BROKEN ARROW
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City of Broken Arrow
Broken Arrow, OK

JUNE 2024
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Public Safety Training Campus
Master Plan 2024

WSKF ARCHITECTS
abercrombie PLANNING+DESIGN
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SUMMARY/PRE-EXISTING CONDITIONS

Broken Arrow Police Department-Fire Department

The Broken Arrow, Oklahoma Police and Fire Departments ("Departments") contracted with WSKF Architects ("WSKF") in February 2023 to complete an assessment of the existing Police and Fire Departments' Public Safety Training Campus and to Master Plan the existing campus to create a campus development/redevelopment road map for future facilities that reflects the real-life training needs for police and fire agencies and to be a "Flagship" facility for the State of Oklahoma.

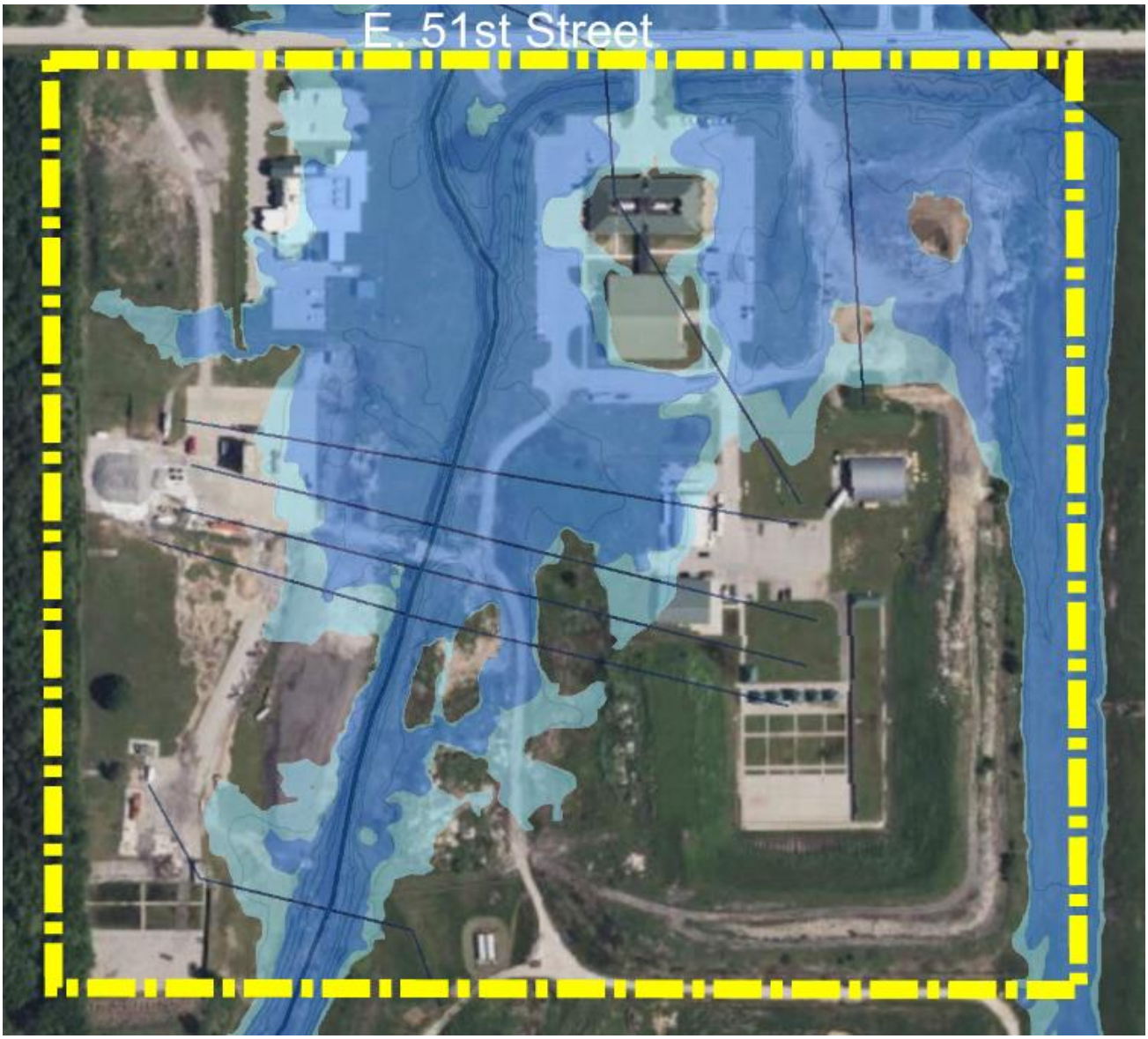
A site visit and facilities assessment was completed on Thursday and Friday, March 30-31, 2023. This visit and associated meetings encompassed:

- Facilities Survey (visual survey of interior and exterior of all existing facilities (7 buildings/structures)
- Site Survey (visual survey of the existing 30A+ campus)
- Master Plan Meetings (two days of meetings; one day with each agency) discussing the current facilities and campus needs as well as what was envisioned for the master planning of the facilities and campus

Meeting agendas and meeting minutes were prepared for each of the agency meetings to both chronicle and document the respective agency needs and vision. Meeting minute review and confirmation was requested and provided. Final edits to meeting minutes were provided to the agencies.

Although the original occupancy of the current training campus for police and fire training purposes is not known, drawings for some of the current facilities provides some insight. It would appear the gun range was the original building dating to the early 1990's. There has been steady facilities development since the original range development. The most recent facility developed on campus appears to have been completed around 2010.

During the initial stages of site and facility research by the Design Team, it was discovered that a significant proportion (approximately 50%) of the 30A site is encumbered with floodplain waters from the Adams Creek Drainage Study completed for the Corp of Engineers. The Study defines the floodplain for the "Existing" as well as the "Developed" area of the Adams Creek Drainage area. The adjacent aerial image with floodplain representation provides some insight into the floodplain coverage:



Public Safety Site Aerial w/Floodplain Overlay

As is evident in the floodplain aerial, there are "islands" of land area that are unencumbered with flood water. As further testament to this condition, the 1993 flood surrounded the two most northern buildings and flood waters covered the east parking lot to a reported depth of "just below the windows of cars in the parking lot."

In addition to the floodplain conditions, the area, generally to the east of the drainage way through the site, is reported to be an area that was a former "garbage dump" for the City of Broken Arrow. The subgrade condition has impacted the development of the site requiring the use of piers to assure foundation stabilization. Generally, all buildings developed and to be developed will likely need to considered for pier foundations. It would be noted, that the soft subgrade conditions are not limited to the east side of the drainage way as the Fire Department Burn Tower, located on the west side of the drainage way, also required pier foundations to assure adequate foundation support. The "piering" of foundations is certainly not unknown in Oklahoma, but will be of particular consideration for development on this site. The graphic below provides some understanding of the area of site that likely presents soft subgrade conditions.

Public Safety Site Aerial w/Subgrade Soft Soils Overlay

As the information presented by the two previous graphics created some serious reservations for the Design Team as to the viability of the Campus, a hydrology assessment of the floodplain conditions was completed by the Design Team Civil Engineer, TEP. The assessment conclusion was that there was likely a way to mitigate some of the floodplain condition sufficiently to allow for development that was either not at-risk or reduced risk from impact for flooding. Therefore, the Design Team is moving forward with development recommendations that addresses most, if not all, of the requested training elements needed by the Police Department and the Fire Department.

The Study objectives are:

1) To maximize the training opportunities within the limitations of the site area and developable constraints
2) To create a safe and secure site to conduct training exercises for public safety agencies
3) To create a development plan footprint for the public safety training future for both Fire Department and Police Department
4) To create a training village that provides equal opportunity for training for both the Fire Department and the Police Department
5) To augment the Animal Shelter to add kennel capacity, public adoption interface and sally port capacity

SITE & FACILITIES ASSESSMENT[1]

Site

The existing developed site contains approximately 30 acres of land. The site is bound by E. 51st Street on the north and undeveloped land on the east, south and west; the west side is currently being graded for development, but as this study, no vertical development has occurred. The land area to the south is a landfill site.

Generally, the site slopes from north to south with the vertical elevation at the north side being approximately 656 and the elevation at the south property being approximately 655. The high elevation of the site is approximately 658 which represents the approximate finish floor elevation of the existing Phase I and Phase II buildings.

[1] Refer to Appendix Pages 31 – 51, Facilities Assessment; Overview, Long Forms

The floodplain elevation for the site is 656. Approximately 50 percent of the site area lies within the "Developed" floodplain of the Adams Creek Drainage area.[2] There are two drainage channels that generally bisect the site north-south. The primary channel extends across the north property line to near the center of the site, then extends south southwest through the property. This channel is approximately 900 feet in total length and approximately 10 foot in depth. The second channel is approximately 300 feet in length and extends from E. 51st Street (near the west side of the property) to a point where it merges with the primary channel. The width of each of the channels is approximately 50 feet except at the north side of the side (immediately south of E. 51st Street) the channel broadens to approximately 60 to 70 feet. This area of the site appears to retain water given the channel restriction where the access road from E. 51st Street connects to the campus.

The Broken Arrow Animal Shelter is located in the northwest section of the site. This development for this facility includes; 1) Shelter, 2) Public Parking, 3) Outdoor Kennels, 4) Large Animal Holding, and 5) Staff Parking. The site area encumbered by this use is approximately 2.5A. The access to this facility is independent of the Training Campus.

The site contains approximately 45,000 SF of building/structure development, 145,000 SF of paving/hard surface, 70,000 SF of Range use, approximately 120,000 SF of public works debris fields and approximately 136,000 SF of drainage channels. The developable land for the campus is approximately 15A. Approximately 2.5A of land is being reserved for a future fire station leaving a balance of approximately 12.5A of developable land (excludes floodplain encumbered land area).

Phase I Building

This building was constructed in 2004-5 and provides space for; 1) Training Administration (Police & Fire), 2) Tiered Classrooms (2), 3) Classroom/Meeting (1 room that is able to be converted to 2 smaller rooms through the use of an operable partition) and 4) Support Space (restrooms, mechanical/electrical, building services). Generally, the building is slab-on-grade construction with cast-in-place footing/foundation on piers, load-bearing exterior walls and steel structure post and beam interior construction. Interior partitions are non-load-bearing light gauge metal studs.

Interior finishes are standard "office" type finishes (drywall, carpet, acoustical ceilings, etc.). Exterior finishes are masonry, standing seam roofing, aluminum windows/doors and similar. A more detailed review of the existing Phase I building may be found in the Appendix of this document.

[2] Refer to Appendix Page 52, Adams Creek Master Drainage Study, Fully Developed Floodplain Atlas,

Phase II Building

This building was built shortly after Phase I in 2005-6 and provides space for; 1) Training, 2) Offices, 3) Classroom, 4) Fitness, 5) Locker Rooms, 6) Kitchen and 7) Storage. This building is connected to the Phase I building via an overhead covered walkway. This building is a Pre-Engineered Metal Building (PEMB) structure with cast-in-place concrete footing/foundation, concrete slab-on-grade floor, and masonry infill. Interior partitions are a mixture of non-load-bearing concrete masonry units and non-load-bearing metal studs. The distinguishing feature of this building is the large, open, clear span structure for training with an eave height of approximately 14'.

Interior finishes are standard for "warehouse" type finishes (painted CMU, exposed structure, Overhead Doors, etc.). The exterior finishes are masonry infill, prefinished standing seam roofing, aluminum windows, hollow metal doors/frames and similar. A more detailed review of the existing Phase II building may be found in the Appendix of this document.

Phase III Building

This building was built around 2018 and provides space for Range support including; 1) Police Classroom Training, 2) Mat Room, 3) Armory, 4) Lockers and 5) Storage. This building is located near the Range. This building is a Pre-Engineered Metal Building (PEMB) structure with cast-in-place concrete footing/foundation, concrete slab-on-grade floor, and masonry infill. Interior partitions are non-load-metal studs.

Interior finishes are standard for a "office/classroom" type building (metal stud partitions, exposed structure, carpet, foam mat flooring, etc.). The exterior finishes are masonry infill, prefinished standing seam roofing, aluminum windows, hollow metal doors/frames and similar. A more detailed review of the existing Phase III building may be found in the Appendix of this document.

Range Facilities

This facility consists of a series of free-standing structures including; 1) Armory, 2) Open-Air Shelters and 3) Range Tower. The facilities consist of 18 lane 50-yard range and 4 lane 100-yard range. As these are open air ranges, there are earthern berms on 3-sides of the range to contain shooting rounds. Additionally, there is a free-standing CMU wall between the two ranges. The earth covered refuse site to the south of the range also provides firing range round containment. The range structures are a mixture of pre-engineered structures and load-bearing CMU. The Open-Air Shelters are the pre-engineered structures and the Tower is the CMU structure.

As the structures are open air, the finish is on the exposed metal of these structures. The Tower structure is a 2-level design with the 1st level enclosing a stairway to the elevated 2nd level. A more detailed review of the existing Range facilities may be found in the Appendix of this document.

Shoot House

This facility is a Quonset structure that provides space for the Police Department to train for interior building shoot scenarios. The Quonset structure provides the enclosure for the use; however, the interior of the building is outfitted with a panelized wall system that allow for some reconfiguration to accommodate scenario training. Additionally, there is an overhead catwalk system that allows the training officer to monitor and directly observe the personnel advancing through the various rooms and corridors.

As the structure is a lightweight, self-supporting, prefabricated structure of corrugated galvanized steel with a semi-circular cross section. The interior of the structure has been coated with spray foam insulation. Access to the structure is provided through both a walk-in door and an overhead door. The interior panel system is metal. The foundation and slab-on-grade are cast in place concrete. A more detailed review of the existing Shoot House may be found in the Appendix of this document.

Storage Building

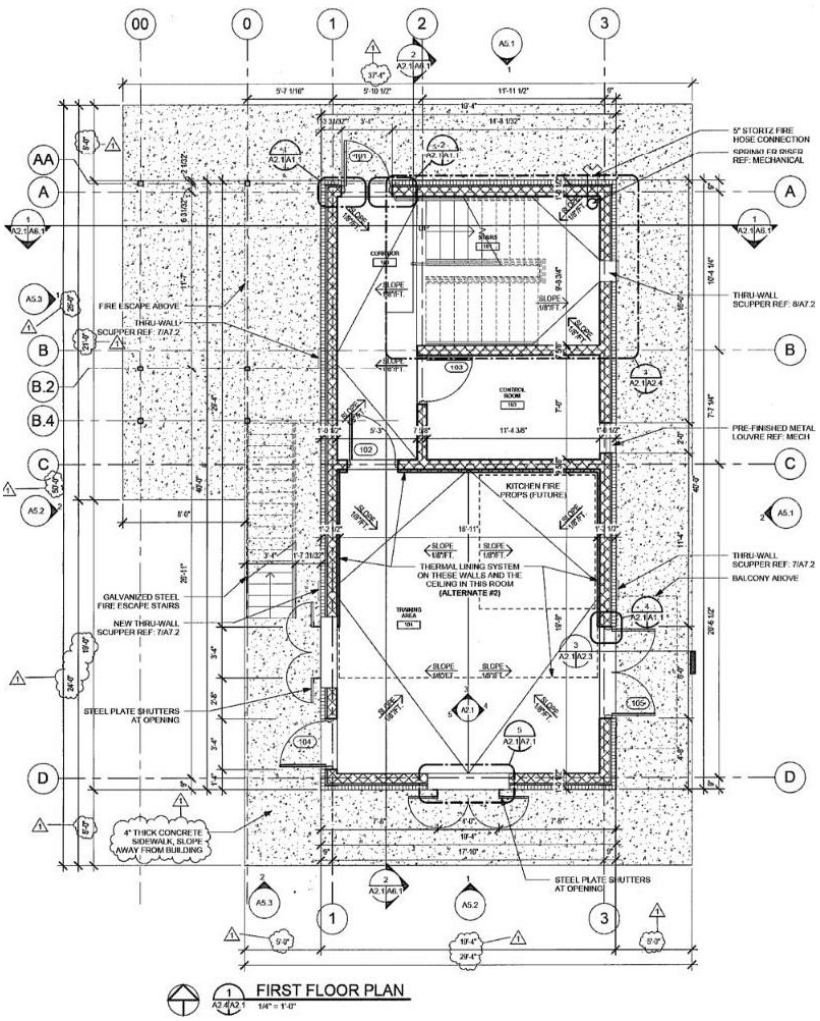
This facility is also a Quonset structure and provides space for both the Police Department and the Fire Department. Generally, this structure is used for storage and staging purposes. As this structure has overhead doors at each end of the building, access is possible for each agency without infringing on the other.

Refer to the Shoot House above for information pertaining to the construction of this facility. Similar to the Shoot House, a more detailed review of the existing Storage Building may be found in the Appendix of this document.

Burn Tower

This facility is a Class A, live-fire, burn facility with 5 levels and a roof deck (6 levels overall). This facility is primarily used by the Fire Department, but the Police Department uses this building on an infrequent basis. Each level provides approximately 800 SF of floor area. The design provides for an internal stair tower at one end of the facility. An exterior stair and platform system connects Levels 2 through 5. There is external access to the roof via a ladder and ladder cage design. There is also an internal ships ladder from the 5th Level to the roof deck. Each floor level contains; 1) Stairway, 2) Small Room and 3) Larger Room. The Larger Room at each level provides access to an exterior balcony and 2 windows. Each floor includes integral slope for water drainage.

The design of this structure is load-bearing CMU with brick veneer. Each floor is cast in place concrete. The footing/foundation system is case in place concrete on drilled piers. All metals (stairs, railings, embeds, etc.) appear to be hot-dippted galvanized. Exterior wall openings (doors/frames, shutters, etc.) appear to be galvanized.



Typical Floor Plate, Fire Training Tower

Animal Shelter

This facility provide animal kennels, habitats and adoption services for the City. The facility provides approximately 13,191 square feet of space. In addition to the main facility, there is a detached storage shed that contains approximately 400 square feet of space. The developed site area provides 18 public parking spaces, 14 staff parking space and an outdoor exercise yard. There is approximately 1,300 square feet containing 88 kennels. There is also kennel space for quarantine and isolation of sick or behavior-condition dogs. The sally port provides for intake and processing of small animals.

The building is structural steel and load-bearing masonry exterior with metal stud/drywall interior partitions (as well as some masonry partitions). The roof design is generally flat with steep pitched areas generally in the public areas. Windows and doors are a mixture of aluminum storefront and hollow metal.

SPACE NEEDS[3]

Overview

Based on interviews and meetings with each of the agencies (Police & Fire), the space and/or functional needs for Campus facilities was determined. These needs were presented and confirmed by each of the agencies to assure alignment with the vision and conformance with needs parameters. The following list of facilities chronicles the needed requirements of each of the existing facilities as well future needs.

Phase I[4]

The existing building is noted to have a number of current facility issues including; 1) Roof leaks, 2) HVAC performance issues, 3) Lack of security/access control throughout, 4) Insufficient Restroom facilities (during times when both PD and FD are training), 5) At-risk technology & insufficient technology, 6) Shortage of office space, 7) Insufficient Breakroom space for Staff and Cadets, 8) Insufficient Classroom space, and 9) The building is too small to conduct "academy" level coursework.

Phase II[5]

The existing building is noted to have a number of current facility needs including; 1) Acoustical treatment of the Training Space, 2) Exhaust system for the Training Space, 3) Competing use of the Training Space between PD and FD, 4) Inadequate Classroom space, 5) Foundation settlement issues, 6) Overhead Coiling Door noise from wind vibration, 7) Archaic training space for fire cadets to learn cooking skills.

Phase I & II

The design goal for Phase I and Phase II facilities is to allow these facilities to be internally connected and to function as a single facility. The finish floor levels vary between Phase I and Phase II, however, the Design Team believes this variation can be negotiated internally as the height difference is not significant.

Phase III[6]

The existing building is noted to have a number of current facility needs including; 1) Inadequate classroom space, 2) Insufficient Mat Room Space,) Insufficient Locker Room Space, and 4) the Simulations Room is inadequate for training and the use of props.

[3] Refer to Appendix Pages 53 – 58 Broken Arrow Public Safety Training Campus, Master Plan Space Needs
[4] Refer to Appendix Page 66, Meeting Minutes, 3/30/2023, Page 7
[5] Refer to Appendix Page 69, Meeting Minutes, 3/30/2023, Page 10
[6] Refer to Appendix Page 69, Meeting Minutes, 3/30/2023, Page 10

Range

The existing range does not have adequate drainage and often is unusable as a result of ponding water. The armory building has floor drains but the building has been flooded as a result of excessive ground water conditions. The facility is currently using a portable generator for power as the normal power is experiencing service issues; source of service issues is unknown.

Animal Shelter

The shelter is needing additional adoption space (kennels & get-acquainted rooms) as well as sally port space. The original design anticipated additional kennels but did not envision the need for get-acquainted or sally port space.

Site[7]

While the existing site has been in use for many years, there have been occasions of flooding as almost half of the site lies within the Adams Creek Floodplain. The impact and significance of this condition are at the forefront of the Master Planning for the site. An Adams Creek Master Drainage Study[8] was completed by Utley and Associates LLC, June 1, 2011, Revised December 10, 2011 which documents the floodplain conditions for the Adams Creek Drainage area. The impact of the floodplain is presented on Map Page #0752 of the drainage study.[9]

Floodplain development is regulated by the Broken Arrow, OK Code of Ordinances, Article IV – Floodplain Development Requirements.[10] Floodplain development for non-residential construction is governed through the application of Section 25-312 – Non-Residential Construction.

Site development requirements generally include: 1) Floodplain management, 2) Security, 3) Range Repair or replacement, 4) Fire training, 5) EVOC course, 6) Classroom expansion, and 7) Existing facilities repair (Phase I and II Bldgs.). The overarching request is for campus-wide aesthetic enhancements to create a much-upgraded appearance.

[7] Refer to Appendix Page 61, Meeting Minutes, 3/30/2023, Page 2
[8] Adams Creek Master Drainage Study, Utley & Assoc. LLC, Volumes 1 through IV
[9] Adams Creek Master Drainage Study, Fully Developed Floodplain Atlas, Map Page #0752
[10] Broken Arrow, OK Code of Ordinances, January 2011

Space Needs[11]

The space needs assessment for the Master Plan includes renovation for Phase I and Phase II plus Phase I Expansion. Additionally, as the Master Plan recommends a new indoor range, the space requirements for this component are listed in the appendix. The important information to understand is that since the Phase III Bldg. is being recommended for demolition, the space provisions for this building are now incorporated into the new range building. Namely, classroom, locker and mat room space (doubling as a simulation room) are now contained within the new range. Lastly, minor additions are needed for the animal shelter.

MASTER PLAN[12]

Overview

The Public Safety Training Campus, proper, encompasses approximately 30.7A of land area with a site cross section of approximately 1,300 feet east-west along E. 51st Street and 1,300 feet north-south from E. 51st Street south. As has been discussed, the site is encumbered with floodplain as the Adams Creek Drainage basin passes through the site. Based on initial civil engineering and hydrologic analysis, a preliminary plan to reduce the impact of the floodplain has been developed.

Master Plan

The Master Plan encompasses all of the requested space and facility needs as discussed with the Police and Fire Departments. The notable elements of the Master Plan include; 1) Site Security, 2) Floodplain Management, 3) Phase I/II Renovation & Expansion, 4) Range Replacement, 5) EVOC Course & EVOC Storage/Garage, 6) Animal Shelter Expansion, 7) Fire Storage/Classroom Bldg., 8) Fire Training Bldgs. (11), and 9) Driver Skills Pad.

As stated previously, the Master Plan Study objectives are:

1) To maximize the training opportunities and shelter needs within the limitations of the site area and developable constraints
2) To create a safe and secure site to conduct training exercises for public safety agencies
3) To create a development plan footprint for the public safety training future for both Fire Department and Police Department

Master Plan Objective 1

In order to accomplish Objective 1 (maximize training opportunities), the key issues to be addressed are:

[11] Refer to Appendix Pages 53 - 58, Space Needs
[12] Refer to Appendix Page 73, Broken Arrow Training, Site Master Plan

1. Issue – The contiguous site area is approximately 40.2A of which 4A is allocated to the existing Animal Shelter & Future Fire Station 8, 5.5A is considered drainage way or channel leaving a net developable area of approximately 30.7A
2. Issue – Of the 40.2A of site area, approximately 19.2A is encumbered within FEMA designated Floodplain
3. Issue – Of the 40.2A of site area, approximately 22A is believed to be underlaid by former landfill (non-structural fill)

We believe the key means of addressing objective 1 is to address the issues of the floodplain. The Design Team recommends a number of tactics to address this issue:

1) Widen the drainage channel from the northeast corner of the site to the southwest corner of the site. Widening generally involves creating a wider channel at the base of the drainage way and grooming the channel sides to provide more volume for water. This widening and grooming inherently will involve the widening of the box culvert at the entry to the site from 51st. Additionally, this work would involve the removal of the secondary entrance at the northeast corner of the site as this point of entry will be unneeded and not warranted in the future.
2) Design a confluence basin at the point where the northeast drainage channel and northwest drainage channel join; just to the northwest of the existing Phase I parking. The work will allow for a larger volume of water at this confluence and therefore, reduce the backup flooding currently being experienced.
3) Addition of an internal roadway crossing of the existing drainage channel. The crossing design could be either box culverts or arched bridge. The crossing design will be such that the widened channel is accommodated in the final design.

Master Plan Objective 2

In order to accomplish Objective 2 (reduce floodplain impact or increase development area), the key issues to be addressed are:

1. Issue – The site is currently bordered by residential development to the north and west (development in process). Additionally, residential development also exists to the south; a distance of approximately 4,000 feet.
2. Issue – The site is accessible from at least 2 points of entry off E 51st Street; no access control or secure entry currently exist.
3. Issue – City public works currently accesses and utilizes the site for debris storage and roadway maintenance encumbering the site and adding to congestion and site training risk. The debris is unsightly and reduces available training space.
4. Issue – The shooting range is an outdoor range which creates both environment and safety potential. The range frequently floods and does not drain properly which creates concerns for student safety as well as lead mitigation challenges. Support structures are settling at a rapid rate which will lead to structural concerns for future operation.

We believe the key means of addressing objective 2 is to address the issues of the floodplain. The Design Team recommends a number of tactics to address this issue:

1) Regrading of the entire site is recommended. Regrading will also involve the removal of all debris piles as well as the berming surrounding the outdoor range. This design for this work is to be completed in conjunction with the Corp of Engineers to redefine the floodplain on site. The available land for development will inherently increase as a result of the combination of this work.
2) Replace the existing outdoor range with an indoor range. The indoor range proposed by the Design Team includes both a 50-yard and 100-yard ranges. The removal of the existing range makes this land available for other uses and addresses the flooding and unstable subgrade conditions that existing at the current range.
3) Replace the range with a use that is not as susceptible to site conditions being experienced. The Design Team is proposing that an EVOC course be developed on the range grounds. The EVOC course would extend along the east property line to maximize the use of the available land.

Master Plan Objective 3

In order to accomplish Objective 3 (address training gaps and unify the campus), the key issues to be addressed are:

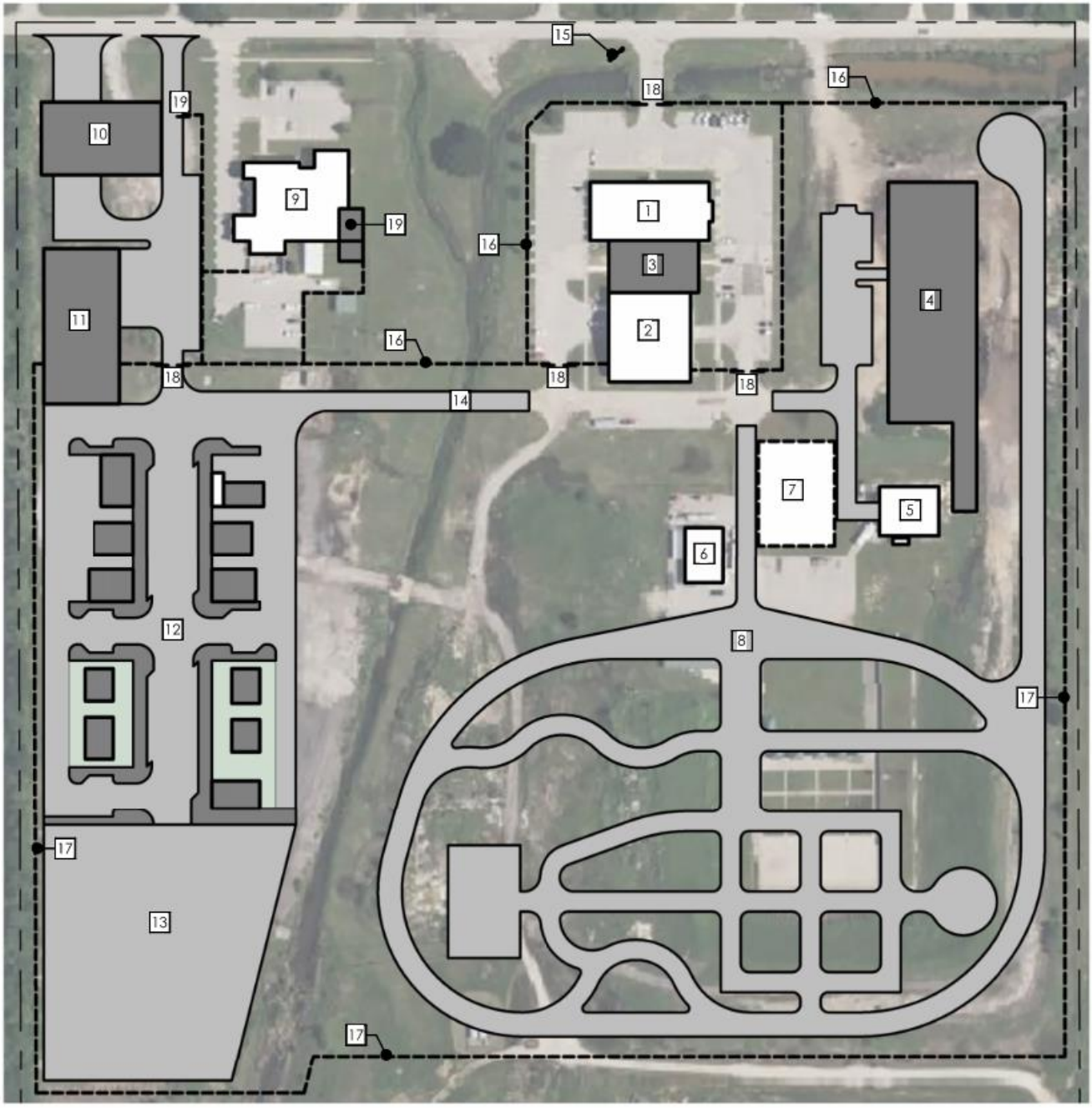
1. Issue – Propose development that addresses current training shortcomings that encompasses agency-identified needs and consultant recommended needs
2. Issue – Propose a development standard for the campus that both unifies as well as elevates the campus aesthetic

We believe the key means of addressing objective 3 is to address the issues of maximizing the training opportunities and to solidify a campus aesthetic. The Design Team recommends a number of tactics to address this issue:

1) Create a design rich plan for training facilities (training buildings, maximize facility development density, provide for cross use (use by both Fire & Police), provide for phased development that offers day-1 enriched training value.
2) Reflect the current community design aesthetic in the campus design to build on the history of the community and to expand the accepted design vocabulary throughout the campus.
3) Implement a focus on campus security as well staff security while allowing uncontrolled access to visitors to the campus.

Master Plan Phasing

Phasing of the Master Plan implementation is highly variable depending on what each of the agencies and the City believes are the priorities and the funding availability. However, there is a logical implementation of some of the elements. For example, floodplain mitigation will likely be a high priority as reduction of floodplain footprint is necessary to all for certain element implementation. Additionally, Range design and construction will allow for the re-development of the outdoor Range for the EVOC. Discussions regarding these elements and others are needed and necessary to allow for the prudent development of the property. The timing of the animal shelter is likely at the discretion of the City as the space needs is a constant.



1 EXISTING PHASE I BUILDING

2 EXISTING PHASE II BUILDING

3 NEW CLASSROOM ADDITION; 7,200 GSF

4 NEW INDOOR FIRING RANGE; 15 50YD LANES, 5 100YD LANES; 36,000 GSF

5 EXISTING SHOOT HOUSE & STORAGE BUILDING

6 EXISTING STORAGE BUILDING

7 EXISTING K-9 AGILITY & OBSTACLE COURSE

8 HIGH SPEED SKILLS COURSE; 0.5 MILES, 8.5 ACRES

9 EXISTING ANIMAL SHELTER

10 FUTURE FIRE STATION #8; 13,500 GSF

11 NEW FIRE STORAGE & CLASSROOM BUILDING; 18,500 GSF

12 TRAINING STREETSCAPE WITH 6 BURN BUILDINGS, 4 TACTICAL BUILDINGS AND AN OUTDOOR CLASSROOM; 3.75 ACRES

13 SLOW SPEED SKILLS PAD; 2.0 ACRES

14 DRAINAGE CHANNEL BRIDGE

15 NEW MONUMENT SIGN

16 NEW 6' HIGH ORNAMENTAL FENCING WITH MASONRY FENCE PIERS

17 NEW 6' HIGH CHAIN LINK FENCING

18 GATE WITH ACCESS CONTROL

19 ANIMAL SHELTER ADDITION

Public Safety Site Aerial w/Master Plan Overlay

PHASE I/II RENOVATION/EXPANSION[13]

Overview

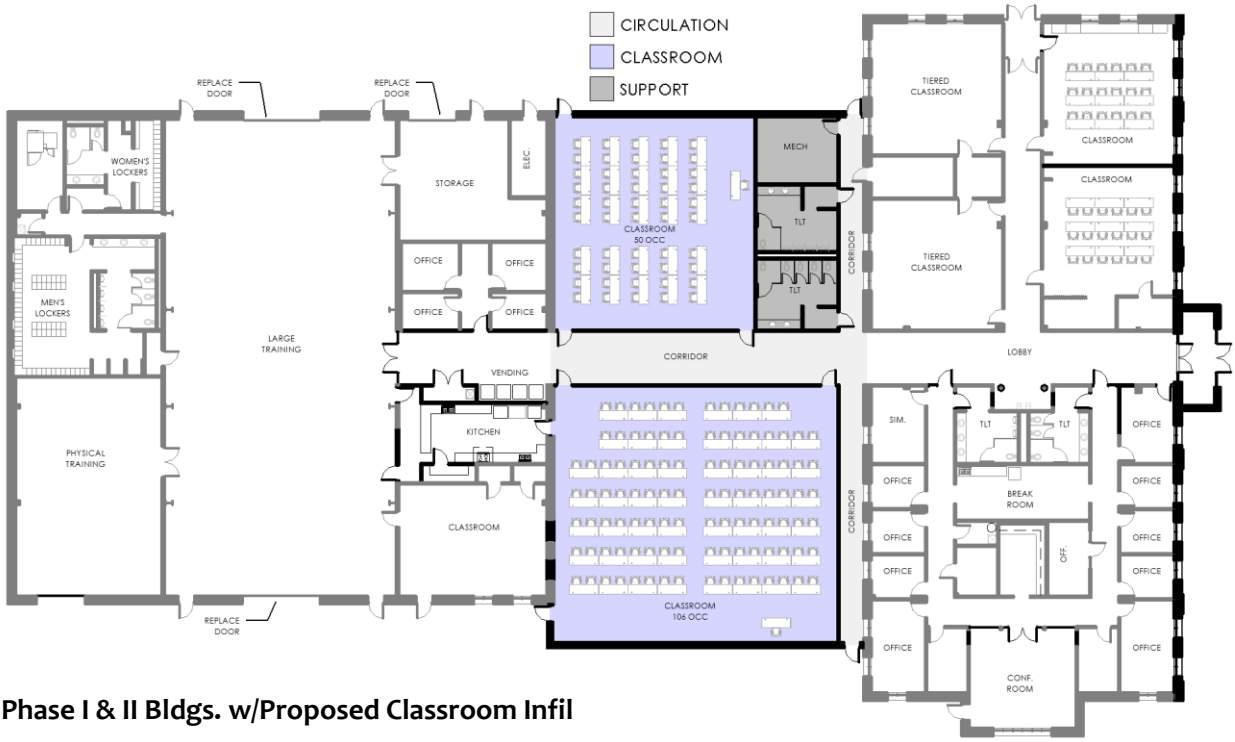
The primary use of the Phase I and II Buildings is cadet didactic training. The primary need for these facilities is additional classroom space. The current facilities are "linked" with a covered walkway between the two buildings. While the two buildings have similar appearances, the volume presentations are quite different with the Phase II building having a much greater volume design.

Floor Plan

The Phase I Bldg. contains approximately 9,600 SF of space and provides both Classroom and Administrative Offices for support staff. The building includes a multi-purpose space that is used both by the community and the City for various occasional functions (polling, group meetings, etc.). The Phase II Bldg. contains approximately 11,560 SF of space and provides a large, high volume, training space plus lockers, fitness, storage and classroom spaces.

While there are a variety of classrooms contained in Phase I and Phase II, none of the existing spaces is able to accommodate seating for 100 and be conducive to a classroom environment. Additionally, there are insufficient toilet facilities for the number of occupants.

For renovation purposes, additional office space is needed. The existing facilities lack security. The existing training space lacks adequate ventilation and acoustical treatment to properly facilitate learning.



Phase I & II Bldgs. w/Proposed Classroom Infil

[13] Phase I/II; Expansion/Renovation, Preliminary Floor Plan

RANGE DESIGN[14]

Overview

The existing Range is an outdoor/open air range providing both 50-yard and 100-yard shooting options. The existing 50-yard range provides for 18 lanes and the 100-yard range provides for 4 lanes with an 8-foot-high CMU demising wall. Due to the open air style of the existing range, it is not ballistically safe posing a risk to the neighboring communities. The range also includes 4 shelter buildings, a tower and armory. As the range is flooded (lack of proper site drainage) most of the time, some elements of the range are not available for use. Likewise, as the range tower leans approximately 5 to 10 degrees, this facility is inadequate. The recommended solution to resolve the existing range issues is to replace existing facilities with an indoor range; 15-lane 50 yard and 5-lane 100-yard range.

Design

The proposed facility provides for approximately 30,000 SF of space containing; 1) range, 2) gun cleaning, 3) range control station, 4) armory, 5) classroom, 6) toilet facilities, and 7) support spaces. The range will be a precast concrete structure for roof and walls with interior bullet containment/ entrapment design. Significant aspects of the range are hazardous (lead) dust management system, bullet collection system and target system. All aspects of the range design are in service to safety for personnel as well as neighborhood residents with the target system enhancing the training opportunites.

EVOC COURSE[15]

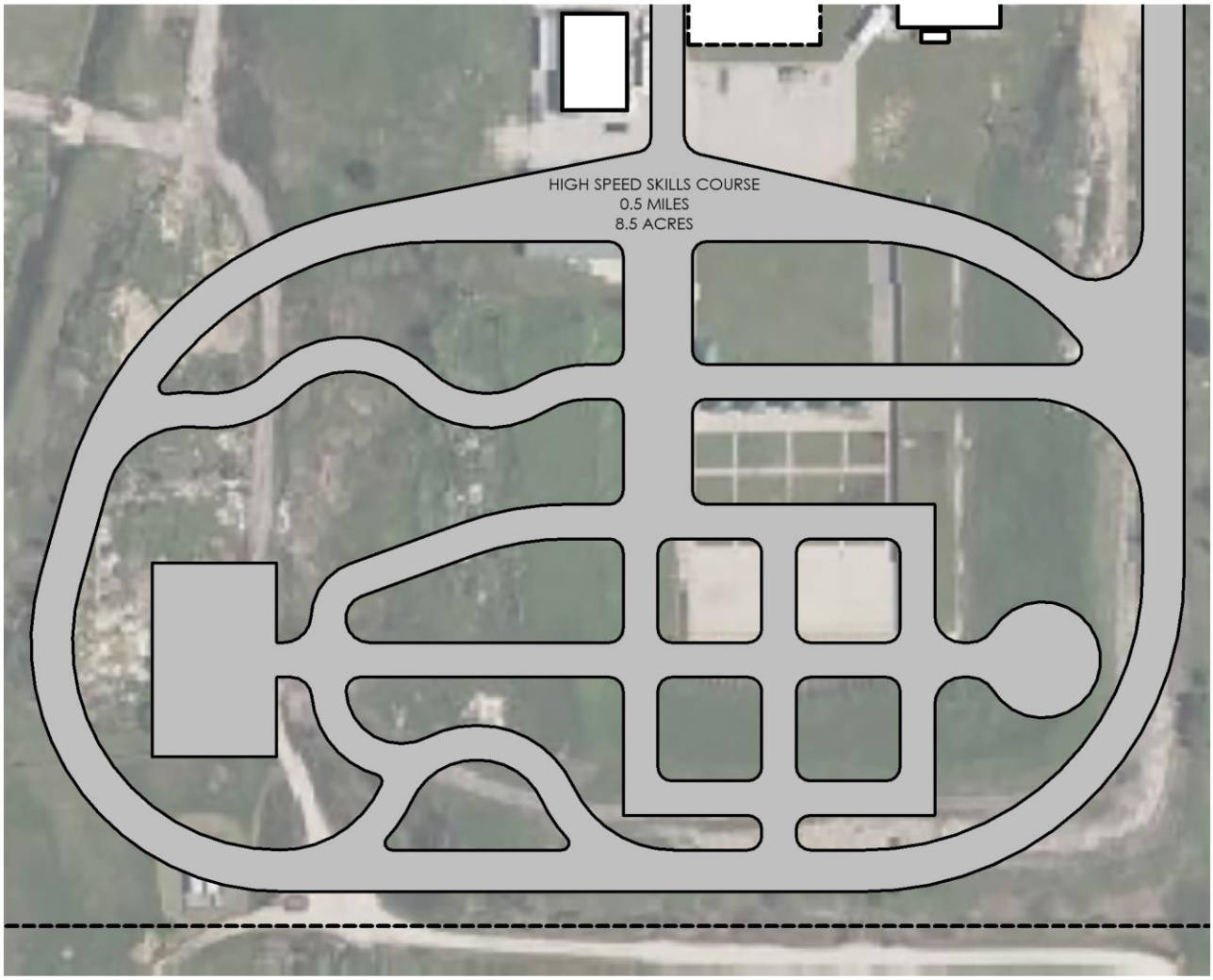
Overview

Emergency vehicle operation is one of the most significant challenges for first responders. The existing campus does not provide for high speed driver skills training. Access to a facility for driver training requires off-site travel to a remote facility.

Design

The proposed EVOC course provides for a ½ mile course with a 500 foot straight away that leads to simulated road conditions. Additionally, the course includes a 700 foot straight away that culminates in a cul-de-sac. The design provides for driver skills development including; 1) skid control, 2) defensive driving, 3) vehicle pursuit techniques and similar skills development. Associated with the course is a facility for outdoor briefing and instruction as well as a small vehicle maintenance and storage facility.

[14] Refer to Appendix Page 76, Campus Master Plan
[15] Refer to Appendix Page 76, Campus Master Plan



EVOC Course Preliminary Plan

ANIMAL SHELTER ADDITIONS

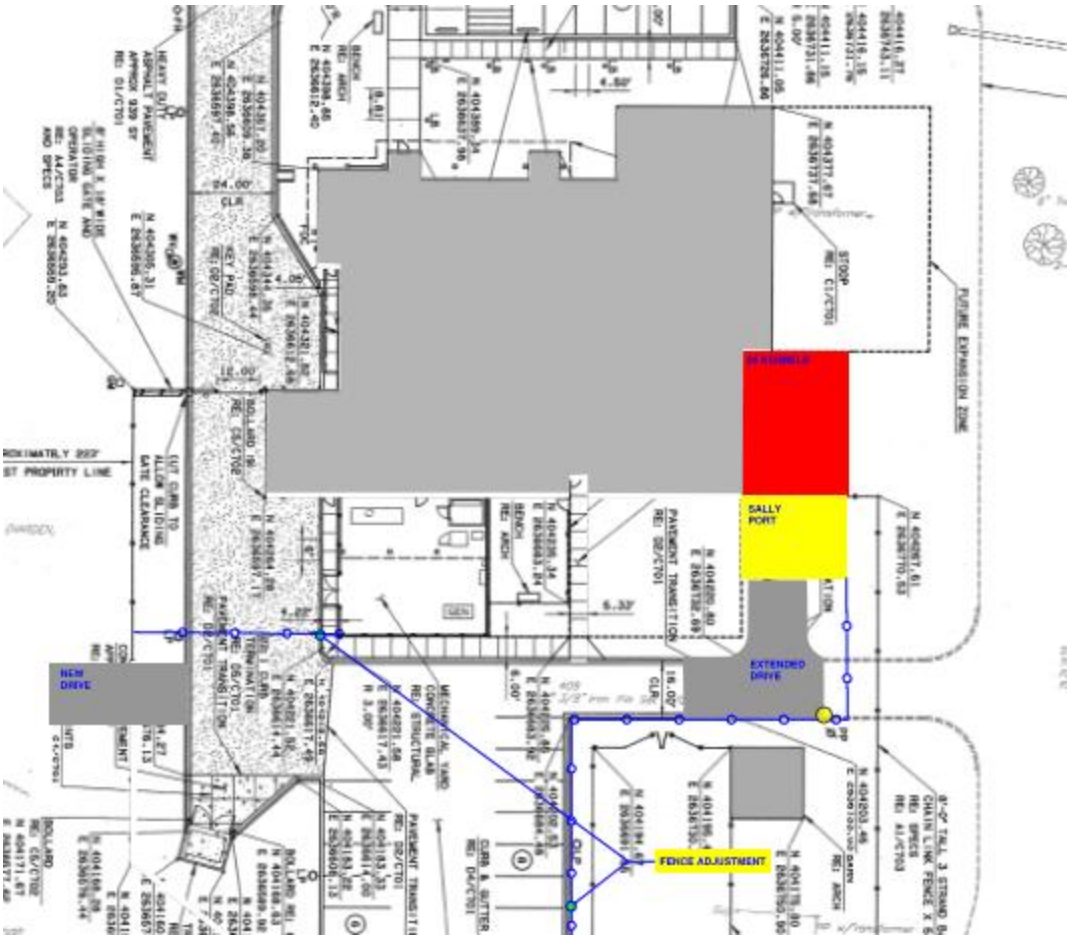
Overview

The animal shelter is a slab-on-grade, single story structure that was constructed approximately 10 years ago. The shelter provides approximately 13,000 GSF of space for small animal welfare. The shelter is a combination of structural steel framing and load-bearing concrete block. Generally, the shelter includes space for public lobby, reception, staff offices, shelter support space, dog kennels (88), cat habitats, sick/aggressive kennels and habitats, sally port, intake and processing and other minor shelter spaces.

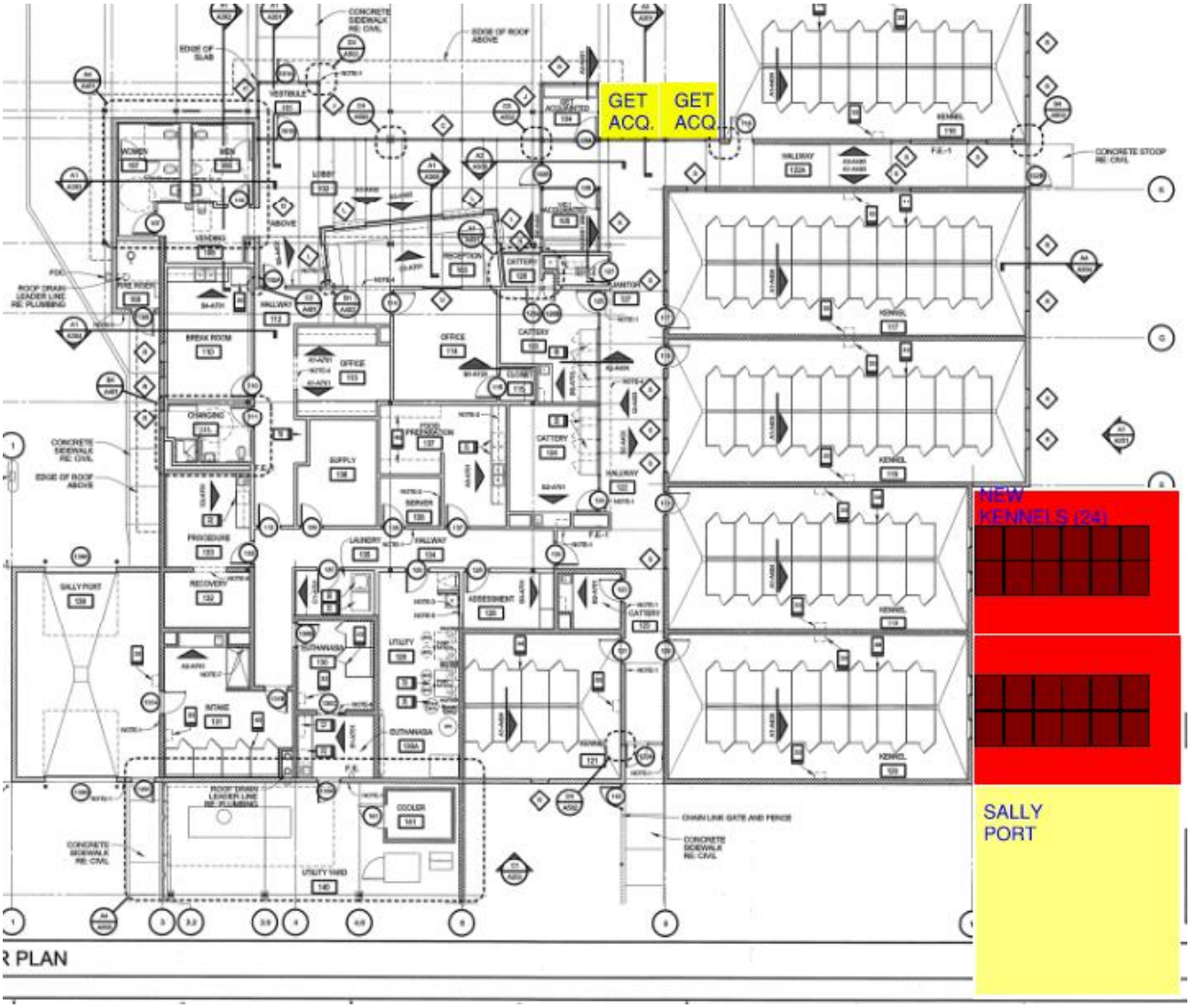
The site provides 18 public parking spaces and 14 staff parking spaces. Additionally, a free-standing barn at the rear of the site. Portions of the site are fenced to provide for both secondary containment (in the event an animal escapes as well as opportunity for outdoor exercise yards for kenneled dogs.

Design

As with communities, shelters have experienced an explosion of animal intakes. The condition places significant strain for sufficient and adequate kennel space. Given societal inclination for no-kill shelters, the demands for kennel space are ever expanding. The shelter operational focus becomes that of providing opportunities for adoption. Given these considerations, the shelter space needs include; 1) Additional Kennels (24), 2) Public Interation Space – Get-Acquainted Rooms, and, 3) Additional Sally Port Space. The additional Sally Port space will facilitate additional intake space as well as provisions for after-hours animal holding (without compromising the security of the existing shelter).



Animal Shelter Site Floor Plan w/Building Additions



Animal Shelter Floor Plan w/Building Additions

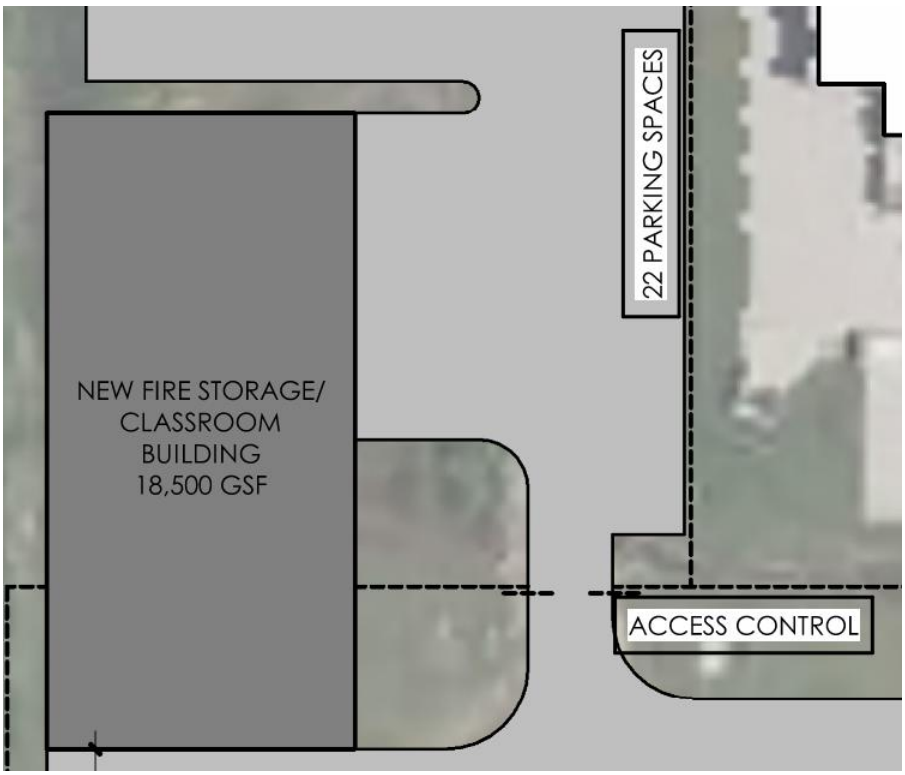
NEW FIRE STORAGE/CLASSROOM[16]

Overview

The existing shared storage building is insufficient for the Fire Department's storage needs. The existing shared storage building will be repurposed for the Police Department's EVOC Storage and Maintenance needs. Moving this function to the west side of the existing drainage way, facilitates most of the Fire Department's functional needs to the west side of the site.

Design

The proposed storage and classroom building are to provide approximately 18,500 SF of dedicated space including; 1) Apparatus storage (5 bays which can be converted to a CPAT (Candidate Physical Ability Test) course), 2) SCBA compressor & fill station, 3) Gear storage, 4) Workshop, 5) Offices (6), 6) Dirty classroom (50 occupants), 7) Clean classroom (50 occupants), 8) Lockers (35), 9) Restroom/showers and 10) Support space (storage, mech/elec., etc.). The Gear Storage space is to be hardened to meet ICC 500 Design Criteria (tornado resistant design) allowing it to be used by students and staff.



Storage/Classroom Bldg. Plan

NEW FIRE TRAINING[17]

[16] Refer to Appendix Page 76, Campus Master Plan
[17] Refer to Appendix Page 76, Campus Master Plan

Overview

The new fire training facilities are designed around the existing burn tower and are intended to present real world conditions for fire training in both an urban and residential setting. The design of these facilities offers the Fire Department and the Police Department the opportunity to create almost endless scenarios for real world environment training. The overall layout provides for a central street element with training buildings on each side. The overall design offers both lot and block conditions for training. The final element of the training design is the Driver Skills Pad (slow speed driver training).

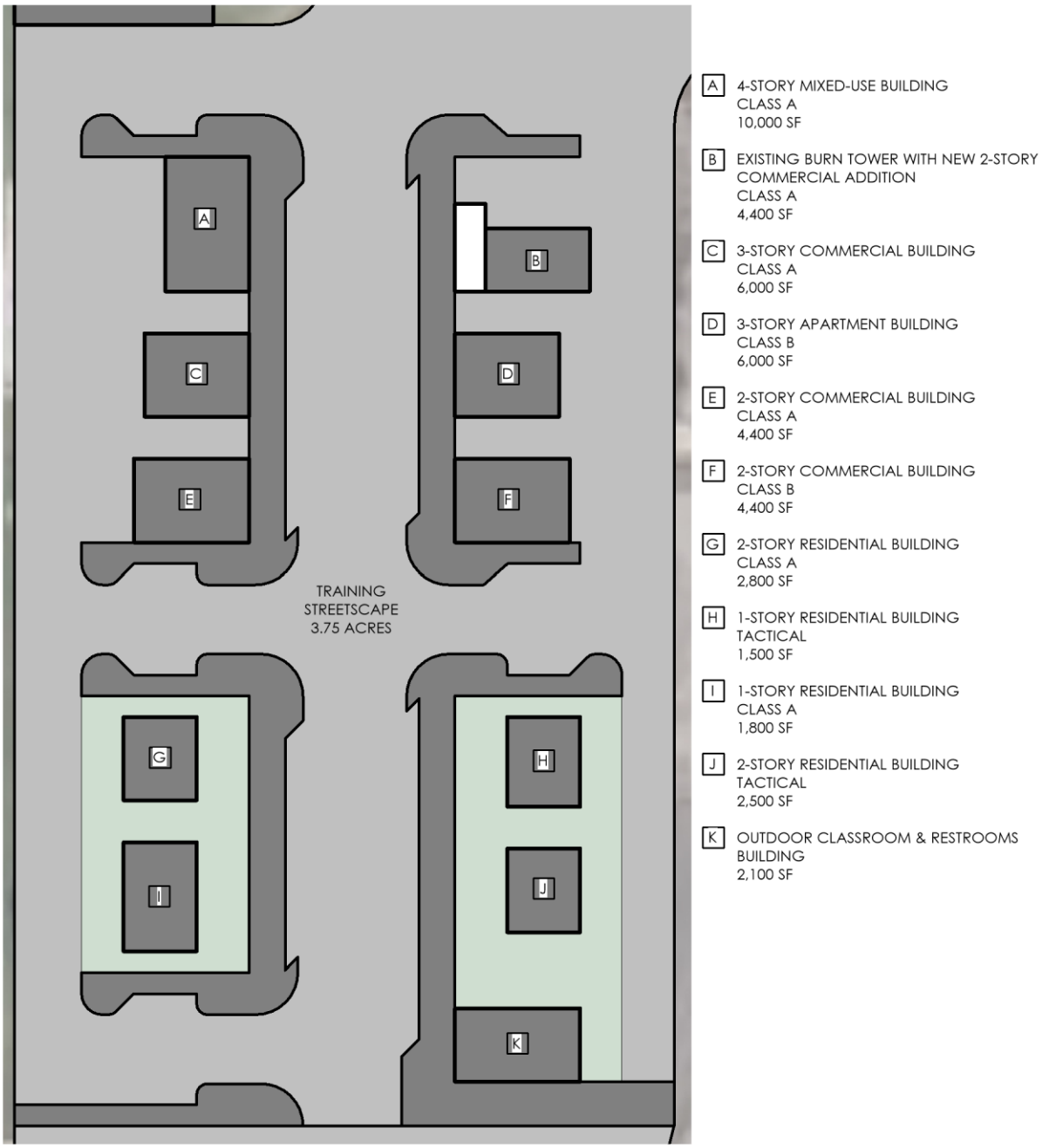
Design

The training village is approximately 300 feet wide by 500 feet long replicating 2 blocks of training components. The particular training buildings included: A) 4-Story Mixed Use Bldg. (10,000 SF, Class A), B) 2-Story Commercial Bldg. Addition to Existing Burn Tower (4,400 SF, Class A), C) 3-Story Commercial Bldg. (6,000 SF, Class A), D) 3-Story Apartment (6,000 SF Class B), E) 2-Story Commercial Bldg. (4,400 SF Class A), F) 2-Story Commercial Bldg. (4,400 SF Class B), G) 2-Story Residential (2,800 SF Class A), H) 1-Story Residential (1,500 SF Tactical), I) 1-Story Residential (1,800 Class A), J) 2-Story Residential (2,500 SF Tactical), and K) Outdoor Classroom and Restroom Building (2,100 SF). The design also includes a Slow Speed Skills Pad that provides approximately 2 A of paving for driver training. This skills pad provides driver training opportunity for such skills development such as backing, 3-point turning, diminishing clearance, alley dock, lane change and similar driver skill development.

It should be noted that the intention of the training village is to serve both the Fire Department and the Police Department. There are to be tactical buildings within this series of structures that provide training challenges and opportunities for both agencies. The design goal is to offer as much dual training opportunity as possible.

The final village design will replicate those facilities and conditions that are regularly encountered by each of the agencies (FD/PD) in Broken Arrow. For example, the design form for some of the facilities will replicate design and building configurations that would be representative of the Rose District. This type of design provides real world experiences and context that facilitates and better prepares each of the agencies for their respective conditions and experiences.

The details (floor by floor design) of the proposed new training buildings will be determined through extensive interviews and discussions with each of the agencies; Police and Fire. The cost estimates for the project will encompass anticipated general training design requirements as a placeholder for full details yet to be developed.



Fire/Police Training Facilities

CAMPUS AESTHETIC ENHANCEMENTS[18]

Overview

One of the Master Plan tasks was to make recommendations for raising the existing campus aesthetic and provide a source of civic pride. Given the proposed Master Plan stature, aesthetic enhancements for the existing as well as new facilities seems entirely appropriate and necessary as the proposed campus design will serve the City of Broken Arrow but other agencies near and far. The proposed Master Plan offers both Police and Fire the opportunity for training in world-class facilities.

Design

Aesthetic enhancements for the campus range from signage to building design and detail. Whatever, the enhancement, the proposed solutions are to be durable and low maintenance. One of the challenges with this task is how to design for both new buildings while also coordinating with and enhancing existing structures. The proposed existing building enhancements should not be considered as a band aide or superficial. Based on such parameters, the proposed changes for existing buildings will focus primarily on the existing Phase I and II facilities. These two facilities are the front door to the campus and provide much of the user interface with the campus.

Elements for enhanced campus aesthetic include; 1) Site Security/Access Control (ornamental fencing in the front and chain-link fencing at the sides and rear), 2) Building Security/Access Control (prominent statements to point of entry that speak to the building enhancements), 3) Façade upgrades (durable and low maintenance materials to present a more modern aesthetic), 4) Campus lighting upgrades (to elevate campus security and accentuate facility attributes/aesthetics, 5) Campus signage (to enhance wayfinding as well unify), and 6) Campus drainage sculpting (to address floodplain conditions while turning a negative element to a positive feature).

[18] Refer to Appendix Pages 77 - 79, Broken Arrow Public Safety Training, Campus Aesthetic Enhancements

MASTER PLAN STATEMENT OF PROBABLE COST[19]

Overview

The statement of probable cost provides costs for site development, facilities construction, facilities renovation and anticipated general conditions. Additionally, the statement of probable costs provides a cost estimate for a project that would begin construction in 2023 and projects forward anticipated costs through 2026.

The basis for the cost estimate is from a recently completed project in Sioux Falls, SD. This project was bid in late summer 2021 with construction beginning in late fall 2021. The costs from 2021 have been escalated to 2023 to make the estimate current. Additionally, there is a location factor difference between Sioux Falls and Broken Arrow; a five-point reduction.

So, the 2023 costs for Sioux Falls have been adjusted based on the location factor for Broken Arrow. This adjustment and the associated costs are present on each of the project component cost estimates. The project costs are summarized on the cover sheet of the cost estimate. In addition to the project construction and renovation costs, there are cost line items for associated project costs including: 1) Furniture, Fixtures & Equipment, 2) Geotechnical/Environmental, 3) Project Expenses, and 4) Engineering/Design Costs.

One of the variables between Sioux Falls and Broken Arrow is the subsurface conditions at the Broken Arrow site. As was noted in the study narrative, much of the site was previously used for land fill which makes the subsurface conditions generally unstable and susceptible to instability. In order to address this condition, it is anticipated that new structures will require the use of drilled piers for support. A line item in each of the building cost estimates will be piered foundations or drilled piers.

The cost estimate provides some breakout costs for buildings versus site development costs. The site development costs includes the anticipated costs for floodplain design to mitigate the site conditions which impact and restrict the developable area of the site.

Lastly, it should be kept in mind, that the cost estimate is at the Master Plan level of estimating. That is to say, that while the estimate provides some level of detail, much more detailed design is needed to assure some level of accuracy for the probable cost of the development.

A copy of the summary page of the Statement of Probable costs, can be found on the following page. The more detailed cost breakout can be found in the appendix.

[19] Refer to Appendix Pages 81 – 92, Cost Estimate

WSKF
110 Armour Rd.
N. Kansas City, MO

City of Broken Arrow - Public Safety Training Center

Estimate of Probable Cost

November 2023
Rev October 2024

General Conditions

Total Development	2023	2024	2025	2026
	$ 2,002,747	$ 2,102,885	$ 2,208,029	$ 2,318,430

Site Development

Site				
30 Acres	$ 9,340,000	$ 9,807,000	$ 10,297,350	$ 10,812,218

Classroom-Admin.

Building				
7200 New | 5700 Renov.	$ 3,883,911	$ 4,078,106	$ 4,282,011	$ 4,496,112

Fire App/Storage

Building				
18,500	$ 4,385,814	$ 4,605,105	$ 4,835,360	$ 5,077,128

Range

Building				
36,380 - 15-Lane 50 Yd./5-Lane 100 Yd.	$ 12,024,922	$ 12,626,168	$ 13,257,476	$ 13,920,350

Animal Shelter

Building•Site				
	$ 3,788,125	$ 3,977,531	$ 4,176,407	$ 4,385,228

Training

Buildings				
A. 4-Story Mixed Use, B. 2-Story Commercial Addition, C. 3-Story Commercial, D. 3-Story Apartment, E. 2-Story Commercial, F. 2-Story Commercial, G. 2-Story Residential, H. 1-Story Residential Tactical, I. 1-Story Residential, J. 2-Story Residential Tactical, K. Outdoor Classroom/Restroom	$ 8,634,691	$ 9,066,425	$ 9,519,746	$ 9,995,734

Phase III Bldg.

Building				
3,500	$ 387,894	$ 407,288	$ 427,653	$ 449,035

Total Development

Buildings	2023	2024	2025	2026
	$ 35,108,102	$ 36,863,508	$ 38,706,683	$ 40,642,017
Site				
	$ 9,340,000	$ 9,807,000	$ 10,297,350	$ 10,812,218
Subtotal	**$ 44,448,102**	**$ 46,670,508**	**$ 49,004,033**	**$ 51,454,235**
Fixtures/Furniture/Equipment	$ 578,000	$ 606,900	$ 637,245	$ 669,107
Geotechnical/Environmental	$ 20,000	$ 21,000	$ 22,050	$ 23,153
Expenses	$ 50,000	$ 52,500	$ 55,125	$ 57,881
Engineering/Design	$ 5,300,000	$ 5,600,400	$ 5,880,420	$ 6,175,000
Subtotal	$ 5,948,000	$ 6,280,800	$ 6,594,840	$ 6,925,141
Total Development [1]	**$ 50,396,102**	**$ 52,951,308**	**$ 55,598,873**	**$ 58,379,376**

[1] 2023 Cost are based on recently completed project with location adjustment factor; year-over-year escalation is 5% (based on CPI index for Broken Arrow, OK). Refer to attached spreadsheets for additional detail. Construction duration is assumed to be 24 months. Site area involvement is assumed to be 30 acres.

APPENDIX: TABLE OF REFERENCES

Public Safety Training Campus, Facilities Assessment; Overview, Long Form

BROKEN ARROW PUBLIC SAFETY TRAINING CAMPUS
Broken Arrow, OK

WSKF ARCHITECTS
November 2023

EXISTING FACILITY ASSESSMENT SURVEY OVERVIEW

Facility	Condition				Notes/Comments
	Exceptional	Good	Fair	Poor	
Phase I			X		Mechanical System Replacement, Roof Replacement, Security Upgrade
Phase II			X		Exhaust System Replacement, OH Door Replacement, Locker Room Renovations, Kitchen Modernization, Classroom Modernization
Phase III		X			
PF/FD Storage		X			
Range				X	Frequent Flooding, Armory Flooding, Tower Structural Repair/Replacement, Bullet Escape Risk
Shoot House		X			
Burn Tower		X			

Exceptional-New/Well Maintained; Good-Some Repair; Fair-Repair/Replace; Poor-Replace

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Phase I (Admin./Classroom)**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This building was one of the first facilities developed on the Public Safety Training Campus. The facility was constructed ~2005. This facility provides administrative and classroom space for the Police and Fire Departments. This facility provides ~9,600 gross sqaure feet of space with approximately half of the space dedicated to offices and the other half dedicated to classroom and related space.

STRUCTURE							
Date of Construction	2005						
Date(s) of Renovation/Expansion	-						
Building Age	18						
Construction Type	II-B						
Building Construction	CMU Masonry, Steel Bar Joists, Cold-Formed Trusses, Structural Steel						
Building Area *(SF)*:	~9,600						
Number of Stories:	One						
Site Area *(SF & Acres)*:	SF:	~60,000		Acres:	~1.4		
Maximum Station Staffing Capability	11 Offices, 120 Classroom						
Seismic Protection *(if required)*	NA						
Category IV Conformance *(if required)*	NA						
ICC 500 Conformance *(if applicable)*	NA						
Hardened Space / Storm Shelter		Yes	X	No			
Generator		Yes	X	No			
Auxiliary Power		Full Facility	X	None			Fuel Source
General Condition	Fair (see page 3)						
Generator Enclosure *(storm rated?)*		Yes	X	No			
Special Considerations	None						

HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection	X	Sprinklers	X	Smoke Detection		
Entry Flooring/Trip Hazards	N					
Mechanical System Type/Age	RTU w/Hot Water Re-Heat					
Natural Light in Spaces	Y					
Security	X	Access Cntrl		Fencing	X	Video Surveillance

Other Security Measures	None						
Fire Extinguishers	Y						
BUILDING ASSESSMENT							
Building Envelope / Exterior Finishes	Brick Masonry, Ground-Face CMU						
Window Material	Alum.						
Roof Construction	Standing Seam + Flat; Numerous Roof Leaks						
Exterior Doors	Alum., Hollow Metal						
Lavatory Style *(for personnel)*		Wall Hung	X	Vanity			
Private vs. Public Space Separation	X	Yes		No			
Office Space	Yes						
Training/Meeting Rooms	Tiered Classroom-2 @ 750 SF/Expandable Classroom-1@1,750 SF						
Adequate Waiting Area		Yes	X	No		N/A	
Adequate Office Storage		Yes	X	No		N/A	
Site Risks/Other Observations	No security fencing, history of flooding						
MEP ASSESSMENT							
Plumbing Assessment	Average						
HVAC Assessment	Frequent disruption; replacement needed						
Electrical Assessment	500 A Service						
Special Systems Assessment	Fire Alarm, Security Cameras, Access Control						
SITE ASSESSMENT							
Topography	Elevated Building Pad						
Landscaping Quality	Average						
Site Lighting	Parking Lot Lighting						
Storm Water Drainage	Average						
Downspouts Below Grade		Yes	X	No		N/A	
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter						
Parking Counts	30	Staff	54	Visitor	3	ADA	
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way						
Front Door Visible	X	Yes		No			
Private vs. Public Space Separation	X	Yes		No			
Street Access Vertical Elevation	Slight grade change between street and front door						
Hydrant Locations	Located at street						
Site Risks/Other Observations	Floodplain						

INTERIOR ACCESSIBILITY / ADA				
Int/Ext. Doors *(access clearance / threshold)*	X	Yes		No
Doors *(handles/opening pressure)*	X	Yes		No

Water Fountain *(height/accessibility)*	X	Yes		No
Signage *(height / braille)*	X	Yes		No
Floor Transitions *(interior/exterior)*	X	Yes		No
Floor Slopes *(interior ramps, etc.)*		Yes	X	No
PUBLIC ACCESSIBLE AREAS				
Sinks *(height, pipe wrap)*	X	Yes		No
Dispensers/Accessory *(mounting height)*	X	Yes		No
Countertops *(heights)*		Yes	X	No
Grab Bars	X	Yes		No
Protruding Objects-Accessible Route(s)	X	Yes		No
Public Access Rooms *(toilets/training/etc.)*	X	Yes		No
EXTERIOR ACCESSIBILITY / ADA				
ADA Parking Striping/Signage	X	Yes		No
Access between ADA Parking & Building	X	Yes		No
Slopes of Accessible Access Pathways	X	Yes		No

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Phase II (Training)**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This building was developed in tandum to the Phase I building. The facility was constructed ~2005 as well. This facility provides office, training and fitness space for the Police and Fire Departments. However, the facility is primarily used by the FD. This facility provides ~11,600 gross sqaure feet of space with approximately one half of the space dedicated to training and the balance equally used for office, fitness and support space.

STRUCTURE						
Date of Construction	2005					
Date(s) of Renovation/Expansion	-					
Building Age	18					
Construction Type	II-B					
Building Construction	PEMB w/CMU & Brick Veneer					
Building Area *(SF)*:	~11,600					
Number of Stories:	One					
Site Area *(SF & Acres)*:	SF:	~60,000		Acres:	~1.4	
Maximum Station Staffing Capability	4 Offices, 30 Classroom, 300 Assembly, 15 Fitness					
Seismic Protection *(if required)*	NA					
Category IV Conformance *(if required)*	NA					
ICC 500 Conformance *(if applicable)*	NA					
Hardened Space / Storm Shelter		Yes	X	No		
Generator		Yes	X	No		
Auxiliary Power		Full Facility	X	None		Fuel Source
General Condition	Fair (see page 3)					
Generator Enclosure *(storm rated?)*		Yes	X	No		
Special Considerations	None					
HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection	X	Sprinklers	X	Smoke Detection		
Entry Flooring/Trip Hazards	N					
Mechanical System Type/Age	AHU w/Split Systems					
Natural Light in Spaces	N					
Security	X	Access Cntrl		Fencing		Video Surveillance

Other Security Measures	None						
Fire Extinguishers	Y						
BUILDING ASSESSMENT							
Building Envelope / Exterior Finishes	Brick Masonry, Ground-Face CMU						
Window Material	Alum.						
Roof Construction	Steep-Pitched Standing Seam; Some Roof Leaks						
Exterior Doors	Hollow Metal						
Lavatory Style *(for personnel)*		Wall Hung	X	Vanity			
Private vs. Public Space Separation		Yes	X	No			
Office Space	Yes						
Training/Meeting Rooms	Classroom 750 SF						
Adequate Waiting Area	X	Yes		No		N/A	
Adequate Office Storage		Yes	X	No		N/A	
Site Risks/Other Observations	No security fencing, history of flooding						
MEP ASSESSMENT							
Plumbing Assessment	Average						
HVAC Assessment	Average						
Electrical Assessment	800 A Service						
Special Systems Assessment	Fire Alarm, Access Control						
SITE ASSESSMENT							
Topography	Elevated Building Pad						
Landscaping Quality	Average						
Site Lighting	Building Wall Pack						
Storm Water Drainage	Average						
Downspouts Below Grade		Yes	X	No		N/A	
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter						
Parking Counts	60	Staff		Visitor	3	ADA	
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way						
Front Door Visible	X	Yes		No			
Private vs. Public Space Separation		Yes	X	No			
Street Access Vertical Elevation	Slight grade change between street and front door						
Hydrant Locations	Located at parking						
Site Risks/Other Observations	Floodplain						

INTERIOR ACCESSIBILITY / ADA				
Int/Ext. Doors *(access clearance / threshold)*	X	Yes		No
Doors *(handles/opening pressure)*	X	Yes		No

Water Fountain *(height/accessibility)*		Yes		No
Signage *(height / braille)*		Yes		No
Floor Transitions *(interior/exterior)*	X	Yes		No
Floor Slopes *(interior ramps, etc.)*		Yes	X	No
PUBLIC ACCESSIBLE AREAS				
Sinks *(height, pipe wrap)*	X	Yes		No
Dispensers/Accessory *(mounting height)*	X	Yes		No
Countertops *(heights)*		Yes	X	No
Grab Bars	X	Yes		No
Protruding Objects-Accessible Route(s)	X	Yes		No
Public Access Rooms *(toilets/training/etc.)*	X	Yes		No
EXTERIOR ACCESSIBILITY / ADA				
ADA Parking Striping/Signage		Yes	X	No
Access between ADA Parking & Building	X	Yes		No
Slopes of Accessible Access Pathways	X	Yes		No

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Phase III (Training)**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This building was developed for use by the PD for training. The facility was constructed ~2018. This facility provides classroom, mat room/simulations room training and gun cleaning space for the Police Departments. This facility provides ~3,330 gross sqaure feet of space.

STRUCTURE						
Date of Construction	2018					
Date(s) of Renovation/Expansion	-					
Building Age	5					
Construction Type	II-B					
Building Construction	PEMB w/Brick Veneer & Metal Panel					
Building Area *(SF)*:	~3,330					
Number of Stories:	One					
Site Area *(SF & Acres)*:	SF:	12,000	Acres:	0.3		
Maximum Station Staffing Capability	xx Classroom, xx Fitness					
Seismic Protection *(if required)*	NA					
Category IV Conformance *(if required)*	NA					
ICC 500 Conformance *(if applicable)*	NA					
Hardened Space / Storm Shelter		Yes	X	No		
Generator		Yes	X	No		
Auxiliary Power		Full Facility	X	None		Fuel Source
General Condition	Good (see page 3)					
Generator Enclosure *(storm rated?)*		Yes	X	No		
Special Considerations	None					

HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection		Sprinklers	X	Smoke Detection		
Entry Flooring/Trip Hazards	N					
Mechanical System Type/Age	Split Systems					
Natural Light in Spaces	N					
Security	X	Access Cntrl		Fencing	X	Video Surveillance

Other Security Measures	None						
Fire Extinguishers	Y						
BUILDING ASSESSMENT							
Building Envelope / Exterior Finishes	Brick Masonry, Pre-Finished Metal Panel						
Window Material	-						
Roof Construction	Steep-Pitched Standing Seam						
Exterior Doors	Hollow Metal						
Lavatory Style *(for personnel)*	X	Wall Hung		Vanity			
Private vs. Public Space Separation		Yes	X	No			
Office Space	No						
Training/Meeting Rooms	Classroom						
Adequate Waiting Area	X	Yes		No		N/A	
Adequate Office Storage		Yes	X	No		N/A	
Site Risks/Other Observations	No security fencing, history of flooding						
MEP ASSESSMENT							
Plumbing Assessment	Average						
HVAC Assessment	Average						
Electrical Assessment	xxx A Service						
Special Systems Assessment	Fire Alarm, Access Control						
SITE ASSESSMENT							
Topography	Elevated Building Pad						
Landscaping Quality	Average						
Site Lighting	Building Wall Pack						
Storm Water Drainage	Average						
Downspouts Below Grade		Yes	X	No		N/A	
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter						
Parking Counts		Staff		Visitor		ADA	
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way						
Front Door Visible	X	Yes		No			
Private vs. Public Space Separation		Yes	X	No			
Street Access Vertical Elevation	Slight grade change between street and front door						
Hydrant Locations	Located at parking						
Site Risks/Other Observations	Floodplain						

INTERIOR ACCESSIBILITY / ADA				
Int/Ext. Doors *(access clearance / threshold)*	X	Yes		No
Doors *(handles/opening pressure)*	X	Yes		No

Water Fountain *(height/accessibility)*		Yes	X	No
Signage *(height / braille)*		Yes	X	No
Floor Transitions *(interior/exterior)*	X	Yes		No
Floor Slopes *(interior ramps, etc.)*		Yes	X	No
PUBLIC ACCESSIBLE AREAS				
Sinks *(height, pipe wrap)*	X	Yes		No
Dispensers/Accessory *(mounting height)*	X	Yes		No
Countertops *(heights)*		Yes	X	No
Grab Bars	X	Yes		No
Protruding Objects-Accessible Route(s)	X	Yes		No
Public Access Rooms *(toilets/training/etc.)*		Yes	X	No
EXTERIOR ACCESSIBILITY / ADA				
ADA Parking Striping/Signage		Yes	X	No
Access between ADA Parking & Building	X	Yes		No
Slopes of Accessible Access Pathways	X	Yes		No

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**PD/FD Storage**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This building was developed for storage use by the PD and the FD. The facility was constructed ~2010. This facility provides interior storage for each departments needs. This facility provides ~3,200 gross sqaure feet of space.

STRUCTURE						
Date of Construction	2010					
Date(s) of Renovation/Expansion	-					
Building Age	13					
Construction Type	II-B					
Building Construction	Quonset w/Galvanized Metal Panel					
Building Area *(SF)*:	~x,xxx					
Number of Stories:	One					
Site Area *(SF & Acres)*:	SF:	10,000	Acres:	0.3		
Maximum Station Staffing Capability	xx Storage					
Seismic Protection *(if required)*	NA					
Category IV Conformance *(if required)*	NA					
ICC 500 Conformance *(if applicable)*	NA					
Hardened Space / Storm Shelter		Yes	X	No		
Generator		Yes	X	No		
Auxiliary Power		Full Facility	X	None		Fuel Source
General Condition	Good (see page 3)					
Generator Enclosure *(storm rated?)*		Yes	X	No		
Special Considerations	None					

HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection		Sprinklers		Smoke Detection		
Entry Flooring/Trip Hazards	N					
Mechanical System Type/Age	-					
Natural Light in Spaces	-					
Security		Access Cntrl		Fencing		Video Surveillance

Other Security Measures	None					
Fire Extinguishers	Y					
BUILDING ASSESSMENT						
Building Envelope / Exterior Finishes	Pre-Finished Metal Panel					
Window Material	-					
Roof Construction	-					
Exterior Doors	Hollow Metal					
Lavatory Style *(for personnel)*		Wall Hung		Vanity		
Private vs. Public Space Separation		Yes		No		
Office Space	No					
Training/Meeting Rooms	Storage					
Adequate Waiting Area		Yes		No		N/A
Adequate Office Storage		Yes		No		N/A
Site Risks/Other Observations	No security fencing, history of flooding					
MEP ASSESSMENT						
Plumbing Assessment	-					
HVAC Assessment	-					
Electrical Assessment	xxx A Service					
Special Systems Assessment	-					
SITE ASSESSMENT						
Topography	Elevated Building Pad					
Landscaping Quality	-					
Site Lighting	Building Wall Pack					
Storm Water Drainage	-					
Downspouts Below Grade		Yes	X	No		N/A
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter					
Parking Counts		Staff		Visitor		ADA
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way					
Front Door Visible	X	Yes		No		
Private vs. Public Space Separation		Yes	X	No		
Street Access Vertical Elevation	Slight grade change between street and front door					
Hydrant Locations	Located at parking					
Site Risks/Other Observations	Floodplain					

INTERIOR ACCESSIBILITY / ADA						
Int/Ext. Doors *(access clearance / threshold)*	X	Yes		No		N/A
Doors *(handles/opening pressure)*	X	Yes		No		N/A

Water Fountain *(height/accessibility)*		Yes		No	X	N/A
Signage *(height / braille)*		Yes		No	X	N/A
Floor Transitions *(interior/exterior)*		Yes		No	X	N/A
Floor Slopes *(interior ramps, etc.)*		Yes		No	X	N/A
PUBLIC ACCESSIBLE AREAS						
Sinks *(height, pipe wrap)*		Yes		No	X	N/A
Dispensers/Accessory *(mounting height)*		Yes		No	X	N/A
Countertops *(heights)*		Yes		No	X	N/A
Grab Bars		Yes		No	X	N/A
Protruding Objects-Accessible Route(s)		Yes		No	X	N/A
Public Access Rooms *(toilets/training/etc.)*		Yes		No	X	N/A
EXTERIOR ACCESSIBILITY / ADA						
ADA Parking Striping/Signage		Yes		No	X	N/A
Access between ADA Parking & Building		Yes		No	X	N/A
Slopes of Accessible Access Pathways		Yes		No	X	N/A

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Shoot House**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This building was developed for fire arms scenario training for the PD. The facility was constructed ~2009. This facility provides interior fire arms training and scenario-based training. This facility provides ~4,360 gross sqaure feet of space.

STRUCTURE							
Date of Construction	2009						
Date(s) of Renovation/Expansion	-						
Building Age	14						
Construction Type	II-B						
Building Construction	Quonset w/Galvanized Metal Panel						
Building Area *(SF)*:	~4,360						
Number of Stories:	One						
Site Area *(SF & Acres)*:	SF:	~x,xxx		Acres:	~0.x		
Maximum Station Staffing Capability	xx						
Seismic Protection *(if required)*	NA						
Category IV Conformance *(if required)*	NA						
ICC 500 Conformance *(if applicable)*	NA						
Hardened Space / Storm Shelter		Yes	X	No			
Generator		Yes	X	No			
Auxiliary Power		Full Facility	X	None		Fuel Source	
General Condition	Good (see page 3)						
Generator Enclosure *(storm rated?)*		Yes	X	No			
Special Considerations	None						
HEALTH / WELLNESS & SAFETY / SECURITY							
Sprinklers / Smoke Detection		Sprinklers		Smoke Detection			
Entry Flooring/Trip Hazards	-						
Mechanical System Type/Age	-						
Natural Light in Spaces	-						
Security	X	Access Cntrl		Fencing		Video Surveillance	

Other Security Measures	None					
Fire Extinguishers	Y					
BUILDING ASSESSMENT						
Building Envelope / Exterior Finishes	Pre-Finished Metal Panel					
Window Material	-					
Roof Construction	-					
Exterior Doors	Hollow Metal					
Lavatory Style *(for personnel)*		Wall Hung		Vanity	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Office Space	No					
Training/Meeting Rooms	No					
Adequate Waiting Area		Yes		No	X	N/A
Adequate Office Storage		Yes		No	X	N/A
Site Risks/Other Observations	No security fencing, history of flooding					
MEP ASSESSMENT						
Plumbing Assessment	-					
HVAC Assessment	-					
Electrical Assessment	xxx A Service					
Special Systems Assessment	-					
SITE ASSESSMENT						
Topography	Elevated Building Pad					
Landscaping Quality	-					
Site Lighting	Building Wall Pack					
Storm Water Drainage	-					
Downspouts Below Grade		Yes		No	X	N/A
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter					
Parking Counts		Staff		Visitor		ADA
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way					
Front Door Visible		Yes		No	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Street Access Vertical Elevation	Slight grade change between street and front door					
Hydrant Locations	Located at parking					
Site Risks/Other Observations	Floodplain					

INTERIOR ACCESSIBILITY / ADA						
Int/Ext. Doors *(access clearance / threshold)*		Yes		No	X	N/A
Doors *(handles/opening pressure)*		Yes		No	X	N/A

Water Fountain *(height/accessibility)*		Yes		No	X	N/A
Signage *(height / braille)*		Yes		No	X	N/A
Floor Transitions *(interior/exterior)*		Yes		No	X	N/A
Floor Slopes *(interior ramps, etc.)*		Yes		No	X	N/A
PUBLIC ACCESSIBLE AREAS						
Sinks *(height, pipe wrap)*		Yes		No	X	N/A
Dispensers/Accessory *(mounting height)*		Yes		No	X	N/A
Countertops *(heights)*		Yes		No	X	N/A
Grab Bars		Yes		No	X	N/A
Protruding Objects-Accessible Route(s)		Yes		No	X	N/A
Public Access Rooms *(toilets/training/etc.)*		Yes		No	X	N/A
EXTERIOR ACCESSIBILITY / ADA						
ADA Parking Striping/Signage		Yes		No	X	N/A
Access between ADA Parking & Building		Yes		No	X	N/A
Slopes of Accessible Access Pathways		Yes		No	X	N/A

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Firing Range**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

This Range and series of buildings were developed for fire arms scenario training for the PD. The facility was constructed ~2009. This facility provides outdoor fire arms training and scenario-based training. The facility provides 18, 50-yard and 4, 100-yard positions. The two ranges are separated by a 8' high CMU wall. The 50-yard range provides; 1) Armory, 2) Shelters (4) and 3) Range Tower. The 100-yard range provides a shelter.

STRUCTURE							
Date of Construction	2009						
Date(s) of Renovation/Expansion	-						
Building Age	14						
Construction Type	NA						
Building Construction	Armory-CMU, Shelter-Prefinished Metal, Tower-CMU						
Building Area *(SF)*:	NA						
Number of Stories:	One						
Site Area *(SF & Acres)*:	SF:	~82,200		Acres:	~2.0		
Maximum Station Staffing Capability	NA						
Seismic Protection *(if required)*	NA						
Category IV Conformance *(if required)*	NA						
ICC 500 Conformance *(if applicable)*	NA						
Hardened Space / Storm Shelter		Yes	X	No			
Generator		Yes	X	No			
Auxiliary Power		Full Facility	X	None			Fuel Source
General Condition	Poor (see page 3)						
Generator Enclosure *(storm rated?)*		Yes	X	No			
Special Considerations	None						

HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection		Sprinklers		Smoke Detection		
Entry Flooring/Trip Hazards	-					
Mechanical System Type/Age	-					
Natural Light in Spaces	-					
Security	X	Access Cntrl		Fencing		Video Surveillance

Other Security Measures	None					
Fire Extinguishers	Y					
BUILDING ASSESSMENT						
Building Envelope / Exterior Finishes	CMU/Pre-Finished Metal Panel					
Window Material	Alum.					
Roof Construction	Pre-Finished Metal Panel					
Exterior Doors	Hollow Metal					
Lavatory Style *(for personnel)*		Wall Hung		Vanity	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Office Space	No					
Training/Meeting Rooms	No					
Adequate Waiting Area		Yes		No	X	N/A
Adequate Office Storage		Yes		No	X	N/A
Site Risks/Other Observations	No security fencing, history of flooding					
MEP ASSESSMENT						
Plumbing Assessment	NA					
HVAC Assessment	Tower-Window AC					
Electrical Assessment	Electrical Service via Portable Generator					
Special Systems Assessment	-					
SITE ASSESSMENT						
Topography	Flat					
Landscaping Quality	Grass-Normal Condition					
Site Lighting	NA					
Storm Water Drainage	Perimeter Trench Drain (poor condition)					
Downspouts Below Grade		Yes		No	X	N/A
Paving & Concrete	Asphalt paving, Concrete Curb/Gutter					
Parking Counts	8	Staff	X	Visitor	X	ADA
Sidewalk *(ROW connect, condition, accessibility)*	No sidewalk from building to public way					
Front Door Visible		Yes		No	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Street Access Vertical Elevation	NA					
Hydrant Locations	Located at parking					
Site Risks/Other Observations	Floodplain					

INTERIOR ACCESSIBILITY / ADA						
Int/Ext. Doors *(access clearance / threshold)*		Yes		No	X	N/A
Doors *(handles/opening pressure)*		Yes		No	X	N/A

Water Fountain *(height/accessibility)*		Yes		No	X	N/A
Signage *(height / braille)*		Yes		No	X	N/A
Floor Transitions *(interior/exterior)*		Yes		No	X	N/A
Floor Slopes *(interior ramps, etc.)*		Yes		No	X	N/A
PUBLIC ACCESSIBLE AREAS						
Sinks *(height, pipe wrap)*		Yes		No	X	N/A
Dispensers/Accessory *(mounting height)*		Yes		No	X	N/A
Countertops *(heights)*		Yes		No	X	N/A
Grab Bars		Yes		No	X	N/A
Protruding Objects-Accessible Route(s)		Yes		No	X	N/A
Public Access Rooms *(toilets/training/etc.)*		Yes		No	X	N/A
EXTERIOR ACCESSIBILITY / ADA						
ADA Parking Striping/Signage		Yes		No	X	N/A
Access between ADA Parking & Building		Yes		No	X	N/A
Slopes of Accessible Access Pathways		Yes		No	X	N/A

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

EXISTING FACILITY ASSESSMENT SURVEY

FACILITY NAME/NO.:	**Burn Tower**
ADDRESS/LOCATON:	4205 E. Omaha St., Broken Arrow, OK 74014

The Training Tower is a Class A burn building with 5 levels with approximately 780 SF per floor resulting in a total of 3,900 SF plus roof deck. The facility was constructed ~2010. This facility provides both indoor and outdoor scenario training. The building is constructed with load-bearing CMU and cast-in-place concrete floors and roof deck. The buiding was recently inspected by a structural engineer and found to be in good structural condition.

STRUCTURE								
Date of Construction	2010							
Date(s) of Renovation/Expansion	-							
Building Age	23							
Construction Type	1A							
Building Construction	Load-Bearing CMU w/CIP Concrete Floors/Roof							
Building Area *(SF)*:	780 SF/Floor; 5 levels plus roof							
Number of Stories:	5							
Site Area *(SF & Acres)*:	SF:	~10,000		Acres:	~0.25			
Maximum Station Staffing Capability	NA							
Seismic Protection *(if required)*	NA							
Category IV Conformance *(if required)*	NA							
ICC 500 Conformance *(if applicable)*	NA							
Hardened Space / Storm Shelter		Yes	X	No				
Generator		Yes	X	No				
Auxiliary Power		Full Facility	X	None		Fuel Source		
General Condition	Good (see page 3)							
Generator Enclosure *(storm rated?)*		Yes	X	No				
Special Considerations	None							

HEALTH / WELLNESS & SAFETY / SECURITY						
Sprinklers / Smoke Detection		Sprinklers		Smoke Detection		
Entry Flooring/Trip Hazards	-					
Mechanical System Type/Age	-					
Natural Light in Spaces	-					
Security		Access Cntrl		Fencing		Video Surveillance

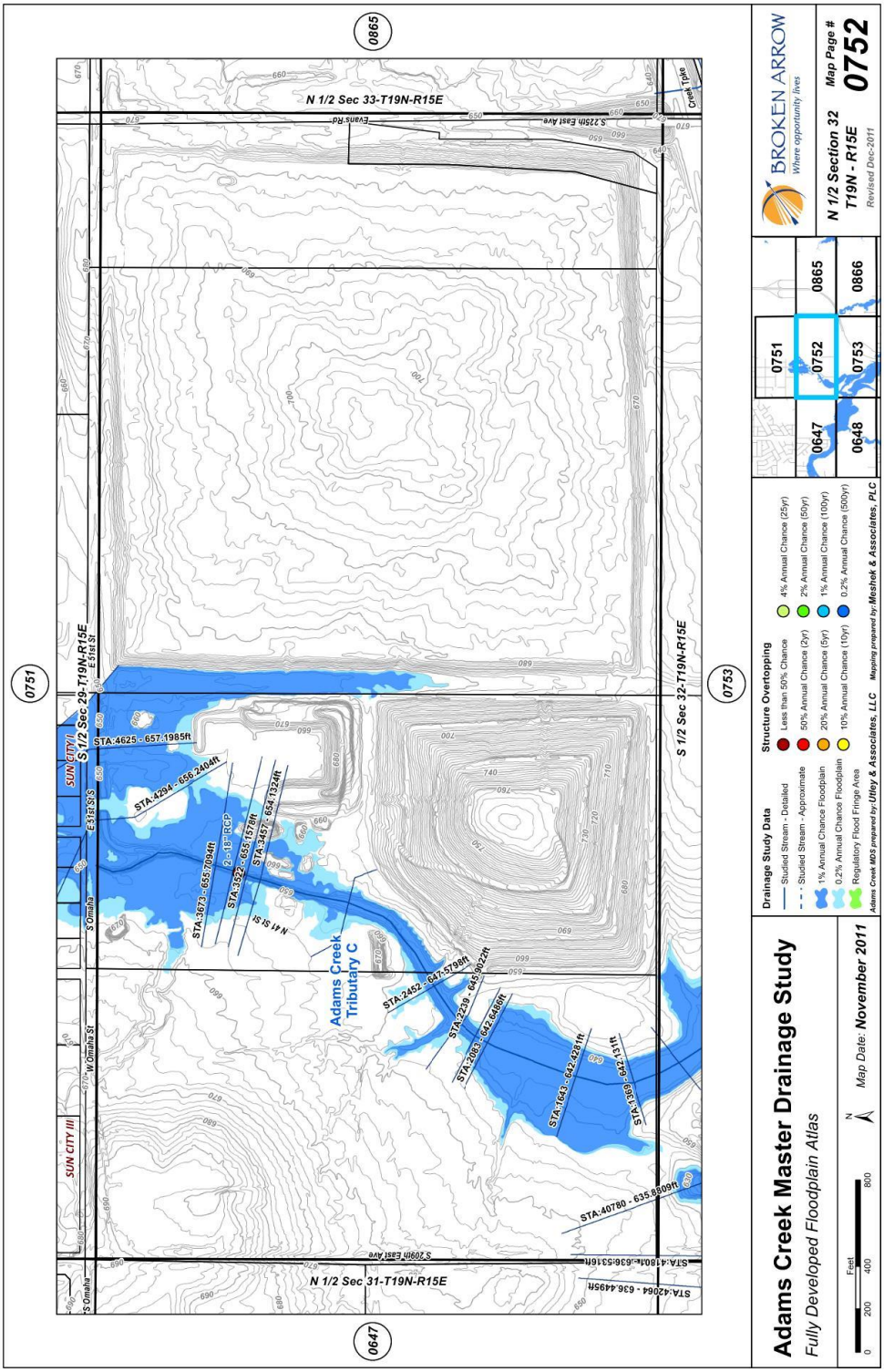
Other Security Measures	None					
Fire Extinguishers	-					
BUILDING ASSESSMENT						
Building Envelope / Exterior Finishes	Brick Veneer w/CMU Backup					
Window Material	Steel Shutters					
Roof Construction	CIP Concrete					
Exterior Doors	Hollow Metal					
Lavatory Style *(for personnel)*		Wall Hung		Vanity	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Office Space	No					
Training/Meeting Rooms	No					
Adequate Waiting Area		Yes		No	X	N/A
Adequate Office Storage		Yes		No	X	N/A
Site Risks/Other Observations	No security fencing					
MEP ASSESSMENT						
Plumbing Assessment	NA					
HVAC Assessment	NA					
Electrical Assessment	NA					
Special Systems Assessment	-					
SITE ASSESSMENT						
Topography	Flat					
Landscaping Quality	NA					
Site Lighting	NA					
Storm Water Drainage	None, No contaminate containment					
Downspouts Below Grade		Yes	X	No		N/A
Paving & Concrete	Concrete					
Parking Counts		Staff		Visitor		ADA
Sidewalk *(ROW connect, condition, accessibility)*	NA					
Front Door Visible		Yes		No	X	N/A
Private vs. Public Space Separation		Yes		No	X	N/A
Street Access Vertical Elevation	NA					
Hydrant Locations	On Site					
Site Risks/Other Observations	Floodplain					

INTERIOR ACCESSIBILITY / ADA						
Int/Ext. Doors *(access clearance / threshold)*		Yes		No	X	N/A
Doors *(handles/opening pressure)*		Yes		No	X	N/A

Water Fountain *(height/accessibility)*		Yes		No	X	N/A
Signage *(height / braille)*		Yes		No	X	N/A
Floor Transitions *(interior/exterior)*		Yes		No	X	N/A
Floor Slopes *(interior ramps, etc.)*		Yes		No	X	N/A
PUBLIC ACCESSIBLE AREAS						
Sinks *(height, pipe wrap)*		Yes		No	X	N/A
Dispensers/Accessory *(mounting height)*		Yes		No	X	N/A
Countertops *(heights)*		Yes		No	X	N/A
Grab Bars		Yes		No	X	N/A
Protruding Objects-Accessible Route(s)		Yes		No	X	N/A
Public Access Rooms *(toilets/training/etc.)*		Yes		No	X	N/A
EXTERIOR ACCESSIBILITY / ADA						
ADA Parking Striping/Signage		Yes		No	X	N/A
Access between ADA Parking & Building		Yes		No	X	N/A
Slopes of Accessible Access Pathways		Yes		No	X	N/A

WSKF CONDITION RATINGS & DEFINITIONS	
Exceptional	New or well-maintained condition, little to no visual evidence of wear and tear, damage, or other deficiencies.
Good	Some wear and tear, damage, or other deficiencies are visible but still in a functioning and acceptable condition.
Fair	Subjected to some hard and/or long-term wear and term or damage, nearing the end of its useful life and should be monitored for additional deterioration
Poor	At the end of its useful or serviceable life due to age and condition, replacement should be considered imminent

Adams Creek Master Drainage Study, Fully Developed Floorplain



Broken Arrow Public Safety Training Master Plan, Space Needs

WSKF, Inc.
110 Armour Road
N. Kansas City, MO

Broken Arrow Public Safety Training Campus
Master Plan - Space Needs
Broken Arrow, OK

10/16/2023

A. PHASE I							
RM. NO.	ROOM NAME	DESIGN REQUIREMENTS	RM. SIZE (L)	RM. SIZE (W)	EXISTING AREA	PROPOSED AREA	NOTES
A-1	Vestibule	Secure Entry			60	120	
A-2	Lobby				700	760	
A-3	Women's RR				165	165	
A-4	Men's RR				170	170	
A-5	Office 1				173	173	
A-6	Office 2 - 4				288	288	
A-7	PD Training Chief Office				208	208	
A-8	Armory				110	110	
A-9	Conference				450	450	
A-10	FD Storage				110	110	
A-11	FD Training Chief Office				208	208	
A-12	Office 5 - 7				288	288	
A-13	Office 8				130	130	
A-14	Small Conference				172	172	
A-15	Kitchen/Breakroom				309	309	
A-16	Tiered Classroom 1				725	725	
A-17	Tiered Classroom 2				736	735	
A-18	Classroom A/B				1506	1506	
		Phase I			**6,508**	**6,627**	
		Grossing Factor (33%)			**2,148**	**2,187**	
		Phase I			**8,656**	**8,814**	

WSKF, Inc.
110 Armour Road
N. Kansas City, MO

Broken Arrow Public Safety Training Campus
Master Plan - Space Needs

Broken Arrow, OK

10/16/2023

B. PHASE I EXPANSION

RM. NO.	ROOM NAME	DESIGN REQUIREMENTS	RM. SIZE (L)	RM. SIZE (W)	EXISTING AREA	PROPOSED AREA	NOTES
B-1	Corridor (extended lobby)				0	700	Secure Entry
B-2	Classroom 1				0	3108	106 Occupants
B-3	Classroom 2				0	1825	50 Occupants
B-4	Men's RR				0	223	
B-5	Office 1				0	239	
B-6	Corridor (exit)				0	222	
B-7	Mechanical				0	229	
B-8							
		Phase I Expansion			**0**	**6,546**	
		Grossing Factor (33%)			**0**	**2,160**	
		Phase I Expansion			**0**	**8,706**	

WSKF, Inc.
110 Armour Road
N. Kansas City, MO

Broken Arrow Public Safety Training Campus
Master Plan - Space Needs

Broken Arrow, OK

10/16/2023

C. PHASE II

RM. NO.	ROOM NAME	DESIGN REQUIREMENTS	RM. SIZE (L)	RM. SIZE (W)	EXISTING AREA	PROPOSED AREA	NOTES
C-1	Corridor (lobby)				200	342	
C-2	Vending				24	55	
C-3	Kitchen				322	452	
C-4	Classroom				678	678	
C-5	Office 1-2				232	170	
C-6	Offices 3-4				230	230	
C-7	Storage				628	628	
C-8	Large Training				4710	4710	
C-9	Fitness				1356	1356	
C-10	Men's Locker				828	828	
C-11	Women's Locker				369	369	
C-12	Gear Wash				184	184	
C-13					0	0	
		Phase II Subtotal			**9,761**	**10,002**	
		Grossing Factor			**1,717**	**1,576**	
		Phase II			**11,478**	**11,578**	

WSKF, Inc.
110 Armour Road
N. Kansas City, MO

Broken Arrow Public Safety Training Campus
Master Plan - Space Needs

Broken Arrow, OK

D. RANGE						
RM. NO.	ROOM NAME	DESIGN REQUIREMENTS	RM. SIZE (L)	RM. SIZE (W)	PROPOSED AREA	NOTES
D-1	Vestibule		8	10	80	
D-2	Lobby		12	20	240	
D-3	Armory		18	24	432	
D-4	Ammo Storage		16	18	288	
D-5	Gun Storage		7	10	70	
D-6	50-YD Range	15 lane	77	190	14630	
D-7	100-YD Range	5 lane	27	340	9180	
D-8	Target Storage		12	14	168	
D-9	Control		12	14	168	
D-10	Cleaning		20	26	520	
D-11	Janitor		7	10	70	
D-12	Toilet	1 wc, 1 urinal, 1 lav	8	12	96	
D-13	Toilet	2 wc, 1 lav	8	12	96	
D-14	Data		8	10	80	
D-15	Electrical		10	14	140	
D-16	Water		8	8	64	
D-17	Classroom	30 chairs	24	36	864	
D-18	Men's Locker	20 lockers	14	26	364	
D-19	Men's Restroom	1 wc, 1 urinal, 1 lav	8	12	96	
D-20	Women's Locker	10 lockers	14	16	224	
D-21	Women's Restroom	1 wc, 1 lav	8	12	96	
D-22	Mat Room		24	27	648	Sim Room Use
D-23	Dust Collection		17	20	340	50 YD Trap
D-24	Dust Collection		10	15	150	100 YD Trap
		Range Subtotal			**29,104**	
		Grossing Factor (25%)			**7,276**	
		Range Total			**36,380**	

WSKF, Inc.
110 Armour Road
N. Kansas City, MO

Broken Arrow Public Safety Training Campus
Master Plan - Space Needs

Broken Arrow, OK

G. FIRE STORAGE/CLASSROOM BLDG.						
RM. NO.	ROOM NAME	DESIGN REQUIREMENTS	RM. SIZE (L)	RM. SIZE (W)	PROPOSED AREA	NOTES
G-1	Apparatus Bays	5 bays, CPAT course	60	100	6000	
G-2	SCBA/Air Compressor		12	16	192	
G-3	Gear Storage	50 lockers	25	25	625	Hardened Structure
G-4	Gear Wash		14	16	224	
G-5	Workshop		12	15	180	
G-6	General Storage		21	24	504	
G-7	Unisex Lockers	35 lockers	12	26	312	
G-8	Unisex Shower/Toilet	7 showers (8x11; 88sf)	8	11	616	
G-9	Janitor		6	8	48	
G-10	Staff Toilet		7	8	56	
G-11	Training Officer Office	6 offices (11x14; 154sf)	11	14	924	
G-12	Dirty Classroom	50 occupants	45	42	1890	
G-13	Outdoor Classroom	50 occupants	50	35	1750	
G-14	Mechanical		10	12	120	
G-15	Electrical		10	12	120	
G-16	Data		10	10	100	
G-17	Water		10	10	100	
		Fire Storage/Classroom Bldg. Subtotal			**13,761**	
		Grossing Factor (33%)			**4,541**	
		Fire Storage/Classroom Bldg. Total			**18,302**	

Broken Arrow Pubic Safety Training, Meeting Minutes, 3/30/2023, Rev. 11/3/2023

WSKF ARCHITECTS
110 Armour Rd
North Kansas City, MO 64116
p. 816.300.4101
wskfarch.com

MEETING NOTES

Meeting Subject: Police Department User Group Meetings
Date: March 30, 2023, Rev. 11/3/2023
Project: Broken Arrow Public Safety Training Center Campus

Project No.: 22037
Meeting Location: Police & Fire Training Facility, 4205 E Omaha St, Broken Arrow, OK 74014

Attendees:
Maddy Scheel, City of Broken Arrow, Engineering & Construction
Brandon Tener, Police Dept. – Captain, Support Services
Deidre Hughes, Police Dept. – Captain, Training
Brent Cox, Tulsa Engineering & Planning
Tommy Abercrombie, Abercrombie Planning & Design
Rick Kuhl, WSKF Architects
Dalyn Novak, WSKF Architects

INTRODUCTIONS & PROJECT OVERVIEW

1. Other Master Plans have been completed for this site.
    A. We have to ask ourselves: Why did they not succeed?
    B. WSKF would like those Master Plans to inform but not direct this Master Plan.
2. Goal for Design Team: Multi-use of facilities for both PD and FD.
3. WSKF and our team is looking to provide realistic training. Training needs to match realistic situations that PD and FD are engaging in while working for Broken Arrow.
    A. A goal is to discover opportunities to keep training engaging.
4. The Master Plan solution provided by the design team will be tailored to Broken Arrow and their needs.
5. More training structures equals more training opportunities.
6. A cityscape that matches Broken Arrow is going to provide the best training experience for all users.
7. The Design Team doesn't want to just duplicate what is at Owasso.
    A. Maybe Owasso would come here for training that they don't have at their facility.
8. PD asked if anyone knew of the PD Comprehensive Needs Assessment Study that Matrix Consulting Group was doing for PD. City Engineering and the Design Team was unaware of this study.
    A. The study includes manpower and deployment of manpower for the next 10 years.
        i. The Training Dept. of PD will be included in the study.
        ii. RFP #23.124 – can search study online (WSKF has a copy now)
        iii. WSKF noted that this study could affect the Master Plan for the Training Campus in terms of class sizes, frequency, staffing, etc.

1. WSKF suggested that the Master Plan Study be finished after this Matrix study so as to incorporate the findings into the Master Plan design. Twenty weeks is the noted length of this study.

iv. The Matrix study is to start the third week of April.

9. The Design Team asked how honest PD wanted the Design Team to be with the study.
   A. PD noted "honest" and Maddy noted Engineering wants to know the truth about the site as well.
   B. Tommy noted there are environmental hazards every time the Range floods due to the amount of lead in the area.
10. GOAL: PD would like to see their training facility be a flagship of the State.
11. Maddy noted this Master Plan will inform the City as to what to put on the next bond issue, noting that operational funds are harder to come by than physical plant funding. This Master Plan will provide project projected budgets for the future understanding that phasing of the work may likely be needed.
    A. The City would like cost estimates to be projected into the future so that there is an understand how much money is needed in the future; not just for today.
    B. The Design Team noted that projecting costs is typically based on history, however, given the dynamic construction cost experiences, there is a realistic factor that is needed.
12. PD has a part-time SWAT team and they noted there are no full-time SWAT teams in Oklahoma.
13. PD noted they have 5 training staff and around 70-74 instructors and 150 officers.
14. After the facility tour of the existing facilities, the Design Team thoughts were:
    A. A cityscape with multiple structures is missing for realistic training.
    B. The training needs to be more fluid.
    C. The existing facilities makes training scenarios difficult to achieve.
    D. Currently, the existing site and facilities is seen as a collection of pieces without a cohesive design.
15. The facility does not have back-up power.
    A. The Design Team typically recommends that at least a minimal level of back-up power be provided essential operational needs.
    B. PD does not want to become an emergency shelter location due to the nature of facility.

SITE ASSESSMENT

16. Water Impact on the Site needs to be discussed.
    A. Where can development occur and where should it not?
    B. In 2019 flood waters were at the bottom of car windows that were in the parking lot.
    C. PD noted that the Firing Range floods all the time. Additionally, standing water occurs on the Range after every rain event.
    D. Brent asked Maddy to have the City request the storm water model from FEMA of the site as he believes the City may receive at no cost.
    E. Brent noted that development within floodplains is expensive.

F. What is the city's tipping point regarding development within the floodplain? It would not be unrealistic to think that as much as half of the development funds for a project could be spent on making the site developable. Additionally, as a result of the site being a former landfill area, adding foundation piers to stabilize structures would be an additional development expense.

G. It was conveyed that the secondary service driveway off of 51st Street may be removed as part of the re-grading of the existing channel in efforts to minimize the onsite flooding.

H. Replacement of the low water crossing with a bridge type (box or arch span) structure elevating the drivable surface above the 100-yr. flood elevation.

I. Existing stockpiles of spoils on the north end of the site will need to be removed in consideration of development and proposed channel grading; including smaller spoil stockpiles to the west of the existing gun range adjacent to the channel.

17. The Design Team was curious if any radon testing had been completed on-site. The response was no.
    A. Radon testing is not very common in Oklahoma per Maddy. The dump site causes the Design Team to be more concerned about the presence of radon than other sites.
18. Blackshare Environmental Solutions has completed an environmental study on the site which would have likely included the toxicity of the soil on-site.
    A. The design team would like a copy of the report.
    B. The report should likely include the type of "cap" needed to seal the landfill underground. This information can inform the Design Team regarding design requirements for such items as building foundation, slabs-on-grade, etc.
19. Besides the current campus being a former landfill, there was likely strip mining on site as well. The strip mining was likely for gypsum.
20. The property is in Wagoner County, OK.
21. The Design Team asked if a geotechnical study has been completed on the site.
    A. Brian Merit with GFAC completed one not long ago.
    B. Maddy will look up the details of this investigation. She noted that cores were taken south of the fire tower.
    C. Brent Cox (TEP) requested a copy of any geotechnical reports from the site.
    D. Geotechnical work was also be completed for the Phase 3 building when it was built.
    E. The design team will be requesting additional geotechnical work once the old geotechnical reports have been gathered.
22. As the entire property was once a landfill, PD noted they have experienced facility problems from the nature of the previous use (shifting, wall cracking, etc.).
23. Brent asked who the survey crews should contact regarding access to the site; it was noted that contact should be Capt. Hughes.
24. It was noted that the Phase I facility is often used as a polling place for elections.
    A. Citizens enter in the Phase 1 building on the west side, tables are placed in the corridor to keep people from the majority of the facility, and the large classroom operable wall is closed to keep voting in the NW classroom.
25. A new neighborhood is being built on the west side of the site.

26. It was noted that a neighborhood was moving in on the east side as well but the east side is being monitored for methane. So, the timing of the development is unknown.
27. Fencing the entire training site is a priority for PD.
    A. Vendors that provide services to the Campus need to be considered with fencing the entire property.
        i. Vending, rug cleaning service, first aid stations, exterminators, lawn maintenance, City trash/recycling, etc. are some of the frequent vendors accessing the site.
        ii. PD suggested a card or access code to open gates.
        iii. A secondary security fence might be helpful to maintain access control for more public access like visitors and Phase I vendors out of the areas that need more security like the range.
        iv. Typical facility hours are 6am to 6pm but the range could be open as late as 10pm.
28. Maddy noted a new monument sign should be planned.
29. There is a breezeway connecting Phase 1 Building and Phase 2 Building.
    A. The brick insets in the concrete of the breezeway is sinking and causes tripping hazards.
30. PD mentioned they recently gained a mounted patrol and don't have any training facilities for this unit.
    A. The officers own their own horses and keep them on their personal properties.
    B. Rooster Days Festival is one event mounted patrol attends.
    C. PD mentioned adding an arena for horse training.
        i. Did not mention if this was an indoor or outdoor arena.
31. East of the Phase 2 Building and west of the Shoot House is an outdoor K9 training area.
    A. There are no kennels on Campus as each of the K9's is housed in patrol cars when on site.
32. As part of the fitness training for PD, the Range site was used for running, however, with the water issues, the interior site drives are now used instead.
33. PD and FD both have two Conex storage containers on site. What is housed in every container was not fully discussed.
    A. PD has one Conex at the Shoot House, south side (SWAT gear storage) and another east of the Storage Quonset building.
34. A past Master Plan showed a 360 Range west of the Storage Quonset building but PD noted that burying the powerlines in the area was too expensive and the project was nixed.
    A. A PD substation was noted in the NE corner of the site on other Master Plans.
    B. The current chief is thinking a substation, if one is every built, should be father east than the training site.
35. PD Headquarters is centrally located currently.
    A. PD moved to the facility they are in now in 2012.
    B. PD shifts are as follows: 7am-5pm, 3pm-1am, 10pm-8am
        i. Officer briefings are held at the beginning of each shift.
36. The City of Broken Arrow has their own jail facility.

37. The NW corner of the site has been planned for a new fire station to provide needed coverage.
38. The City of Broken Arrow is growing mostly to the east.
    A. Tulsa is to the west and the Arkansas River is to the south.
39. Tulsa was noted as a dangerous city.
40. PD mentioned an EVOC course is desired.
    A. LEDT (law enforcement driving training) track is some distance from Broken Arrow and use of the track requires booking such far in advance of each use.
        i. The facility they use is only day time training.
    B. Online training is used as well.

PARKING

41. Parking was noted to be adequate at this time although it can get crowded at times.
42. Lighting at the parking lot was noted as good.
43. On site PD cars go home at night.

RANGE

44. Academy staff-cadet ratios are 1 to 3 for the Range. The ratio with Officers is different but exact number was not noted.
45. The Range Observation Tower is leaning (likely due to poor soils and foundation settling). 2015 is when the leaning was first observed.
46. The Range experienced a power outage at the time of our tour. A portable generator was used to run the facility. Water was noted as the likely the culprit of the power outage issues.
47. The rifle range includes five spaces on the east side of the pistol range.
48. A small ammunition storage building is located at the NW corner of the range.
    A. Just north of this building is a sump pump that is used to keep water out of the building and subsurface water from coming up in the building.
    B. The building has a floor drain. Humidity control in the building is critical. A dehumidifier is used to manage humidity in the building.
49. Concrete walks and staging areas around the range are often under water. As a result of this condition, there is algae build up on surfaces and this condition is a constant problem on the east side of the range.
50. Lead remediation was recently completed. Remediation was accomplished by removing approximately 2.5' of surface soils in order to mine the embedded lead. Replacement soil materials was placed in the excavated areas. PD noted lead remediation was not going to be needed again for another 10 years.
51. Clean up materials and targets are stored in the lower level of the observation tower.
52. Two light bars are attached to the tower over the storage door to provide more realistic lighting for night training.
53. The target system is air operated. Targets are turned using compressed air; air compressor is located on the lower level of the Range tower.

54. The Range was added around 2008 or 2009.
55. A concrete block wall between the pistol and rifle ranges has been experiencing settling. To address the wall settlement gaps, metal plates have been added to each side of the wall to maintain wall integrity and assure user safety. Additionally, the plates provide some level of structural integrity of the wall as well.
56. The range was originally design with water trough drainage to manage the surface water. However, as the site has experienced significant movement, the troughs are now rendered inoperable.
57. Tommy thinks the condition of the range and the risk associated with range use will likely lead to a recommended "do-over."
    A. He suggested that PD consider an indoor range.
        i. Indoor ranges are healthier environments for the users and will require less land.
            1. The only negative with an indoor range is the air handling system; this element is typically an energy hog. Additionally, HEPA filters are needed for air cleaning.
        ii. Indoor ranges can be used 24/7 and, thus, are not weather dependent or lighting dependent. Artificial lighting can be use to simulated any hour of the day.
        iii. Vehicles can be brought into the indoor shooting range.
        iv. Indoor ranges don't impact the neighbors like an outdoor range.
        v. A 50-yard range is pretty typical although there are 100-yard ranges indoors.
        vi. Sound absorption and lead are managed.
        vii. Outdoor ranges must be cleaned more often for health of the instructors.
58. PD uses the FD tower across the training campus for sniper training. The target is set up at the SE corner of the rifle range.
    A. Image below shows path of bullets from fire training tower to the sniper target at the SE corner of the rifle range.

59. More ammunition storage space is needed.
60. The armory is vented but could use larger workstations while housing all of the items together on one facility.
61. The title "Range Master" has been a problem for PD. Using "Fire Arms Instructor" has been better.
62. An office with glass for viewing in the indoor range can be used to set up lights and controls for different scenarios.

BUILDING ASSESSMENT

63. Roof leaks were noted in all buildings.
64. The City prefers a higher level of aesthetics than the current design. The Design Team was pointed to the Rose District (N Main Street) as an area loved by locals.
    A. PD noted people are "booshie" here.

PHASE 1 BUILDING

65. The roof leaks mainly around the rooftop units at the Phase 1 building.
66. The building has had HVAC issues since first occupied.
    A. After the 2019 site flood the VAV valve broken and flooded interior of the building.
67. The Phase 1 Training Building was built in 2005; 18 years ago.
    A. PD/FD calls the buildings by the phase of when they were built, i.e. Phase 1, Phase 2, Phase 3.

68. Phase 3 Building had foundation piers that made the building more costly than originally anticipated, PD noted.
69. PD noted they have to power wash the building yearly to keep the white "white."
    A. They also noted that keeping the cast stone at the Phase 1 building entrance is also a challenge.
70. Although there is a Reception Area in the Phase 1 Building, there has never been a Receptionist. Sometimes volunteers sit in the area; this space is underutilized.
    A. Whoever is in the building answers the front door.
        i. A video door bell system would be nice with a buzzer system that opens the front door from staff offices.
71. PD would like a classroom that can hold 50 as well as another one that can hold 100.
72. The building server is in a mechanical room with the fire sprinkler which is not desirable.
73. The Phase 1 Building is a 50/50 space split with the FD.
    A. Sometimes PD and FD are challenged by double bookings of the large classroom on the NW side of the building.
    B. The operable panel for the large classroom is rarely used given the difficulty with closing and opening the panel system.
74. There is EMS Storage in the cabinetry on the west end of the NW large classroom space.
75. The carpet in the large classroom has been replaced recently.
76. PD & FD use the counter space on the west end of the NW large classroom for refreshments, drinks, food, etc. The counter space does not have power which would be helpful.
77. The building's restrooms have insufficient capacity when PD and FD have classes on the same day. This is a regular and frequent occurance.
78. PD prefers the tiered classroom over the large classroom for training.
79. There is power in the tiered classroom but not in the large classroom.
    A. Power for computers is needed in the large classroom space.
80. More and larger monitors in the tiered classroom would be helpful.
81. The overhead projection or white board in the tiered classroom cannot be utilized at the same time.
82. PD stated FD doesn't use their tiered classroom as much as PD uses theirs. FD tends to use their classroom in the Phase 2 building more often than the Phase I building classroom.
    A. Continuing education for FD is typically held in the tiered classroom though per PD.
83. A storage room is located between the PD and FD tiered classrooms. The front portion of this room houses mechanical equipment as well as technology equipment. The rear portion of this room houses the building boiler system and is accessed from the exterior only. The boiler heating system has been operationally problematic; the 18 VAV's tend to leak a lot.
    A. PD noted they have $390K budgeted to fix the HVAC system in the Phase 1 building.
    B. The City is performing an energy audit before the system is fixed.

C. The Design Team noted that the expansion of the building should be thought about when looking at what type of mechanical system the building should have. A system that can grow with the building is desirable.
    i. There are two rooftop units.
    ii. PD mentioned going away from the boiler and having electric reheat as part of the building system.
    iii. The primary energy source would be natural gas.

84. There are a lot of lights in the Lobby along the walls at 9'-0" AFF or so that aren't operational. PD noted that the ballasts are not accessible so the lights haven't been fixed.
85. PD needs more office space. An exact number of offices was not provided.
    A. PD noted staffing should be higher than what it is now and said they could see staffing doubled in 20-30 years.
    B. Injured and light duty officers tend to come to this facility to work until they can go back on shift. It would be good to have a place for them to work.
86. The facility was not built as an academy city when originally built.
87. PD Library – everything is digital now so the Library was converted to Gun Storage room.
    A. Gun repair occurs in the Phase 3 building.
88. PD and FD use Microsoft Office to schedule the use of the shared conference room on the east side of the building.
89. Additional space for lunch is needed in the Breakroom. If PD has more than eight in an academy they can't eat in the breakroom space. Typically, 10-12 are in each academy but a class size of 16 can be accommodated.
90. PD noted that academies last six months and there will be two this year.
    A. They noted that FD will have an academy at the same time as PD.
91. PD thought they could see a 20-person academy in 20 years.
    A. Given the recent community growth, PD could envision a need for approximately 40 officers in next 20 years.
92. Broken Arrow population is 116,330 so there are 1.5 officers for 1,000 citizens; a standard ratio would be approximately 2.5 per 1,000. However, the national average ranges from 1.8 to 2.6.
    A. PD suggested that they need 175 officers now and currently have 157.
    B. PD indicated that they are growing two officers per year on average not counting turnover, etc.
93. Classroom use by outside agencies is a regular event.
    A. A state fire school among other agency use was noted as well as sniper school.
94. PD is 2nd in size to Tulsa and NE Oklahoma smaller agencies need a place to train.
    A. Future Vision for Broken Arrow is to be a leader in training.
95. The academy is only for their own officers.
96. PD would like to continue providing continuing education and specialty classes.
    A. Classrooms are limiting the size of classes.

B. If the academy grows to 20 – all training spaces will need to grow along with the classrooms.
C. Currently defensive tactics is limited to 12 people per class due to mat space.
D. When classes are held for the current 157 officers, it takes approximately 13 days to get all attendees through the class.

97. PD and FD are housed out of the Public Safety Complex (PSC).

98. Technology is not adequate currently in the Phase 1 building.

A. If the classrooms are full, people need to take turns using laptops as there isn't enough bandwidth for all users at the same time.
B. The city is supposed to be bringing fiber to the site soon.
C. Security cameras as also killing bandwidth at the facility.
D. The City has an IT Department; contact is Dustin Weber
    i. Dustin doesn't answer help desk questions.
    ii. More complex questions is what Dustin works on.
    iii. Dustin is located at the (PSC).
    iv. Depending on the size of the project IT can do some work for new construction.

99. Conference Room

A. Used mainly for interviewing new applicants for FD and PD.
B. The room can do virtual conferences although the conference table is not centered on the wall monitor which makes virtual conferences a bit awkward.
C. The conference room is not used daily.
D. During interview, a background coordinator and HR sit at the desks closer to the door while others sit at the conference room table during applicant interviews.
E. Ten people can fit around the table currently.

100. Building Security

A. The front doors are propped open for external classes.
B. Typically, around 40 officers are coming and going on a regular basis.
C. Free access through the entire building is gained once inside the front doors.
D. A second level of internal security was discussed, but it was determined that this was unnecessary.
    i. All office doors lock.
E. The Design Team mentioned many times facilities we design allow anyone into the vestibule, out of the weather, and then they must gain greater access to the building by staff or dispatch. Video surveillance is common in vestibules to see who is at the front door.

101. There is a state police academy held in Ada, Oklahoma.

PHASE 2 BUILDING

102. The PD Simulation room is located on the left when you first enter from the north is now being used as a storage room. Things are moved out of the way to use it as a simulator room but that doesn't occur very often.
    A. Additional simulation space is provided in the Phase 3 Building.
103. On the right side of the corridor there are three FD offices and one PD storage space.
    A. Storage of K9 supplies, pepper balls, etc. are stored in this room.
104. Just south of the PD Simulator Room is a Kitchen used mainly by the FD.
    A. Cooking is taught in the kitchen as well as meals prepared for citizen events which are housed in the large Gymnasium space south of the Kitchen.
105. The Gymnasium space is used for many different purposes.
    A. Citizen events/public presentations, vehicle training/practice stops, used during rain events when outdoors is inaccessible, fitness, etc.
106. This building has mezzanine space on either side of the Gymnasium. Both spaces house mechanical equipment and are accessible via ship's ladders.
107. The NE corner of the building is a FD classroom. PD does not use this classroom.
108. The Fitness room in the SE corner is used by FD and PD for training and any staff member can come at any time and use the facility. The building is accessed from the north door by staff.
109. PD includes 4-day, 10 hour shifts and two days a week they complete a fitness workout.
110. Physical and agility testing is completed in the Gymnasium space.
111. Cross fit workouts are completed in Gymnasium.
112. Mats are stored in the storage room on the NW side of the Gymnasium and brought out for use during various activities.
113. FD repels inside the Gymnasium space. They use a ladder truck to tie off from the structure.
114. The building has experienced settling which is causing some of the doors in the building to stick when opening/closing.
115. Sidewalks around the building are pulling away from the building as well due to settling. This was especially visible on the SE corner of the building near Fitness.
116. There is no exhaust system in the Gymnasium space which is a concern for the Design Team. HVLS fans could also be helpful in this space.
117. The overhead coiling doors are used on the east and west sides of the Gymnasium space; these are quite noisy when it is windy outside.
118. PD recruits clean.

STORAGE QUONSET BUILDING

119. South of the Phase 2 Building is a Quonset building used for storage, 50/50 between PD and FD.
120. The roof leaks from where the overhead door track was installed into the Quonset building metal.
121. Building is used for storage of such items as building props, equipment, building materials and similar. The building has some operational use such as light repairs of vehicles, moderate welding, power washing, etc.

PHASE 3 BUILDING

122. The outdoor covered area on the north side of this building has bird nesting issues. There have been artificial deterrents have been used to stop the nesting without success. Bird poop is constantly power washed off the sidewalk near the building.
123. This building has a small PD classroom that can hold approximately 12 students.
    A. The classroom is used as a firearms and tactics teaching space.
    B. This classroom could be larger per PD.
124. Firearm Repair occurs in the space north of the classroom.
125. PD noted they do not have a "range master" and they have two instructors.
126. Defense Tactics is taught in the room to the west of the small classroom.
    A. The floor in this room is padded and those in the academy bring mat shoes to wear only on the mats; street shoes are not allowed. Socks are also allowed.
    B. The room includes three simulation projectors but the system was noted as not good for training.
    C. PD noted that the public likes to see simulation training and they can participate in training with the simulators during certain times.
    D. T1 Technologies is used for simulation.
    E. PD has to supplemental the simulation training in order to facilitate training. This facilitation includes multiple equipment stopping/starting in order to provide adequate training simulations.
    F. PD has taught car extraction in this room as well.
    G. All weapons are locked up before training in this classroom.
127. FD does not use this building.
128. This building includes small locker rooms for cadet use.
129. Vending machines at this building are desired.

SHOOT HOUSE (QUONSET BUILDING)

130. The insulated Quonset building NE of the Range is primarily for PD use.
131. The insulation was added last year as the facility has no heat so temperatures changed drastically with the weather in the heat of summer or chill of winter. Insulation helps reduce those temperatures extremes and provides for a more manageable temperature range.
132. Instructors are able to watch training scenarios in process from the cat walk about the training area.
133. Live rounds can be used in this facility but sim rounds are typically used.
    A. The building is extremely loud when live rounds are used; ear protection required.
    B. Blanks can also be used in training which are more realistic.
    C. Eye and ear protection is required during use which takes away from the realistic aspects of training.
134. SWAT uses this facility a lot.

135. Other agencies can use the facility as well.
136. FD uses this facility for search and rescue by filling the building with smoke.
137. Scenarios such as building searches, active shooters, and K9 training occur in this building.

NEXT STEPS

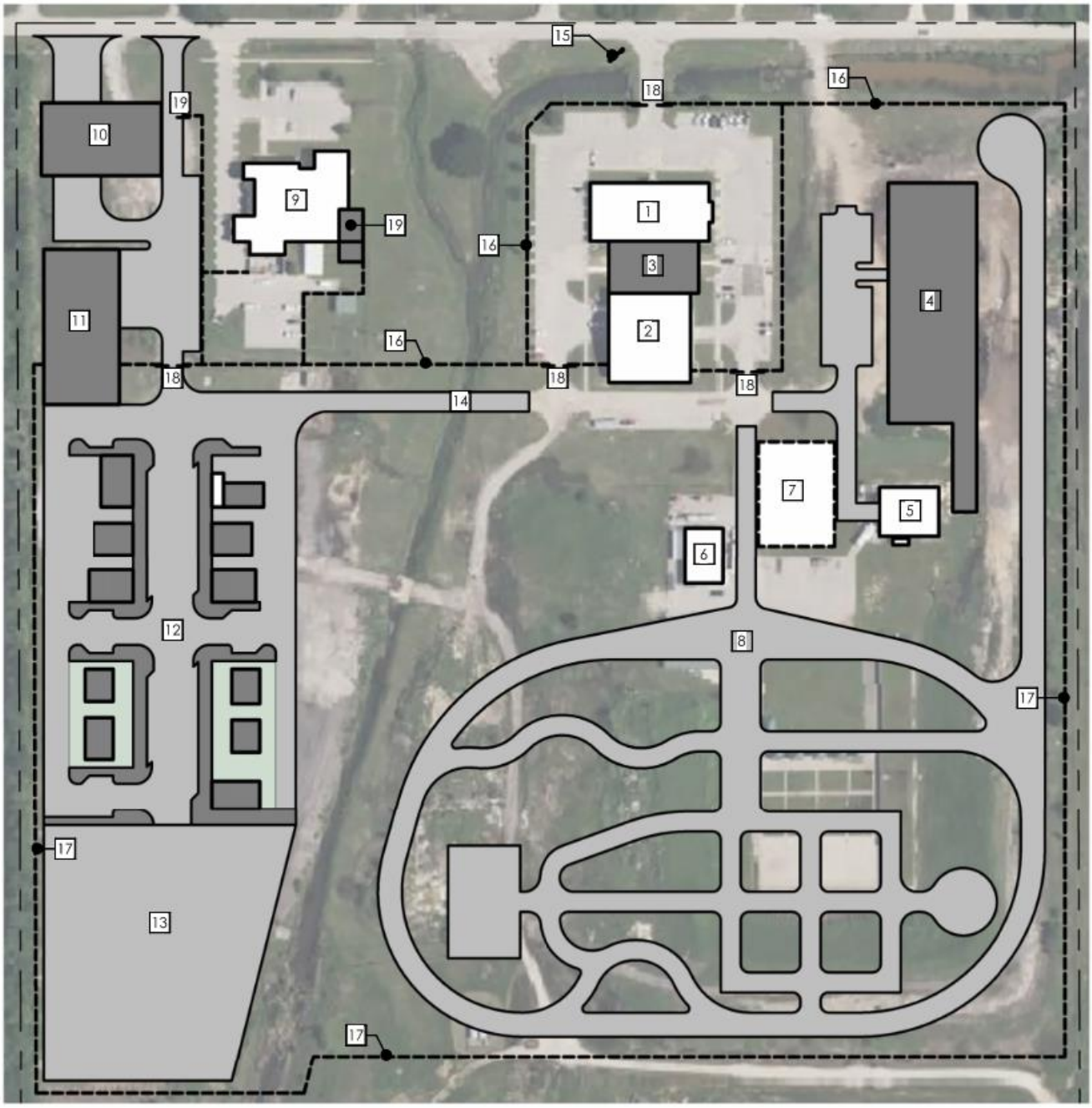
138. Meeting notes will be created based on the discussions from today.
139. PD to continue thinking about things we might have not covered from today.
140. Following meeting notes and PD's review of the meeting notes, the Design Team will create spreadsheets and space programming based on the input received.

Prepared by: Dalyn Novak
Date: April 6, 2023

The above represents the writer's understanding of items discussed and agreed to. Please notify WSKF, Inc. within five days of any questions or comments regarding the content of these meeting notes.

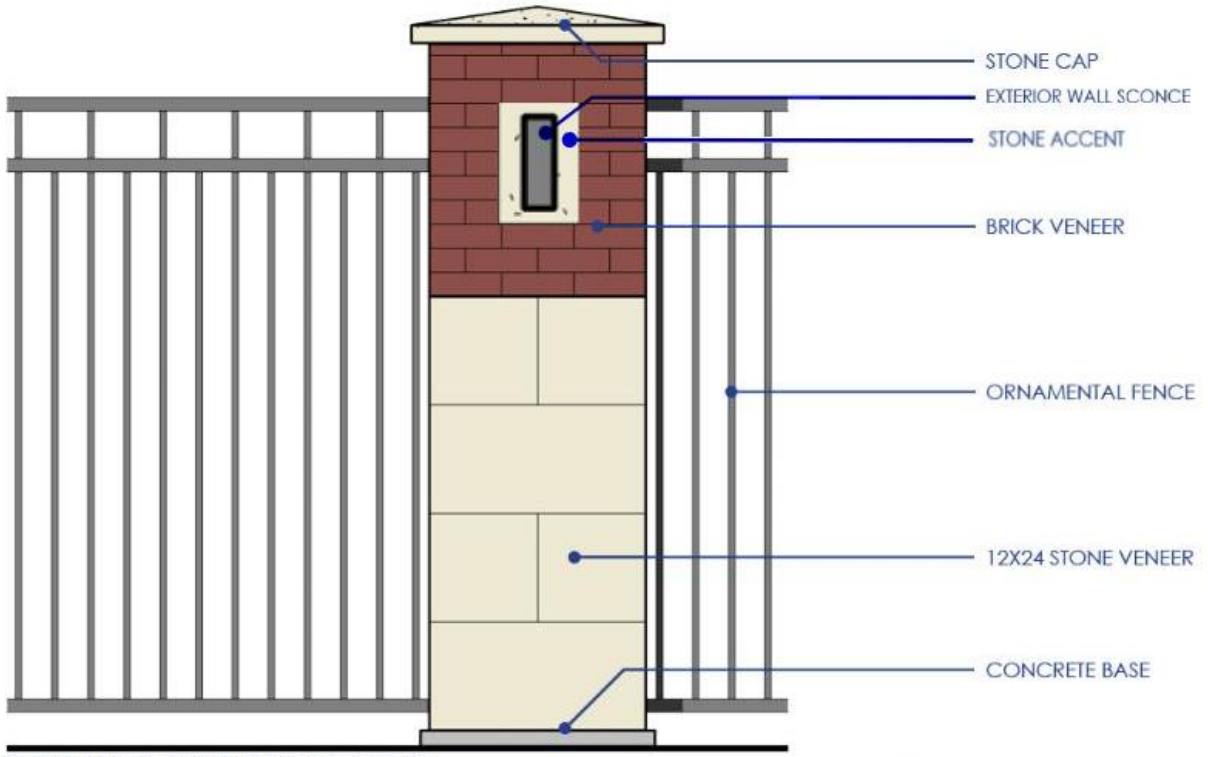
Copy to: Attendees
File

Broken Arrow Pubic Safety Training, Master Plan



1. EXISTING PHASE I BUILDING
2. EXISTING PHASE II BUILDING
3. NEW CLASSROOM ADDITION; 7,200 GSF
4. NEW INDOOR FIRING RANGE; 15 50YD LANES, 5 100YD LANES: 36,000 GSF
5. EXISTING SHOOT HOUSE & STORAGE BUILDING
6. EXISTING STORAGE BUILDING
7. EXISTING K-9 AGILITY & OBSTACLE COURSE
8. HIGH SPEED SKILLS COURSE; 0.5 MILES, 8.5 ACRES
9. EXISTING ANIMAL SHELTER
10. FUTURE FIRE STATION #8; 13,500 GSF
11. NEW FIRE STORAGE & CLASSROOM BUILDING; 18,500 GSF
12. TRAINING STREETSCAPE WITH 6 BURN BUILDINGS, 4 TACTICAL BUILDINGS AND AN OUTDOOR CLASSROOM; 3.75 ACRES
13. SLOW SPEED SKILLS PAD; 2.0 ACRES
14. DRAINAGE CHANNEL BRIDGE
15. NEW MONUMENT SIGN
16. NEW 6' HIGH ORNAMENTAL FENCING WITH MASONRY FENCE PIERS
17. NEW 6' HIGH CHAIN LINK FENCING
18. GATE WITH ACCESS CONTROL
19. ANIMAL SHELTER ADDITION

Broken Arrow Pubic Safety Training, Campus Aesthetic Enhancements

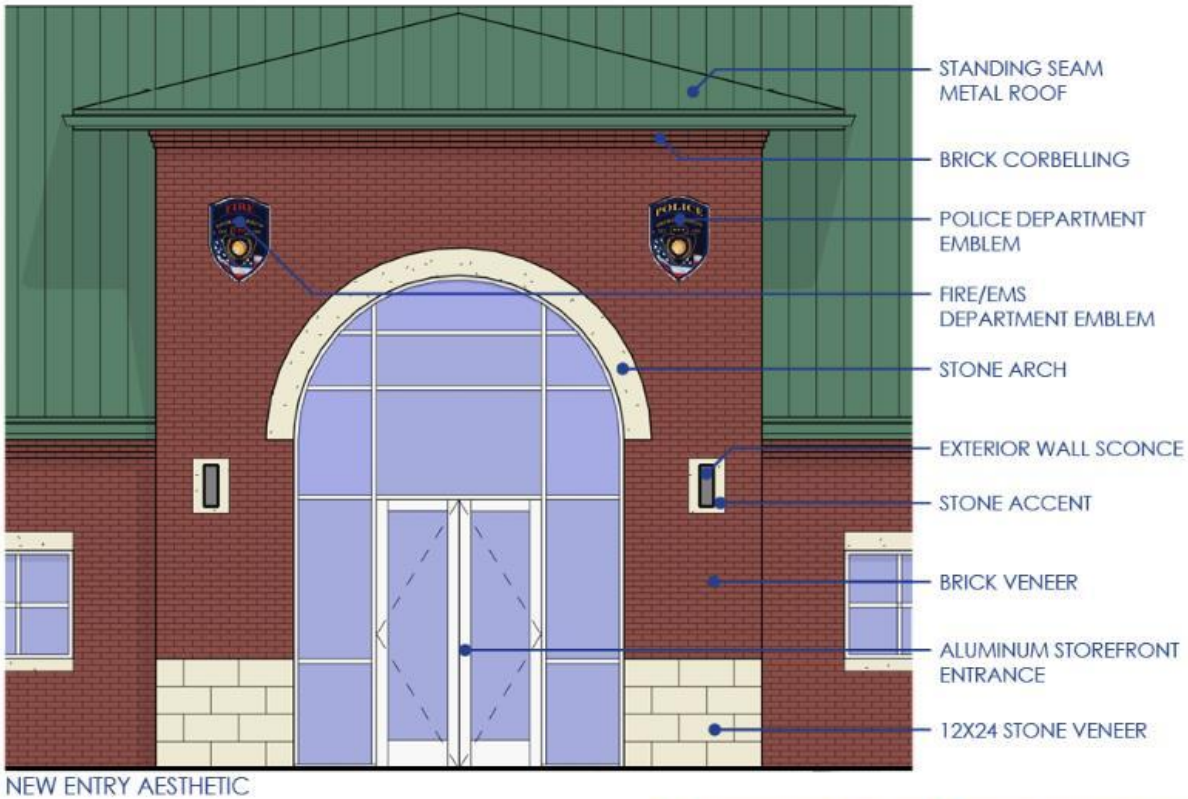


NEW CAMPUS ORNAMENTAL FENCING

FENCE WITH MASONRY COLUMNS EXAMPLE

SLIDING SECURITY GATE EXAMPLE

EXISTING CAMPUS ENTRANCE

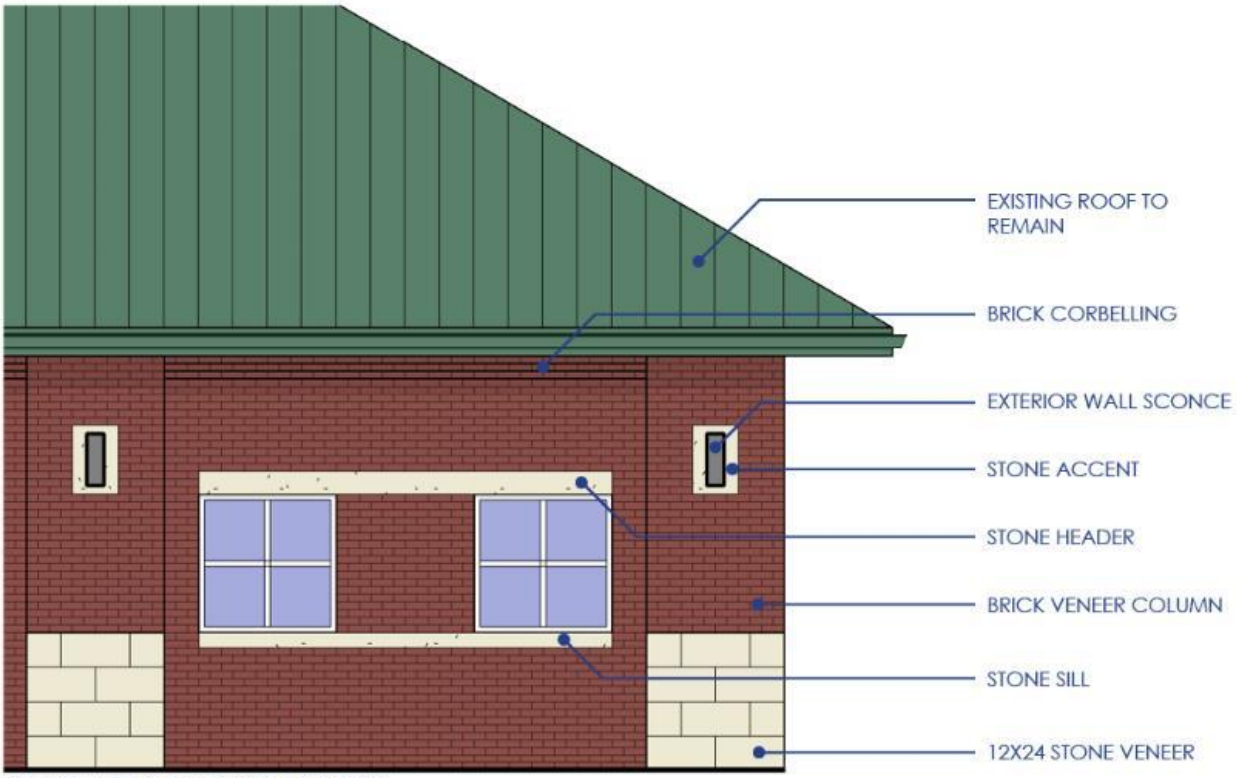


NEW ENTRY AESTHETIC


EXISTING ENTRANCE


ROSE DISTRICT ARCH EXAMPLE


ROSE DISTRICT BRICK CORBELLING EXAMPLE



NEW CAMPUS BUILDING AESTHETIC

EXISTING CAMPUS BUILDING AESTHETIC

ROSE DISTRICT STONE ACCENT EXAMPLE

ROSE DISTRICT WINDOW DETAIL EXAMPLE

Broken Arrow Public Safety Training Master Plan, Statement of Probable Cost

WSKF
110 Armour Rd.
N. Kansas City, MO

City of Broken Arrow - Public Safety Training Center
Estimate of Probable Cost

November 2023
Rev October 2024

General Conditions

Total Development	2023	2024	2025	2026
	$ 2,002,747	$ 2,102,885	$ 2,208,029	$ 2,318,430

Site Development

Site				
30 Acres	$ 9,340,000	$ 9,807,000	$ 10,297,350	$ 10,812,218

Classroom-Admin.

Building				
7200 New | 5700 Renov.	$ 3,883,911	$ 4,078,106	$ 4,282,011	$ 4,496,112

Fire App/Storage

Building				
18,500	$ 4,385,814	$ 4,605,105	$ 4,835,360	$ 5,077,128

Range

Building				
36,380 - 15-Lane 50 Yd./5-Lane 100 Yd.	$ 12,024,922	$ 12,626,168	$ 13,257,476	$ 13,920,350

Animal Shelter

Building•Site				
	$ 3,788,125	$ 3,977,531	$ 4,176,407	$ 4,385,228

Training

Buildings				
A. 4-Story Mixed Use, B. 2-Story Commercial Addition, C. 3-Story Commercial, D. 3-Story Apartment, E. 2-Story Commercial, F. 2-Story Commercial, G. 2-Story Residential, H. 1-Story Residential Tactical, I. 1-Story Residential, J. 2-Story Residential Tactical, K. Outdoor Classroom/Restroom	$ 8,634,691	$ 9,066,425	$ 9,519,746	$ 9,995,734

Phase III Bldg.

Building				
3,500	$ 387,894	$ 407,288	$ 427,653	$ 449,035

Total Development

Buildings	2023	2024	2025	2026
	$ 35,108,102	$ 36,863,508	$ 38,706,683	$ 40,642,017
Site				
	$ 9,340,000	$ 9,807,000	$ 10,297,350	$ 10,812,218
Subtotal	**$ 44,448,102**	**$ 46,670,508**	**$ 49,004,033**	**$ 51,454,235**
Fixtures/Furniture/Equipment	$ 578,000	$ 606,900	$ 637,245	$ 669,107
Geotechnical/Environmental	$ 20,000	$ 21,000	$ 22,050	$ 23,153
Expenses	$ 50,000	$ 52,500	$ 55,125	$ 57,881
Engineering/Design	$ 5,300,000	$ 5,600,400	$ 5,880,420	$ 6,175,000
Subtotal	$ 5,948,000	$ 6,280,800	$ 6,594,840	$ 6,925,141
Total Development [1]	**$ 50,396,102**	**$ 52,951,308**	**$ 55,598,873**	**$ 58,379,376**

[1] 2023 Cost are based on recently completed project with location adjustment factor; year-over-year escalation is 5% (based on CPI index for Broken Arrow, OK). Refer to attached spreadsheets for additional detail. Construction duration is assumed to be 24 months. Site area involvement is assumed to be 30 acres.

Div 1	General Requirements	
01 1000	Supervision	$585,110.00
01 1000	Layout/Staking	$31,764.00
01 1000	Temp Facilities	$409,389.00
01 1000	Temp Fencing	$53,280.00
01 1000	General Supplies/Tools	$91,056.00
01 1000	Equipment Costs	$401,050.00
01 1000	Erosion Control	$6,000.00
01 1000	Project Vehicles	$97,050.00
01 1000	Bond Costs	$202,000.00
01 1000	Cleanup	$53,023.00

Design Package 1- Site		
Div 2	**Existing Conditions**	
24116	Structure Demolition	$18,500.00
Div 3	**Concrete**	
32000	Concrete Reinforcing	$4,433.00
33000	EVOC Curb and Paving	$1,686,000.00
33000	Site Curb and Paving	$1,602,000.00
33000	Site Sidewalks and Pads	$219,502.00
34100	Precast Concrete	$101,382.00
Div 4	**Masonry**	
42200	Concrete Unit Masonry	$168,000.00
Div 5	**Metals**	
55000	Metal Fabrications	$82,000.00
55213	Pipe & Tube Railings	$82,000.00
Div 10	**Specialties**	
107516	Ground-Set Flagpoles	$13,938.00
Div 26	**Electrical**	
260010	Electrical Provisions	$4,000.00
260011	Basic Electrical Mat.	$50,000.00
260013	Protection Coordination	$16,000.00
260519	Wire & Cable	$47,354.00
260526	Grounding	$27,000.00
260533	Raceways & Boxes	$308,025.00
265600	Exterior Lighting	$316,000.00
Div 28	**Electronic Safety & Security**	
280500	Common Work for Electronic Safety	$8,160.00
Div 31	**Earthwork**	
	Mass Grading	$1,334,444.00
	Gravel under EVOC track	$265,224.00
	Gravel under paving and walks	$432,124.00
	Final Rough Grading	$304,000.00
	Final Finish Grading/Black dirt	$85,000.00
Div 32	**Exterior Improvements**	
323113	Chain Link Fences & Gates	$353,427.00
328400	Landscaping	$310,652.00
328400	Lawn irrigation	$100,000.00
328400	Seeding/Sodding	$350,940.00
328400	Synthetic Turf	$180,000.00
	Site furnishings	$60,334.00
	Pavement Markings/traffic control/dir	$79,544.00
	Propane distribution	$200,000.00
	Railways	$75,720.00
	Asphalt Surfacing	$226,716.00
	Paving Joint sealants	$160,000.00
Div 33	**Utilities**	
334119	Mobilization	$110,450.00
	Water Service	$490,000.00
	Sewer Service	$428,000.00
	Storm Service	$670,000.00
	Concrete Inlet Boxes	$300,000.00

				Historic Escalation		Location Adjustment		Projected Escalation		
				5.3%	4.8%	SF	BA	5%	5%	5%
		2021		2022	2023	90.7%	85.3%	2024	2025	2026
$11,270,869.00	42	$268,354 /A		$282,577	$296,140	$296,140	$278,509	$292,435	$307,056	$322,409
						30 A	$8,355,275	$8,773,039	$9,211,691	$9,672,276
						TEP	$9,340,000	$9,807,000	$10,297,350	$10,812,218

Design Package 2- Classroom-Admin		
Div 3	**Concrete**	
32000	Concrete Reinforcing	$82,117.00
33000	Cast-In-Place	$460,000.00
34100	Precast Structural Concrete	$736,858.00
	Foundation Piering	$150,000.00
Div 4	**Masonry**	
42200	Concrete Unit Masonry	$15,000.00
Div 5	**Metals**	
51200	Structural Steel Framing	$683,962.00
52100	Steel Joint Framing	$390,000.00
53100	Steel Decking	$335,000.00
Div 6	**Wood, Plastics, and Composites**	
61000	Rough Carpentry	$115,000.00
64113	Wood-Veneer-Faced Arch. Cabinets	$79,131.00
Div 7	**Thermal & Moisture Protection**	
72726	Fluid-Applied Membrane Air Barriers	$68,792.00
74113	Standing Seam Metal Roof	$543,491.00
74213.13	Formed Metal Wall Panels	$222,419.00
74243	Composite Wall Panels	$287,464.00
76200	Sheet Metal Flashing & Trim	$203,550.00
79200	Joint Sealants	$64,550.00
Div 8	**Openings**	
81113	HM framesdoos/hardware	$200,204.00
83323	Overhead Coiling Doors	$23,112.00
83613	Sectional Doors	$6,515.00
84113	Alum-Framed Entr/Storefront	$40,000.00
84413	Glazed Alum. Curtain Walls	$150,000.00
85113	Aluminum Windows	$71,800.00
85653.13	Wind & Impact Security Windows	$70,000.00
88000	Glazing	$60,000.00
88300	Mirrors	$4,000.00
88700	Architectural Window Films	$60,000.00
Div 9	**Finishes**	
92216	Non-Structural Metal Framing	$741,940.00
92900	Gypsum Board	$432,870.00
93013	Ceramic Tiling	$207,735.00
95100	Acoustical Ceilings	$227,610.00
95423	Linear Metal Ceilings	$103,411.00
96500	Resilient Flooring	$50,600.00
96813	Tile Carpeting	$114,130.00
96900	Access Flooring	$124,000.00
98436	Sound-Absorbing Ceiling Units	$22,913.00
99113	Painting	$59,730.00
Div 10	**Specialties**	
101100	Visual Display Units	$41,989.00
101423.16	Signage	$35,463.00
102114	Stainless Toilet Compartments	$8,063.00
102213	Wire Mesh Partitions	$8,000.00
102239	Folding Panels Partitions	$16,878.00
102600	Wall & Door Protection	$4,454.00
102800	Toilet, Bath, & Laundry Accessories	$18,803.00
104413	Fire Protection Cabinets	$4,150.00
105030	Turnout Gear Lockers Wall Mounted	$22,000.00
105113	Metal Lockers	$195,000.00
105613	Metal Storage Shelving	$15,000.00
105626	Mobile Storage Shelving	$33,000.00
107313	Awnings	$43,389.00
Div 11	**Equipment**	
111916	Detention Gun Lockers	$7,100.00
116623	Gymnasium Equipment	$8,500.00
Div 12	**Furnishings**	
122413	Roller Window Shades	$41,158.00
123623.13	Plastic-Laminate-Clad Countertops	$7,000.00
123661.19	Quartz Agglomerate Countertops	$70,071.00
Div 21	**Fire Suppression**	
211313	Fire sprinkler	$138,000.00
Div 22	**Plumbing**	
220011	Basic Plumbing Materials & Methods	$33,200.00
220013	Project Coordination	$28,200.00
220523	Valves	$5,600.00
220548	Plumbing Sound & Vibration Control	$1,800.00
220700	Plumbing Insulation	$31,900.00
221000	Plumbing Piping	$322,301.00
221119	Domestic Water Piping Specialties	$9,600.00
221319	Sanitary Waste Piping Specialties	$32,800.00
221429	Sump Pumps	$7,885.00

223300	Electric Water Heaters	$2,200.00
223400	Gas Water Heaters	$29,585.00
224000	Plumbing Fixtures	$68,275.00
Div 23	**eating Ventilation & Air Conditioning**	
230515	Variable Frequency Controllers	$4,700.00
230523	Valves	$11,800.00
230548	Mechanical Sound & Vibration Contr	$3,200.00
230553	Identification for HVAC Piping & Equ	$1,900.00
230593	System Testing & Balancing	$15,194.00
230713	Duct Insulation	$15,500.00
230719	Piping Insulation	$30,000.00
230923	Automatic Temperature Controls	$102,690.00
232000	HVAC Piping	$77,250.00
232016	HVAC Piping Specialties	$5,647.00
232123	Hydronic Pumps	$18,250.00
233113	Metal Ducts	$280,312.00
233300	Air Duct Accessories	$954.00
233400	HVAC Fans	$9,501.00
233439	High Volume, Low Speed Fans	$14,697.00
233616	Variable Air Volume Boxes	$8,736.00
233619	Fan Powered Terminal Units	$11,928.00
233713	Diffusers, Registers, & Grilles	$11,569.00
233750	HVAC Louvers	$1,025.00
233813	Commercial Kitchen Hoods	$10,332.00
235216	Condensing Boilers	$67,000.00
236200	Condensing Units	$19,290.00
237313	Modular Air Handling Units	$17,892.00
237314	AHU Blender Box	$1,192.00
237416	Rooftop Heating/Cooling Units	$355,421.00
Div 23	**ng Ventilation & Air Conditioning Cont.**	
238116	Mini-Split Systems	$7,278.00
238123	Computer Room A/C Units	$138,340.00
238233	Convectors	$10,805.00
238240	Electric Heaters	$2,037.00
238316	Radiant-Heating Hydroponic Piping	$21,750.00
238413	Humidifiers	$37,936.00
Div 26	**Electrical**	
260010	Electrical Provisions	$60,000.00
260011	Basic Electrical Mate	$14,000.00
260013	Project Coordination	$61,000.00
260519	Wire & Cable	$152,300.00
260526	Grounding	$44,000.00
260529	Hangers & Supports for Electrical Sy	$35,000.00
260533	Raceways & Boxes	$671,840.00
260536	Cable Tray	$38,000.00
260573	Overcurrent Protective Decice Coord	$10,000.00
260923	Lighting Control Devices	$30,000.00
260943	Digital Network Lighting Controls	$197,043.00
262213	General Distribution Transformers	$40,000.00
262413	Distribution Switchboard	$126,000.00
262416	Panelboards	$80,000.00
262510	Track Busyway System	$84,000.00
262726	Wiring Devices	$14,200.00
262813	Fuses	$1,200.00
262816	Enclosed Switches & Circuit Breaker	$5,300.00
262913	Enclosed Controllers	$9,000.00
263213	Engine Generators	$400,000.00
263353	Uninterruptible Power Supply Systen	$161,000.00
263600	Transfer Switches	$9,000.00
263601	Three-Way Manual Transfer Switch	$6,500.00
233602	Generator Tap Box	$5,000.00
264113	Lighting Protection System	$45,000.00
265100	Interior Lighting	$640,380.00
Div 27	**Communications**	
270500	Common Work for Communications	$300,000.00
271100	Communications Equp. Room Fitting	$30,000.00
271300	Communications Cabling & Equip.	$68,000.00
275119	Sound Masking Systems	$15,000.00
Div 28	**Electronic Safety & Security**	
280500	Common Work for Electronic Safety	$20,000.00
284605	Conductors/Cables for Fire Alarm Sy	$5,000.00
284611	Fire Sensors & Detectors	$5,000.00
284621	Digital, Addressable Fire-Alarm Syst	$5,000.00
Div 31	**Earthwork**	
	Excavation	$48,000.00
	Backfill	$92,000.00
	Gravel under slabs	$30,000.00

				Historic Escalation		Location Adjustment		Projected Escalation		
				5.3%	4.8%	SF	BA	5%	5%	5%
			2021	2022	2023	90.7%	85.3%	2024	2025	2026
$13,371,157.00	41,000	$326.13	$343.41	$359.89	$359.89	$338.47	$355.39	$373.16	$391.82	
					New	7,200	$2,436,964	$2,558,812	$2,686,752	$2,821,090
					Renov.	5,700	$1,446,947	$1,519,294	$1,595,259	$1,675,022
							$3,883,911	$4,078,106	$4,282,011	$4,496,112

Design Package 3- Apparatus-Storage		15,100 GSF
Div 3	**Concrete**	
32000	Concrete Reinforcing	$39,003.00
33000	Cast-In-Place	$285,000.00
33543	Polished Concrete Finishing	$60,000.00
34100	Precast Structural Concrete	$20,549.00
	Foundation Piering	$150,000.00
Div 4	**Masonry**	
42200	Concrete Unit Masonry	$36,000.00
Div 5	**Metals**	
55000	Metal Fabrications	$38,000.00
Div 6	**Wood, Plastics, and Composites**	
61000	Rough Carpentry	$98,000.00
61600	Sheathing	$60,160.00
Div 7	**Thermal & Moisture Protection**	
72726	Fluid-Applied Membrane Air Barriers	$30,000.00
74243	Composite Wall Panels	$287,464.00
79200	Joint Sealants	$20,000.00
Div 8	**Openings**	
81113	Hollow Metal Doors & Frames/hardw	$121,721.00
83323	Overhead Coiling Doors	$21,793.00
83613	Sectional Doors	$162,995.00
84519	Interconnected Poly. Wall System	$35,000.00
85113	Aluminum Windows	$11,000.00
88000	Glazing	$4,250.00
Div 9	**Finishes**	
92216	Non-Structural Metal Framing	$68,950.00
92900	Gypsum Board	$9,860.00
95100	Acoustical Ceilings	$37,325.00
96500	Resilient Flooring	$400.00
99113	Painting	$29,730.00
Div 12	**Furnishings**	
123616	Metal Countertops	$16,601.00
123619	Wood Countertops	$9,707.00
123661.19	Quartz Agglomerate Countertops	$2,830.00
Div 13	**Special Construction**	
133419	Metal Building Systems	$740,000.00
133420	Pre-Engineered Metal Bldg Insulatior	$124,000.00
Div 21	**Fire Suppression**	
211313	Fire sprinkler	$54,000.00
Div 22	**Plumbing**	
220523	Valves	$2,600.00
220700	Plumbing Insulation	$9,000.00
221000	Plumbing Piping	$128,549.00
221119	Domestic Water Piping Specialties	$6,400.00
221319	Sanitary Waste Piping Specialties	$73,028.00
223300	Electric Water Heaters	$2,700.00
223400	Gas Water Heaters	$32,125.00
224000	Plumbing Fixtures	$39,500.00
Div 23	**ating Ventilation & Air Conditioning**	
230553	Identification for HVAC Piping & Equ	$800.00
230593	System Testing & Balancing	$2,415.00
230713	Duct Insulation	$5,000.00
233113	Metal Ducts	$56,793.00
233300	Air Duct Accessories	$3,609.00
233400	HVAC Fans	$10,337.00
233439	High Volume, Low Speed Fans	$45,949.00
233713	Diffusers, Registers, & Grilles	$524.00
238116	Indirect Gas Fired Make Up Air Units	$35,400.00
238123	Mini Split Systems	$10,914.00
238239	Gas Fired Unit Heaters	$4,001.00
238240	Electric Heaters	$8,760.00
238305	Infrared Heaters	$24,083.00
Div 26	**Electrical**	
260010	Electrical Provisions	$5,000.00
260011	Electrical Materials	$5,000.00
260013	Project Coordination	$10,000.00
260519	Wire & Cable	$41,000.00
260526	Grounding	$2,000.00
260529	Hangers & Supports for Electrical Sy	$5,000.00
260533	Raceways & Boxes	$89,000.00
260536	Cable Tray	$3,000.00
260573	Overcurrent Protective Decice Coord	$1,000.00
260923	Lighting Control Devices	$4,000.00
262213	General Distribution Transformers	$9,000.00
262416	Panelboards	$19,000.00
262726	Wiring Devices	$6,500.00

262816	Enclosed Switches & Circuit Breaker	$10,000.00										
265100	Interior Lighting	$63,920.00										
Div 27	**Communications**											
270500	Common Work for Communications	$15,000.00										
271100	Communications Equp. Room Fitting	$5,000.00										
271300	Communications Cabling & Equip.	$5,000.00										
Div 28	**Electronic Safety & Security**											
280500	Common Work for Electronic Safety	$10,000.00										
284605	Conductors/Cables for Fire Alarm Sy	$5,000.00										
284611	Fire Sensors & Detectors	$5,000.00										
Div 31	**Earthwork**											
	Excavation	$16,000.00										
	Backfill	$22,000.00										
	Gravel under slabs	$16,000.00				Historic Escalation			Location Adjustment		Projected Escalation	
						5.3%	4.8%		SF	BA	5%	5%	5%
					2021	2022	2023		90.7%	85.3%	2024	2025	2026
		$3,449,245.00	15,100	$228.43 SF	$240.53	$252.08		$252.08	$237.07		$248.92	$261.37	$274.44
									18,500	$4,385,814	$4,605,105	$4,835,360	$5,077,128

Design Package 4- Range		18,650 GSF
Div 3	**Concrete**	
32000	Concrete Reinforcing	$17,603.00
33000	Cast-In-Place	$255,000.00
33543	Polished Concrete Finishing	$76,000.00
34100	Precast Structural Concrete	$972,140.00
	Foundation Piering	$150,000.00
Div 4	**Masonry**	
42200	Concrete Unit Masonry	$65,000.00
Div 5	**Metals**	
51200	Structural Steel Framing	$146,200.00
55000	Metal Fabrications	$97,500.00
55119	Metal Grating Stairs	$10,000.00
55213	Pipe & Tube Railings	$10,000.00
Div 6	**Wood, Plastics, and Composites**	
61000	Rough Carpentry	$102,751.00
64113	Wood-Veneer-Faced Arch. Cabinet	$4,602.00
Div 7	**Thermal & Moisture Protection**	
75323	EPDM Roofing	$346,055.00
79200	Joint Sealants	$65,000.00
Div 8	**Openings**	
81113	Hollow Metal Doors & Frames/hard	$39,715.00
83323	Overhead Coiling Doors	$40,965.00
84113	Alum-Framed Entr/Storefront	$25,000.00
88000	Glazing	$9,400.00
88853	Security Glazing	$40,000.00
Div 9	**Finishes**	
92216	Non-Structural Metal Framing	$32,190.00
92900	Gypsum Board	$12,990.00
95100	Acoustical Ceilings	$14,141.00
96500	Resilient Flooring	$1,620.00
96813	Tile Carpeting	$1,600.00
99113	Painting	$35,000.00
Div 11	**Equipment**	
116723	Shooting Range Equipment	$2,062,373.00
Div 12	**Furnishings**	
123616	Metal Countertops	$71,885.00
Div 21	**Fire Suppression**	
211313	Fire sprinkler	$20,500.00
Div 22	**Plumbing**	
220523	Valves	$675.00
220700	Plumbing Insulation	$1,330.00
221000	Plumbing Piping	$18,567.00
221119	Domestic Water Piping Specialties	$6,400.00
221319	Sanitary Waste Piping Specialties	$3,300.00
223300	Electric Water Heaters	$2,700.00
224000	Plumbing Fixtures	$5,319.00
Div 23	**Heating Ventilation & Air Conditioning**	
230593	System Testing & Balancing	$1,628.00
230713	Duct Insulation	$825.00
233113	Metal Ducts	$15,677.00
233400	HVAC Fans	$3,514.00
233713	Diffusers, Registers, & Grilles	$1,003.00
230100	Shooting Range Mechanical Ventila	$725,963.00
237314	AHU Blender Box	$1,192.00
237416	Rooftop Heating/Cooling Units	$10,363.00
238116	Mini-Split Systems	$3,638.00
238240	Electric Heaters	$2,910.00
Div 26	**Electrical**	
260010	Electrical Provisions	$6,000.00
260011	Basic Electrical Mate	$2,000.00
260013	Project Coordination	$4,000.00
260519	Wire & Cable	$21,000.00
260526	Grounding	$2,000.00
260529	Hangers & Supports for Electrical S	$5,000.00
260533	Raceways & Boxes	$48,000.00
260536	Cable Tray	$3,000.00
260923	Lighting Control Devices	$6,000.00
262213	General Distribution Transformers	$12,000.00
262416	Panelboards	$20,000.00
262726	Wiring Devices	$9,500.00
262816	Enclosed Switches & Circuit Breake	$4,500.00
265100	Interior Lighting	$165,000.00
Div 27	**Communications**	
270500	Common Work for Communications	$3,000.00

Design Package 5 - Animal Shelter												
Kennels	3000	GSF										
Building	$1,800,000											
Sally Port	1500	GSF										
Building	$900,000											
Get Acquainted	200	GSF										
Building	$200,000											
Site Development												
Excavation	$15,000											
Paving	$20,000											
Fencing	$15,000											
					Historic Escalation			Location Adjustment		Projected Escalation		
					5.3%	4.8%		SF	BA	5%	5%	5%
				2021	2022	2023		90.7%	85.3%	2024	2025	2026
	$2,950,000	4,700	$627.66 SF	$660.93	$692.65			$692.65	$651.41	$683.98	$718.18	$754.09
								4,700	$3,061,635	$3,214,717	$3,375,453	$3,544,225

Design Package 6 - Training Bldgs.		46,000	GSF
Div 3	**Concrete**		
31000	Concrete Forming and Accessorie	$720,000.00	
32000	Concrete Reinforcing	$265,000.00	
33000	Cast-In-Place	$1,800,000.00	
34100	Precast Structural Concrete	$2,000,000.00	
	Foundation Piering	$300,000.00	
Div 4	**Masonry**		
42200	Concrete Unit Masonry	$3,300,000.00	
Div 5	**Metals**		
51200	Structural Steel Framing	$550,000.00	
55000	Metal Fabrications	$130,000.00	
55119	Metal Grating Stairs	$130,000.00	
55213	Pipe & Tube Railings	$110,000.00	
Div 7	**Thermal & Moisture Protection**		
74113	Standing Seam Metal Roof	$25,000.00	
74293	Shingling	$25,000.00	
76200	Sheet Metal Flashing & Trim	$54,000.00	
79200	Joint Sealants	$95,000.00	
Div 8	**Openings**		
81113	HM frames/doors/hardware	$550,000.00	
84113	Alum-Framed Entr/Storefront	$160,000.00	
88000	Glazing	$100,000.00	
Div 9	**Finishes**		
99113	Exterior Painting	$7,000.00	
	Fire panels	$500,000.00	
Div 22	**Plumbing**		
220011	Basic Plumbing Materials & Meth	$100,000.00	
Div 26	**Electrical**		
260013	Project Coordination	$20,000.00	
260519	Wire & Cable	$45,000.00	
260526	Grounding	$7,000.00	
260529	Hangers & Supports	$25,000.00	
260533	Raceways & Boxes	$120,000.00	
262213	General Distribution Transformers	$40,000.00	
262416	Panelboards	$50,000.00	
262726	Wiring Devices	$10,000.00	
262816	Enclosed Switches & Circuit Brea	$40,000.00	
265100	Interior Lighting	$75,000.00	
265600	Exterior Lighting	$25,000.00	
Div 31	**Earthwork**		
	Excavation	$45,000.00	
	Backfill	$9,000.00	
	Gravel under slabs	$15,000.00	
		$13,197,000.00	
		incl. $1.75M Props	

			Historic Escalation		Location Adjustment		Projected Escalation		
			5.3%	4.8%	SF	BA	5%	5%	5%
	2021		2022	2023	90.7%	85.3%	2024	2025	2026
46,000	$286.89 /SF		$302.10	$316.60	$316.60	$297.75	$312.64	$328.27	$344.68
A: 4-Story Mixed Use		10,000	$2,977,480	$3,126,353	$3,282,671	$3,446,805			
B: 2-Story Commercial		4,400	$1,310,091	$1,375,596	$1,444,375	$1,516,594			
C: 3-Story Commercial		6,000	$1,786,488	$1,875,812	$1,969,603	$2,068,083			
D: 3-Story Apartment		6,000	$1,786,488	$1,875,812	$1,969,603	$2,068,083			
E: 2-Story Commercial		4,400	$1,310,091	$1,375,596	$1,444,375	$1,516,594			
F: 2-Story Commercial		4,400	$1,310,091	$1,375,596	$1,444,375	$1,516,594			
G: 2-Story Residential		2,800	$833,694	$875,379	$919,148	$965,105			
H: 1-Story Residential		1,500	$446,622	$468,953	$492,401	$517,021			
I: 1-Story Residential		1,800	$535,946	$562,744	$590,881	$620,425			
J: 2-Story Residential		2,500	$744,370	$781,588	$820,668	$861,701			
K: Outdoor Classroom & Restrooms		2,100	$625,271	$656,534	$689,361	$723,829			
* includes Props					$8,634,691	$9,066,425	$9,519,746	$9,995,734	

Design Package 7 - Phase III		3,500	GSF
Div 3	**Concrete**		
32000	Concrete Reinforcing	$14,000.00	
33000	Cast-In-Place	$41,000.00	
Div 5	**Metals**		
55000	Metal Fabrications	$7,000.00	
Div 6	**Wood, Plastics, and Composites**		
61000	Rough Carpentry	$16,000.00	
Div 8	**Openings**		
81113	Hollow Metal Doors & Frames	$8,000.00	
83613	Sectional Doors	$12,000.00	
85113	Aluminum Windows	$10,000.00	
88000	Glazing	$11,000.00	
Div 9	**Finishes**		
92216	Non-Structural Metal Framing	$3,000.00	
92900	Gypsum Board	$4,000.00	
95100	Acoustical Ceilings	$26,000.00	
99124	Painting	$8,000.00	
Div 12	**Furnishings**		
123619	Wood Countertops	$1,500.00	
123661.19	Quartz Agglomerate Countertops	$1,500.00	
Div 13	**Special Construction**		
133419	Metal Building Systems	$250,000.00	
133420	Pre-Engineered Metal Bldg Insulation	$150,000.00	
Div 22	**Plumbing**		
220011	Basic Plumbing Materials & Methods	$3,000.00	
220013	Project Coordination	$3,000.00	
220523	Valves	$1,500.00	
220700	Plumbing Insulation	$2,500.00	
221000	Plumbing Piping	$14,000.00	
221119	Domestic Water Piping Specialties	$8,000.00	
221319	Sanitary Waste Piping Specialties	$2,500.00	
223300	Electric Water Heaters	$4,000.00	
224000	Plumbing Fixtures	$4,500.00	
Div 23	**Heating Ventilation & Air Conditioning**		
230593	System Testing & Balancing	$500.00	
230713	Duct Insulation	$2,000.00	
233113	Metal Ducts	$13,000.00	
233300	Air Duct Accessories	$2,500.00	
233400	HVAC Fans	$4,000.00	
233439	High Volume, Low Speed Fans	$5,000.00	
238239	Gas Fired Unit Heaters	$4,000.00	
238240	Electric Heaters	$1,500.00	
238305	Infrared Heaters	$10,000.00	
Div 26	**Electrical**		
260519	Wire & Cable	$14,000.00	
260573	Overcurrent Protective Decice Coord	$8,000.00	
262213	General Distribution Transformers	$8,000.00	
262416	Panelboards	$14,000.00	
262726	Wiring Devices	$8,000.00	
262816	Enclosed Switches & Circuit Breaker	$6,000.00	
265100	Interior Lighting	$19,000.00	
Div 27	**Communications**		
270500	Common Work for Communications	$4,000.00	
271100	Communications Equp. Room Fitting	$3,000.00	
271300	Communications Cabling & Equip.	$3,000.00	
Div 28	**Electronic Safety & Security**		
280500	Common Work for Electronic Safety	$4,000.00	
Div 31	**Earthwork**	$8,000.00	
		$747,500.00	3,500

			Historic Escalation		Location Adjustment		Projected Escalation		
			5.3%	4.8%	SF	BA	5%	5%	5%
	2021		2022	2023	90.7%	85.3%	2024	2025	2026
	$213.57		$224.89	$235.69	$235.69	$221.65	$232.74	$244.37	$256.59
					3,500	$387,894	$407,288	$427,653	$449,035

Design Package 8 - Horse Arena		9,000	GSF
Div 3	**Concrete**		
32000	Concrete Reinforcing	$15,000.00	
33000	Cast-In-Place	$40,000.00	
Div 5	**Metals**		
55000	Metal Fabrications	$6,000.00	
Div 6	**Wood, Plastics, and Composites**		
61000	Rough Carpentry	$20,000.00	
Div 8	**Openings**		
81113	Hollow Metal Doors & Frames	$10,000.00	
83613	Sectional Doors	$20,000.00	
85113	Aluminum Windows	$10,000.00	
88000	Glazing	$10,000.00	
Div 9	**Finishes**		
92216	Non-Structural Metal Framing	$4,000.00	
92900	Gypsum Board	$5,000.00	
95100	Acoustical Ceilings	$20,000.00	
99124	Painting	$9,000.00	
Div 12	**Furnishings**		
123619	Wood Countertops	$1,000.00	
123661.19	Quartz Agglomerate Countertops	$1,000.00	
Div 13	**Special Construction**		
133419	Metal Building Systems	$250,000.00	
133420	Pre-Engineered Metal Bldg Insulatio	$125,000.00	
Div 22	**Plumbing**		
220011	Basic Plumbing Materials & Methods	$1,400.00	
220013	Project Coordination	$1,406.00	
220700	Plumbing Insulation	$1,600.00	
221000	Plumbing Piping	$11,403.00	
221119	Domestic Water Piping Specialties	$6,400.00	
221319	Sanitary Waste Piping Specialties	$1,100.00	
223300	Electric Water Heaters	$2,600.00	
224000	Plumbing Fixtures	$2,910.00	
Div 23	**Heating Ventilation & Air Conditioning**		
230593	System Testing & Balancing	$375.00	
230713	Duct Insulation	$1,000.00	
233113	Metal Ducts	$10,703.00	
233300	Air Duct Accessories	$1,732.00	
233400	HVAC Fans	$2,555.00	
233439	High Volume, Low Speed Fans	$3,578.00	
238239	Gas Fired Unit Heaters	$2,691.00	
238240	Electric Heaters	$773.00	
238305	Infrared Heaters	$7,141.00	
Div 26	**Electrical**		
260519	Wire & Cable	$10,000.00	
260573	Overcurrent Protective Decice Coord	$5,000.00	
262213	General Distribution Transformers	$5,000.00	
262416	Panelboards	$10,000.00	
262726	Wiring Devices	$5,000.00	
262816	Enclosed Switches & Circuit Breaker	$3,000.00	
265100	Interior Lighting	$15,000.00	
	Arena Lighting	$20,000.00	
Div 27	**Communications**		
270500	Common Work for Communications	$2,000.00	
271100	Communications Equp. Room Fitting	$1,000.00	
271300	Communications Cabling & Equip.	$1,000.00	
Div 28	**Electronic Safety & Security**		
280500	Common Work for Electronic Safety	$1,424.00	
Div 31	**Earthwork**	$12,000.00	

				Historic Escalation		Location Adjustment		Projected Escalation		
				5.3%	4.8%	SF	BA	5%	5%	5%
			2021	2022	2023	90.7%	85.3%	2024	2025	2026
	$695,791.00	9,000	$77.31	$81.41	$85.32	$85.32	$80.24	$84.25	$88.46	$92.88
						9,000	$361,061	$379,114	$398,069	$417,973