

MALETA – HEADQUARTERS

SBC PROJECT NO. 529/017-01-2021-06

NASHVILLE, TENNESSEE



anecdote...

PROGRAM VERIFICATION
CM RFQ
29 MARCH 2023

PROJECT NO. 22008



PROGRAM VERIFICATION NARRATIVE

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22008\pv cm narrative

DESIGN TEAM

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Architecture & Interior Design

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HDLA
Landscape Architecture

EMC
Structural Engineering

ICT
Mechanical, Plumbing, Fire Protection, Electrical and ITS Engineering



MALETA-HEADQUARTERS
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SECTION 1
PROJECT DESCRIPTION / INTRODUCTION

INTRODUCTION

The Multi Agency Law Enforcement Training Academy (MALETA) will be a consolidation of various existing State law enforcement training sites into a single campus with new, state-of-the-art shared facilities. MALETA is located on the State of Tennessee owned Cockrill Bend site west of Nashville, bordered by the existing John C. Tune Airport on the east, The Cumberland River to the north, and the Riverbend Maximum Security Institution and DeBerry Special Needs Facility to the west. Tennessee is one of the few states in the nation to invest in this type of shared law enforcement training campus facility.

The campus will consist of various facilities spread across the site, each designed by a separate architect with a specialty in each facility type and built by a separate contractor. However, each of the design and construction teams will be expected to work with the others for a cohesive design language while working as a team in efficiency in construction and materials to maximize value for the State of Tennessee.

There will be common spaces that the two departments will share. The site location is circled in red in the image below.



This narrative's focus is on the Headquarters, intended to be one building serving two separate users: Tennessee Department of Safety (TDOS) and Tennessee Department of Correction (TDOC). They have similar office space needs and share some common needs. The program includes 212,750 GSF with about 68,200 GSF for TDOC, 118,300 GSF for TDOS and 26,350 GSF common space. It is likely to be a 3-4 level building with two wings and a common connector between them. The two departments will have their own controlled access for security. Portions of the common area will be entirely public with progressive zoning in the building from public to secure. There are multiple divisions within each department that will be more suited to separate suites accessible by a common corridor. There may be some shared divisional functions such as conference rooms. It is likely to be type IIB construction, and fully sprinklered.

SECTION 2

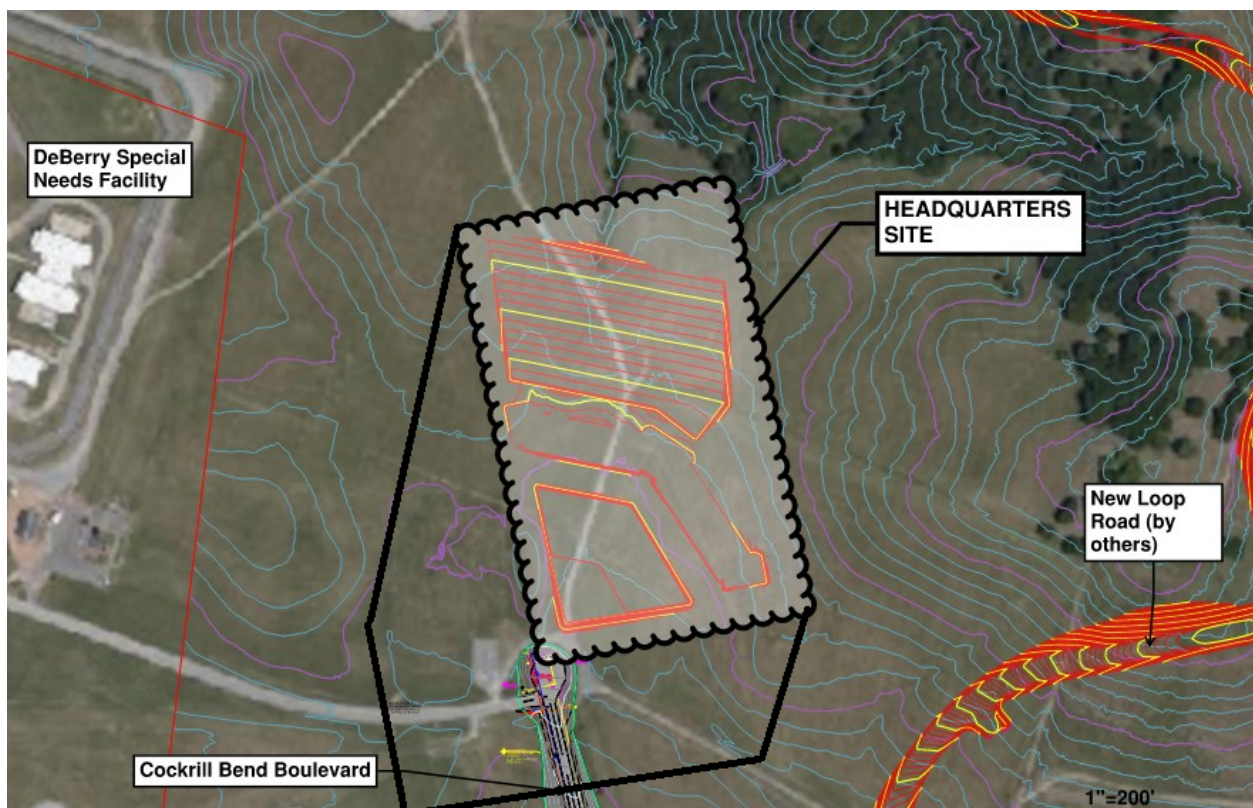
CIVIL

SITE DESCRIPTION

This project includes a new TDOC/TDOS Headquarters Building and parking lot associated with the Multi-Agency Law Enforcement Training Academy (MALETA) in the Cockrill Bend area of Nashville, TN. The existing site proposed for this facility is currently vacant land (turf grass).

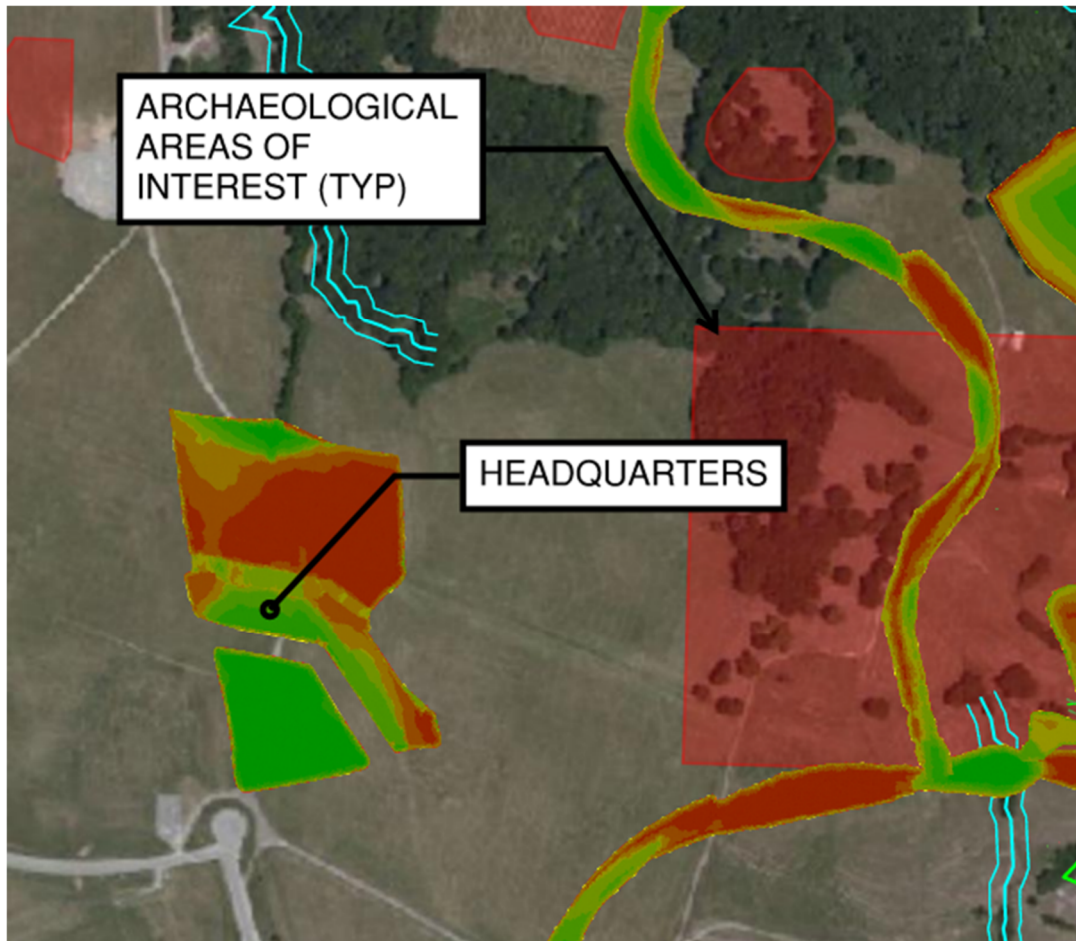
SITE LAYOUT

The overall site for this facility is anticipated to encompass approximately 10 acres. This includes approximately 700 parking spaces (per the original program document), the building itself and perimeter space for grading and water quality features.



GRADING & DRAINAGE

The existing topography of the site falls to the south towards the existing cul-de-sac and also from east to west. The proposed site grades are anticipated to follow the same general pattern. At the present time the site is envisioned to be able to balance with regard to cut and fill assuming a finished floor elevation of 452.



Given the proximity to the Cumberland River, quantity based stormwater detention is not anticipated, however, water quality treatment of stormwater runoff in accordance with the Metro Stormwater Low Impact Design regulations is anticipated. These features will be located in the lower areas of the site.

UTILITIES

Water

Public Water is available at the cul-de-sac in the form of a 16" line. This line should be adequate for a new tap for Fire, Domestic and Irrigation water. All will require above ground cross connection equipment with reduced pressure principle backflow preventers on the domestic and irrigation lines, and a double detector check valve on the fire line. The domestic and irrigation lines will also require meters. From the connection point to the building all three lines will be extended as private lines to the building. Private fire hydrant(s) may be required in order to satisfy the fire protection requirements related to hydrant coverage and relationship to the fire department connection point. Once demands are known, an Availability Letter will be submitted to Metro Water Services to determine the amount of Capacity Fees that will need to be paid by the owner.

Sanitary Sewer

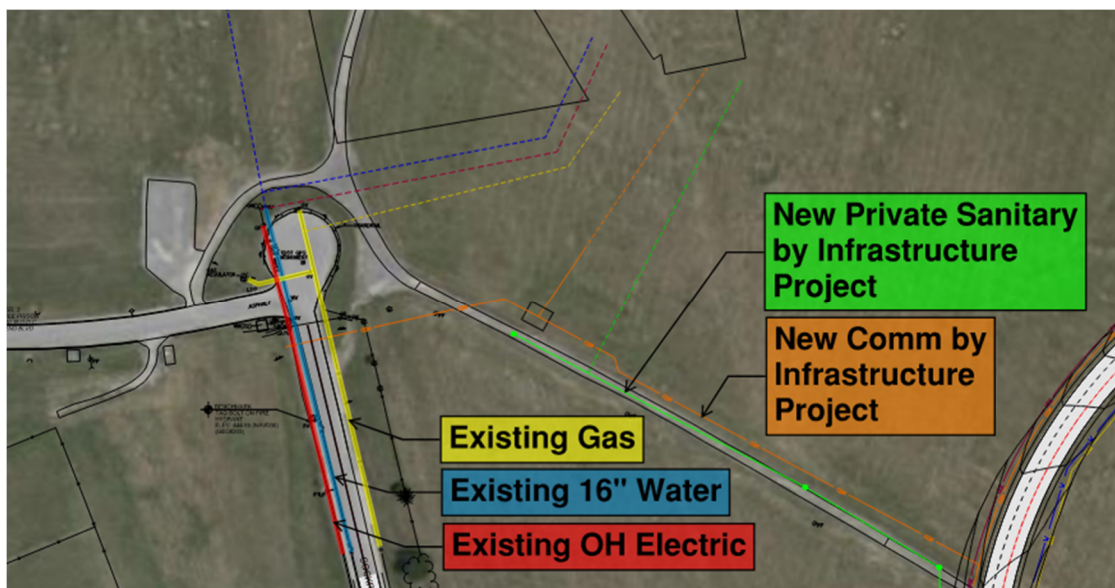
The Infrastructure Package will be providing a gravity sanitary sewer service to the new building at the southeast corner. This will accommodate one or more sanitary sewer service points for the new building. If grease traps are required, they will need to be installed between the building service exit and the new private main line. Similar to the water process described above, Capacity Fees will need to be established with Metro Water Services. Since the proposed sanitary line will be private, there will be no tap fees involved.

Electric

Electric service will be available from the NES line in Cockrill Bend Boulevard.

Gas & Communications

Natural gas service will be available from the line in Cockrill Bend Boulevard. Communications will be provided by the Infrastructure Project as shown below.



SECTION 3

LANDSCAPING

The scope of work will be the overall outdoor aesthetic which includes exterior spaces, pedestrian connections around the Headquarters Building Complex, connections to and from the dedicated parking areas, and links to the previously developed Training Academy, Dining & Housing Building, and Range. These spaces will be the primary focus of attention on the exterior when arriving at the facility, so attention to materiality both for the hardscape and landscape that compliments the architectural style and narrative will be of primary importance.

In addition to the hardscape materials and a native plant palette that will be utilized around the area of development, light fixtures, site furnishing such as benches, trash cans, tables and chairs, and planter to be used will be selected from among those to be used among other MALETA projects. Other items such as fences, railing or gates will be programmed with input from other disciplines to best accommodate the project. Depending on site topography and other needs, a natural looking blend of the proposed and existing landscape will be pursued to fit into the overall site contextual characteristic of the MALETA complex. Bio-ponds and detention areas that will be sized specifically for this site by the engineering team for stormwater, will also be coordinated with native plant materials to be incorporated into the design. All metro codes for stormwater planting will be utilized and incorporated into those areas.

SECTION 4

ARCHITECTURE & INTERIORS

Introduction

Two of the State of Tennessee law enforcement agencies will be sharing the headquarters building. The agencies are the Tennessee Department of Correction (TDOC) and Tennessee Department of Safety (TDOS). They have similar office space needs but there are a number of spaces that will be shared.

Offices / Administration

The Program is based upon the State's Alternative Workplace Solutions (AWS) addressing Assigned Space, Work from Home, Mobile Work and Free Address. The latter allows flexibility in workstation types to align with daily tasks of every agency. Offices for both agencies will follow these standards. Each will have its own administration areas separate from each other. They will include typical office and conference functions, with standard office space construction. There will be a mix of hard wall and workstation environments. TDOC departments include Commissioners Office Suite, Operational Support, Finance Office, Administration, Communications & Public Relations, Legal Services, Investigation & Compliance, Research & Planning, Facilities, Community Supervision, Rehabilitative Services, and TDOC Communication Center. TDOS departments include: Commissioners Office, Command Staff, Communications & Public Service, Human Resources, Special Investigation, Fiscal Services, Homeland Security, Information Systems, Internal Audit, Inspection Services Bureau (Internal Affairs), Legal Division, Research, Planning & Development, Financial Responsibilities, Information Processing / Document Management, THP Safety Office, Commercial Drivers License (Drivers Service), Drivers License Issuance, Commercial Vehicle Enforcement, and Talent Management.

Common / Shared Functions

Shared functions will include an Emergency Response Command Center, service entry, lobby, food service / café, media center, conference rooms, mail room, storage, and a secure vehicle sallyport. With the sallyport comes functional security lines that will be important. Both agencies have secure areas for internal affairs and a secure back door entry. The sallyport is part of an Incident Command Center which also includes a control room, restroom and shower, sleeping quarters, and a conference room.



Materials

Each of the buildings on the campus will have the freedom of their own design, but common materials used across the campus is desired by the state for campus cohesiveness and for possible cost reduction measures. The design teams of the various projects have met to discuss potential materials for use as design progresses. All these material concepts will be discussed with the selected CM/GC and coordinated to be common across the campus as design progresses. These initial material conversations have included:

- Concrete
 - Cast-in-place, site cast, tilt-up, and precast concrete are all being considered in other MALETA projects including structure of the buildings, roads and flatwork, finish materials, and surfaces. Premanufactured hollow core concrete slabs are also being considered.
 - A steel structure may be more appropriate for the new headquarters building.
- Masonry
 - A common range of finish, sizes, textures, and colors can be agreed upon as a palette to choose from.
- Window Wall (spanning from slab-to-slab instead of in front of the slab) and Unitized Curtain Wall
 - Including similar mullion profiles.
 - Glazing would be similar tint, color, and reflectivity based on building orientation.
 - Anodized finishes for the window systems are currently anticipated.
- Aluminum Composite Panel as an accent.
- Roofing – TPO or EPDM, based on market, pricing, and State desires.
 - Also Standing Seam metal roofing for some prominent areas.
- Lighting – LED, including common exterior site light fixtures and building interior light fixtures.
- Signage – materials and design.
- Material details that can be shared among the buildings that is consistent throughout campus.
 - Such as incorporating logos of the various resident agencies throughout the finished materials.
- Future conversations around common interior design features and materials will also occur as design progresses.

Miscellaneous

The project will follow all requirements of the State of Tennessee STREAM Designers Manual and include all Division 00 and 01 STREAM provided Project Manual sections. The CM/GC will be expected to follow all current STREAM requirements of CM/GC project procurement.

The State Fire Marshal's Office will have plans review and certificate of occupancy jurisdiction for the building, but Metro Nashville Codes, Tennessee Department of Environment and Conservation (TDEC), among others will also have to be included for permitting.

State of Tennessee High Performance Building Requirements (HPBr) will be followed. Checklists will be included and further defined throughout design and included in the final Project Manual. Commissioning will be done by SSRCx through their contract with the State of Tennessee.

State of Tennessee BIM Requirements are expected to be followed by the design and construction teams.

The project is currently in the Program Verification phase. The design team is currently working with the agencies to finalize expectations, and confirm the space needs, with the intent to submit a final Program Verification document.

SECTION 5 STRUCTURAL

Structural Code and Design Criteria

International Building Code, 2018 Edition (State of TN has adopted IBC 2012). ASCE 7-16. Structural design loads will be further defined as part of the schematic design phase.

Structural Systems

The design team will discuss potential materials and structural systems for this project that are efficient and meet the program requirements. The current basis of design is structural steel, elevated composite slabs, cast-in-place concrete, CMU walls, and shallow foundation systems. The lateral load resisting system will be determined as part of the schematic design phase.

Structural Testing and Inspection

Special inspections and testing, as defined in Chapter 17 of the International Building Code, will be required to verify that the work has been completed in compliance with the Construction Documents. Testing and inspections shall be performed by a qualified Structural Testing/Inspection Agency.

Geotechnical Report

A geotechnical subsurface investigation and report will be required to determine recommendations and criteria for foundation design. Final geotechnical recommendations can potentially modify the site preparation and the type of foundation system described above.

SECTION 6 MECHANICAL

The mechanical system intent shall be to provide an energy efficient, cost-effective solution that is easy to maintain. Temperature control zones will be determined by combining areas of similar load and occupancy. The basis of design for the cooling/heating system is water-source heat pumps (WSHP) with room-direct outdoor air. Each WSHP shall have Hot Gas Reheat, 2-stage cooling, ECM motors, and minimum cooling efficiency of 15 EER. Ducted zone units will be installed in concealed locations – either above ceiling spaces or in separated utility spaces. Outdoor air will be provided room-direct from rooftop dedicated outdoor air systems (DOAS). Restroom exhaust will be passed through total energy recovery wheels located in the DOAS units. Kitchen and Custodial Room exhaust will be exhausted directly to the outside. Hooded kitchen equipment, if needed, will require a fully designed kitchen exhaust system, including exhaust fan and makeup air unit. Computer Rooms / IDF Rooms / MDF Room will be served by dedicated cooling units connected to the building water system. The larger areas will be served by units in mechanical rooms. Zone control will be assisted by individual damper control based on room thermal zone. Each water source heat pump unit serving these spaces will be equipped with a small standalone circulator pump to ensure conditioning to mission-critical services. The total tonnage for the building will be approximately 660 tons. The main atrium will be equipped with smoke evacuation system via fans ducted from the atrium to the roof.

All Ductwork construction will be in accordance with SMACNA standards and all air distribution systems will be designed with primary consideration for energy efficiency and acoustic performance. All supply, return, and outside air ductwork will be insulated in accordance with ASHRAE Standard 90.1. Fire dampers and/or smoke dampers will be provided as required to seal penetrations of rated walls or smoke barriers designated by the fire protection/life safety consultant. Round snap-lock ductwork will only be allowed up to 14" in diameter all round over 14" shall be spiral or flat oval.



The source for the heating/cooling for the water source heat pumps is a building-wide condensing water system. The method of conditioning the condenser loop will be a geothermal wellfield. All piping inside building shall be insulated with 1" armaflex insulation. Piping mains in main mechanical space shall be 10" in size. Loop piping shall also have a Spirovent Air and Dirt Separator, expansion tank, and bypass piping and valves to allow system to be flushed and purged. Main water processing/filtration will occur at a central mechanical pump house. Inside the building piping shall be steel or copper.

HVAC systems will be controlled by a BACNET direct digital control (DDC) system. Local control modules shall be provided with spare point's capacity and shall be equipped with battery backup and automatic memory reloading features. HVAC systems shall be capable of being controlled by the local control modules which shall allow for standalone operation in the event of a communication failure. The DDC system will allow monitoring and control of all major equipment, including piping systems, pumps, WSHP units, DOAS units, and exhaust fans.

SECTION 7

PLUMBING / FIRE PROTECTION

DOMESTIC WATER SYSTEMS:

Piping: Domestic water will be supplied to the facility as follows. Underground piping will be ductile iron or type "A" copper tube. The piping distribution system above grade will be type "B" copper tube for 4-inch and smaller piping and steel pipe galvanized for piping larger than 4-inch. Piping will be sized based on the fixture unit method to provide 30 – 40 psi minimum flow supply pressure at the most remote fixture. Domestic hot and cold-water piping will be insulated with pre-molded fiberglass insulation with all-service. All exposed insulation shall have a PVC jacket except in return air plenums. Cold piping in un-cooled spaces will be provided with cellular glass insulation to prevent water absorption. Insulation shall be provided on piping per ASHRAE 90.1 and IECC requirements at a minimum.

Conduct a flow test of the available water pressure. In the event of low water pressure - provide an alternate price for a domestic water booster pump to obtain pressure and flow for the building domestic water system. The booster pump shall be a variable speed duplex pump. Discharge pressure shall be determined once water flow data can be obtained.

Men and Women toilet rooms will have separate isolation valves.

DOMESTIC HOT WATER:

A hot water recirculation system shall be provided to provide hot water in the distribution piping at all times. Hot water for general purpose use will be generated and stored at 140 deg. F. Hot water service to fixtures will be reduced to a maximum supply temperature of 110 deg. F by use of thermostatic mixing valves.

The laundry will have an instantaneous heater and will be provided with a thermostatic mixing valve shall allow for dual hot water temperatures as required for the laundry. Isolated small restroom groups may be equipped with electric instantaneous water heaters.

SANITARY SEWER SYSTEMS:

Cleanouts will be provided at the base of each stack and in horizontal piping at all changes in direction greater than 1/4 bend, and at intervals not exceeding 100 feet. All sanitary drain, waste, and vent piping below grade will be cast iron with hub and spigot fittings and neoprene compression gaskets, extra heavy below structures. Sanitary drain, waste, and vent piping above grade will be service weight cast iron "No-hub" pipe and fittings with heavy-duty couplings.

Floor drains will be provided throughout the facility in all toilet rooms, showers and like areas to facilitate housekeeping needs, as well as mechanical areas. All sewer mains shall be inspected by CCTV cameras after completion of construction and deficiencies located shall be corrected.

**PLUMBING FIXTURES:**

- Commercial grade vitreous china plumbing fixtures will be provided for public and staff facilities.
- Floor-mounted composition mop basins will be provided in all janitor closets.
- Roof mounted frost-free hose bibbs will be provided within 50 feet of each roof mounted HVAC unit.
- All floor drains will be provided with waterless trap protection similar to Sureseal inline trap sealer inserts.

STORM DRAINAGE SYSTEM:

Rainwater will be collected from roofs in roof drains and piped in an internal piping system. All storm drain piping below buildings will be cast iron with hub and spigot fittings and neoprene compression gaskets. Storm drain piping above grade will be service weight cast iron "No-hub" pipe and fittings with heavy-duty couplings. Secondary drainage will also be picked up by internal drain piping system.

FUEL GAS SYSTEM:

Natural gas will be used as the fuel source for building heat and domestic hot water service. All meters, regulators, and venting will be provided in accordance with NFPA 54, the local utility company, and Metro requirements. Gas piping above ground, 2-1/2 inch and less will be schedule 40 black steel painted (Yellow) with threaded fittings on exposed piping operating below 1 PSI, and welded fittings on 3-inch pipe or above and on piping operating at 1 PSI and above. Concealed gas piping above ground shall be welded or sleeved. Pipe shall not be run below building slabs unless provided with ventilated sleeves. Underground piping shall be thermally-joined plastic piping system as approved by the local gas company, and sleeved where passing under vehicle traffic areas. Gas regulators and meters will be protected with bollards.

FIRE PROTECTION SYSTEM NARRATIVE

All new construction will be provided with a complete combination horizontal standpipe/automatic sprinkler system providing 100 percent building coverage. All system pipe sizing to be hydraulically calculated. All requirements of the insurance underwriter will be met.

A preliminary flow test of the municipal water service must be performed to determine the requirement for a fire pump.

All sprinkler heads shall be quick response type as follows:

- Any public space shall be pendant and equal to Tyco TY-FRB and be chrome recessed.
- All interior piping 3-1/2" and smaller may be Schedule 10 (ASTM), Allied XL pipe with Victaulic fittings. All interior piping greater than 3-1/2" shall be Schedule 10. Exterior pipe shall be cement lined D.I. Class 52.

The sprinkler system shall be hydraulically calculated using the following criteria:

- Office areas, corridors, exercise, institutional and like occupancies shall be hydraulically balanced on a Light Hazard basis to produce 0.10 GPM density over the most remote 1500 sq.ft. and head coverage of 225 sq.ft./head maximum using 165 degree F quick-response heads.
- Electrical rooms, mechanical rooms, incidental storage rooms, and like occupancies shall be hydraulically balanced on an Ordinary Group 1 basis to produce 0.15 GPM density over the most remote 1500 sq.ft. and head coverage of 130 sq.ft./head maximum using 165 degree F quick-response heads.
- Mechanical rooms, loading docks, trash rooms and like occupancies shall be hydraulically balanced on an Ordinary Group 2 basis to produce 0.20 GPM density over the most remote 1500 sq.ft. and head coverage of 130 sq.ft./head using 165 degree F heads.

Calculations for above densities to include hose streams of 100 GPM for Light Hazard, 250 GPM for Ordinary Hazard, and 500 GPM for Extra Hazard occupancies.

Fire protection system shall conform to all requirements of NFPA 10, 13, 14, 20, and 24; International Fire Code and International Building Code.



All fire extinguishers to be 10 pound, ABC with UL listing of 4A:60B:C. Wall-hung fire extinguishers equal to ABC type with UL listing of 4A:60B:C shall be provided in all mechanical spaces. Wall-hung fire extinguishers equal to CO Type, 10 pound with UL listing of 10B:C shall be provided in electrical rooms.

SECTION 8 ELECTRICAL

Reference architectural narrative for preliminary project program and square footages.

Principal features of electrical scope of work included are as follows:

- New pad mounted primary electrical service switch(es) from NES
- New pad mounted transformer from NES
- Secondary Electrical Services
- Main Service Distribution Equipment
- Power Wiring and Secondary Distribution
- Interior LED Lighting Fixtures and Lighting Control Equipment
- Heating, Ventilating and Air-Conditioning Equipment Power
- Plumbing Equipment Power
- Fire Alarm and Smoke Detection Systems
- Power for Access Control and Closed-Circuit Television
- Lightning Protection System per NFPA 780
- Electrical Connections to Owner-Furnished Equipment
- Emergency Power Generation System
- Information Technology Room Grounding Systems

The electrical service for the facility shall originate from existing underground electrical services operated by Nashville Electric Service (NES). The existing underground primary electrical service shall be intercepted and routed throughout the MALETA campus at the discretion of NES. The TDOC and TDOS Headquarters Building primary electrical service shall branch off the campus loop to a new pad mounted transformer to serve the building. The transformer will be located adjacent to the building in a location that is ideal for the main electrical room. All primary conduits and transformer pads shall be by the contractor, with the primary conductors, switches, and transformer provided by NES. All secondary conduits and conductors shall be provided by the contractor. The secondary electrical service for the complex shall be fed from the new pad mounted transformer. A new switchboard rated for 480Y/277V, 4000A shall be located in the new main electrical room and shall include a main breaker with ground fault protection and metering section.

Interior building electrical distribution shall primarily be 480Y/277 volts with step-down to 208Y/120 volts from dry type transformers with copper windings to serve loads requiring lower voltage. An emergency power generation system including generator, automatic transfer switches, and associated distribution equipment shall be designed to support both the Life Safety Electrical System, Legally Required System, Stand-by Power Systems. The generator shall be located on site in a weatherproof, sound alternating enclosure with a sub-base fuel tank.

The campus demark building on this side of the campus will be near the HQ building and will be powered and supported from the HQ building. The demark building will be provided in the infrastructure project.



SECTION 9 TECHNOLOGY SYSTEMS

Reference architectural narrative for preliminary project program and square footages.

Principal features of the technology scope of work included are as follows:

- Structured Voice/Data/Wireless Cabling and Infrastructure:
 - Only the pathways will be provided by the CM/GC. The rest will be by the State.
- Access Control Systems:
 - All connecting hardware and pathways are by the CM/GC. All other components will be by the State.
- A/V Systems and Closed Circuit Television (CCTV)
- Site Infrastructure
- Emergency Responder Radio Communications System (ERRC)

The primary data network service for the facility will be coordinated as a campus distribution system with the other buildings and projects across the campus. A new campus ductbank system shall be developed and coordinated to ensure solution and network delivery to all buildings on the campus. The primary backbone fiber optic cabling shall be distributed in a modified star topology producing a redundant path to each building for survivability.

The Access Control and CCTV solution shall be a campus solution to which all buildings on the campus utilize a single platform for ease of use and maintenance. The Access control system shall utilize a single data base for credential management and the CCTV solution shall use a centralized server storage solution for all retained video.

END OF NARRATIVE