00
20.40.2.	1000 Kva Utility Transformer	16460.031	Ea.	1	29,479.95	29,479.95
20.40.3.	EV Charging Station (assume 2)		Ea.	2	10,000.00	20,000.00
20.40.4.	EV Charging Station Feeder - 4"C, Concrete Encased (assume 400LF)		L.F.	400	51.72	20,686.32
20.47.	<b>Communications Utilities</b>	<b>22-33 80 00</b>		<b>1</b>	<b>20,000.00</b>	<b>20,000.00</b>
20.47.1.	Telecom Utilities - Allowance		Allo	1	20,000.00	20,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
21.	<b>Add Alternate #1 - Mass Timber Structural Framing System (Alternative)</b>					<b>150,000.00</b>
21.1.	<b>Shop-Fabricated Structural Wood</b>	<b>22-06 17 00</b>		<b>1</b>	<b>300,000.00</b>	<b>300,000.00</b>
21.1.1.	Mass Timber Structural System - 6000 SF - Allowance		Allo	1	300,000.00	300,000.00
21.2.	<b>Fabricated Engineered Metal Structures</b>	<b>22-13 34 00</b>		<b>1</b>	<b>-150,000.00</b>	<b>-150,000.00</b>
21.2.1.	PEMB Structural System - 6000 SF - Allowance		Allo	-1	150,000.00	-150,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
22.	<b>Add Alternate #2 - Furnitures (Alternative)</b>					<b>53,800.00</b>
22.1.	<b>Furniture</b>	<b>22-12 50 00</b>		<b>1</b>	<b>53,800.00</b>	<b>53,800.00</b>
22.1.1.	Break Room 30"x30" Table		Ea.	12	200.00	2,400.00
22.1.2.	Break Room Chair		Ea.	24	350.00	8,400.00
22.1.3.	Office Desk		Ea.	6	625.00	3,750.00
22.1.4.	Office Chair		Ea.	12	750.00	9,000.00
22.1.5.	Office L-Shape Desk		Ea.	5	1,000.00	5,000.00
22.1.6.	Excecutive Chair		Ea.	5	1,250.00	6,250.00
22.1.7.	Guest Chair		Ea.	5	500.00	2,500.00
22.1.8.	Large Conference Table		Ea.	1	1,500.00	1,500.00
22.1.9.	Conference Chair		Ea.	8	500.00	4,000.00
22.1.10.	Workstations		L.F.	55	200.00	11,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
23.	<b>Add Alternate #3 - Columbarium (Alternative)</b>					<b>500,000.00</b>
23.1.	<b>Site Improvements</b>	<b>22-32 30 00</b>		<b>1</b>	<b>500,000.00</b>	<b>500,000.00</b>
23.1.1.	Columbarium - Incl. Wall with Finishes, Foundation, Misc. Waterproofing... - Allowance		Allo	1	500,000.00	500,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
24.	<b>Add Alternate #4 - Scatter Garden (Alternative)</b>					<b>100,000.00</b>
24.1.	<b>Site Improvements</b>	<b>22-32 30 00</b>		<b>1</b>	<b>100,000.00</b>	<b>100,000.00</b>
24.1.2.	Scatter Garden - Incl. Vegetation, Ground Surface Materials, Flagpole... - Allowance		Allo	1	100,000.00	100,000.00

Pos	Text	Num	Unit	Quantity	Total UC	Total Cost
25.	<b>Deduct Alternate #1 - No Sprinkler System (Alternative)</b>					-83,408.41
25.1.	<b>Facility Fire-Suppression Water-Service Piping</b>	<b>22-21 11 00</b>		<b>1</b>	<b>-10,503.96</b>	<b>-10,503.96</b>
25.1.1.	Fire Suppression Service Line - 4" Green-Tite PVC-Sdr 35 fittings - Trench & Backfill	2622.01	L.F.	-20	29.51	-590.18
25.1.2.	4" Fire Line Backflow Preventer-W/OS&Y Valves Double Check - Complete Assy	15112.035	Ea.	-1	9,913.78	-9,913.78
25.2.	<b>Fire-Suppression Standpipes</b>	<b>22-21 12 00</b>		<b>1</b>	<b>-33,904.44</b>	<b>-33,904.44</b>
25.2.1.	4" Dry Standpipe Riser W/Valve	15501.021	Ea.	-1	25,792.11	-25,792.11
25.2.2.	FIRE-Pipe, fittings & valves, steel, black, grooved joint, 4" diameter, schedule 40, incl coupling & clevis type hanger 10' OC	22-22 11 13 48	L.F.	-20	147.43	-2,948.59
25.2.3.	1" Test Drain Valve		Ea.	-1	270.00	-270.00
25.2.4.	Wet Alarm - Retard Chamber, Trim, Gauges, Alarm Line Strainer		Ea.	-1	4,893.75	-4,893.75
25.3.	<b>Fire-Suppression Sprinkler Systems</b>	<b>22-21 13 00</b>		<b>1</b>	<b>-39,000.00</b>	<b>-39,000.00</b>
25.3.1.	Wet Pipe Sprinkler System - Allowance		BDSF	-6,000	6.50	-39,000.00

# Escalation Worksheet

2023	2024	2025	2026	2027	Sum	15.50%
5%	4.0%	4.0%	4.0%	4.0%	Year	2.75
					% Per Year	5.64%

Escalation Calcs

	Winter 23	
	Spring 23	
Today	Summer 23	1.25%
	Fall 23	1.25%
	Winter 24	1.00%
	Spring 24	1.00%
	Summer 24	1.00%
	Fall 24	1.00%
	Winter 25	1.00%
	Spring 25	1.00%
	Fall 25	1.00%
	Summer 25	1.00%
	Winter 26	1.00%
	Spring 26	1.00%
	Summer 26	1.00%
Start	Fall 26	1.00%
	Winter 27	1.00%
Mid Point	Spring 27	
	Summer 27	
Substantial Completion	Fall 27	
		15.50%



ARCHITECTURAL PROJECT BUDGET ESTIMATE

PROJECT CHARTER ATTACHMENT A

NOTE: Refer to the Project Charter or Construction Cost Estimate for goals and initial scope of work

Project Name	AMP Cemetery Maintenance Facility		
Department	Parks and Recreation	CIP ID	
Type	Other	Type Indicator	New Construction
Class <sup>20</sup>	Class 4 Cost Estimate - Feasibility Study (-20% to 30%)		

<b>2800 - ARCHITECTURE/ ENGINEERING (A/E)</b>		18%	\$2,065,246.55
CONSULTANTS		\$868,154.04	
5520 A/E Basic Services (Incl. LEED Services) <sup>2</sup>		\$868,154.04	
INTERDEPARTMENTAL CHARGES		\$1,197,092.51	
6237 PWD Project Management Services (PMD) <sup>3</sup>		\$448,546.25	
6238 PWD Construction Services (CSD) <sup>3</sup>		\$448,546.25	
6203 Sponsor Department Charges <sup>4</sup>		\$300,000.00	
<b>2801 - SURVEYING<sup>5</sup></b>		1%	\$126,605.80
<b>2802 - TESTING</b>		1%	\$130,223.11
5730 Construction Material Testing <sup>6</sup>		\$72,346.17	
5730 Geotechnical Report <sup>7</sup>		\$57,876.94	
5588 Hazardous Material Testing <sup>8</sup>			
5588 Environmental Assessment <sup>9</sup>			
<b>2803 - INSPECTIONS</b>		1%	\$144,692.34
5590 Building Commissioning (Cx) <sup>17</sup>	Type Enhanced	\$144,692.34	
Other			
<b>2804 - CONSTRUCTION (see detailed cost estimate)</b>		64%	\$7,234,617.00
5560 New Construction <sup>1</sup>		\$7,234,617.00	
5560 Renovation <sup>1</sup>			N/A
5560 Demolition <sup>1</sup>		\$0.00	N/A
5560 Site Work/ Landscaping <sup>1</sup>		\$0.00	included in new construction cost
5600 Hazardous Material Abatement <sup>18</sup>		\$0.00	N/A
6324 ROCIP <sup>19</sup>		\$0.00	N/A
<b>2805 - LAND &amp; RIGHT-OF-WAY<sup>11</sup></b>		0%	\$0.00
<b>2806 - MISCELLANEOUS</b>		1%	\$141,460.55
5580 Debt Issuance <sup>13</sup>		\$62,200.92	
6843 Permits/ Fees <sup>14</sup>		\$54,259.63	
7157 GAATN Connection <sup>15</sup>		\$25,000.00	
<b>2807 - EQUIPMENT/FURNISHINGS</b>		20%	\$300,000.00
7615 Office Furniture <sup>16</sup>		\$60,000.00	
Equipment <sup>16</sup>		\$100,000.00	
9055 Data/ Communications (CTM) <sup>16</sup>		\$40,000.00	partial included in construction cost
9055 Audio/ Visual <sup>16</sup>		\$60,000.00	
7603 Security <sup>16</sup>		\$40,000.00	partial included in construction cost
<b>2808 - MATERIALS</b>		2%	\$0.00
<b>2809 - ART IN PUBLIC PLACES (Rounded to nearest \$100)<sup>12</sup></b>		2%	\$200,500.00
<b>PROJECT SUB-TOTAL</b>			\$10,281,144.42
COST CONTINGENCY (Based on project risk analysis)	Risk Probability % <sup>10</sup>	10.00%	9%
			\$1,028,114.44
<b>TOTAL PROJECT BUDGET ESTIMATE (Rounded to nearest \$1,000)</b>		119%	\$11,371,000.00

CLASS 4 COST ESTIMATE ACCURACY RANGE LOW (-20%) \$9,096,800.00 to HIGH (30%) \$14,782,300.00

## FOOTNOTES (Assumptions & Constraints)

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- 1 The construction cost estimate is based on the detailed estimate provided by Sunland Group dated 07/24/2023. The construction cost shown here does not include the construction cost alternates shown in the detailed estimate. The detailed estimate includes a description of the project scope, assumptions, exclusions and source/ references for all cost information.
- 2 The A/E design budget estimate is based on historical City of Austin actual costs per construction value. It includes reimbursable expenses and all services from conceptual through warranty phases. This estimate excludes additional services.
- 3 Project management and construction services budget estimates are based on historical City of Austin - Public Works actual costs per construction value.
- 4 The Sponsoring department has chosen to charge their project management time to the project. This budget estimate is provided by Parks and Recreation Department and accounts for management through all phases of the project life cycle.
- 5 The survey cost estimate is based on a historical average of City of Austin - Public Works actual costs per construction value.
- 6 The material testing cost estimate is based on a historical average of City of Austin - Public Works actual costs per construction value.
- 7 The geotechnical cost estimate is based on a historical average of City of Austin - Public Works actual costs per construction value.
- 8 The cost estimate for hazardous testing for asbestos, lead and mold is excluded since the project is a new ground up facility.
- 9 The cost estimate for an Environmental Phase 1 assessment is not anticipated for this project.
- 10 When estimating the cost for a project, there is always uncertainty as to the precise content of all items in the estimate, how work will be performed, what work conditions will be like when the project is implemented and so on. These uncertainties are risks to the project. Some refer to these risks as "known-unknowns" because the estimator is aware of them, and based on past experience, can even estimate their probable costs, or in this case, the 'Risk Probability %'. The estimated costs of the known-unknowns is referred to by cost estimators as cost contingency. The Cost Contingency amount is calculated by multiplying the Risk Probability % by the 'Project Sub-Total' which excludes the 'Debt Issuance'.
- 11 The land acquisition cost estimate is excluded as the project is on existing parkland owned by the city.
- 12 As required by the 1985 City Ordinance (No. 850926-0; amended by No. 861009-A; amended by No. 970904-B; Austin City Code Volume 1, Title IX, Chapter 9-2).
- 13 This amount is not included in the subtotal for '2806 - Miscellaneous'. It is instead included in the Total Project Budget Estimate.
- 14 Permits/ fees includes costs for site development, building and demolition permits, LEED certification, TDLR requirements and any others.
- 15 The GAATN connection cost estimate is based on similar City of Austin Parks and Recreation Department maintenance facilities.
- 16 The budget line for equipment/ furniture (FF&E) includes costs for office furniture, equipment, data and voice, audio/ visual solutions, and security. Some costs are provided in the contractor's detailed cost estimate. Estimates for anticipated items excluded from the contractor's detailed cost estimate are included here.
- 17 Enhanced commissioning is required for the project and includes all mechanical, electrical, plumbing, building automation systems, and the building envelope. The cost estimate is based on historical City of Austin - Public Works actual costs per construction value.
- 18 Demolition of existing structures is not anticipated and estimates for demolition of areas that may contain hazardous material are not included.
- 19 Rolling Owner Controlled Insurance Program (ROCIP) is not anticipated for this project.
- 20 The cost estimate classification is to align the project budget estimate with the phase of design scope development and decision making process. The five (5) class levels provides a summary of the maturity level of project definition (i.e., 30% or Schematic Design) characteristic. The maturity is roughly indicated by a percentage of complete definition, or design phase; however, it is the maturity of the defining design deliverables that is the determinant, not the percent or design phase. The specific deliverables, and their maturity or status are provided in the Construction Cost Estimating instructions. The percentage range in parenthesis represents the variation of the cost estimate from actual costs. The budget estimate uses the highest value of the range and is reflected in the Contingency's costs. The contingency level reduces as the design matures to a Class 1.



Project Name AMP Cemetery Maintenance Facility

Date 7/25/2023

CIP ID 0.0

**SPENDING PLAN COST ESCALATION**

*Assume 10% Escalation per year*

Escalation Time Period - Based on Construction mid-point in 2027	Total Project Budget
If the Mid-Point of Construction Begins in 2 Years after 2027 then -	<u>\$13,758,910.00</u>
If the Mid-Point of Construction Begins in 4 Years after 2027 then -	<u>\$15,134,801.00</u>
If the Mid-Point of Construction Begins in 6 Years after 2027 then -	<u>\$20,144,420.13</u>
If the Mid-Point of Construction Begins in 8 Years after 2027 then -	<u>\$24,374,748.36</u>
If the Mid-Point of Construction Begins in 10 Years after 2027 then -	<u>\$29,493,445.51</u>
If the Mid-Point of Construction Begins in 12 Years after 2027 then -	<u>\$35,687,069.07</u>
If the Mid-Point of Construction Begins in 14 Years then after 2027 then -	<u>\$43,181,353.58</u>



**LEED v4 for BD+C: New Construction and Major Renovation**  
Project Checklist

Project Name: CoA PARD Austin Memorial Park Cemetery Maintenance Facility

Date: 07/26/2023

Y ? N

1			Credit	Integrative Process	1
<b>2 0 30 Location and Transportation 32</b>					
		16	Credit	LEED for Neighborhood Development Location	16
		1	Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
		5	Credit	Surrounding Density and Diverse Uses	5
		5	Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
		1	Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles	1
<b>4 0 6 Sustainable Sites 10</b>					
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
		2	Credit	Site Development - Protect or Restore Habitat	2
		1	Credit	Open Space	1
		3	Credit	Rainwater Management	3
2			Credit	Heat Island Reduction	2
1			Credit	Light Pollution Reduction	1
<b>7 0 4 Water Efficiency 11</b>					
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
2			Credit	Outdoor Water Use Reduction	2
4			Credit	Indoor Water Use Reduction	6
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1
<b>15 3 15 Energy and Atmosphere 33</b>					
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
4			Credit	Enhanced Commissioning	6
5			Credit	Optimize Energy Performance (assume 15% improvement)	18
1			Credit	Advanced Energy Metering	1
2			Credit	Demand Response	2
		3	Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
2			Credit	Green Power and Carbon Offsets	2

<b>11 0 2 Materials and Resources 13</b>					
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
3			Credit	Building Life-Cycle Impact Reduction	5
2			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
2			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2
<b>15 0 1 Indoor Environmental Quality 16</b>					
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
3			Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
2			Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
2			Credit	Interior Lighting	2
2			Credit	Daylight	3
1			Credit	Quality Views	1
1			Credit	Acoustic Performance	1
<b>6 0 0 Innovation 6</b>					
5			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1
<b>4 0 0 Regional Priority 4</b>					
1			Credit	Regional Priority: Outdoor Water Use Reduction	1
1			Credit	Regional Priority: Indoor Water Use Reduction	1
1			Credit	Regional Priority: Optimize Energy Performance	1
1			Credit	Regional Priority: Rainwater Management	1

**65 3 58 TOTALS** Possible Points: **126**

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110