

# **MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY TRAINING FACILITY**

Oklahoma City, Oklahoma

## **PRELIMINARY REPORT SUBMITTAL**

May 7, 2024

Prepared by  
ADG Blatt PC  
Oklahoma City, OK  
[www.adgblatt.com](http://www.adgblatt.com)



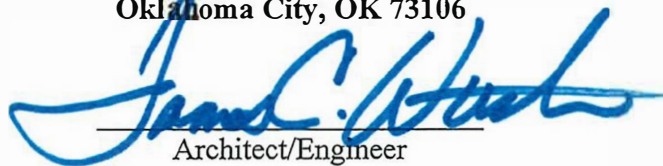
**THE CITY OF OKLAHOMA CITY**  
**("Awarding Public Agency")**

**APPROVAL SHEET**

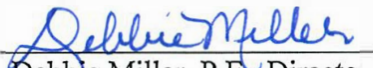
**PROJECT NO. MB-1649**  
**Driving Facility at the Public Safety Training**  
**Facility Preliminary Report**

Prepared by:

**ADG Blatt PC**  
**920 W. Main Street**  
**Oklahoma City, OK 73106**

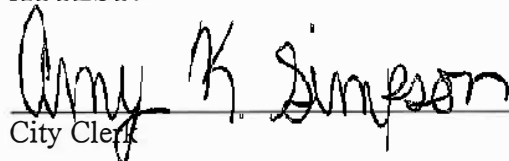
  
Architect/Engineer

Recommended for Approval

  
Debbie Miller, P.E., Director  
Public Works/City Engineer

**APPROVED** by The City of Oklahoma City this 21<sup>ST</sup> day of MAY,  
20 24.

**ATTEST:**

  
City Clerk



The City of Oklahoma City



# MB-1649 DRIVING FACILITY AT THE PSTF

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## ACKNOWLEDGEMENTS

The ADG Blatt Design Team wishes to thank the following individuals for their guidance, input, and cooperation. We sincerely appreciate their involvement in the development of this project.

### OKLAHOMA CITY POLICE DEPARTMENT

Police Chief Wade Gourley  
Deputy Chief Vashina Butler  
Deputy Chief Bobby Tompkins  
Major Juan Balderrama  
Sergeant Justin Walters

### OKLAHOMA CITY FIRE DEPARTMENT

Fire Chief Richard Kelley  
Deputy Chief Shane Smailey

### CITY OF OKLAHOMA CITY PUBLIC WORKS

Jim Lewellyn	CIP Program Manager
Frank Manning	Senior Project Manager
Michael Clark	Senior Project Manager

### DESIGN TEAM

ADG Blatt	Architect of Record
Abercrombie Planning + Design	Public Safety Design Consultant
Urban Strategy	Civil Engineer/Driving Track Consultant
CEC	Civil Engineer
CEC	Structural Engineer
CEC	MEP Engineer
Rated Engineering	Fire Protection Consultant
White and Associates	Cost Estimating Consultant
Summers Associates	Security Consultant
Waystone	AV/IT Consultant
Spec Services	Specifications Consultant
Intertek PSI	Geotechnical Services



## PROJECT DESIGN TEAM DIRECTORY

### ARCHITECT OF RECORD

#### **ADG Blatt PC**

920 W. Main Street  
Oklahoma City, OK 73106

### PUBLIC SAFETY DESIGN CONSULTANT

#### **Abercrombie Planning + Design**

3508 Overton Park Drive West  
Fort Worth, TX 76109

### CIVIL ENGINEER/DRIVING TRACK CONSULTANT

#### **Urban Strategy**

1112 E. 1st Street  
Fort Worth, TX 76102

### CIVIL ENGINEERING

#### **CEC**

525 Central Park Drive, Suite 202  
Oklahoma City, OK 73105

### STRUCTURAL ENGINEERING

#### **CEC**

525 Central Park Drive, Suite 202  
Oklahoma City, OK 73105

### MECHANICAL, PLUMBING AND ELECTRICAL ENGINEERING

#### **CEC**

525 Central Park Drive, Suite 202  
Oklahoma City, OK 73105

### FIRE PROTECTION

#### **Rated Engineering**

609 S. Kelly Avenue, Suite H2  
Edmond, OK 73003

### COST ESTIMATING

#### **White and Associates**

418 NW 30<sup>th</sup> Street  
Oklahoma City, OK 73118

### SECURITY CONSULTANT

#### **Summers Associates**

2335 E. Colorado Blvd., Suite 115-229  
Pasadena, CA 91107

### AV/IT CONSULTANT

#### **Waystone**

1211 N. Shartel Avenue  
Oklahoma City, OK 73103

### SPECIFICATIONS

#### **Spec Services**

13612 Midway Road, Suite 601  
Farmers Branch, TX 75244

### GEOTECHNICAL SERVICES

#### **Intertek PSI**

11825 S. Portland Avenue  
Oklahoma City, OK 73170

## EXECUTIVE SUMMARY

In the summer of 2023, The City of Oklahoma City, in partnership with the OKC Police and Fire Departments, engaged ADG Blatt and our Design Team members, to provide design and construction services for the following project:

### **MB-1649, Driving Facility at the Public Safety Training Center**

The project site is located south of Interstate 240, along the west side of South Midwest Boulevard, in Oklahoma City. For a complete summary of the project site and the proposed site improvements, please refer to the Civil Design Narrative.

The Scope of Work, as noted in the Request for Proposals, read as follows:

The consultant will design a high-speed driving track with a straight away and banked curves. A 1,600 SF driver training building with restrooms, offices, and a training room will be designed near the track. The building should have a drive-through vehicle bay where tires can be repaired. A driving skill pad will be built adjacent to the track. The project is fully funded by the American Rescue Plan Act (ARPA) money. Estimated Construction Cost is \$4,624,800.

Over the past 7 months, ADG Blatt has worked closely with OKC Public Works, as well as the OKC Police and Fire Departments, to fully develop the scope of the project.

As described in the narratives included in this Preliminary Report, the project includes the following major scopes of work:

## MAJOR SCOPES OF WORK

### A. SITE IMPROVEMENTS

1. Site Clearing
2. Site Grading (Cut and Fill)
3. Finish Grading
4. Building Pad Preparation
5. Entry Drives and Parking Lot Paving (Concrete)
6. Site and Building Utilities
7. Landscaping
8. Site Irrigation
9. Perimeter Security Fencing and Entry Gates

### B. DRIVING TRACK

1. The Driving Track is located south of the Skills Pad and is connected by a drive lane to the Skills Pad. The track includes a high-speed section capable of allowing the drivers to hit up to 60 mph. The main track corners are superelevated to allow drivers to carry speed into and out of the corners. The track also includes an ess curve section, two reverse camber turns, an accident-avoidance section, a CLEET training area, street scape, low water crossing, and a cul-de-sac. Also connected to the track is a gravel, off road path that connects the streetscape with the Skills Pad.

C. SKILLS PAD

1. The Skills Pad is located due west of the Driver Training Building and is separated from the Driver Training Building by a drive lane and a median.
2. The Skills Pad is 300 feet by 300 feet and will be concrete.

D. DRIVER TRAINING BUILDING (DTB)

1. The Driver Training Building (DTB) has increased in size from the original 1,600 GSF (as noted in the Request for Proposals) to 5,047 GSF.
2. The need to increase the square footage first came up in our Kickoff Meeting/Design Charrette, which was held on September 14, 2023.
3. The latest Space Program for the DTB is included on page 9.
4. The DTB is comprised of the following spaces:
  - a. Training Room to accommodate up to 50 cadets
  - b. Offices for Law Enforcement Driver Training (LEDT Coordinator) and Staff
  - c. Break Room
  - d. Men's and Women's Restrooms
  - e. Service Bay
5. The Service Bay provides a drive-through space for the tires on the training vehicles to be repaired and replaced. At each side of the Service Bay there are 10' x 10' overhead doors, with a trench drain running down the center lane. Many of the Mechanical, Electrical, Plumbing and Fire Protection Systems will be housed in the Service Bay, including electrical panels, fire risers, and ductwork that will serve the other portions of the building. The space will contain unit heaters in the corners but will not be air conditioned.
6. The DTB will be clad in insulated, prefinished metal roof and wall panels. The front of the building features a black brick base (as was used for the OKC Police HQ Building) with a blue Aluminum Composite Metal Panel (ACM) system capped off with red trim soffit panels. Pre-finished aluminum fixed windows are provided in the Training Room, Offices, and the Break Room.
7. On the back side of the DTB, a portion of the metal roofing system extends out, providing cover for the concrete patio, which is intended to be used as an outdoor classroom space.
8. The structural framing system for the DTB will be a Pre-Engineered Metal Building System.
9. The parking lot that serves the DTB contains 54 spaces and 3 handicapped spaces.

## ESTIMATED CONSTRUCTION COST

As noted previously, the project is fully funded by the American Rescue Plan Act (ARPA) and the Fixed Limit of Construction Cost is \$4,624,800.

The current Estimated Construction Cost for the project is \$8,973,695, which exceeds the Fixed Limit of Construction Cost by **\$4,348,895.**

Therefore, it was imperative that some add alternates be identified, to allow the project's Base Bid construction costs to not exceed the \$4,624,800 construction budget.

Based upon recent conversations that have been held with OKC Public Works, and the OKC Police and Fire Departments, the following Base Bid and Add Alternates have been established:

<u>Driving Facility Base Bid and Add Alternates</u>		<u>Estimated Construction Cost</u>
<b>Base Bid</b>	<b>Driving Track</b>	<b>\$4,245,437</b>
<b>Add Alternate 1</b>	<b>ESS Turns/Off-Camber</b>	<b>\$ 265,891</b>
<b>Add Alternate 2</b>	<b>Inner Loop</b>	<b>\$ 188,687</b>
<b>Add Alternate 3</b>	<b>Skills Pad</b>	<b>\$1,774,563</b>
<b>Add Alternate 4</b>	<b>Driver Training Building</b>	<b>\$2,195,334</b>
<b>Add Alternate 5</b>	<b>Parking Lot and Drives</b>	<b>\$ 303,781</b>
<b>Total</b>		<b>\$8,973,695</b>

*Note: Please refer to the Architectural Site Plan in the Appendix, which shows the extent of the Base Bid scope, as well as the location of each Add Alternate.*

## PROJECT SCHEDULE

The Project Schedule is as follows:

- |  |                                    |
|--|------------------------------------|
| • DDs and Preliminary Report             | Submit on March 29, 2024           |
| • OKC PW Review/Council Routing          | April 1 to April 22, 2024          |
| • Council Approval of Preliminary Report | May 7, 2024                        |
| • Final Plans                            | Submit on July 9, 2024             |
| • Council Approval of Final Plans        | July 10 to July 30, 2024           |
| • Start of Bidding to Bid Opening        | July 31 to September 18, 2024      |
| • Council Award of Construction Contract | October 22, 2024                   |
| • Pre-Work Meeting                       | October 29, 2024                   |
| • Construction Administration            | January 13, 2025 to Sept. 12, 2025 |

It is our understanding that projects that are funded by ARPA have the following time constraints, which the Project Schedule above meets:

- By the end of 2024, the Bidding Process must be completed, and the Construction Contract must be finalized.
- By the end of 2026, the Project's Construction must have reached Final Completion.

## BUILDING CODES AND STANDARDS

The project is being designed in accordance with the following:

- International Building Code, 2018
- National Electrical Code, 2017
- International Plumbing Code, 2018
- International Mechanical Code, 2018
- International Energy Conservation Code, 2009
- International Fire Code, 2018
- American National Standards Institute, 2009
  - ANSI A117.1 – 2009 Accessible and Usable Buildings and Facilities
- International Residential Code, 2018
- International Fuel Gas Code, 2018
- International Existing Building Code, 2018
- 2010 ADA Standards for Accessible Design

*Please refer to the narratives that follow for other applicable codes referenced for this project.*

## SPACE PROGRAM

The following is the current Design Development Space Program:



OKC Driving Facility  
Driver Training Building Program

**ADG Blatt**

29-Mar-24

Departments		Area (SF)	Quantity	Total Net Area (SF)	Comments
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### TRAINING BUILDING

#### Offices

Shared Office	185	1	185	
Flex Office	225	1	225	Work Stations for 6

#### Training Room

Training Room	25	50	1,275	Space for 50 people
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#### Public Areas

Toilet/Shower	110	0	110	
Restrooms	135	2	270	
Janitor/Storage	0	1	0	Locate in Service Bay

#### Support

Staff Break Room	172	0	172	Add Break Room Counter in Training Room
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#### Service Bays

Service Bay	1,645	1	1,645	
-------------	-------	---	-------	--

Department Net Area (NSF)			3,882	
Walls & Circ. Factor	30%		1,165	
<b>Programmed Dept. Gross Area (SF)</b>			<b>5,047</b>	



## INTERIOR DESIGN NARRATIVE

The intent for this Interior Design Narrative is to provide the following interior finishes that have been selected for the Design Development phase.

### I. INTERIOR FINISHES AND FF&E

#### A. CORRIDORS

1. Flooring: Stained and Polished Concrete with Walk-Off Carpet Tile (Shaw Contract, Welcome II Tiles) at Entries
2. Base: Porcelain Tile Base (Part of Porcelain Tile Wainscot) Daltile, Volume 1
3. Walls: Porcelain Tile Wainscot up to 5'-0" with Painted Gypsum Wallboard above Daltile, Volume 1 (12" x 12" with 6" x 24" and 6" x 6" accent tiles)
4. Ceiling: 2' x 2' Acoustical Lay-In Ceiling Panel (Armstrong Cirrus High NRC, #556, Tegular Edge in 15/16" Prelude Grid) with Painted Gypsum Wallboard Furr-Down and Soffits
5. Misc: Provide Tackboard/Display Board at Entry and Corridor by Training Room

#### B. BREAK ROOM

1. Flooring: Stained and Polished Concrete
2. Base: 4" Rubber Cove Base (Tarkett Baseworks, Thermoset Rubber)
3. Walls: Painted Gypsum Wallboard
4. Ceiling: 2' x 2' Acoustical Lay-In Ceiling Panels (Armstrong Cirrus High NRC, #556, Tegular Edge in 15/16" Prelude Grid)
5. Millwork: Solid Surface Countertop and Splash (Corian) with Plastic Laminate Base and Upper Cabinets (Wilsonart)
6. Equipment: 2 Full Refrigerators, 2 Microwaves, Coffee Maker/Keurig

#### C. FLEX OFFICE

1. Flooring: Textile Composite Flooring (J&J Flooring Kinetex)
2. Base: 4" Rubber Cove Base (Tarkett Baseworks, Thermoset Rubber)
3. Walls: Painted Gypsum Wallboard
4. Ceiling: 2' x 2' Acoustical Lay-In Ceiling Panels (Armstrong Cirrus High NRC #556, Tegular Edge in 15/16" Prelude Grid)
5. Furniture: 6 Workstations and 6 Task Chairs
6. Equipment: Printer/Copier

#### D. OFFICE

1. Flooring: Textile Composite Flooring (J&J Flooring Kinetex)
2. Base: 4" Rubber Cove Base (Tarkett Baseworks, Thermoset Rubber)
3. Walls: Painted Gypsum Wallboard
4. Ceiling: 2' x 2' Acoustical Lay-In Ceiling Panels (Armstrong Cirrus High NRC #556, Tegular Edge in 15/16" Prelude Grid)
5. Furniture: 2 L-Shaped Desks with Storage and 2 Task Chairs

#### E. TRAINING ROOM

1. Flooring: Textile Composite Flooring (J&J Flooring Kinetex)
2. Base: 4" Rubber Cove Base (Tarkett Baseworks, Thermoset Rubber)
3. Walls: Painted Gypsum Wallboard
4. Ceiling: 2' x 2' Acoustical Lay-In Ceiling Panels with Painted (Armstrong Cirrus High NRC #556, Tegular Edge in 15/16" Prelude Grid) and Gypsum Wallboard Furr-Down and Soffits
5. Millwork: Solid Surface Countertop and Splash (Corian) with Plastic Laminate Base and Upper Cabinets (Wilsonart)
6. Furniture: Training Tables and Training Chairs for 50
7. Equipment: Display Monitors, Undercounter Refrigerator, 2 Microwaves, Coffee Maker, IT Rack (in millwork cabinet), Floor boxes (minimum of 5) with electrical and data outlets.

#### F. MEN'S AND WOMEN'S RESTROOMS

1. Flooring: Poured Epoxy Flooring with Broadcast Flakes and Slip Resistant Additive (Dur-a-flex Hybri-Flex EC with Armor Top Gloss with Dur-a-Grit)
2. Base: 6" Flash Cove Base of Epoxy with Broadcast Flakes (Dur-a-flex Hybri-Flex EC with Armor Top Gloss with Dur-a-Grit)
3. Walls: Ceramic Wall Tile up to 7'-0" with accent bands of accent Tile and Painted Gypsum Wallboard above (Daltile Color Wheel Linear 6" x 18" and Daltile Color Wheel Classic 2" x 8" in two accent colors. Top row to edge with Schluter strip)
4. Ceiling: 2' x 2' Acoustical Lay-in Ceiling Panels (Armstrong Clean Room FL #1715 in 15/16" clean room Aluminum Grid) and Painted Gypsum Wallboard above Shower area (refer Reflected Ceiling Plan)
5. Millwork: Solid Surface Vanity with Integral Solid Surface Sink (Corian) and Plastic Laminate Removable Angled Panel (Wilsonart)
6. Misc: High Density Polyethylene (HDPE) Toilet Partitions and Urinal Screen (Scranton Hiney Hiders)

#### G. SERVICE BAY

1. Flooring: Sealed Concrete
2. Base: 4" Rubber Cove Base (Tarkett Baseworks, Thermoset Rubber)
3. Walls: Painted
4. Ceiling: Painted Open to Structure
5. Furniture: Heavy Duty Metal Shelving, Heavy Duty Metal Storage Cabinets

## **CIVIL DESIGN NARRATIVE (CEC)**

### **I. LOCATION**

The project site for the City of Oklahoma City's Driving Facility at the Public Safety Training Center (MB-1649) is located south of Interstate 240 along the west side of S. Midwest Boulevard in Oklahoma City. It is within the SE/4 of Section 34, T11N, R2W in Oklahoma County, Oklahoma.

### **II. EXISTING SITE**

The site currently consists of primarily vacant land with some fencing throughout the site, an existing OG&E overhead line and easement along the north side of the site and an existing N-S drainage way along the west side of the site.

There is an existing FEMA floodplain along the western boundary of the site covering the drainage way / blueline stream referenced above. No development should occur within this area.

### **III. EXISTING & PROPOSED UTILITY COORDINATION**

#### **A. SANITARY SEWER**

1. Per correspondence with the City's Utility Department, a septic system will be allowed for the minimal flows anticipated with the building facility. A perc test will be needed to determine site-specific requirements for associated lateral lines.
2. The facility could potentially be connected to the sanitary sewer line that will be extended across the creek to serve the PSTC main campus in the future, if desired.
3. See Exhibit C-SD 1 for reference.

#### **B. WATER**

1. Per correspondence with the City's Utility Department, a 12-in waterline will be extended from the south to provide fire and domestic water service for the proposed facility.
2. See Exhibits C-SD 1 & C-SD 2 for reference.

#### **C. ELECTRIC | OG&E**

1. Per the OG&E provided utility atlas and site survey, there is an existing OG&E transmission line along the north side of the project site. Development in this area should be avoided and/or limited and coordinated with OG&E to determine site specific allowances in relation to the existing transmission line including no grade modifications within the easement.
2. There is an additional existing overhead electrical line on-site along the west side of S. Midwest Boulevard.
3. See Exhibit C-SD 3 for reference.



#### **D. GAS | ONG**

1. Per the ONG provided utility atlas, there is no existing gas service in the vicinity south of Interstate 240.
2. See Exhibit C-SD 4 for reference.

#### **E. TELECOMMUNICATIONS | COX COMMUNICATIONS**

1. Per the Cox Communications provided atlas, they appear to have some facilities west of the project site at the corner of S. Air Depot and E. I-240 Service Road.
2. See Exhibit C-SD 5 for reference.

### **III. SITE PLANNING, GRADING & DRAINAGE**

In general, the site will be configured to adapt to the existing grade as much as possible, while accommodating site improvements.

Per correspondence with the City's Public Works Department, a drainage study comparing the time of concentration values for the floodplain drainage basin and the project site will be required to determine if the subject site will peak before the entire basin. If it does, then detention will not be required.

Should any proposed development and/or site grading occur within 200-ft of the floodplain boundary, a floodplain activity permit will be required.

Storm sewer will be necessary at entrance drive and at various locations within the driving track limits to ensure the site drains adequately.

The proposed development will consist of a driving track and building with associated drives and parking. Access to the site will be from S. Midwest Boulevard. Any necessary pavement improvements to S. Midwest Boulevard will be handled by others.

It is anticipated that the site will have fencing along the S. Midwest Boulevard frontage and along the south property boundary from S. Midwest Boulevard to west, as needed.

ADA parking and accessible paths will maintain a maximum 2% cross slope and all ramps provided will meet ADA requirements.

The geotechnical report will provide earthwork recommendations, as well as recommended pavement sections for proposed site drives and parking facilities.

The site will be required to meet the requirements of the City of Oklahoma City and Oklahoma Department of Environmental Quality regarding storm water pollution prevention.

Permits for construction will be issued through the City of Oklahoma City.

See Exhibits C-SD 6, C-SD 7 and C-SD 8 for reference, refer Appendix.

# **CIVIL DESIGN NARRATIVE (URBAN STRATEGY)**

## **I. INTRODUCTION**

The intent of this narrative is to document the rationale for major decisions made for the design of the skills pad and the track. This may include assumptions, conditions, owner direction, and other explanations.

## **II. PROJECT SCOPE**

This project provides the design and construction phase services for the new Drivers Training Facility located in the City of Oklahoma City. This includes a single-story building, skills pad, and driving track primarily intended for Driver Training with the City of Oklahoma City Police and Fire Departments.

## **III. APPLICABLE CODES, STANDARDS, OTHER CRITERIA AND EFFECTIVE DATE**

The State of Oklahoma County Highway System 2022 Design Guidelines was used as a guide for the track layout and design.

## **IV. TRACK AND SKILLS PAD ELEMENTS**

### **A. SKILLS PAD**

The skills pad is 300' x 300' and will be a concrete surface. It will slope from northeast to southwest at a rate of between 1% and 1.6%. Due to the function of the skills pad, the concrete will be an 8" heavy-duty section 4,000 psi concrete reinforced with #4's at 18" on center each way. The subgrade will be part of the pavement design provided by the Geotechnical Engineer and is expected to be lime treated, lime-fly ash treated, or cement treated, dependent on the material, to a depth of eight (8) inches and uniformly compacted to a minimum of 98 percent of their maximum standard proctor dry density (ASTM D698) at a workable moisture content at or above optimum.

Reinforcing steel yield strength is to be 60,000 psi.

### **B. DRIVING TRACK**

The driving track varies in width between 24' for ess turns, off camber section and street scape, 30' for main track oval section, 75' wide in the accidence avoidance section, and 104.5' wide in the CLEET training section. The track generally has a 2% crown section and will super elevate at the oval corners to 4%. The off-camber sections will slope 3% in the off camber direction and the accident avoidance/CLEET section wider pavement will slope 1% to drain. The site slopes from 1230 on the west, up to 1273 in the center and back down to 1240 on the east side of the site. The profiles developed for the track will limit the maximum slope to 5% and will provide vertical curves with minimum crest K values of 82.70 based on a design speed of 60 mph for the oval section of the track. The design speed for the other sections of the track will be considerably slower.

Due to the function of the track, the concrete will likely be a 6" heavy-duty section 4,000 psi concrete reinforced with #4's at 18" on center each way. The subgrade will be part of the pavement design provided by the Geotechnical Engineer and is expected to be lime treated, lime-fly ash treated, or cement treated, dependent on the material, to a depth of eight (8) inches and uniformly compacted to a minimum of 98 percent of their maximum standard proctor dry density (ASTM D698) at a workable moisture content at or above optimum. On-site material may be used in fill areas as long as the material has a liquid limit of 45 or less and a plasticity index of less than 25. The material must be free of organics and miscellaneous debris and have a particle size of 3 inches or less. Fill should be placed in maximum 8-inch loose lifts and compacted to 98 percent of their maximum standard proctor dry density (ASTM D698) at a workable moisture content -2% to +3% of optimum.

Reinforcing steel yield strength is to be 60,000 psi.



# STRUCTURAL DESIGN NARRATIVE

## I. INTRODUCTION

A new, single-story pre-engineered metal building of approximately 5,000 GSF is planned to be constructed West of S. Midwest Boulevard and North of SE 104th ST. in Southeastern Oklahoma County. The new building will include a Service Bay, Mechanical/Electrical, Break Room, Restrooms, a large Training Room, and Office area. The project site will also include a Driving Track and Skills Pad.

The project site is currently an empty plot of land that will be repurposed by the City to build a Driving Facility to train Police and other public servants. There is currently a flat, largely even area with only small vegetation for consideration.

## II. ENGINEERING

### A. CODES AND STANDARDS

1. Building Codes
  - a. 2018 International Building Code (IBC)
  - b. ASCE 7-16 | Minimum Design Loads for Buildings and Other Structures
2. Material Codes
  - a. ACI 318-14 | American Concrete Institute "Building Code Requirements for Structural Concrete"
  - b. AISC 360-16 | American Institute of Steel Construction "Specification for Structural Steel Buildings"
  - c. TMS 402-16 | Building Code for Masonry Structures
  - d. AISI S100-16 | American Iron and Steel Institute "Specifications of the Design of Cold Formed Steel Structural Members"

### B. DESIGN LOADS

1. Dead Loads
  - a. Self-weight of structure
  - b. Collateral Dead Loads
2. Live Loads
  - a. Offices
  - b. Lobbies and first-floor corridors
  - c. Roofs
  - d. Garages
  - e. Handrails
3. Risk Category
  - a. It is assumed the total occupant load will not exceed 250 per 2018 IBC, Table 1604.5
4. Snow Loads

Actual Weights of Materials  
15-25 psf  
50 psf  
100 psf  
20 psf  
40 psf  
200 psf lb. at top of rail  
50 plf along top of rail

II

a. Ground Snow Load	10 psf
b. Importance Factor- Is	1.0
c. Exposure Category	C
d. Exposure Factor – Ce	0.9
e. Thermal Factor- Ct	1.0
5. Wind Loads	
a. Basic Wind Speed	109 mph
b. Exposure Category	C
c. Risk Category	II
d. Wind Directionality Factor- Kd	0.85
6. Seismic Loads	
a. Site Class (assumed, pending Geotech report)	D
b. Seismic Design Category	TBD
c. Importance Factor	1.0
d. Ss	TBD
e. S1	TBD
f. Sds	TBD
g. SD1	TBD

### III. FOUNDATION SYSTEMS

#### A. GEOTECHNICAL

The geotechnical recommendations listed herein are assumed pending receipt of the final report from the Geotechnical Engineer.

1. Geotechnical Consultant	Intertek-PSI (PSI)
2. Report Number	05462732
3. Date	January 23, 2024
4. Recommended foundation system	Shallow spread footings
5. Allowable bearing pressure	2,000 psf
6. Approved bearing material	Properly compacted native or structural fill soils
7. Anticipated settlement	1"
8. Minimum column footing width	24"
9. Minimum continuous footing width	18"
10. Minimum bearing depth	24" below adjacent grade

#### B. SLAB-ON-GRADE

1. It is expected that a concrete slab-on-grade system will be used at the ground level of the structure.
2. A 5" thick slab-on-grade will be supported over a 4" layer of aggregate over at least 12" of new structural fill.

### IV. SUPERSTRUCTURE

The proposed superstructure for the proposed facility will consist of a pre-engineered metal building (PEMB) consisting of straight-legged columns and tapered beam clear-spanning the structure. The lateral system for the proposed facility will consist of cable X-bracing or portal frames (per the manufacturer's design).

# ELECTRICAL DESIGN NARRATIVE

## I. CODES AND STANDARDS

- A. 2018 International Building Code (IBC)
- B. 2020 National Electrical Code (NEC)
- C. 2009 International Energy Efficiency Code (IECC)

## II. ELECTRICAL

### A. ELECTRICAL SERVICE AND DISTRIBUTION

- 1. 800 Amp 277/480v 3 Phase Switchboard anticipated.
- 2. A second electrical service supplying the track traffic light will be provided.
- 3. Emergency Power: (1) centralized inverters located in shop space.
- 4. Each panel will be fitted with a surge suppression device (SPD).

### B. EMERGENCY POWER

- 1. Life safety power will be provided by a centralized inverter to serve the following loads.
  - a. Egress lighting
  - b. Exit Signs
  - c. Powered egress doors (if required)
  - d. Fire Alarm systems (also provided with battery backup)
- 2. All egress lighting will be switched with adjacent normal power fixtures via a UL924/UL1008 device.
- 3. Optional diesel generator will be provided with a service entrance rated transfer switch.

### C. FEEDERS AND BRANCH CIRCUIT WIRING

- 1. All feeders and branch circuits will be copper, including service conductors from utility transformer into the building. All homerun circuits, underground runs, in slabs runs, outdoor or exposed to view inside the spaces shall be installed in conduits.
- 2. MC Cable will be utilized in the following scenarios. Conduit required unless noted below.
  - a. Lighting whips less than 6ft
- 3. Conduits shall be schedule 40 PVC where installed underground / under slab, rigid galvanized steel (RGS) when installed outdoors or subject to physical damage. Electrical metallic tubing (EMT) can be utilized otherwise.

### D. BUILDING GROUNDING AND LIGHTNING

- 1. Lightning protection will be provided.
- 2. The electrical distribution system throughout the facility shall be grounded in accordance NEC Article 250. The grounding electrode system for this purpose will include the following items:



- a. One driven ground rod installed near or within the footprint of the service entrance equipment.
- b. Domestic water piping.
- c. Building steel
- 3. Generator will be a separately derived system and therefore require bonding of neutral and ground.
- 4. Ground bar per telecom room. Telecom ground bars to be routed to main telecom ground bar located in MDF.

#### E. BUILDING POWER

- 1. Floor boxes provided in conference/meeting rooms per NEC 210.65. Data conduits provided to each floor box unless otherwise specified. Hubbell CFB6G30CR
- 2. Electrical devices to be specification grade with stainless cover plates.

#### F. BUILDING EXTERIOR AND SITE LIGHTING

- 1. Lighting types:
  - a. Building mounted wall packs will be utilized for egress illumination.
  - b. Parking lot and roadway light poles will be utilized at building parking areas and entrance road for security and for personnel safety.
- 2. 4000K color temperature.
- 3. The exterior lighting will be automatically controlled by the lighting control system to turn on at dusk and off at dawn.

#### G. BUILDING INTERIOR LIGHTING

- 1. LED technology is intended to be used throughout the facility. Lighting selections will be coordinated with the Architectural design. Fixture types will be minimized for ease of maintenance. Effort will be made to follow illumination levels recommended by Illumination Engineering Society (IES) guidelines.
- 2. 4000K color temperature in common spaces.
- 3. The design team will be aggressive with connected lighting loads. The goal is 0.8w/sf or less.
- 4. A hard-wired connected lighting system will provide lighting control to meet IECC.
  - a. System will be capable of being networked.
  - b. System will be able to track building usage.
  - c. Battery powered devices will not be allowed.
- 5. Space types and control intent
  - a. Private offices – Occupancy sensor with dimming to 1%. Single basket architectural troffers to be used to reduce glare.
  - b. Open office – Occupancy sensor with dimming to 1%, zoned.
  - c. Corridors, lobbies, bathrooms, vestibules – Scheduled with occupancy sensor overrides during non-business hours, dimming to 10%, daylight harvesting.
  - d. Shop – Manual control, dimming to 10%, zoned.
  - e. Service areas – Occupancy sensor, except where safety is a concern.

## H. LOW VOLTAGE SYSTEMS - TELECOM

1. CEC will design pathway infrastructure for low voltage systems in conjunction with the Design Team. Anticipated systems include:
  - a. Access Controls
  - b. Telecom
  - c. Security Cameras
  - d. Wireless Access Points
  - e. Intercom
2. CEC will design infrastructure for all low voltage systems. Infrastructure shall consist of cable tray, conduit, boxes, pull strings and power. The exact requirements of these systems shall be coordinated with the Owner and Owner's vendors.
3. Telecom pathways consisting of
  - a. Cable tray in main corridors
  - b. J-hooks in rooms
  - c. Floor to floor sleeves
  - d. Device conduit routed to nearest accessible ceiling.
  - e. Cabling and head-end equipment provided by the City.
4. Access control system consisting of
  - a. Assume centralized power supply to serve doors located in MDF/IDF rooms. Exterior doors which have openers may require 120V to above the door.
  - b. Design of access control system by others.

# MECHANICAL DESIGN NARRATIVE

## I. INTRODUCTION

The intent of the following section is to provide a basic understanding of the Heating, Ventilation, and Air Conditioning (HVAC) mechanical systems anticipated by CEC to be used on this project. The information included is based on industry standards, project meetings, preliminary calculations, and assumptions.

## II. CODES, DESIGN CONDITIONS, AND INTERNAL LOADS

### A. CODES AND STANDARDS

1. 2018 International Building Code (IBC)
2. 2018 International Mechanical Code (IMC)
3. 2009 International Energy Efficiency Code (IEEC)

### B. GENERAL ROOMS (training room, offices, break rooms)

1. Design Space Temp: 75°F Summer, 72°F Winter
2. Humidity: 50% R.H.
3. Lighting: 1 W/SF
4. People: 250 BTU/HR Sensible, 200 BTU/HR Latent
5. Equipment/Plug: 1.5 W/SF
6. Acoustic Noise Criteria: NC 25-35

### C. SERVICE BAY

1. Design Air Temp: 60°F Winter (no cooling planned for Summer)
2. Lighting: 1 W/SF
3. Equipment: 2 W/SF
4. Acoustic Noise Criteria: NC 30-35 (excluding air compressor noise)

### D. OUTSIDE AIR (OA) VENTILATION, EXHAUST RATES, and AIR TREATMENT

1. Classroom: 0.18 CFM/SF and 10 CFM/SF per person
2. General Office Spaces: 0.06 CFM/SF and 5 CFM/SF per person
3. Corridors: 0.06 CFM/SF
4. Restrooms / Janitor's Closet Exhaust: 75 CFM per toilet/urinal fixture
5. Service Bay: 6 AC/H

## III. MECHANICAL EQUIPMENT

### A. PACKAGED UNITS

1. Packaged Units will be provided with direct expansion cooling, heat pump heating with electric secondary heating, demand control and economizer



ventilation modes, hinged access doors, hot gas reheat for dehumidification sequence, and concrete pad for mounting equipment on the ground.

2. Equipment to meet minimum efficiency ratings as allowed by current codes.
3. Units will be single zone with the following cooling capacities.
  - a. Training Room Zone: 7 tons
  - b. Office/Restrooms/Breakroom/Corridors: 5 tons
4. Ductwork will rise up from the ground mounted equipment and extend to their respective zones.
5. Controls will be through stand-alone programmable thermostats.

## B. EXHAUST FANS

1. Restrooms will be provided with a single exhaust fan to turn on when the building is occupied by interlocking with corridor lights.
2. General ventilation for the Service Bay will be provided through intake louvers with motor operated dampers and a single wall mounted exhaust fan with motor guards, fan housing, motor operated louver, and rain hood. Fan will be controlled through a manual on/off switch and hazardous fume detection.

## C. UNIT HEATERS

1. Fan forced, electric unit heaters (quantity two [2]) will be located in the Service Bay for warming the space. Independent thermostats will be located near each heater.

# PLUMBING DESIGN NARRATIVE

## I. INTRODUCTION

The intent of the following section is to provide a basic understanding of the plumbing systems, materials, and equipment anticipated by CEC to be used on this project. The information included is based on industry standards, project meetings, preliminary calculations, and assumptions.

## II. CODES

- A. 2018 International Building Code (IBC)
- B. 2018 International Plumbing Code (IPC)
- C. 2009 International Energy Efficiency Code (IECC)

## III. PLUMBING FIXTURES

- A. Plumbing fixtures shall meet National Sanitation Foundation (NSF) Standard 61 and all applicable Americans with Disabilities Act (ADA) accessibility requirements.
- B. Breakroom and Training Room Sinks:
  - a. Undermount stainless-steel basin with manual gooseneck faucet
- C. Electric Water Cooler:
  - a. Vandal-resistant stainless steel with filtered bi-level cooler and bottle filler.
- D. Floor Cleanouts:
  - a. Cast iron cleanout and plug with nickel bronze round adjustable top.
- E. Floor Drains:
  - a. Cast iron body with anchor flange and collar and square adjustable heel-proof strainer (one drain located in each restroom and one adjacent to air compressor in the service bay.)
- F. Trench Drains:
  - a. A premanufactured trench drain approximately 40 feet long and 4 inches wide will be located in the Service Bay.
- G. Janitor/Service Sink:
  - a. Freestanding stainless steel, single bowl sink with manual faucet (TBD if separate floor mounted mop sink will be used on the project).
- H. Lavatories:
  - a. Undermount vitreous China basins with automatic sensor faucets and grid drains.
- I. Water Closets:
  - a. Floor-mounted vitreous China fixture with automatic flush valve.

**J. Urinals:**

- a. Wall-hung vitreous China fixture with automatic flush valves.

**K. Shower:**

- a. Wheelchair accessible surround with fixed shower head and separate adjustable height shower head, temperature mixing valve with pressure and temperature safeties and hand-held diverter valve.

**L. Wall-Hydrants:**

- a. Recessed box with lockable cover, freeze resistant, backflow prevention, key operated.

**M. Emergency Eye Wash and Drench Shower:**

- a. Freestanding accessible emergency fixture with shower head, eye wash spray/bowl, and 25 GPM emergency use temperature mixing valve.

## **IV. PLUMBING PIPING SYTEMS**

**A. DOMESTIC WATER**

1. 2" domestic water service to the building.
2. ASTM B 88, Type L copper tube piping installed with ASME B16 wrought-copper solder-joint fittings per AWWA standards.

**B. WASTE AND VENT**

1. 4" sanitary waste service exiting the building.
2. Solid core ASTM D2665 and D3034 PVC piping with ASTM D2564 solvent cement welded joints shall be used for sanitary sewer waste/vent systems.
3. An oil interceptor will be provided to receive waste from the service bay drains prior to discharging to sanitary sewer.

**C. STORM**

1. Roof storm drainage is anticipated to be collected through gutters and downspouts by the metal building manufacturer.

**D. COMPRESSED AIR**

1. Compressed air will be generated through a 100 gallon, 5 horsepower air compressor and extended to 2 wall mounted, spring return hose reels with 50 feet of ½" compressed air tubing. The hose reels will be spaced to provide compressed air to Service Bay.

**E. PLUMBING ACCESSORIES AND EQUIPMENT**

1. Provide floor or wall cleanouts for waste drains in accordance with the IPC at each change in direction, beginning of run, base of riser, interval of over 50 feet of piping, and where required by the nature of the work.
2. Provide ball valves on each piping extension serving plumbing fixtures, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops.
3. Provide domestic hot water and hot water return piping to tie hot water plumbing fixtures into existing building hot water recirculation loop. Water heater will be a

80- gallon tank type electric unit with an approximate 45-kW demand. Volume and demand characteristics are driven largely by the emergency use shower/eyewash fixture.

#### **F. PLUMBING INSULATION AND IDENTIFICATION**

1. Insulate piping systems in accordance with International Energy Conservation Code.
2. Domestic cold, hot, and hot water recirculation piping shall receive preformed fiberglass insulation.
3. Include protective shielding pipe covers for exposed sanitary drains, domestic water, and stops for plumbing fixtures for people with disabilities.
4. Mark and label equipment, valves, and piping including piping system and direction of flow and provide warning signs or labels where applicable per ANSI A13.1.

#### **G. PIPE HANGERS AND SUPPORTS**

1. Floor supports: Concrete pier or steel pedestal with floor flange for fixture attachment.
2. Overhead supports: Individual steel rod hangers attached to structure or to trapeze hangers.
3. Trapeze hangers: Welded steel channel frames attached to structure.
4. Vertical pipe supports: Steel riser clamps.



# **FIRE PROTECTION NARRATIVE (FIRE ALARM AND FIRE SUPPRESSION)**

## **I. INTRODUCTION**

The intent of this narrative is to document the rationale for major decisions made under Rated Engineering's direction. This may include assumptions, conditions, owner direction, and other explanation but is not expected to repeat all content otherwise addressed in the project plans and specifications.

## **II. PROJECT SCOPE**

This project provides the design and construction phase services for the new Driving Facility located in the City of Oklahoma City. This includes a single-story building primarily intended for Driver Training for the City of Oklahoma City Police Department.

Rated Engineering provides all fire protection engineering scope as an independent contractor to ADG Blatt, the Architect of Record. Rated Engineering's scope includes fire sprinkler and fire alarm systems.

## **III. APPLICABLE CODES, STANDARDS, OTHER CRITERIA AND EFFECTIVE DATE**

The project fire protection systems will comply with the codes, standards and criteria listed below.

As of June 22, 2022, Oklahoma Uniform Building Code Commission (OUBCC) has adopted the codes listed below. 2018 edition of the International Building Code (September 14, 2021 effective date) with amendments

- A. International Building Code (IBC), 2018 with OUBCC amendments
- B. International Fire Code (IFC), 2018 with OUBCC amendments
- C. NFPA 10 Standard for Portable Fire Extinguishers, 2018
- D. NFPA 13 Standard for the Installation of Sprinkler Systems, 2016
- E. NFPA 20 Standard for the Installation of Stationary Pumps for Fire Protection, 2016
- F. NFPA 24 Standard for Installation of Private Fire Service Mains and Their Appurtenances, 2016
- G. NFPA 72 Fire Alarm and Signal Code, 2016
- H. NFPA 291 Recommended Practice for Water Flow Testing and Marking of Hydrants, 2022 (most current edition referenced by Rated Engineering for flow testing methodology)

## **IV. BUILDING CHARACTERISTICS**

- A. Occupancy Classification

Refer to architectural for detailed code compliance path. The building includes business, assembly, and storage occupancies.

#### **B. Occupancy Separation Approach, Construction Type and Allowable Height and Area**

Refer to architectural for detailed code compliance path.

#### **C. Building Separation Distance and Exterior Wall Fire Resistance Rating**

Refer to architectural for detailed code compliance path.

#### **D. Specific Hazards**

Miscellaneous tire storage, as defined by NFPA 13 will be stored in the vehicle garage. Final storage arrangement to be determined. This schematic design is based on "double-row or multi-row fixed or portable rack storage on-side or on-tread up to 5 ft high". To be confirmed/agreed upon by stakeholders.

#### **E. Building Power Supply**

The building is served by the electrical utility. Refer to electrical for detailed power supply discussion.

#### **F. Building Temperature Management**

1. The building shall be maintained at temperature and humidity typical with business occupancies.

#### **G. Building Areas Subject to Physical Damage**

The building is located a safe distance from the driving track. Per coordination with the design team, additional protection from the driving track is not required.

#### **H. Building Areas Subject to Corrosion**

No building areas are known to be subject to unique corrosive effects.

### **V. FIRE SUPPRESSION AND EXTINGUISHING SYSTEMS AND FIRE WATER UTILITIES**

#### **A. Portable Fire Extinguishers**

Portable fire extinguishers are required by IFC 906.1

#### **B. Water-Based Fire Suppression Systems, Manual**

A manual water-based fire suppression system is not required and shall not be provided.

#### **C. Water-Based Fire Suppression Systems, Automatic**

An automatic water-based fire suppression system is not required. However, based on coordination with the design team and stakeholders, the design documents shall include a wet pipe sprinkler system. A wet pipe sprinkler system shall be provided throughout the facility.



Chrome pendent sprinklers will be provided in finished areas with ceilings, while brass upright sprinklers will be provided in the service bay and other areas which are unfinished with deck. Hazard classification will be in accordance with IBC and NFPA 13. The business and assembly portion of the facility will be classified as light hazard while the vehicle bay will be classified as ordinary hazard group II.

#### **D. Special Hazard Automatic Fire Suppression and Extinguishing Systems**

No special hazard automatic fire suppression or extinguishing systems are required. Based on schematic plans large commercial cooking equipment will not be provided in the breakroom.

#### **E. Water Supply Description, Hydrant Flow Tests, Fluctuations, and Corrosivity**

Rated Engineering has conducted hydrant flow testing (it has been determined that adequate water supply is available for the driver training building). Refer to preliminary hydraulic analysis report for additional information.

#### **F. Fire Pump System**

A fire pump is not required.

#### **G. Fire Water Storage Tanks**

Fire water storage tank(s) are not required.

#### **H. Underground Piping System, Materials, and Valves**

The underground piping from the point of connection into the fire suppression system will comply with NFPA 24.

### **VI. FIRE ALARM AND DETECTION**

#### **A. Supervising Station Location, Type, and Communication**

The location of the supervising station is not currently known.

#### **B. Wide-Area Mass Notification System and Giant Voice**

A wide-area mass notification system is not required or provided.

#### **C. Control Units**

The driver training building will be provided with a primary fire alarm control unit.

#### **D. Automatic Fire Detection**

Fire will be automatically detected via sprinkler system waterflow switch, spot-type smoke detection (above fire alarm control unit) and duct-type smoke detection in mechanical systems with a supply capacity of 2,000 cfm. Refer to fire alarm floor plans for locations of duct detection as coordinated with mechanical systems.

#### **E. Occupant Notification, Audible and Visual**

The fire alarm system notification will comprise of horns and strobes. Horns will be spaced to ensure audibility requirements of NFPA 72 are met. Strobes will be provided in all public and common use areas in accordance with IFC and NFPA 72 requirements.

#### **F. Emergency Control Function Interfaces**

The fire alarm system will shut down air handlers, perform release of held-open doors and unlocking of access-controlled doors in the direction of means of egress. If required by lighting controls, the fire alarm system may also cause illumination of means of egress lighting.

#### **G. Circuit Classification, Conductor Type, Conduit, and Pathway Survivability**

Circuit classification shall be class B as allowed by IFC and NFPA 72. Conductor type and shall be in accordance with IFC, NFPA 70 and NFPA 72. Pathway survivability beyond Level 1 is not anticipated.

# AV/IT DESIGN NARRATIVE

## I. CODES AND STANDARDS

1. All equipment and installations shall meet or exceed the minimum requirements of the following standards: BICSI, J-STD-607-A, TIA 569-B, TIA 758-A, ADA, ASTM, IEEE, NEC, NEMA, NFPA, OSHA, UL, FCC and the Fire Marshall. and Manufactures requirements.
2. 2018 International Building Code (IBC)
3. 2020 National Electrical Code (NEC)
4. OEM installation manuals
5. Applicable state and local codes
6. ANSI/TIA-568 series – Commercial Building Telecommunications Cabling Standard
7. ANSI/BICSI/NECA 568 – “Standard for Installing Commercial Building Telecommunications Cabling”

## II. LOW VOLTAGE

### A. SERVICE ENTRANCE

Regardless of if the new City facility will be connected at time of completion to City of Oklahoma City network, service entrance must be included and constructed at time of project.

1. Handhole - 30" x 48" - Typically Quazite
2. Service Ingress/Egress of Two (2) 4" PVC conduit with a minimum of (3) 1 inch innerducts inside
3. 4" PVC underground conduit Provided to be connected to PSTC at a future date.

### B. CATEGORY CABLE

Standard cable will be Cat-6 UTP 250MHz or higher. Other versions may be called out for specific needs on a case-by-case basis. All Interior Cat-6 cable in a facility will be plenum rated. Exterior cable exposed to the elements will be rated for the application, this includes Direct Bury, Tower, Lashed Aerial, Duct, Underground Conduit.

Acceptable Category-6/UTP Solutions:

1. Panduit Cat-6/Panduit Termination
2. Commscope Cat-6/Commscope Termination
3. General Cat-6/Panduit Termination
4. Belden Cat-6/Belden Termination
5. SuperiorEssex Cat-6/Ortronics Termination

Acceptable Outdoor Cat-6/UTP Solutions:

6. Superior Essex Cat6A 04-001-A5
7. Any other Manager approved cable must be rated for Duct, Underground Conduit, Tower, Lashed Aerial, Low-Risk Direct Burial, Direct Burial, Open Trench



### C. NETWORK RACK

1. 48" 19U Wall Mounted Enclosed Rack with tempered glass doors and Lockable
2. Power
3. Two separate circuits having:
4. Two (2) 220V/30A, L6R30 form factor and Two (2)/ dual-gang/120V/20A (individual circuits)
5. Grounding bar or halo
6. (2) 2" Conduit routed from this rack to above the ceiling to an easily accessible location. This conduit is being provided for all of the CAT6 cable runs
7. (1) 1" Conduit routed from this rack to the where the internet/Phone service provider will be coming into the building.
8. (2) Rack mounted shelves shall also be required
9. (1) Grounding Bar

### D. NETWORK EQUIPMENT

All network equipment shall be provided by the contractor and coordinated with and approved of by City of Oklahoma City Infrastructure Manager. All equipment shall include the associated licensing required for one year post opening.

1. (1) 48 Port Cisco Enterprise Model POE switch
  - a. Provision PCs and voice
  - b. Distribution layer of current generation
    - i. confirm with City IT
  - c. For connection and routing to City network
  - d. Associated licensing
2. (5) Cisco Current Generation Wireless Access Points
  - a. Associated Licensing

### E. CAT6/EHTERNET

This is the current estimate and is subject to change.

1. (40) CAT6A and shall meet the requirements for ANSI/TIA 568 C.2
2. All runs shall be ran within approximately sized conduit routed above the ceiling to an easily accessible space. (longest estimated run will be less than 120ft)
3. (1) 1" under slab Conduit routed from the podium location in the Training Room to the Network Rack. This will be used for AV/IT only Electrical will need a separate underslab conduit run.
4. (1) 4 - Gang Deep Floor Box, Legrand RFB6 or equivalent. Decorator Bracket color shall be coordinated with Architect.

### III. AUDIO VISUAL

#### A. TRAINING ROOM

1. (2) 86" LG Commercial Series TV's
  - a. Each TV is required to have
    - i. (1) Duplex Receptacle
    - ii. (2) Ethernet Drops. Refer Low Voltage section.
    - iii. (1) Chief TS525TU Thinstall Swing Arm Wall Mount or Equivalent.
    - iv. (1) Inwall installation Box, Chief TA500 or Equivalent.
2. (4) 8" Ceiling Mount Speakers
  - a. Color Shall be Coordinated with the Architect.
3. (1) AMX DVX-3266-4K All-In-One Presentation Switcher or Equivalent.
4. (2) AMX DXLink-4K60 Receiver Modules
5. (1) Presentation Podium
  - a. Shall be Coordinated with the Architect
  - b. (1) AMX DX-TX-DWP-4K Transmitter Wall Plate, Mounted within the floor box.
  - c. (1) Volume control and input selector panel,
    - i. Shall be programmed to control overall volume in the room and switch between 1-4 inputs.
    - ii. Shall fit within podium, Coordinate with Architect
  - d. (1) Duplex Receptacle, Mounted within the floor box.
  - e. (2) Ethernet Drops. Refer Low Voltage section, Mounted within the floor box.

#### B. FLEX OFFICE

1. (1) 65" LG Commercial Series TV
  - a. Each TV is required to have
    - i. (1) Duplex Receptacle
    - ii. (2) Ethernet Drops. Refer Low Voltage section.
    - iii. (1) Chief TS525TU Thinstall Swing Arm Wall Mount or Equivalent.
    - iv. (1) Inwall installation Box, Chief TA500 or Equivalent.

#### C. BREAK ROOM

1. (1) 55" LG Commercial Series TV
  - a. Each TV is required to have
    - i. (1) Duplex Receptacle
    - ii. (2) Ethernet Drops. Refer Low Voltage section.
    - iii. (1) Chief TS525TU Thinstall Swing Arm Wall Mount or Equivalent.
    - iv. (1) Inwall installation Box, Chief TA500 or Equivalent.

On 2024/03/24 a meeting was held between the City of Oklahoma City and ADG Blatt and its consultants. The IT Closet (IDF) was modified and is not shown in this Preliminary Report submission. The following amendments to the City's standard IT specs were discussed and approved.

1. Room size was amended to better fit the building.
  - a. The closet in the training room was converted to an IT closet.
2. Rack clearance size was amended to better fit the building.
  - a. 48" min in the front of the 4 post rack.
  - b. 30" min in the rear of the rack.
  - c. 24" min to one side of the rack.
  - d. The Access control panel and its clearance can overlap within the 48" front rack clearance.
3. AV equipment can be housed within the main IT rack as long as no outside network connections are not required.
  - a. HDMI or Room PC connection only.
4. ADG Blatt will coordinate with CEC (MEP Consultant) to condition the space and modify the electrical layout for the space as needed.

# SECURITY DESIGN NARRATIVE

## I. INTRODUCTION

The intent of the following section is to provide a basic understanding of the electronic security countermeasure systems, materials, and equipment anticipated by Summers Associates to be used on this project. The information included is based on industry standards, project coordination and client meetings, and assumptions.

## II. CODES AND STANDARDS

1. Americans with Disabilities Act (ADA)
2. American National Standards Institute (ANSI)
3. ASIS International (PAP 202) Physical Asset Protection
4. 2018 International Building Code (IBC)
5. 2020 National Electrical Code (NEC)
6. OEM installation manuals
7. Applicable state and local codes
8. ANSI/TIA-568 series – Commercial Building Telecommunications Cabling Standard
9. ANSI/BICSI/NECA 568 – “Standard for Installing Commercial Building Telecommunications Cabling”
10. Federal Communications Commission (FCC)
11. NFPA 70 (2005 or Newer: TIA2005) National Electric Code
12. NFPA 72(2007 or Newer) National Fire Alarm Code
13. NFPA 730 (2020 or Newer) Guide for Premises Security
14. NFPA 731 (2006 or Newer) Standard for the Installation of Electronic Premises Security Systems
15. Underwriters Laboratories (UL)
16. UL 294 – Standard for Access Control System Units
17. UL 1076 – Standard for Proprietary Burglar Alarm Units

## III. ELECTRONIC SECURITY SYSTEMS

### A. ACCESS CONTROL - BUILDING

1. (2) HID Signo 40 Dual Tech Card Readers 40
2. AMAG M4000 4-Door Entry Controller
3. (2) Schlage Electrified Cylindrical Lock with Internal REX(Div.8)
4. 8 Door Altronix/AMAGE Access and Power Integration Kit
5. Door Position Switches – Double Pull, Double Throw (DPDT)
6. (1) Symmetry Edge Network 1 Door PoE+ Controller (Vehicle Gate)
7. Pedestal Pro Enclosure with Pro 48” Gooseneck Pedestal (Vehicle Gate)
8. (2) Superior Essex Cat.6A 1000’ 04-001-A5
9. Plenum Access Control Cable 500’



## B. ACCESS CONTROL – VEHICLE GATE

1. Lift Master KPR2000 Stand Alone 125K Proximity Reader w/Keypad / Wiegand Output
2. Lift Master PS12D2A Power Supply
3. Hoffman A20P20 Back Plate
4. Hoffman A20H2008GQRLP3PT Enclosure
5. Extreme Power J60-350 Conversion Lithium UPS 350VA/200W 120VAC Surge Protection
6. Pedestal Pro Lando-CS-14x10-E Pedestal
7. Pedestal Pro 48-9C 48" Steel Gooseneck Pedestal
8. Stud-Anchor 500 Stud-Bolt Pedestal Mounting Kit – ½: Bolts
9. 18 AWG 4 Conductor, Multi-Conductor Direct Burial Cable 1804-VNQ/VNTC 500'

## C. INTRUSION DETECTION

1. DSC HS3251CP01 PowerSeries Neo Kit
2. (2) GRI roll up door contacts 2" gap
3. (3) DSC Bravo BV-300DP Motion Detectors

## D. VIDEO SURVEILLANCE SYSTEM

1. (6) Genetec GSC-OM-E-1C Camera Licenses – connect to Genetec Enterprise Security Center Archiver in OKC Data Center
2. (4) Hanwha Vision 6MP Dual-Sensor Dome Camera, IR AI; Indoor/Outdoor PNM-C12083RVD6
3. (2) 4-Sensor 4K Outdoor AI IR + PTZ (2MP) Multi-Directional IP Camera PNM-C34404RQPZ
4. (2) Corner Mount Base SBP-300WMW1
5. (2) Gooseneck Wall Mount SBP-317HM
6. (2) Hanging Mount SBP-317HM
7. Hanwha Vision 83W PoE Injector SPO-8315
8. 24 Port Cisco PoE Switch or Equivalent
9. Ditek PoE Surge Protector DTK-MRJPOE
10. APC 1500VA Smart UPS
11. 1,000' Superior Essex Cat6A 04-001-A5



# LANDSCAPE DESIGN NARRATIVE

## I. INTRODUCTION

The landscape design for the Driving Facility at the Public Safety Training Center will consist of native and adaptive species that will complement the existing environment and reduce the demand for irrigation and maintenance.

A native grass hydro mulch will be used to control erosion at all disturbed areas and slopes. The seed mix will be a native short grass mix and will only require mowing once a year and when established irrigation will not be necessary.

The landscape at the building will incorporate xeriscape principles that will complement the architecture and lessen the maintenance and irrigation demands.

Existing trees and vegetation along Midwest Boulevard and throughout the site will be preserved and protected where applicable.

All landscaped areas and trees at the building and parking islands are to be irrigated and is a total of 20,500 SF of landscaped and irrigated area.

## APPENDIX

### A. Drawings

- Civil Exhibits
- Architectural Site Plan
- Department Floor Plan
- Building Elevations
- Building Sections
- 3D Views and Perspectives

### B. Design Development Cost Estimate

MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
CITY OF OKLAHOMA CITY SEWER & WATER UTILITY ATLASES



200 W. Main St.  
Oklahoma City, OK 73104  
101 S. Broadway, Suite 200  
Edmond, OK 73034

Project Address

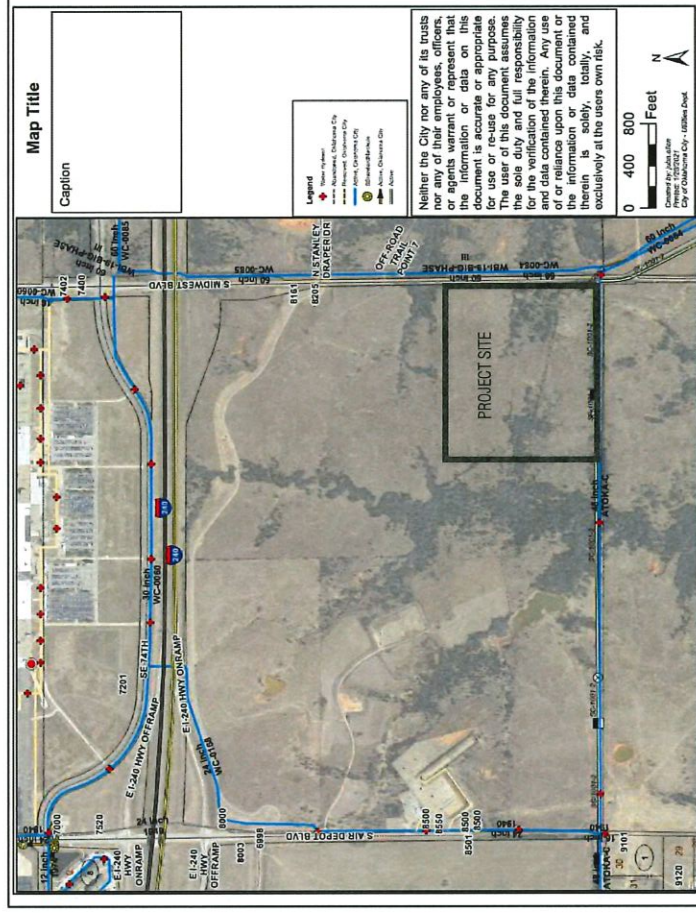
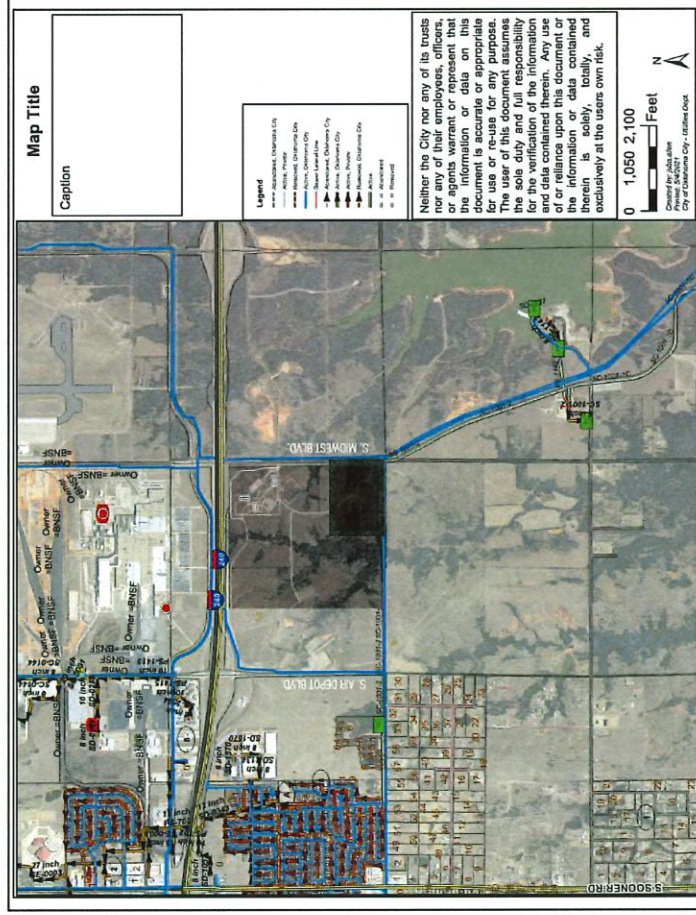
01/24/2024

ISSUE DATE:  
REVISION DATE:

PROJECT NO: 23-062

C-SD 1

Revisions:





**MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
WATER EXTENSION COORDINATION**

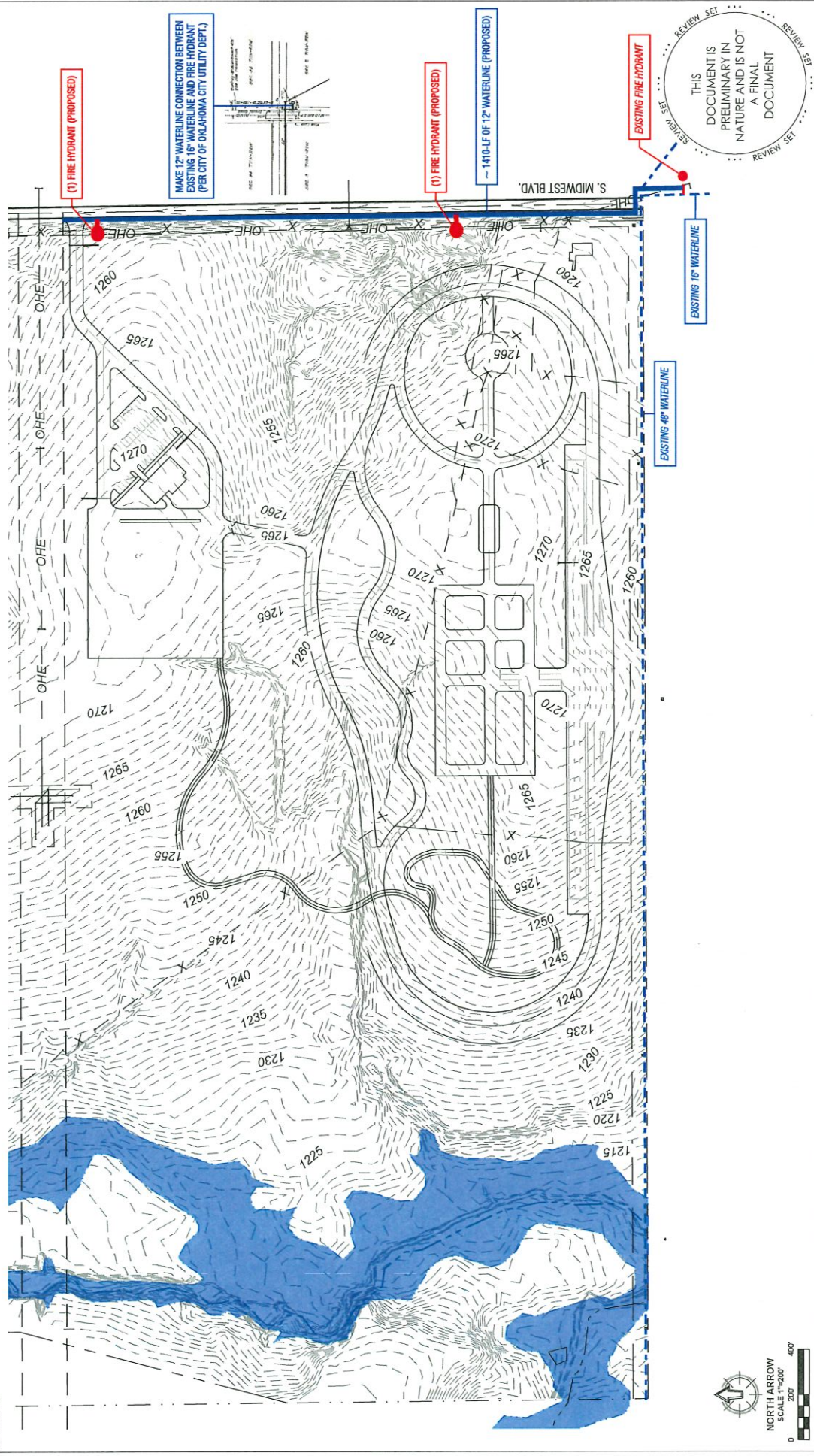


Project Address

ISSUE DATE: 01/24/2024  
REVISION DATE:  
PROJECT NO: 23-062

**C-SD 2**

Revisions:





**MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
OG&E UTILITY ATLAS**



Project Address

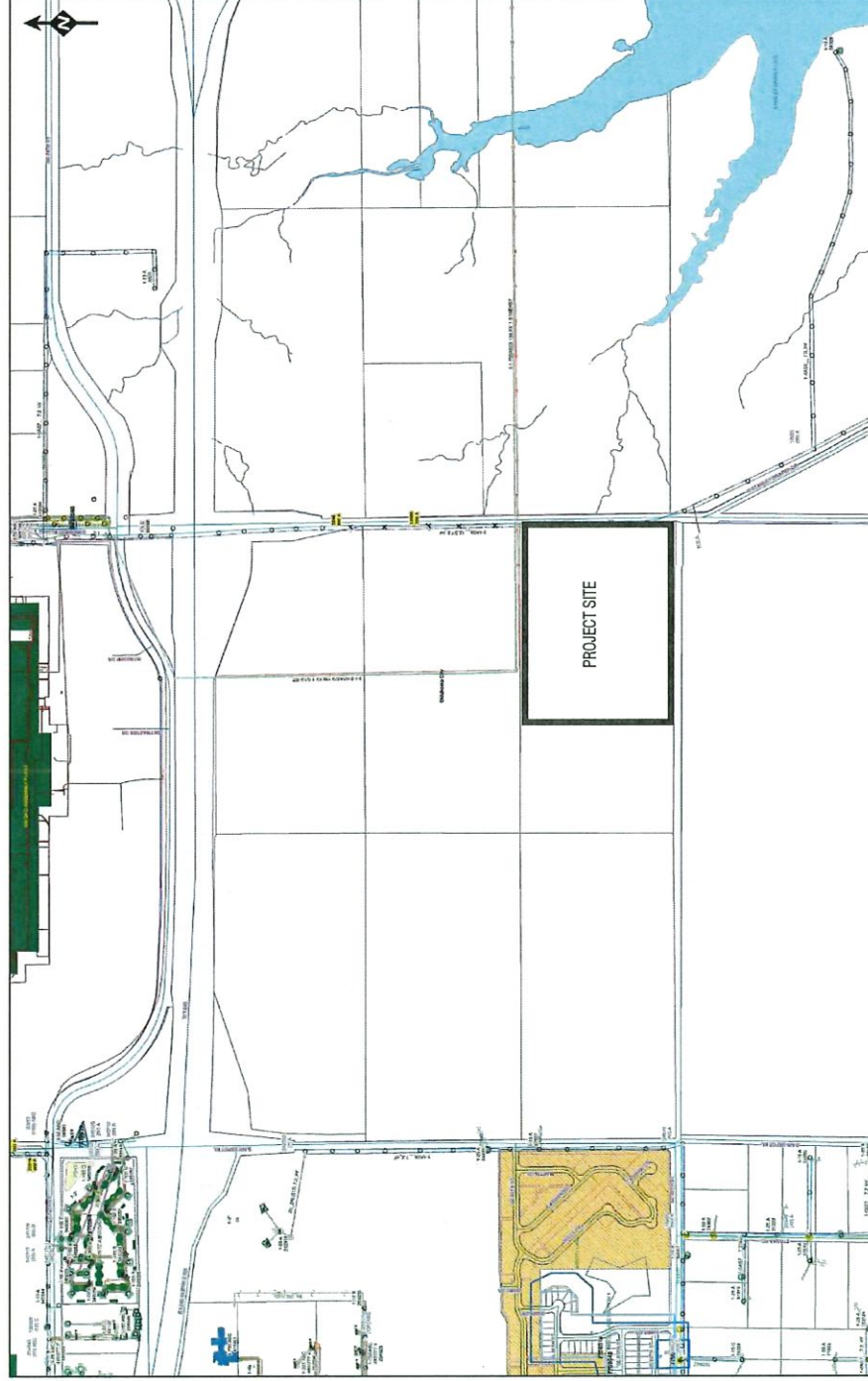
01/24/2024

ISSUE DATE:  
REVISION DATE:

**C-SD 3**

PROJECT NO: 23-062

Revisions:





MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
COX COMMUNICATIONS UTILITY ATLAS



920 W. Main St.  
Oklahoma City, OK 73106  
101 S. Broadway, Suite 200  
Edmond, OK 73034

Project Address

01/24/2024

ISSUE DATE:  
REVISION DATE:

C-SD 5

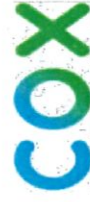
PROJECT NO: 23-062

Revisions:



Map Legend:

Pedestal	Underground Structure
Vault	Overhead Structure
Riser	Pole
26"	





MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
WETLANDS INVENTORY MAP - USGS TOPOGRAPHY

ISSUE DATE:  
REVISION DATE:  
PROJECT NO: 23-062

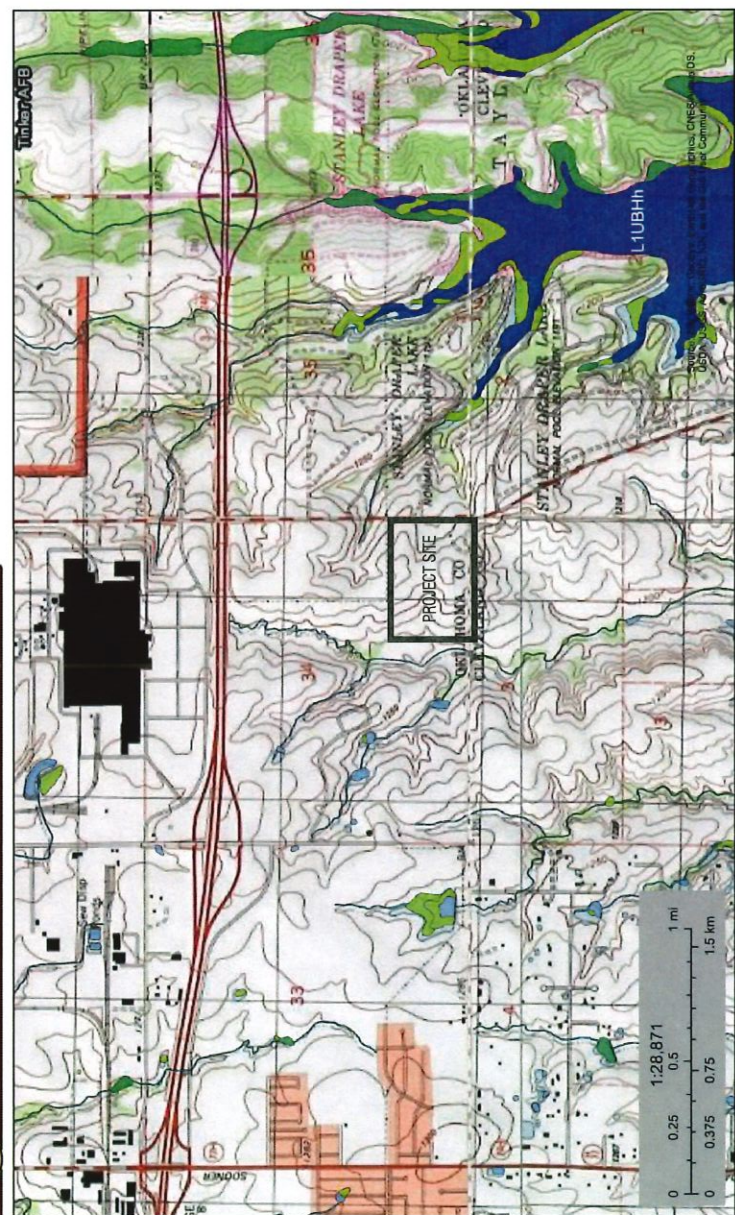
C-SD 6

Project Address

Revisions:



Wetlands - USGS Topo



January 28, 2021

**Wetlands**

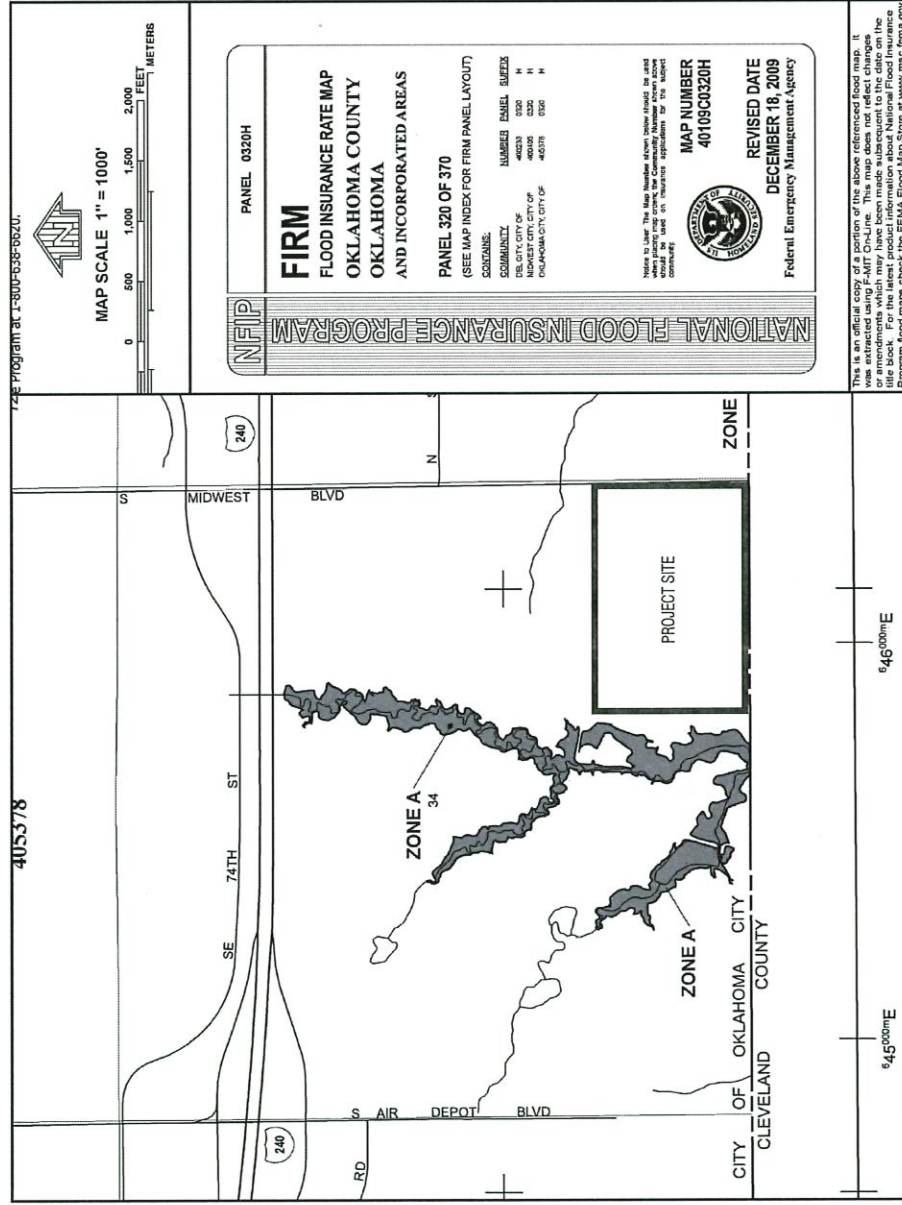
Estuarine and Marine Deepwater	Freshwater Emergent Wetland	Lake
Estuarine and Marine Wetland	Freshwater Forested/Shrub Wetland	Other
	Freshwater Pond	Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currency of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
This page was produced by the NWI mapper



## Revisions:



MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY CENTER  
OKLAHOMA CITY, OKLAHOMA  
SITE FENCING COORDINATION



Project Address

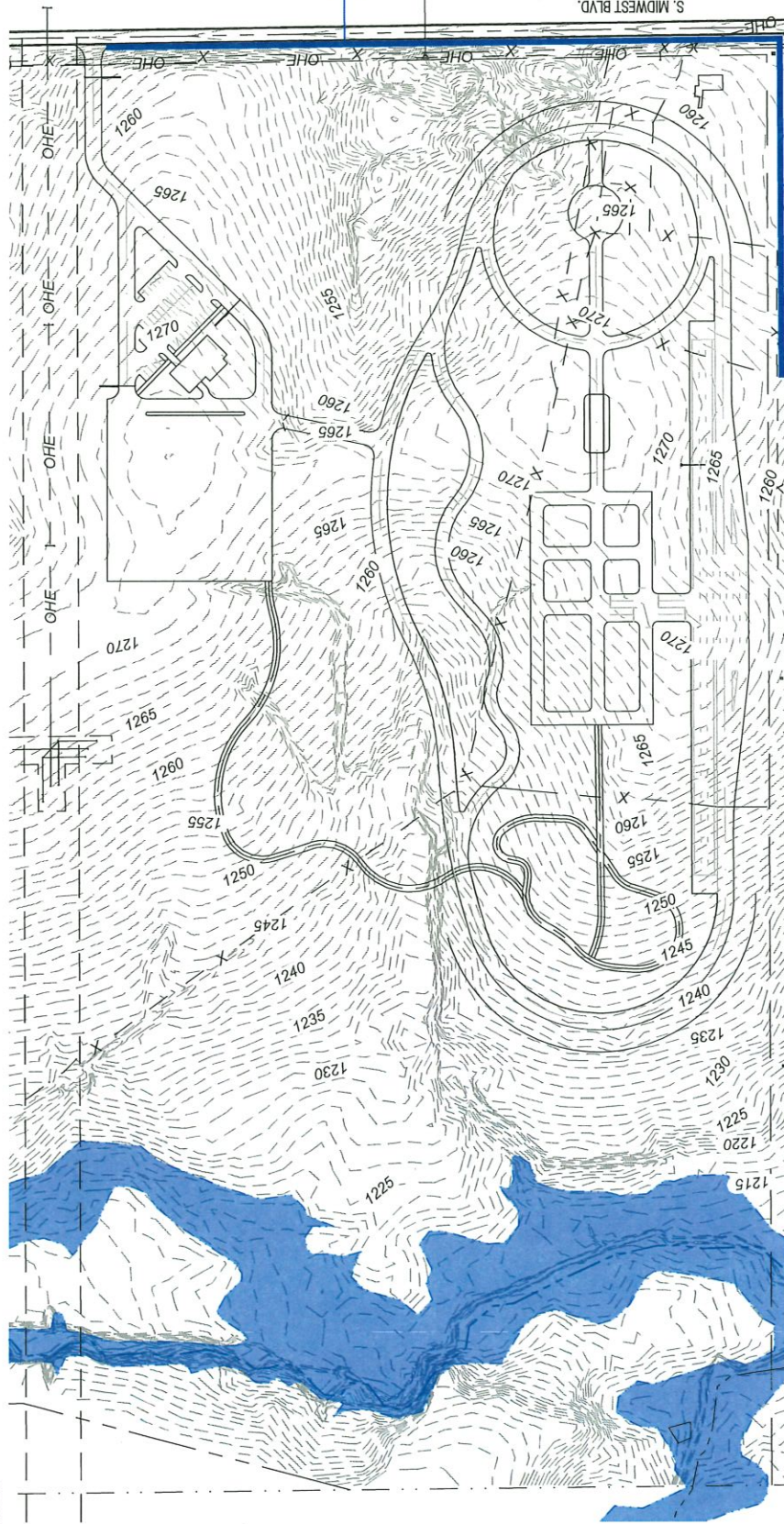
01/24/2024

ISSUE DATE:  
REVISION DATE:

PROJECT NO: 23-062

C-SD 8

Revisions:



~ 1290-LF FENCING (FRONTAGE)

~ 600-LF FENCING (SOUTH PROPERTY LINE)



NORTH ARROW  
SCALE 1"=200'  
0 200 400'

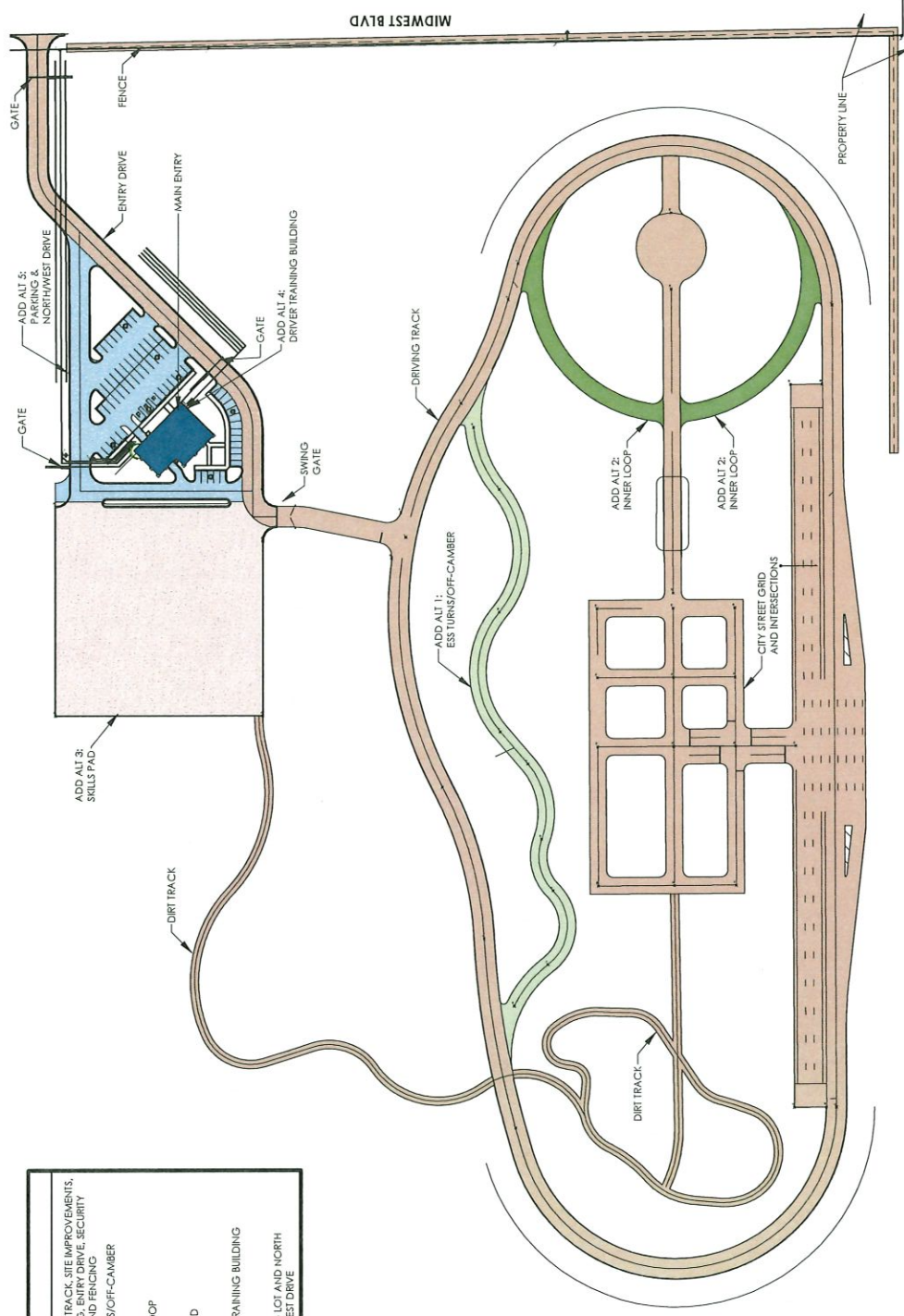




# MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY TRAINING CENTER

ISSUE DATE: 03.29.2024

PROJECT NO: 23-062



1 ARCHITECTURAL SITE PLAN  
 1" = 160'-0"

REVIEW SET  
 THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL DOCUMENT  
 REVIEW SET

This architectural floor plan shows a building layout with several rooms and a service bay. The plan includes a table at the top listing room names and their corresponding areas. The main areas of the building are:

- Office:** Located in the top left corner, containing desks and chairs.
- Flex Office:** Located in the top right corner, containing desks and chairs.
- Breakroom:** Located in the bottom left corner, containing tables and chairs.
- Training Room:** A large room in the center, containing rows of chairs and a table.
- Corridor:** A central corridor connecting the rooms.
- Vestibule:** Located in the bottom right corner, containing a desk and chair.
- Entry:** Located in the bottom right corner, containing a desk and chair.
- Service Bay:** A large area on the right side, containing a car and a workbench.
- Proposed Fire Riser Location:** Indicated by a red dashed line in the bottom right corner.
- Proposed Water Heater Location:** Indicated by a red dashed line in the bottom right corner.
- Proposed Facu Location:** Indicated by a red dashed line in the bottom right corner.
- Men's and Women's Restrooms:** Located in the bottom right corner, containing stalls and sinks.
- Toilet & Shower:** Located in the bottom right corner, containing a toilet and shower.
- Oil/Water Separator:** Located in the bottom right corner, containing a tank and pipes.
- Tire Rack Storage:** Located in the bottom right corner, containing a rack and tires.
- Mop Sink and Emergency Shower and Eye Wash:** Located in the bottom right corner, containing a sink and shower.
- Workbench:** Located in the bottom right corner, containing a table and chairs.
- Tool Chest:** Located in the bottom right corner, containing a chest and tools.
- 4,570 Net S.F. / 5,047 S.F. Gross:** Located in the bottom right corner, indicating the total area.

The plan also includes a table at the top listing room names and their corresponding areas:

ROOM	NAM
ENTR	
BREAKR	
FLEX OF	
OFFIC	
CORRIL	
CORRIL	
TOILET & SH	
TRAINING	
CLOS	
SERVICE	

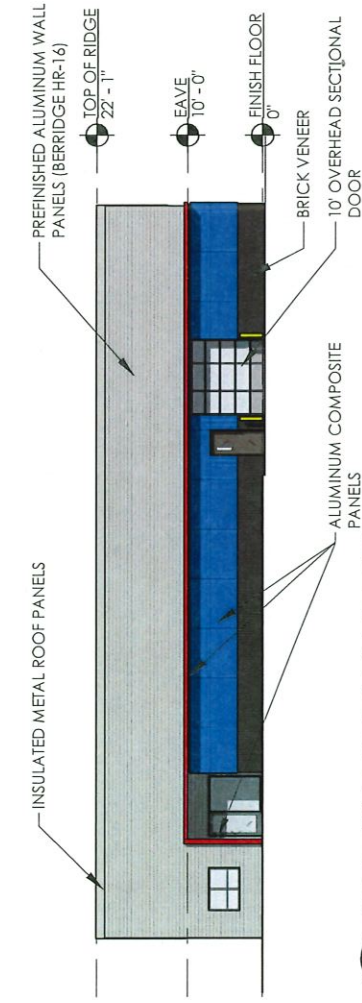
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL DOCUMENT



# MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY TRAINING CENTER

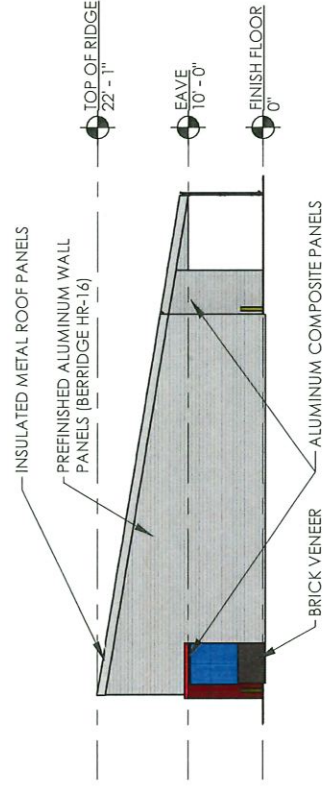
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PROJECT NO.: 23-062



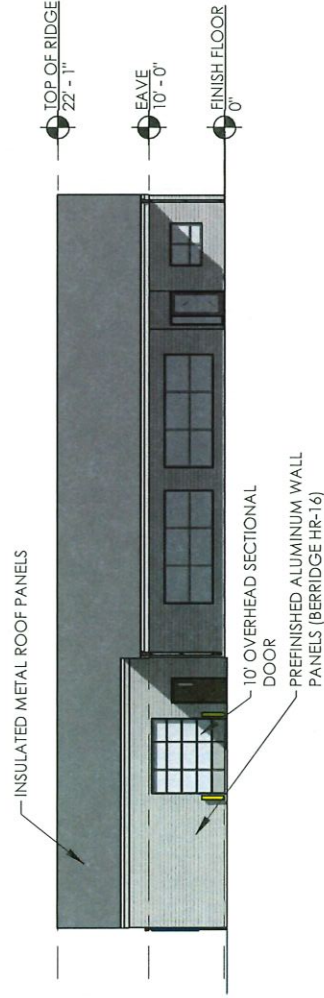
1 **NORTHEAST ELEVATION**

1/16" = 1'-0"



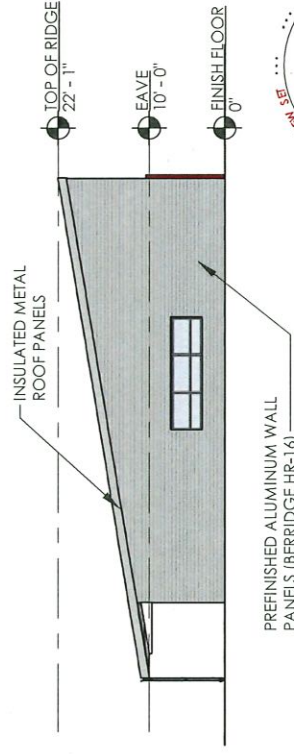
2 **NORTHWEST ELEVATION**

1/16" = 1'-0"



3 **SOUTHWEST ELEVATION**

1/16" = 1'-0"



4 **SOUTHEAST ELEVATION**

1/16" = 1'-0"

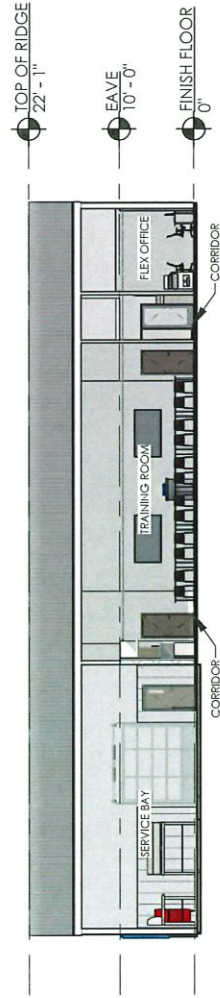


# MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY TRAINING CENTER

ISSUE DATE:

03.29.2024

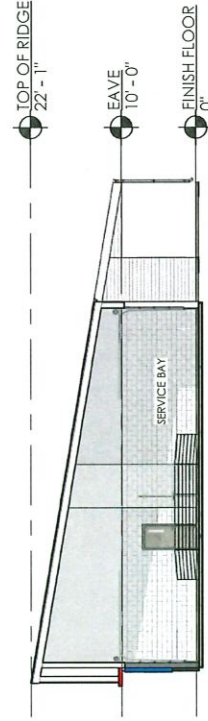
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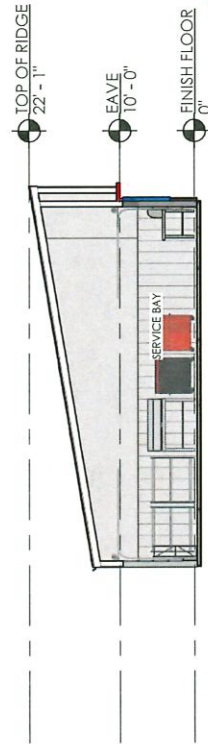
1 BUILDING SECTION  
1/16" = 1'-0"



2 BUILDING SECTION  
1/16" = 1'-0"



3 BUILDING SECTION  
1/16" = 1'-0"



4 BUILDING SECTION  
1/16" = 1'-0"

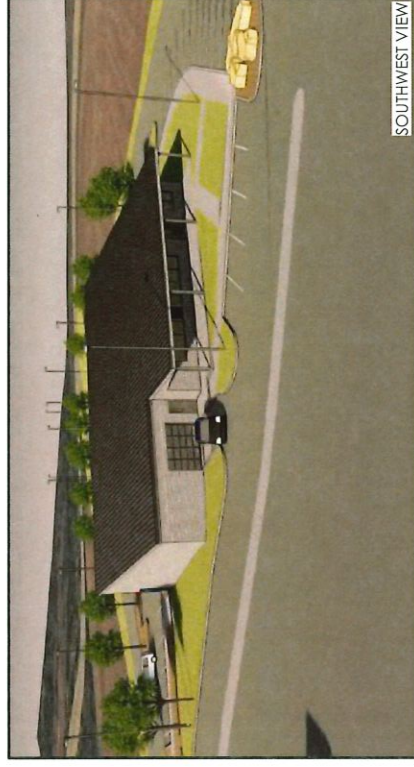
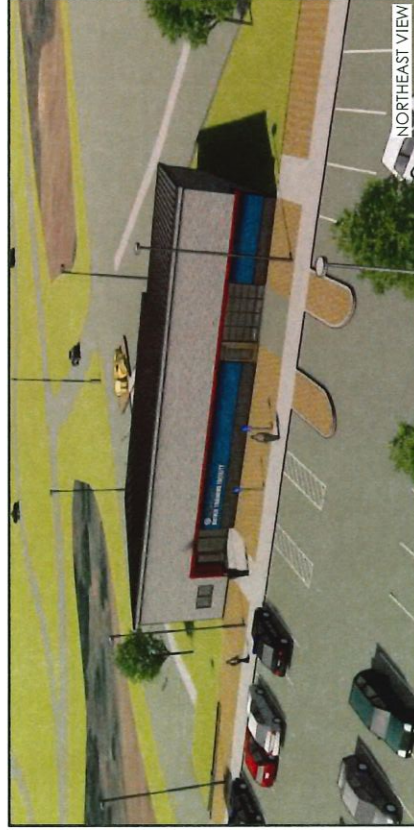
REVIEW SET  
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REVIEW SET



# MB-1649, DRIVING FACILITY AT THE PUBLIC SAFETY TRAINING CENTER

ISSUE DATE: 03.29.2024

PROJECT NO: 23-042



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REVIEW SET REVIEW SET REVIEW SET REVIEW SET

White and Associates  
418 NW 30th  
Oklahoma City, Oklahoma

MB-1649, Driving Facility at the PSTC  
Design Development Cost Estimate  
ADG Blatt  
March 29, 2024

Base Bid and Add Alternate Summary

March 29, 2024

<u>Base Bid</u>	Driving Track, Site Work, Entry Drive, Security Gates and Fencing	\$	4,245,437.54
	General Conditions	\$	311,839.00
	Site Work	\$	1,404,860.00
	Main Track and Dirt Track	\$	1,725,703.54
	Entry Drive	\$	264,827.00
	Fence and Security	\$	538,208.00
<u>Add Alternate 1</u>	ESS Turns/Off-Camber	\$	265,891.06
	Paving	\$	248,946.59
	Sub-base and Grading	\$	16,944.47
<u>Add Alternate 2</u>	Inner Loop	\$	188,687.37
	Paving	\$	168,617.89
	Sub-base and Grading	\$	20,069.48
<u>Add Alternate 3</u>	Skills Pad	\$	1,774,563.66
	Paving	\$	1,531,379.16
	Sub-base and Grading	\$	68,854.50
	Light poles	\$	174,330.00
<u>Add Alternate 4</u>	Driver Training Building	\$	2,195,334.17
	General Conditions	\$	125,225.10
	Building Foundation	\$	125,016.84
	Structure and Building	\$	1,008,200.88
	MEP	\$	693,167.90
	Equipment and Special Requirements	\$	243,723.45
<u>Add Alternate 5</u>	Parking Lot and North Drive / West Drive	\$	303,781.65
	Paving	\$	282,071.77
	Markings	\$	2,511.99
	Sub-base and Fine Grading	\$	19,197.89
<u>Grand Total</u>		\$	8,973,695.45



White and Associates  
418 NW 30th  
Oklahoma City, Oklahoma

MB-1649, Driving Facility at the PSTC  
Design Development Cost Estimate  
ADG Blatt  
March 29, 2024  
210 Days - Estimated Construction Duration

**Base Bid - Driving Track**

<b>General Conditions</b>				\$	<b>262,050.00</b>		
Office and site temporary requirements	7.00	mo	\$	1,200.00	\$	8,400.00	\$ 8,400.00
Contractor Management	7.00	mo	\$	4,500.00	\$	31,500.00	\$ 31,500.00
General Superintendent	7.00	mo	\$	16,850.00	\$	117,950.00	\$ 117,950.00
Site General Conditions	7.00	mo	\$	2,500.00	\$	17,500.00	\$ 17,500.00
Survey and staking	680.00	chr	\$	115.00	\$	78,200.00	\$ 78,200.00
Permits and Fees	1.00	ls	\$	8,500.00	\$	8,500.00	\$ 8,500.00
<b>Site Work</b>				\$	<b>1,180,554.05</b>		
Site grading-cut	40,028.00	cy	\$	5.85	\$	234,163.80	\$ 234,163.80
Site grading - fill	32,911.00	cy	\$	5.25	\$	172,782.75	\$ 172,782.75
Site grub and final finish grade	132,422.00	sy	\$	1.25	\$	165,527.50	\$ 165,527.50
Landscaping Hydromulch	88,060.00	sy	\$	1.75	\$	154,105.00	\$ 154,105.00
Building pad	535.00	cy	\$	28.00	\$	14,980.00	\$ 14,980.00
Storm line	1,000.00	lf	\$	42.00	\$	42,000.00	\$ 42,000.00
Water line 12"	1,515.00	lf	\$	78.00	\$	118,170.00	\$ 118,170.00
Water line 6"	595.00	lf	\$	66.00	\$	39,270.00	\$ 39,270.00
Fire Hydrant and tap	3.00	ea	\$	13,500.00	\$	40,500.00	\$ 40,500.00
Paving removal and replacement	65.00	sy	\$	87.00	\$	5,655.00	\$ 5,655.00
Boring	40.00	lf	\$	485.00	\$	19,400.00	\$ 19,400.00
Electrical Power - Site	1.00	allow	\$	75,000.00	\$	75,000.00	\$ 75,000.00
Lighting site	6.00	ea	\$	16,500.00	\$	99,000.00	\$ 99,000.00
<b>Main Track</b>				\$	<b>1,571,564.25</b>		
Paving	18,855.00	sy	\$	78.00	\$	1,470,690.00	\$ 1,470,690.00
Sub-base and fine grading	18,855.00	sy	\$	5.35	\$	100,874.25	\$ 100,874.25
<b>Dirt Track</b>				\$	<b>124,500.00</b>		
Shaping and compaction	480.00	hr	\$	115.00	\$	55,200.00	\$ 55,200.00
Sub-base and fine grading	420.00	hr	\$	165.00	\$	69,300.00	\$ 69,300.00
<b>Entry Drive</b>				\$	<b>222,544.50</b>		
Paving	2,670.00	sy	\$	78.00	\$	208,260.00	\$ 208,260.00
Sub-base and fine grading	2,670.00	sy	\$	5.35	\$	14,284.50	\$ 14,284.50
<b>Pavement Marking</b>				\$	<b>11,628.00</b>		
Prep	12,240.00	lf	\$	0.25	\$	3,060.00	\$ 3,060.00
Sub-base and fine grading	12,240.00	lf	\$	0.70	\$	8,568.00	\$ 8,568.00
<b>Fence</b>				\$	<b>452,275.00</b>		
Fence	1,780.00	lf	\$	125.00	\$	222,500.00	\$ 222,500.00
Primary access power allowance	1.00	allow	\$	7,500.00	\$	7,500.00	\$ 7,500.00
Gate access plus installation	3.00	ea	\$	24,205.00	\$	72,615.00	\$ 72,615.00
Gate - swing	1.00	ea	\$	14,660.00	\$	14,660.00	\$ 14,660.00
Gates	3.00	ea	\$	45,000.00	\$	135,000.00	\$ 135,000.00
<b>Subtotal</b>				\$	<b>3,602,571.30</b>	\$	<b>3,825,115.80</b>

Insurances	0.75%	\$	27,019.28
Bonds	1.00%	\$	36,025.71
Builders Risk	0.28%	\$	10,087.20
Subtotal		\$	3,675,703.50
Contractor Fee	5%	\$	183,785.17
Subtotal		\$	3,859,488.67
Contingency	10%	\$	385,948.87
<b>Total for Base Bid - Driving Track</b>		\$	<b>4,245,437.54</b>

#### Add Alternate 1 - ESS Turns/Off-Camber

Paving	2,707.00	sy	\$	78.00	\$	211,146.00	\$	211,146.00
Sub-base and Fine Grading	2,707.00	sy	\$	5.35	\$	14,482.45	\$	14,482.45
<b>Subtotal</b>					\$	225,628.45	\$	225,628.45
Insurances	0.75%		\$			1,692.21		
Bonds	1.00%		\$			2,256.28		
Builders Risk	0.28%		\$			631.76		
Subtotal					\$	230,208.71		
Contractor Fee	5%		\$			11,510.44		
Subtotal					\$	241,719.14		
Contingency	10%		\$			24,171.91		
<b>Total for Add Alternate 1 - ESS Turns/Off-Camber</b>					\$	<b>265,891.06</b>		

#### Add Alternate 2 - Inner Loop

Paving	1,921.00	sy	\$	78.00	\$	149,838.00	\$	149,838.00
Sub-base and Fine Grading	1,921.00	sy	\$	5.35	\$	10,277.35	\$	10,277.35
<b>Subtotal</b>					\$	160,115.35	\$	160,115.35
Insurances	0.75%		\$			1,200.87		
Bonds	1.00%		\$			1,601.15		
Builders Risk	0.28%		\$			448.32		
Subtotal					\$	163,365.69		
Contractor Fee	5%		\$			8,168.28		
Subtotal					\$	171,533.98		
Contingency	10%		\$			17,153.40		
<b>Total for Add Alternate 2 - Inner Loop</b>					\$	<b>188,687.37</b>		

**Add Alternate 3 - Skills Pad**

Paving	11,000.00	sy	\$	118.00	\$	1,298,000.00	\$	1,298,000.00
Sub-base and Fine Grading	11,000.00	sy	\$	5.35	\$	58,850.00	\$	58,850.00
Light poles	4.00	ea	\$	37,250.00	\$	149,000.00	\$	149,000.00
<b>Subtotal</b>					\$	<b>1,505,850.00</b>	\$	<b>1,505,850.00</b>
Insurances		0.75%			\$	<b>11,293.88</b>		
Bonds		1.00%			\$	<b>15,058.50</b>		
Builders Risk		0.28%			\$	<b>4,216.38</b>		
<b>Subtotal</b>					\$	<b>1,536,418.76</b>		
Contractor Fee		5%			\$	<b>76,820.94</b>		
<b>Subtotal</b>					\$	<b>1,613,239.69</b>		
Contingency		10%			\$	<b>161,323.97</b>		
<b>Total for Add Alternate 3 - Skills Pad</b>					\$	<b>1,774,563.66</b>		

**Add Alternate 4 - Driver Training Building**

<b>General Conditions - Added Time Requirements</b>					\$	<b>107,030.00</b>		
Office and site temporary requirements	3.00	mo	\$	1,200.00	\$	3,600.00	\$	3,600.00
Contractor Management	3.00	mo	\$	4,500.00	\$	13,500.00	\$	13,500.00
General Superintendent	3.00	mo	\$	16,850.00	\$	50,550.00	\$	50,550.00
Site General Conditions	3.00	mo	\$	2,500.00	\$	7,500.00	\$	7,500.00
Permits and Fees	1.00	ls	\$	31,880.00	\$	31,880.00	\$	31,880.00
<b>Building Foundation</b>					\$	<b>106,852.05</b>		
Finish grade and layout	5,047.00	sf	\$	1.25	\$	6,308.75	\$	6,308.75
Slab	5,047.00	sf	\$	9.65	\$	48,703.55	\$	48,703.55
Reinforcing	9.35	tons	\$	1,785.00	\$	16,689.75	\$	16,689.75
Footings	74.00	cy	\$	475.00	\$	35,150.00	\$	35,150.00
<b>Structure and Building</b>					\$	<b>861,710.15</b>		
Siding	3,420.00	sf	\$	24.00	\$	82,080.00	\$	82,080.00
Brick veneer	1,600.00	sf	\$	14.75	\$	23,600.00	\$	23,600.00
Anchor bolt	1.00	ls	\$	3,995.00	\$	3,995.00	\$	3,995.00
Canopy	1.00	ls	\$	29,865.00	\$	29,865.00	\$	29,865.00
PEMB- \$224,440 building	1.00	ls	\$	333,105.00	\$	333,105.00	\$	333,105.00
Insulation - R30	9,644.00	sf	\$	6.85	\$	66,061.40	\$	66,061.40
Alum panel	1.00	ls	\$	32,250.00	\$	32,250.00	\$	32,250.00
Roofing penetrations	1.00	allow	\$	750.00	\$	750.00	\$	750.00
Roofing - gutter and downspouts	1.00	allow	\$	3,500.00	\$	3,500.00	\$	3,500.00
Wood Blocking	232.00	bf	\$	7.00	\$	1,624.00	\$	1,624.00
Glass and glazing - Storefront	372.00	sf	\$	95.00	\$	35,340.00	\$	35,340.00
Glass and glazing - fixed	420.00	sf	\$	65.00	\$	27,300.00	\$	27,300.00
Alum entrance - glass	2.00	ea	\$	6,250.00	\$	12,500.00	\$	12,500.00
Doors and frames	12.00	ea	\$	1,258.00	\$	15,096.00	\$	15,096.00
Hardware	16.00	ea	\$	625.00	\$	10,000.00	\$	10,000.00
Overhead doors	2.00	ea	\$	26,880.00	\$	53,760.00	\$	53,760.00
Toilet Accessories	1.00	ls	\$	1,425.00	\$	1,425.00	\$	1,425.00
Tile	1,724.00	sf	\$	22.50	\$	38,790.00	\$	38,790.00
TCF	52.00	sy	\$	62.00	\$	3,224.00	\$	3,224.00
Concrete	45.00	sy	\$	29.25	\$	1,316.25	\$	1,316.25
Poured epoxy	212.00	sy	\$	121.00	\$	25,652.00	\$	25,652.00
Ceiling	2,988.00	sf	\$	5.25	\$	15,687.00	\$	15,687.00
TA TP FE Specialties	1.00	allow	\$	7,800.00	\$	7,800.00	\$	7,800.00
Framed walls and drywall	5,102.00	sf	\$	7.25	\$	36,989.50	\$	36,989.50



<b>MEP</b>				\$	<b>583,057.60</b>		
Mechanical systems	3,120.00	sf	\$	44.95	\$	140,244.00	\$ 140,244.00
Unit heaters	2.00	ea	\$	8,355.00	\$	16,710.00	\$ 16,710.00
Plumbing - rough	5,047.00	sf	\$	7.95	\$	40,123.65	\$ 40,123.65
Plumbing - installation	1.00	ls	\$	48,250.00	\$	48,251.00	\$ 48,251.00
Separator	1.00	ls	\$	8,422.00	\$	8,422.00	\$ 8,422.00
Domestic water line	125.00	lf	\$	52.00	\$	6,500.00	\$ 6,500.00
Fire service line	125.00	lf	\$	66.00	\$	8,250.00	\$ 8,250.00
Kitchen equipment	1.00	allow	\$	6,500.00	\$	6,500.00	\$ 6,500.00
Specialty fixtures / Eye wash	1.00	ls	\$	7,892.00	\$	7,892.00	\$ 7,892.00
Electrical power	5,047.00	sf	\$	16.00	\$	80,752.00	\$ 80,752.00
Electrical generator	1.00	ls	\$	85,000.00	\$	85,000.00	\$ 85,000.00
Electrical equipment	5,047.00	sf	\$	5.25	\$	26,496.75	\$ 26,496.75
Electrical lighting package	5,047.00	sf	\$	15.35	\$	77,471.45	\$ 77,471.45
Electrical sight lighting - incl above	-	ea	\$	-	\$	-	\$ -
Lightning protection	1,880.00	sf	\$	1.25	\$	2,350.00	\$ 2,350.00
Fire alarm system	1,880.00	sf	\$	0.85	\$	1,598.00	\$ 1,598.00
Fire protection - wet	5,047.00	sf	\$	5.25	\$	26,496.75	\$ 26,496.75
<b>Equipment and Special Requirements</b>				\$	<b>204,255.45</b>		
Millwork	48.00	lf	\$	925.00	\$	44,400.00	\$ 44,400.00
Lanscaping	1.00	ls	\$	26,880.00	\$	26,880.00	\$ 26,880.00
Irrigation	1.00	ls	\$	27,243.00	\$	27,243.00	\$ 27,243.00
Low voltage	5,047.00	sf	\$	1.15	\$	5,804.05	\$ 5,804.05
Data drops	22.00	ea	\$	225.00	\$	4,950.00	\$ 4,950.00
Access	5,047.00	sf	\$	0.75	\$	3,785.25	\$ 3,785.25
Video	5,047.00	sf	\$	0.45	\$	2,271.15	\$ 2,271.15
Security access control - Summers	1.00	ls	\$	86,422.00	\$	86,422.00	\$ 86,422.00
Surge protection and dedicated power	1.00	allow	\$	2,500.00	\$	2,500.00	\$ 2,500.00
<b>Subtotal</b>				\$	<b>1,862,905.25</b>	\$	<b>1,862,905.25</b>
Insurances		0.75%		\$	<b>13,971.79</b>		
Bonds		1.00%		\$	<b>18,629.05</b>		
Builders Risk		0.28%		\$	<b>5,216.13</b>		
<b>Subtotal</b>				\$	<b>1,900,722.23</b>		
Contractor Fee		5%		\$	<b>95,036.11</b>		
<b>Subtotal</b>				\$	<b>1,995,758.34</b>		
Contingency		10%		\$	<b>199,575.83</b>		
<b>Total for Add Alternate 4 - Driver Training Building</b>				\$	<b>2,195,334.17</b>	\$	<b>449.86</b>
<b>Full General Conditions</b>				\$	<b>2,457,384.17</b>	\$	<b>503.56</b>

**Add Alternate 5 - Parking Lot and North Drive / West Drive**

Paving	3,067.00	sy	\$	78.00	\$	239,226.00	\$	239,226.00
Markings	2,260.00	lf	\$	0.95	\$	2,147.00	\$	2,147.00
Sub-base and Fine Grading	3,067.00	sy	\$	5.35	\$	16,408.45	\$	16,408.45

<b>Subtotal</b>					\$	257,781.45	\$	257,781.45
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Insurances	0.75%	\$	1,933.36
Bonds	1.00%	\$	2,577.81
Builders Risk	0.28%	\$	721.79

Subtotal	\$	263,014.41
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Contractor Fee	5%	\$	13,150.72
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Subtotal	\$	276,165.13
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Contingency	10%	\$	27,616.51
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<b>Total for Add Alternate 5 - Parking Lot and North Drive / West Drive</b>	\$	303,781.65
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<b>Grand Total</b>	\$	8,973,695.45
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