City of Lawrence KANSAS

DAKE | WELLS architecture

Lawrence Field Operations Campus

Revised Master Plan + Phase 1 and Phase 2 Schematic Design

12 May 2023

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Table of Contents

1 Introduction

The Lawrence Field Operations Campus. In early 2018, the City of Lawrence, Kansas streamlined City services to create the Municipal Services and Operations Organization, commonly referred to as MSO. The Organization is divided into several Divisions that provide services to the residents and businesses in Lawrence. It is the desire of the City to create the Lawrence Field Operations Campus — a single grouping of related facilities that consolidates the Field Operations for MSO Divisions, including the Solid Waste Division and the Central Maintenance Garage. In addition, the Campus would include the Construction Management and Engineering Division, and the Administrative Division.

A Design Team led by Dake Wells Architecture, Oertel Architects and CFS Engineers was retained in 2019 to develop a Program, Master Plan and Conceptual Design for key facilities on the Lawrence Field Operations Campus. In 2022, based on feedback from the neighborhood and City staff, the Design Team revised the Master Plan and developed Schematic Designs for the first two phases.

Brief operational summaries for each of the Divisions/ facilities included in the proposed Campus are as follows:

Phase 1

Fuel Island
Included in Phase 1 is the construction of a new Fuel Island that will serve the City's vehicle fleet operated by Divisions planned to relocate to the Campus, as well as various other City fleets such as Police and Fire Departments.

STRT — Streets Division
The Streets Division provides day-to-day general maintenance for the network of City roads and supports other Divisions in their respective maintenance of City infrastructure.

STWT — Stormwater Division
Stormwater Division staff oversee the construction and maintenance of stormwater infrastructure throughout the City of Lawrence and their operations are closely interlaced with the Streets Division.

WSWT — Wastewater Collections Division
Wastewater Collection staff is responsible for maintaining the City's sanitary sewer system. Their work efforts prevent sewer backups and overflows to homes and businesses within the City.

WTDT — Water Distribution Division
Water Distribution staff is responsible for maintaining the water distribution system for the City of Lawrence. They ensure clean water and fire protection to everyone within the City. Water Distribution services include providing water meters, as well as servicing and repairing the entire water distribution network. The Water Distribution Division operates closely with the Streets Division and Wastewater Collections.

INS — Inspections Division
The Inspections Division provides installation and repair oversight for all City of Lawrence infrastructure construction and repair activities.

TRAF — Traffic Division
The Traffic Division maintains and monitors signs and signals throughout the City of Lawrence. To accomplish this mission, they make, store and repair signal equipment, along with street and traffic signs. The Division works closely with Streets, Water and Wastewater Divisions for use of signs in addition to coordinating maintenance activities.

CMED - Construction Management and Engineering Division
CMED provides oversight and management for City funded projects, ranging from planning to construction projects.

ADMIN - Administrative
The Admin Division oversees the day-to-day operations of the MSO staff across the City and handles staffing, technical issues, call service operations, reception and various other administrative functions.

Phase 2

CMG — Central Maintenance Garage
The Central Maintenance Garage provides service and repair to the entire fleet of City owned vehicles and certain equipment. Maintenance staff are responsible for day-to-day preventative maintenance services, as well as performing detailed large scale repairs, including repairs of specialized equipment. Divisional leadership is responsible for all fleet asset management, including fuel management and fleet equipment purchase and replacement.

Phase 3

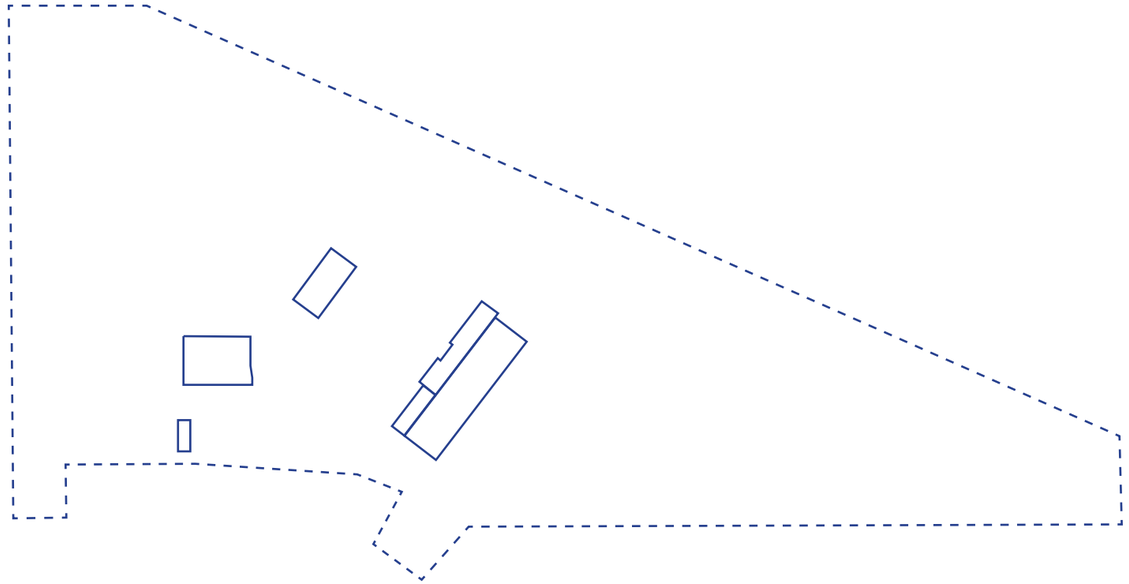
SWD — Solid Waste Division
The Solid Waste Division has been a City service since 1946 and provides a valuable service to Lawrence residents. The collection services are provided to residential and commercial entities within the City. Collections include trash, recycling, yard waste, bulky items and tires. The Division maintains a stock of commercial dumpsters and an operational vehicle fleet that requires specialized work areas.

Phase 4

Conditioned Vehicle Storage
The Final phase of the Campus consists of a large conditioned vehicle storage structure built over the equipment parking area developed in Phase 1 adjacent to the MSO facility. In this structure the City will house several critical vehicles to protect them from the elements. The conditioned vehicle storage structure is proposed to also include charging stations for future electric City vehicles, and some diagnostic repair areas.

2

Master Planning



2 Master Planning

In 2019, based on feedback from MSO staff, the Design Team developed a series of Project Imperatives that embody the spirit and goals of this project. Aside from addressing Divisional needs, key priorities for the project include: creating operational efficiencies, developing safe and healthy work environments, remediating the contaminated Farmland Site, enhancing the local ecosystem, and showing respect to the surrounding community. Although these imperatives may continue to adapt and change, they will remain at the forefront of the design process in the Master Panning and Schematic Design phases.

Project Imperatives

1 **Consolidate municipal operations onto a single Campus.** Create a Master Plan for an efficient Campus environment, encouraging spaces shared by multiple Divisions.

2 **Remediate the Farmland site through phased construction.** Develop a phasing strategy that allows for the site to be methodically remediated over time.

3 **Improve working conditions and safety.** Conditions in some existing facilities do not meet current standards with regard to operation, ventilation, safety and flood mitigation. It is imperative that the staff that provide critical services are allowed to work in an efficient, safe facility.

4 **Be a great neighbor.** The Farmland site is adjacent to a residential neighborhood. Carefully study impacts and design to control traffic, sound, visual and light impacts on this community through careful design.

5 **Embrace Sustainable Design**. Understand the implications of baseline and “code minimum” thinking and consider design strategies that prioritize resource efficiency, carbon reduction, and ecosystem rehabilitation.

6 **Design for the present...and the future.** Consider current needs in context of predicted future industry trends, and design to create facilities that are flexible enough to adapt. Use Life Cycle Analysis tools to balance initial construction costs with longer term operational costs. LCA also includes understanding the costs and benefits of protecting vehicles from the elements.

7 **Promote the health and well being of staff.** Design a facility with an awareness that the occupants are essential workers. Focus on glare free daylighting, acoustic controls, access to fitness facilities, ventilation and fresh air, soil vapor intrusion and other environmental components that contribute to workers feeling healthy and productive.

8 **Be resilient.** Design to maintain continuous operation in the midst of and aftermath of disasters. Design to adapt, should future emergencies dictate temporary uses for the project. Design to meet typical social distancing requirements of future pandemics. Additionally — address resiliency of some existing facilities. Although some are obsolete and located in flood-prone areas, some have the potential to be repurposed to address community needs.

Previous Master Plan

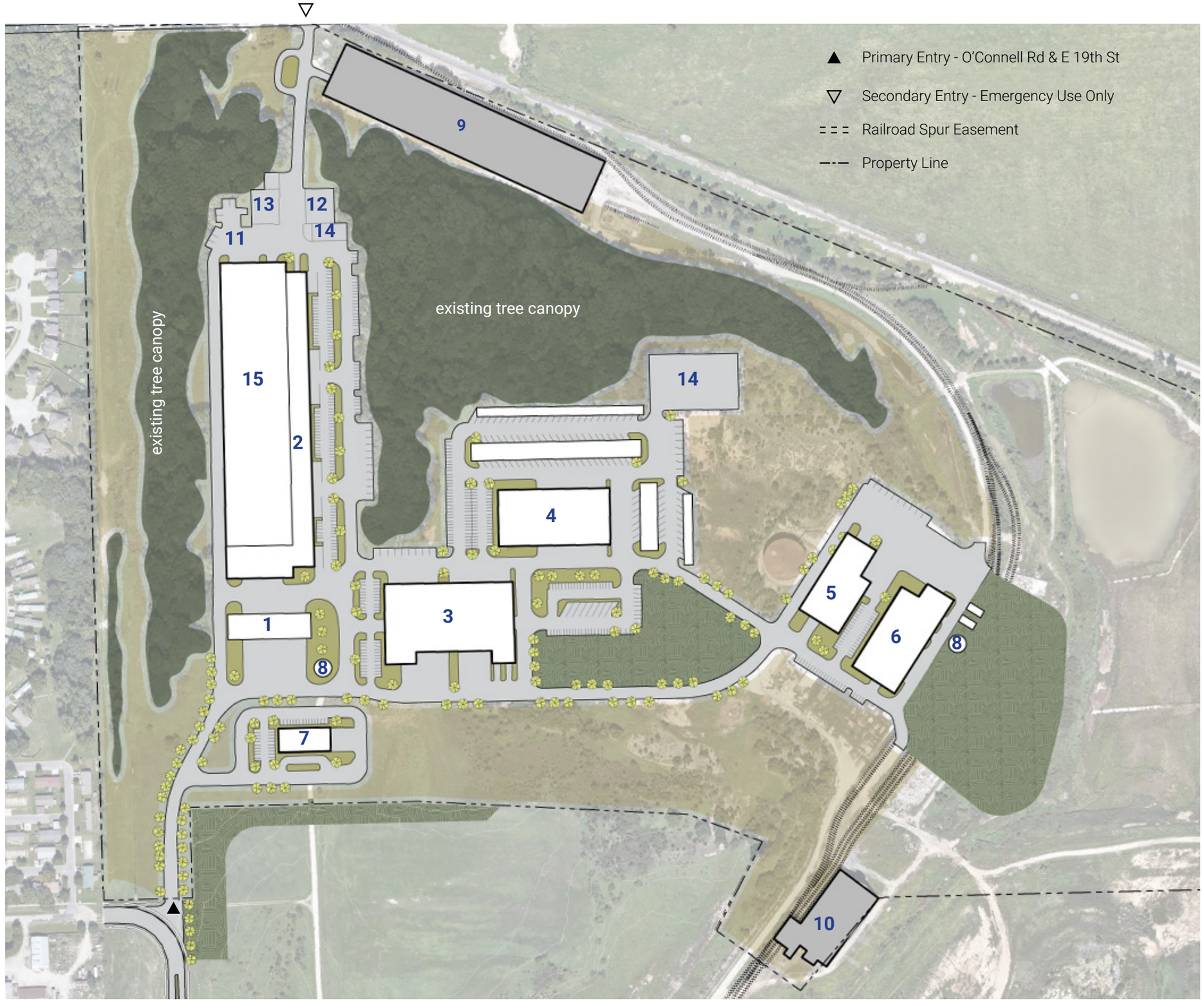
The originally proposed Master Plan was developed with the goal of including Field Operations for all City Divisions on a single Campus. As a result, the entire available site was developed, aside from mature tree stands or steep slopes. Given the size and operation of the MSO building, it was initially designed to occupy the west portion of the site, approximately 350 to 400 feet from the west property line. Although the layout achieved the goal of locating all Divisions on a single parcel, a public meeting revealed that the adjacent neighborhood felt the site was over-developed, and the facilities were too close. Neighborhood concerns were documented, and formed the basis for a revised Master Plan.

Neighborhood Concerns

- Proximity to Neighborhood
- Size of Operation
- Unsightly Views
- Noise Disturbance
- Light Pollution
- Traffic Congestion
- Disruption of ecosystem/ open space
- Property value destabilization
- Odors
- Site Contamination
- Hazardous Materials

Key

1. Fuel Island
2. MSO Building: Water, Wastewater, Streets, Stormwater, Traffic & Inspections Divisions
3. Central Maintenance Garage
4. Solid Waste Division
5. Facility Maintenance Division
6. Forestry & Horticulture Divisions
7. Household Hazardous Waste Division
8. Rainwater Collection Tank
9. Bag Warehouse (existing)
10. Bulk Warehouse (existing)
11. Bulk Bins
12. Salt/ Sand Storage Shed
13. Salt/ Sand Mixing Shed
14. Laydown Area
15. Conditioned Vehicle Storage



Revised Master Plan

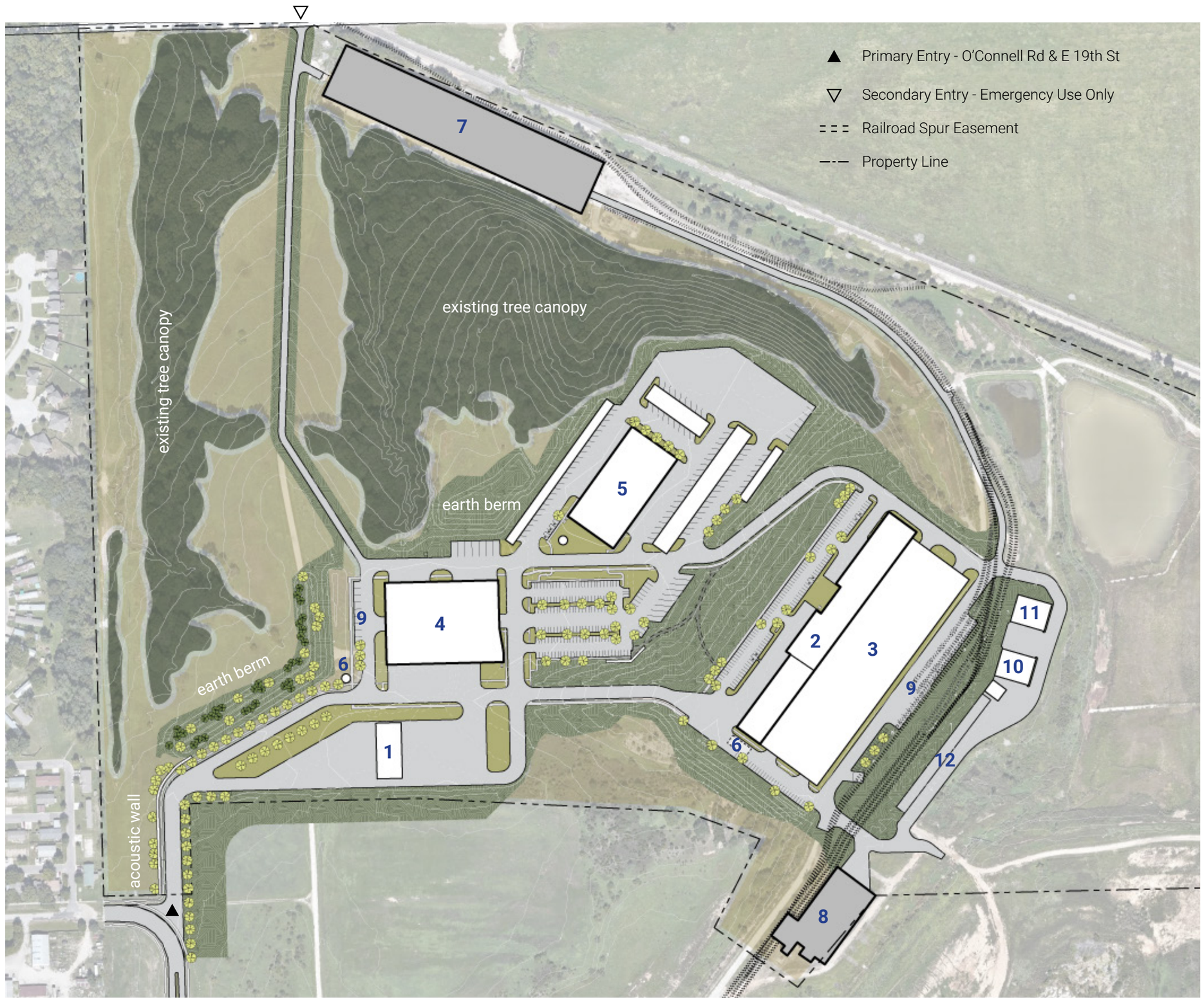
Following community engagement efforts, the Master Plan was adjusted to address the neighborhood's concerns. The first step towards this goal was to remove some of the facilities that do not needed to be relocated immediately. This allowed the MSO building to be relocated from the west side of the site, to the east. The reconfiguration of the site also allows for the MSO facility to benefit from being constructed on level ground, removing the previous need to follow the slope of the hill, which will lead to greater capability of Divisional interaction. Additionally, large berms and an acoustic wall were integrated into the design to further reduce sight, sound, and light disruptions.

Features and Considerations

- A less dense Campus with 8 Divisions benefiting most from close proximity located on the site.
- Distance from property line to the MSO facility increased by over 1000 ft.
- Large Berms added to the west sides of CMG and SWD to assist in noise reduction and sight obstruction from neighborhood.
- Open space preserved at former location of MSO.
- A separate, off-Campus strategy will be needed to address the needs of Forestry, Horticulture and Household Hazardous Waste.
- Light studies were conducted with dark-sky compliant, timed light fixtures that showed minimal impact to the adjacent neighborhood.
- Remediation would need to occur before Phase 1 can begin.

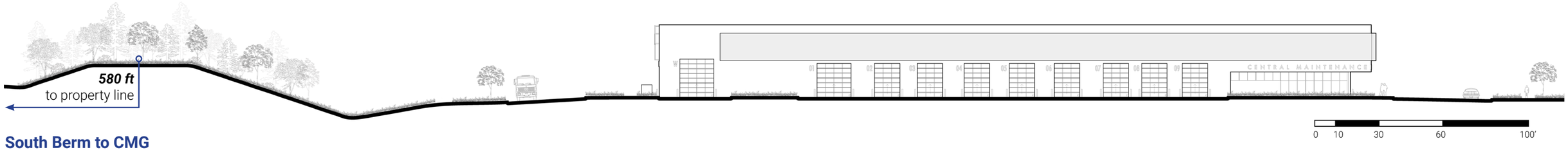
Key

1. Fuel Island
2. MSO Building: Water Distribution,Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management, & Inspections Divisions
3. Conditioned Vehicle Storage
4. Central Maintenance Garage
5. Solid Waste Division
6. Rainwater Collection Tank
7. Bag Warehouse (existing)
8. Bulk Warehouse (existing)
9. Bulk Bins
10. Salt/Sand Storage Shed
11. Salt/Sand Mixing Shed
12. Laydown Area

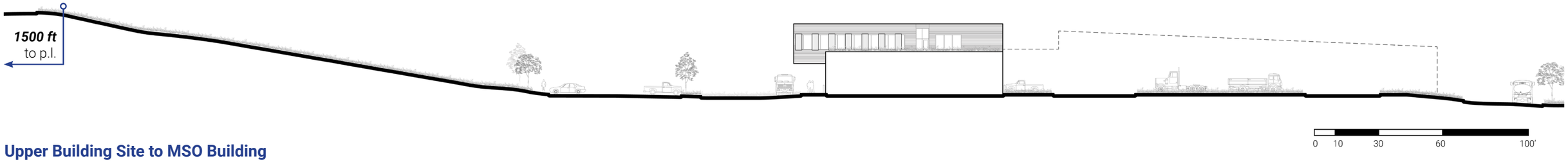


Site Sections

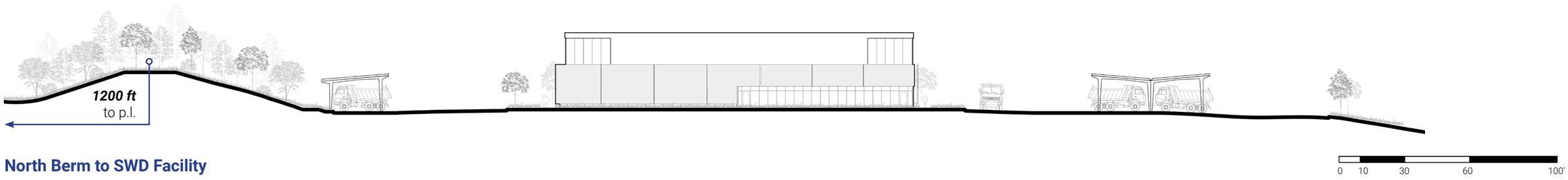
The Master Plan took the topography of the existing site into account. In the case of the Central Maintenance Garage and the Solid Waste Division buildings, the resulting cut from leveling the building locations will be used to build up earth berms in order for the day-to-day operations of the campus to be visually and acoustically separated from the adjacent neighborhood. In the case of the MSO building, the Design Team took advantage of the natural slope of the land to achieve the same goal. The addition of coniferous trees atop the berms, and an acoustic wall at the Campus entry would also contribute to the separation. The Site Section drawings below illustrate these site moves and also show the large distances between them and the west property line.



South Berm to CMG



Upper Building Site to MSO Building



North Berm to SWD Facility

Site Massing

This before-and-after view shows how the site and neighborhood proximity has shaped the Campus layout. The Campus entry drive is shielded from the neighborhood by an acoustic wall, similar to those used for highways adjacent to residential areas. The acoustic wall engages an earth berm, with trees planted atop, to provide visual and acoustical separation for the Central Maintenance Garage. The MSO building can be seen to the east, separated from the neighborhood both by an elevation drop of approximately 40 feet and by sheer distance.

Aerial View — Campus Entry Looking North

Aerial View — Current Conditions

Site Massing

This aerial view shows the first three phases in place. The MSO Building — seen in the foreground — has a finish floor elevation approximately 40 feet below the Central Maintenance Garage and the Solid Waste Division Building. For the MSO Building, the natural earthform to the west, in combination with the distance to the west property line, will help shield the neighborhood from its day-to-day operations. The earth berms and trees west of the CMG and SWD buildings can also be seen. Many sustainable aspects are also shown in this image, including PV arrays, landscape integration, water reclamation, and daylighting features.

Aerial View — Current Conditions

Aerial View — Campus Looking West

Phase **1**

After analysis and City Staff recommendation, it was determined that Phase 1 would include the MSO Building, a Fuel Island, along with any associated sitework and some support structures as shown. The MSO Building would include offices and operational spaces for each Division inlcuded therein, as well as provide shared spaces such as locker rooms, restrooms, conference/training rooms and a fitness room. Indoor and outdoor break areas would be accommodated to encourage staff to spend a few minutes outside each day. A wash bay and conditioned vehicle storage bays would also be a part of this facility. The sitework would include an entry road, Campus circulation roads, parking areas for staff, and landscaped areas. A large parking area for City vehicles would be located to the east of the building. This area could eventually be enclosed with a Conditioned Vehicle Storage building during Phase 4. Phase 1 support structures would include salt and sand sheds, a laydown area and brine storage.

The Fuel Island is a key element of Phase 1. Designed to meet the needs of the entire Field Operations Campus, it offers efficiencies related to time and operational costs, resulting in reductions of queuing time from 30-60 minutes to 10 minutes during peak times. A properly sized Fuel Island would allow the City to purchase fuel at discounted prices, and allow for safer vehicle and equipment access, reducing potential for accidents.

Phase 1 would also utilize soil from areas to be excavated in order to create an earth berm to the west of the Phase 2 Central Maintenance Garage.

Key

1. Fuel Island
2. MSO Building: Water Distribution,Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management & Inspections
3. Bag Warehouse (existing)
4. Bulk Warehouse (existing)
5. Bulk Bins
6. Salt/ Sand Storage Shed
7. Salt/ Sand Mixing Shed
8. Brine Storage
9. Laydown Area
10. Rainwater Collection Tank

0 200’ 400’

Phase **2**

Phase 2 would include the construction of a new Central Maintenance Garage, parking for staff, and a paved staging area for City vehicles in need of maintenance. The Garage would include a variety of service, welding, fabrication and tire bays, with a central drive lane for circulation, diagnosis and to service oversized equipment if needed. A wash bay would be included as well to clean vehicles prior to maintenance, a best practice that also allows for a close visual inspection of vehicles. In addition to vehicle maintenance spaces, the facility would include Administrative offices, Training Areas, Conference Rooms, Locker Rooms and a small Fitness Center.

Phase 2 would also utilize soil from areas to be excavated to create an earth berm to the west of the Phase 3 Solid Waste Division Building.

Key

1. Fuel Island
2. MSO Building: Water Distribution, Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management & Inspections
3. Bag Warehouse (existing)
4. Bulk Warehouse (existing)
5. Bulk Bins
6. Salt/ Sand Storage Shed
7. Salt/ Sand Mixing Shed
8. Brine Storage
9. Laydown Area
10. Rainwater Collection Tank
11. Central Maintenance Garage
12. Down Vehicle Parking

0 200’ 400’

Phase **3**

Phase 3 would include the construction of the Solid Waste Division Building, parking for staff, and parking for the Solid Waste Vehicle Fleet. In addition, paved areas for roll-off bin storage and cart staging would be provided. Overhead canopies in the fleet parking area would provide some protection for the vehicles, as well as prepping for the possibility of future EV charging needs. The building would include offices, locker rooms, training rooms, break rooms, in addition to drive through bays for vehicle maintenance and repair. The building would also include a paint booth and a drive through wash bay.

Key

1. Fuel Island
2. MSO Building: Water Distribution, Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management & Inspections
3. Bag Warehouse (existing)
4. Bulk Warehouse (existing)
5. Bulk Bins
6. Salt/ Sand Storage Shed
7. Salt/ Sand Mixing Shed
8. Brine Storage
9. Laydown Area
10. Rainwater Collection Tank
11. Central Maintenance Garage
12. Down Vehicle Parking
13. Solid Waste Division
14. Covered Parking Canopy

0 200’ 400’

Phase **4**

Phase 4 would include the construction of a Conditioned Vehicle Storage Building adjacent to the Phase 1 MSO building. To keep construction costs as low as possible, it is likely that this would be a pre-engineered metal building.

Note that the viability of Phase 4 is dependent on final costs for Phases 1 - 3. Cost realities could require a shift in the strategy of conditioned vehicle storage as shown in this document.

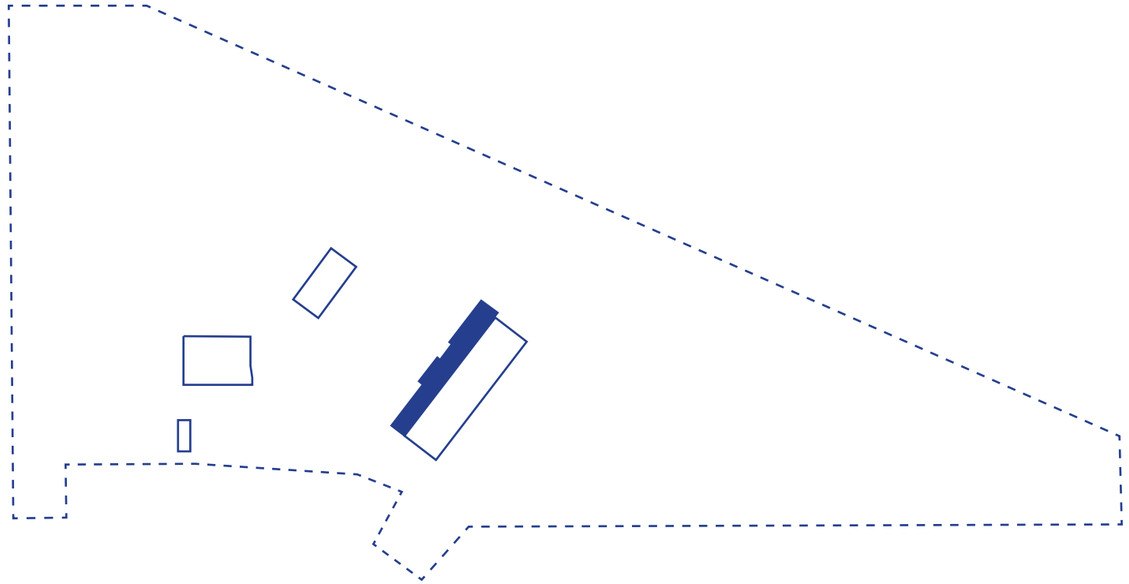
Key

1. Fuel Island
2. MSO Building: Water Distribution, Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management, & Inspections Divisions
3. Bag Warehouse (existing)
4. Bulk Warehouse (existing)
5. Bulk Bins
6. Salt/ Sand Storage Shed
7. Salt/ Sand Mixing Shed
8. Brine Storage
9. Laydown Area
10. Rain Water Collection Tank
11. Central Maintenance Garage
12. Down Vehicle Parking
13. Solid Waste Division
14. Covered Parking Canopy
15. Conditioned Vehicle Storage

0 200’ 400’

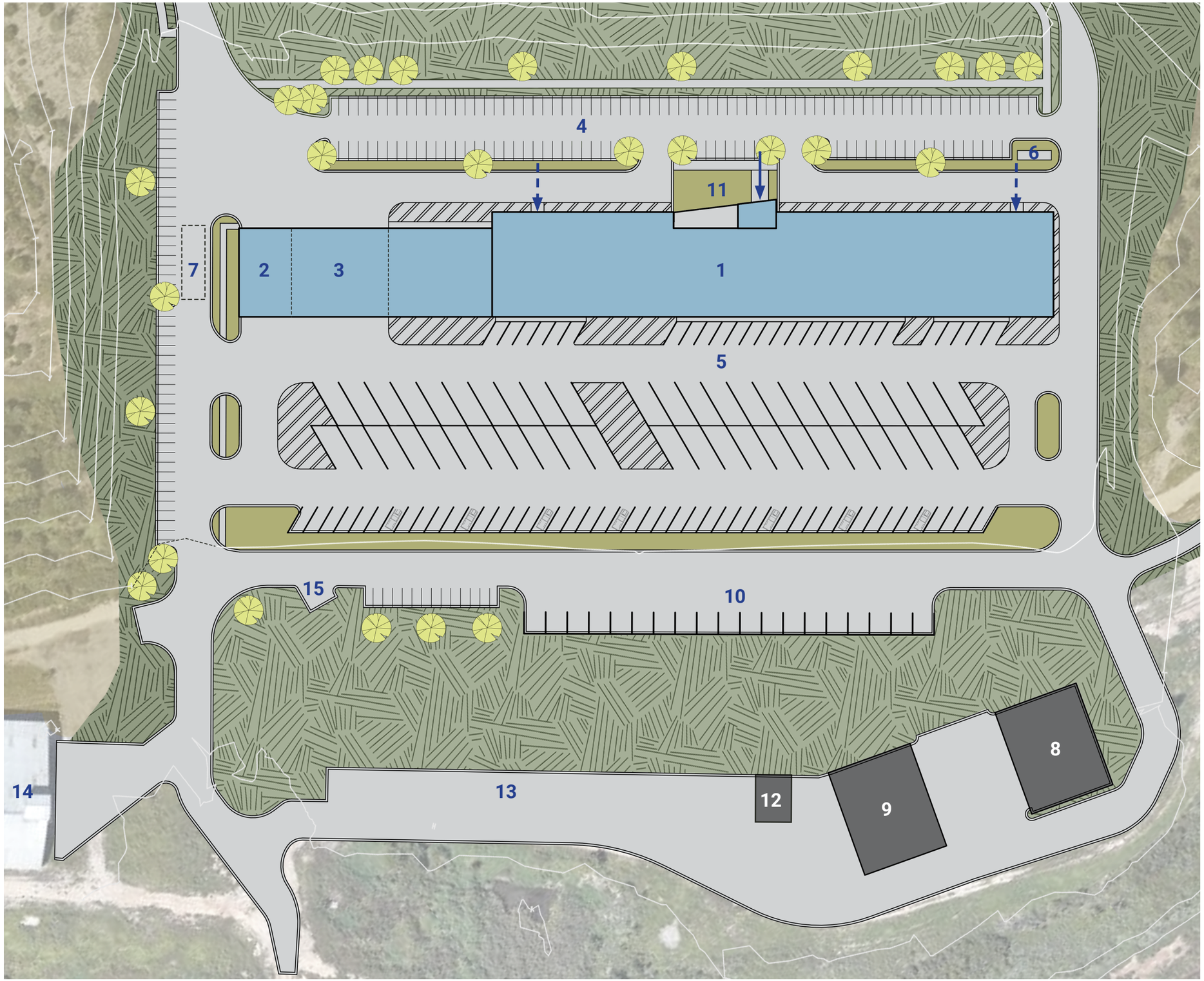
3

Phase **1:**
Municipal Services and Operations Building and Related Sitework



Site Plan

This enlarged site plan shows the interaction between vehicle flow and staff pedestrian flow. Although designed around the goal of optimal day-to-day operation, landscape buffers and outdoor staff break areas provide relief from the expanses of paving. Staff parking for personal vehicles is to the northwest of the building, with City vehicle parking to the southwest. Located approximately 40 feet below the eventual site of the CMG and SWD buildings, the location of the MSO uses natural grade characteristics to provide a buffer from the residents to the west of the Campus.



Key

1. MSO Building: Water Distribution, Wastewater, Streets, Stormwater, Traffic, Administration, Construction Management & Inspections
2. Wash Bay
3. Conditioned Vehicle Storage
4. Employee Parking
5. Equipment Parking - Future Conditioned Storage
6. Generator
7. Underground Rainwater Storage Tank
8. Salt Shed
9. Sand and Salt Mixing Shed
10. Bulk Material Bins
11. Outdoor Break Area
12. Brine Making and Storage
13. Pipe Laydown Area
14. Existing Bulk Building
15. Trash

→ Primary Pedestrian Entry

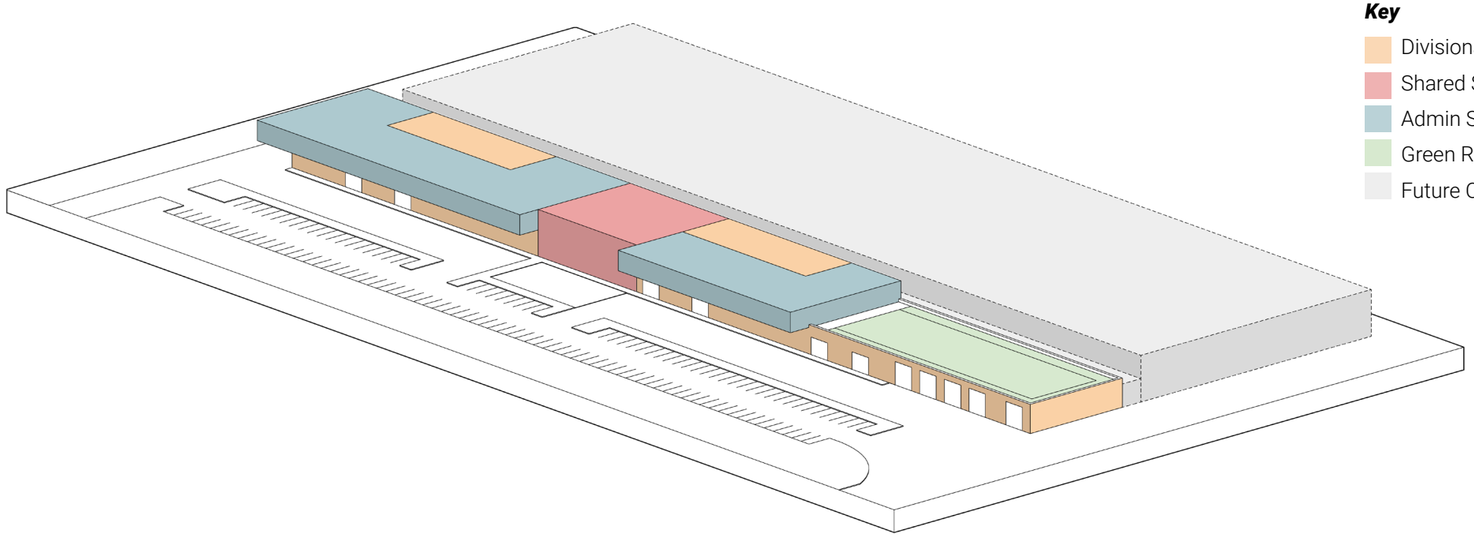
⇢ Secondary Pedestrian Entry

0 50’ 100’ 200’

Architectural Narrative

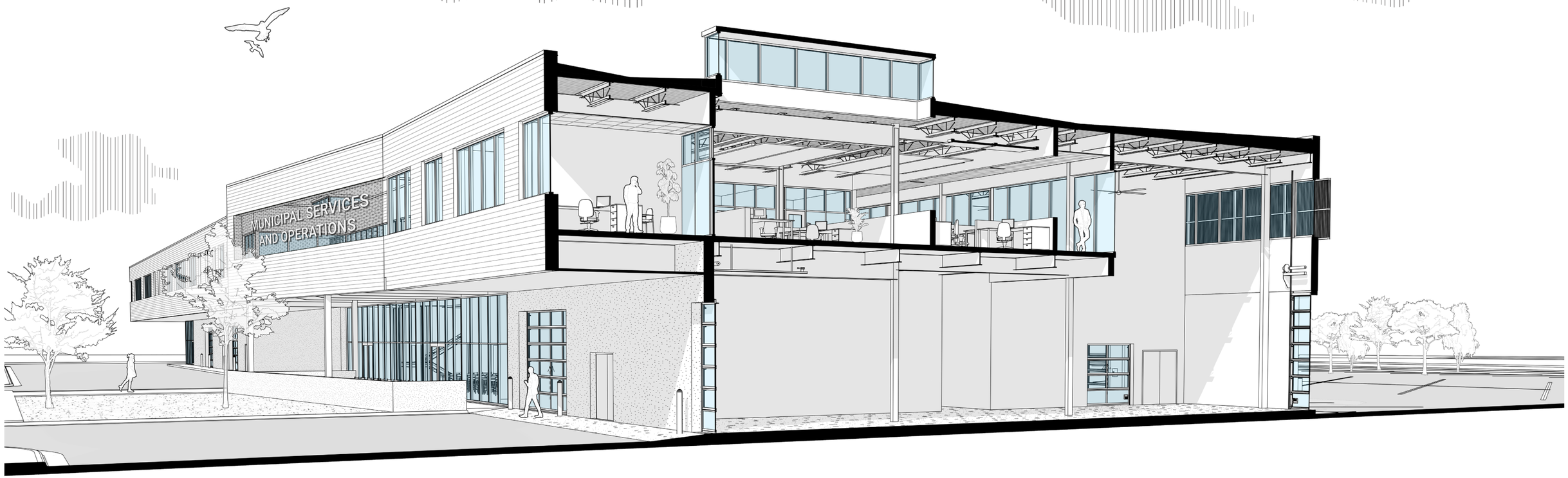
The MSO Building was designed to operate efficiently in both plan and section. The lower level contains the shop spaces, conveniently adjacent to shared break rooms, locker rooms and training spaces. The upper level contains the administrative component of each Division's operation. Taking advantage of double height shop spaces, supervisors on the upper level are able to visually connect with the lower level. Structurally, the upper level is cantilevered out in front of the west facing overhead doors, providing a sheltered zone for vehicles to interface with the shop spaces. Light monitors are located above some second level areas, bringing daylight deep into the space.

Materials include a steel structure with precast concrete sandwich panels and storefront framing forming the exterior walls. A corrugated metal skin system would be used on the upper level, along with a wood soffit at the overhanging area.



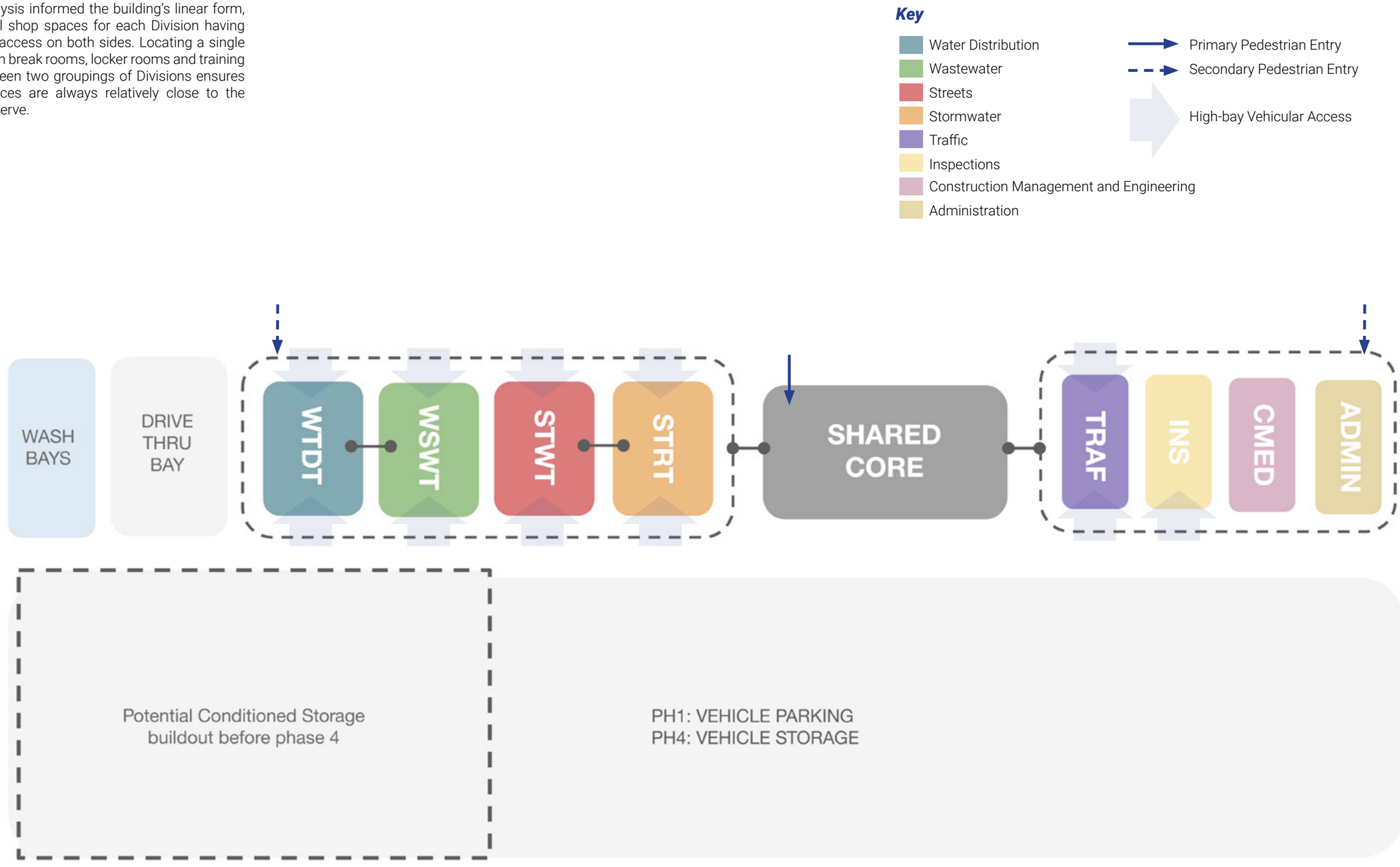
Key

- Divisional Operation Spaces
- Shared Spaces
- Admin Spaces
- Green Roof + PV Array
- Future Conditioned Vehicle Storage



Organizational Diagram

After Programming, an Organizational Diagram was generated, to visually communicate which Divisions would benefit from being directly adjacent to each other. This analysis informed the building's linear form, with lower level shop spaces for each Division having overhead door access on both sides. Locating a single shared core with break rooms, locker rooms and training spaces in between two groupings of Divisions ensures that these spaces are always relatively close to the Divisions they serve.



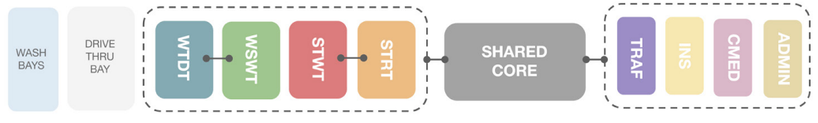
Block A Shared Spaces	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.1a - Building Entry / Vestibule	100	10' X 10'	1	100	
DIV.6a - Small Conference Room	120	12' x 10'	1	120	
DIV.6b - Standard Conference Room	180	12 'X 15'	3	540	
DIV.9a - Admin. Breakroom	512	32'x16'	1	512	
DIV.9b - Flexroom	120	12'x10'	6	665	wellness rooms, small conference rooms, future offices
DIV.10a - Universal Public Restroom	72	8' x 9'	10	720	
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	1	63	
DIV.11 - General Storage / Supply Closets	100	10' x 10'	2	200	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				3,064	
CIRCULATION @ 30%				919	
TOTAL				3,983	

Block B Shared Spaces	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.1a - Building Entry / Vestibule	100	10' X 10'	1	100	
DIV.6a - Small Conference Room	120	12' x 10'	0	0	
DIV.6b - Standard Conference Room	180	12 'X 15'	3	540	
DIV.9a - Admin. Breakroom	1,285	32'x16'	1	512	
DIV.9b - Flexroom	665	12'x10'	3	665	wellness rooms, small conference rooms, future offices
DIV.10a - Universal Public Restroom	72	8' x 9'	12	864	
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	1	63	
DIV.11 - General Storage / Supply Closets	100	10' x 10'	2	200	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				3,088	
CIRCULATION @ 30%				926	
TOTAL				4,014	

Central Shared Spaces	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.1a - Building Entry / Vestibule	100	10' X 10'	1	100	
DIV.6a - Small Conference Room	120	12' x 10'	2	240	
DIV.6b - Standard Conference Room	180	12 'X 15'	4	540	
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	3	1,500	
DIV.9a - Kitchen	625	25' x 25'	1	625	
DIV.9a - Breakroom	1,875	25 sf x Staff #	1	1,875	for all DOS staff
DIV.10b - Men's Locker and Restroom	2,720	40' x 68'	1	2,720	110 lockers + 11 Restrooms, 5 Showers
DIV.10c - Women's Locker and Restroom	1,600	32' x 50'	1	1,600	36 lockers + 8 Restrooms, 3 Showers
DIV.11 - Uniform Storage	160	15' x 12'	1	160	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
Fitness Room	768	24' x 32'	1	768	
DIV.10g - Mechanical and Electrical Room	1,520	15% of supported	1.0	1,520	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				11,744	
CIRCULATION @ 30%				3,523	
TOTAL				15,267	

The Design Team identified space needs that are shared by all or several MSO Divisions, e.g. training rooms, break rooms, fitness rooms, IT rooms, etc. For the sake of spacial efficiency and to encourage interDivisional interactions, these shared spaces are interspersed throughout the building. Depending on the nature of the program, this was done by either combining the spaces into a single larger space, as is the case for locker rooms, or by providing a variety of the requested program type, as is the case for conference rooms. A complete list of all shared spaces and where they are located in the facility can be found on the tables above.

Programming Summary
Shared Spaces



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	4	600	
DIV.4 - Staff Office	120	12' x 10'	1	120	First Responder
DIV.5 - Field Staff Workstation / Open Office	900	6'x6' x (FTE+1/2PTE)	1	900	for 25 people, see Block A shared spaces
DIV.6a - Small Conference Room	120	12' x 10'	0	0	2 requested, see Block A shared spaces
DIV.6b - Standard Conference Room	180	12' x 18'	0	0	
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	2 requested, see shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	0	0	3 requested, see Block A shared spaces
DIV.9 - Breakroom	960	25 sf x Staff #	0	0	1 requested for 38 people, see Block A shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	2 requested, see Block A shared spaces
DIV.10b - Men's Locker and Restroom	Varies	Varies	0	0	1 requested, see Block A shared spaces
DIV.10c - Women's Locker and Restroom	Varies	Varies	0	0	1 requested, see Block A shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	3 requested, ssee Block A shared spaces
DIV.10e - IT Closet	48	6' x 8'	0	0	1 requested, see Block A shared spaces
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block A shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	3	300	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	0	0	1 requested, see Block A shared spaces
DIV.14 - Laundry Facility	100	10' x 10'	1	100	1 requested, see shared core A
DIV.10g - Mechanical and Electrical Room	330	15% of supported	1	330	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				2,530	
CIRCULATION @ 30%				759	
TOTAL				3,289	

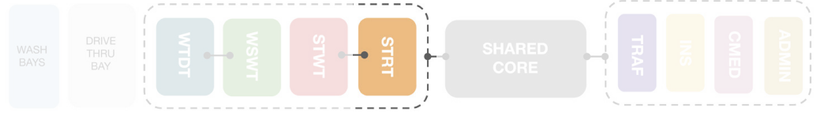
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
STRT.2 - General Maintenance Bay	1,680	30' x 56'	1	1,680	
STRT.3 - Asphalt Shop	1,200	20' x 60'	1	1,200	Combined with Concrete Shop
STRT.4 - Carpentry / Wood Fabrication Shop	900	30' x 30'	1	900	
STRT.5 - Concrete Shop	960	40' x 24'	1	960	
STRT.6 - Hazardous Storage	450	15' x 30'	1	450	
STRT.7 - Wash Bay	1,680	30' x 56'	2	3,360	
STRT.8 - Parts Storage	224	16' x 14'	1	224	
STRT.9 - Tool Storage	224	16' x 14'	1	224	
STRT.10 - Bulk Fluids Room	192	16' x 12'	1	192	
STRT Division Opertion Critical Spaces	9,190				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				9,190	
CIRCULATION @ 30%				2,757	
TOTAL				11,947	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	19	17,280	
Medium Space	288	12'x24'	18	5,069	
Pickup Space	200	10'x20'	14	2,720	
VEHICLE PARKING SUBTOTAL	25,069				
DOUBLE TRAFFIC LANE STORAGE INCREASE	30,083			55,151	Parking plus traffic lane serving parking
Mezzanine Storage				18,384	Maximum 1/3 of open storage area (IBC)
General Storage area				6,894	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				55,151	Parking plus traffic lane serving parking
CIRCULATION @ 15%				8,273	
TOTAL				70,318	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	3	922	
Pickup Space	200	10'x20'	16	3,200	
VEHICLE PARKING SUBTOTAL	4,122				
DOUBLE TRAFFIC LANE STORAGE INCREASE	4,946			9,068	Parking plus traffic lane serving parking
Mezzanine Storage				3,023	Maximum 1/3 of open storage area (IBC)
General Storage area				1,133	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				9,068	Parking plus traffic lane serving parking
CIRCULATION @ 15%				1,360	
TOTAL				11,561	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	38	10,886	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	13	3,802	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	2	470	
DIV.15 - Trash Area	900	30'x30' (can vary)	1	900	
STRT.12 - Sander Racks	180	10' x 18'	36	6,480	
STRT.14 - Salt and Sand Mixing	4,800	60' x 80'	1	4,800	
STRT.15 - Salt Shed	8,000	100' x 80'	1	8,000	
STRT.16 - Stock Pile Material Bins	800	40' x 20'	8	6,400	
STRT.17 - Brine Making and Storage	1,920	40' x 48'	1	1,920	
Fuel Island	1,500	30' x 50'	1	1,500	
SITE PROGRAM SUB-TOTAL				29,100	
SITE CIRCULATION @ 150%				43,650	Accounts for access to all sides of separated site functions
TOTAL				72,750	

Programming Summary
Streets Division (STRT)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	2	300	
DIV.4 - Staff Office	120	12' x 10'	0	0	
DIV.5 - Field Staff Workstation / Open Office	324	6'x6' x (FTE+1/2PTE)	1	324	for 9 people, see Block A shared spaces
DIV.6a - Small Conference Room	120	12' x 10'	1	120	1 requested, see Block A shared spaces
DIV.6b - Standard Conference Room	NA			-	
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block A shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	288	1 requested, see Block A shared spaces
DIV.9 - Breakroom	400	25 sf x Staff #	0	0	1 requested, see Block A shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	1 requested, see Block A shared spaces
DIV.10b - Men's Locker and Restroom	380	TBD	0	0	1 requested, see Block A shared spaces
DIV.10c - Women's Locker and Restroom	260	TBD	0	0	1 requested, see Block A shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	1 requested, see Block A shared spaces
DIV.10e - IT Closet	48	6' x 8'	0	0	1 requested, see Block A shared spaces
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block A shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	3	300	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
DIV.10g - Mechanical and Electrical Room	241	15% of supported	1	241	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				1,849	
CIRCULATION @ 30%				555	
TOTAL				2,404	

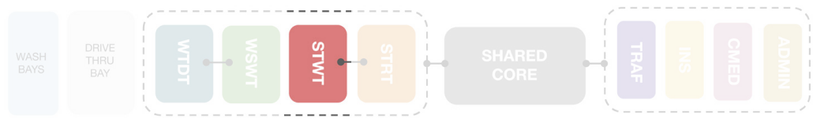
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
STWT.2 - Stormwater Shop	800	20' x 40'	1	800	
STWT.3 - Levee Shop	900	30' x 30'	1	900	
STWT.4 - Secure Storage	256	16' x 16'	1	256	
STWT.5 - Material and Equipment Storage Shop	1,350	45' x 30'	1	1,350	
STWT.6 - Wash Bay	1,680	30' x 56'	2	3,360	
STWT Division Opertion Critical Spaces	6,666				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				6,666	
CIRCULATION @ 30%				2,000	
TOTAL				8,666	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	13	11,520	
Medium Space	288	12'x24'	10	2,765	
Pickup Space	200	10'x20'	8	1,680	
VEHICLE PARKING SUBTOTAL	15,965				
DOUBLE TRAFFIC LANE STORAGE INCREASE	19,158			35,123	Parking plus traffic lane serving parking
Mezzanine Storage				11,708	Maximum 1/3 of open storage area (IBC)
General Storage area				4,390	Area created by angled parking, used for small implement storage
				TOTAL	MINIMUM TOTALS
CONDITIONED VEHICLE STORAGE SUBTOTAL				35,123	Parking plus traffic lane serving parking
CIRCULATION @ 15%				5,268	
TOTAL				44,781	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	5	1,382	
Pickup Space	200	10'x20'	11	2,160	
VEHICLE PARKING SUBTOTAL	3,542				
DOUBLE TRAFFIC LANE STORAGE INCREASE	4,251			7,793	Parking plus traffic lane serving parking
Mezzanine Storage				2,598	Maximum 1/3 of open storage area (IBC)
General Storage area				974	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				7,793	Parking plus traffic lane serving parking
CIRCULATION @ 15%				1,169	
TOTAL				9,936	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	16	4,536	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	10	2,765	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	306	
STWT.7 - Exterior Fleet Parking				0	
STWT.8 - Stormsewer Pipe and Precast Stock				0	
STWT.8 & .9 - Bulk Material Storage Bins	800	40' x 20'	8	6,400	
SITE PROGRAM SUB-TOTAL				9,471	
SITE CIRCULATION @ 150%				14,206	Accounts for access to all sides of separated site functions
TOTAL				23,677	

Programming Summary
Stormwater Division (STWT)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	1	150	
DIV.4 - Staff Office	120	12' x 10'	1	120	
DIV.5 - Field Staff Workstation / Open Office	468	6'x6' x (FTE+1/2PTE)	1	468	for 13 people, see Block A shared spaces
DIV.6a - Small Conference Room	120	12' x 10'	0	0	1 requested, see Block A shared spaces
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block A shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	288	1 requested, see Block A shared spaces
DIV.9 - Breakroom	400	25 sf x Staff #	0	0	1 requested, see Block A shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	2	144	
DIV.10b - Men's Locker and Restroom	340	Varies	0	0	1 requested, see Block A shared spaces
DIV.10c - Women's Locker and Restroom	260	Varies	0	0	1 requested, see Block A shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	1 requested, see Block A shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	1	63	
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
	NA			-	
	NA			-	
DIV.10g - Mechanical and Electrical Room	219	15% of supported	1	219	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				1,876	
CIRCULATION @ 30%				563	
TOTAL				2,439	

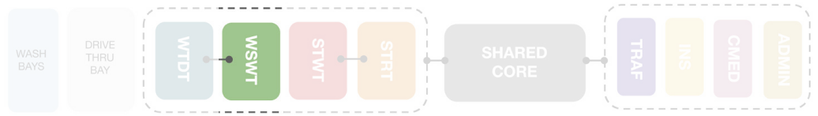
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
WSWT.2 - Wastewater Shop	400	20' x 20'	1	400	
WSWT.3 - Wastewater Storage Area	200	20' x 10'	1	200	
WSWT.4 - Secure Storage	256	16' x 16'	1	256	
WSWT.5 - Confined Space Storage Unit	64	8' x 8'	1	64	
WSWT Division Opertion Critical Spaces	920				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				920	
CIRCULATION @ 30%				276	
TOTAL				1,196	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	3	2,880	
Medium Space	288	12'x24'	11	3,226	
Pickup Space	200	10'x20'	0	0	
VEHICLE PARKING SUBTOTAL	6,106				
DOUBLE TRAFFIC LANE STORAGE INCREASE	7,327			13,432	Parking plus traffic lane serving parking
Mezzanine Storage				4,477	Maximum 1/3 of open storage area (IBC)
General Storage area				1,679	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				13,432	Parking plus traffic lane serving parking
CIRCULATION @ 15%				2,015	
TOTAL				17,126	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	0	0	
Pickup Space	200	10'x20'	0	0	
VEHICLE PARKING SUBTOTAL	0				
DOUBLE TRAFFIC LANE STORAGE INCREASE	0			0	Parking plus traffic lane serving parking
Mezzanine Storage				0	Maximum 1/3 of open storage area (IBC)
General Storage area				0	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				0	Parking plus traffic lane serving parking
CIRCULATION @ 15%				0	
TOTAL				0	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	16	4,536	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	306	
SITE PROGRAM SUB-TOTAL				4,842	
SITE CIRCULATION @ 150%				7,263	Accounts for access to all sides of separated site functions
TOTAL				12,105	

Programming Summary
Wastewater Collections Division (WSWT)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	2	300	
DIV.4 - Staff Office	120	12' x 10'	0	0	
DIV.5 - Field Staff Workstation / Open Office	1,519	6'x6' x (FTE+1/2PTE)	0	0	
DIV.6a - Small Conference Room	120	12' x 10'	0	0	
DIV.6b - Standard Conference Room	240	12' x 20'	0	0	2 requested, see Block A shared spaces
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block A shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	216	1 requested, see Block A shared spaces
DIV.9 - Breakroom	1,280	25 sf x Staff #	0	0	1 requested, see Block A shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	4 requested, see Block A shared spaces
DIV.10b - Men's Locker and Restroom	604	Varies	0	0	1 requested, see Block A shared spaces
DIV.10c - Women's Locker and Restroom	348	Varies	0	0	1 requested, see Block A shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	2 requested, see Block A shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	1 requested, see Block A shared spaces
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block A shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	0	0	1 requested, see Block A shared spaces
DIV.10g - Mechanical and Electrical Room	127	15% of supported	1	127	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				971	
CIRCULATION @ 30%				291	
TOTAL				1,262	

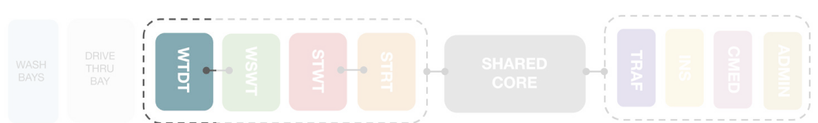
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Field Shop	6,890	106' x 65'	1	6,890	
WTDT.3 - Water Distribution Shop	1,248	48' x 26'	1	1,248	
WTDT.4 - Secure Storage	256	16' x 16'	1	256	
WTDT.5 - Hazardous Storage	36	6' x 6'	3	108	
WTDT Division Opertion Critical Spaces	8,502				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				8,502	
CIRCULATION @ 30%				2,551	
TOTAL				11,053	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	6	5,760	
Medium Space	288	12'x24'	18	5,069	
Pickup Space	200	10'x20'	36	7,280	
VEHICLE PARKING SUBTOTAL	18,109				
DOUBLE TRAFFIC LANE STORAGE INCREASE	21,731			39,839	Parking plus traffic lane serving parking
Mezzanine Storage				13,280	Maximum 1/3 of open storage area (IBC)
General Storage area				4,980	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				39,839	Parking plus traffic lane serving parking
CIRCULATION @ 15%				5,976	
TOTAL				50,795	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	0	0	
Pickup Space	200	10'x20'	0	0	
VEHICLE PARKING SUBTOTAL	0				
DOUBLE TRAFFIC LANE STORAGE INCREASE	0			0	Parking plus traffic lane serving parking
Mezzanine Storage				0	Maximum 1/3 of open storage area (IBC)
General Storage area				0	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				0	Parking plus traffic lane serving parking
CIRCULATION @ 15%				0	
TOTAL				0	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	51	14,515	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	2	627	
WTDT.7 - Bulk Material Bins	750	30' x 25'	3	2,250	
SITE PROGRAM SUB-TOTAL				17,392	
SITE CIRCULATION @ 150%				26,088	Accounts for access to all sides of separated site functions
TOTAL				43,480	

Programming Summary
Water Distribution Division (WTDT)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	NA			-	
DIV.4 - Staff Office	120	12' x 10'	1	120	
DIV.5 - Field Staff Workstation / Open Office	516	6'x6' x (FTE+1/2PTE)	1	516	for 14 people, shared with Traffic
DIV.6a - Small Conference Room	NA			-	
DIV.6b - Standard Conference Room	NA			-	
DIV.7 - Large Conference Room-Training Room	NA			-	
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	259	
DIV.9 - Breakroom	360	25 sf x Staff #	0	0	1 requested, see Block B shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	2 requested, see Block B shared spaces
DIV.10b - Men's Locker and Restroom	364	TBD	0	0	1 requested, see Block B shared spaces
DIV.10c - Women's Locker and Restroom	256	TBD	0	0	1 requested, see Block B shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	1 requested, see Block B shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block B shared spaces
DIV.11 - General Storage / Supply Closets	200	20' x 10'	1	200	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
DIV.10g - Mechanical and Electrical Room	213	15% of supported	1	-	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				1,420	
CIRCULATION @ 30%				426	
TOTAL				1,845	

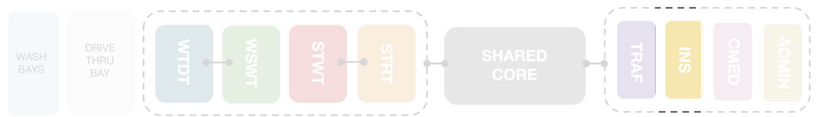
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
INS.1 - Open Work Shop	750	25' x 30'	1	750	
INS.2 - Surveyor Office - (See DIV.3)				0	
INS.3 - Common Office Area (See DIV.5)				0	
INS Division Opertion Critical Spaces	750				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				750	
CIRCULATION @ 30%				225	
TOTAL				975	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	0	0	
Pickup Space	200	10'x20'	14	2,880	
VEHICLE PARKING SUBTOTAL	2,880				
DOUBLE TRAFFIC LANE STORAGE INCREASE	3,456			6,336	Parking plus traffic lane serving parking
Mezzanine Storage				2,112	Maximum 1/3 of open storage area (IBC)
General Storage area				792	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				6,336	Parking plus traffic lane serving parking
CIRCULATION @ 15%				950	
TOTAL				8,078	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	0	0	
Pickup Space	200	10'x20'	0	0	
VEHICLE PARKING SUBTOTAL	0				
DOUBLE TRAFFIC LANE STORAGE INCREASE	0			0	Parking plus traffic lane serving parking
Mezzanine Storage				0	Maximum 1/3 of open storage area (IBC)
General Storage area				0	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				0	Parking plus traffic lane serving parking
CIRCULATION @ 15%				0	
TOTAL				0	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	14	4,082	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	306	
SITE PROGRAM SUB-TOTAL				4,388	
SITE CIRCULATION @ 150%				6,583	Accounts for access to all sides of separated site functions
TOTAL				10,971	

Programming Summary
Inspections Division (INS)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	1	150	
DIV.4 - Staff Office	120	12' x 10'	2	240	
DIV.5 - Field Staff Workstation / Open Office	202	6'x6' x (FTE+1/2PTE)	1	202	for 6 people
DIV.6a - Small Conference Room	120	12' x 10'	0	0	1 requested, see Block B shared spaces
DIV.6b - Standard Conference Room	NA			-	
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block B shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	173	see Block B shared spaces
DIV.9 - Breakroom	240	25 sf x Staff #	0	0	1 requested, see Block B shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	2 requested, see Block B shared spaces
DIV.10b - Men's Locker and Restroom	Varies	Varies	0	0	1 requested, see Block B shared spaces
DIV.10c - Women's Locker and Restroom	Varies	Varies	0	0	1 requested, see Block B shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	1 requested, see Block B shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block B shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	0	0	1 requested, see Block B shared spaces
DIV.13 - General Computer Area - Traffic Central Unit	400	20'x20'	1	400	
DIV.10g - Mechanical and Electrical Room	224	15% of supported	1	224	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				1,716	
CIRCULATION @ 30%				515	
TOTAL				2,231	

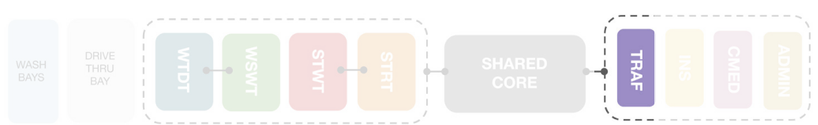
DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
TRAF.2 - Fabrication Shop	750	25' x 30'	1	750	
TRAF.3 - Sign Shop	1,500	30' x 50'	1	1,500	
TRAF.4 - Sign Making Material Storage	1,600	40' x 40'	1	1,600	
TRAF.5 - Signal Equipment Storage Shop	4,000	50' x 80'	1	4,000	
TRAF.6 - Cabinet Testing Shop	300	15' x 20'	1	300	
TRAF.7 - Secure Storage	256	16' x 16'	1	256	
TRAF.8 - Hazardous Storage	450	15' x 30'	1	450	
TRAF Division Operation Critical Spaces	8,856				
				TOTAL	
DIVISION OPERATION SPACES SUBTOTAL				8,856	
CIRCULATION @ 30%				2,657	
TOTAL				11,513	

CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	8	2,304	
Pickup Space	200	10'x20'	9	1,760	
VEHICLE PARKING SUBTOTAL	4,064				
DOUBLE TRAFFIC LANE STORAGE INCREASE	4,877			8,941	Parking plus traffic lane serving parking
Mezzanine Storage				2,980	Maximum 1/3 of open storage area (IBC)
General Storage area				1,118	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				8,941	Parking plus traffic lane serving parking
CIRCULATION @ 15%				1,341	
TOTAL				11,400	Sum of parking and traffic lanes, plus additional circ and storage

UNCONDITIONED VEHICLE STORAGE (COLD)	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	0	0	
Pickup Space	200	10'x20'	0	0	
VEHICLE PARKING SUBTOTAL	0				
DOUBLE TRAFFIC LANE STORAGE INCREASE	0			0	Parking plus traffic lane serving parking
Mezzanine Storage				0	Maximum 1/3 of open storage area (IBC)
General Storage area				0	Area created by angled parking, used for small implement storage
				TOTAL	
UNCONDITIONED VEHICLE STORAGE SUBTOTAL				0	Parking plus traffic lane serving parking
CIRCULATION @ 15%				0	
TOTAL				0	Sum of parking and traffic lanes, plus additional circ and storage

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	10	2,722	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	306	
TRAF.10 - Exterior Fleet Parking	0	0	0	0	
TRAF.12 - Pole Storage and Laydown Area	3,000	100' x 30'	1	3,000	
SITE PROGRAM SUB-TOTAL				6,028	
SITE CIRCULATION @ 150%				9,041	Accounts for access to all sides of separated site functions
TOTAL				15,069	

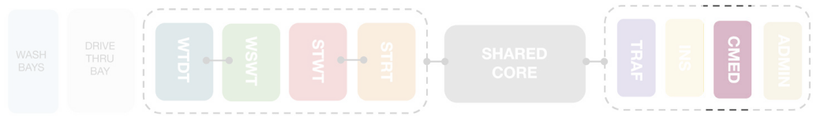
Programming Summary
Traffic Division (TRAF)



ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	2	360	CMED assist. director + City Engineer
DIV.3 - Supervisor Office	150	10' x 15'	5	750	For engineering program managers
DIV.4 - Staff Office	120	12' x 10'	9	1,080	8 project engineers + 1 right of way admin
DIV.5 - Field Staff Workstation / Open Office	288	6'x6' x (FTE+1/2PTE)	1	288	1 project coordinator + 1 engineering tech + 3 interns + 3 field office spaces
DIV.6a - Small Conference Room	120	12' x 10'	0	0	1 requested, see Block B shared spaces
DIV.6b - Standard Conference Room	180	12'x15'	0	0	1 requested, see Block B shared spaces
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block B shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	216	see Block B shared spaces
DIV.9 - Breakroom	2,000	25 sf x Staff #	0	0	1 requested, see Block B shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	2 requested, see Block B shared spaces
DIV.10b - Men's Locker and Restroom	444	Varies	0	0	19 spaces requested - see Block B shared spaces
DIV.10c - Women's Locker and Restroom	332	Varies	0	0	19 spaces requested - see Block B shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	1 requested, see Block B shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block B shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.10g - Mechanical and Electrical Room	426	10' x 10'	1	426	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				3,268	
CIRCULATION @ 30%				980	
TOTAL				4,249	

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	24	6,804	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	306	
SITE PROGRAM SUB-TOTAL				7,110	
SITE CIRCULATION @ 150%				10,665	Accounts for access to all sides of separated site functions
TOTAL				17,775	

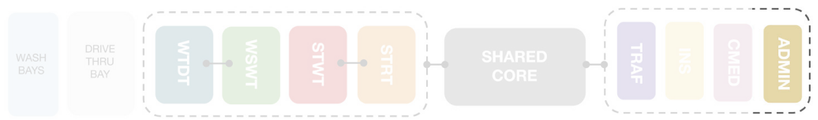
Programming Summary
Construction Management and Engineering Division (CMED)

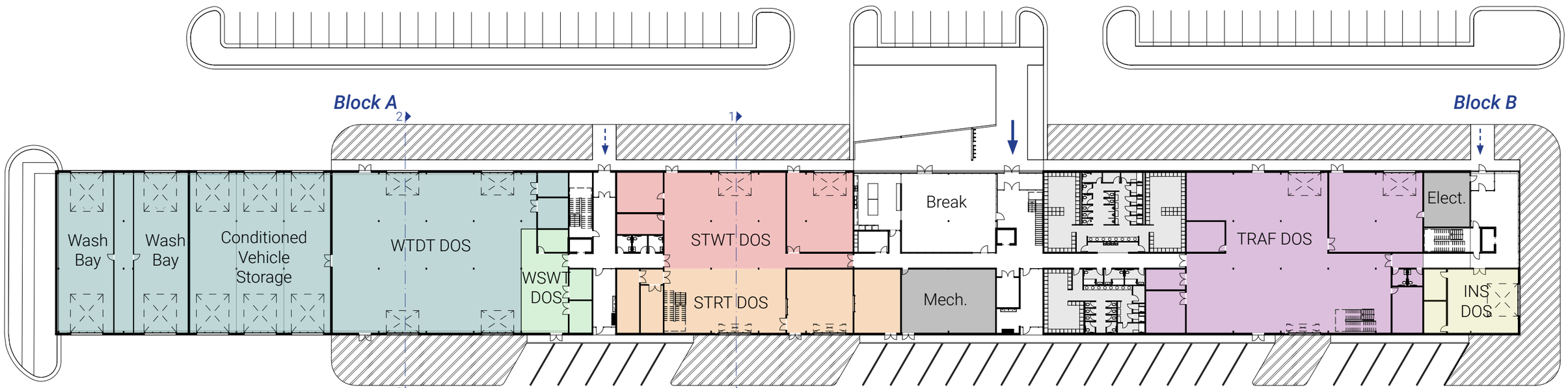


ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
DIV.2 - Division Manager Office	180	12' x 15'	3	540	General Manager + MSO director + Deputy Director
DIV.3 - Supervisor Office	150	10' x 15'	11	1,650	2 HR, 2 GIS, 1 AMI program manager, 1 communication, 1 training, 1 ada, 1 leasing, 1 data analyst, 1 budget analyst
DIV.4 - Staff Office	120	12' x 10'	0	0	
DIV.5 - Open Office - MSO Tech.	540	6'x6' x (FTE+1/2PTE)	1	540	15 staff open office
DIV.5 - Open Office - Admin	360	6'x6' x (FTE+1/2PTE)	1	360	10 staff open office (admin + customer service+ floating stations)
DIV.6a - Small Conference Room	120	12' x 10'	0	0	2 requested, see Block B shared spaces
DIV.6b - Standard Conference Room	180	12'x15'	0	180	1 requested, see Block B shared spaces
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	0	0	1 requested, see Block B shared spaces
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	1	216	1 requested, see Block B shared spaces
DIV.9 - Breakroom	2,000	25 sf x Staff #	0	0	1 requested, see Block B shared spaces
DIV.10a - Universal Public Restroom	72	8' x 9'	0	0	2 requested, see Block B shared spaces
DIV.10b - Men's Locker and Restroom	444	Varies	0	0	1 requested, see Block B shared spaces
DIV.10c - Women's Locker and Restroom	332	Varies	0	0	1 requested, see Block B shared spaces
DIV.10d - Wellness Room	168	12' x 14'	0	0	2 requested, see Block B shared spaces
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	0	0	1 requested, see Block B shared spaces
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.10g - Mechanical and Electrical Room	545	10' x 10'	1	545	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				4,179	
CIRCULATION @ 30%				1,254	
TOTAL				5,433	

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL SQ.FT.	NOTES
Staff Parking and Drive Aisle	284	9' x 18'	37	10,490	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	2	612	
SITE PROGRAM SUB-TOTAL				11,102	
SITE CIRCULATION @ 150%				16,652	Accounts for access to all sides of separated site functions
TOTAL				27,754	

Programming Summary
Administration Division (ADMIN)

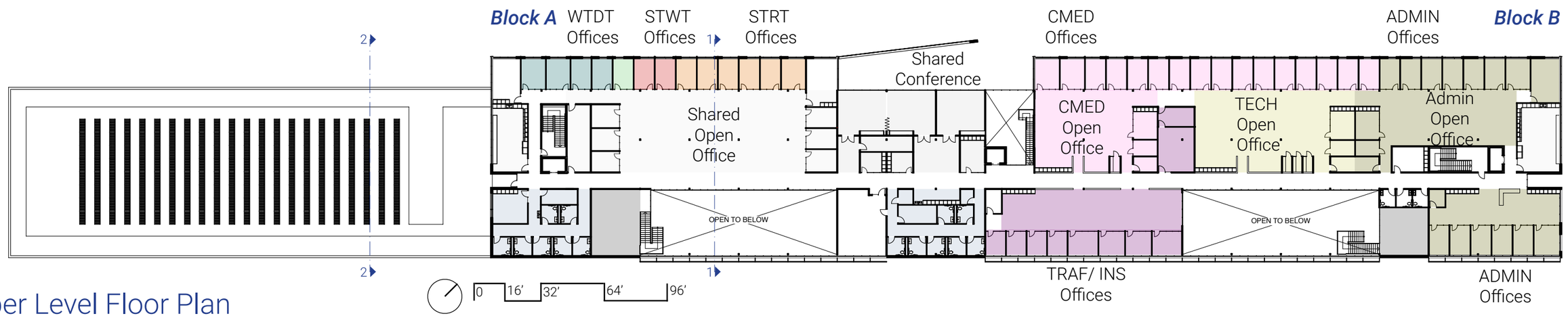




Lower Level Floor Plan

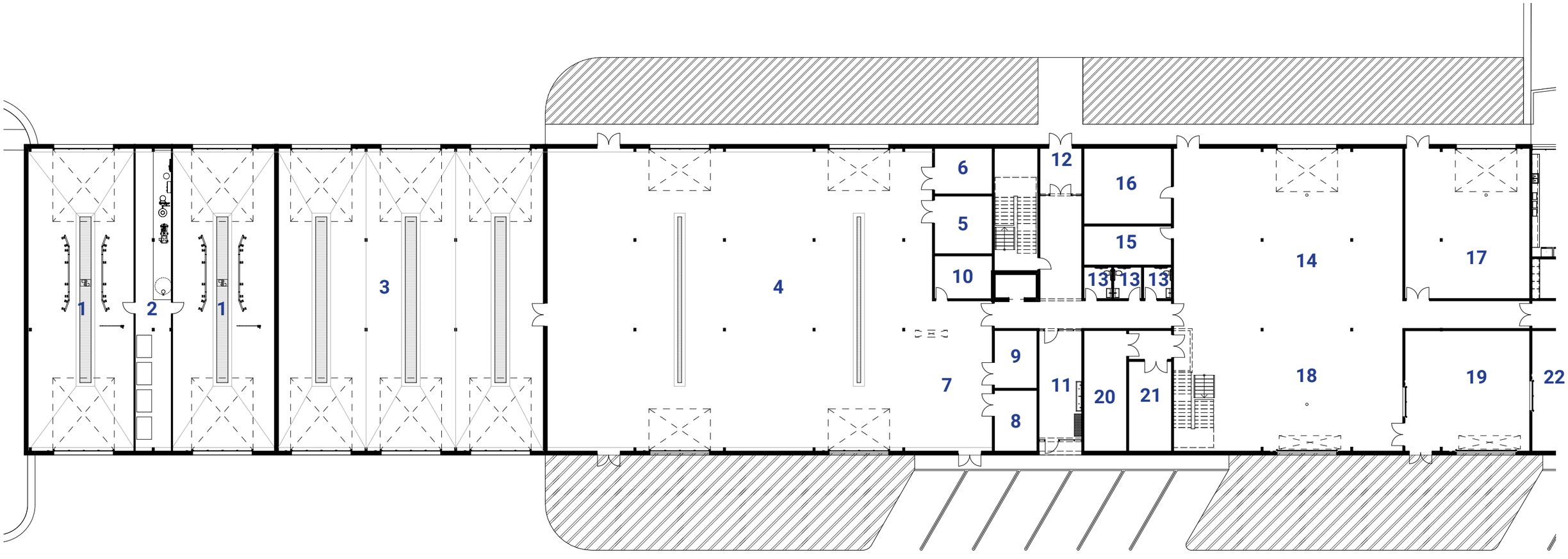
Key

- Traffic
- Streets
- Stormwater
- Water Distribution
- Wastewater
- Inspections
- Admin
- CMED
- Primary Entry
- Secondary Entry



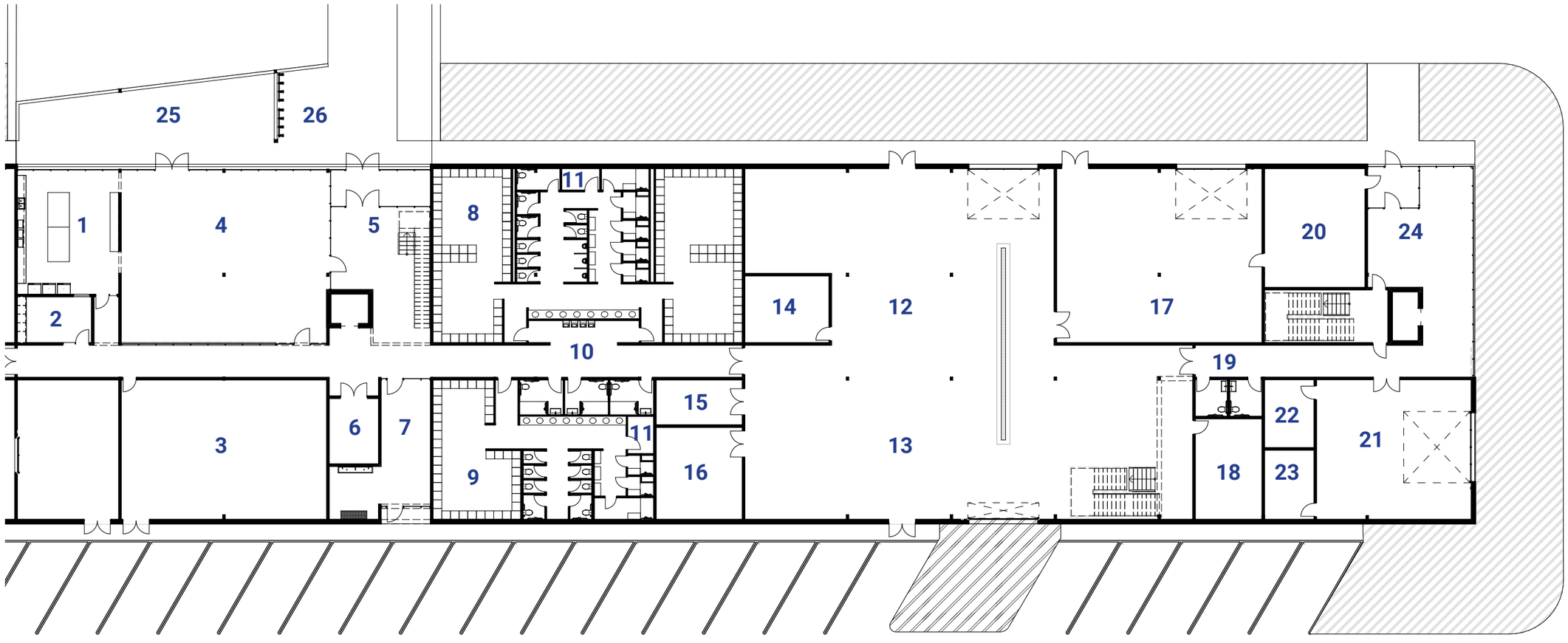
Upper Level Floor Plan

1. Wash Bay
2. Equipment Room
3. Conditioned Vehicle Storage
4. WTDT Field/ Distribution Shop
5. WTDT Secure Storage
6. WTDT Bulky Storage
7. WSWT Shop
8. WSWT Storage
9. WSWT Secure Storage
10. WSWT Confined Space Storage
11. Mudroom
12. Secondary Entry
13. Universal Public Restroom
14. STWT Fabrication Shop
15. STWT Secure Storage
16. STWT Tool Storage
17. STWT Material and Equip Storage
18. STRT Asphalt and Concrete Shop
19. STRT Carpentry Shop
20. STRT Bulky Storage
21. STRT Fluids
22. STRT Storage



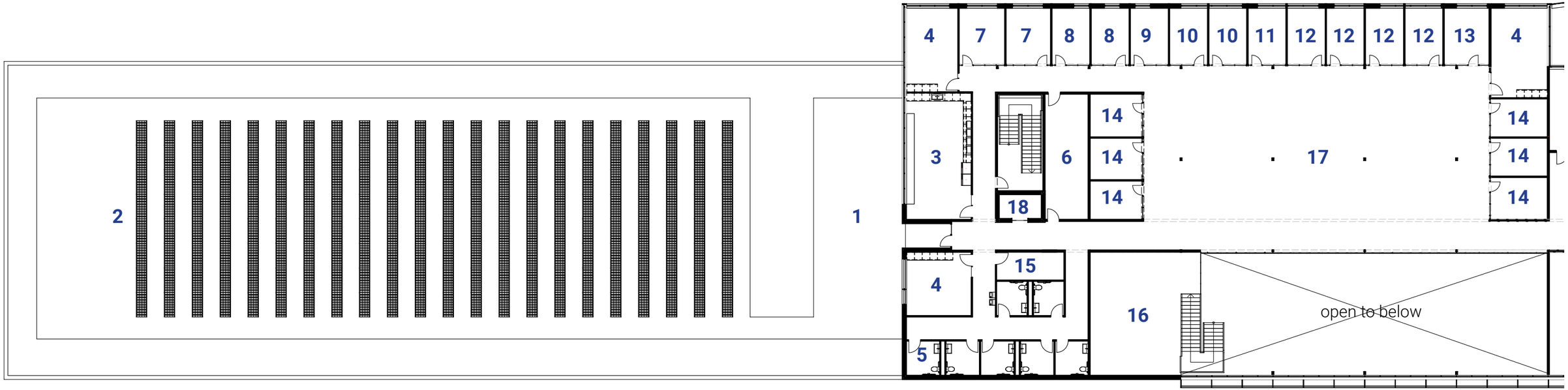
Block A Lower Level Floor Plan

1. Kitchen
2. Conference Room
3. Mechanical
4. Break Room
5. Primary Entry
6. Uniform Storage
7. Mudroom
8. Men's Locker Room
9. Women's Locker Room
10. Universal Shower Room
11. Janitor
12. Traffic Sign Fabrication Shop
13. Traffic Signal Equipment Storage
14. Sign Printing Shop
15. Traffic Secure Storage
16. Traffic Bulky Storage
17. Traffic Sign and Material Storage
18. Traffic Cabinet Testing
19. Universal Public Restroom
20. Electrical
21. Inspections Workshop
22. Record Storage'
23. Inspections Heavy Storage
24. Secondary Entry
25. Exterior Break Area
26. Bike Storage



Block B Lower Level Floor Plan

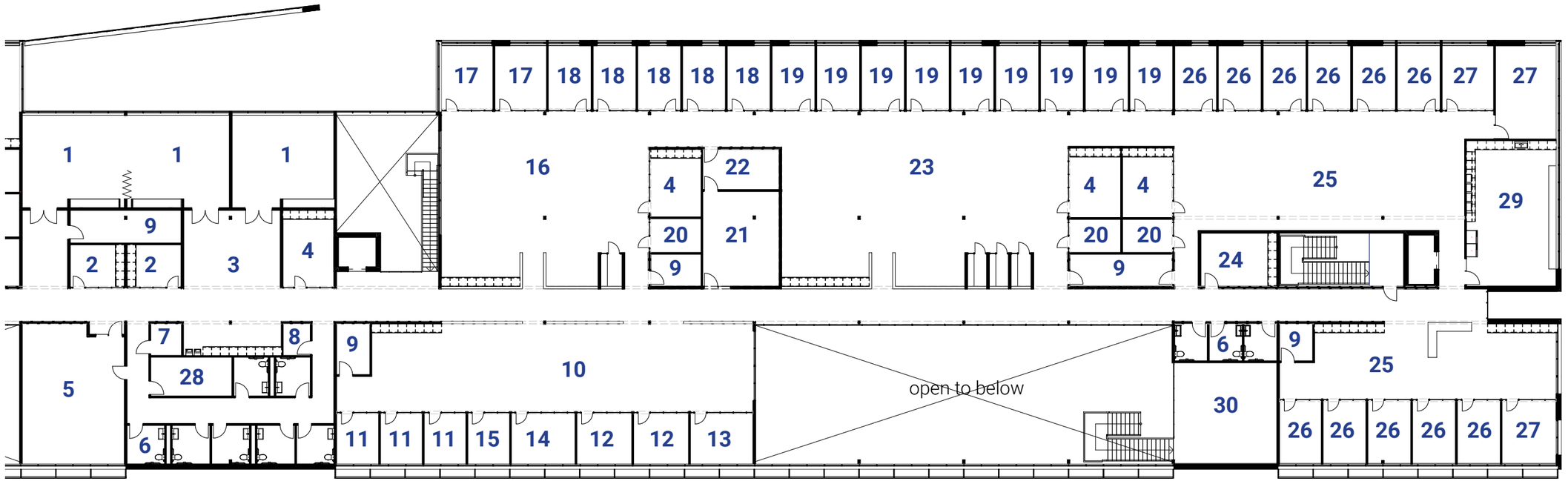
1. Occupiable Green Roof
2. Photo-voltaic Array
3. Break Room
4. Standard Conference Room
5. Universal Public restroom
6. Storage/ IT
7. WTDT Director Office
8. WTDT Supervisor Office
9. WSWT Supervisor Office
10. STWT Supervisor Office
11. STRT First Responder Office
12. STRT Supervisor Office
13. STRT Director Office
14. Flex Office
15. Janitor/ Mechanical
16. Mezzanine
17. Block A Shared Open Office
18. Elevator



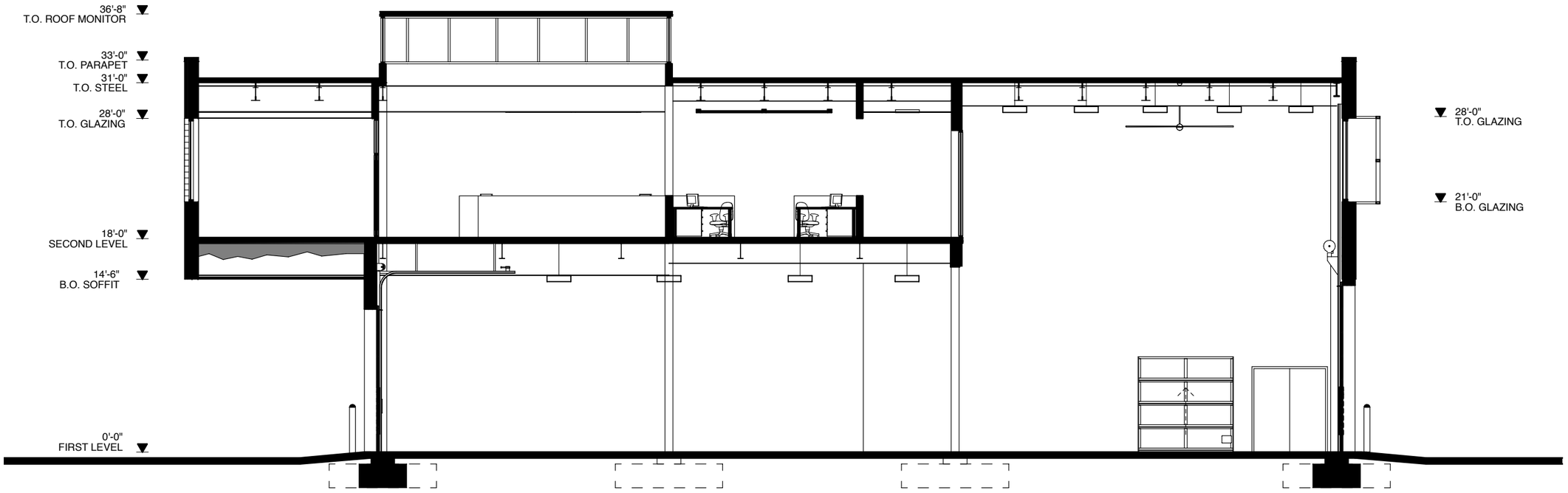
Block A Upper Level Floor Plan

0 8' 16' 32' 48'

1. Training Room
2. Small Conference Room
3. Preconvene
4. Standard Conference Room
5. Fitness Room
6. Universal Public Restroom
7. Janitor
8. IT Room
9. Storage
10. Traffic and Inspections Open Office
11. Traffic Staff Office
12. Traffic Supervisor Office
13. Traffic Director Office
14. Inspections Directors Office
15. Inspections Staff Office
16. CMED Open Office
17. CMED Director Office
18. CMED Supervisor Office
19. CMED Staff Office
20. Flex Room
21. Traffic Central Unit
22. Traffic IT/ Storage
23. Admin Tech Open Office
24. Mail Room
25. Admin Staff Open Office
26. Admin Supervisor Office
27. Admin Director Office
28. Mechanical Room
29. Break Room
30. Mezzanine



Block B Upper Level Floor Plan

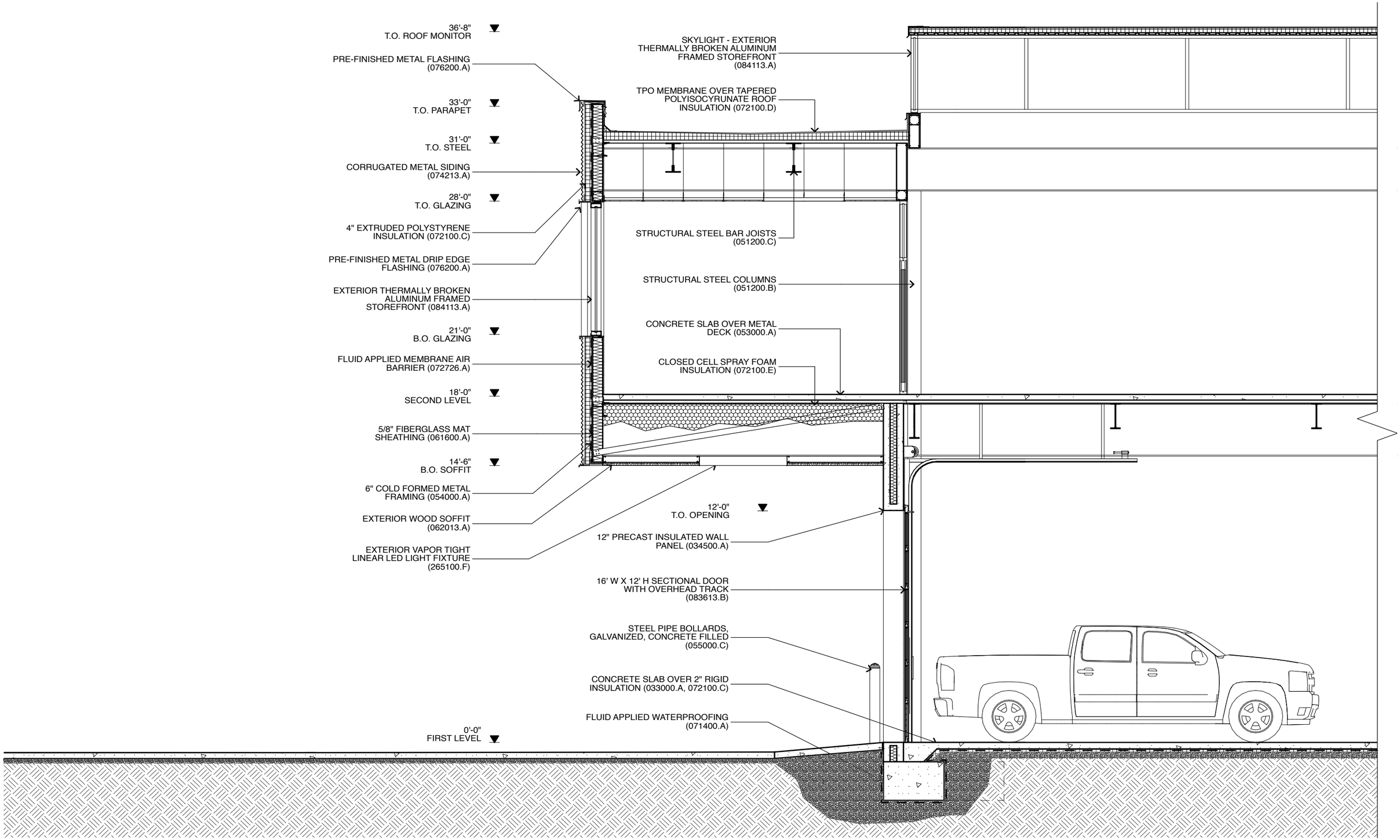


Section 1

0 4' 8' 16' 24'

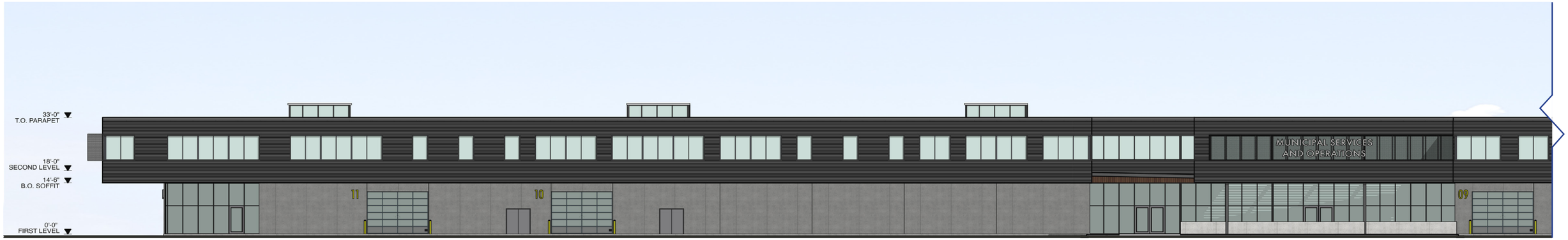
Section 2

0 4' 8' 16' 24'

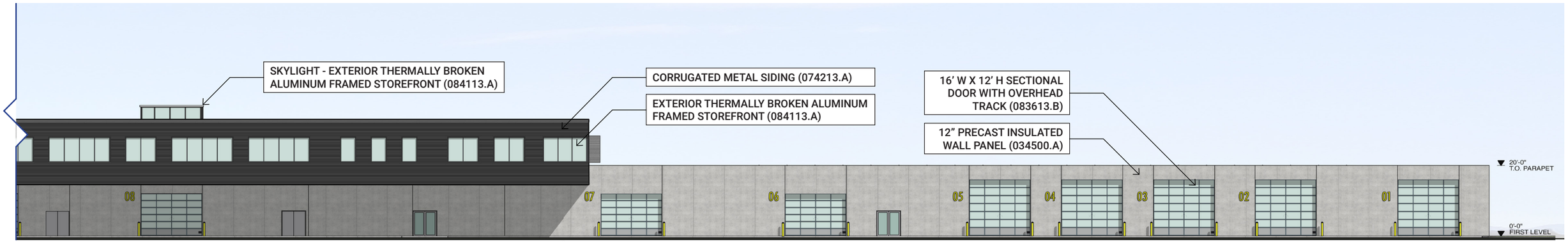


Wall Section

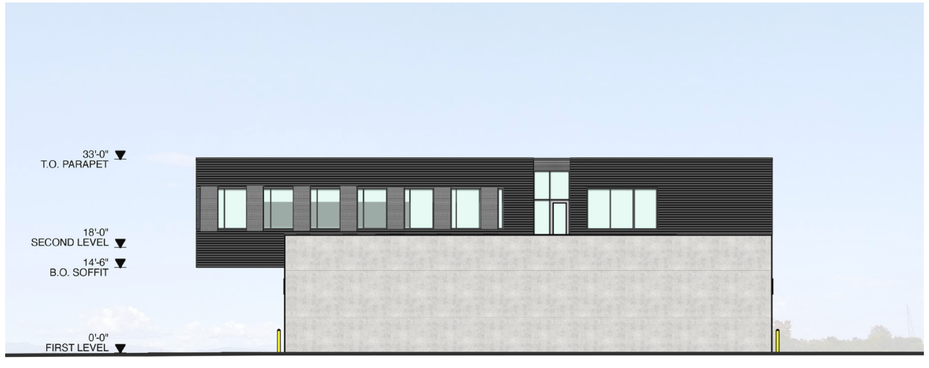
0 4' 8' 16' 24'



West Elevation



West Elevation



South Elevation

North Elevation

Renderings
Exterior View from the West

Exterior Entry View

Interior View of Block B looking North down Main Street

Interior View of South Break Room

Interior View of Traffic DOS

Interior View of Block A Shared Office

Interior View of Central Break Room

Sustainability Strategy

Features

Sustainable Design strategies played an important role in the development of the building and site design for Phase 1. Some Sustainable Design features include:

Remediation. Phase 1 contributes to remediating the otherwise development-challenged site.

Acoustical Berm. Part of the remediation strategy will include removing contaminated soil and berming it to the west of the site, covering it with native landscape species and deep rooted grasses. This will provide an effective acoustic barrier between the Campus and the neighborhood.

Light pollution reduction. LED lights with zero lot line photometric characteristics, and the ability to dim when there is no activity will be used.

Water capture. Rain water captured from the roof will be stored in a large tank, and processed for use in the washbays.

Protection of Habitat: existing stands of trees and grasses are protected, with the developed areas largely focused on areas of the site needing remediation.

Native landscape species: after establishment, use of irrigation will be limited to the area directly adjacent to the main door. Otherwise, landscape species are natives, requiring no regular watering.

Enhanced MEP commissioning/Testing and Balancing: MEP systems would be tested and commissioned to ensure proper operation.

Envelope commissioning: the Design Team is recommending the inclusion of a specialist to provide a 3rd party eye towards envelope design and eventual testing.

Optimizing Energy Performance: in coming design phases, highly efficient systems will be explored

Photo-voltaic array: A PV array sized to handle the buildings lighting load is being proposed.

Low emitting materials: paints, sealants and other products will be specified as Low or no VOC.

Natural Daylight: abundant natural light, deep into the space, from all directions

Acoustics: interior acoustical best practices will be utilized.

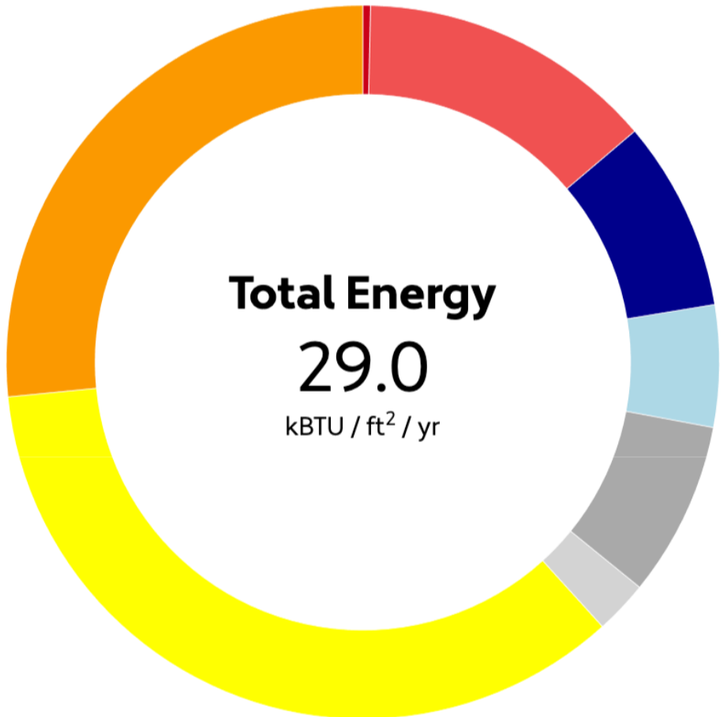
MSO Building Energy Analysis

2030 Challenge Baseline Energy Use Intensity (EUI): 78 kBtu/sq. ft./yr.

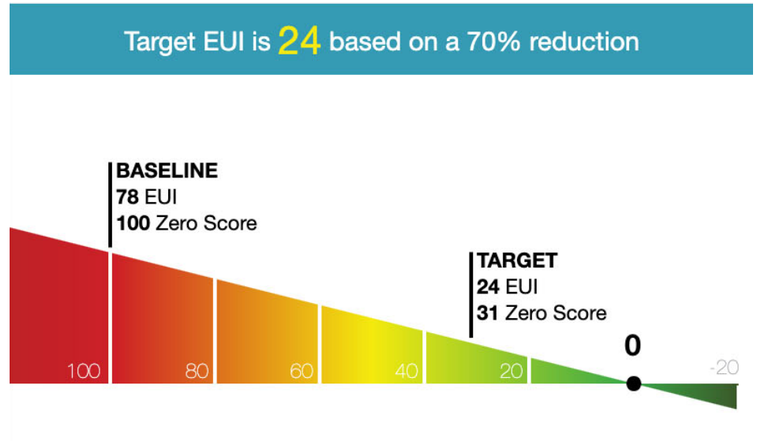
Number based on CBECS 2003/RECS 2001 but normalized by climate, building type, building size, occupancy, and schedule. The 2030 challenge has a goal for a 70% reduction in baseline EUI, resulting in a target goal of 24 EUI.

LEED Silver: As a part of our LEED strategy we are targeting 9 points in energy performance which equates to a 22% reduction in energy use compared to an ASHRAE baseline.

Modeled Baseline: Our model, tested with ASHRAE minimum U-value requirements, with a baseline VRF system used in the offices, and heating and ventilation only used in the Workshop areas, resulted in a pEUI of 37 kBtu/sq. ft./yr. To achieve LEED Silver, our goal will be to achieve 28.86 kBtu/sq. ft/yr in the final design. These numbers are based on preliminary design assumptions and will require more in-depth energy modeling in future phases.



MSO Office + Workshop Spaces: 72,217 sq. ft., VRF system
Annual Energy Use Intensity (EUI)= 37 kBtu/sq. ft./yr



Annual Energy Use - Office + Workshop Spaces

Segment	kBTU / ft² / yr	% of total use
Heating	**4.0**	**14 %**
AHU	0.1	0 %
Zones	3.9	13 %
Humidification	0.0	0 %
Cooling	**4.1**	**14 %**
AHU	2.5	9 %
Heat Rejection	0.0	0 %
Zones	1.6	6 %
Fans	**3.0**	**10 %**
AHU	2.3	8 %
Zones	0.7	2 %
Interior	**17.9**	**62 %**
Lighting	10.2	35 %
Equipment	7.7	27 %
Pumps	**0.0**	**0 %**

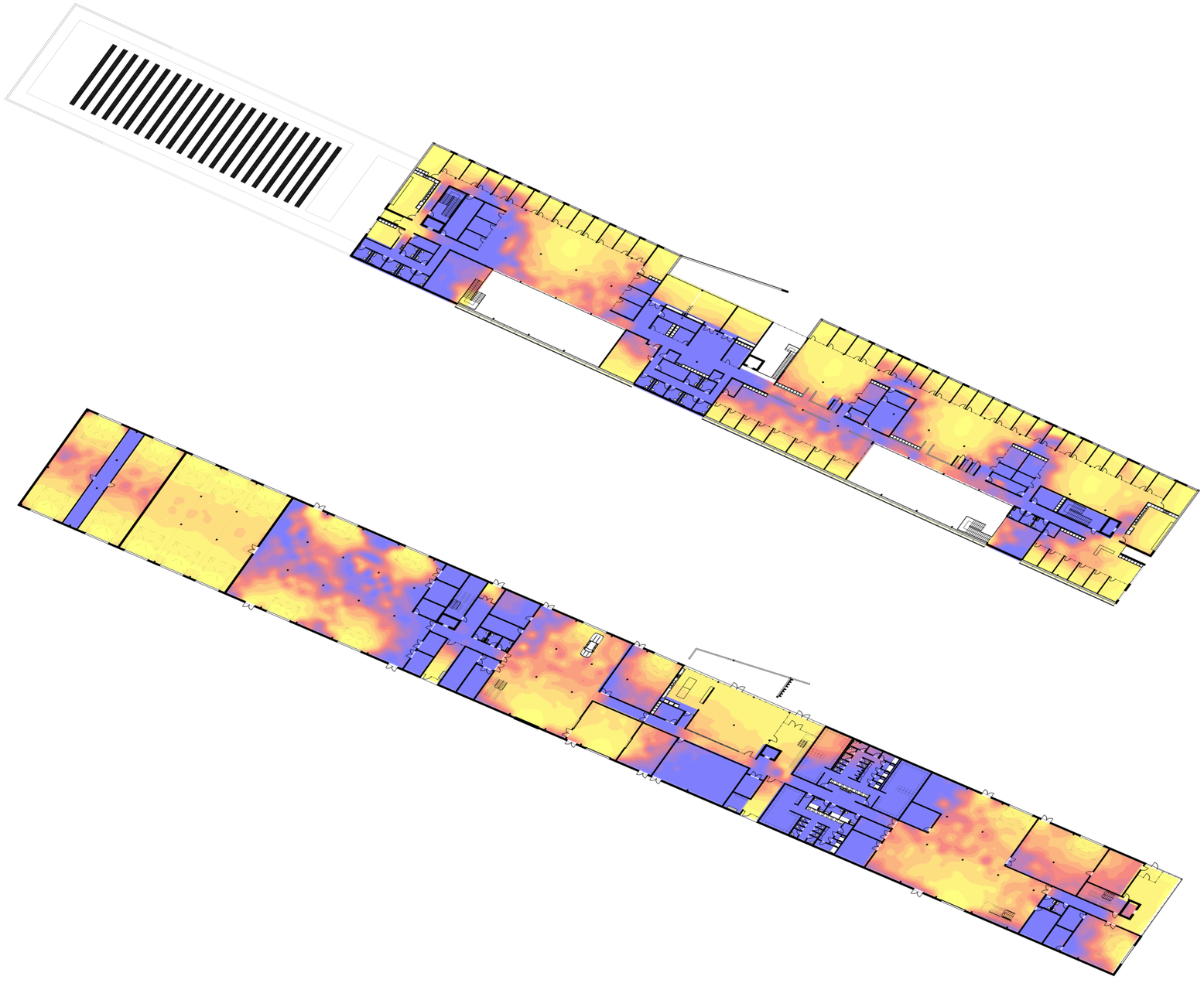
Sustainability Strategy

Daylighting

The MSO building is comprised of office spaces, break areas, meeting spaces, and various workshops. All of these spaces benefit greatly from daylighting, which improves worker health, safety and comfort. Early in conceptual design for this building, desire to get as much glare-free natural light into these spaces as possible was identified as a high priority. The building has a north/south orientation, which allowed us to use the eastern facade with large spans of glazing with controlled screening to pull light through the circulation into the open offices spaces.

By controlling the screening and glazing types, the Design Team was able to achieve the recommended light levels between 30 and 50 foot candles in the space for at least 50% of the operating hours throughout the year. This allows daylighting to be the predominant lighting strategy throughout the building, creating a comfortable and efficient space that requires minimal artificial lighting.

The Annual Daylight Autonomy study shows spaces that would achieve a target of 40 foot candles for minimum of 50% of the working time throughout the year. The warmer the color, the more frequently the space will meet or exceed the target footcandles. This study shows that a significant portion of of the spaces, including the DOS work shops, achieve this light level goal with daylighting alone. Frequently occupied areas that do not achieve daylighting goals can be improved by skylights or other glazing strategies.



Project Summary

Lawrence Field Operations Campus - **Phase 1**

Scope Summary: Phase 1 includes the Municipal Services and Operations (MSO) Building, plus supporting structures, sitework, berming and a Fuel Island.

Draft Schedule:

Design Development: *April 2023 - December 2023*

Construction Documents: *January 2024 - September 2024*

Initial Site Preparation: *Q4 2024, TBD*

Construction: *January 2025 - July 2026, TBD*

Key Design Features of Phase 1:

Consolidation. Operations and Divisions charged with maintaining civil infrastructure include Streets, Stormwater, Wastewater Collection, Water Distribution, Traffic and Inspections Divisions. These groups share a common work language and general work responsibilities, thus consolidation into a single location or facility, improves cohesive work efforts and efficiency in training abilities. Programming exercises for each Division determined a variety of support spaces such as conference rooms, locker rooms, restrooms, break rooms and training rooms. By consolidating the Divisions, overall square footage can be reduced.

Functionality and Space for growth. Phase 1 allows MSO staff to have the space they need to do their jobs and connect with each other. Programming efforts included a growth factor to ensure the facility can stay functional for decades to come.

Administrative/Shop interaction. The design of the MSO building allows for a clear connection between office and shop staff's efforts. This encourages efficiency and communication and discourages siloization.

Removal of key operations from floodway. Disruptions to key facilities in the floodway would occur in the aftermath of a disaster — the flood event — a time when many services provided by MSO are most needed. Because improvements to damaged buildings are not allowed by City Code, a best practice is to relocate them to a consolidated Campus.

Dedicated Washbays. Two dedicated wash bays in the MSO Building would reduce queuing time significantly compared to the existing operation. Increased wash frequency would also reduce wash time per vehicle, and would contribute to raised awareness of vehicle condition.

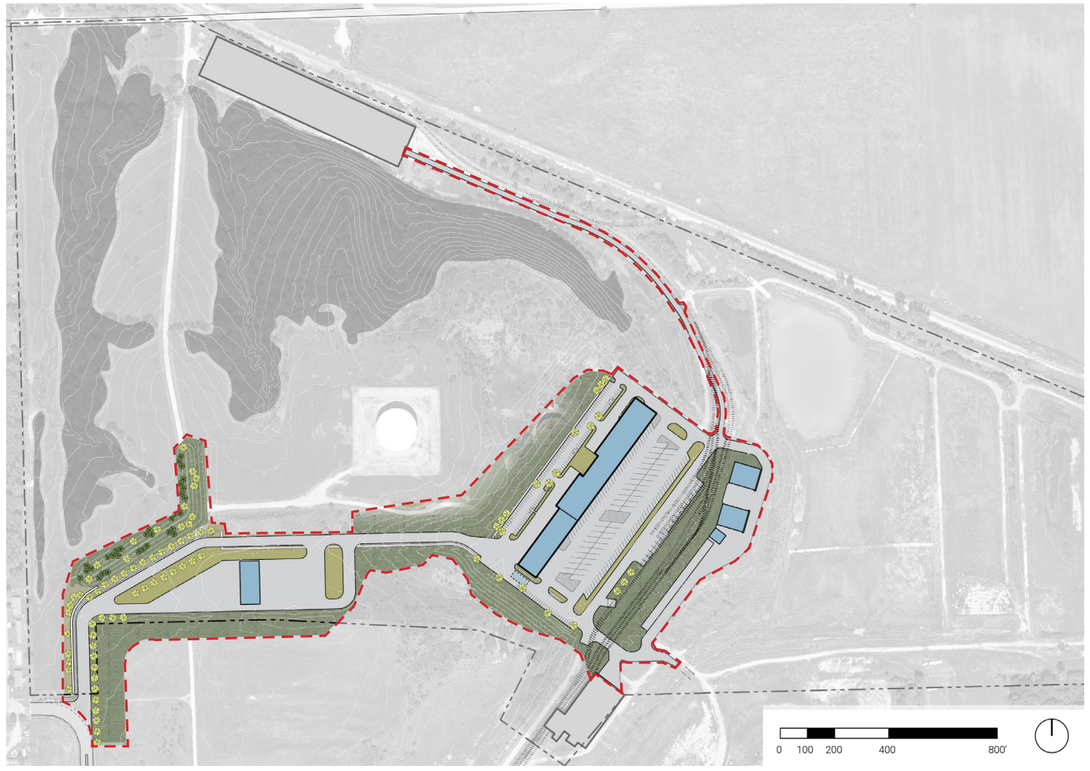
Health and Wellness. The well being of staff was considered in the design. The building includes abundant natural light, access to exterior break areas, a fitness center and will eventually include a walking path.

Target Project Budget moving into Design Development. It is challenging to develop a cost range during Schematic Design, due to uncertainties related to site development costs, and construction escalation figures. Initial projections indicate the project as documented is over budget and would benefit from some cost saving strategies during Design Development. Per City directive, the maximum funding for the project cannot exceed $45,680,000. In addition, the project funding may include up to $3,000,000 (final figure TBD) earmarked for Farmland remediation. A preliminary target Division of that budget to include soft costs and escalation is as follows:

MSO Building	$24,000,000
Site Costs	15,800,000
Brine storage	450,000
Fuel Island	1,250,000
Escalation (8%)	3,320,000
Soft Costs (8.5%)	3,810,000
Subtotal	$48,630,000

Remediation funding	($2,950,000 projected)
Target Project Budget	**$45,680,000**

It is recommended by the Design Team that cost estimation of the Schematic Design be undertaken by the Construction Manager at Risk, once they are selected. The results of the cost estimate will inform design efforts moving forward into Design Development.



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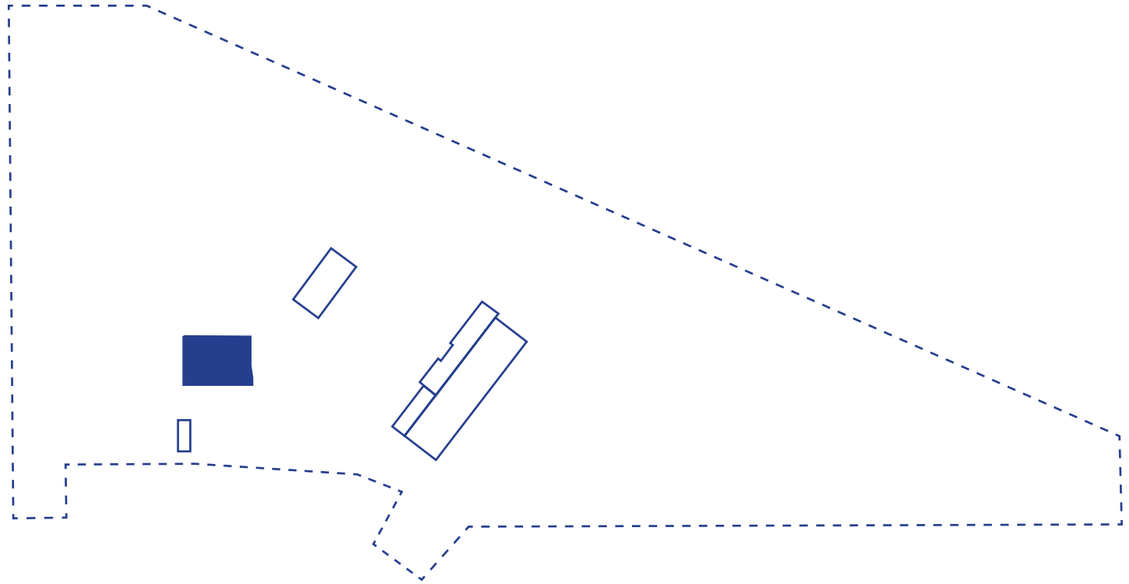
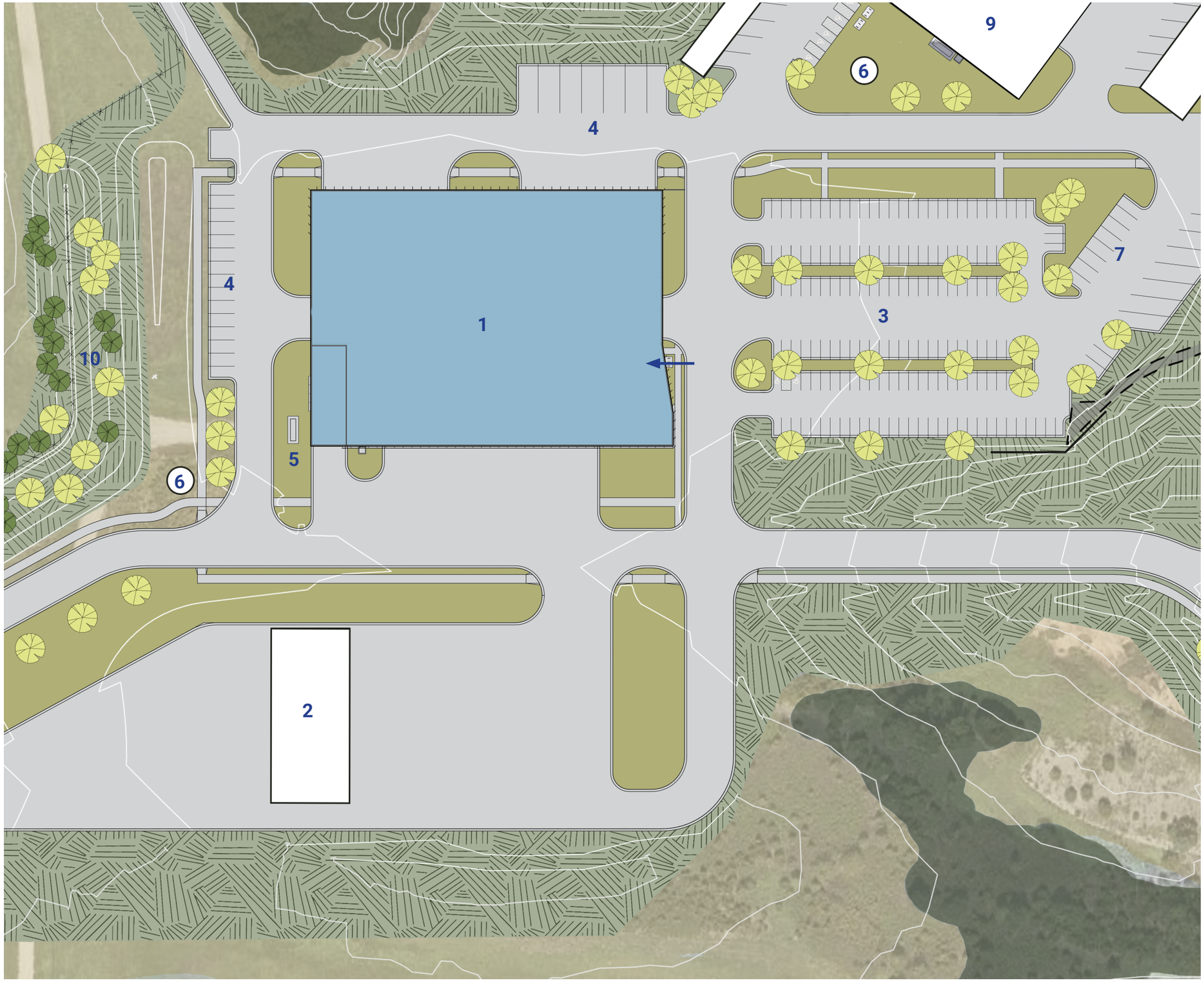
Phase **2:**
Central Maintenance Garage and Related Sitework



Site Plan

This enlarged site plan shows how vehicles and staff circulation flow would work for the Central Maintenance Garage. Staff parking is on the east side of the building, adjacent to the main staff entrance on the southeast corner. An earth berm would be located west of the building, to provide a visual and acoustic buffer from the adjoining neighborhood.



Key

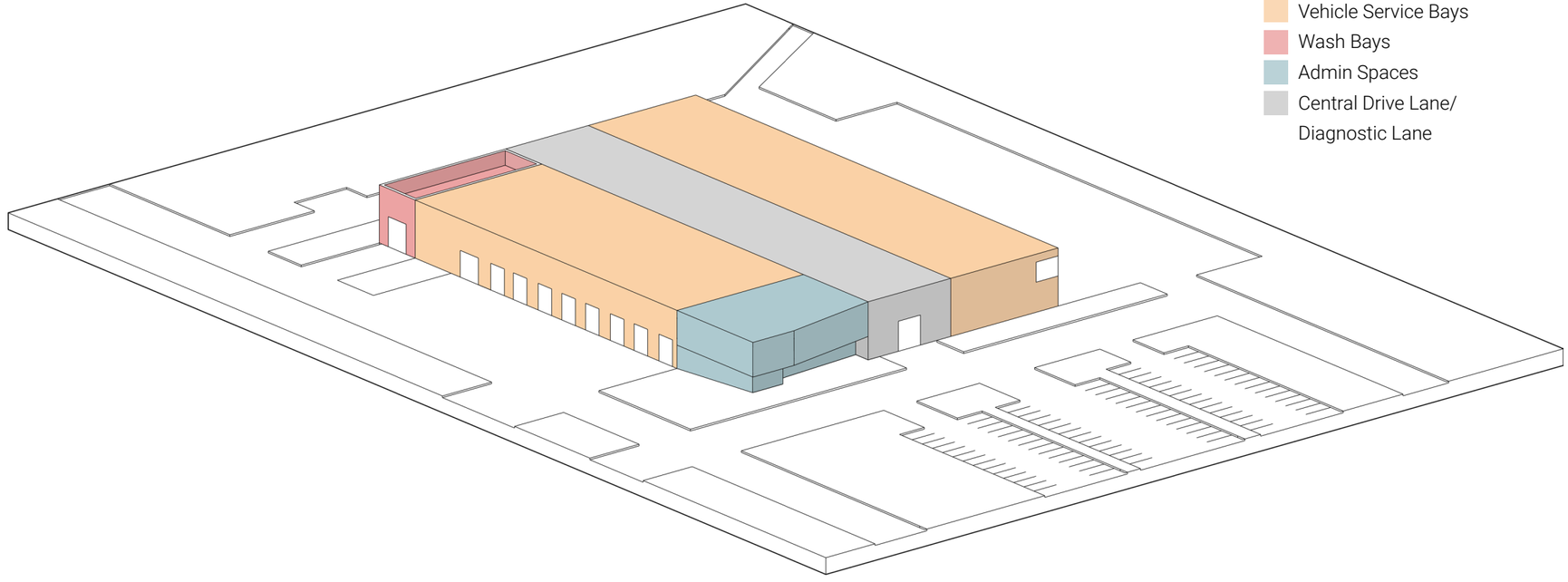
1. Central Maintenance Garage
2. Fuel Island - Phase 1
3. Employee Parking
4. Down Vehicle Parking
5. Generator
6. Rainwater Storage Tank
7. Bulk Material Bins
8. Trash
9. Solid Waste - Phase 3
10. Landscaped Berm

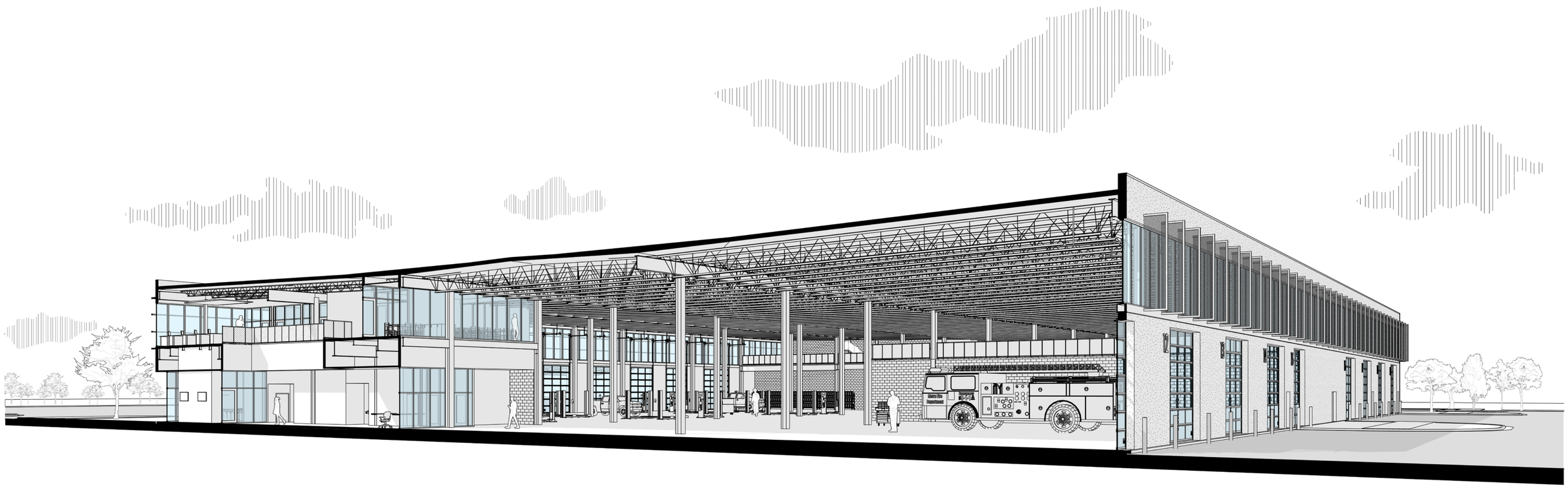
→ Primary Pedestrian Entry

Architectural Narrative

The Central Maintenance Garage (CMG) was designed to support current vehicle maintenance operations, and is sized to accommodate larger vehicles which are predicted to be used in the future. The building is organized around a central drive bisecting the building. This drive allows space for vehicles to be directed and staged as the workday progresses. A variety of small and large vehicle bays are provided, with the shop space receiving ample glare-free daylight. Non-shop spaces such as offices, break spaces, locker rooms and training spaces are located in a two-story zone, with a training room and the Division Director's office overlooking the shop from above.

The CMG is made of durable materials, befitting an active vehicle maintenance shop. Materials include a steel structure with precast concrete sandwich panels and storefront framing forming the exterior walls. Distinctive solar shading devices block direct glare from the south, east and west.





ADMINISTRATIVE	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
DIV.1a - Building Entry / Vestibule	100	0	4	400	
DIV.1b - Reception	100	10' x 10'	1	100	
DIV.2 - Division Manager Office	180	12' x 15'	1	180	
DIV.3 - Supervisor Office	150	10' x 15'	2	300	
DIV.4 - Staff Office	120	12' x 10'	1	120	
DIV.5 - Field Staff Workstation / Open Office	634	6'x6' x (FTE+1/2PTE)	1	634	
DIV.6a - Small Conference Room	120	12' x 10'	1	120	
DIV.6b - Standard Conference Room	NA			-	
DIV.7 - Large Conference Room-Training Room	500	20' x 25'	1	500	
DIV.8 - Copy Area / Document Work Room	216	12' x 18'	2	367	
DIV.9 - Breakroom	665	25 sf x Staff #	1	665	
DIV.10a - Universal Public Restroom	72	8' x 9'	2	144	
DIV.10b - Men's Locker and Restroom	420	TBD	1	420	
DIV.10c - Women's Locker and Restroom	243	TBD	1	243	
DIV.10d - Wellness Room	168	12' x 14'	1	168	
DIV.10e - IT Closet	48	6' x 8'	1	48	
DIV.10f - Janitorial	63	7' x 9'	2	126	
DIV.11 - General Storage / Supply Closets	100	10' x 10'	1	100	
DIV.12 - Mud Room / Wash Area	96	8' x 12'	1	96	
DIV.13 - General Computer Area	NA			-	Central Computer area - See Also DIV.5 - Field Staff / Open Office
DIV.14 - Laundry Facility	NA			-	
DIV.10g - Mechanical and Electrical Room	709	15% of supported	1.0	709	
				TOTAL	
ADMINISTRATIVE AREA SUBTOTAL				5,439	
CIRCULATION @ 30%				1,632	
TOTAL				7,071	

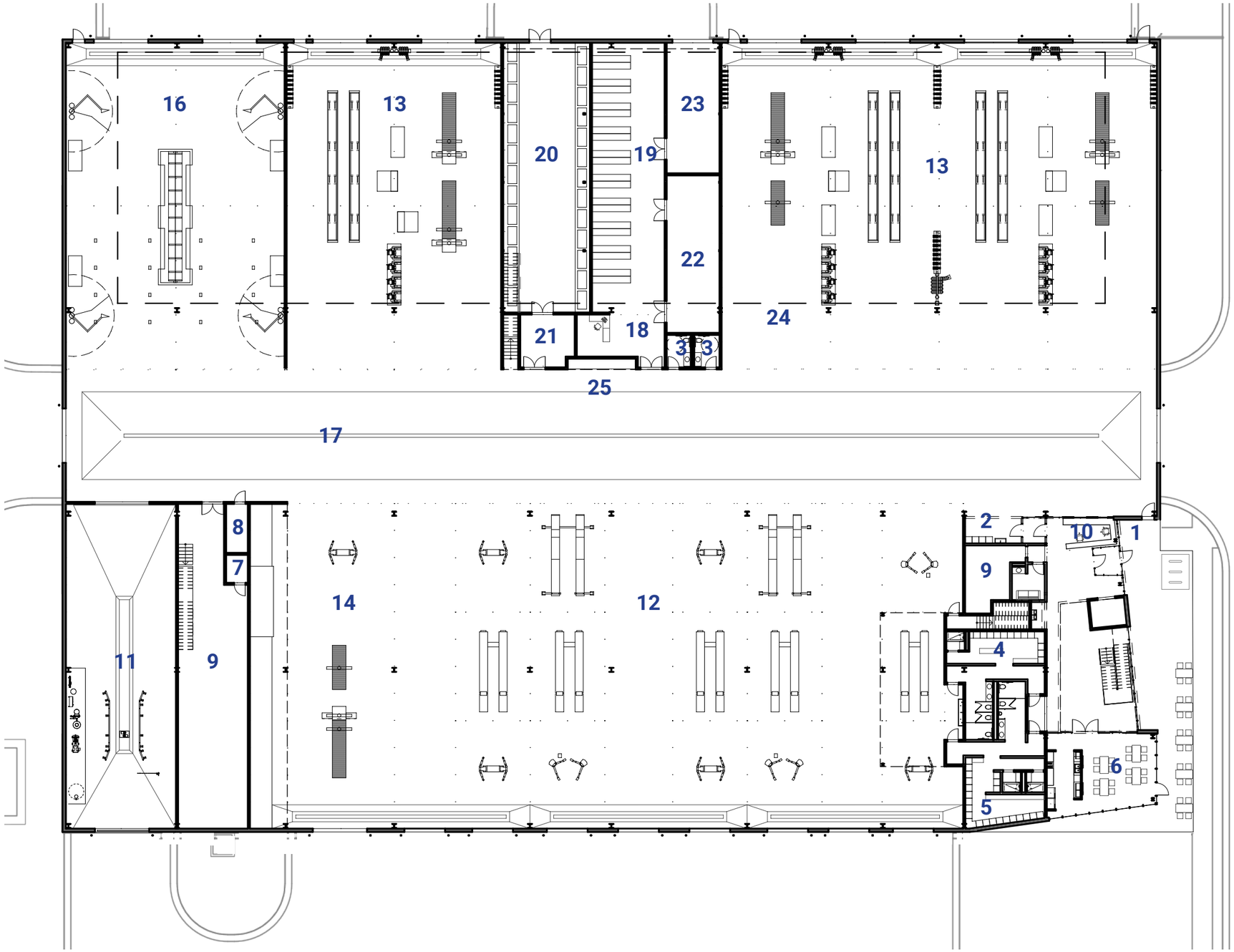
CONDITIONED VEHICLE STORAGE (WARM)	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Large Space	900	20'x45'	0	0	
Medium Space	288	12'x24'	2	634	
Pickup Space	200	10'x20'	2	440	
VEHICLE PARKING SUBTOTAL	1,074				
DOUBLE TRAFFIC LANE STORAGE INCREASE	1,288			2,362	Parking plus traffic lane serving parking
Mezzanine Storage				787	Maximum 1/3 of open storage area (IBC)
General Storage area				295	Area created by angled parking, used for small implement storage
				TOTAL	
CONDITIONED VEHICLE STORAGE SUBTOTAL				2,362	Parking plus traffic lane serving parking
CIRCULATION @ 15%				354	
TOTAL				3,011	Sum of parking and traffic lanes, plus additional circulation and general storage

DIVISION OPERATION CRITICAL SPACES	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
CMG.1a - Large Service Bay	1,456	28' x 52'	13	18,928	Bays based on Projected Fleet & Vehicles per Mechanic
CMG.1b - Small Service Bay	704	22' x 32'	17	11,968	Bays based on Projected Fleet & Vehicles per Mechanic
CMG.2 - Welding and Fabrication Bay	2,560	32' x 80'	2	5,120	
CMG.2b - Steel Stock Storage	200	10' x 20'	2	400	
CMG.3a - Tire Service Bay	960	24' x 40'	1	960	
CMG.3b - Tire Service Storage	800	20' x 40'	1	800	
CMG4.a - Bulk Fluids Room - Waste Oil	180	15' x 12'	1	180	
CMG.4b - Bulk Fluids Room - Virgin Fluids	2,000	50'x40'	1	2,000	
CMG.5 - Parts Storage	1,500	50' x 30'	1	1,500	
CMG.6 - Tool Storage	450	15' x 30'	1	450	
CMG.7 - Mobile Lift and Jack Storage	64	8' x 8'	5	320	
CMG.8 - Hazardous Material Storage	150	15' x 10'	1	150	
CMG.9 - Inventory Receiving Area and Office	300	15' x 20'	1	390	
CMG.10 - Wash Bay - Degreasing Bay	1,680	56' x 30'	1	1,680	
CMG Division Operation Critical Spaces	44,846				
				TOTAL	MINIMUM TOTALS
DIVISION OPERATION SPACES SUBTOTAL				44,846	
CIRCULATION @ 30%				13,454	
TOTAL				58,300	

SITE PROGRAM REQUIREMENTS	SQ.FT.	SIZE (rough dim)	#	TOTAL	NOTES
Staff Parking and Drive Aisle	284	9' x 18' +1/2 of 27' Drive	27	7,541	1 per staff on largest shift
Exterior Equipment Parking Demands	288	12' x 24'	0	0	
ADA Space plus Aisle	306	9' x 18' +8' Aisle	1	326	
DIV.15 - Trash / Reycling Area	900	30'x30' (can vary)	1	900	
CMG.11 - Fleet Vehicle Staging Area	900	20' x 45'	6	5,400	
SITE PROGRAM SUB-TOTAL				6,626	
SITE CIRCULATION @ 150%				9,938	Accounts for access to all sides of separated site functions
TOTAL				16,564	

Programming Summary

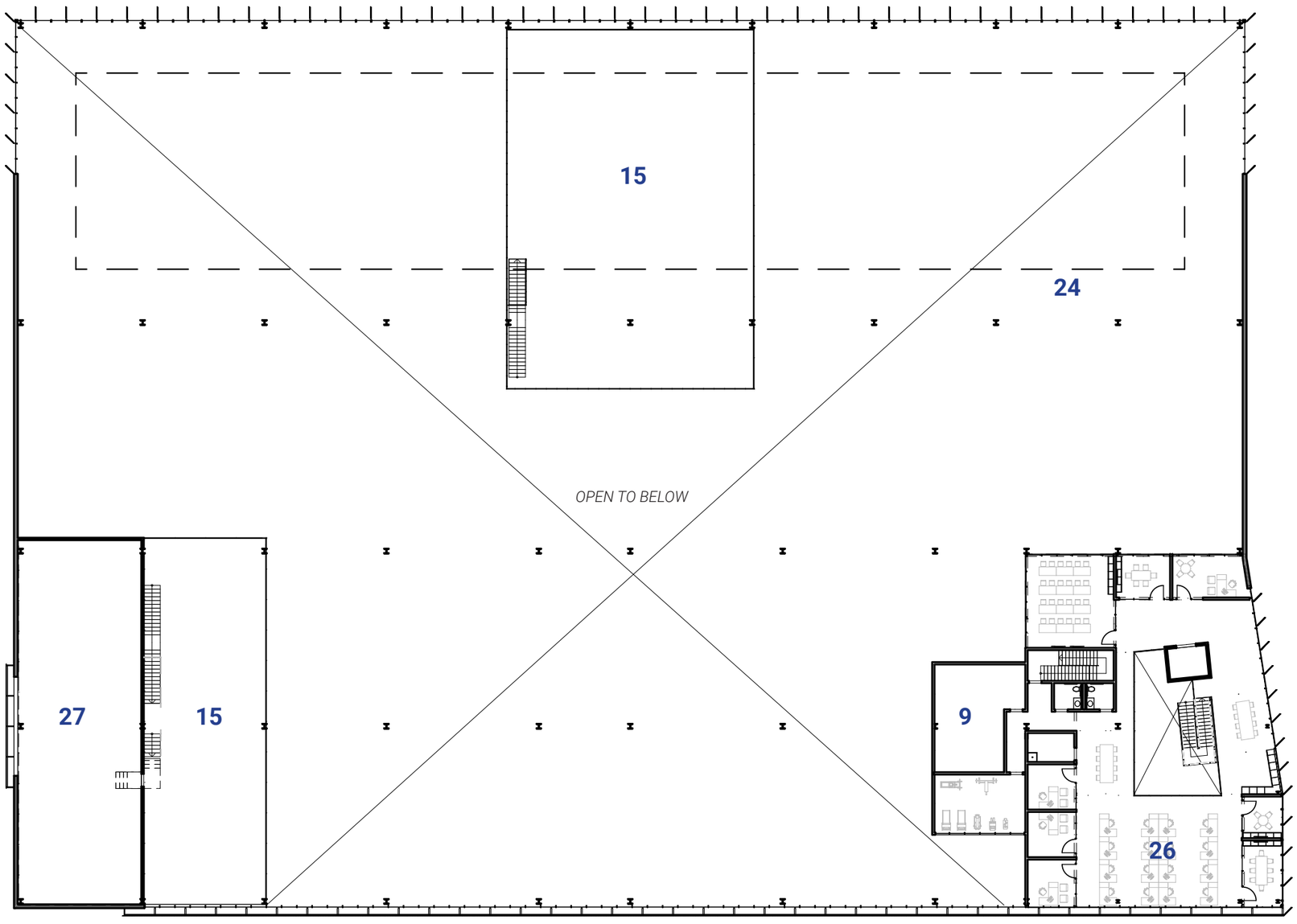
Architectural Drawings



Lower Level Floor Plan

0 8′ 16′ 32′ 64′

1. Entry Vestibule
2. Mud Room
3. Restroom
4. Women's Locker Room
5. Men's Locker Room
6. Break Room
7. IT Closet
8. Janitor
9. Storage and Mechanical
10. Shop Foreman's Office
11. Wash Bay
12. Small Service Bays
13. Large Service Bays
14. Tire Bay
15. Storage
16. Welding and Fabrication Bay
17. Central Drive Lane
18. Parts Office
19. Parts Storage
20. Bulk Fluids - Virgin
21. Bulk Fluids - Used
22. Tool Storage
23. Inventory and Receiving
24. Gantry Crane Above
25. Parts Carousel
26. Office Spaces, See Enlarged Plans
27. Mechanical Penthouse



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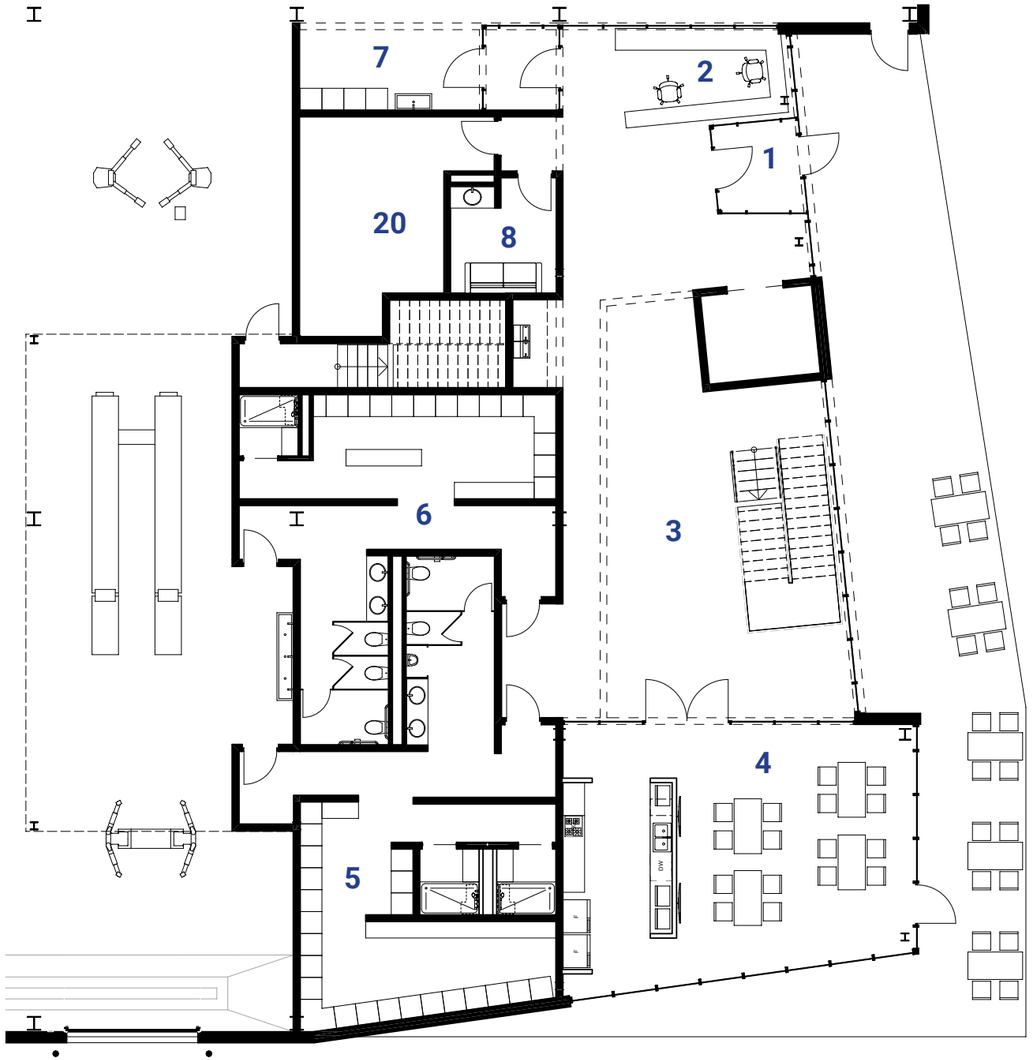
17. Central Drive Lane
18. Parts Office
19. Parts Storage
20. Bulk Fluids - Virgin
21. Bulk Fluids - Used
22. Tool Storage
23. Inventory and Receiving
24. Gantry Crane Above
25. Parts Carousel
26. Office Spaces, See Enlarged Plans
27. Mechanical Penthouse

Upper Level Floor Plan

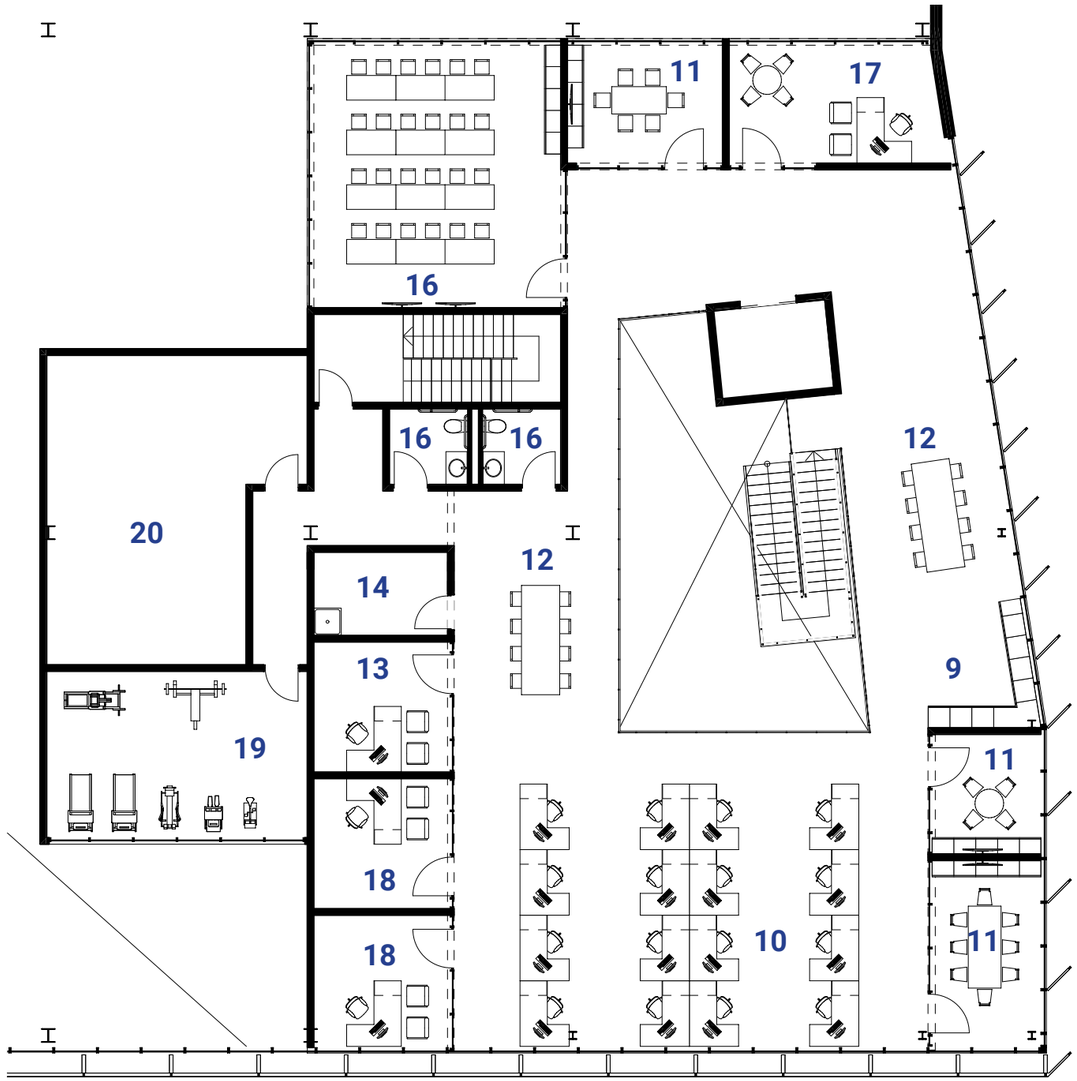
0 8' 16' 32' 64'

1. Primary Entry
2. Shop Foreman
3. Lobby
4. Break
5. Men’s Locker Room
6. Women’s Locker Room
7. Mud Room/ PPE Storage
8. Wellness Room
9. Work Room
10. Open Office
11. Conference Room
12. Collaboration Area
13. Staff Office
14. Janitor
15. Universal Public Restroom
16. Training Room
17. Division Manager Office
18. Supervisor Office
19. Fitness Room
20. Mechanical/ Storage



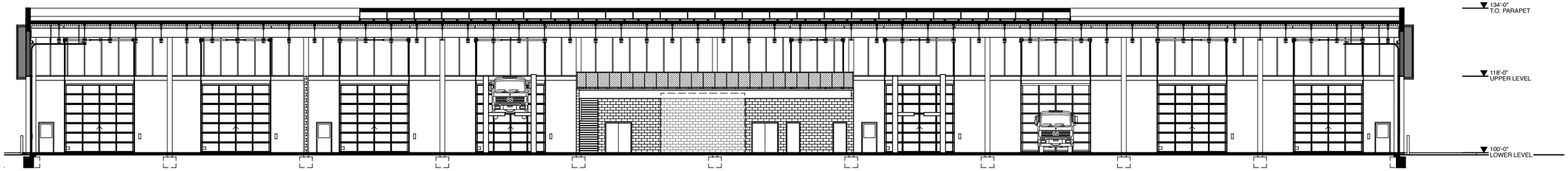
Enlarged Lower Level Plan

0 4’ 8’ 16’ 32’



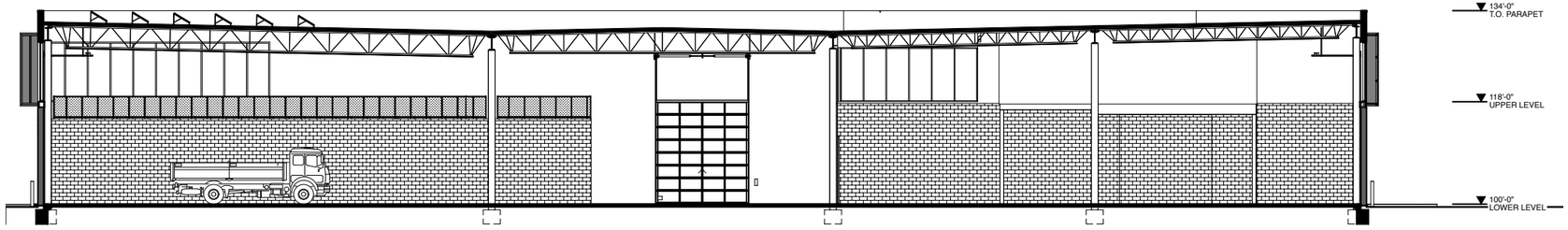
Enlarged Upper Level Plan

0 4’ 8’ 16’ 32’



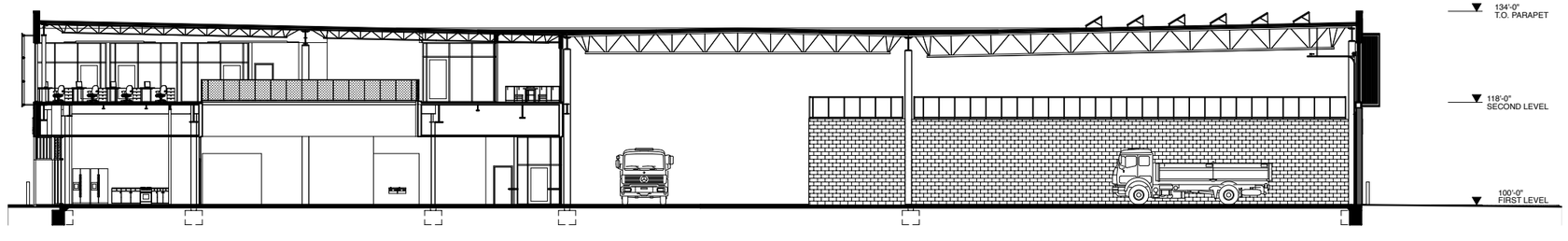
Section 1

0' 8' 16' 32' 64'



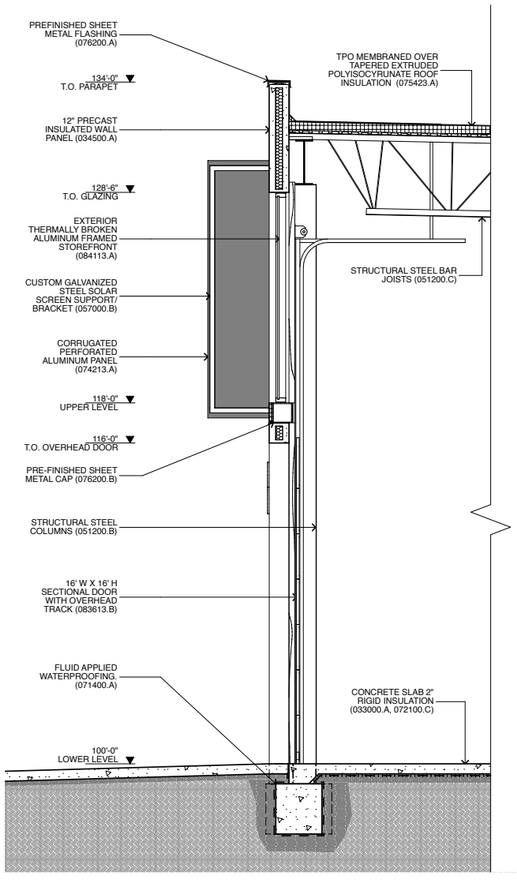
Section 2

0' 8' 16' 32' 64'

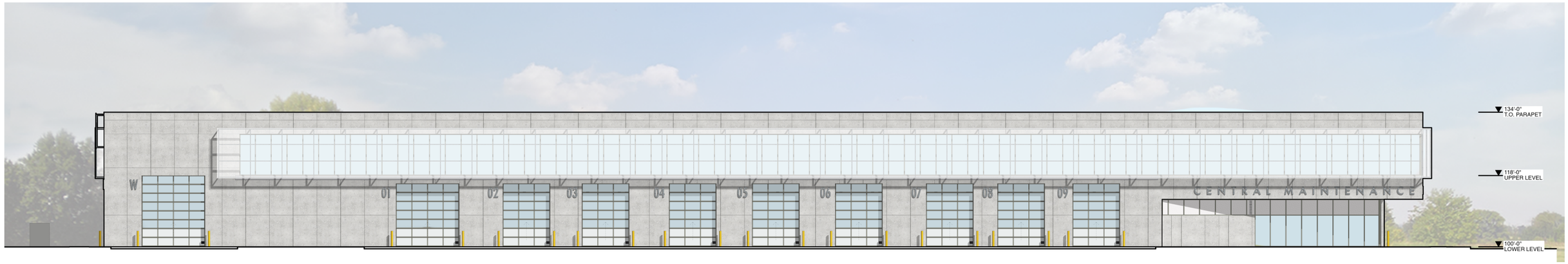


Section 3

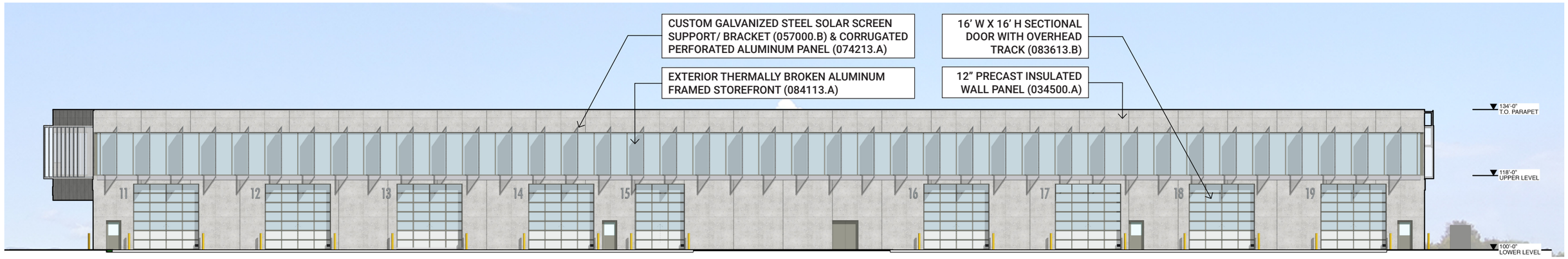
0' 8' 16' 32' 64'



Typical Wall Section



South Elevation



North Elevation

East Elevation

Renderings
Exterior View from the Southeast

Exterior Entry View

Exterior View from the South

Interior View of Shop Space

Interior View of Admin. Lower Level

Interior View of Admin. Upper Level

Interior View of Training

Sustainability Strategy

Features

Sustainable Design strategies played an important role in the development of the building and site design for Phase 1. Some Sustainable Design features include:

Remediation. Phase 2 contributes to remediating the otherwise development-challenged site.

Acoustical Berm. Part of the remediation strategy will include removing contaminated soil and berming it to the west of the site, covering it with native landscape species and deep rooted grasses. This will provide an effective acoustic barrier between the project and the neighborhood.

Light pollution reduction. LED lights with zero lot line photometric characteristics, and the ability to dim when there is no activity will be used.

Water capture. Rain water captured from the roof will be stored in a large tank, and processed for use in the wash bay.

Protection of Habitat: existing stands of trees and grasses are protected, with the developed areas largely focused on ares needing remediation.

Native landscape species: after establishment, use of irrigation will be limited to the area directly adjacent to the main door. Otherwise, landscape species are natives, requiring no regular watering.

Enhanced MEP commissioning / Testing and Balancing: MEP systems would be tested and commissioned to ensure proper operation.

Envelope commissioning: the Design Team is recommending inclusion of a specialist to provide a 3rd party eye towards envelope design and eventual testing.

Optimizing Energy Performance: in coming design phases, highly efficient systems will be explored

Photo-voltaic array: A PV array sized to handle the buildings lighting load is being proposed.

Low emitting materials: paints, sealants and other products will be specified as Low or no VOC.

Natural Daylight: abundant natural light, deep into the space, from

CMG Building Energy Analysis

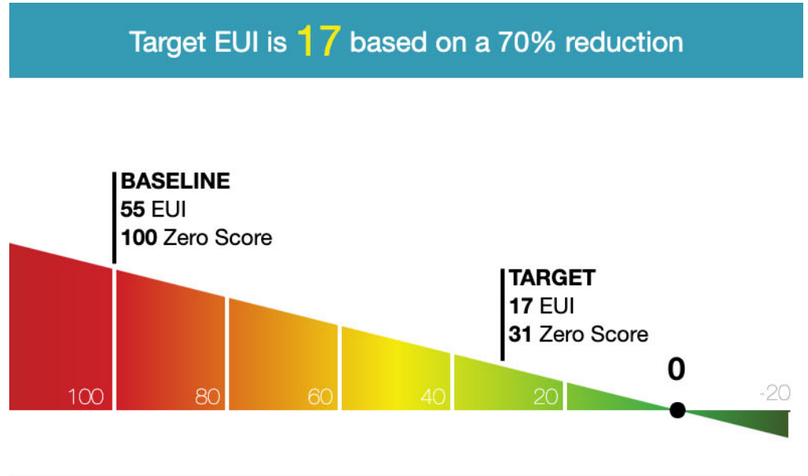
2030 Challenge Baseline Energy Use Intensity (EUI):
55 kBtu/sq. ft./yr.

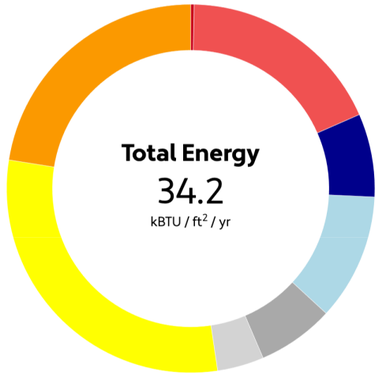
Number based on CBECS 2003/RECS 2001 but normalized by climate, building type, building size, occupancy, and schedule. The 2030 challenge has a goal for a 70% reduction in baseline EUI, resulting in a target goal of 17 EUI.

LEED Silver: As a part of our LEED strategy we are targeting 9 points in energy performance which equates to a 22% reduction in energy use compared to an ASHRAE baseline.

Modeled Baseline: Our model, tested with ASHRAE minimum U-values, a baseline VRF system used in the offices, and heating and ventilation only used in the workshop resulted in a pEUI of 26.41 kBtu/sq. ft./yr. To achieve LEED Silver, our goal will be to achieve 20.6 kBtu/sq. ft/yr in the final design. These numbers are based on preliminary design assumptions. Moving further into the design phase will require more in-depth energy modeling to document achievement of LEED certification requirements.

Average Annual EUI = ((34.2 x 9,800) + (28.1 x 73,600)) /83,400
= 28.81 kBtu/sq. ft./yr

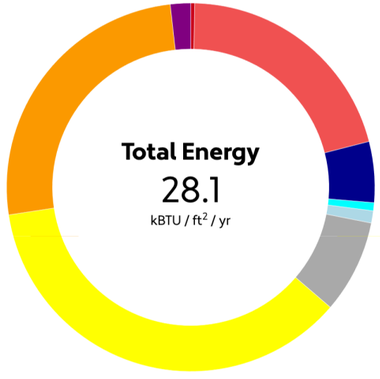




Annual Energy Use - Office Spaces

Segment	kBTU / ft² / yr	% of total use
Heating	**6.3**	**18 %**
AHU	0.1	0 %
Zones	6.2	18 %
Humidification	0.0	0 %
Cooling	**6.3**	**18 %**
AHU	2.5	7 %
Heat Rejection	0.0	0 %
Zones	3.8	11 %
Fans	**3.7**	**11 %**
AHU	2.3	7 %
Zones	1.4	4 %
Interior	**17.9**	**52 %**
Lighting	10.2	30 %
Equipment	7.7	23 %
Pumps	**0.0**	**0 %**

CMG Office : 9,800 sq. ft., VRF system
Annual Energy Use Intensity (EUI)= 34.2 kBtu/sq. ft./yr



Annual Energy Use - Workshop Spaces

Segment	kBTU / ft² / yr	% of total use
Heating	**5.9**	**21 %**
AHU	0.1	0 %
Zones	5.8	21 %
Humidification	0.0	0 %
Cooling	**2.0**	**7 %**
AHU	1.5	5 %
Heat Rejection	0.2	1 %
Zones	0.3	1 %
Fans	**2.3**	**8 %**
AHU	2.3	8 %
Zones	0.0	0 %
Interior	**17.4**	**62 %**
Lighting	10.2	36 %
Equipment	7.2	26 %
Pumps	**0.5**	**2 %**

CMG Workshop :73,600 sq. ft., heat and vent only
Annual Energy Use Intensity (EUI)= 28.1 kBtu/sq.ft./

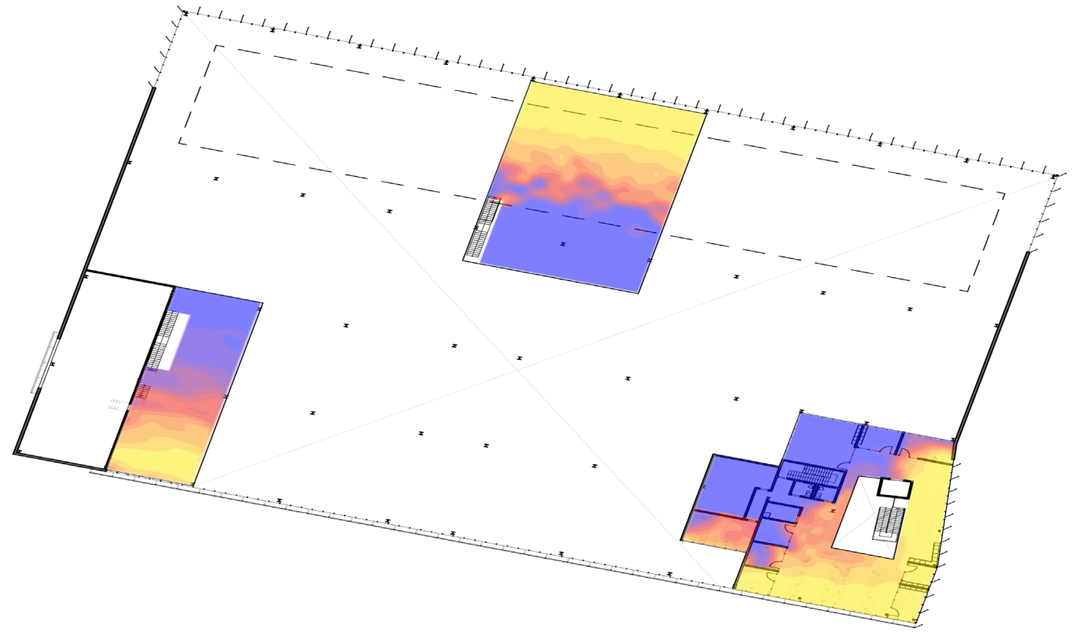
Sustainability Strategy

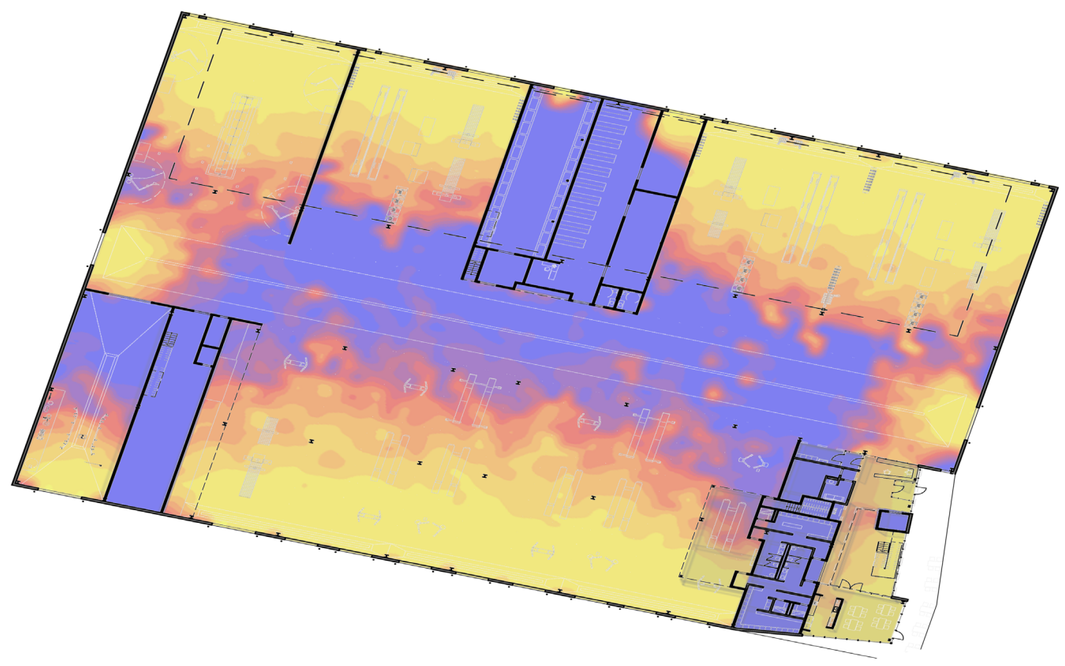
Features

Throughout the design process, the Design Team has worked to provide ample daylighting in all work areas. Daylighting design informs architectural expression as well performance objectives, namely to optimize occupant health and well being and reduce building energy use.

In early design stages for the Central Maintenance Garage, daylight became an important factor in the success of the vehicular work areas and the office areas. This resulted in large north and south facing clerestories that helped bring natural light deep into the space, providing a safe, healthy and comfortable work environment, as well as reducing the need for artificial lights. In the existing facilities, there was very little to no natural light brought into the spaces. Lighting studies were conducted to show the average daylight levels throughout the building. A range of 30-75 foot candles is the recommended light level for workshop work environments. Our daylight studies show that this goal is easily achievable without the need for artificial lights during the average day.

The Annual Daylight Autonomy study shows spaces that would achieve a target of 28 foot candles for minimum of 50% of the working time throughout the year. The warmer the color, the more frequently the space will meet or exceed the target footcandles. This study shows that a significant area of the shop and admin areas achieve this light level goal with daylighting alone. Areas that do not achieve daylighting goals can be improved by skylights or other glazing strategies.





Percentage of daylight hours ≥ 400 lux

0% **50%** 100%

Project Summary

Lawrence Field Operations Campus - **Phase 2**

Scope Summary: Phase 2 includes the Central Maintenance Garage, sitework and berming.

Draft Schedule:

Design Development: *Oct 2024 - May 2025*

Construction Documents: *June 2025 - May 2026*

Initial Site Preparation: *Q2-Q3 2026, TBD*

Construction: *June 2026 - Nov 2027, TBD*

Key Design Features of Phase 2:

Co-location with Phase 1 MSO. Vehicle and Equipment maintenance operations, as performed by Central Maintenance are critical to MSO work Divisions. Each municipality supplies these work Divisions with critical equipment required to maintain their civil infrastructure. This equipment needs frequent preventative maintenance and observation, as well as the ability to perform large scale maintenance. This critical relationship mandates very close proximity or co-location to improve response time to necessary repairs.

Co-location with Phase 3 SWD. Sanitation collection services are a municipal service that shares many of the vehicle and equipment typologies with the MSO Divisions responsible for maintaining Civil Infrastructure. The equipment employed by these work groups, also has a high level of sophistication and moving parts that need even more attention than that of other Municipal work groups. That requirement makes co-location of SWD with CMG extremely important for improving efficiency, safety and level of service expectations. Co-locating will also save a lot of time, and fuel, as SWD vehicles will no longer need to travel a long distance for Maintenance which is especially important since they make up approximately 50% of the equipment serviced at CMG.

Functionality and Space for Growth. Operationally, a properly sized and outfitted Central Maintenance Garage will improve the lifespan of all serviced vehicles, reducing turnover costs. The most dramatic efficiencies are related to large and specialized vehicles. The new facility could add a potential average of four years to the life of large/specialized vehicles, thus saving approximately $500,000 per year in reduced equipment replacement costs.

Operational Resiliency for Emerging Technologies. When planning a fleet repair facility, considering future developments in equipment technologies and how those can be safely and efficiently maintained is critical to the facilities long term success. Note that if the City does switch to a majority electric fleet or other alternative fuel vehicles and equipment, replacement schedules and maintenance activities will shift significantly. In this case, future efficiencies would be realized by appropriating flexible service bays within CMG to allow ease of adaptation and resiliency to changing technologies.

Staff Attraction and Retention. Creating safe, properly sized and outfitted equipment maintenance areas develop a workplace that will attract people to fill critical roles within the municipal organization. Investing in current maintenance technologies and training in state of the art facilities creates a reputation in the industry that will retain those employees. Investing in work space that provides good ventilation, proper heating and cooling, access to daylight, access to fresh air and overall clean and safe work conditions will increase employee and organizational efficiency.

Unique Layout. The central access lane is a unique feature at CMG that allows quick access to all service bays, while reducing the overall footprint of the building. The central aisle can be used for access and egress out of interior bays, used for quick diagnosing vehicles and short duration services, utilized for extra long vehicles (such as fire apparatus) and also be used for delivery unloading. The central drive also allows a large number of bays required to meet service demands of Lawrence's fleet, to be condensed as much as possible into a more efficient rectangular floor plan. This layout allows for more efficient use of building materials, reduces cost for special maintenance systems such as bulk fluid delivery, overhead gantry crane access to multiple spaces and vehicle exhaust extraction systems. The orientation and layout also allows for more efficient staff movements and access to support areas in a facility that is essentially operated by one critical City Division.

Administrative/Shop Interaction. The design of the CMG allows for a clear connection between office and shop staff efforts. This encourages efficiency and communication and discourages siloization. The training room has the ability to offer views directly down into the shop, offering real time, real-world training and education opportunities. Shop supervisors and operational managers have the ability to quickly access equipment for incoming service to diagnose and assign staff and location within the building to reduce downtime and get vehicles back in service.

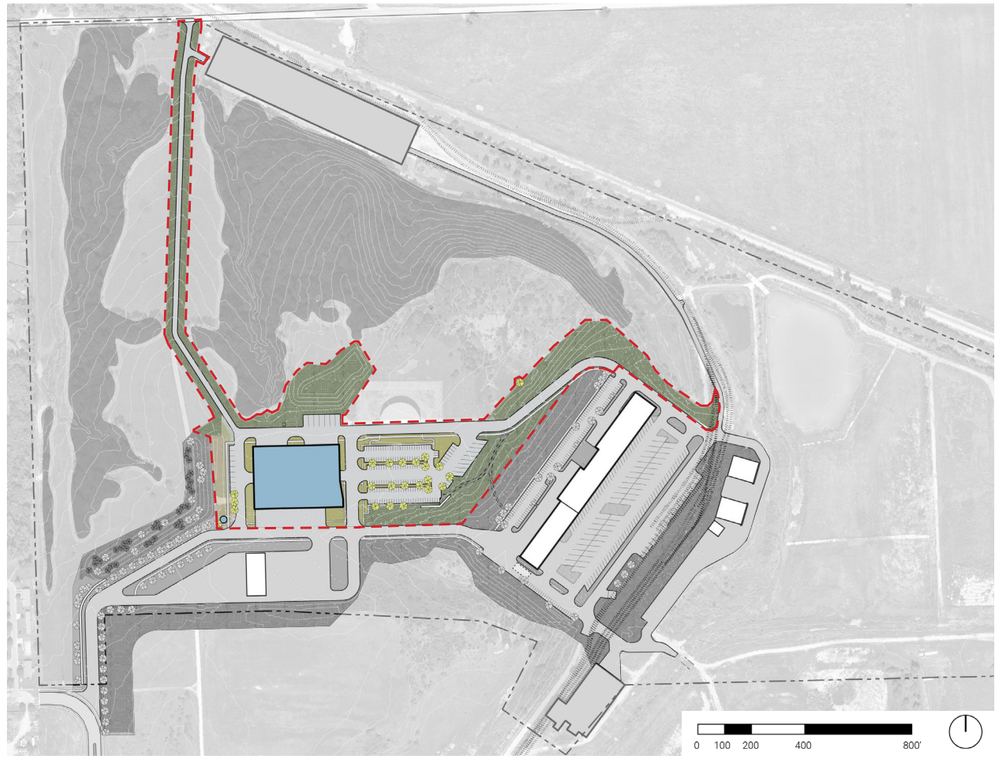
Dedicated Wash bays. Improved washing frequency raises awareness and observation, triggering problems being caught earlier. Washing, as the simplest preventative maintenance measure, can provide prolonged life of critical vehicle components, as well as offering early diagnosis.

Health and Wellness. The well being of staff was considered in the design. The building includes abundant natural light, access to exterior break areas, a small fitness center and will eventually include a walking path.

Target Project Budget. During a project update to City Commission on 7 June 2022, a preliminary target construction cost was presented of $25,900,000, based on 2021 cost estimation factors. This number includes a factor for soft costs. At this time it was not known if CMG would be part of Phase 1 or Phase 2, so escalation factors past June 2022 were not included. Factoring in projections, significant escalation has occurred, and will continue to occur until the project is constructed.

Target Project Budget	$32,100,000
Escalation	4,815,000
Soft Costs	3,085,000
Target Project Budget	**$40,000,000**

It is recommended by the Design Team that cost estimation of the Schematic Design be undertaken by the Construction Manager at Risk. The results of the cost estimate will inform design efforts moving forward.



City of Lawrence KANSAS

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