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AGENDA

ADMINISTRATIVE BOARD

Date: Thursday May 30, 2024
1:00 PM – 3:00 PM

Location: 625 Halleck Street, Bellingham, WA

1:00 p.m. – 1:10 p.m.

CALL TO ORDER – Whatcom County Sheriff, Donnell Tanksley

Point of Order: *This is a hybrid meeting. Please speak up to be heard and understood by those attending remotely and to ensure the audio recording is accurate. To make and second a motion, please raise your hand and wait to be audibly acknowledged by the Chair for clarity of the official record.*

1:10 p.m. – 1:20 p.m.

PUBLIC COMMENT PERIOD

During this period of time, citizens may request to speak informally to the Board via ZOOM on subjects not scheduled on the agenda and will be unmuted by the moderator. EACH SPEAKER IS ALLOWED A MAXIMUM OF THREE MINUTES. If the speaker has written comments for the Board, an additional copy should be given to Julie Knight via email at jkknight@cob.org, preferably before the meeting, for our office files.

1:20 p.m. – 1:30 p.m.

Approval of the Minutes

Sheriff Tanksley

1:30 p.m. – 2:00 p.m.

What-Comm Interlocal Agreement

Alysn Everbeck, What-Comm Deputy Director of Operations

2:00 p.m. – 3:00 p.m.

What-Comm Facility Update

Carol Rofkar, COB Public Works

Forrest Longman, COB Finance

Alysn Everbeck, What-Comm Deputy Director of Operations

3:00 p.m.

Adjourn

The next scheduled meeting will be held September 26th, 2024, at 1 PM.

**WHAT-COMM COMMUNICATIONS CENTER
ADMINISTRATIVE BOARD
MINUTES
Thursday January 25, 2024
Meeting held at 625 Halleck Street, Bellingham WA and Via ZOOM**

Present were:

Administrative Board Members: Donnell Tanksley, Sheriff, WCSO; Scott Korthuis, Lynden Mayor; Jeff Hindman, Fire Commissioners Association Representative; Chief Rebecca Mertzig, Bellingham Police Department; Hollie Huthman, City of Bellingham Council Chair of the Public Safety Committee; Bill Hewett, Bellingham Fire Chief; Satpal Sidhu, Whatcom County Executive; Todd Donovan, Whatcom County Council Chair of the Finance Committee and Fire Chief District 7, Larry Hoffman.

Other Panelists in attendance:

Bellingham Fire Department, Prospect Division Chief, Dan McDermott; Bellingham Police Department, Deputy Chief and Director of What-Comm, David Crass; Bellingham Police Department Lieutenant Jason Monson and Deputy Director of What-Comm, Alys Everbeck.

Call to Order and Opening comments:

Sheriff Donnell Tanksley called the meeting to order at 1:00pm

PUBLIC COMMENT PERIOD

During this period of time, citizens may request to speak informally to the Board via ZOOM on subjects not scheduled on the agenda and will be unmuted by the moderator. EACH SPEAKER IS ALLOWED A MAXIMUM OF THREE MINUTES. If the speaker has written comments for the Board, an additional copy should be given to Julie Knight via email at jkknight@cob.org, preferably before the meeting, for our office files.

Sheriff Tanksley asked the public if they had comments. There were no public comments.

Approval of the Minutes

Sheriff Tanksley asked if everyone had a chance to review the September 28, 2023, meeting minutes and if there is a motion to approve those minutes.

Councilmember Donovan stated a correction to the September 28, 2023 meeting minutes wherein Sheriff Elfo stated the Administrative Board has been working well for 50 years. The Administrative Board has not been functioning in it's current capacity for quite that long.

Approval of the minutes was motioned by Scott Korthuis, seconded by Hollie Huthman, and approved unanimously.

What-Comm Year in Review

Presented by Alys Everbeck

Alys shared a What-Comm 911 2023 Annual Report prepared by her, which included some of the highlights, challenges, and statistics for the year. New consoles are installed and fully operational to accommodate new dispatch staff positions and the community outreach staff. The planned 2023 equipment upgrades and minor remodel projects were completed on time and under budget. Filling vacant dispatch positions has been a high priority and we are now down to two open positions.

**WHAT-COMM COMMUNICATIONS CENTER
ADMINISTRATIVE BOARD
MINUTES
Thursday January 25, 2024
Meeting held at 625 Halleck Street, Bellingham WA and Via ZOOM**

There are upcoming projects including a new dispatch facility for What-Comm. Alysnn stated that the project is expected to start in February of 2024 and What-Comm's goal is for the building to be complete before the World Cup in 2026. The influx of travelers in and through Whatcom County is expected to be significant during this major event.

Sheriff Tanksley asked if we keep track of tactical call out of dispatchers/events and asked if that could be included in future data reports. Jeff Hindman asked if the duration of the tactical events could also be included in future reports.

Prospect Year in Review

Presented by Dan McDermott

Dan shared that Prospect has improved their dispatch times. Dan also shared that Prospect has partnered with Allied Connect which is a mental health liaison that connects appropriate services for employee mental health support. This service is for first responders only and not for the general public.

Prospect is currently working on "automated" dispatching that will send out tones and automated text-to-voice dispatch information to the units in the field. This system is expected to be in operation by March 1st.

What-Comm Facility Update

Alysnn Everbeck indicated there was not a lot of new information to share. The scoping of the project will begin in February.

New Business

Todd Donovan brought up composition of the administrative board and that county council will continue their discussions of this topic. They also plan to continue discussions regarding separate centers. The current thought of the council is that a change of the board make-up might lead toward more of a chance for consolidation. Executive Sidhu asked that anybody who wanted to send comments to county council for review please do so, and that the comments would be welcomed. Sheriff Tanksley asked that if you send comments to please Cc the current administrative board members. Jeff Hindman suggested that there be a roundtable discussion with current Board members to educate each other, along with council members, and to share any concerns. Alysnn Everbeck cautioned that we cannot delay building a new facility, for further consolidation discussions. Jeff Hindman indicated that fire services fully support moving forward with the new facility. Executive Sidhu commented that we need to fully develop a facility to meet growth needs and that it is much more economical to overdevelop now, and then grow into the space.

Adjourn

There being no further discussion, the meeting was adjourned at 1:45pm

The next scheduled meeting will be held May 30th, 2024, at 1 PM.



CITY OF BELLINGHAM

WHAT-COMM 911

PROGRAM VERIFICATION AND SITE ANALYSIS REPORT

May 16, 2024

PROJECT TEAM



CITY OF BELLINGHAM

ADMINISTRATION
210 Lottie Street
Bellingham, WA 98225
360.778.8000
Team:
Carol Rofkar, Superintendent



WHAT-COMM 911

620 Alabama Street
Bellingham, WA 98225
360.778.8906
Team:
Alysn Everbeck, Deputy Director
Justin Rasmussen, Training Supervisor
Sam Dunkailo, Director of IT



ARCHITECTS

SHKS ARCHITECTS
1050 North 38th Street
Seattle, WA 98103
206.675.9151
Team:
Adam Hutschreider, Architect, Principal
Matt Inpanbutr, Project Manager
Stephen Trigueiro, Project Architect



ELECTRICAL ENGINEER

Stantec
720 3rd Ave, Suite 1500
Seattle, WA 98104
206.667.0555
Team:
Tim Janof, Principal
Sam Young, Project Manager

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EXECUTIVE SUMMARY

PURPOSE

The purpose of this report is to verify What-Comm 911's program requirements for a new Public Service Answering Point (PSAP) to be located on the site of their existing facility at 620 Alabama Street.

PROGRAM

The program has been confirmed and includes the minimum program requirements established by What-Comm staff. In total, the interior program requires approximately 9,500 square feet (SF) including 16 consoles on day one, with capacity for 20 consoles (includes moving existing consoles into new building). The site program - staff parking, radio tower, and building infrastructure elements require roughly 10,000 SF.

Funding for the project acquired through grants require the project to achieve Leadership in Energy and Environmental Design (LEED) Silver Certification. SHKS will lead an eco-charette at the commencement of Schematic Design.

SITE ANALYSIS / CONCEPT DEVELOPMENT

SHKS performed site analysis to understand the existing constraints and opportunities, including environmental conditions, views, and topography. Three site layouts/test-to-fits were performed based on the program, including both one- and two-story options. Each concept assumes the existing building will remain fully operational and in use until the new building is operational.

PREFERRED CONCEPT

The preferred concept is a two-story building with all primary spaces located on the ground level, and a second floor with administration offices, employee break spaces and roof terrace. This concept provides increased operational efficiency, employee comfort, and opportunities for the program areas to expand as needs of the facility change over time. Additionally, the site diagram provides the most future flexibility for What-Comm 911 while providing adequate parking and employee amenity spaces upon project completion. Further refinement of the preferred concept will be done in Schematic Design, including exploration of construction types, building/site hardening measures, program efficiency, optimized circulation, and building materiality.

COST

A cost plan was not developed as part of this study, however benchmark data of recently completed PSAP/Essential Facilities suggests a cost of \$1,000 - \$1,200 per square foot. These costs are driven by the redundant systems (primarily electrical, telecom, and heating, cooling, and ventilation). Municipal facilities (non-essential facilities) construction costs range from \$600-\$800 per square foot. Approximately half of the program area has been identified as needing to comply with "Essential Facility" requirements/standards. A detailed cost plan will be prepared at 50% Schematic Design.

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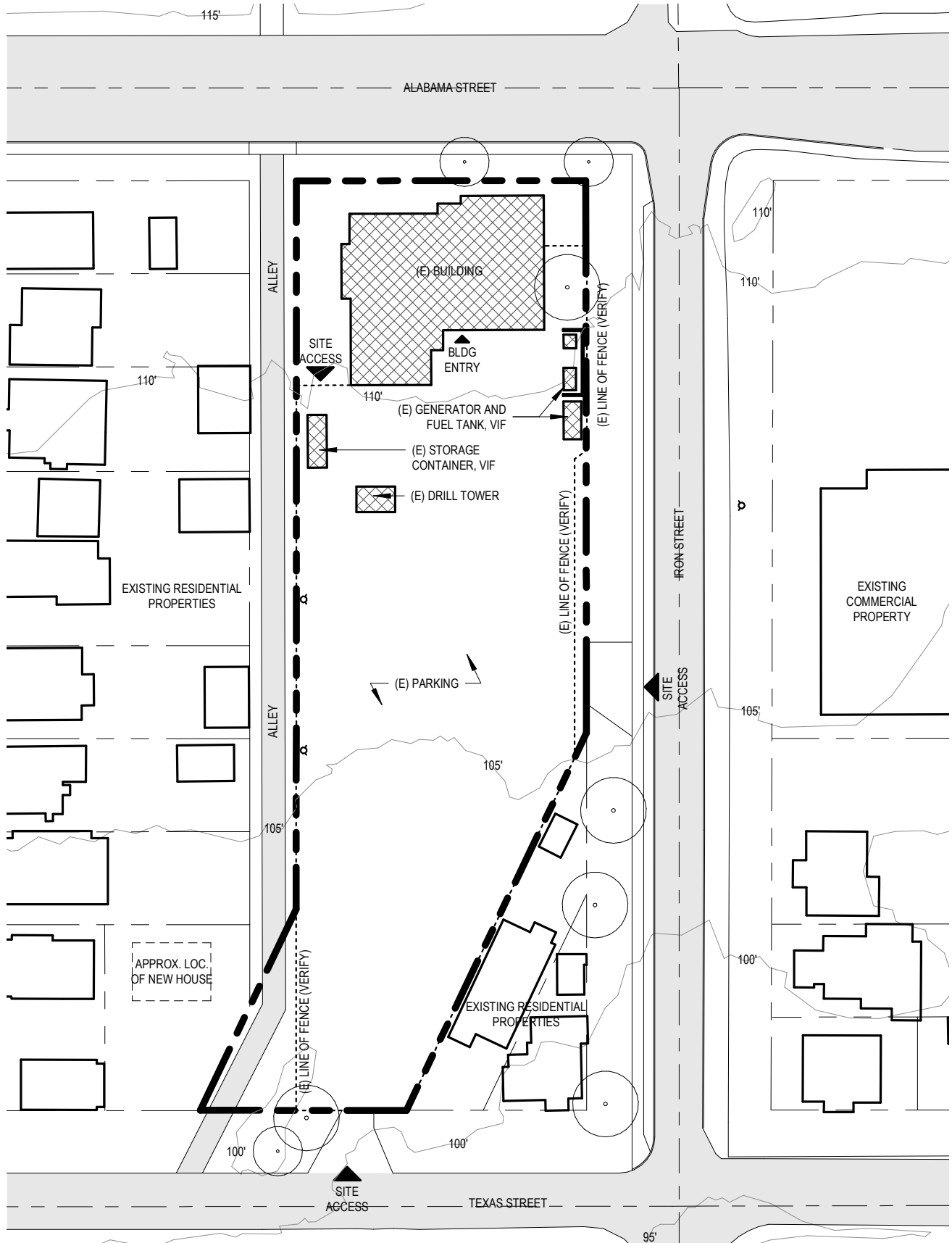
1 EXISTING BUILDING AND SITE

OVERVIEW

The site, located at 620 Alabama Street in the Sunnyland neighborhood of Bellingham, Washington was historically part of the B.B. & B.C. Railroad corridor, contributing to its unique shape within a residential context. It consists of two lots with a combined area of approximately 45,479 square feet (pending survey verification). Controlled access to the site is through a security fence with vehicular entrances on Iron Street and Texas Street and a locked man-gate located on the northwest side of the property. There are two existing structures on the site: the What-com PSAP, which was constructed as a Fire Station in the 1950s, and subsequently remodeled in 1989; and a retired fire training tower. Other site features consist of an emergency generator with associated fuel tank, mechanical equipment, and parking for employees and city vehicles. Landscaping on-site is limited to flowering cherry trees, laurel hedges along the fence line, and street trees along Alabama.

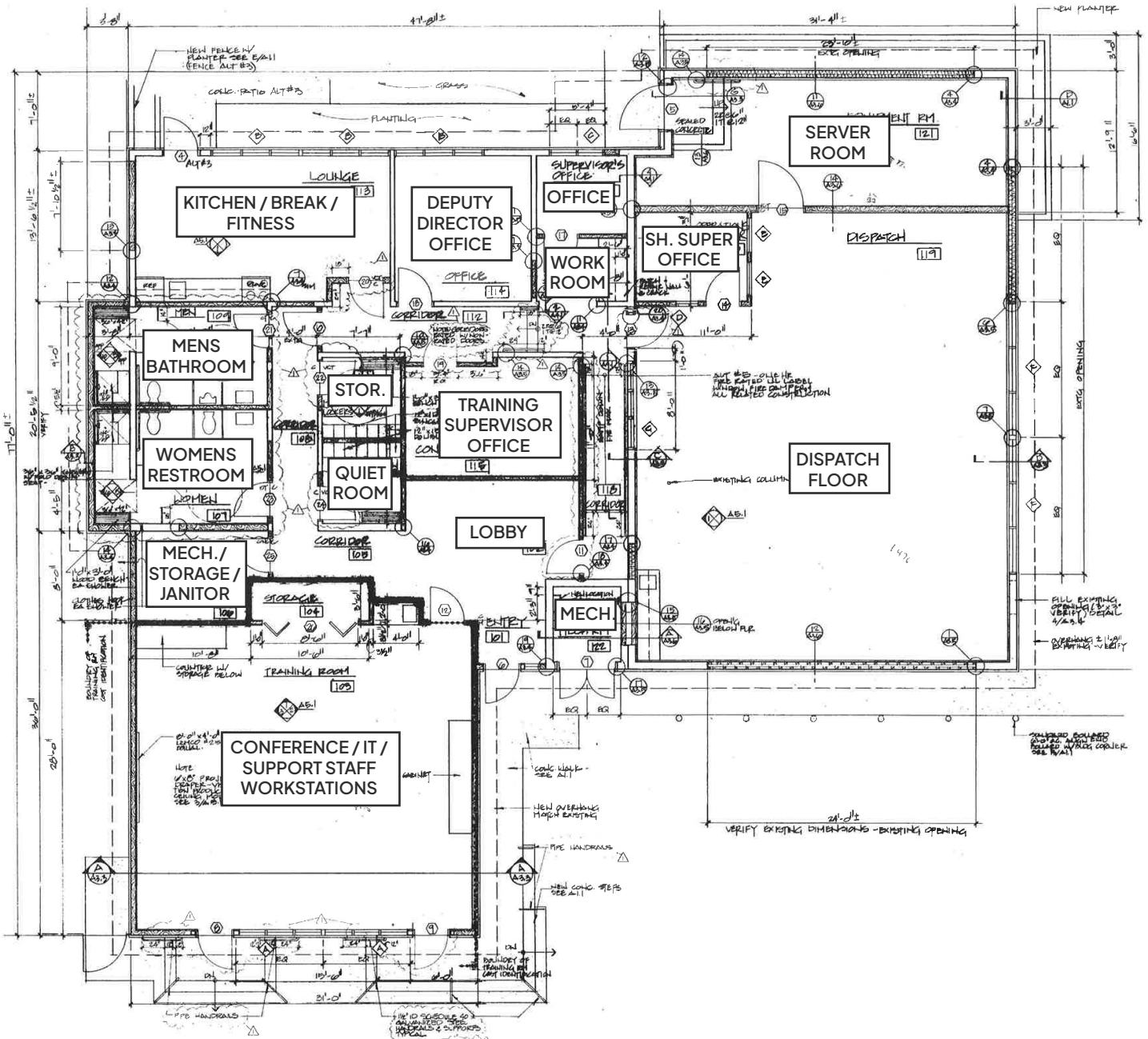
The footprint of the existing wood framed building is approximately 4,700 square feet and is topped with a radio antennae. Current uses include administrative office, mixed meeting and office spaces, building and employee support spaces, server room and dispatch floor. Site visits and employee interviews indicate that the facility is undersized for What-Comm 911's present and future needs, and does not meet current safety and system redundancy standards for a Category IV Essential Facility and per NFPA 1225.

EXISTING BUILDING AND SITE



EXISTING SITE PLAN
SCALE: 1"=60'-0"





EXISTING FACILITY PLAN
SCALE: NTS

(OWNER PROVIDED PDF)

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2 CODE ANALYSIS SUMMARY

OVERVIEW

The following pages provides a summary of relevant land use requirements, design guidelines and code regulations per the Bellingham Municipal Code (BMC) Title 20, National Fire Protection Association (NFPA) 1225 Standard for Emergency Services Communications, and the National Electrical Code (NEC) Article 708 for Critical Operations Systems.

For detailed code analysis, see Appendix B: Code Analysis

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ZONING AND LAND USE

The site is designated Public, Governmental Services and is surrounded by Residential Multi and Commercial Zones. Because the site consists of two parcels, the project may require a covenant to bind if the future building straddles the property line between them. Bellingham Municipal Code Title 20 dictates use and restrictions of the site. The proposed use of the site as a government facility is allowed outright and will require commercial design review since the primary program is considered "office." The planned 100' tall communications tower will require an administrative conditional use, but would be exempt from needing a Wireless Communication Facility (WFC) permit.

Other relevant development standards include a 20' building and 10' parking setback from properties zoned Residential Multi. There is no height limit provided for Public designated lands, so building height will be regulated through SEPA and Design Review. Parking will be held to 1-stall per 350 square feet of floor area unless the team decides to apply for a director determination to reduce the ratio. Additional street trees will be required along Alabama and Iron Street at 50' on-center, with the existing trees counting toward the required spacing.

Due to the complexity of an emergency response facility and the site's Public zoning designation, the team met early on with the City of Bellingham staff to discuss site and zoning constraints. These conversations indicated that while the project will be able to meet most code standards, some departures and director's determinations will be pursued to ensure safe operation and to meet current design standards for this facility type. Conversations with the Fire Marshal determined that hydrant service is adequate, but a fire access lane may be required from Texas Street depending on other site access locations and building placement. For further analysis and site constraints diagrams, see Appendix B: Code Analysis.

REQUIRED PERMITS AND APPROVALS

- | | | |
|----------------------------|-------------------------------------|---|
| - SEPA | - Site Development Permit / Grading | - Demolition Permit (For existing building) |
| - Commercial Design Review | - Building Permit | - FAA Determination for Radio Tower |

NFPA 1225

In addition to land use considerations, SHKS reviewed NFPA 1225 which dictates best practice guidelines for design and operation of emergency response facilities and influences the size and type of redundant mechanical, electrical, and plumbing systems, facility security features, fire protection ratings, seismic resistance criteria, construction type, and lighting. NFPA 1225 is not a requirement in this jurisdiction, but will be considered as the project develops. Please see the NFPA 1225 checklist provided in Appendix B: Code Analysis. A comparison between NFPA guidelines and NEC 708 requirements provided by Stantec can be found in Appendix C: Electrical Narrative

NEC 708

During the Schematic Design Phase, a meeting will be scheduled with the City of Bellingham to establish interpretations of NEC 708.

The National Electrical Code (NEC) establishes the standards for power systems supporting facilities or parts of facilities that require continuous operation for the reasons of public safety, emergency management, national security, or business continuity. These systems are referred to as Critical Operations Power Systems (COPS). The areas within a facility or a site designated as requiring COPS are called Designated Critical operations Areas (DCOA). SHKS worked with What-Comm 911 to establish three tiers of program spaces in the project with the goal of collocating "Mandatory Required," "Preferred Required," and "None" DCOA's. A further description of these areas can be found in the following chapter, and a detailed area matrix can be found in Appendix D: Programming. Risk assessment is also required for this project and must consider naturally occurring disasters (geological, meteorological, or biological) and human-caused events (accidental and intentional). This will be performed by an outside consultant. See Appendix C: Electrical Narrative.

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3 PROGRAM

PROCESS

SHKS Architects (SHKS) began by reviewing the City of Bellingham Call Center Emergency Dispatch Pre-Design Report, August 2017, existing drawings, reports and other relevant information provided by What-Comm 911 and the City of Bellingham. An initial kickoff meeting with project stakeholders was held to establish the following project goals/priorities:

- **Provide a safe and secure facility**
This includes the physical site and building features which protect the facility's functions and its employees.
- **Include redundant systems for continuous operation of the facility**
Ensuring no drop in service during a major event by providing back-up power to critical systems within the facility and flexibility during maintenance.
- **Prioritize employee health and wellness**
Providing a variety of employees spaces for rest and recovery from the taxing nature of their work. These can include spaces to exercise, prepare and eat meals, decompress after a major call event, secure exterior spaces, etc.
- **Optimize layout for operational efficiency**
Space organization should not detract from an employee's ability to do their work. Placement of compatible uses and similar critical area designations will allow for greater operational and systems efficiency.

With these priorities in mind, SHKS asked What-Comm 911 to respond to the following documents to support and guide program development:

- **Questionnaires:**
Questionnaires were distributed to What-Comm 911 for completion, the questions included topics ranging from facility, operations, safety, technology, employee support spaces, site improvements, and goals. For responses, see Appendix D: Programming.
- **Interviews:**
Following the completion of the questionnaires, Initial interviews were conducted with What-comm 911 management team to review their responses and identify additional concerns not addressed in the questions. In addition, "sit-alongs" occurred with two dispatchers, allowing the team to better understand and document the job of a dispatcher and how their space configuration and attributes impact their work.
- **Room Data Sheets:**
Room data sheets are a byproduct of the questionnaires and interviews. Each program element was documented, outlining the required area, optimal adjacencies, and preferred fixtures, furnishings, and equipment. See Appendix D: Programming for the requirements of each program element.

In conjunction with the code analysis outlined in section 2, we reviewed and established priorities and requirements for Essential Facilities with What-Comm and City of Bellingham stakeholders. See Appendix D: Programming.

Through the analysis of these documents, three programming workshops, and operations observations; the program and adjacency requirements were established.

PROGRAM AREAS

The program requirements are combined and sorted into function interior and exterior categories of use. A summary of the program is provided below. A comprehensive program analysis is provided in Appendix D: Programming.

Program Areas Summary	NSF
Dispatch	2,400
Office	1,255
Server	400
Building Support	3,870
Site Requirements	10,444

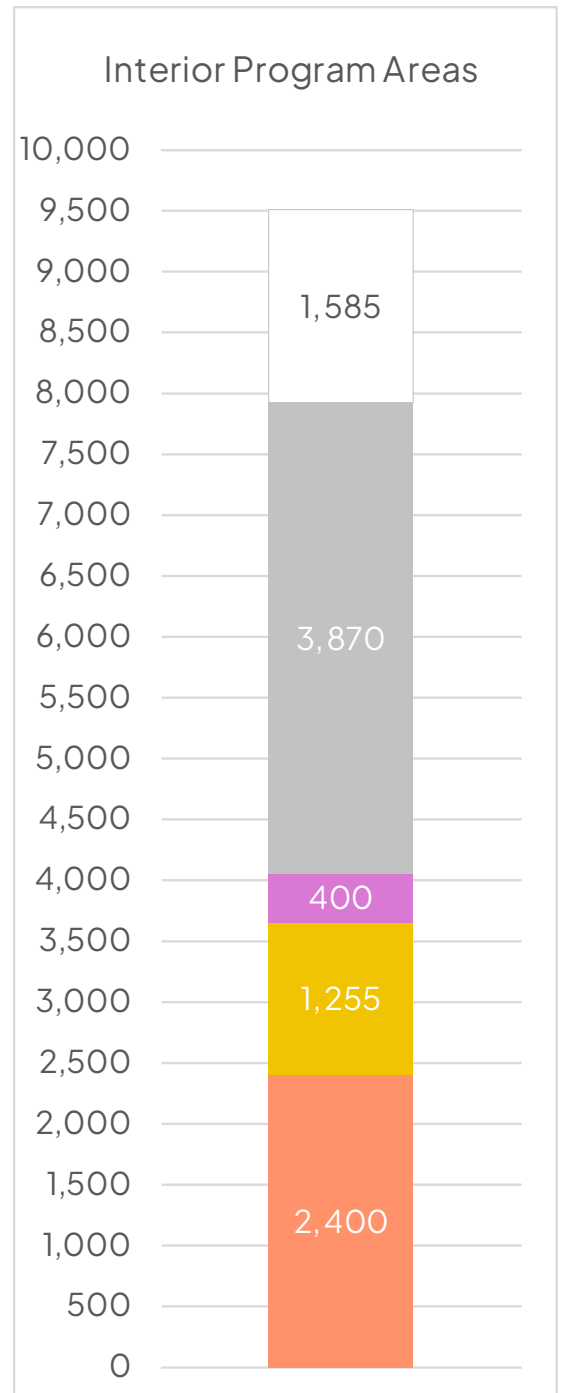
Program NSF: 7,925

Total Building GSF (Less Site Req.): 9,510

Total Project SF: 19,954

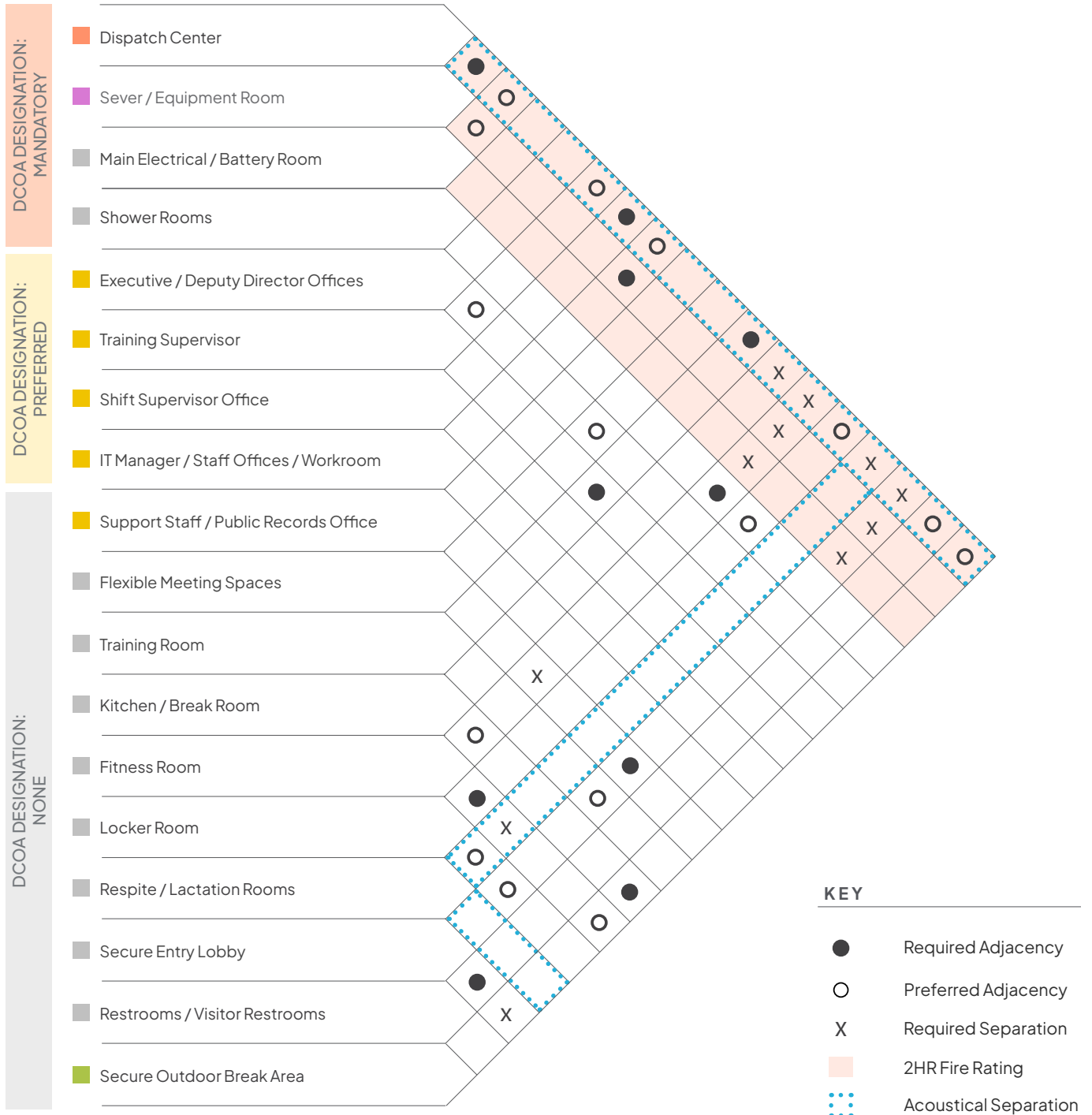
KEY

- Non-Programmed
- Building Support
- Server
- Office
- Dispatch



ROOM PROXIMITY MATRIX

The matrix below establishes space adjacency priorities as well as highlights area with special acoustical considerations and fire separation requirements. Collocating critical operations areas and those with compatible uses and environmental requirements will increase operational and systems efficiencies throughout the facility.



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4 CONCEPT DEVELOPMENT

PROCESS

Following the verification of the program requirements, SHKS performed site analysis and test-to-fit layouts of the building and site. Design will occur at completion and approval of program verification. During this layout process, the design team added two additional project priorities to further organize design considerations. Additions highlighted in bold below:

- Provide a safe and secure facility
- Include redundant systems for continuous operation of the facility
- Prioritize employee health and wellness
- Optimize layout for operational efficiency
- **Neighborhood Scale**
Reflecting the relationship between site a building elements to the surrounding building scale and use type
- **Program Flexibility**
The ability for the building and site to accommodate growth as the needs of the facility evolve over time

OVERVIEW:

Site and building layout options were informed by environmental site conditions, client feedback, and the need for the existing facility to remain fully operational during construction. The following describes three site layout and program concepts which explore a variety of lot coverage, building orientation, and program layouts. From which, Concept B was selected as preferred.

CONCEPT OPTIONS SUMMARY:

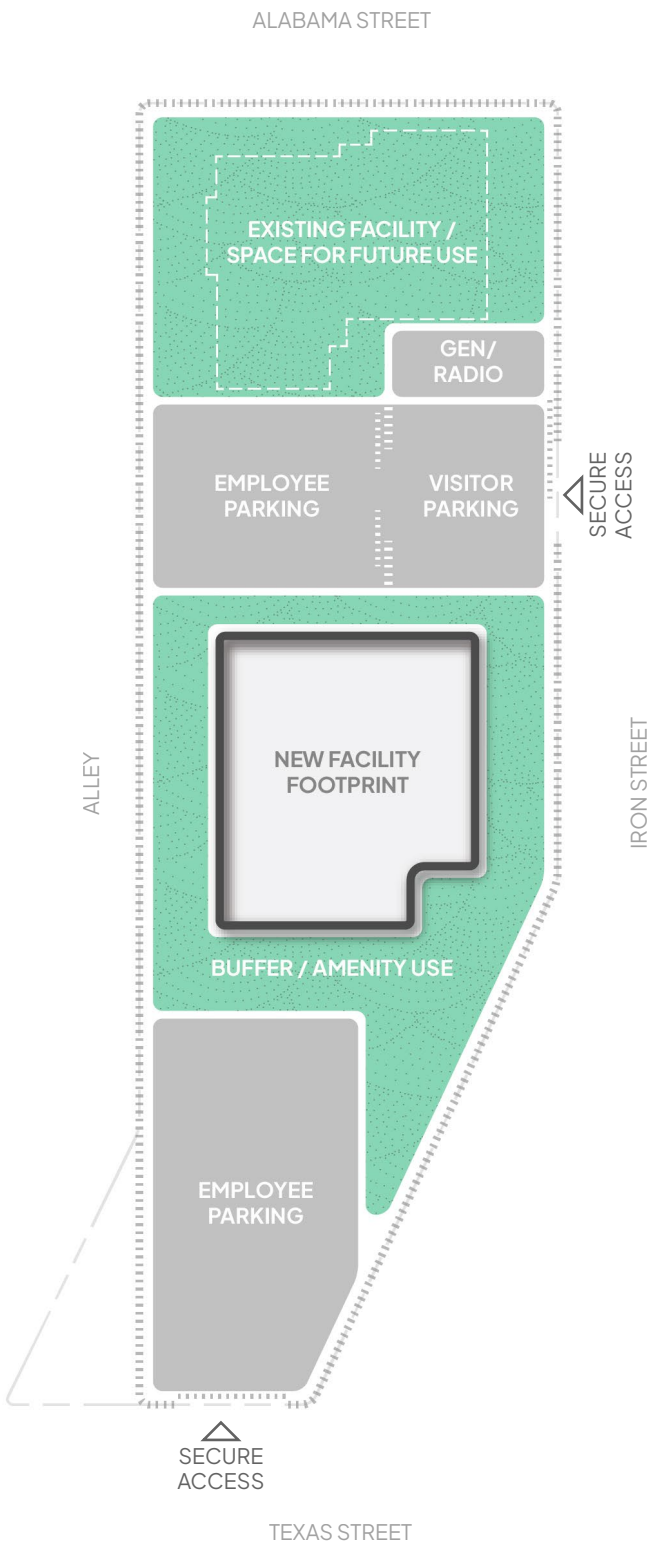
Concept A showed a two-story facility which elevated the dispatch floor, training, and main break areas to the second floor with the aim of increasing perceived security for the telecommunicators and providing them access to light and views from the upper level. Ultimately, it was decided that the scheme felt the most constricted on day one.

Concept C is a single-story option with the largest site footprint. Spaces were organized in discrete precincts which support security needs, facility function and adjacency requirements of the spaces. Due to its large footprint, siting and future growth of the building are least flexible.

Please see Appendix F: Concept Options for additional information on Concept A and Concept C.

PREFERRED CONCEPT:

Concept B is a two-story option with all primary spaces located on the ground level, and a second floor with administration offices, employee break spaces and a roof terrace. This option was selected as the preferred option because it provides increased operational efficiency, employee comfort, and opportunities for the program areas to expand as needs of the facility change over time.



RECOMMENDED SITE LAYOUT
SCALE: NTS



SITE DIAGRAM

Locating the building toward the center of the site creates space on all sides to support construction efforts and What-Comm 911's operations during the build. Parking areas flank the building to the north and south, with the option for tiered security. Once the new facility is occupied and the existing building is demolished, the remaining space can be utilized by What-Comm 911. The project goals were used to evaluate the proposed site layout in relation to the larger objectives.

Provide a safe and secure facility

- There is a minimum 20' buffer around the entire facility
- The entire facility is surrounded by an anti-climb fence
- Employee parking is separate from visitor parking
- Tower fall zone does not overlap dispatch and server spaces

Redundant systems for continuous operation of the facility

- Generators and radio tower accommodated

Prioritize employee health and wellness

- Abundant site area for outdoor break / gather spaces
- Maximizes daylight into building spaces

Optimize layout for operational efficiency

- Tiered parking access allows visitor parking to remain open during the day so deliveries and short term guests do not require secure access into the lot
- Access for trucks make deliveries of larger systems and consoles easier

Neighborhood Scale

- Distance between property line and the facility reduces the large scale feel of a building built up against the property line
- Modulation of the building form reduces long, flat facades and reduces the visual scale of the building from different angles

Program Flexibility

- There is room for program expansion on both levels



100'
SITELAYOUT: CONCEPT B
SCALE: 1"=60'-0"



PROGRAM LAYOUT

SHKS and the client team worked to establish space standards that collocate complimentary program elements and separate others. Additional program needs were evaluated by, once again, employing the four project priorities.

Provide a safe and secure facility:

- Secure areas of the facility are separated from public facing program areas
- Size and shape of program configuration provides a buffer between the facility and property line

Redundant systems for continuous operation of the facility:

- Server room size and configuration increases capacity
- Back-up generators and radio tower accounted for
- Electrical room size and location provides accessible redundant power

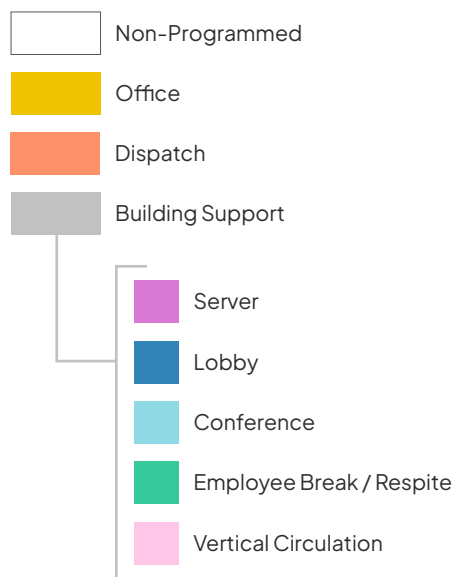
Prioritize employee health and wellness:

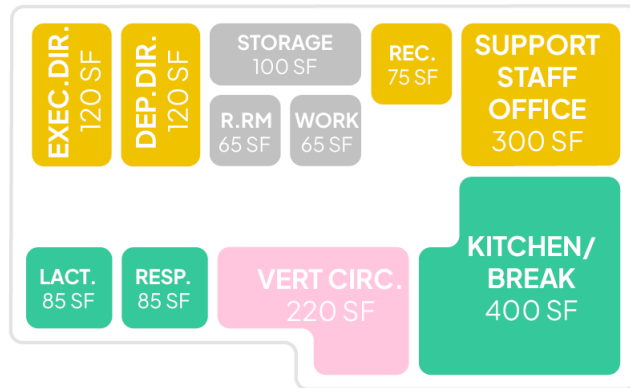
- Variety of distinct employee break spaces
- Roof deck provides secure access to light, air, and views
- Console room location prioritizes access to light and separates it from other high-intensity spaces in the facility

Optimize layout for operational efficiency:

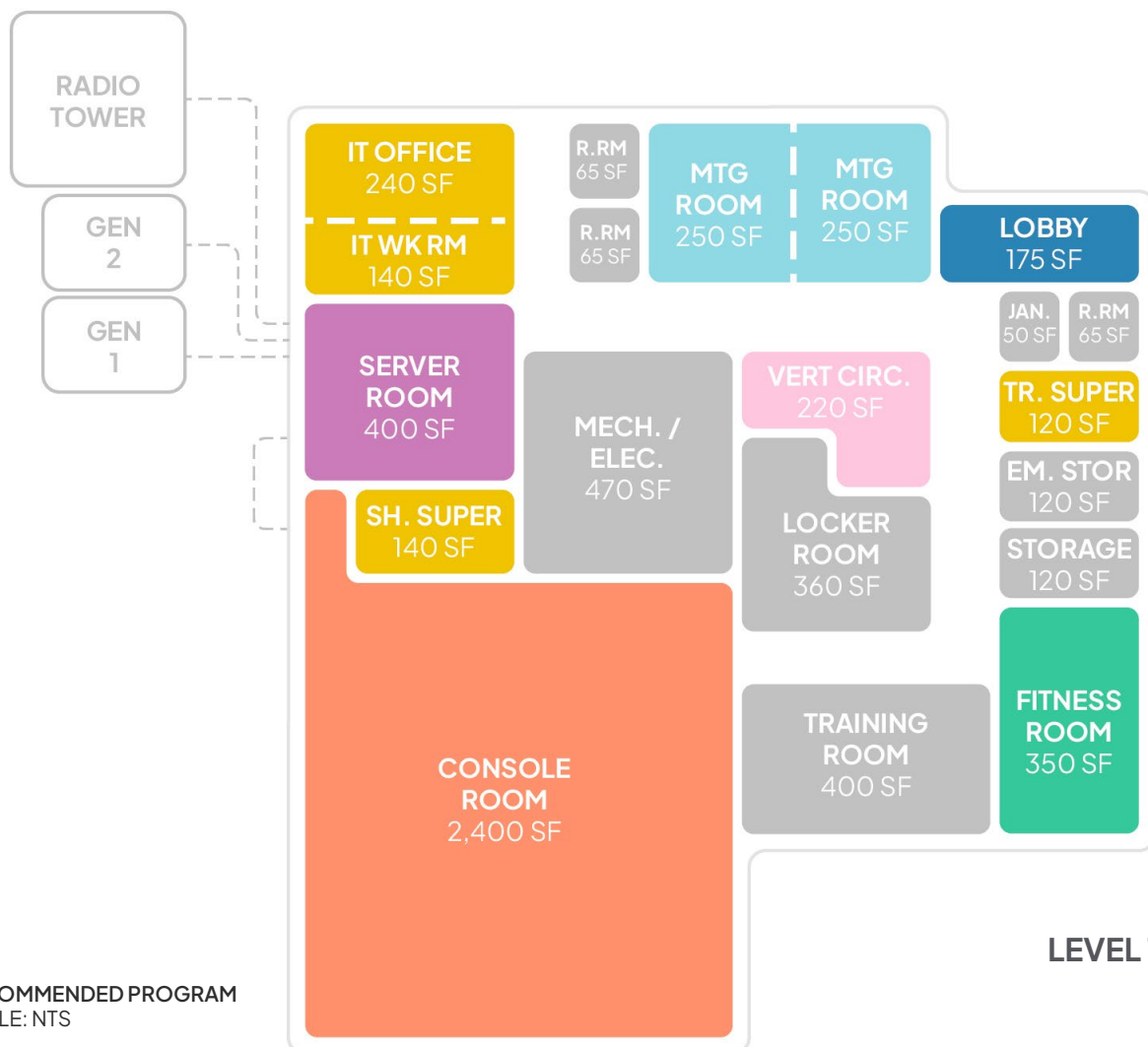
- Collocated console, training, and locker rooms
- IT, server, and console room connected
- Centrally located mechanical systems
- Offices associated with other program uses have been located on the same floor

KEY





LEVEL 2



LEVEL 1

RECOMMENDED PROGRAM
SCALE: NTS

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5 COST

A cost plan was not developed as part of this study, however SHKS and DCW Cost Management recommend assuming \$1,000 - \$1,200 per square foot for an essential facility such as a PSAP, and \$600 - \$800 per square foot for municipal facilities. This range is based on benchmarked data, and the recent completion of similar projects. Approximately half of the program area has been identified as needing to comply with essential facility requirements/standards.

SHKS explored cost differences between design concepts, as well as potential reuse of the existing building. Based on our analysis, the cost differences between a one- and two-story facility are negligible.

However, when considering options with two separate buildings linked by a courtyard, one housing essential facilities and the other non-essential facilities and found that this approach would prove slightly more expensive than a single building. The option including retaining the existing building for non-essential uses proved most costly.

A detailed cost plan will be created at 50% Schematic Design.

We understand the Total project cost is \$12M, inclusive of construction costs and soft costs.

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APPENDIX

APPENDICES CONTENTS

- Appendix A: Context and Site Photos
- Appendix B: Code Analysis
- Appendix C: Electrical Narrative
- Appendix D: Programming
- Appendix E: Site Analysis
- Appendix F: Concept Options
- Appendix G: Precedent Research

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APPENDIX A:

CONTEXT AND SITE PHOTOS

NEIGHBORHOOD CONTEXT



Sunnyland Park - South Entrance



Sunnyland Park - Play Structure



Commercial Development



Social Security Administration Building

BUILDING - EXTERIOR



North Facade - Alabama Street



South Facade - Parking Lot



East Vehicular Entrance - Iron Street



South Vehicular Access - Texas Street



View of Alley - Looking North



View of Alley - Looking North



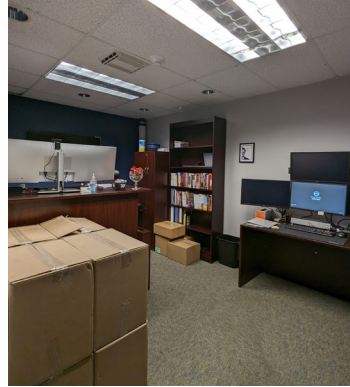
View From Drill Tower - Looking East

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BUILDING - INTERIOR



Deputy Director Office



Training Supervisor Office



Shift Supervisor Office



Office



Employee Mail



Dispatch Floor - Kitchenette



Respite Room



Kitchen / Break / Fitness Room



Server Room



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APPENDIX B:

CODE ANALYSIS

CODE ANALYSIS – What-Comm 911 Emergency Response Facility

Project: What-Comm 911, Emergency Response Facility
 Officials Consulted: Sarah Ullman, Planner – City of Bellingham
 Shawn Linville, Fire Marshal – City of Bellingham

GENERAL

Project Description: Design of a new emergency call center facility which supports the growing needs of the agency and its employees. The existing facility must remain functioning during construction of the new facility.

Owner: City of Bellingham

Building Address(es): 620 Alabama Street; Bellingham, WA 98225

Applicable Codes: 2021 International Building Code with Washington amendments, including Appendix E
 2021 International Fire Code with Washington amendments, including Appendix B, C, E, F
 Bellingham Municipal Code Title 20

Washington Administrative Code (WAC) – Chapter 296-305 Safety Standards for Firefighters
 OSHA, WISHA

Zoning Jurisdiction: City of Bellingham

Other Regulatory Agencies: State of Washington (WAC), National Fire Protection Association (NFPA 1225)

ZONING ANALYSIS

Parcel Number: 380319503076, 380319461052

Legal Description: 380319503076:
 FIRST ADD TO NEW WHATCOM LOTS 15 THRU 20 BLK 315-LESS RR.

380319461052:
 FIRST ADD TO NEW WHATCOM-80 FT STRIP ABANDONED RR R/W WH CROSSES BLKS 315-334-ACROSS SE COR OF MEMORIAL PARK-TOG WI PTDN OF BLK 334 LY SELY OF ABOVE DESC 80 FT WIDE STRIP LY NWLY OF R/W OF BELLINGHAM-NORTHERN RR-EXC ALL MIN AS RES AF 1360709

Deed Restrictions/Easements: Easements to be determined at completion of survey

Zone: Public

Allowed or Conditional Use: 20.42.050.A.1 Land owned by the city of Bellingham, Whatcom County, the port of Bellingham, the Bellingham housing authority or the Bellingham school district and designated public.

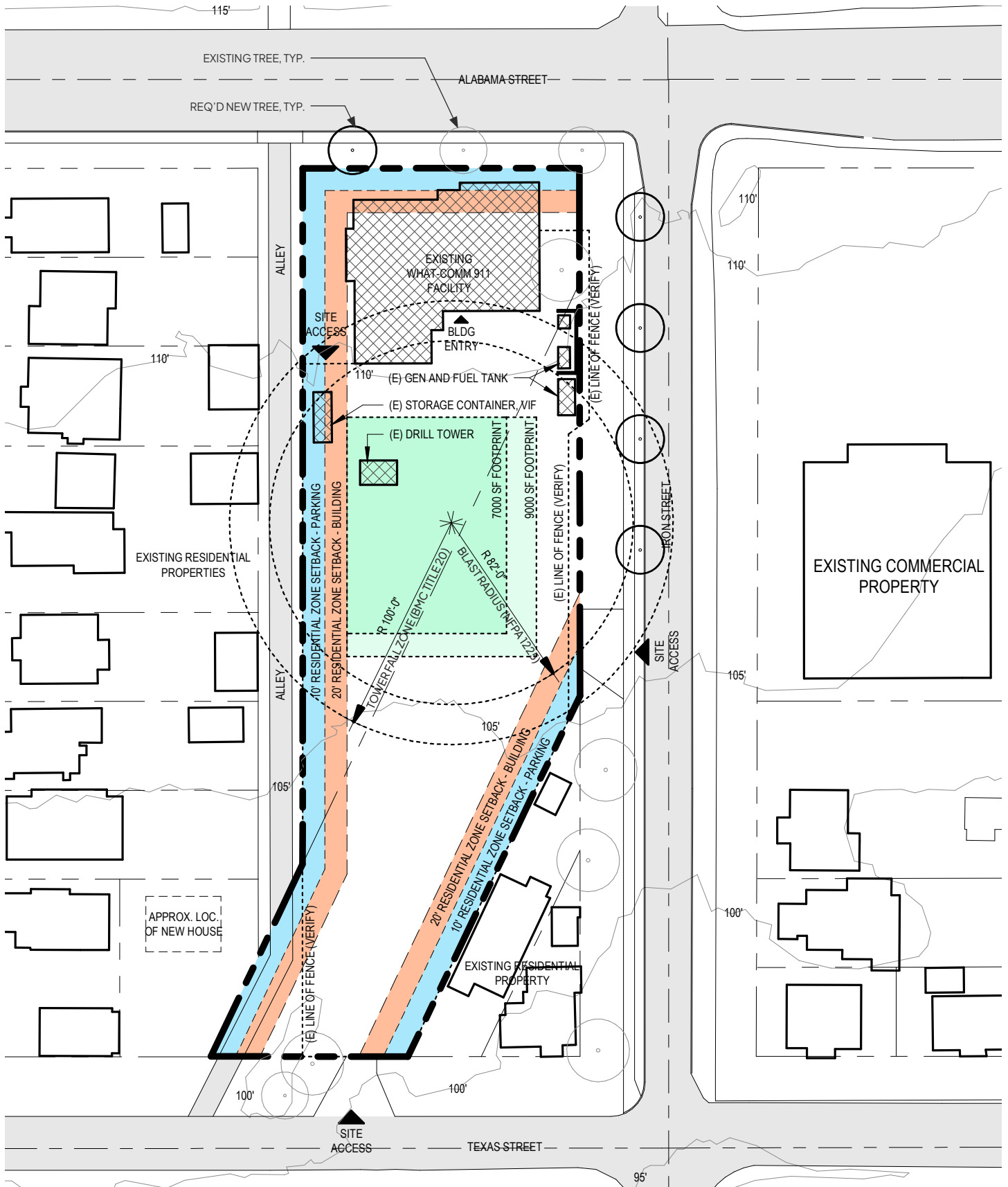
204.42.050.A.1.c. Governmental Services. To provide any of a diversified range of governmental services such as offices, fire and police stations, libraries, museums, senior activity centers, arts and crafts facilities and similarly related uses.

Year Built: Unknown

City Landmark Status: No

Lot Area: 45,479 SF (Pending Survey Verification)

Lot Coverage:	N/A for Public designation - Verify with land use planner			
Existing Floor Area:	Approximately 4,716 SF			
Street Improvements:	Verify potential of ROW improvements with City of Bellingham Public Works. Street trees will be required on Alabama Street and Iron Street at a spacing of 50'-0" O.C.			
Landscape Requirements:	20.12.030.B.4	Existing Trees	Existing trees which will be saved and which meet the minimum specification herein specified shall count toward meeting the requirements herein, provided they are an acceptable species as to their location.	
	20.12.030.C.4.a	Trees	1 per 10 open parking spaces	
	20.42.030.D.4	Yards and Storage areas visible from beyond the property line shall be screened as defined by: 20.12.030	20.12.030.2.b: All yards required (except the vision triangle) for all uses permitted in the commercial general use type and urban village industrial land use areas shall be screened. 20.12.030.3: <i>Garbage Receptacle Areas.</i> Garbage receptacle areas for multifamily dwelling units shall be screened on at least two sides.	
Maximum Building Width	Existing: 83' - 0"	Allowed: N/A	Proposed: TBD	
Maximum Building Depth:	Existing: 77' - 0"	Maximum Allowed: N/A	Proposed: TBD	
Setback Standards:	20.42.050.D.1	Front: 20FT / 10FT	Rear: 20FT / 10FT	Side: 20FT / 10FT
Setbacks for Specific Items:	Building / Parking abutting or across the street from land designated residential single, residential multi, or planned residential/			
Building Height:	Existing: Approx. 25FT	Allowed: Regulated through SEPA and Commercial Design Review	Proposed: TBD	
Parking:	20.12.101.B.3	Existing: Approx. 28	Required: 1 space / 350 SF (Existing bldg. = ~4700/350 = 14 spaces)	Proposed: TBD
		Existing ADA: N/A	Required ADA: 1space/25 spaces (Existing bldg. = 1 spaces)	Proposed ADA: TBD
	20.12.090.B.3.e.i	Code section provided by city planner suggesting to apply for a director determination to reduce the parking ratio to manufacturing or warehouse because employees work in shifts and there is no direct public access. This would reduce parking quantities down to "1-stall per 20,000 SF or 1-stall per employee (working at the same time), whichever is greater."		
Bicycle Parking: "human-powered vehicle"	Existing short-term: 4	Required short-term: TBD	Proposed short-term: TBD	
	Existing long-term: N/A	Required long-term: TBD	Proposed long-term: TBD	
Light and Glare:	N/A for Public designation - Verify with land use planner			



SITE CONSTRAINTS PLAN
SCALE: 1"=60'-0"



ZONING AND LAND USE SUMMARY

Address: 620 Alabama Street, Bellingham, WA 98225
 Parcel Numbers: 380319503076, 380319461052
 Lot Area: 45,479 SF (Pending Survey Verification)

REQUIREMENTS FOR MULTI-LOT DESIGN:

Covenant to bind lots may be required if proposed building straddles lot lines

MINIMUM PERFORMANCE STANDARDS:

Max Height: No Height Limit - To be regulated through SEPA and Design Review
 Setbacks*: 20 FT - Building setback from property lines abutting residential zones
 10 FT - Parking setback from property lines abutting residential zones
 (*Setbacks only req'd from land designated residential multi)
 Parking Ratio: 1-stall / 350SF of office use
 (Parking reduction up to 25% could be obtained pursuant to BMC 20.12.010.A.5)
 Street Trees: 1-tree / 50 lineal feet along Alabama Street and Iron Street

POTENTIAL DEPARTURES:

Code Section	Standard Summary
20.25.090B.1.a:	i. Buildings shall be located as close to rights-of-way as possible. ii. Buildings can be set back from right-of-way to allow for public open space, not parking. iv. Buildings contribute to a strong building wall edge to the street. This should not preclude the provision of a wider sidewalk, public space, landscaping, art, or outdoor seating.
20.25.090.B.1.c	i. Ground floor commercial space requirements
20.25.090.B.7.c	i. Blank walls are not permitted when visible from a public street, public park, trail or a shared property line with residentially zoned property. ii. A minimum of 60 percent of the building wall facing a public street, park, trail or plaza shall be transparent at a height between two feet and seven feet above grade.

DIRECTOR DETERMINATIONS:

Code Section	Standard Summary
20.25.090B.3.e:	i. Using parking ratio for manufacturing or warehouse because employees work in shifts and there are no public uses.

OTHER:**Fire Access:**

- The alley is not considered a fire access road due to the presence of power lines
- If the building is above 30'-0" a larger ladder apparatus will need to be accommodate
- Gates will be allowed, but require knock boxes for access in case of a fire
- There is a potential need for fire access from Texas street depending on building location and shape
- There are two hydrants on the west side of the site and one across the street, there is no anticipated need for additional hydrants on the site

Fences:

- The project should minimize additional fencing (Recommendation)
- Minimize opaque fencing (Recommendation)
- Shall not exceed height limitation of the zone

Alley Access:

- Do not use alley as primary access to provide residential buffer (Recommendation) Street Frontage Improvements
- Public Works will need to provide guidance

Trail Connections:

- Parks will need to provide guidance

Radio Tower:

- Wireless facility for emergency preparedness would be an allowed accessory use and exempt from needing a WCF permit.
- Setback for radio tower is equal to its height = 100'



What-Comm 911 NFPA 1225 (1221) Requirements Comparison					
	Requirement	What-Comm 911 Scope			Notes
		Full	Partial	None	
12.2 General					
12.2.1	Communications centers and alternate communications centers shall comply with Chapter 12.			N/A	
12.2.2	A comprehensive emergency management plan (CEMP) shall be in place for each communications center.				
12.2.2.1	The CEMP shall comply with the applicable requirements of NFPA 1600 and additional requirements specified in this document.				
12.2.2.2	The AHJ shall review the CEMP for currency and applicability annually.				
12.2.2.3	There shall be a management-approved, written, dated, and annually tested emergency fire plan that is part of the CEMP.				
12.2.2.4	There shall be a management-approved, written, dated, and annually tested damage control plan that is part of the CEMP.				
12.2.2.5	Each jurisdiction shall develop a tactical interoperable communications plan (TICP) utilizing TIA-603, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards, or a similar reference.				
12.2.2.6	The TICP shall be included in the comprehensive emergency management plan (CEMP).				
12.2.3	When provided, remote communications facilities shall comply with Section 12.11.				
12.2.4	Communications equipment shall be kept in working order at all times.				
12.2.5	Each center shall be provided with a designated primary means of communication that shall be compatible with the designated primary means of communication provided at the Emergency Response Facilities (ERFs).				
12.2.5.1	Each center shall be provided with an alternate means of communication that is compatible with the alternate means of communication provided at the ERFs.				
12.2.5.2	The alternate means shall be available to the telecommunicator in the event of failure of the primary communications system.				
12.2.6	Each jurisdiction shall maintain an alternate communications center that meets the criteria in 12.2.6.1 and 12.2.6.2.				
12.2.6.1	The alternate communications center shall be capable, when staffed, of performing the emergency functions performed at the primary communications center.				
12.2.6.2	The alternate communications center shall be separated geographically from the primary communications center at a distance that ensures the survivability of the alternate center.				
12.2.6.3	Each jurisdiction shall develop a formal plan to maintain and operate the alternate communications center.				
12.2.6.3.1	The plan shall include the ability to reroute incoming event and alarm traffic to the alternate center and to process and dispatch events at that center.				
12.2.6.3.2	The plan shall be included in the Comprehensive Emergency Management Plan (CEMP).				
12.2.6.4	When operations are from the alternate communications center, receipt, transfer, processing, and dispatching of alarms and events in accordance with the requirements of this standard shall not be dependent on the functioning of any equipment at the primary communications center.				

12.2.7	The communications center shall be capable of continuous operation long enough to enable the transfer of operations to the alternate communications center in the event of fire or other emergency in the communications center or in the building that houses the communications center.				
12.2.8	Systems that are essential to the operation of the communications center shall be designed to accommodate peak workloads as determined by the authority having jurisdiction (AHJ).				
12.2.9	Communications centers shall be designed to accommodate the staffing level necessary to operate the center as required by Chapter 15.				
12.2.10	The design of the communications center shall be based on number of personnel needed to handle peak workloads as determined by the AHJ.				
12.3 Exposure Hazards					
12.3.1	Where the building that houses the communications center is adjacent to another structure, the exposed walls shall be protected in compliance with NFPA 5000 or in compliance with the building code legally in effect, whichever is more restrictive.	X			
12.3.2	When the building that houses a communications center located within 150 ft of the collapse zone of a taller structure, the roof shall be designed to resist damage from collapse of the exposing structure.				
12.3.3	The lowest floor elevation of the communications center shall be above the 500 year flood plain established by the Federal Emergency Management Agency (FEMA).	X			
12.4 Construction					
12.4.1	Communication centers shall be located in buildings of Type I or II construction as defined by NFPA 220				
12.4.2	Buildings which house communication centers shall have Class A roof coverings	X			
12.4.3	Communications Centers shall be separated from other portions of buildings occupied for purposed other than emergency communications by fire barriers having a fire resistance rating of a 2 hours.				
12.4.4	Fire barriers shall comply with NFPA 100, Section 8.3				
12.4.5	Communications Centers shall not be located below grade unless the elevation of the lowest floor in the facility is above the 500 year flood plain.	X			Outside FEMA 0.2% flood hazard area
12.4.6	Communication Centers located below grade shall comply with 11.7.3 of NFPA 101 and be specifically designed for the location.				
12.4.7	The exposed surfaces of interior walls and ceiling shall have a flame spread index of 25 or less and a smoke development index of 50 or less when tested in accordance with ASTM E84.	X			
12.4.8	Interior floor finish shall comply with the requirements of NFPA 101 interior floor finish testing and classification shall be Class 1 as established by NFPA 101 or shall have a minimum critical radiant flux of 0.1W/CM ²	X			
12.4.9	The operations room shall be equipped with a toilet facility and a lunch room area that are directly accessible to the telecommunicators within the secured area as required by Section 12.7				
12.4.9.1	Communications centers shall be provides with backup facilities for sanitation and drinking water to provide for the health and safety of employees during extended periods of failure of public water and sewer systems.			X	
12.4.10	The communications center or that portion of the building to be utilized as a communications center shall be protected against seismic damage in accordance with NFPA 90A and NFPA 90B				
12.5 Climate Control					

12.5.1	HVAC shall be provided in accordance with NFPA 90A and NFPA 90B				
12.5.1.1	HVAC systems shall be designed to maintain temperature and relative humidity within limits specified by the manufacturers of the equipment critical to the operation of the communications center as designated by the AHJ				
12.5.1.1.1	Separate temperature and humidity controls shall be provided for each equipment room, for the operations room, for office areas, and for other spaces designated by the AHJ				
12.5.1.2	HVAC systems shall be independent systems that serve only the communications center				
12.5.1.3	HVAC system intakes for fresh air shall be arranged to minimize smoke intake from a inside or outside the building and to resist intentional introduction of irritating noxious, toxic or poisonous substances in the HVAC system.				
12.5.1.4	Emergency controls shall be provided in the operations room to permit closing of outside air intakes				
12.5.1.5	Backup HVAC systems shall be provided for the operations room and other spaces housing electronic equipment determined by the AHJ to be essential to the operations of the communications center				
12.5.1.6	Backup or redundant HVAC units shall be capable of receiving power from all power sources required by 12.8				
12.5.1.7	HVAC system shall be designed so that the communication center is capable of uninterrupted operation with the largest single HVAC unit or component out of service				
12.5.1.8	Primary and backup HVAC systems shall be capable of operating from the normal power source required by 12.8.2 and the alternative power source required by 12.8.3.				
12.5.1.9	Primary and backup/redundant HVAC units shall be located to prevent tampering, vehicle impact or introduction of hazardous / noxious chemicals or odors.	X			
12.5.2	Penetrations into the communications shall be limited those necessary for the operation of the center.	X			
12.6 Fire Protection					
12.6.1	Communications center shall be provided with extinguishers that meet requirements of NFPA 10.	X			
12.6.2	Communications center and spaces adjoining the communications shall be provided with an automatic fire detection, alarm, and notification system in accordance with NFPA 72.		X		A fire alarm system will be provided per Code requirements. If smoke detection is not required by code, for example, it will be not provided.
12.6.2.1	The alarm system shall be monitored in the operations room.	X			A remote annunciator will be provided on the dispatch floor.
12.6.2.2	Operation of notification appliances shall not interfere with communications operations.				A fire alarm system will be provided per Code requirements.
12.6.3	The building tha houses the communications center shall be protected throughout by an approved, supervised automatic sprinkler system that complies with NFPA 13.	X			
12.6.4	Supervision shall be in accordance with 9.7.2 of NFPA 101				Review NFPA 101
12.6.5	Electronic computer and data processing equipment shall be protected in accordance with NFPA 75.		X		NFPA 75 is not a code requirement in this project.
12.7 Security					
12.7.1	The communications center and other buildings that house essential operating equipment shall be protected against damage from vandalism, terrorism, and civil disturbances.	X			
12.7.2	Entry to the communications center and other buildings and structures which contain equipment essential to the operations of the communications system shall be restricted ot authorized persons.	X			Card readers are being provided that restrict access.

12.7.2.1	Potential points for unauthorized entry as determined by the AHJ shall be protected by an electric intrusion detection system.		X		Card readers will be provided at building entry doors.
12.7.2.2	The intrusion detection system shall be annunciated in the operations room and at another location designated by the AHJ.	X			
12.7.3	Entryways to the communications center shall be protected by a security vestibule				
12.7.3.1	Door openings shall be protected by listed, self-closing fire doors that have a fire resistance rating of not less than 1 hour	X			
12.7.3.2	Door openings shall be protected by listed, self-closing doors that are rated for bullet resistance to Level 4 as defined in UL 752, <i>Standard for Bullet-Resistant Equipment</i> .				
12.7.4	Where a communications center has windows, the requirements of 12.7.4.1 through 12.7.4.5 shall apply				
12.7.4.1	Window sills on all direct exterior windows shall be a minimum of 4 ft (1.2 m) above floor level or 4 ft (1.2 m) above finished grade, whichever is higher.				
12.7.4.2	Direct exterior windows shall be rated for bullet resistance to Level 4 as defined in UL 752, <i>Standard for Bullet-Resistant Equipment</i> .				
12.7.4.3	Direct exterior windows that are not bullet resistant shall be permitted, provided that they face a secured area that cannot be accessed or viewed from outside the secured perimeter of the communications center.				
12.7.4.4	Direct exterior windows that are required to be bullet resistant shall be configured so that they cannot be opened.				
12.7.4.5	Direct exterior windows shall be arranged so that it is not possible to view the interior of the communications center from outside the secured perimeter.				
12.7.5	Perimeter walls shall be designed and constructed to provide the same level of ballistic protection as that required for windows.				
12.7.6	Means shall be provided to prevent unauthorized vehicles from approaching the building housing the communications center to a distance of no less than 82 ft (25 m).				
12.7.7	As an alternative to 12.7.6, unauthorized vehicles shall be permitted to approach closer than 82 ft (25m) if the building has been designed to be blast resistant, as approved by the AHJ.				
12.8 Power					
12.8.1	Each communications center shall be provided with a critical operations power system in compliance with NFPA 70.	X			
12.8.1.1	Designated critical operations areas (DCOAs) shall include the operations room, information technology (IT) rooms, telephone room, electrical equipment rooms, mechanical equipment rooms, fire protection equipment rooms, sanitary facilities, and other spaces and equipment designated by the AHJ as requiring critical operations power.		X		There is no space designated for critical equipment. Circuits will be provided for critical equipment that meets the requirements of NEC 708.
12.8.1.2	At least two independent and reliable power sources shall be provided, one primary and one emergency, and each shall be of adequate capacity for operation of the communications center.				
12.8.1.3	Power sources shall be monitored for integrity, with annunciation provided in the operations room.				
12.8.1.4	In addition to the two power sources required by 12.8.1.2, a means for connecting a portable or vehicle-mounted generator shall be provided.				
12.8.1.5	The means shall include an outdoor weatherproof power connector and a manual disconnecting means for the power connector. The disconnecting means shall connect to the center's power system on the load side of the automatic transfer switch required by 12.8.3.2.				
12.8.1.6	Wiring methods for feeders, branch circuits, and any control wiring utilized in the delivery of power for the operation of the communications center shall be designed in accordance with NFPA 70.	X			

12.8.2	Primary Power Source. One of the following shall supply primary power: (1) A feed from a commercial utility distribution system (2) An approved engine-driven generator installation or equivalent under the control of communications center staff, designed for continuous operation, and with a person specifically trained in its operation on duty at all times (3) An approved engine-driven generator installation or equivalent under the control of communications center staff, arranged for cogeneration with commercial light and power, and with a person specifically trained in its operation on duty at all times	X			Option 1 is being provided for Primary power.
12.8.3	Emergency Power Supply				
12.8.3.1	The emergency power supply system shall consist of one or more engine-driven generators installed in accordance with NFPA 70.	X			One generator is being provided on Day One.
12.8.3.2	Upon failure of primary power, transfer to the standby emergency supply system shall be automatic.	X			
12.8.4	Engine-Driven Generators				
12.8.4.1	Engine-driven generators shall conform with the provisions of Chapter 4 of NFPA 37 and with NFPA 110.	X			
12.8.4.2	Engine-driven generators shall conform with the provisions of NFPA 110, Type 10, Level 1, Class 72.	X			
12.8.4.2.1	The AHJ shall be permitted to require a higher class if necessary to comply with CEMP				
12.8.4.3	Engine-driven generators shall be sized to supply power for the operation of all functions of the communications center and for any additional loads determined by the AHJ.	X			
12.8.4.4	When installed indoors, engine-driven generators shall be located in a ventilated and secured area that is separated from the communications center by fire barriers having a fire resistance rating of 2 hours.	N/A			No generator will be located indoors
12.8.4.5	Fire barriers shall comply with NFPA 101, Section 8.3.				Team to review
12.8.4.6	When installed outdoors, engine-driven generators shall be located in a secure enclosure concealed from public view and accessible only to authorized personnel.				Enclosure will be lockable. Level to which it is concealed depends on the nature of the fencing.
12.8.4.6.1	The enclosure shall be capable of resisting the entrance of precipitation at the maximum wind velocities referenced in NFPA 5000 or in accordance with the building code legally in effect, whichever is more restrictive.				
12.8.4.6.2	The enclosure shall be capable of resisting penetration by small arms fire. Doors, and windows if provided, shall be rated for bullet resistance to Level 4 as defined in UL 752, <i>Standard for Bullet-Resistant Equipment</i> .				
12.8.4.6.3	The enclosure shall be equipped with an intrusion detection system complying with NFPA 731 that shall be monitored in the operations room and at another location designated by the AHJ.				
12.8.4.7	The area that houses an engine-driven generator shall not be used for storage other than spare parts or equipment related to the generator system.				
12.8.4.8	Liquid fuel shall be stored in accordance with NFPA 37.	X			
12.8.4.9	Liquid fuel for engine-driven generators shall not use a gravity-fed system.	X			
12.8.4.10	Natural gas installations shall comply with NFPA 54.	N/A			
12.8.4.11	Liquefied petroleum gas (LPG) installations shall comply with NFPA 58.	N/A			
12.8.4.12	Fuel to operate an engine-driven generator for 72 hours at full load shall be available on site.				
12.8.4.12.1	Diesel fuel shall be maintained and tested at regularly scheduled intervals as determined by the AHJ.				This is an Owner procedural issue.

12.8.4.12.2	Fuel tank levels shall be monitored electronically in the operations room. A low-fuel supervisory alert shall be annunciated when the fuel level in a tank drops to two-thirds rated capacity. The AHJ shall be permitted to designate additional levels for tank level annunciation.	X			
12.8.4.12.3	A dedicated fuel tank shall be provided for each engine.				
12.8.4.13	Equipment essential to the operation of the generator shall be supplied with standby power from the generator.				
12.8.4.14	Generators shall not use the public water supply for engine cooling.	X			
12.8.4.15	The engine conditions requiring remote audible annunciation for Level 1 systems in NFPA 110, Table 5.6.5.2, shall be individually visually annunciated in the operations room.	X			
12.8.4.15.1	In addition to the visual annunciation, an audible signal common to all annunciated signals shall be provided.	X			
12.8.4.15.2	A silencing switch for the audible signal in the operations room shall be permitted on the condition that when all supervisory signals have cleared, the silencing circuit will automatically reset or the audible alert will re-sound as a reminder to restore the switch to normal.	X			
12.8.5	Power Circuits. Power circuits, together with their associated motors, generators, rectifiers, transformers, fuses, and controlling devices, shall be installed in accordance with NFPA 70 and the requirements of this subsection.	X			
12.8.5.1	Primary power shall be obtained from the line side of the main service disconnect switch of the connection to a commercial utility distribution system or to the main conductors from an isolated power plant that is located on the premises.				
12.8.5.2	Power shall be permitted to be obtained from the load side of the main service disconnect switch only when the building is used exclusively for housing of emergency communications facilities.	X			
12.8.5.3	Power circuit conductors shall not be installed in conduit that is used for other circuits.	X			
12.8.5.4	The power circuit disconnecting means shall be installed so that it is accessible only to authorized personnel.	X			
12.8.6	Surge Protective Devices (SPDs)				
12.8.6.1	SPDs shall be provided in accordance with NFPA 70.	X			
12.8.6.2	SPDs shall be installed in accordance with NFPA 70 for protection of telecommunications equipment, two-way radio systems, computers, and other electronic equipment determined by the AHJ to be essential to the operation of the communications center.	X			
12.8.7	Single-Point Facility Grounding System. Telecommunications equipment, two-way radio systems, computers, and other electronic equipment determined by the AHJ to be essential to the operation of the communications center shall be bonded to the single-point facility ground system in accordance with NFPA 70.	X			
12.8.8	Uninterrupted Power Supply				
12.8.8.1	In addition to the required engine-driven generators, an uninterruptible power supply system shall be provided. It shall comply with the requirements of 12.8.8 and NFPA 70.	X			
12.8.8.2	The UPS shall provide conditioned, uninterrupted power to telecommunications equipment, two-way radio systems, IT equipment, and other sensitive electronic equipment determined by the AHJ to be essential to the operation of the emergency communication systems.	X			
12.8.8.3	The UPS shall be sized to carry the connected load for the length of time required to transfer operations to the alternate communications center as determined by the AHJ in connection with the CEMP, but in no case less than 15 minutes (Class 0.25.)		X		

12.8.8.4	The UPS shall provide performance equivalent to Type O or Type U stored emergency power supply system (SESS) as specified in Table 4.2.2 of NFPA 111.	X			<i>NFPA111 is the Standard on Stored Electrical Energy Emergency and Standby Power Systems. UPSs are not considered either an Emergency or legally required standby system as defined by the National Electrical Code</i>
12.8.8.5	The UPS shall meet the SESS requirement for Level 1 as defined by NFPA 111.			X	<i>NFPA111 is the Standard on Stored Electrical Energy Emergency and Standby Power Systems. UPSs are not considered either an Emergency or legally required standby system as defined by the National Electrical Code</i>
12.8.8.6	Each UPS shall be provided with a bypass switch that maintains the power connection during switchover and that is capable of isolating all UPS components while allowing power to flow from the source to the load.	X			
12.8.8.7	The following UPS conditions shall be annunciated in the operations room: (1) Source power failure, overvoltage, and undervoltage (2) High and low battery voltage (3) UPS in bypass mode	X			
12.9 Lighting					
12.9.1	General	X			
12.9.1.1	Artificial lighting shall be provided to enable personnel to perform their assigned duties.	X			
12.9.1.2	Lighting intensity shall be in accordance with IESNA HB-9-00, Lighting Handbook. <i>The Lighting Handbook.</i>				
12.9.1.3	Lighting circuits, together with their associated motors, generators, rectifiers, transformers, fuses, and controlling devices, shall be installed in accordance with NFPA 70.	X			
12.9.2	Emergency Lighting				
12.9.2.1	The communications center shall be equipped with emergency lighting that illuminates automatically within 15 seconds of failure of normal lighting power.	X			Lighting will have generator back-up.
12.9.2.1.1	Illumination levels shall be sufficient to allow all essential operations.	X			
12.9.2.2	In addition to the requirement of 12.9.2.1, the operations room shall be equipped with redundant emergency lighting provided by individual unit equipment in accordance with NFPA 70.				
12.9.2.3	Individual unit equipment emergency lighting shall be provided at locations of communications equipment situated outside the operations room and at the locations of engine-driven generators.				
12.10.0	Lighting. Buildings that house communications centers shall have lightning protection that complies with NFPA 780.				
13.0 Communications and Signal Wiring					
13.1	Circuit Construction and Arrangement				
13.1.1	Installation Shall be in accordance with NFPA 70.				
13.1.2	As an alternative to 13.1.1, installation of outdoor circuitry shall be in accordance with IEEE C2, <i>National Electrical Safety Code</i> , where approved by the AHJ.				
13.1.3	Circuits shall be routed so as to avoid damage due to mechanical injury, fire, falling walls, floods, corrosive vapors, and other risks that are identified in the CEMP				
13.1.3.1	Alternative communications centers shall comply with the requirements of Chapter 12				
13.1.4	All circuits shall be routed to allow circuits to be traced				
13.1.5	Record Drawings shall be provided as required by Chapter 21				

13.1.6	Circuits Shall not pass over, pass under, pass through, or be attached to buildings or property that is not owned by, or under the control of, the AHJ or the entity that is responsible for maintaining the system.				
13.1.7	Alarm instruments installed in buildings not under the control of the AHJ shall be on separate designated circuits				
13.1.8	The combination of public emergency services communication and signaling (C&S) circuits in the same cable with other circuits shall comply with 13.1.8.1 and 13.1.8.2.				
13.1.8.1	Other municipally controlled C&S circuits shall be permitted.				
13.1.8.2	Circuits of private signaling organizations shall be permitted only by permission of the AHJ.				
13.2	Circuit Conductors				
13.2.1	Wires, conductors and fiber-optic strands shall be terminated in order to prevent breaking due to vibration or stress.				
13.2.2	Circuit conductors and fiber-optic cables on terminal racks shall be identified and isolated from conductors of other systems wherever possible and shall be protected from mechanical injury.				
13.2.3	Fiber-optic cables containing metallic protection or strength members shall be grounded and protected in accordance with NFPA 70.				
13.2.4	Wiring for control equipment shall be not smaller than 24 AWG				
13.2.5	Unsupported wires and wires that are subject to vibration shall be not smaller than 18 AWG.				
13.2.6	The insulation and outer jacket of cables and wiring shall be flame retardant and moisture resistant.				
13.2.7	Exterior metallic, fiber-optic cables and wires shall conform to International Municipal Signal Association (IMSA) specifications or an approved equivalent, except where circuit conductors or fiber-optic strands are provided by a public utility on a lease basis.				
13.3	Underground Cables				
13.3.1	Underground metallic and fiber-optic communication and signal cables in ducts or of the direct burial type shall be permitted to be brought above ground only at locations approved by the AHJ.				
13.3.1.1	Protection from physical damage or heat incidental to fires in adjacent buildings shall be provided.				
13.3.2	Underground cables installed in ducts, vaults, and manholes shall comply with 13.3.2.1 through 13.3.2.2.				
13.3.2.1	Metallic and fiber-optic communication and signal cables shall be permitted to be located only in duct systems, manholes, and vaults that contain low-voltage C&S system conductors, secondary power cables not exceeding 600 volts nominal, or both.				
13.3.2.2	Where located in duct systems or manholes that contain conductors of other circuits operating in excess of 250 volts to ground, metallic and fiber-optic communication and signal cables shall be located as far as possible from such power cables and shall be separated from them by a noncombustible barrier or other means approved by the AHJ to protect the communication and signal cables from physical damage.				
13.3.3	All cables that are installed in manholes, vaults, handholes, and other enclosures shall be racked and marked for identification.				
13.3.4	All raceways or ducts entering buildings from underground duct systems shall be effectively sealed with an identified sealing compound or other means acceptable to the AHJ to prevent moisture or gases from the underground duct system from entering the building.				
13.3.5	Cable splices, taps, and terminal connections shall be located only where accessible for maintenance and inspection and where the AHJ has determined that no potential for damage to the cable due to falling structures or building operations exists.				

13.1.6	Circuits Shall not pass over, pass under, pass through, or be attached to buildings or property that is not owned by, or under the control of, the AHJ or the entity that is responsible for maintaining the system.				
13.1.7	Alarm instruments installed in buildings not under the control of the AHJ shall be on separate designated circuits				
13.1.8	The combination of public emergency services communication and signaling (C&S) circuits in the same cable with other circuits shall comply with 13.1.8.1 and 13.1.8.2.				
13.1.8.1	Other municipally controlled C&S circuits shall be permitted.				
13.1.8.2	Circuits of private signaling organizations shall be permitted only by permission of the AHJ.				
13.2	Circuit Conductors				
13.2.1	Wires, conductors and fiber-optic strands shall be terminated in order to prevent breaking due to vibration or stress.				
13.2.2	Circuit conductors and fiber-optic cables on terminal racks shall be identified and isolated from conductors of other systems wherever possible and shall be protected from mechanical injury.				
13.2.3	Fiber-optic cables containing metallic protection or strength members shall be grounded and protected in accordance with NFPA 70.				
13.2.4	Wiring for control equipment shall be not smaller than 24 AWG				
13.2.5	Unsupported wires and wires that are subject to vibration shall be not smaller than 18 AWG.				
13.2.6	The insulation and outer jacket of cables and wiring shall be flame retardant and moisture resistant.				
13.2.7	Exterior metallic, fiber-optic cables and wires shall conform to International Municipal Signal Association (IMSA) specifications or an approved equivalent, except where circuit conductors or fiber-optic strands are provided by a public utility on a lease basis.				
13.3	Underground Cables				
13.3.1	Underground metallic and fiber-optic communication and signal cables in ducts or of the direct burial type shall be permitted to be brought above ground only at locations approved by the AHJ.				
13.3.1.1	Protection from physical damage or heat incidental to fires in adjacent buildings shall be provided.				
13.3.2	Underground cables installed in ducts, vaults, and manholes shall comply with 13.3.2.1 through 13.3.2.2.				
13.3.2.1	Metallic and fiber-optic communication and signal cables shall be permitted to be located only in duct systems, manholes, and vaults that contain low-voltage C&S system conductors, secondary power cables not exceeding 600 volts nominal, or both.				
13.3.2.2	Where located in duct systems or manholes that contain conductors of other circuits operating in excess of 250 volts to ground, metallic and fiber-optic communication and signal cables shall be located as far as possible from such power cables and shall be separated from them by a noncombustible barrier or other means approved by the AHJ to protect the communication and signal cables from physical damage.				
13.3.3	All cables that are installed in manholes, vaults, handholes, and other enclosures shall be racked and marked for identification.				
13.3.4	All raceways or ducts entering buildings from underground duct systems shall be effectively sealed with an identified sealing compound or other means acceptable to the AHJ to prevent moisture or gases from the underground duct system from entering the building.				
13.3.5	Cable splices, taps, and terminal connections shall be located only where accessible for maintenance and inspection and where the AHJ has determined that no potential for damage to the cable due to falling structures or building operations exists.				

13.5.2	Where installed in buildings, conductors and fiber-optic cables shall be installed in accordance with NFPA 70 in any one of the following wiring methods: (1) Electrical metallic tubing (2) Intermediate metal conduit (3) Rigid metal conduit (4) Surface metal raceways (5) Reinforced thermosetting resin conduit (RTRC) (6) Metallic cable trays				
13.5.2.1	Rigid polyvinyl chloride conduit shall be permitted where approved by the AHJ.				
13.5.3	Wire, conductors, and metallic and fiber-optic cables shall have approved insulation in accordance with NFPA 70.				
13.5.4	The insulation, cable sheath or jacket for wire, conductors, and fiber-optic cables shall have an approved insulation in accordance with NFPA 70.				
13.5.5	Conductors and fiber-optic cables shall be installed as far as possible without splices or joints.				
13.5.5.1	Splices or joints shall be permitted only in listed junction terminal boxes, enclosures, or other approved termination devices.				
13.5.5.2	Wire and fiber-optic terminals, terminal boxes, splices, and joints shall conform to NFPA 70.				
13.5.5.3	Communications and signal circuits where installed in junction terminal boxes, enclosures, or other approved termination devices, shall be identified by the use of a distinctive color on covers or doors of such devices.				
13.5.5.4	The words "emergency communication-signal circuit" shall be clearly marked on all terminal and junction locations to prevent unintentional interference.				
13.5.6	Conductors that are installed in a vertical riser that connects two or more floors shall meet the requirements of riser-rated cable and installation in accordance with NFPA 70.				
13.5.7	Metallic and fiber-optic cable terminals and cross-connecting facilities shall be located either in or adjacent to the operations room.				
13.5.8	At the communications center, metallic and fiber-optic cable terminals and cross-connecting facilities shall be located either in or adjacent to the operations room.				
13.5.9	Where signal conductors, non-dielectric fiber-optic cables, and electric light and power wires are run in the same shaft, they shall be separated by at least 2 in. (51 mm), or each system shall be encased in a noncombustible enclosure.				
13.5.10	All wired dispatch circuit devices and instruments whose failure can adversely affect the operation of the system shall be mounted in accordance with the following: (1) On noncombustible bases, pedestals, switchboards, panels, or cabinets (2) With mounting designed and constructed so that all components are readily accessible				
13.6	Surge Protection				
13.6.1	Surge protection required at the communications center shall be provided in all buildings that house communications center equipment.				
13.6.1.1	Grounded and ungrounded conductors that enter a communications center shall be protected by a surge-protective device (SPD).				
13.6.1.2	Equipment grounding conductors and bonding jumpers shall not be connected to the SPD.				
13.6.1.3	Wired communications circuits shall have an SPD installed at the point of entrance to the communications center.				
13.6.1.4	Each conductor that enters a communications center from a partially or entirely aerial line shall be protected by an SPD.				
13.6.1.5	A surge protective device shall be required on all alternating-current electrical power circuits providing power to communications center equipment.				

13.6.1.5.1	Surge protective devices for alternating-current power circuits shall have either audible alarm status notification or a dry contact circuit for remote notification status.				
13.6.1.6	A surge protective device shall be required on all external metallic antenna cabling that directly terminates to communications center equipment.				
13.6.1.7	A surge protective device is required on any data or signal communication circuits that are terminated between the fire alarm control system and communications center equipment.				
13.6.2	All SPDs shall be connected to the single-point facility ground in accordance with NFPA 70.				
13.6.3	The SPDs shall be either located in proximity to or combined with the cable terminals.				
13.6.4	SPDs shall be designed and listed for the specific application.				
13.6.5	All designed and approved protective devices shall be installed at a location accessible only to qualified persons, marked with the name of the manufacturer and the model designation.				
13.6.6	All SPDs shall be accessible for maintenance and inspection.				
13.6.7	Where the SPDs are located outside in damp or wet locations, their enclosures shall be watertight or protected from the weather.				
13.6.8	Where the SPDs are located indoors, they shall be installed in a minimum NEMA Type 1 enclosure or enclosure listed for the unit.				
13.6.9	At the junction points of open aerial conductors and cable, each conductor shall be protected by an SPD in accordance with 13.6.9.1 and 13.6.9.2.				
13.6.9.1	The SPD shall be weatherproof or protected from the weather.				
13.6.9.2	A connection shall be provided between the SPD ground and any metallic sheath and messenger wire.				
13.6.10	Two-conductor cable circuits shall be protected by SPDs at intervals of approximately 2,000 ft (610 m).				
13.6.11	Buildings that house communications equipment shall have lightning protection that complies with NFPA 780.				
13.7	Fuses				
13.7.1	All fuses, fuseholders, and adapters shall be clearly marked with their ampere rating.				
13.7.2	All fuses that are rated over 2 amperes shall be of the enclosed type.				
13.7.3	Fuses shall be located only at the power source.				
13.8	Grounding				
13.8.1	Sensitive electronic equipment determined by the AHJ to be essential to the operation of telecommunications and dispatching systems shall be connected to the single-point facility ground in accordance with NFPA 70.				
13.8.2	Listed isolated ground receptacles in accordance with NFPA 70 shall be provided for all cord-and-plug-connected essential and sensitive electronic equipment.				
13.8.3	Where required by the AHJ, unused wire or cable pairs shall be grounded.				
13.8.4	Ground connection for surge suppressors shall be made to the single-point facility ground system in accordance with NFPA 70.				
13.9	Access. All equipment shall be accessible for the purpose of maintenance.				
14.0 Emergency Response Facilities					
14.1	General. A primary and a secondary means of dispatch notification shall be provided at the ERF and comply with 14.1.1 and 14.1.2.				
14.1.1	The primary means of dispatch notification at the ERF shall be compatible with the primary means of dispatch notification that is provided at the communications center.				
14.1.2	The secondary means of dispatch notification at the ERF shall be compatible with the secondary means of dispatch notification that is provided at the communications center.				

14.1.3	Dispatch notification equipment shall be kept in working order at all times.				
14.1.4	A publicly accessible means for reporting events to the communications center shall be provided on the exterior of the ERF.				
14.2	Commercial Telephone.				
14.2.1	A commercial telephone shall be provided at each emergency response facility.				
14.2.2	When no other means of voice communication between the communications center and an ERF is provided, the telephone at the ERF shall be arranged so that it cannot be used by the public.				
14.3	Fire protection. Fire protection shall be provided as required by NFPA 5000 or in accordance with the building code legally in force, whichever is more restrictive.				
14.3.1	Sprinkler systems shall comply with NFPA 13.				
14.3.2	Fire alarm systems shall comply with NFPA 72.				
14.4	Power. Two independent and reliable power sources shall be provided, each of which shall be of adequate capacity for operation of the communications equipment.				
14.5	Lighting.				
14.5.1	Lighting shall be provided to enable personnel to operate communications equipment that is used for the receipt of alarms and events.				
14.5.2	Emergency lighting shall be provided in accordance with NFPA 101, Section 7.9.				
14.6	Communications Conductors. Communications conductors in an ERF shall be installed in accordance with NFPA 70.				
14.6.1	Circuit protection shall be in accordance with Section 13.6.				
14.6.2	Lightning protection shall be in accordance with Section 12.10.				

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APPENDIX C:

ELECTRICAL NARRATIVE

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What-Comm 911 NEC 708 vs NFPA 1225 (1221) Requirements Comparision			
Requirement	NEC 708	NFPA 1225	Notes
General			
Follow NEC 708	X	X	
Generator Systems			
Always provide a portable generator connection system	X	X	
Provide a portable generator connection system only if there is a single generator feed to the building	X		
Provide bypass/isolation transfer switch if there is a single generator feed to the building.	X		Bypass/isolation allows for manual override and maintenance while maintaining power to the load.
Conceal generator from public view		X	
Generator shall resist small arms fire		X	Potential design alternate - CMU protective enclosure.
Generator shall have intrusion detection system		X	
Generator shall have 72 hours of fuel	X	X	
A dedicated fuel tank shall be provided for each engine		X	
Provide generator remote annunciator in the dispatch area.		X	
Surge Protection			
Provide surge protection to protect electronics		X	
Provide surge protection at all voltage levels.	X		
Uninterruptible Power Supply			
Provide UPS for sensitive electronic equipment.		X	
Provide UPS battery time that is sufficient to transfer operations to alternate site, but no less than 15 minutes.		X	
UPSs shall have an external maintenance bypass cabinet		X	
UPS shall have a remote annunciator in the dispatch area.		X	
Lighting			
Provide battery backed lights in the dispatch area, data center, and generator location.		X	
Lightning Protection			
Provide lightning protection system		X	
Low Voltage Cabling			
Cabling for fire alarm, security, emergency communications, and signaling systems shall be riser rated and 2-hour rated.	X		
Cabling for control, monitoring, and power wiring to HVAC systems shall be 2-hour rated cabling.	X		
Tele/Data Systems			
Provide redundant telecom entries to the building.		X	



**WHAT-COMM-911
ELECTRICAL & TECHNOLOGY
NARRATIVE**

April 24, 2024

Prepared for:
SHKS

Prepared by:
Tim Janof, PE

Project Number:
204822686

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Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date



Project Number: 204822686

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The conclusions in the Report titled What-Comm-911 are Stantec’s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

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Prepared by: _____
Signature

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Reviewed by: _____
Signature

Printed Name

Approved by: _____
Signature

Printed Name



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EXECUTIVE SUMMARY

What-Comm 911 will build a new 911 dispatch facility on its existing property at 620 Alabama Street, Bellingham, WA 98225. Once the new facility is complete, the existing facility will be removed. This report outlines our understanding of the Electrical and Technology requirements for this facility.



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ACRONYMS / ABBREVIATIONS

A	Amps
AHJ	Authority Having Jurisdiction
ATS	Automatic Transfer Switch
COPS	Critical Operations Power System
DCOA	Designated Criteria Operations Area
EPO	Emergency Power Off
EV	Electric Vehicle
kVA	kilovolt-amperes
kW	kilowatts
LPS	Lightning Protection System
MEP	Mechanical, Electrical, Plumbing
MTS	Manual Transfer Switch
NEC	National Electrical Code
NFPA	National Fire Protection Association
PV	Photovoltaic
SnoPUD	Snohomish PUD
STS	Static Transfer Switch
UPS	Uninterruptible Power Supply
V	Volts
VRLA	Valve Regulated Lead Acid
A	Amps
AHJ	Authority Having Jurisdiction
ATS	Automatic Transfer Switch



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1 CHAPTER 1 – CODE REQUIREMENTS

911 Centers are deemed necessary for public safety, which requires that continuity of operation be safeguarded by the installation of systems that meet the requirements of NEC 708. Though not considered a requirement in the State of Washington, NFPA 1225 is another standard that 911 Center designers consult.

1.1 NEC 708

NEC 708, Critical Operations Power Systems (COPS), has several requirements for this project. The key requirements are as follows:

1.1.1 RISK ASSESSMENT

A formal risk assessment is required for this project. This assessment must look at several categories of risk:

- Naturally Occurring Disasters (geological, meteorological, biological)
- Human-caused events (accidental and intentional)

It is our assumption that this Risk Assessment is being performed by a separate consultant

1.1.2 CYBERSECURITY

The Critical Operations Power System must account for cybersecurity. The ability to control the system shall be limited to a local non-networked interface, or connected to a local network that has the following features:

- A system and its software that has been evaluated for cybersecurity.
- An onsite assessment of cybersecurity vulnerabilities.

1.1.3 COMMISSIONING

The system shall be commissioned not only for individual component functionality but also for overall system performance.

1.1.4 ELECTRICAL SYSTEM

- Receptacles shall have an indicator light.
- Feeders shall be in RGS or IMC conduit, or use MI cable, unless they are encased in 2" of concrete.



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- Feeders shall have 2-hour protection, whether using a UL listed system or installed in a listed 2-hour assembly.
- Feeders installed below the 100-year flood plain shall be installed per the requirements of wet locations.
- Panelboards that serve the dispatch floor need to be on the same floor.
- Electrical rooms shall be 2-hour rated and be located above the 100-year flood plain.
- Surge protective devices shall be provided at all voltage levels.
- A portable generator connection shall be provided if the building is supplied by a single generator.
- The generator shall be sized to run for an unlimited number of hours. i.e. continuous duty rated.
- The generator shall have 72 hours of fuel at full load of the dispatch area. NFPA 1225 also requires this.
- Bypass/isolation transfer switches shall be provided if there is only one transfer switch for the 911 function.
- Two levels of ground fault protection is required if the main service disconnect has ground fault protection.
- The electrical system shall be selectively coordinated.

1.1.5 LOW VOLTAGE SYSTEMS WIRING

- All cable shall be in conduit and use shielded cable.
- Optical fiber shall be used between buildings, where applicable.
- All cable shall be riser rated and 2-hour rated. It needs to be confirmed if this applies to tele/data and radio system cable, or if it is just for low voltage systems such as fire alarm, security, intercom, and paging.

1.2 NFPA1225

While NFPA 1225 is not enforced in the State of Washington, there are recommendations in this code that should be reviewed:

- The communications center shall be capable of continuous operation long enough to enable transfer of operations to an alternate communications center. [This typically affects UPS battery time]



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- The data center shall be built per NFPA 75. [This typically requires a rated room for the data center]
- Power sources shall be monitored for integrity, with annunciation provided in the dispatch area. [This would likely include generator and UPS remote annunciators].
- Portable generator connection system. This connects on the load side (output) of the transfer switch. [If this project has two generators, this is not required by NEC 708].
- Bullet-proof generator (from small arms fire) enclosure with intrusion detection. [Past projects have installed generators in a CMU block wall enclosure to meet the intent of this code].
- Dedicated fuel tank for each engine. [It needs to be determined if each 8-12 hour belly tank meets this requirement, or does each generator need its own 72-hour tank?]
- Power can be obtained from the load side of a service disconnect only if the building is dedicated to the EOC [We believe the entire building can be considered an EOC in this project.]
- UPS shall have 15 minutes of battery minimum.
- Each UPS shall have an external maintenance bypass.
- Lightning protection shall be provided.
- All conductors and fiber optic cables shall be in conduit or metallic cable trays.

2 CHAPTER 2 - ELECTRICAL

2.1 EXISTING ELECTRICAL SYSTEM

The existing electrical system is comprised of four main components: utility power service, diesel generator, emergency system, and optional standby system.

2.1.1 EXISTING ELECTRICAL UTILITIES

The existing utility is Puget Sound Energy. The existing building is fed by an overhead service. We anticipate the new building will require an underground service and a padmount transformer on site. Other existing electrical system components (existing main switchboard, transfer switches, and generator) are expected to be removed from the site once the facility is operational.

2.2 LOAD CALCULATIONS

The following is preliminary load calculation using high level square foot load estimates. A more detailed load analysis will be provided once during future design phases.



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LOAD CALCULATION					
Floor	SF	Watts/sf	kW		
Lighting	9,585	1	9.6		
General Power	9,585	5	47.9		
Server Room	340	75	25.5		
Mechanical	9,585	25	239.6		
Kitchen	440	65	28.6		
Audiovisual	9,585	0.5	4.8		
Misc	9,585	5	47.9		
Site	EV Car Charging		25		
Total			428.9	476.6	571
			kW	kVA at 0.9 pf	Amps

We anticipate providing a 600-800 amp, 480Y/277V service to the building.

2.3 GENERATOR POWER

We anticipate providing generator back-up for the following areas, but we expect other areas may be discussed:

- Console Room
- Shift supervisor office
- Training Room, with the assumption that it doubles as a critical conference room.
- Server Room.
- Radio system
- IT Work Room and IT Office
- Training Room
- Kitchen break area
- Executive director office
- Deputy director office



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We anticipate the generator being 350-500kW. There may be two generators for redundancy if the budget allows. A generator transfer switch could be provided if there are two generators, which switches the system to the alternate generator if the first one fails.

2.3.1 FUEL TANK

The generator requires 72-hour tank. We assume this will be above ground, rated UL 2085, with a fuel spill and level monitoring system.

2.3.2 PORTABLE GENERATOR CONNECTION SYSTEM

NEC 708 requires a portable generator connection system when there is only one generator. NFPA 1225 requires a portable generator connection system on the output of the dispatch floor transfer switch.

2.3.3 TRANSFER SWITCHES

There will be up to three transfer switches in this project:

- Dispatch-related Critical Operations Power System (COPS) per NEC 708.
- Emergency system transfer switch, for egress lighting, exit signs, and fire alarm
- Optional load transfer switch, which feeds other loads the owner may wish to have on generator back-up that are not considered critical.

Code requires the dispatch floor transfer switch be bypass/isolation type if there is a single generator feeder, which there will likely be in this project. A bypass/isolation transfer switch allows for manual override from source to source. It also allows for generator mechanism maintenance while maintaining power to the load. The other transfer switches are not required to be bypass/isolation type.

2.3.4 UNINTERRUPTIBLE POWER SUPPLY (UPS)

A centralized UPS will be provided for IT, Radio, and Dispatch loads. The following is an estimate for the centralized UPS system, which will feed the Level 1 IT and Radio spaces, as well as the Level 3 consoles and IDFs.

UPS LOAD ESTIMATE				
Description	Qty	kW	Subtotal	Notes
Server Room	1	25	25	
Fiber Entry Rooms	2	2	4	
Dispatch Room	1	10	10	
Audiovisual	1	4.8	4.8	
Total			43.8	



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We anticipate providing a 50kW UPS for this facility, but this number will be refined with additional data. It needs to be determined if a redundant UPS system is desired.

2.3.5 CRITICAL OPERATIONS POWER SYSTEMS (COPS) ROOM

NEC 708 requires the generator distribution system, transfer switches, and UPSs be in a separate 2-hour rated room. It should be noted that this room is required to be above the 100-year flood plain. Given that this room is currently slated to be in the ground floor, the risk assessment needs to confirm that this will be acceptable.

2.3.6 SERVER ROOM

The server room will be fed by a UPS system described above. Each rack or cabinet will be provided a receptacle that is fed from each UPS so that A/B circuiting is provided. We assume the cabinets will be provided 120 or 208 volt receptacles, but this needs to be determined, as well as the exact receptacle configurations needed for each cabinet. Power will be provided either by Power Distribution Units (PDUs) or transformers and panelboards.

2.3.7 SELECTIVE COORDINATION

NEC 708 requires that the power system be selectively coordinated. Given that this project is in the City of Bellingham, the system will need to be selectively coordinated down to 0.01 seconds, which typically requires careful device selection by the manufacturer, and the use of circuit breaker test tables. In order to achieve selective coordination, it is assumed that all breakers 225 amp and above will require LSI trip units and the circuit breaker frame sizes will need to be increased.

2.3.8 REMOTE ANNUNCIATORS

Remote annunciators will be provided where required by NEC 708. This includes the diesel generator, transfer switch for the dispatch area, and the UPSs.

2.4 POWER SYSTEM EQUIPMENT

2.4.1 MAIN SERVICE SWITCHBOARD

Main service switchgear shall be UL 891 listed, 480Y/277V, 65kAIC minimum.

2.4.2 PANELBOARDS

All panels shall be bolt-on style breakers with door-in-door construction. All breakers shall be fully rated for the available fault current; no series ratings permitted.

2.4.3 POWER STUDIES

A short circuit, coordination, selective coordination, and arc flash studies using SKM Power*Tools or equivalent program will be provided. Arc flash labels will be provided on all power distribution and HVAC



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equipment. Arc flash labels will meet the requirements of the NFPA 70E adopted by the AHJ, but at a minimum the 2021 version, and include information such as incident energy, minimum arc rating, arc flash boundary, glove class, recommended PPE, shock risk when cover is removed, limited approach distance, restricted approach distance, and available fault current and date.

2.4.4 SURGE PROTECTIVE DEVICES

Surge protective devices on all switchboards, distribution panels, and the first panel on the secondary of all transformers where required by NEC 700 and NEC 708. All panels serving emergency and legally required loads shall have SPDs. 200kA (surge rating) SPDs will be provided on the main switchboard, 100kA (surge rating) on all distribution panels, and 50kA (surge rating) on panelboards. All surge protective devices shall be mounted external to equipment they are connected to, except the main switchboards may be mounted internally in their own barriered section. Provide 18" maximum lead length where constructible or as allowed by SPD manufacturer. Provide low impedance SPD cable where 18" is exceeded.

2.4.5 METERING

A power monitoring system per the Washington State Energy Code will be provided. This may be a separate power monitoring system, or tie into the Building Management System (BMS) head-end. Revenue grade power meters will be provided which measure volts, amps, kW, and kVA. Separate metering between UPS, HVAC, receptacles, and lighting or more granular if required by the AHJ. The system shall store three years' worth of data. A server, storage, and PC will be provided, if a separate power monitoring system is provided.

2.5 GROUNDING

There are four types of grounding in this project:

- Electrical service grounding – Grounding shall include connections to water pipe service entrance, ground rods, concrete encased grounding electrodes. A ground bar in the main electrical room, external to the main switchboards, which are connected to the building electrode system. It is assumed that a new electrical service would be able to tie into a portion of the existing system.
- Generator grounding -- Each generator shall be grounding. Provide a ground rod at four corners of the enclosure, interconnect with #4/0 copper cable via exothermic welds, and connection to the generator casing, and bond neutral and grounding together.
- Electrical system grounding – All electrical conduits and MC cables will be provided with a separate equipment grounding conductor.
- Telecommunications Grounding – This will consist of a new telecommunications grounding riser that meets EIA/TIA standards, and consists of ground bars in each telecommunications room, a grounding conductor that runs along each cable tray and bonds to each section, which in turn bond to server racks. In the data center, a #1/0-#4/0 spine will run along each row of cabinets. #6 grounding cables tap off this spine to each server cabinet.



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- Radio System Grounding – This consists of antenna, radio system, and dispatch station grounding per Motorola R56. Each dispatch station will have its own ground bar that ties into a grounding network.

2.6 CIRCUITING AND DEVICES

The following will be provided:

- Receptacles on two walls in offices. Provide one circuit per four desks maximum.
- Dedicated circuits for permanently installed equipment, including copy machines, printers, coffee machines, disposals, microwaves, and refrigerators.
- Provide one receptacle every four feet on counters in kitchen areas and work counters.
- In conference rooms, no point along the wall shall be more than 6 feet from a receptacle. Provide one floor box for every 215 square feet per electrical code. Provide power for an AV rack, wall display, and drop-down screen.
- Provide controlled receptacles for office spaces where required by energy code.
- Provide power for HVAC and lighting as required.
- Housekeeping receptacles will be provided on 50-foot maximum spacing in corridors.

In the dispatch area the following will be provided:

- Three double duplexes per console, two from the UPS, one from non-UPS power..
- Receptacles will have power indicator lights.

2.7 EMERGENCY POWER OFF (EPO)

An EPO button not be provided for the data center for security reasons.

2.8 LIGHTNING PROTECTION SYSTEM (LPS)

A lightning protection system will be provided per NFPA 1225. This system will be a UL Master Labeled lightning protection system, consisting of air terminals, downleads, ground rods, ground loop around the building perimeter, and interconnecting laterals between air terminals per NFPA 780.

2.9 LIGHTING

Lighting is being designed by Others. See separate lighting narrative. We expect desired minimum average lighting levels will be as follows:

- MEP spaces (indoor and outdoor) – 20 footcandles
- Corridors – 10 footcandles
- Offices and conference rooms – 30 footcandles
- Storage rooms – 10 footcandles
- Kitchens – 30 footcandles

Emergency lighting units (bugeyes or equivalent) will be provided a 90-minute integral battery in each electrical room, generator enclosure, dispatch floor, and data center.



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2.10 LIGHTING CONTROLS

A lighting controls per the Washington State Energy Code will be provided. Minimum requirements are as following:

- MEP spaces – Provide hardwired lighting controls.
- Main lobby – Automatic-on occupancy sensors
- Corridors – Automatic-on occupancy sensors
- Restrooms – Automatic-on occupancy sensors.
- Offices less than 300sf – Vacancy sensors, manual-on, auto-off
- Open office space – 600sf maximum control zones with occupancy sensors
- Open office space – Open office areas larger than 5000sf shall have either luminaire level lighting controls or networked lighting controls.
- Exterior – Programmable astronomic time clock with photocell override, as well as occupancy sensing controls and automatic setback controls.
- Daylighting – Provide photosensors that automatically dim light fixtures within the daylight zone(s) as defined by the Washington State Energy Code.

2.11 ELECTRIC VEHICLE (EV) CHARGING STATIONS

EV charging stations will be provided at selected locations. It needs to be confirmed the quantity the Building Department will require, given that this is an existing site.

2.12 SEISMIC

Electrical systems will be braced per seismic codes for facilities with an Importance Factor of 1.5.

2.13 PHOTOVOLTAICS (PV)

A photovoltaic system will be provided per energy code requirements. Energy production requirements will be coordinated with the Puget Sound Energy. The amount of PV will depend on the remaining roof area after other equipment is laid out, as well as which C406 points are required in the Washington State Energy Code.

2.14 LABELING

Labels will be provided on all switchboards, distribution panels, panelboards, disconnect switches, variable frequency drives, transfer switches, and transformers. Labels shall indicate equipment name, voltage, phase, amperage, and upstream source. Provide different colors for each power branch, using white letters on darker colors. NEC 708 also requires distinctive markings or colors for the COPS system.



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3 CHAPTER 3 - TECHNOLOGY

3.1 TELECOMMUNICATIONS SYSTEMS

3.1.1 OBJECTIVES

This narrative addresses the proposed design intent for Technology Systems. It covers the following Project areas: the Sitework (“Site”), the 911 facility and supporting infrastructure core.

The technology distribution systems encompass the architecture necessary to interconnect the many communications, administrative support, building automation, and security systems. This includes the cabling, pathways, spaces, and associated passive components. The structured cabling and support infrastructure system will be divided into several subsections as follows:

Incoming Service and Site Distribution

- Outside Plant Infrastructure Pathway System
- Outside Plant Cabling

In Building Spaces

- Technology Spaces

Cabling and Pathways

- Infrastructure Pathway Systems
- Backbone Distribution (riser)
- Horizontal Distribution (workstation and node connectivity)
- Grounding System

3.1.2 CODES AND STANDARDS

In addition to the codes and standards listed above, the telecommunications design will follow the following:

- TIA-568-C.0 Generic Telecommunications Cabling
- TIA-568-C.1: Commercial Building Telecommunications Cabling Standard
- TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components
- TIA-568-C.2: Optical Fiber Telecommunications Cabling and Components
- TIA-569-C: Commercial Building Standard for Telecommunications Pathways and Spaces
- TIA-606-A: Administration Standard for Commercial Telecommunications Infrastructure
- TIA-607-C: Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications



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- Motorola- R56 Standards and Guidelines for Communication Sites
- TIA-758-B: Customer-owned Outside Plant Telecommunications Infrastructure Standard
- ANSI/TIA/EIA – 492CAAA, Detail Specification for Class IVa Dispersion – Unshifted Single-Mode Optical Fibers
- ANSI/TIA/EIA-758-B, Customer Owned Outside Plant Telecommunications Infrastructure Standard
- EIA/TIA Fiber Optic Test Procedure (FOTP) Standards.

3.1.3 INCOMING SERVICE AND SITE DISTRIBUTION

The incoming service will consist of multiple telecommunication service provider circuits, if available, located in diverse entrance facilities. These spaces will provide power, colling and grounding for the service provider equipment and cable systems.

3.1.4 IN BUILDING SPACES

3.1.4.1 Minimum Point of Entry (MPOE)

There will be two (2) diverse points of entry, if practical. Service provisions are anticipated to be provided from Alabama Street and an alternate street if available. These MPOEs will be used for incoming telecommunication service provider demarcation point. 2-post rack(s) with fiber patch panels to ease backbone distribute within the building will be provided.

3.1.4.2 Server / IT Equipment /MDF Room

This server/ IT Equipment room is planned to house Cabinets/Racks for What-Comm voice, data and video network systems as well as the radio communications equipment. systems, rack mounted hardware, and cabinets for building backbone and horizontal cable distribution. The main building headend equipment including the access control panel, video surveillance equipment, distributed antenna equipment will also reside in this space. In addition, the room will serve as the building Main Distribution Facility (MDF). This space will have the following minimum requirements:

- Ladder rack will be provided on top of the cabinets for inner room cable distribution,
- The room will be provided with 24/7 cooling and will utilize hot isle containment within the room.
- Power to the cabinets will be provided above the cabinets, from a UPS.
- Each cabinet will be provided with (2) power distribution unit (PDU) plug strips one plugged to each of two circuits provided.
- The grounding for the room will be in accordance with TIA-607C and Motorola- R56 in order to provide sufficient equipment protection.
- The room is to be a minimum of 2-HR rated to comply with NFPA requirements. Cabling and Pathways



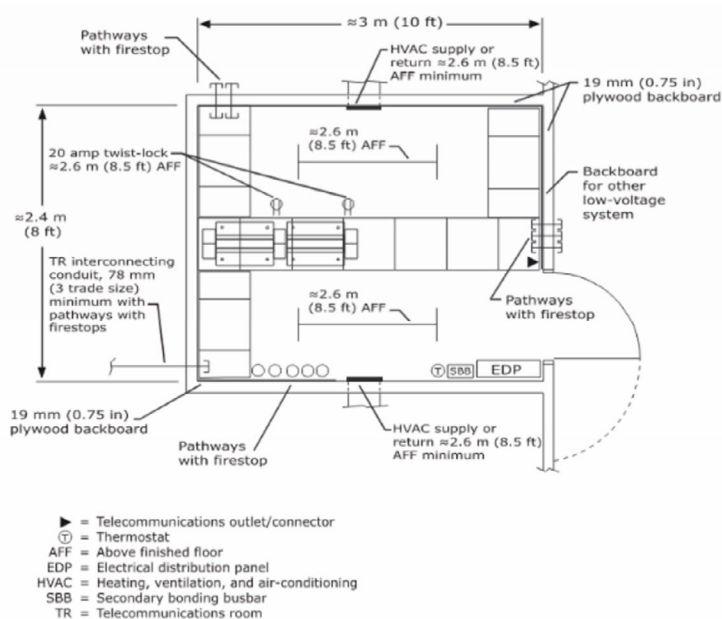
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3.1.4.3 Main Distribution Facility (MDF)

The MDF will be co-located in the Server / IT Equipment Room space and sized accordingly to support the network systems and distribution to each IDF. This space will house equipment racks, cable termination fields and required cable routing hardware as describer for IDFs below.

3.1.4.4 Intermediate Distribution Facility (IDF)

There will be an IDF(s) on each floor of the facility, unless it is determined that the second floor can be fed from the first floor server room. These spaces will house equipment racks, cable termination fields and required cable routing hardware. Racks will be placed in a manner that will allow minimum 3 feet of clearance from the front and rear mounting surfaces and on one side providing adequate workspace for technicians to work on all equipment and wiring In order to meet NFPA requirements for public safety radio systems, IDFs will be constructed with a minimum 2-hour fire ratings and equipped with fire-rated sleeves for riser pathways. All walls will be lined with 3/4 inch, 4' x 8' AC fire-retardant plywood with the "A" side exposed and painted white. Overhead ladder tray will consist of 18" cable runway for horizontal cabling distribution out to the floors. This runway will be mounted to the top of each rack with elevation standoff kits and radius drops. The cable runway shall be braced against the walls for distribution to the racks and wall termination board. All racks and trays will be seismically braced. The grounding for the room will be in accordance with TIA-607C and Motorola- R56 in order to provide sufficient equipment protection.



Example IDF



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3.1.5 CABLE SYSTEMS

3.1.5.1 Overview

All cable pathways shall be designed to provide the capacity and capability to properly install high performance TIA/EIA standard Category 6A (CAT6A) unshielded twisted pair cables. All pathway routes are to be coordinated with other building services (electrical, mechanical, plumbing, etc.) to assure proper clearances and accessibility. The cable distribution pathways shall be designed with a minimum 50% spare capacity and easily accommodate cable changes as well as minimize building occupant disruption when pathways and spaces are accessed.

The cables are planned to be routed in cable tray and conduit and within the raised floor on the third (dispatch) floor of the building.

3.1.5.2 Horizontal Cable

Horizontal, 4-pair, Category 6A, UTP cable will be used in this project along with plenum rated cable when cable is routed in the raised floor spaces or ceiling spaces that are used as return air plenums. The horizontal cables will be terminated on 24- or 48-port Category 6A patch panels in the Info Systems Room. Both voice and data cables will be patch-panel terminated and differentiated by physical placement and labeling.

Cabinets will be provided in the Server / Comm IT Equipment Room for mounting Category 6a patch panels, data networking electronic devices, security devices, optical fiber terminating shelves, radio equipment and cable management.

New cable tray shall be sized to accommodate the horizontal cables required plus 50% future capacity will be included in the design. The cable tray will parallel the corridors in accessible areas and utilize fire-stop sleeves to extend into the local telecom room. Inaccessible ceiling or raised floor areas will be bridged with properly sized conduits.

Cable supports and saddles will be utilized to bridge gaps where the one-inch conduit from the work area outlets does not extend to the corridor cable trays. The maximum number of cables per cable support shall be 24 cables. If the cable count along that routed path exceeds 24 cables, then additional cable supports will be added. Cable supports will be routed through accessible areas, paralleling walls with no greater than 4 feet separation.

The structured cabling system shall be a Cat6A end to end solution from a single manufacturer, be installed by manufacturer certified contractor and come with a minimum 20-year manufacturer warranty. The Cat6A cables shall be rated per NEC code for the areas in which they will traverse. For example, if a cable is routed in a plenum space, plenum cabling shall be employed.

No horizontal cabling runs are to be greater than 85 meters (279 feet).



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3.1.5.3 Work Areas

Dispatch Center work areas will be provided as many as twelve (12) CAT6A UTP cables, depending on final requirements, distributed in the raised floor and terminated in a power/communication floor mounted outlet box. The outlet and termination will mirror they typical work area outlet described below.

All other typical work area includes all areas where staff can be working (i.e.: open offices, closed offices, workstations, conference rooms, printer/copy/fax rooms, etc.) A typical work area outlet pathway will consist of a 4-11/16-inch square by 2-1/8-inch deep back box, mud ring and single gang faceplate complete with a one inch conduit with in the wall to an accessible space in the raised floor routed close to the corridor cable tray. All conduits for communications shall have insulated bushings on both ends. The work area outlet will consist of a faceplate equipped with Category 6A, 8-position, 8-pin, modular outlet jacks wired to TIA Standard T568B pin outs. The outlet jacks will be color coded to match What-Comm standards. The faceplate will be front accessible and be capable of containing four outlet jacks. The Category 6a UTP cables will terminate one end on these outlet jacks.

Outlets will be provided for wireless local area networking (WLAN) in an accessible ceiling area. The typical outlet configuration to support WLAN will be two (2) Cat6A cables. It will be assumed that the wireless access points (WAPs) will use either direct inject or mid-span power over Ethernet (PoE), so electrical outlets will not be required for the wireless access points. The design assumption for the WAP is that these devices will be powered via a maximum IEEE 802.3bt (Type 4) PoE Plus class 4 of 100W. This value is to be used in calculating the network switch power consumption estimates.

Wall phone outlets will require one Cat6A cable and stainless-steel face plates. Outlets for wall mounted telephones will be provided in the electrical and mechanical rooms and in the operations areas as deemed necessary. Coordination for the location of the wall mounted telephones will be coordinated with the Owner in future project phases.

Connectivity for all code required services such a fire alarm and elevators will be provided. This will be two Cat6A UTP cables terminated onto wall mounted in 110-blocks in the main point of entry. The 110-blocks will be mounted next to the tie cables going to the main point of entry to facilitate the connection of telephone circuits from the main point of entry directly to the fire alarm panels. The location of the fire alarm panels will be coordinated in subsequent project phases though these are typically located in an electrical room. Currently a 25-pair bundle of copper cable is planned to be provided for the incoming service to accommodate backup phone lines throughout the building.

Network connectivity for lighting and building controls will be provided. Cat6A cabling from the main point of entry to the electrical and mechanical rooms for network connected systems and devices will be included in the design. This is typically one Cat6A per connected device plus one Cat6A spare.

3.1.5.4 Backbone Cable

Building backbone cabling refers to the intra-building communication trunk system. The system consists, single-mode (8/125 micron SMF) and multi-mode (50/125 micron Laser Optimized OM4 fiber optic cabling and a limited amount of multi-pair copper riser cabling. These cables bring the various communications



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services from the MPOE to the Server/IT space and from the MDF to the IDF spaces where the systems signals are distributed via the horizontal wiring systems to the individual work area user outlets.

3.1.6 GROUNDING SYSTEM

The grounding system design will comply with the current ANSI/TIA J-STD-607-D for a telecommunications signal ground system and the Motorola R standard for radio communication systems. The MDF will contain the Telecommunication Busbar and connect to each Telecommunication Busbar in each IDF with a Telecommunication Bonding Backbone.

3.1.7 WIRELESS SYSTEMS

3.1.7.1 WLAN (WIFI) 802.11XX

In conjunction with the need for mobility and a secondary network system, a robust Wireless Local Area Network (LAN) will be deployed. Utilizing predictive analysis based on applications, density and QOS requirements, the WLAN's will support multiple systems, for Voice, Data and Video applications. Cabling requirements are outlined above.

3.1.7.2 DISTRIBUTED ANTENNA SYSTEMS (DAS)

Emergency Responder Radio Systems (ERRS) RF Signal Enhancement System for the project will be an off-air BDA(s) and distributed antenna system (DAS) unless otherwise directed by the AHJ/approval agencies and in compliance with International Fire Code. A Radio Frequency re-radiating antenna distribution system for wireless emergency first responder communication systems will be provided for the new facility. The DAS will be connected to the life safety branch of the essential electrical system power, meet all code requirements for system survivability, and capable of operation for no less than 24 hours to meet secondary power requirements. In addition, a cellular service DAS will be deployed to propagate major cellular service providers' frequencies throughout the facility.

3.1.8 CLOCK SYSTEM

Standalone clocks will be provided by What-Comm. A single PoE Cat6A outlet will be provided.

3.2 SECURITY SYSTEMS

3.2.1 Overview

The Electronic Security System (ESS) system will be an 'Enterprise'-based system. A new enterprise security monitoring location will be established, where all CCTV cameras will be monitored and recorded.

The ESS will consist of sensors, control devices (card readers, and keypads), control electronics, elevator interface, supporting software, and cabling. Surveillance (CCTV) monitoring is to be provided to view



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remote locations or doors identified as significant points of concern. Video will be recorded on a Network Recording Server that will allow archival and forensic retrieval via a web browser interface.

3.2.2 CODES AND STANDARDS

In addition to the codes and standards listed above, the security systems design will follow the following:

- IEEE C2, National Electrical Safety Code®.
- NFPA-70, National Electrical Code®.
- NFPA-72, National Fire Alarm Code®.
- NFPA-101, Life Safety Code®.
- American National Standards Institute (ANSI).
- Federal Communications Commission (FCC).
- National Electrical Manufacturers Association (NEMA).
- UL 294
- UL 1076
- ANSI C2-1981 National Electrical Safety Code
- TIA 568-C.1 Commercial Building Telecommunications Cabling Standard Part 1.
- TIA 568-C.2 Balanced Twisted-Pair Telecommunications Cabling and Components Standards.
- TIA 568-C.3 Optical Fiber Cabling Components Standard.
- TIA 569-B - Commercial Building Standard for Telecommunications Pathways and Spaces.
- RoHS
- ANSI/BICSI 005-2016, Electronic Safety and Security (ESS) System Design and Implementation Best Practices

3.2.3 ACCESS CONTROL

The access control system within the building, and parking lot area will utilize a headend located in the Server/IT Equipment and MDF space and will have a card reader and electrical lock to allow entry into the building, parking lot entrances, displace space, telecom and electrical rooms, and other coordinated secured spaces. Any second-floor exterior deck(s) will also include a keypad in addition to the card reader as an alternative entry method. The headend will utilize backup power by using the centralized uninterrupted power supply (UPS). All local and remote sub-panels shall be connected via a communication bus or LAN to the main control panel in order to have a centralized reporting, data control and management, and alarm annunciation.



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3.2.4 VIDEO SURVEILLANCE

3.2.4.1 Overview

Cameras and lens selection, camera quantities and positioning are all related to specific performance objectives. Those objectives are categorized within the 5 following groups:

- General observation
- Detection
- Recognition
- Identification

As a single camera won't likely be able to achieve all of these objectives at once, a proper design must adapt to the performance limitations that come with each specific objective (e.g. a camera specifically selected and positioned in order to allow general observation of a large-scale area won't usually allow precise identification of individual, on the other hand, a camera that will allow proper individual identification will not provide a very large field of view, thus limiting the field coverage that a security operator will obtain from that camera).

Because of the lack of uniformity in performance standards with regards to the CCTV industry, simplified guidance is expressed herein. In order to illustrate the relationship between a selected target, a camera field of view and the proportional display of the video result in relation to a performance objective.

3.2.4.2 General Observation

It will be possible for a security operator to assess in a large-scale area the number of individuals along with the general characteristics associated with their movement, provided that:

- The presence and location of the subject is already known by the operator
- The subject occupies at least 5% of the screen height of the monitor on which it is presented
- The subject is captured at an average resolution of 5 pixels per foot (300 mm)

3.2.4.3 Retention

Video shall be stored for a minimum of one year.

3.2.4.4 Monitoring

CCTV monitoring will be available to select workstation/office location for surveillance requirements. Space and configuration is yet to be determined. This configuration will allow for the monitoring of cameras, as well as door alarms, intrusion alarms and intercoms. A Graphical User Interface (GUI) and the associated vendor requirements providing event monitoring and interconnecting the camera system with the access control system, and the intercom system is yet to be determined.



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3.3 AUDIO-VISUAL SYSTEMS

3.3.1 OBJECTIVES

The goal for the audiovisual system is to provide an integrated, reliable, scalable, and sustainable audiovisual system to assist in the day-to-day needs. The audiovisual systems intended for these buildings include equipment and/or infrastructure provisions for mission-critical visualization, background music, paging, speech reinforcement; high-definition computer-based presentations, media playback, audio and video teleconferencing and web-based conferencing. It is important that these capabilities be provided in a manner which is functional but not complex in its operation, allowing for non-technical users to easily set up and control all the functions within a given space. The basis of this section is developed from program information provided by What-Comm, and our experience from numerous other facilities of this type. The overall form of the technology used to accomplish audiovisual functionality must be engaging and attractive to the user and viewer.

There are a number of functional criteria that should be applied to designing and integrating the AV presentation technology in the new building

- State-of-the-art proven equipment for the facilities. The systems should include the latest technology and equipment available. The equipment should stay within an equipment family as much as possible to leverage common control code sets.
- High quality systems. For example, the displays must be the highest quality available in terms of sharpness, contrast, and brightness.
- High degree of reliability. These systems must perform, day in and day out, without a material degree of downtime. Some systems within the project such as the mission critical visualization systems need to perform 24/7 with no system wide down time.
- Easy to operate by both technical and non-technical personnel. The interface for controlling the AV equipment should be intuitive, self-explanatory, and easily accessible to the greatest degree possible.
- Easy to care for, maintain, and upgrade. The systems should be chosen and integrated in a way that eases access and enables equipment replacement and/or augmentation
- Where applicable, hot-swappable components will be utilized.
- Single points of failure will be eliminated as much as possible.

3.3.2 CODES AND STANDARDS

In addition to the codes and standards listed above, the AV systems design will follow the following:

- AVIXA 202.01:2016: Display Image Size for 2D Content in Audiovisual Systems
- AVIXAF501.01:2015: Cable Labeling for Audiovisual Systems
- AVIXA A102.01:2017: Audio Coverage Uniformity in Listener Areas



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- ANSI/InfoComm 2M-2010: Standard Guide for Audiovisual Systems Design and Coordination Processes
- AVIXA V201.01:201X: Projected Image System Contrast Ratio
- AVIXA 10:2013: Audiovisual Systems Performance Verification
- AVIXA STD-710: Audio, Video and Control Architectural Drawing Symbols Standard
- AVIXA S601.01:201X: Energy Management for Audiovisual Systems
AVIXA RP-C303.01:2018: Recommended Practices for Security in Networked Audiovisual Systems
- AVIXA RP-38-17: Recommended Practice for Lighting Performance for Small to Medium Sized Videoconferencing Rooms
- Electronic Industry Association (EIA)
- Telecom Industry Association (TIA)
- National Fire Protection Association (NFPA) Codes, Regulations,
- Federal Communications Commission (FCC)
- Insulated Power Cable Engineers Association (IPCEA)
- National Electrical Manufacturer Association (NEMA)
- Building Industry Consulting Service International (BICSI)
- International Communications Industries Association (ICIA)
- Criminal Justice Information Services (CJIS)

3.3.3 IN BUILDING SPACES

3.3.3.1 Typical Room Requirements

What follows are requirements we've seen in other facilities and should be considered preliminary. These will be validated with the Owner during the design phase.

3.3.3.2 Communications Dispatch Room

A modular IP based video windowing and distribution system shall be used to allow for the ingest of any type of source, whether it is video, data, streaming, or still images, and the distribution of those sources over an IP based network throughout the operations center. Sources shall be able to be displayed as a single source on a single monitor or as a combination of sources (windowing) on either video walls, single monitors, or multiple monitors throughout the TSOC. Source selection and layout should be customizable at an individual operators' station or the main video wall in the control room. The room will be provided with a raised floor to allow for flexibility for the cabling.

Room shall be able to accommodate operators with sit/stand desks and no tiered seating and shall be outfitted with equipment to support the daily operations of a 24/7 security operations center.



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3.3.3.2.1 Video System

- Video Wall (final size, resolution, and location to be confirmed). This Display for Critical News & Information consists of an array of 96 Direct View LED (DV-LED) tiles comprising a seamless electronic canvas with viewable image dimensions of 24.25 feet wide x 9.17 feet high. The aggregate resolution of the DV-LED DID Wall will be 12,441,600 pixels. The DV-LED tiles will have a pixel pitch of 1.2mm and be arrayed in a landscape orientation 8 high x 12 wide configuration.
- The Digital Information Display (DID) Wall is affixed to a purpose-built mounting framework which will be seismic rated, supported on the floor slab, and centered on the Communications Dispatch room's northwest wall.
- A variety of audiovisual sources will be provided for the Stakeholder's selection and viewing on the DID Wall; Sources may include
 - Critical News & Information Television Programming from Cable or Satellite receivers.
 - The screen image from a PC at each of the 22 Communications Dispatch room positions.
 - Backroom Application Servers.
 - TSOC Dashboard
 - SCADA
 - OBVSS
 - ORB CAD
 - CCTV
 - Audio Visual Images shared from identified Remote rooms including:
- Media Play-Out devices. The dispatch consoles and video wall will utilize virtual network-based video distribution. Virtual desktop computers will be dedicated in the Info Systems Room to allow for information to be routed to the video wall through the network.
- Encoders are to be provided at each dispatch console to provide KVM controls to the dispatcher.
- Infrastructure will be provided in the back of the room for a future camera positioned to view the wall only.

3.3.3.2.2 Audio System

- Ceiling recessed loudspeakers for program audio playback and voice lift sound reinforcement
- The audio system will allow Communications Dispatch room operators to select and control the volume of audio sources.
- Assisted listening system for the hearing impaired.



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3.3.3.2.3 Control Systems

- Selection, placement, and sizing of the various AV image sources on the DID Wall is managed by the Communications Dispatch room operators via a touch panel control system.

3.3.3.2.4 Equipment

- 84" high, 19" EIA, 36" deep, ganged equipment cabinets with tapped front & rear mounting rails and seismic support bases.
- The space housing these AV equipment cabinets is at a minimum 10' wide x 15' deep.
- 84" high, 19" EIA 36" deep, ganged equipment cabinets with tapped front & rear mounting rails and seismic support bases for a remote power supply.
- The recommended envelope for the space housing these two Remote Power Supply Cabinets is: 10' wide x 9' deep.

3.3.3.3 Training

Room shall be able to accommodate 60 people at a series of tables. The room is operationally planned to be used as a media room, training room, and conference room, and overflow for meetings.

A. Video System

- 2 LCD display mounted side by side.
- A variety of audiovisual sources will be provided; Sources may include:
 - The screen image from Laptops connected at ports on the two U-Shaped Tables.
 - The screen image from the EOC's Dedicated Display PC (DDPC).
 - An AV image source shared on the AV network by the Communications Dispatch room #150.
 - A Media Player.
 - Critical News & Information Television Programming from Cable or Satellite receivers.
- Connections to and from Video Distribution Systems utilizing matrix switching.
- Wired connectivity for video presentations and/or web conferencing.
- Video signal selection and distribution
- Bring your own device (BYOD) capabilities

3.3.3.3.1 Audio System

- Ceiling recessed loudspeakers for program audio playback and voice lift sound reinforcement
- The audio system will allow Comm Security room operators to select and control the volume of audio sources.



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- Assisted listening system for the hearing impaired.

3.3.3.3.2 Control Systems

- Selection, placement of the various AV image sources are managed by the EOC stakeholders via a touch panel control system.
- Wall Mounted room scheduling system.

3.3.3.3.3 Equipment

- 19" EIA credenza rack, location to be verified.
- Partition wall sensor

3.3.3.4 Break Room

A. Video System

- Display mounted in room.
 - A Media Player.

3.3.3.4.1 Equipment

- 19" EIA credenza rack, location to be verified.

3.3.3.5 Digital Signage

A. Video System

- A display on selected floors to provide important information. Locations TBD.

3.4 WIRELESS SYSTEMS

3.4.1 OBJECTIVES

In-building wireless communications inside of the facility is considered critical. The facility will be designed to accommodate radio signals of commonly used services inside of the facility to ensure reliable communications, whether primary or backup comms. Emergency Responder Radio Coverage System (ERRCS) will be provided as required to provide acceptable coverage for the Countywide 700/800 MHz CCCS radio system, which will include emergency responders as well as What-Comm internal radio system(s) as well. Commercial cellular coverage will be provided with an in-building distributed antenna system (DAS). Wireless LAN (Wi-Fi) system will be provided with the latest Wi-Fi standard (802.11 AX) and will be backwards compatible to 802.11 G. Additional requirements per What-Comm's design standards will be incorporated once it is defined and approved.



**What-Comm
Electrical & Technology Narrative**

3.4.2 CODES AND STANDARDS

In addition to the codes and standards listed above, the wireless systems design will follow the following:

- 2019 CFC with City of Anaheim amendments (Anaheim Municipal Code 16.08.20)
- 2016 NFPA 1221 as referenced

3.4.2.1 Emergency Responder Radio Coverage System (ERRCS)

- ERRCS is required to provide critical day-to-day radio operations within the facility.
- Per Anaheim Fire Code section 510, there is an exception for buildings less than 3 stories with no subterranean spaces. Due to the emergency communications nature of this facility, an ERRCS may still be desired. Bi-directional amplifier would be utilized with passive distribution system. Mounted to wall in IDF/MDF.
- Required frequencies to be coordinated with Fire Official and/or county radio operations
- Equipment and system backbone to be enclosed 2-hour fire rated enclosure (or meet the fire rating of building)
- Donor antenna on roof (3' Yagi style antenna)
- Ceiling mounted antennas distributed throughout the facility
- FCC/NFPA/NEMA-4 compliant
- 12 hours of secondary power.(Generator and 2-hour dedicated battery system)

3.4.2.2 Cellular Distributed Antenna System (DAS)

- Cellular DAS (CDAS) will be provided as required by Code to ensure reliable commercial cellular voice/data communications.
- Design will be separate from the ERRC to minimize potential interference and avoid code issues.
- Bi-directional amplifier will be utilized with passive distribution system. (donor signal will be coordinated with carriers).
- Will accommodate up to 4 service providers (ATT, Verizon, T-Mobile/Sprint)
- Required frequencies and donor signals to be coordinated with carriers.
- Passive components will be designed to accommodate future 5G bands (600 MHz, CBRS).
- Donor antenna on roof (3' Yagi style antenna)
- Ceiling mounted antennas distributed throughout the facility

3.4.2.3 WLAN

- Wireless LAN (Wi-Fi) will be designed to Wi-Fi 6 standard (802.11 AX) for the interior spaces in accordance with SNO911s design standards (to be coordinated with owner).



**What-Comm
Electrical & Technology Narrative**

- External Wi-Fi access will be provided as needed to meet the operational needs. WLAN will be coordinated with the county. SNO911 will provide Wi-Fi standards when available.
- WAPs will be mounted on ceiling throughout the facility to provide the minimum desired coverage and throughput on each level.
- Capacity and throughput requirements will be optimized through coordination with owner based on internal WLAN design standards, building occupancy, and use cases. Default values for WLAN:
 - Signal Strength: -63 dBm
 - Signal-to-noise: 20 dB
 - Data Rate: 20 Mbps
 - Number of Points: 2 (min) @ -75 dBm
 - Channel Interference: 2 (max) @ -85 dBm
 - Round Trip Time (RTT): 200 ms
 - Packet Loss: 2% max
 - Two CAT 6A cable to run to each WAP from the IDF
 - Switches to be located in the Info Systems Room on the second floor



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APPENDIX D:

PROGRAMMING

APPENDIX D CONTENTS

- Questionnaires - Client Response
- Essential Facilities Matrix - Client Response
- Existing Program
- Program Detail
- Room Data Sheets



What-Comm 911 – Stakeholder Questionnaire

Job Title: Public Safety Telecommunicator I/II

Meeting Date: 3/6/24

GOALS

<p>What are you proud of about this organization and/or the work you do?</p>	<p>Answers all point to pride in providing professional, high-quality, values-driven support to the community and one another while performing the difficult job of being the First First Respond. Our organizational values are Service, Adaptability, Integrity, and Teamwork.</p>
<p>Imagine yourself in a facility which supports you and your work and is a place you enjoy arriving at each day. How would you describe it to your friends?</p>	<p>Clean, bright, welcoming, quiet, organized, spacious, with natural lighting and neutral tones. The space needs to make sense for the way dispatchers work and have sufficient storage space for the supplies they need. There should be adequate rest and wellness areas for people working unpredictably long shifts such as separate kitchen, quiet rooms, gym, showers, and space to store personal toiletries, change of clothes, and food.</p>
<p>What opportunities could a new facility provide in terms of function and aesthetics? (i.e. materials, color, texture, light quality, acoustics, comfort)</p>	<p>Lots of windows that open, especially in the offices, hallways, and meeting areas and high-quality ventilation for adequate heating and cooling and clean air to cut down on germ transmission in shared and constantly occupied spaces. Highly adjustable lighting and heating/cooling at each console desk that don't impact neighbors with different preferences. Noise dampening panels or design. A sink with filtered hot and cold water and a garbage disposal on the console room floor is very important to the staff.</p> <p>The current quiet room is too small, has no natural light, and is in the middle of the building which is very loud. A new facility should have two quiet rooms situated in quiet parts of the building and with sound proofing to allow for sleeping as needed.</p> <p>The kitchen is currently a catchall food storage/prep area, dining room, and exercise room. A new facility should separate these functions so people can use each without intruding on other's time and space in ways that inhibit utilization.</p> <p>The building should feel spacious – with obvious</p>



	<p>room to grow – so staff does not feel like we have outgrown the new building from the moment we occupy it.</p> <p>Calming colors – blues, yellows, sage greens, lights on dimmers, maybe a water feature? Plants inside and out. Not a drab industrial building. No “government grey”. High-use fabrics and leathers for durability. Fabrics that are easy to clean and sanitize.</p>
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OPERATIONS

<p>Describe the work you perform?</p>	<p>8-12 hour shifts providing public safety telecommunications – emergent and non-emergent call processing and dispatching for 9 law enforcement agencies in a 24/7, teamwork intense environment. Processing critical incidents, master-level multi-tasking, frequent trauma exposure and frustration. Dispatchers are inundated with lights and sounds throughout their shifts and have to attend to six screens and manipulate multiple mice, keyboards, buttons, and pedals. Administrators work in office spaces on computers, most often during bankers hours.</p>
<p>What does a typical day look like for you? (ex. Breakdown of arrival time, break/fitness room usage, respite room usage, breaks office/dispatch, departure)</p>	<p>Dispatchers arrive 10-15 minutes before their shift begins, put away their food, collect their headsets, and begin logging into their various systems while receiving a brief/passdown from the person they are relieving, then commence call processing and dispatching for 8-12 hours. Dispatchers get 30 minutes of paid break time for every 4-hours worked but can be recalled from breaks as needed via flashing blue lights installed throughout the building.</p> <p>On breaks, people eat food in the break room or outside at the patio set, watch tv, go for walks, smoke outside, or use the exercise equipment. Some people combine breaks for a longer period off the floor typically used to run errands or nap in the quiet room. Administrative staff typically avoid the quiet room and breaking in the kitchen or using the exercise equipment to ensure they are available to dispatchers.</p>



<p>Does/Will your organization support other public services? If so, please describe. (i.e. Lifeline (988), public records requests, etc.)</p>	<p>We provide public records but do not have citizens come to the center to retrieve them. We partner with the Alternative Response Team to staff a Community Connector position who dispatches Community Service resources. This takes one of our console positions during our busiest hours.</p>
<p>When do you typically arrive to and depart from the facility? Do your hours change seasonally?</p>	<p>Days: 06-1400 Swings: 14-2200 Nights: 22-0600 There are two power shifts (10-18/18-02) Dispatchers bid shifts in 2-month increments and can remain on any shift up to 10-months out of the year. Probationary dispatchers are assigned shifts, typically changing every 1-2 months based on the phase of their training. Admin staff typically works 08-16</p>

COLLABORATION

<p>What are your conference / training room needs?</p>	<p>We need both a conference room large enough for Board meetings and on-site classes/trainings (space for at least 30 – tables, chairs, projector or large monitor for presentations) and a training room with at least four fully outfitted consoles for academy classes. Ideally this training space would be connected to the console room and could be additional console space for major incidents via a window wall we could open or a false wall we could move. In an ideal world, we would also have a smaller meeting space with a table for 10-12 for small group meetings. This could be a portion of the conference room if the space could be divided. Labor negotiations and various committee/team meetings often happen off site due to our lack of private and functional meeting space.</p>
<p>Who inside of What-Comm 911 do you collaborate with daily/weekly?</p>	<p>The work and workgroup are extremely collaborative. The console room and dispatch staff are collaborating all day every day. The operations supervisors work closely with floor staff and need office space close to the dispatch floor as well as a supervisor console on the</p>



	<p>floor. The training supervisor needs office space separate from but close to the training room. The IT manager should be close to the server room/IT workspace.</p> <p>The deputy director collaborates most with the training supervisor and IT manager.</p>
<p>Who outside of What-Comm 911 (besides the public) do you collaborate with daily/weekly? (i.e. police depts, fire depts, etc.)</p>	<p>All 9 law enforcement user agencies and their Records Departments, Whatcom County Jail and Humane Society, the Alternative Response Team, the Hospital and Crisis Triage/Detox centers, Prosecutor’s Office, Fire department dispatch, loss prevention and security personnel, etc.</p>
<p>Does your work require in-person interaction with the public? (i.e. public records requests, school tours, vendor meetings, etc.)</p> <p>If none currently, can you imagine possible scenarios where a public facing component would support the function of your operations?</p>	<p>Infrequently.</p> <p>We host applicants and new officers/deputies for sit-alongs, we also invite politicians and local stakeholders to sit-along for awareness. We sometimes host community groups for public education and brief tours.</p> <p>The Deputy Director frequently has meetings on-site with stakeholders, user agency personnel, politicians, etc.</p> <p>We would interview applicants on-site if we had an appropriate space to do so.</p>

VEHICLES / EQUIPMENT / STORAGE

<p>How do employees get to work? (i.e. single occupant vehicle, carpool, public transit)</p>	<p>Most drive. Some bike and/or walk. Carpooling is very occasional. Public transit does not align well with shift start and stop times.</p>
<p>Are the existing parking facilities adequate for employees and visitors?</p> <p>If not, describe how so.</p>	<p>Parking is generally adequate but will not be for long. Once we have hired all the people we currently have in background, we will be out of space during dayshift when all administrative staff is onsite. Removing the fire tower and reorganizing the available space/restriping the lot for maximum efficiency would go a long way. We do not have designated visitor parking space currently but should. We have no dedicated disabled parking but should have</p>



	at least one.
What are your site and building storage needs? (uncovered, covered, conditioned, etc.)	Storage is currently disorganized and insufficient. We need indoor storage for extra chairs and more food storage and lockers for staff. We need indoor storage for emergency supplies (food, blankets/cots, water, lights, etc.). IT staff need indoor space to store spare parts and equipment as well as tools. Administrative staff needs indoor space for paper and other office supplies. We have public education supplies, cleaning supplies, ice and snow supplies, and seasonal decorations which need to go somewhere – these could be stored outside the building if it is enclosed and easily accessible. We do not currently have space to store extra folding tables and chairs but should – this could also go outside in an enclosed storage area.

TECHNOLOGY

What digital tools and technology do you use daily / weekly?	Lots. 6-screens, 4 computers, radios, phones, fax machines, copiers, camera systems, etc.
How could technology be improved or implemented to make your job easier?	More effective sound mitigation, better light and temperature control at each console, cord management could be cleaner at the consoles, a camera mounted to the speaker box at the entry gate would be beneficial.

FACILITY OPERATIONS

What aspect of your existing facility is critical for your day-to-day job duties?	The console room, kitchen, bathroom, quiet room, office supplies, and technology. Lights indicating when people are on the radio and phone. A private meeting space with technology (projector or large display monitor) are critical for administrative staff.
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	<p>The training academy space with functional consoles and a separate, private office for the training supervisor. A private office for supervisors with at least two desks and a fair amount of storage. An IT workspace with equipment and tool storage.</p>
<p>What aspect of the existing facility hinders your day-to-day job duties?</p>	<p>Spaces are too small and cluttered. Many spaces are multiuse to the point of being unusable (kitchen/break room/gym, conference room/IT storage/three offices, training room/supervisor office, etc.). There are not enough consoles available. The console room at max capacity can be prohibitively noisy. Lack of adequate storage. The proximity and subsequent noises and smells from the HVAC system and generator are disruptive. The supervisor’s office is very small and shared by four staff. There is not enough storage and no space to meet with people, certainly not confidentially.</p>
<p>What are the main safety issues associated with your work?</p>	<p>Clutter. Lack of sink on the floor means less hand washing and more germs. Inadequately personalized lighting leads to migraines and interpersonal conflicts. Poor air circulation and filtering.</p>
<p>What works well at other emergency dispatch facilities you’ve seen?</p>	<p>Quiet rooms with added soundproofing. Defined spaces with room to expand/grow. Access to outdoor space – a patio off the kitchen, a deck on the roof of the first floor accessible from the second, a walking path around the property, etc. Gym with room for machines, free weights, and yoga mats as well as attached showers. Full-sized lockers with storage above for emergency kits. Lots of natural lighting and plants. High ceilings and ceiling mounted lighting to reduce glare/eye strain and help with sound. Clallam County works in a shared municipal building with a central atrium – it is warm, beautiful, has fresh air, and can serve as a covered walking space in bad weather. SS911 has a large, clean, well organized gym and lots of</p>



	<p>empty spaces and offices for future growth, as well as a walking path few people use due to crime in the area around their facility.</p> <p>MACC 911 in Grant County has a server room triple the size of their current needs – plenty of room to grow and a convenient workspace for their IT staff.</p> <p>CENCOM/Kitsap 911 has two large meeting spaces which can be joined or separated by a movable wall.</p> <p>SREC/Spokane 911 has multiple sections of their dispatch center separated by walls that are windows on the top half – they keep the individual work spaces quiet but can be opened to improve interoperability between groups.</p>
<p>Do you need a permanent desk, or are you able to work at a shared workstation / remotely?</p>	<p>Dispatchers share desks.</p> <p>Supervisors can share desks – 2 per desk – at least two desks in the office are needed.</p> <p>Training supervisor, Accounting Tech, IT Manager, GIS Analyst, TSAS, and Deputy Director need permanent desks. The GIS Analyst, TSAS, and Accounting Tech could share workspace with dedicated desks in cubicles.</p> <p>We should also plan for at least two flex offices for supervisors to have confidential meetings with staff, employees to work on special projects, and allow for agency growth.</p> <p>There is currently not an executive director but should be and very likely will be in the future – they need an office.</p>

EMPLOYEE SUPPORT SPACES

<p>How do spaces in the current facility provide respite from the stresses of your work?</p>	<p>Not well. Spaces are multipurpose, crowded, cluttered, and loud. The chair and table in the breakroom only has space for one person so anyone accessing the kitchen, food storage, or workout equipment feels like they are intruding on the person breaking.</p> <p>Several people break in their vehicles or walk outside the building to distress.</p> <p>The quiet room is utilized but could be much improved and is currently the only space appropriate to serve as a</p>
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	lactation room.
What types of spaces give you peace of mind and ground you outside of work?	Parks, gyms, quiet and uninterrupted spaces, a covered courtyard, walking paths, water, trees and green spaces, clean/organized/uncluttered rooms, soft lighting, soft music, art, windows with pretty views (mountains/water), fresh air.
What type of physical activity provides you with the greatest relief of stress?	Walking, pickleball, weights, yoga, cardio equipment, kickboxing.
How often do you use the locker room and shower facilities? If never/rarely, would you use it more often if it were different in the new facility? If yes/often, what are the most important aspects to consider in a new facility?	A handful of people use the showers somewhat regularly, some use it occasionally, many avoid using it due to the cramped and public placement of the exercise equipment and the showers being in the bathroom. Showers would be utilized more if they were attached to a gym that wasn't in the kitchen and had a full size locker room for storing clothes and toiletries and changing. Most dispatchers use their lockers every day. We do not currently have a washer and dryer on site but would appreciate one in a new facility so we can discontinue our towel service and wash linens from the quiet room.
Kitchen and Break Room Do you prepare your meals at work or home? Is there a desire to have space for group meals / potlucks?	Both, for most people. Yes, shift meals/potlucks are a frequent occurrence and important aspect of morale/culture at What-Comm. Having counterspace, a sink, and outlets in the console room for potlucks would be great.
How much food storage do you	Current food storage shelves allotted to each staff are



<p>require personally?</p> <p>What elements of the current kitchen and break room do you enjoy?</p> <p>In your opinion, what would make the kitchen and break room areas more enjoyable?</p>	<p>adequately sized, but we no longer have enough of them for each employee.</p> <p>The two refrigerators are frequently over full. Having a larger/industrial sized fridge would be an improvement, or a fridge associated with the admin staff and a separate one for dispatchers if we had a multi-floor building with break areas on each floor.</p> <p>Having full appliances for cooking and dishwashing is a big plus. A garbage disposal is a necessity. We have a fridge on the console room floor which is important for drinks, creamer, and potluck supplies.</p> <p>The current kitchen has very little counter space and not enough shelves for staff food storage. The kitchen is also the break room but there is only enough seating room for one or two people to use it at the same time. More freezer space would be helpful. The microwave often has a lineup, two would be great. Separating the kitchen/food prep area from the break room would be ideal – even if it is single I-shaped room – so people making food and people eating food, watching TV, or relaxing don't feel like they're bothering one another. It would be nice to be able to warm up or prep food and leave without bothering the person taking their break. The kitchen needs windows and strong ventilation.</p>
<p>Exterior / Context</p> <p>Are there any places within the community where you enjoy spending your breaks? (i.e. parks, trails, cafes, etc.)</p> <p>How often do you make use of the exterior spaces at the facility?</p>	<p>Many people walk on their breaks in the surrounding neighborhood. It is sidewalks and a combination of busy arterial and relatively quiet neighborhood streets. There isn't much nearby trail or park access. People often walk to nearby restaurants or Trader Joes for food on breaks.</p> <p>Many people sit at the patio set outside on nice days. It's in the parking lot next to all the cars and uncovered. There is a picnic table on a grassy area but it is rarely used due to proximity to Alabama Street and the HVAC system – it is very loud and can be smelly.</p>



<p>What do you like about the exterior spaces of the facility? What would you change or add?</p> <p>Are there any elements of the existing exterior spaces you would like to retain for the new facility?</p>	<p>The cherry trees outside the console room are the only thing people noted as enjoying about the exterior of our building. Several requests were made for covered outdoor eating space and a walking path. A rooftop patio was frequently requested. More flowers/planters/trees would be appreciated. We need a blue light outside to notify people enjoying breaks outside the building that we need them to return.</p> <p>The cherry trees. The BBQ.</p>
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OTHER

<p>Are there any other priorities you would like to share with us at this time?</p> <p>If you think of something in the future, please reach out to us by 03/08/2024 so we can incorporate your comments in our final pre-design report.</p>	<p>A request was made for the bathrooms to include a commercial grade toilet in the handicap stall with a bidet. More than one stall in the men’s bathroom was requested.</p> <p>Several people requested HVAC/generator further from the building to lessen the noise and fuel smells.</p> <p>More security camera coverage is requested.</p> <p>We need sufficient space for What-Comm’s current operations and growth, and to serve as a backup to Prospect Fire/EMS dispatch.</p>
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What-Comm 911 – Stakeholder Questionnaire

Director / Manager: Alysn Everbeck

Meeting Date: 3/6/24

EMPLOYEES + FACILITY NEED PROJECTIONS

How many employees do you have?		30 dispatchers, 5 supervisors, 5 admin staff = 40				
What are the roles of the employees? Dispatchers, operations supervisors, training supervisor, accounting tech, IT manager, GIS Analyst, IT Specialist, Deputy Director						
Job Title / Quantity	Quantity	Desk	Touchdown	% of Time in Office	% of Time in Field	Personal Work Vehicle
Director	1	1	0	50-75	25-50	Yes
Deputy Director	1	1	0	75	25	Yes
Training Supervisor	1	1	0	95	5	Shared
Operations Supervisors	4	2	1?	95	5	Shared
PST I/II	30	16	0	100	0	Shared
IT Manager	1	1	1?	75	25	Shared
TSAS	1	1	0	80	20	Shared
GIS Analyst	1	1	0	100	0	No
Accounting Tech	1	1	0	100	0	No
TOTALS						3

What are your employee projections for January 2025? (e.g. No change. Addition of (1) one, 5-person crew)	Addition of Civilian Director and one supervisor.
What are your employee projections for January 2035? Are you projecting any further out?	Projecting for community and user agency growth, I anticipate adding one position essentially every two years. By 2035, this would equate to 33 PST IIs, 6 operations supervisors, and 1 training supervisor. (5 positions above what we currently have.)
Does What-Comm 911 have any dedicated vehicles/equipment? If so, do any of them need to live on-	The Deputy Director has a take home vehicle. The agency has a van for trainings and meetings that is shared amongst the staff. We anticipate the addition of



<p>site?</p>	<p>a Comm Van for tactical deployment in the next year which will need on-site storage and access to power.</p>
<p>What are your vehicle/equipment projections for January 2025?</p>	<p>The Comm Van and Director's take home vehicle would be the only additions.</p>
<p>Is there a desire to accommodate future technology / server needs to facilitate future growth of the facility?</p> <p>If so, what percentage of growth are you projecting, and how far out?</p>	<p>Yes.</p> <p>The server room should be at least 50% larger than it is currently, with IT workspace and equipment/tool storage either included or adjacent. If the space is better laid out and more useable than our current server room, 50% increase should suffice.</p>



What-Comm 911 – Essential Facilities Matrix

Completed By: Alysnn Everbeck

Date Completed: 3/6/24

Client Provided Program Uses

Program Category / Use	Must Have	Like to Have	Designated Critical Operations Area (DCOA)		
			1-Mandatory	2-Preferred	3-None
Dispatch					
Dispatch Center Consoles:					
Police	X		X		
Future Growth	X		X		
Dispatcher Storage:					
Police	X			X	
Dispatch/Shift Supervisor Office	X			X	
Com. Ops Supervisor		X		X	
Training + Standards Supervisor Office		X		X	
Kitchenette		X			X

Admin. / Finance					
Deputy Directors Office	X			X	
Division Chief's Office	X				X
Accounting Tech. Office	X				X

Operations					
Flexible Meeting Spaces:					
Conference Room	X				X
Training	X				X
Support Staff Offices	X				X

Information Technology (IT)					
Server / Equipment Room	X		X		
IT Office	X			X	
GIS - Ops System Coordinator	X				X
IT Work Room	X		X		
System Analyst - Work Station	X				X
Armature Radio Room - Exterior	X		X		



Client Provided Program Uses
(Cont.)

Program Category / Use	Must Have	Like to Have	Designated Critical Operations Area (DCOA)		
			1-Mandatory	2-Preferred	3-None
Building Support					
Fitness Room	X				X
Kitchen + Breakroom	X				X
Locker Room	X				X
Bathroom w/ Showers	X		X		
Quiet Rooms	X				X
Storage Room	X				X
Emergency Supply Room	X		X		
Restrooms (ADA)	X				X
Work Room (Copiers, Printers, Etc.)	X				X
Secure Public Entry Lobby	X				X
Visitor Restroom (ADA)		X			X
Janitorial Closet	X				X

Site Requirements					
Staff Parking:					
Police Staff	X				X
Misc. City Parking		X			X
Public Parking		X			X
Generator + Equipment Area	X		X		
Trash Enclosure:					
Trash	X				X
Recycling	X				X

Space For Additional Notes / Comments:

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Potential Program Additions

Program Category / Use	Must Have	Like to Have	Designated Critical Operations Area (DCOA)		
			1-Mandatory	2-Preferred	3-None
Dispatch					
Shift Supervisor Platform		X	X		
Dispatch Center:					
3-1-1 Console		X			X
9-8-8 Console	X		X		

Admin. / Finance					
Long Term Dead-File Storage Room		X			X
Secure Records File Room		X			X
Public Records / Admin Services	X				X

Operations					
Additional Conference / Break-out Space	X				X

Information Technology (IT)					
Main Distribution Frame (MDF) Room	X		X		
Telecom POE	X		X		
Fiber Termination Closet	X		X		
A/V Racks	X		X		

Building Support					
Uninterrupted Power Supply (UPS) Room	X		X		
Main Electrical Room	X		X		
Parallel Switch Gear Room	X		X		
Receiving Area	X				X
Mechanical Room	X		X		
Vending + Pantry		X			X
Lactation Room	X				X
Food Delivery Box		X			X

Site Requirements					
Generator #2		X		X	

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EXISTING PROGRAM ADJACENCIES

In the existing program arrangement, many rooms have more than one use and are not collocated with similar uses, reducing facility operational efficiencies and employee comfort. Using the four project priorities, SHKS and What-Comm 911 established deficiencies in the current facility and its spaces.

Provide a safe and secure facility:

- Exterior walls of office and server room uses extend beyond the secure perimeter fence
- Except dispatch, the entire facility can be accessed from the lobby

Redundant systems for continuous operation of the facility:

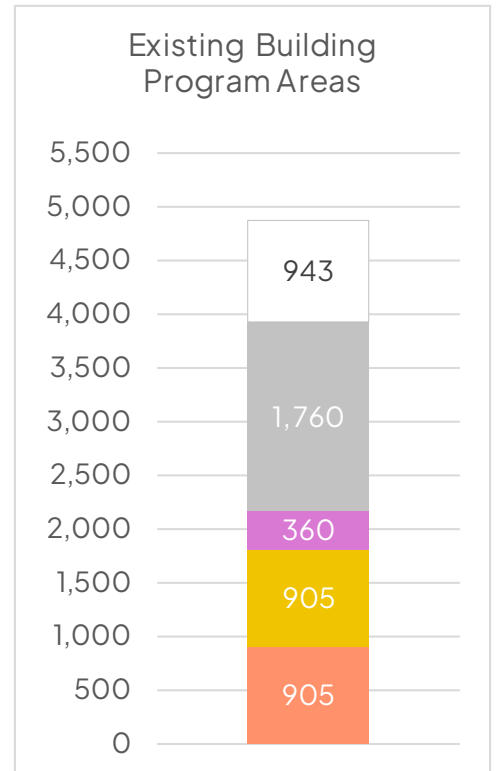
- Sever room is currently at maximum capacity
- Only one back-up generator

Prioritize employee health and wellness:

- Conflicting uses share the same room
- Console room is at maximum capacity
- Light quality, noise pollution, temperature, and smells affecting the ability for telecommunicators to do their work efficiently
- Break spaces are not adequately sized and have adjacencies which detract from their function

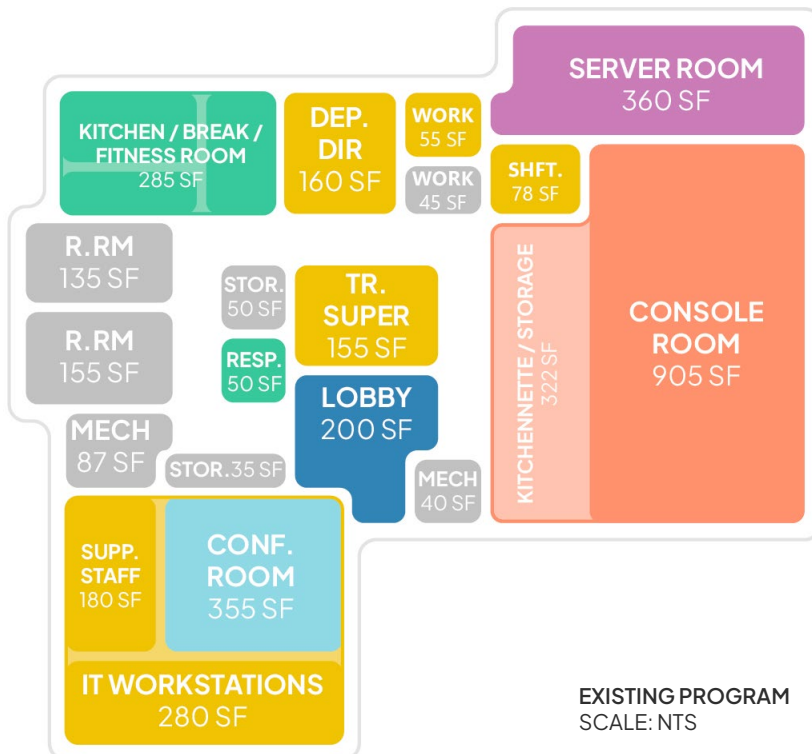
Optimize layout for operational efficiency:

- IT workstations are located on the opposite side of the facility
- Conference / meeting space is collocated with IT and support staff workstations



Total NSF: 3,930 SF

Total GSF: 4,716 SF



EXISTING PROGRAM
SCALE: NTS

KEY

- Non-Programmed
- Office
- Dispatch
- Building Support
- Server
- Lobby
- Conference
- Employee Break / Respite

Designated Critical Operations Areas - Mandatory

Program Category / Use	# of Staff	# of Spaces	Space SF	Net-SF	Notes
Dispatch					
Dispatch Center Consoles				1,800	20 total consoles
Police		15	90	1,350	
Future Consoles		4	90	360	1 future console → shift super platform
Shift Supervisor Platform		1	90	90	
Total:				1,800	

Building Support					
Server / Equipment Room		1	400	400	
Main Electrical / Battery Room		1	470	470	
Telecom POE		2	Size TBD		
Fiber Termination Closet		1	Size TBD		
Uninterrupted Power Supply (UPS)		1	Size TBD		Can be located within server room
Parallel Switch Gear Room		1	Size TBD		
Mechanical Room		1	150	150	Placeholder - Size TBD
Shower Rooms		3	60	180	
Emergency Supply Room		1	120	120	
Total:				1,320	

Site Requirements					
Generator + Equipment Area		1	250	250	
Radio Tower Footprint		1	484	484	
Total:				734	

Designated Critical Operations Areas - Preferred

Program Category / Use	# of Staff	# of Spaces	Space SF	Net-SF	Notes
Dispatch					
Dispatcher Storage		1	40	40	
Chair Corral		1	80	80	
Total:				120	

Office					
Deputy Directors Office	1	1	120	120	
Executive Director Office	1	1	120	120	
Training + Standards Supervisor Office	1	1	120	120	
Shift Supervisor Office	2	1	140	140	
IT Office + Work Room				380	
IT Manager Office	1	1	90	90	
IT Staff Workstation	2	2	75	150	
Work Room		1	140	140	
Total:				880	

Site Requirements					
Generator #2		1	250	250	
Total:				250	

Designated Critical Operations Areas - None

Program Category / Use	# of Staff	# of Spaces	Space SF	Net-SF	Notes
Dispatch					
Kitchenette		1	100	100	
Shelves / Storage / Circulation		1	380	380	
Total:				480	

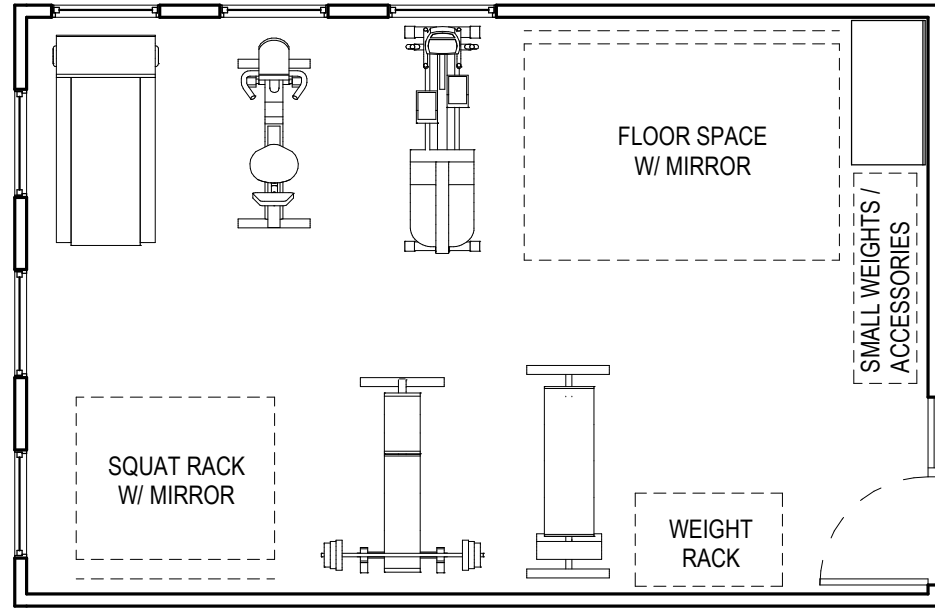
Office					
Support Staff Office - WS	4	4	75	300	
Public Records Office		1	75	75	
Total:				375	

Building Support					
Flexible Meeting Spaces				940	
Conference Room		1	500	500	(2) Connected 250SF Rooms
Training		1	400	400	
Small Work Space		1	40	40	
Fitness Room		1	350	350	
Kitchen + Breakroom		1	400	400	
Locker Room		1	360	360	
Respite Room		1	85	85	
Restrooms (ADA)		3	65	195	
Work Room (Copiers, Printers, Etc.)		1	65	65	
Secure Public Entry Lobby		1	175	175	
Visitor Restroom (ADA)		1	65	65	
Janitorial Closet		1	50	50	
Storage Room		1	120	120	
Receiving Area		1	20	20	
Vending + Pantry		1	40	40	
Lactation Room		1	85	85	
Food Delivery Box		1	0	0	
Total:				2,950	

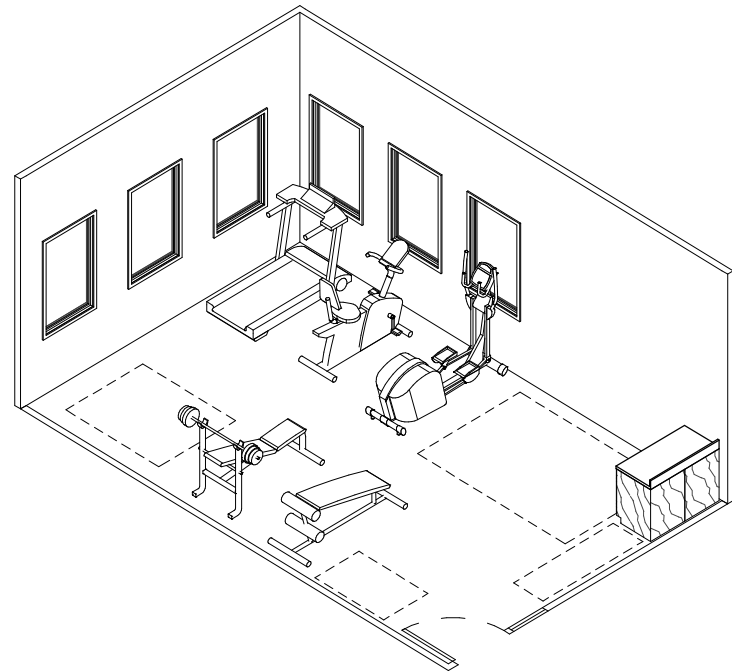
Site Requirements					
Staff Parking				8,640	
Police Staff		20	360	7,200	
Misc. City Parking		4	360	1,440	
Public Parking		2	360	720	
Trash Enclosure				100	
Trash		1	50	50	
Recycling		1	50	50	
Total:				9,460	

Designated Critical Operations Area	BLDG NSF	SITE SF	NOTES
Mandatory	3,120	734	NFPA, NEC, and Category IV Structural Req'd
Preferred	1,000	250	NFPA, NEC, and Category IV Structural Considered
None	3,805	9,460	Facility-Specific Requirements Only

Building Net SF: 7,925
 Building Gross SF (+20%): 9,510 **10,444**



1 **FITNESS ROOM**
SCALE: 3/16" = 1'-0"



2 **FITNESS ROOM**
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 4 to 6	No. of Units:
Function:	Fitness room with space for free-weights, open space for floor exercises and existing...	
Character:		
Adjacency:	Required Adjacency: Locker Rooms, Showers	
	Desired Adjacency: Washer + Dryer, Genderless Single Occ. Restrooms	
	Required Separation: Acoustically sensitive spaces, dispatch, Quiet Room	
Shared Facilities:	Showers	
Public Access:	None	

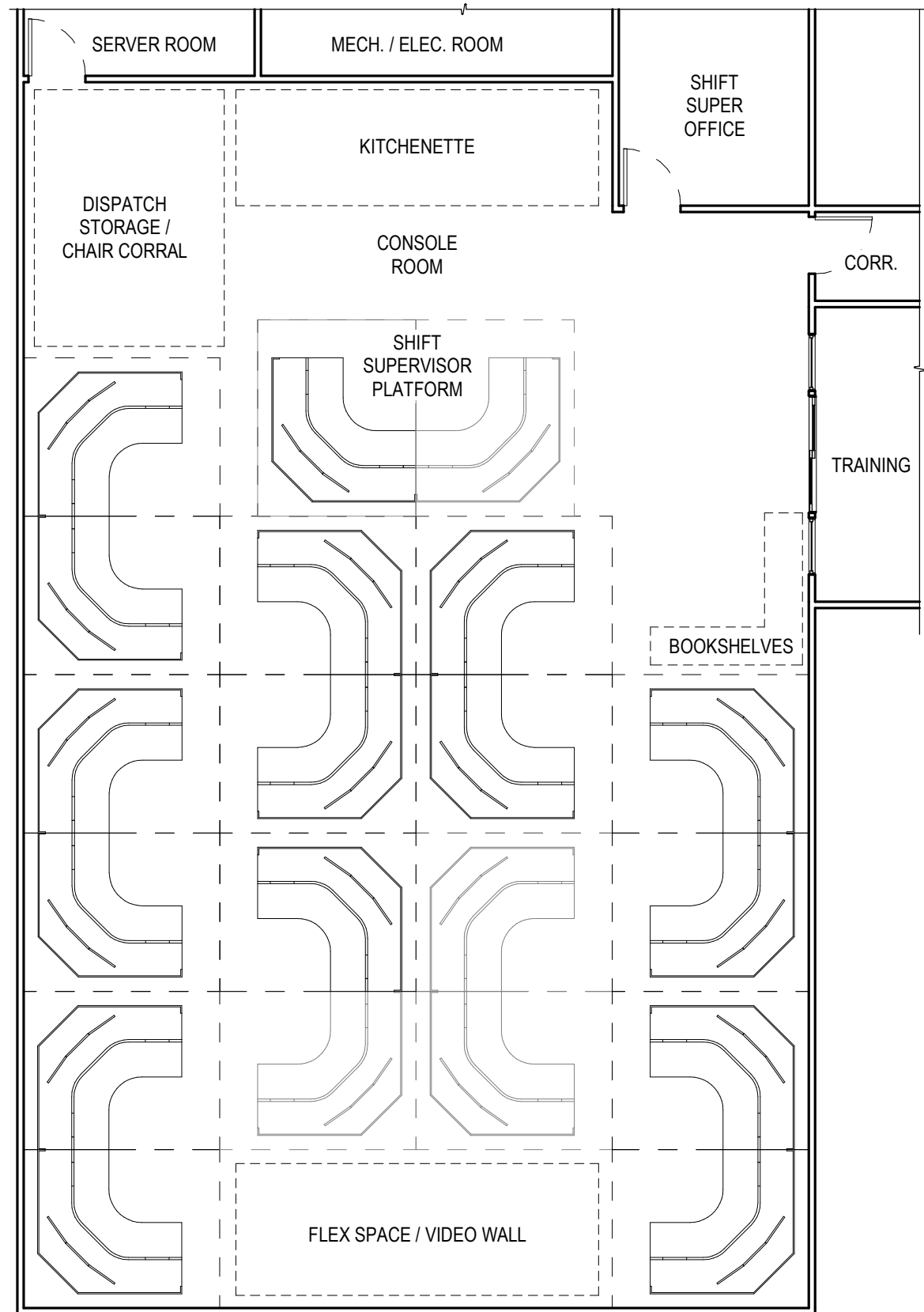
Use	Environmental	Lighting		
Hours of use	Int. 24 Heating / Cooling	X	Light Levels	
Monday - Friday	Int. 24 Humidity	X	Daylight (Yes/No)	X
Weekends	Int. 24 Acoustical	X	LED Light	X
Other	Operable Windows	X	Task Light	-
	Other		Dimmable system	-
			Controls	-
			Other	

Plumbing	Fire Protection		
Sink	Sprinklers		
InstaHot	Other		
Other			

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Display Monitor	Whiteboard	1	4'x6'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
		Worksurface	-	
		Table	-	
		Shade - manual	X	
		Shade - motorized	-	
		Shade - blackout	-	
		Lockers	-	
		Fire Extinguishers	-	
		Coat Hooks	X	
		Display Monitor	1	
		Mirror	1 to 2	4'x8'

Finishes	Casework		
Floor	Uppers (lineal footage)	-	
Base	Lower (lineal footage)	X	
Partial / Full	Bookshelves (lineal...)	-	
Wall Material	Worksurface	-	
Wall Finish	Drafting Station	-	
Acoustical wall panels	Other		
Ceiling material			
Ceiling finish			
Doors			
Windows			
Relites / Transoms			
Other			

Special Considerations
On ground level. Three showers. Desire to have squat rack, yoga mats, mirror wall, rowing machine. Lower casework for towels and other supplies.



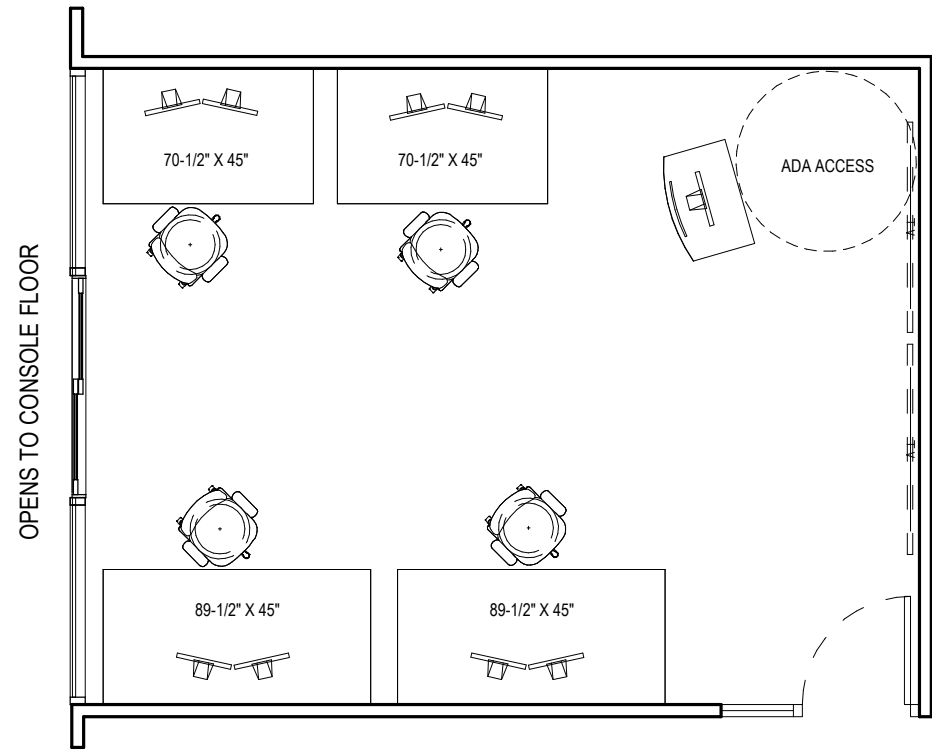
1 DISPATCH FLOOR
SCALE: 1/8" = 1'-0"

Room Number:	Area (ASF):	Ceiling Height:
Function:	Occupants: 16 -20	No. of Units:
Character:	Dispatch Floor with 16 consoles, space for 4 future consoles, and supervisor podium	
Adjacency:	Daylight, sound conscious, hard surfaces for rolling chairs, flexible lighting, heating, and cooling.	
Shared Facilities:	Required Adjacency: Training Room - Operable wall, Sever Room, Shift Supervisor Office	
Public Access:	Desired Adjacency: Restrooms within secure perimeter	
	Required Separation: Noisy break spaces, public-facing uses	
	Kitchenette, ART Consoles	
	None	

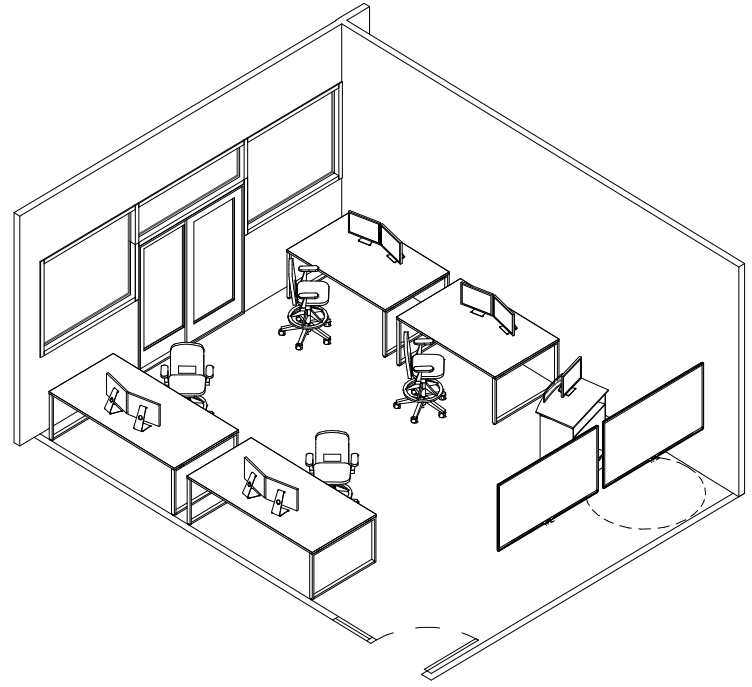
Use	Environmental	Lighting		
Hours of use	24	Heating / Cooling	X	Light Levels
Monday - Friday	24	Humidity	X	Daylight (Yes/No)
Weekends	24	Acoustical	X	LED Light
Other		Operable Windows	-	Task Light
		Other		Dimmable system
				Controls
				Other
Plumbing	Fire Protection			
Sink	Sprinklers	X		
InstaHot	Other - Early Alert Strobe	X		
Other				
Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	TBD	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	X-min	TBD
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - TV - Security	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	20	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	-	
Base	Lower (lineal footage)	Shade - manual	-	
Partial / Full	Bookshelves (lineal footage)	Shade - motorized	X	TBD
Wall Material	Worksurface	Shade - blackout	X	TBD
Wall Finish	Other - Banquette / Pantry	Cubbies	X	TBD
Acoustical wall panels	Other - Chair Corral	Fire Extinguishers	-	
Ceiling material		Coat Hooks	-	
Ceiling finish		Other-Refrigerator	X	
Doors				
Windows				
Relites / Transoms				
Other - Static Dissipative				

Special Considerations

New consoles to be installed in new facility, then old consoles will be transferred to avoid drop in service. Viewing gallery opportunity. No exposed wiring. Face camera at lobby and front gate. Extra screens. Pre-Action strobes for fire suppression. 18" min. raised floor system. Shift supervisor platform w/ room to expand to two stations. Explore modular lighting strategies, circadian lighting. avoid perpendicular sound reflections between consoles. 2 Task lights each



1 TRAINING ROOM
SCALE: 3/16" = 1'-0"



2 TRAINING ROOM
SCALE:

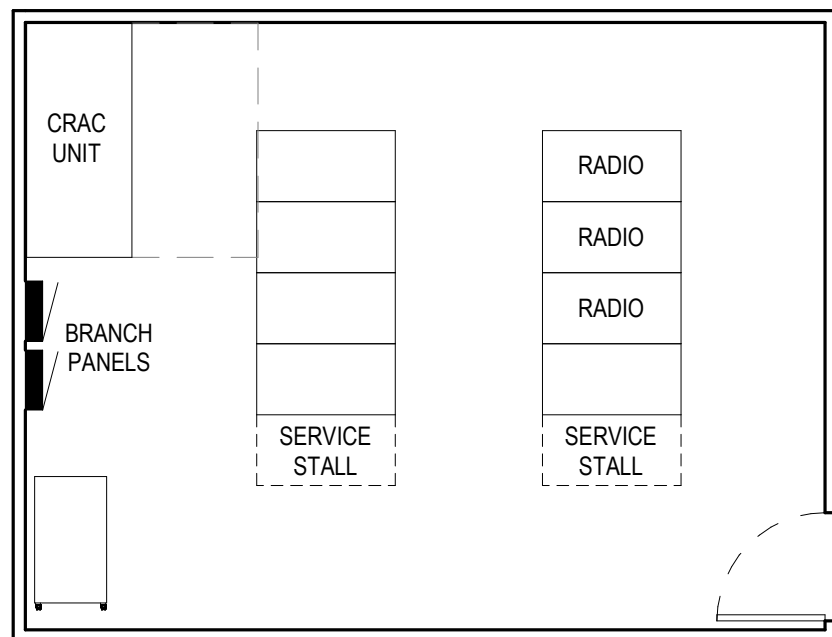
Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 5	No. of Units:
Function:	Four (4) fully functional console which could act as overflow dispatch during major events.	
Character:		
Adjacency:	Required Adjacency	Dispatch Floor
	Desired Adjacency	Training Supervisor Office
	Required Separation	
Shared Facilities:		
Public Access:	None	

Use	Environmental	Lighting	
Hours of use	Heating / Cooling	Light Levels	
Monday - Friday	Humidity	Daylight (Yes/No)	-
Weekends	Acoustical	LED Light	X
Other	Operable Windows	Task Light	X
	Other	Dimmable system	X
		Controls	-
		Other	
Plumbing	Fire Protection		
Sink	Sprinklers	X	
InstaHot	Other		
Other			

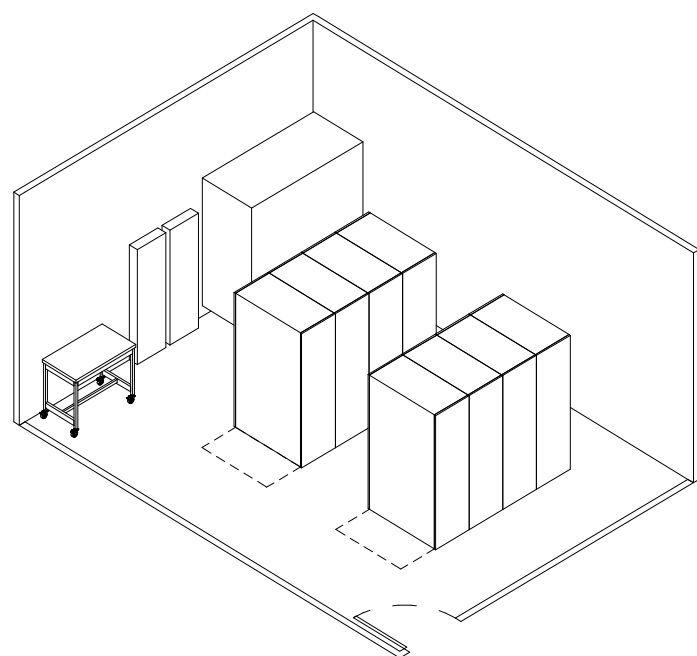
Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Display Monitors	Whiteboard	1	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	5	
		Side Chair	-	
		Desk	-	

Finishes	Casework		
Floor	Uppers (lineal footage)	-	Worksurface
Base	Lowers (lineal footage)	-	Table
Partial / Full	Bookshelves (lineal...)	-	Shade - manual
Wall Material	Worksurface	-	Shade - motorized
Wall Finish	Drafting Station	-	Shade - blackout
Acoustical wall panels	Other		Lockers
Ceiling material			Fire Extinguishers
Ceiling finish			Presenter Podium
Doors			Other - Training Consoles
Windows			4
Relites / Transoms			
Other - Static Dissipative			

Special Considerations
Operable wall into dispatch floor.



1 SERVER + EQUIPMENT ROOM
SCALE: 3/16" = 1'-0"



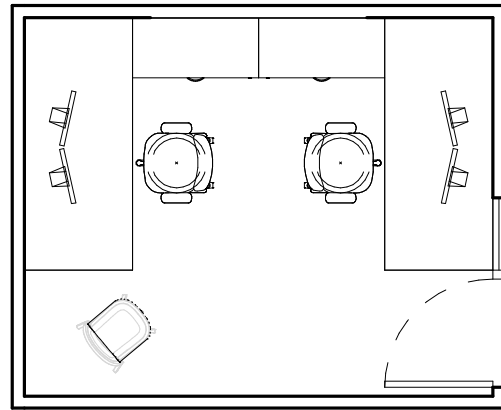
2 SERVER + EQUIPMENT ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: N/A	No. of Units:
Function:	5 IT racks + 3 radio (8 total). Two additional stalls to avoid down time when being serviced. UPS, power cleaner, and fire supression location to be assessed in schematic design	
Character:		
Adjacency:	Required Adjacency: Dispatch, IT Workroom Desired Adjacency: UPS	
Shared Facilities:	HVAC Service Area	
Public Access:	None	

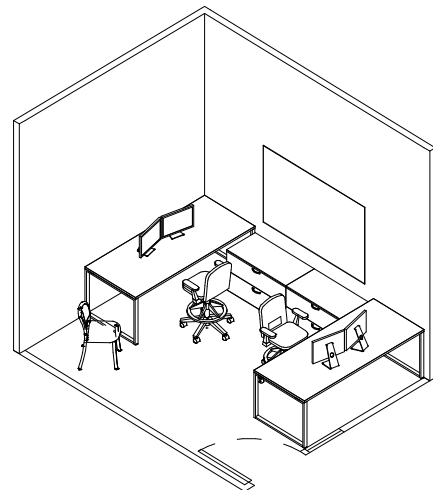
Use	Environmental	Lighting	
Hours of use	Int. 24 Heating / Cooling	X Light Levels	WORK
Monday - Friday	Int. 24 Humidity	X Daylight (Yes/No)	-
Weekends	Int. 24 Acoustical	X LED Light	X
Other	Operable Windows	- Task Light	-
	Other	- Dimmable system	-
		- Controls	-
		- Other	-
Plumbing	Fire Protection		
Sink	- Sprinklers - FM200	X	
InstaHot	- VESDA Smoke Detection	X	
Other	- Other - Early Alert Strobe	X	

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	X Projector	- Whiteboard	-	
Clean power	X Document Camera	- Proj. Screen manual	-	
Tel/Data	X Photocopier	- Proj. Screen motorized	-	
Cable TV	- Fax Machine	- Tackable Panel	-	
CCTV	X Printer	- Map Rail	-	
Security System	- Phone	- Bookshelves	-	
Security Cameras	X Clock	- Lateral Files	-	
Card Access System	X Other	- Pedestal...	-	
Other (UPS, Emergency, etc)	X	- Desk Chair	-	
		- Side Chair	-	
		- Desk	-	
Finishes	Casework	- Worksurface	1	2'-6"x4'
Floor	CFT Uppers (lineal footage)	- Table	-	
Base	RB Lower (lineal footage)	- Shade - manual	-	
Partial / Full	Full Bookshelves (lineal...)	- Shade - motorized	-	
Wall Material	GYP Worksurface	- Shade - blackout	-	
Wall Finish	PNT Drafting Station	- Lockers	-	
Acoustical wall panels	N/A Other	- Fire Extinguishers	X	
Ceiling material	N/A	- Server Rack - Radio	3	
Ceiling finish	N/A	- Server Rack - IT	5	
Doors	WD	- Sever Rack - Service Stall	2	
Windows	N/A	- CRAC Unit	1	TBD
Relites / Transoms	N/A			
Other - Static Dissipative	X			

Special Considerations
Separate entry points between server and HVAC maintenance, separated by fence. Direct access to dispatch floor. Work surface can be a rolling toolbox with a top, approx. 2'6"x4'. Wall spaces for fiber and electrical. Computer Aided Dispatch (CAD) Phone. Redundant cooling strategies are necessary. Door large...



1 SHIFT SUPERVISOR OFFICE
SCALE: 3/16" = 1'-0"



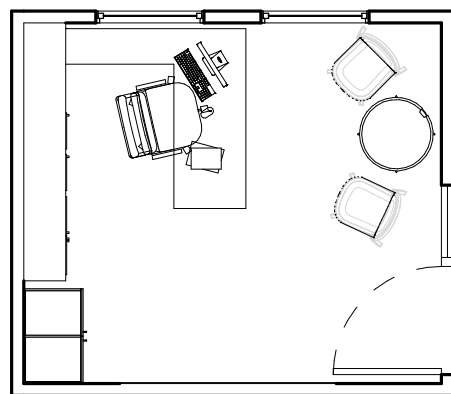
2 SHIFT SUPERVISOR OFFICE
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 2	No. of Units:
Function:	Single office with two desks for four (4) shift supervisors.	
Character:		
Adjacency:	Required Adjacency: Dispatch Floor, Shift Supervisor Platform	
	Desired Adjacency: None	
	Required Separation: None	
Shared Facilities:	Dispatch Floor	
Public Access:	None	

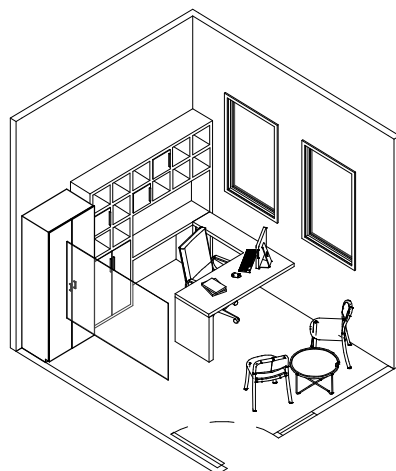
Use	Environmental	Lighting
Hours of use	Int. 24 Heating / Cooling	X Light Levels
Monday - Friday	Int. 24 Humidity	- Daylight (Yes/No)
Weekends	Int. 24 Acoustical	X LED Light
Other	Operable Windows	- Task Light
	Other	- Dimmable system
		- Controls
		- Other
Plumbing	Fire Protection	
Sink	- Sprinklers	X
InstaHot	- Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	X Projector	- Whiteboard	1	4'X6'
Clean power	X Document Camera	- Proj. Screen manual	-	
Tel/Data	X Photocopier	- Proj. Screen motorized	-	
Cable TV	- Fax Machine	- Tackable Panel	-	
CCTV	X Printer	- Map Rail	-	
Security System	- Phone	- Bookshelves	-	
Security Cameras	- Clock	- Lateral Files	-	
Card Access System	- Other	- Pedestal...	-	
Other (UPS, Emergency, etc)	X	- Desk Chair	2	
		- Side Chair	1	
		- Desk	2	TBD
Finishes	Casework	- Worksurface	-	
Floor	CPT Uppers (lineal footage)	X	-	
Base	RB Lower (lineal footage)	X	2	TBD
Partial / Full	Full Bookshelves (lineal...)	X	X	
Wall Material	GYP Worksurface	X	-	
Wall Finish	PNT Drafting Station	X	-	
Acoustical wall panels	- Other	-	-	
Ceiling material	ACP/G...	-	-	
Ceiling finish	PNT	-	-	
Doors	WD	-	-	
Windows	-	-	-	
Relites / Transoms	WD/STL	-	X	
Other - Static Dissipative	X	-	-	

Special Considerations



1 TRAINING SUPERVISOR OFFICE
SCALE: 3/16" = 1'-0"

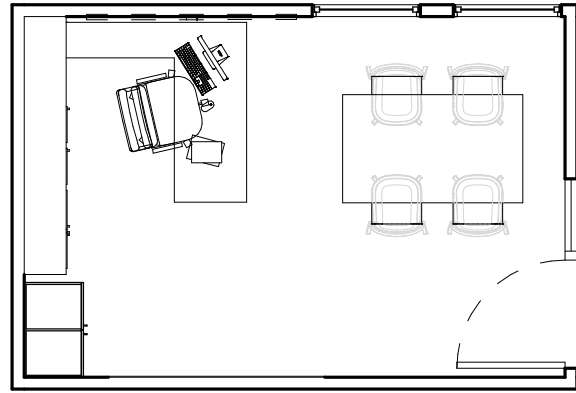


2 TRAINING SUPERVISOR OFFICE
SCALE:

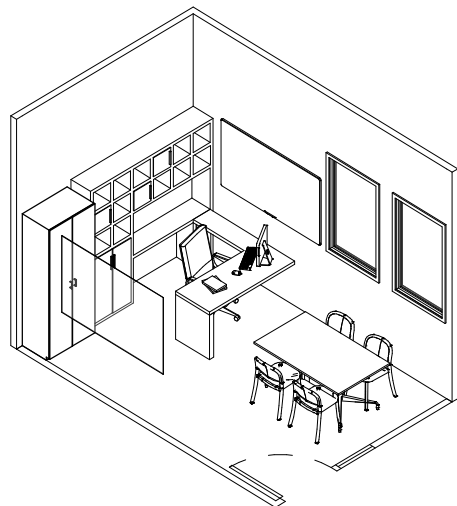
Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: 1 No. of Units: _____
 Function: Office with space for training supervisor to have small meetings with up to two people.
 Character: _____
 Adjacency: Required Adjacency: Training Room
 Desired Adjacency: Deputy Director Office
 Required Separation: _____
 Shared Facilities: None
 Public Access: None

Use	Environmental	Lighting		
Hours of use	10	Heating / Cooling	X	
Monday - Friday	10	Humidity	-	X
Weekends	0	Acoustical	X	X
Other		Operable Windows	X	-
		Other		X
Plumbing		Fire Protection		
Sink	-	Sprinklers	X	
InstaHot	-	Other		
Other				
Electrical		Equipment		Furniture & Fixtures
Power	X	Projector	-	Whiteboard
Clean power	X	Document Camera	-	Proj. Screen manual
Tel/Data	X	Photocopier	-	Proj. Screen motorized
Cable TV	X	Fax Machine	-	Tackable Panel
CCTV	-	Printer	-	Map Rail
Security System	-	Phone	X	Bookshelves
Security Cameras	-	Clock	X	Lateral Files
Card Access System	-	Other		Pedestal...
Other (UPS, Emergency, etc)	X			Desk Chair
Finishes		Casework		Side Chair
Floor	CPT	Uppers (lineal footage)	X	Desk
Base	RB	Lowers (lineal footage)	X	Worksurface
Partial / Full	Full	Bookshelves (lineal...)	X	Table
Wall Material	GYP	Worksurface	X	Shade - manual
Wall Finish	PNT	Drafting Station	-	Shade - motorized
Acoustical wall panels	-	Other		Shade - blackout
Ceiling material	ACP			Armoire
Ceiling finish	PNT			Fire Extinguishers
Doors	WD/GL			Coat Hooks
Windows	WD/GL			Other
Relites / Transoms	WD/GL			
Other				

Special Considerations
 Small table with space for two people.



1 DEPUTY / EXEC. DIRECTOR OFFICE
SCALE: 3/16" = 1'-0"



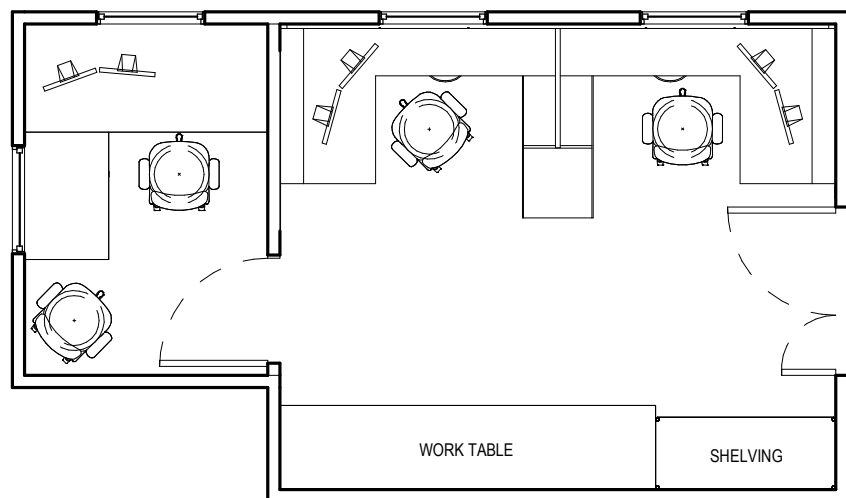
2 DEPUTY / EXEC. DIRECTOR OFFICE
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
Function:	Occupants:	No. of Units:
Character:	Office with space for deputy director to have small meetings with up to four people.	
Adjacency:	Required Adjacency: Executive director's office, Training office	
	Desired Adjacency: Dispatch floor, conference room	
	Required Separation: None	
Shared Facilities:	None	
Public Access:	None	

Use	Environmental	Lighting	
Hours of use	Heating / Cooling	Light Levels	
Monday - Friday	Humidity	Daylight (Yes/No)	X
Weekends	Acoustical	LED Light	X
Other	Operable Windows	Task Light	-
	Other	Dimmable system	X
		Controls	-
Plumbing	Fire Protection	Other	
Sink	Sprinklers		X
InstaHot	Other		
Other			

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	1	4'x6'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	1	TBD
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Display Monitor	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	1	
		Side Chair	2 to 4	
Finishes	Casework	Desk	1	TBD
Floor	Uppers (lineal footage)	Worksurface	1	TBD
Base	Lowers (lineal footage)	Table	1	TBD
Partial / Full	Bookshelves (lineal...)	Shade - manual	X	
Wall Material	Worksurface	Shade - motorized	-	
Wall Finish	Drafting Station	Shade - blackout	-	
Acoustical wall panels	Other	Armoire	1	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	1	
Doors		Other - Display Monitor	1	Verify
Windows				
Relites / Transoms				
Other				

Special Considerations
New matching furniture for all supervisor offices: Sit-stand desks w/ modesty panel, armoire, small meeting table, Door with lite.



1 IT WORK ROOM
SCALE: 3/16" = 1'-0"



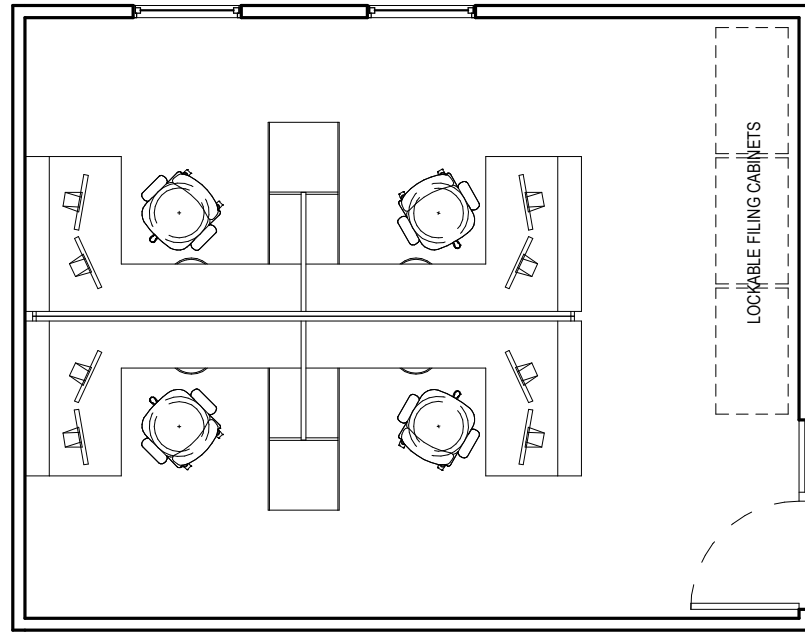
2 IT WORK ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants:	No. of Units:
Function:	Office housing IT workstations and workbench	
Character:		
Adjacency:	Required Adjacency: Server Room, Dispatch Floor	
	Desired Adjacency: Delivery area or path to delivery area	
	Required Separation: None	
Shared Facilities:	None	
Public Access:	None	

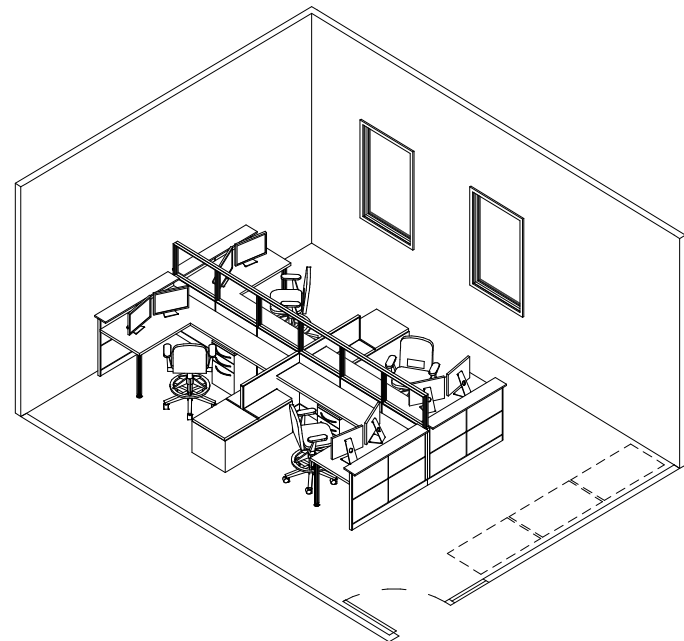
Use	Environmental	Lighting	
Hours of use	Heating / Cooling	Light Levels	
Monday - Friday	Humidity	Daylight (Yes/No)	X
Weekends	Acoustical	LED Light	X
Other	Operable Windows	Task Light	X
	Other	Dimmable system	-
		Controls	-
Plumbing	Fire Protection	Other	
Sink	Sprinklers		X
InstaHot	Other		
Other			

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	1 to 4	4'x6'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	1 to 4	TBD
Other (UPS, Emergency, etc)		Desk Chair	1 to 4	
		Side Chair		
Finishes	Casework	Desk	1 to 4	
Floor	Uppers (lineal footage)	Worksurface	1	TBD
Base	Lower (lineal footage)	Table	-	
Partial / Full	Bookshelves (lineal...)	Shade - manual	X	
Wall Material	Worksurface	Shade - motorized	-	
Wall Finish	Drafting Station	Shade - blackout	-	
Acoustical wall panels	Other - Shelving	Lockers	-	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	4	
Doors		Other		
Windows				
Relites / Transoms				
Other - Static Dissipative				

Special Considerations
20 linear feet of shelving, a door that can accommodate a pallet, and an independent IT managers office



1 SUPPORT STAFF OFFICES
SCALE: 3/16" = 1'-0"



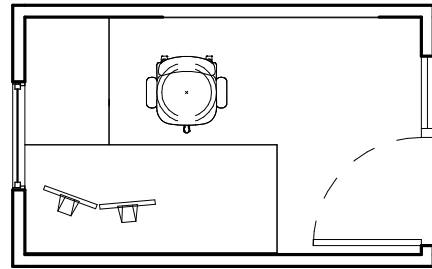
2 SUPPORT STAFF OFFICES
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 1 to 6	No. of Units:
Function:	Shared office space with three standing and lockable file cabinets	
Character:		
Adjacency:	Required Adjacency: None	
	Desired Adjacency: Public Records Office, Work Room (Copier, printer, etc)	
	Required Separation: None	
Shared Facilities:	None	
Public Access:	None	

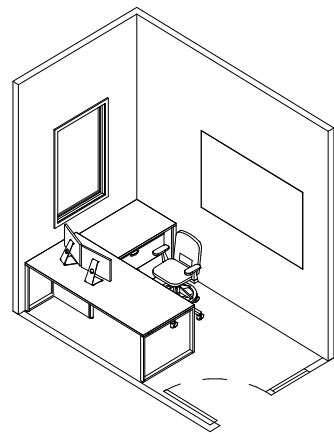
Use	Environmental	Lighting	
Hours of use	Heating / Cooling	Light Levels	
Monday - Friday	Humidity	Daylight (Yes/No)	X
Weekends	Acoustical	LED Light	X
Other	Operable Windows	Task Light	X
	Other	Dimmable system	-
		Controls	-
Plumbing	Fire Protection	Other	
Sink	Sprinklers		X
InstaHot	Other		
Other			

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	1 to 6	TBD
Other (UPS, Emergency, etc)		Desk Chair	1 to 6	
		Side Chair	-	
Finishes	Casework	Desk	1 to 6	TBD
Floor	Uppers (lineal footage)	Worksurface	-	
Base	Lowers (lineal footage)	Table	-	
Partial / Full	Bookshelves (lineal...)	Shade - manual	-	
Wall Material	Worksurface	Shade - motorized	X	TBD
Wall Finish	Drafting Station	Shade - blackout	-	
Acoustical wall panels	Other	Lockers	-	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	X	
Doors		Other		
Windows				
Relites / Transoms				
Other				

Special Considerations



1 PUBLIC RECORDS OFFICE
SCALE: 3/16" = 1'-0"



2 PUBLIC RECORDS OFFICE
SCALE:

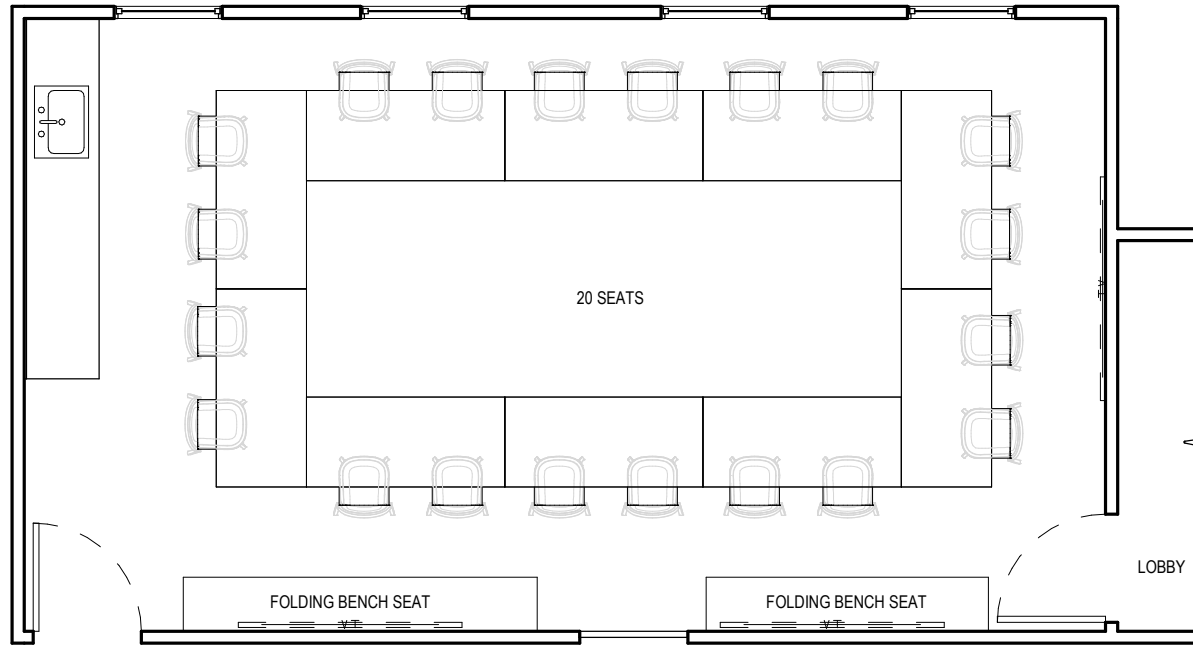
Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: 1 No. of Units: _____
 Function: Private office for public records keeping.
 Character: _____
 Adjacency: Required Adjacency: None
 Desired Adjacency: Support Staff Office, Work Room
 Required Separation: None
 Shared Facilities: None
 Public Access: None

Use	Environmental	Lighting		
Hours of use	8	Heating / Cooling	X	
Monday - Friday	8	Humidity	-	X
Weekends	0	Acoustical	X	X
Other		Operable Windows	-	X
		Other		-
		Fire Protection		-
Plumbing		Sprinklers	X	
Sink	-	Other		
InstaHot	-			
Other				

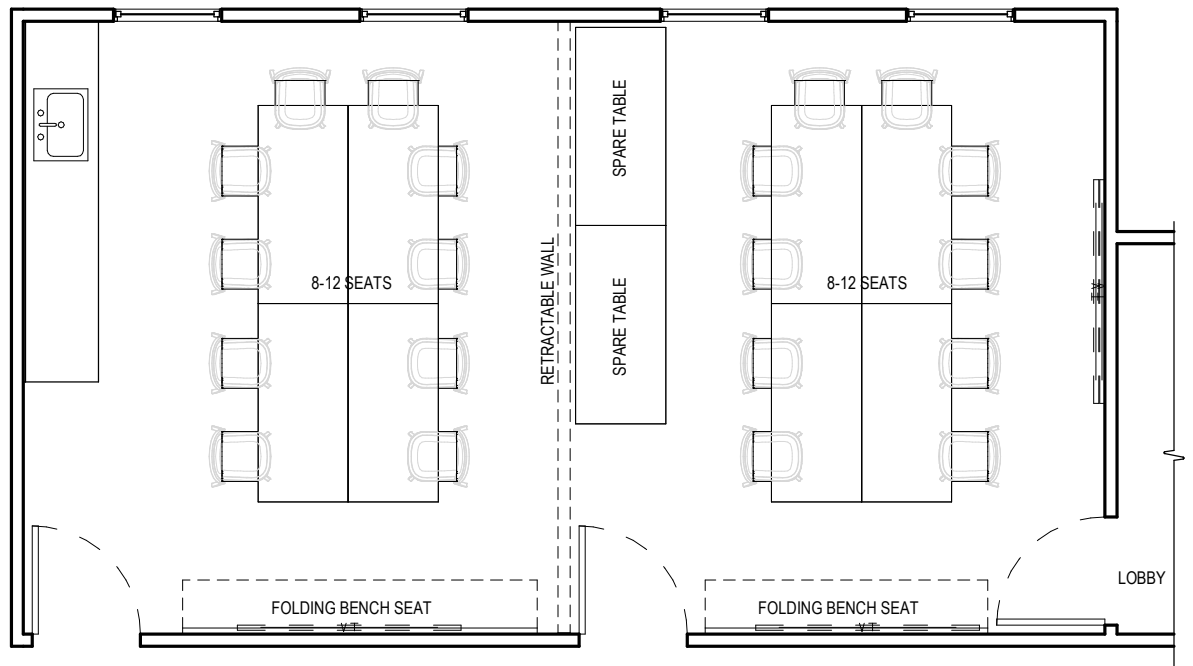
Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	1 to 6	4'x6'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	1	TBD
Other (UPS, Emergency, etc)		Desk Chair	1	TBD
		Side Chair	-	
Finishes	Casework	Desk	1	TBD
Floor	Uppers (lineal footage)	Worksurface	-	
Base	Lowers (lineal footage)	Table	-	
Partial / Full	Bookshelves (lineal...)	Shade - manual	X	
Wall Material	Worksurface	Shade - motorized	-	
Wall Finish	Drafting Station	Shade - blackout	-	
Acoustical wall panels	Other	Lockers	-	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	X	
Doors		Other		
Windows				
Relites / Transoms				
Other				

Special Considerations

Needs acoustical separation due to recording process



1 CONFERENCE ROOM - BOARD CONFIGURATION
SCALE: 3/16" = 1'-0"



2 CONFERENCE ROOM - MEETING CONFIGURATION
SCALE: 3/16" = 1'-0"

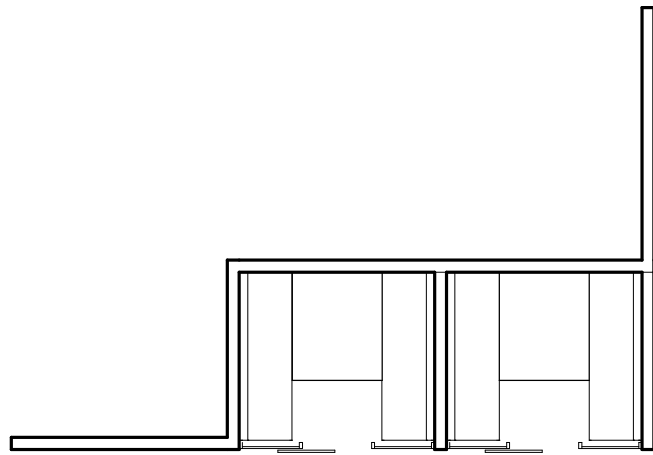
Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 40 Max.	No. of Units:
Function:	Public-facing conference room for meetings with non-employees and citizen academy	
Character:		
Adjacency:	Required Adjacency:	Entry lobby, Visitor Restroom
	Desired Adjacency:	Training Room
	Required Separation:	Kitchen + Break Room (Smells), Fitness (Noise)
Shared Facilities:	None	
Public Access:	Partial	

Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
		Other
Plumbing	Fire Protection	
Sink	Sprinklers	
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Display Monitor	Whiteboard	2	4'x6'
Clean power	Virtual Conf. Camera - Owl	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	20	
		Side Chair	20	

Finishes	Casework	Desk	-	
Floor	Uppers (lineal footage)	Worksurface	-	
Base	Lower (lineal footage)	Table	X	TBD
Partial / Full	Bookshelves (lineal footage)	Shade - manual	-	
Wall Material	Worksurface	Shade - motorized	X	
Wall Finish	Drafting Station	Shade - blackout	X	
Acoustical wall panels	Other	Lockers	-	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	-	
Doors		Display Monitors	3	TBD
Windows		Other		
Relites / Transoms				
Other				

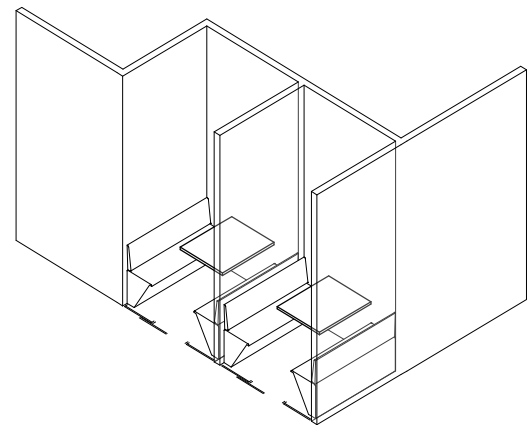
Special Considerations
15SF/Occupant. Board room style configuration, 15-20 at the table plus up to 20 chairs at perimeter. Classroom style, grouping of tables (rectangular), lecture style. TV w/ central computer on three walls. Whiteboards. Floor outlets and minimal exposed wiring across floor. Operable wall to small conference room to allow space to expand.



1

WORK SPACE

SCALE: 3/16" = 1'-0"



2

WORK SPACE

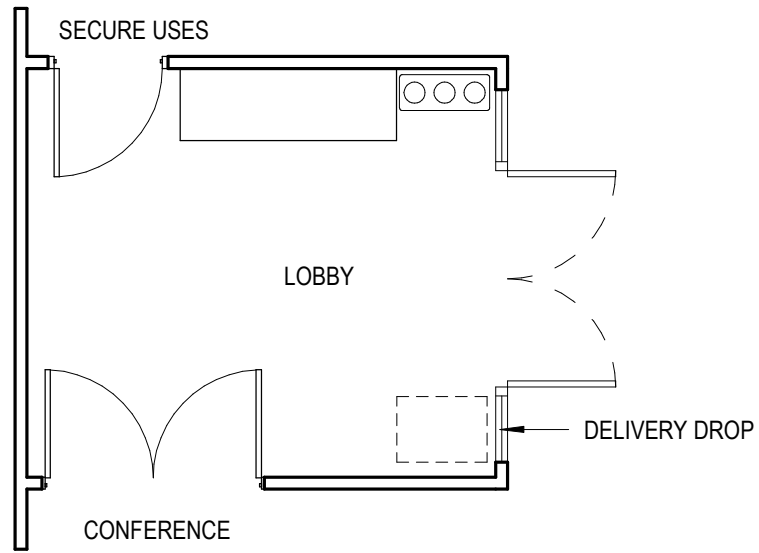
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants:	No. of Units:
Function:	Small work space to accomodate temporary use.	
Character:		
Adjacency:	Required Adjacency:	None
	Desired Adjacency:	None
	Required Separation:	Accoustically sensitive uses
Shared Facilities:	None	
Public Access:	None	

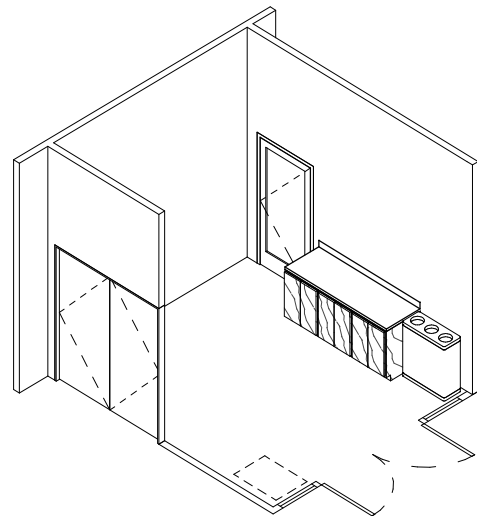
Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
Plumbing	Fire Protection	Other
Sink	Sprinklers	
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Bench...	X	TBD
		Side Chair	X	
Finishes	Casework	Desk	-	
Floor	Uppers (lineal footage)	Worksurface	-	
Base	Lowers (lineal footage)	Table	X	TBD
Partial / Full	Bookshelves (lineal...)	Shade - manual	-	
Wall Material	Worksurface	Shade - motorized	-	
Wall Finish	Drafting Station	Shade - blackout	-	
Acoustical wall panels	Other	Lockers	-	
Ceiling material		Fire Extinguishers	-	
Ceiling finish		Coat Hooks	-	
Doors		Other	-	
Windows			-	
Relites / Transoms			-	
Other			-	

Special Considerations



1 SECURE ENTRY LOBBY
SCALE: 3/16" = 1'-0"



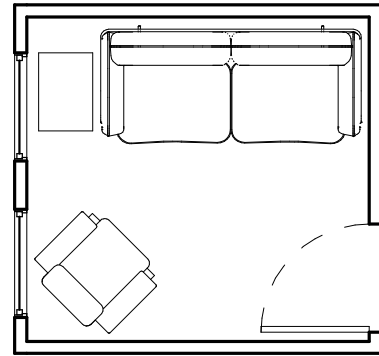
2 SECURE ENTRY LOBBY
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: N/A	No. of Units: 1
Function:	Small lobby with security vestibule, sign in area, and receiving area and drop-box.	
Character:		
Adjacency:	Required Adjacency: Conference rooms	Desired Adjacency: "Public" Restroom(s), Training Room
	Required Separation: Dispatch floor and other high-security uses	
Shared Facilities:		
Public Access:	Partial	

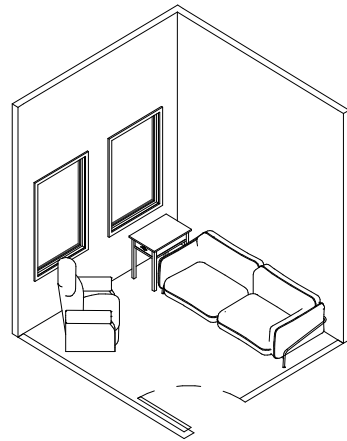
Use	Environmental	Lighting
Hours of use	Int. 24 Heating / Cooling	X Light Levels
Monday - Friday	Int. 24 Humidity	X Daylight (Yes/No)
Weekends	Int. 24 Acoustical	X LED Light
Other	Operable Windows	- Task Light
	Other	- Dimmable system
		- Controls
		- Other
Plumbing	Fire Protection	
Sink	Sprinklers	X
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	Y	4'X6'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	-	
Base	WD/CFT	Shade - manual	X	TBD
Partial / Full	FULL	Shade - motorized	-	
Wall Material	GYP	Shade - blackout	-	
Wall Finish	PNT	Drafting Station	-	
Acoustical wall panels	-	Other	-	
Ceiling material	ACP	Lockers	-	
Ceiling finish	PNT	Fire Extinguishers	X	
Doors	WD/STL	Coat Hooks	X	
Windows	WD/STL	Other	-	
Relites / Transoms	-			
Other - Walk-off Mat	CPT			

Special Considerations
Public parking for drop-offs and visiting officers open during daylight hours. Staff mailboxes in secure hallway. Small table or casework for sign in.



1 RESPITE ROOM
SCALE: 3/16" = 1'-0"

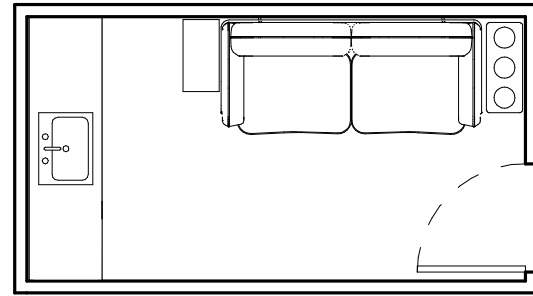


2 RESPITE ROOM
SCALE:

Room Number:	Area (ASF): 80 to 100 SF	Ceiling Height:
	Occupants: 1 to 2	No. of Units:
Function:	Small respite rooms with comfortable furniture	
Character:	Soothing environment, Acoustically separated from other high volume uses, furniture, Access to natural light and air	
Adjacency:	Required Adjacency: _____ Desired Adjacency: Break Room	
Shared Facilities:	Required Separation: High volume and high activity spaces	
Public Access:	One respite room will serve as a lactation room	
	None	

Use	Environmental	Lighting		
Hours of use	Int. 24 Heating / Cooling	X	Light Levels	
Monday - Friday	Int. 24 Humidity	-	Daylight (Yes/No)	X
Weekends	Int. 24 Acoustical	X	LED Light	X
Other	Operable Windows	X	Task Light	-
	Other		Dimmable system	X
			Controls	-
Plumbing	Fire Protection		Other	
Sink	Sprinklers	X		
InstaHot	Other			
Other				
Electrical	Equipment		Furniture & Fixtures	qty. size
Power	Projector	-	Whiteboard	-
Clean power	Document Camera	-	Proj. Screen manual	-
Tel/Data	Photocopier	-	Proj. Screen motorized	-
Cable TV	Fax Machine	-	Tackable Panel	-
CCTV	Printer	-	Map Rail	-
Security System	Phone	-	Bookshelves	-
Security Cameras	Clock	X	Lateral Files	-
Card Access System	Other - Blue Light	X	Pedestal...	-
Other (UPS, Emergency, etc)			Desk Chair	-
			Lounge...	X TBD
			Desk	-
Finishes	Casework		Worksurface	-
Floor	Uppers (lineal footage)	-	Table	X SIDE
Base	Lowers (lineal footage)	-	Shade - manual	X
Partial / Full	Bookshelves (lineal...)	-	Shade - motorized	-
Wall Material	Worksurface	-	Shade - blackout	X
Wall Finish	Drafting Station	-	Lockers	-
Acoustical wall panels	Other		Fire Extinguishers	-
Ceiling material			Coat Hooks	X
Ceiling finish			Other - Sofa / Bed	X TBD
Doors				
Windows				
Relites / Transoms				
Other				

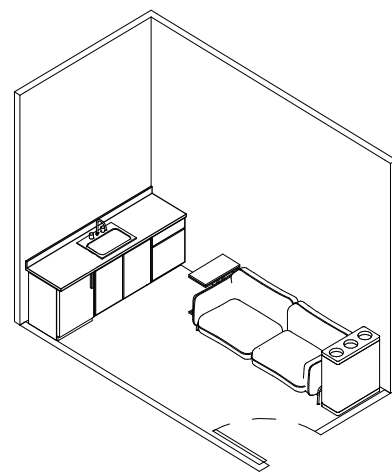
Special Considerations
More comfortable chair.



2

LACTATION ROOM

SCALE: 3/16" = 1'-0"



1

LACTATION ROOM

SCALE:

Project: What-Comm 911 Contact: _____
 Room Name: Lactation Room E-mail: _____
 Department: _____ Phone: _____

Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: 1 to 2 No. of Units: _____

Function: Small respite room with comfortable furniture. Sink and refrigerator to support lactati...
 Character: Soothing environment, Acoustically separated from other high volume uses, ... furniture, Access to natural light and air

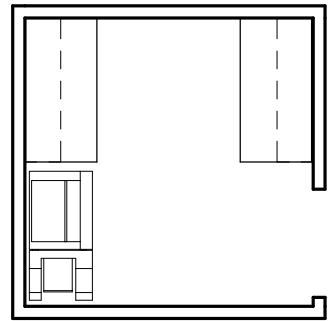
Adjacency: Required Adjacency: _____
 Desired Adjacency: Break Room
 Required Separation: High volume and high activity spaces

Shared Facilities: Can act as respite room
 Public Access: None

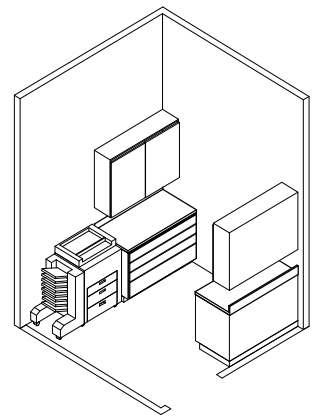
Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
		Other
Plumbing	Fire Protection	
Sink	Sprinklers	
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Lounge...	X	TBD
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	X	SIDE
Base	Lowers (lineal footage)	Shade - manual	X	
Partial / Full	Bookshelves (lineal...)	Shade - motorized	-	
Wall Material	Worksurface	Shade - blackout	X	
Wall Finish	Drafting Station	Refrigerator	X	TBD
Acoustical wall panels	Other	Fire Extinguishers	-	
Ceiling material		Coat Hooks	X	
Ceiling finish		Other - Sofa / Bed	X	TBD
Doors				
Windows				
Relites / Transoms				
Other				

Special Considerations



1 WORK ROOM
SCALE: 3/16" = 1'-0"



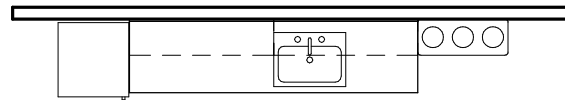
2 WORK ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
Function:	Occupants: 0	No. of Units:
Character:	Room to house copier, printer, fax machine, small plotter, stationary storage	
Adjacency:	Required Adjacency:	
	Desired Adjacency:	Support Staff Office, Public Record Office
	Required Separation:	None
Shared Facilities:	None	
Public Access:	None	

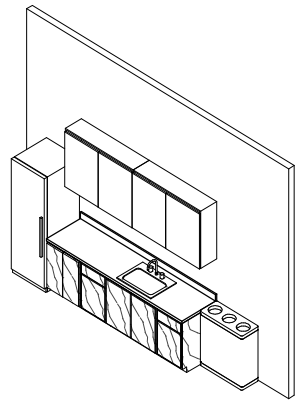
Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
		Other
Plumbing	Fire Protection	
Sink	Sprinklers	
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	X	3'X3'
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	TBD
Floor	Uppers (lineal footage)	Table	-	
Base	Lowers (lineal footage)	Shade - manual	-	
Partial / Full	Bookshelves (lineal...)	Shade - motorized	-	
Wall Material	Worksurface	Shade - blackout	-	
Wall Finish	Drafting Station	Lockers	-	
Acoustical wall panels	Other	Fire Extinguishers	-	
Ceiling material		Coat Hooks	-	
Ceiling finish		Trash and Recycle	X	
Doors		Other - Shredding Bin	X	
Windows				
Relites / Transoms				
Other				

Special Considerations
Existing work room houses litter box for cats, consider new location.



1 DISPATCH KITCHENETTE
SCALE: 3/16" = 1'-0"



2 DISPATCH KITCHENETTE
SCALE:

Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: _____ No. of Units: _____

Function: Small kitchenette for quick meal prep, snacks, and drinks for telecommunicators whil...
 Character: _____

Adjacency: Required Adjacency: Dispatch Floor
 Desired Adjacency: None
 Required Separation: None

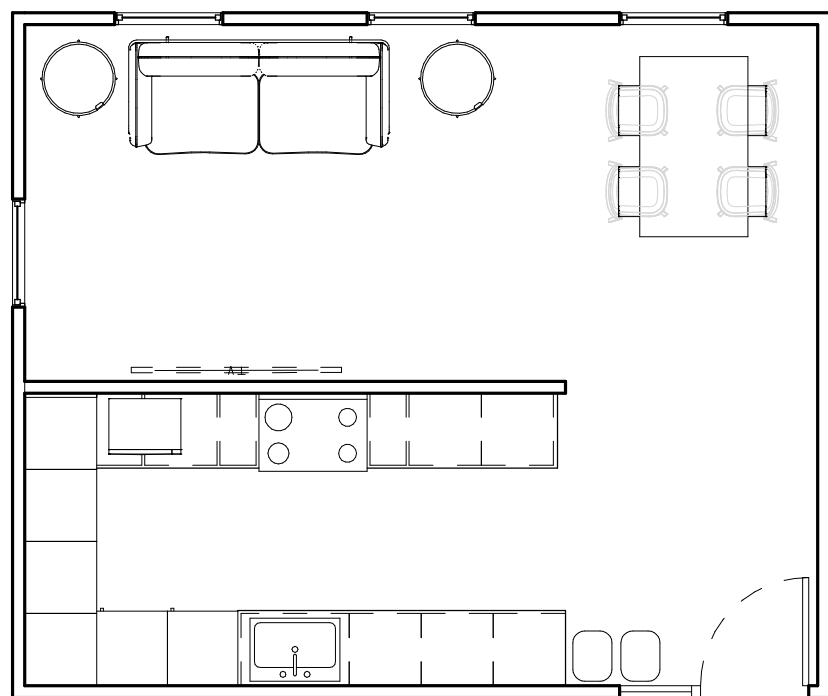
Shared Facilities: On dispatch floor
 Public Access: None

Use	Hours of use	Environmental	Lighting	
Hours of use	24	Heating / Cooling	X	Light Levels
Monday - Friday	24	Humidity	X	Daylight (Yes/No)
Weekends	24	Acoustical	-	LED Light
Other		Operable Windows	-	Task Light
		Other		Dimmable system
				Controls
				Other

Plumbing	Fire Protection	
Sink	Sprinklers	-
InstaHot	Other	
Other - Garbage Disposal		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers(lineal footage)	Table	-	
Base	Lower(lineal footage)	Trash+Recycle	X	
Partial / Full	Bookshelves(lineal...)	Refrigerator	X	
Wall Material	Worksurface	Shade - blackout	-	
Wall Finish	Drafting Station	Lockers	-	
Acoustical wall panels	Other - Shift meal staging	Fire Extinguishers	X	
Ceiling material		Coat Hooks	-	
Ceiling finish		Other		
Doors				
Windows				
Relites / Transoms				
Other				

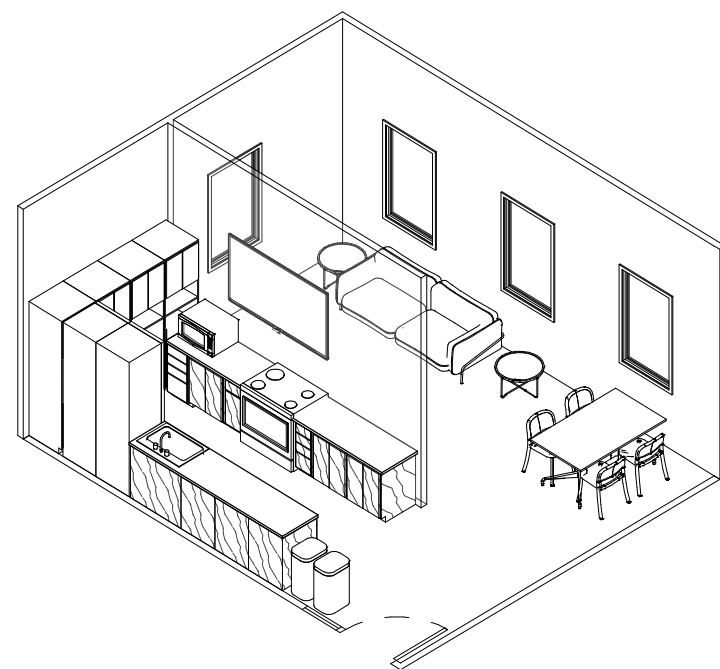
Special Considerations _____



1

KITCHEN + BREAK ROOM

SCALE: 3/16" = 1'-0"



2

KITCHEN + BREAK ROOM

SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants: 6	No. of Units:
Function:	Kitchen visually separated. Break room to provide seating, TV, and small gathering...	
Character:		
Adjacency:	Required Adjacency:	
	Desired Adjacency: Patio Space	
	Required Separation: Conference Room + Dispatch Floor (Smells), Quiet Room	
Shared Facilities:	None	
Public Access:	None	

Use	Environmental	Lighting	
Hours of use	Heating / Cooling	Light Levels	
Monday - Friday	Humidity	Daylight (Yes/No)	X
Weekends	Acoustical	LED Light	X
Other	Operable Windows	Task Light	-
	Other	Dimmable system	-
		Controls	-
		Other	-
Plumbing	Fire Protection		
Sink	Sprinklers		X
InstaHot	Other		-
Other - Disposal or Alternative			X

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Display Monitor	Whiteboard	X	
Clean power	Document Camera	Stove	X	
Tel/Data	Photocopier	Oven	X	
Cable TV	Fax Machine	Dishwasher	X	
CCTV	Printer	Microwave	X	
Security System	Phone	Trash and recycle	X	
Security Cameras	Clock	Refridgerator	2 or (1)	(Indust.)
Card Access System	Other - Blue Light	Avanti	TBD	
Other (UPS, Emergency, etc)		Lounge chair - couch	1	TBD
		Desk	-	
		Worksurface	-	
		Dining Table	1	TBD
		Shade - manual	X	
		Shade - motorized	-	
		Shade - blackout	-	
		Lockers	-	
		Fire Extinguishers	X	
		Coat Hooks	X	
		Other - Display Monitor	1	TBD

Finishes	Casework		
Floor	Uppers (lineal footage)	X	
Base	Lowers (lineal footage)	X	
Partial / Full	Bookshelves (lineal...)	-	
Wall Material	Worksurface	-	
Wall Finish	Drafting Station	-	
Acoustical wall panels	Other	-	
Ceiling material			
Ceiling finish			
Doors			
Windows			
Relites / Transoms			
Other			

Special Considerations

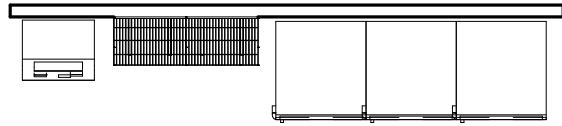
Exhaust. Avanti. Group meal prep. Increase pantry storage.

Room Number:	Area (ASF): 45SF 14'X3'	Ceiling Height:
Function:	Occupants: 0	No. of Units:
Character:	Wall space for Avanti or similar vending equipment.	
Adjacency:	Required Adjacency: Kitchen and Break Room	
	Desired Adjacency: None	
	Required Separation: Dispatch Floor, Conference Room	
Shared Facilities:	Kitchen and break room	
Public Access:	None	

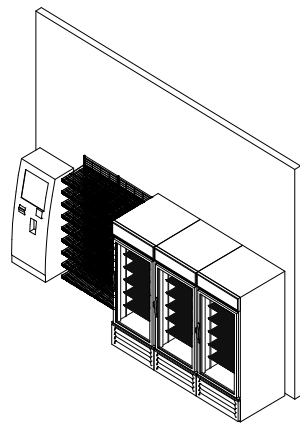
Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	Fluorescent Light
Other	Operable Windows	LED Light
	Other	Task Light
		Dimmable system
Plumbing	Fire Protection	Controls
Sink	Sprinklers	Other
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard		
Clean power	Document Camera	Blackboard		
Tel/Data	Photocopier	Proj. Screen manual		
Cable TV	Fax Machine	Proj. Screen motorized		
CCTV	Printer	Tackable Panel		
Security System	Phone	Map Rail		
Security Cameras	Clock	Bookshelves		
Card Access System	Other	Lateral Files		
Other (UPS, Emergency, etc)		Pedestal Files		
		Desk Chair		
Finishes	Casework	Side Chair		
Floor	Uppers (lineal footage)	Desk		
Base	Lowers (lineal footage)	Worksurface		
Partial / Full	Bookshelves (lineal...)	Table		
Wall Material	Worksurface	Shade - manual		
Wall Finish	Drafting Station	Shade - motorized		
Acoustical wall panels	Other	Shade - blackout		
Ceiling material		Lockers		
Ceiling finish		Fire Extinguishers		
Doors		Coat Hooks		
Windows		Other		
Relites / Transoms				
Other				

Special Considerations
 Approx. 14 LF (Lineal Feet) required



1 VENDING - AVANTI
 SCALE: 3/16" = 1'-0"



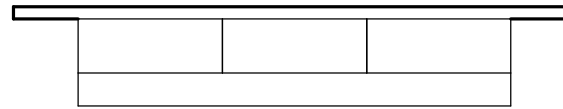
2 VENDING - AVANTI
 SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants:	No. of Units: 20+
Function:	Casework for telecommunicator's headsets and other small items used on the dispatc...	
Character:		
Adjacency:	Required Adjacency:	Dispatch Floor
	Desired Adjacency:	None
	Required Separation:	None
Shared Facilities:	Dispatch Floor	
Public Access:	None	

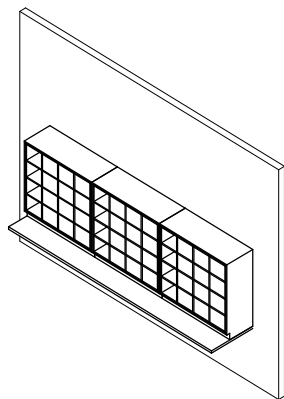
Use	Environmental	Lighting
Hours of use	24 Heating / Cooling	- Light Levels
Monday - Friday	24 Humidity	- Daylight (Yes/No)
Weekends	24 Acoustical	- LED Light
Other	Operable Windows	- Task Light
	Other	- Dimmable system
		- Controls
Plumbing	Fire Protection	Other
Sink	- Sprinklers	-
InstaHot	- Other	-
Other	-	-

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	- Projector	- Whiteboard	-	
Clean power	- Document Camera	- Proj. Screen manual	-	
Tel/Data	- Photocopier	- Proj. Screen motorized	-	
Cable TV	- Fax Machine	- Tackable Panel	-	
CCTV	- Printer	- Map Rail	-	
Security System	- Phone	- Bookshelves	-	
Security Cameras	- Clock	- Lateral Files	-	
Card Access System	- Other	- Pedestal...	-	
Other (UPS, Emergency, etc)	-	- Desk Chair	-	
		- Side Chair	-	
		- Desk	-	
Finishes	Casework	- Worksurface	-	
Floor	- Uppers (lineal footage)	- Table	-	
Base	- Lowers (lineal footage)	- Shade - manual	-	
Partial / Full	- Bookshelves (lineal...)	- Shade - motorized	-	
Wall Material	- Worksurface	- Shade - blackout	-	
Wall Finish	- Drafting Station	- Lockers	-	
Acoustical wall panels	- Other	- Fire Extinguishers	-	
Ceiling material	-	- Coat Hooks	-	
Ceiling finish	-	- Other - Dispatch Cubbies	20+	TBD
Doors	-			
Windows	-			
Relites / Transoms	-			
Other	-			

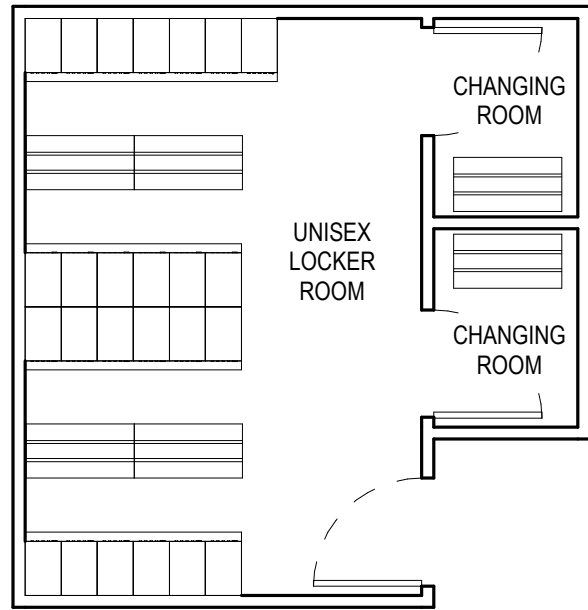
Special Considerations
 40 Dispatcher cubbies required, with space for an additional 10.



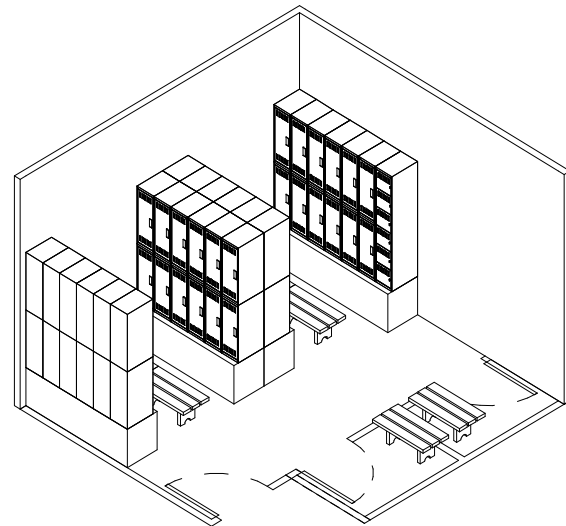
1 DISPATCH STORAGE
 SCALE: 3/16" = 1'-0"



2 DISPATCH STORAGE
 SCALE:



1 DISPATCHER LOCKER ROOM
SCALE: 3/16" = 1'-0"



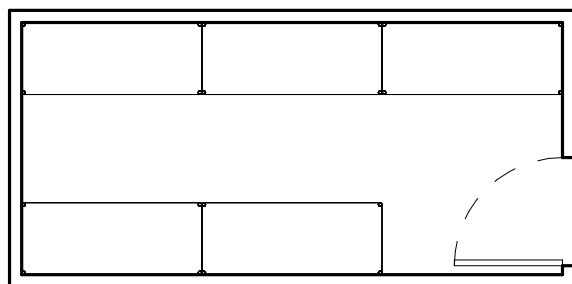
2 DISPATCHER LOCKER ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
	Occupants:	No. of Units:
Function:	Locker room for dispatchers with enough storage space for clothes, medicine, other essentials. 40 Lockers on day one, space for 50 in the future.	
Character:		
Adjacency:	Required Adjacency: Fitness Room, Break Room Desired Adjacency: Common path of arrival for telecommunicators Required Separation: None	
Shared Facilities:	None	
Public Access:	None	

Use	Environmental	Lighting	
Hours of use	24	Heating / Cooling	X
Monday - Friday	24	Humidity	X
Weekends	24	Acoustical	-
Other		Operable Windows	-
		Other	
Plumbing	Fire Protection	Lighting	
Sink	Sprinklers	Light Levels	
InstaHot	Other	Daylight (Yes/No)	-
Other		LED Light	X
		Task Light	-
		Dimmable system	-
		Controls	-
		Other	

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other - Blue Light	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	-	
Base	Lowers (lineal footage)	Shade - manual	-	
Partial / Full	Bookshelves (lineal...)	Shade - motorized	-	
Wall Material	Worksurface	Shade - blackout	-	
Wall Finish	Other - Laundry Hamper	Lockers	50	Half HT.
Acoustical wall panels		Fire Extinguishers	-	
Ceiling material		Coat Hooks	X	
Ceiling finish		Other		
Doors				
Windows				
Relites / Transoms				
Other				

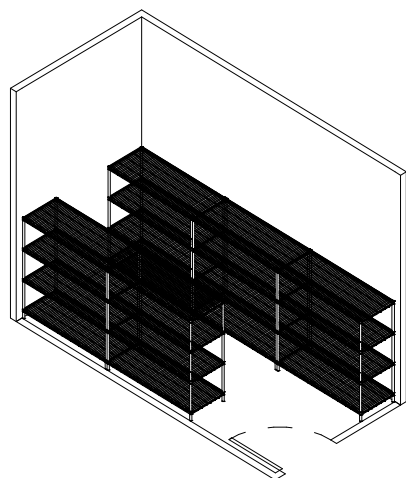
Special Considerations



1

EMERGENCY STORAGE ROOM

SCALE: 3/16" = 1'-0"



2

EMERGENCY STORAGE ROOM

SCALE:

Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: _____ No. of Units: _____

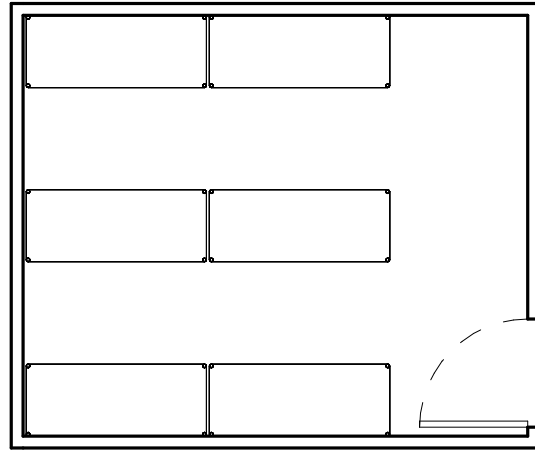
Function: Storage of emergency supplies in case of a catastrophic event
 Character: _____

Adjacency: Required Adjacency _____
 Desired Adjacency _____
 Required Separation _____

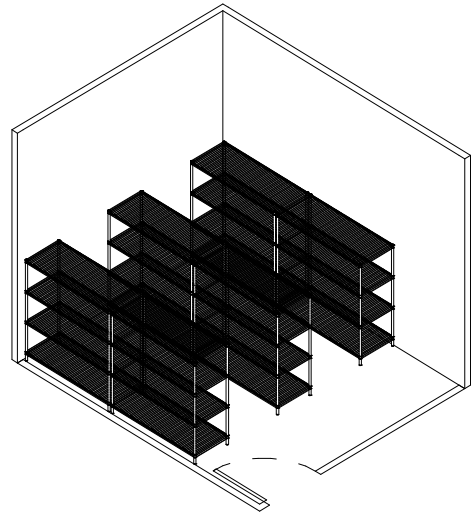
Shared Facilities: _____
 Public Access: _____

Use	Environmental	Lighting		
Hours of use	Heating / Cooling	Light Levels	-	
Monday - Friday	Humidity	Daylight (Yes/No)	-	
Weekends	Acoustical	LED Light	-	X
Other	Operable Windows	Task Light	-	
	Other	Dimmable system	-	
		Controls	-	
Plumbing	Fire Protection	Other	-	
Sink	Sprinklers		X	
InstaHot	Other		-	
Other			-	
Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	-	
Other (UPS, Emergency, etc)		Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	-	
Base	Lower (lineal footage)	Shade - manual	-	
Partial / Full	Bookshelves (lineal...)	Shade - motorized	-	
Wall Material	Worksurface	Shade - blackout	-	
Wall Finish	Drafting Station	Lockers	-	
Acoustical wall panels	Other	Fire Extinguishers	-	
Ceiling material		Coat Hooks	-	
Ceiling finish		Other - Wire Racks	5	2'x6'
Doors				
Windows				
Relites / Transoms				
Other				

Special Considerations



1 SUPPLY ROOM
SCALE: 3/16" = 1'-0"



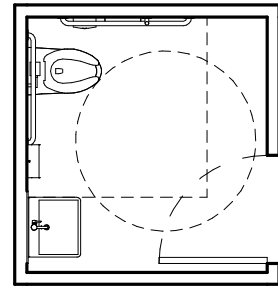
2 SUPPLY ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
Function:	Occupants: 0	No. of Units:
Character:	General storage room	
Adjacency:	Required Adjacency: None	
	Desired Adjacency: None	
	Required Separation: None	
Shared Facilities:	None	
Public Access:	None	

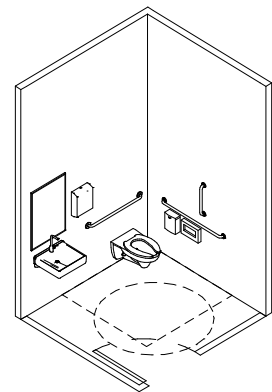
Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
		Other
Plumbing	Fire Protection	
Sink	Sprinklers	
InstaHot	Other	
Other		

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	
Clean power	Document Camera	Proj. Screen manual	-	
Tel/Data	Photocopier	Proj. Screen motorized	-	
Cable TV	Fax Machine	Tackable Panel	-	
CCTV	Printer	Map Rail	-	
Security System	Phone	Bookshelves	-	
Security Cameras	Clock	Lateral Files	-	
Card Access System	Other	Pedestal...	-	
Other (UPS, Emergency, etc)	?	Desk Chair	-	
		Side Chair	-	
		Desk	-	
Finishes	Casework	Worksurface	-	
Floor	Uppers (lineal footage)	Table	-	
Base	Lowers (lineal footage)	Shade - manual	-	
Partial / Full	Bookshelves (lineal...)	Shade - motorized	-	
Wall Material	Worksurface	Shade - blackout	-	
Wall Finish	Drafting Station	Lockers	-	
Acoustical wall panels	Other	Fire Extinguishers	-	
Ceiling material		Coat Hooks	-	
Ceiling finish		Other - Wire Racks	7	2'x6'
Doors				
Windows				
Relites / Transoms				
Other				

Special Considerations



1 TYP. ADA RESTROOM
SCALE: 3/16" = 1'-0"



2 TYP. ADA RESTROOM
SCALE:

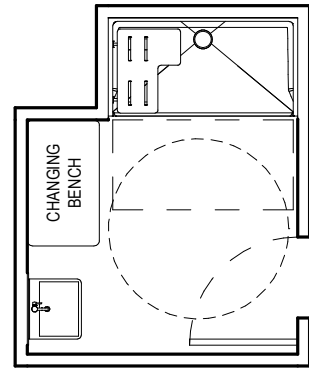
Room Number:	Area (ASF):	Ceiling Height:
	Occupants:	No. of Units:
Function:	Gender-neutral ADA restroom. Multi-stall gender neutral arrangement will be explored in schematic design.	
E		
Adjacency:	Required Adjacency:	None
	Desired Adjacency:	Dispatch floor
	Required Separation:	None
Shared Facilities:	None	
Public Access:	None	

Use	Environmental	Lighting
Hours of use	Heating / Cooling	Light Levels
Monday - Friday	Humidity	Daylight (Yes/No)
Weekends	Acoustical	LED Light
Other	Operable Windows	Task Light
	Other	Dimmable system
		Controls
		Other

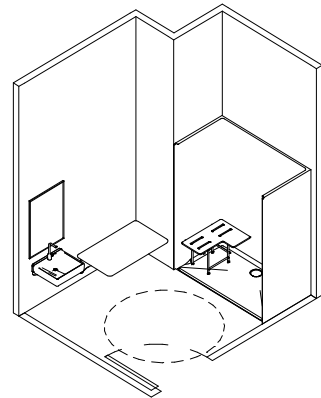
Plumbing	Fire Protection
Sink	Sprinklers
Toilet	Other
Other - Bidet	

Electrical	Equipment	Furniture & Fixtures	qty.	size
Power	Projector	Whiteboard	-	-
Clean power	Document Camera	Proj. Screen manual	-	-
Tel/Data	Photocopier	Proj. Screen motorized	-	-
Cable TV	Fax Machine	Tackable Panel	-	-
CCTV	Printer	Map Rail	-	-
Security System	Phone	Bookshelves	-	-
Security Cameras	Clock	Lateral Files	-	-
Card Access System	Other - Blue Light	Pedestal...	-	-
Other (UPS, Emergency, etc)		Desk Chair	-	-
		Side Chair	-	-
		Desk	-	-
		Worksurface	-	-
		Table	-	-
		Shade - manual	-	-
		Shade - motorized	-	-
		Shade - blackout	-	-
		Lockers	-	-
		Fire Extinguishers	-	-
		Coat Hooks	X	-
		Other - Grab Bars	3	-

Special Considerations
Requested one ADA restroom with bidet



1 ADA SHOWER ROOM
SCALE: 3/16" = 1'-0"



2 ADA SHOWER ROOM
SCALE:

Room Number:	Area (ASF):	Ceiling Height:
Function:	Occupants:	No. of Units:
Character:	Shower Room - 3 Total (2-Standard, 1-ADA)	
Adjacency:	Required Adjacency:	Fitness Room
	Desired Adjacency:	Dispatch Locker Room
	Required Separation:	None
Shared Facilities:	None	
Public Access:	None	

Use	Environmental	Lighting		
Hours of use	Int. 24 Heating / Cooling	X	Light Levels	
Monday - Friday	Int. 24 Humidity	X	Daylight (Yes/No)	-
Weekends	Int. 24 Acoustical	-	LED Light	X
Other	Operable Windows	-	Task Light	-
	Other		Dimmable system	-
			Controls	-
Plumbing	Fire Protection		Other	
Sink	X Sprinklers	-		
InstaHot	- Other			
Other				
Electrical	Equipment		Furniture & Fixtures	qty. size
Power	X Projector	-	Whiteboard	-
Clean power	- Document Camera	-	Proj. Screen manual	-
Tel/Data	- Photocopier	-	Proj. Screen motorized	-
Cable TV	- Fax Machine	-	Tackable Panel	-
CCTV	- Printer	-	Map Rail	-
Security System	- Phone	-	Bookshelves	-
Security Cameras	- Clock	-	Lateral Files	-
Card Access System	- Other - Blue Light	X	Pedestal...	-
Other (UPS, Emergency, etc)			Desk Chair	-
			Side Chair	-
			Desk	-
Finishes	Casework		Worksurface	-
Floor	CFT Uppers (lineal footage)	-	Mirror	X TBD
Base	CFT Lower (lineal footage)	-	Towel Rod	X TBD
Partial / Full	FULL Bookshelves (lineal...)	-	Bench	X TBD
Wall Material	GYP Worksurface	-	Grab Bars	X TBD
Wall Finish	CWT Drafting Station	-	Lockers	-
Acoustical wall panels	- Other		Fire Extinguishers	-
Ceiling material	GYP		Coat / Towel Hooks	X
Ceiling finish	PNT		Other	
Doors	WD			
Windows	-			
Relites / Transoms	-			
Other				

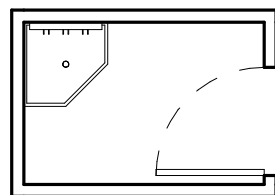
Special Considerations

Room Number: _____ Area (ASF): _____ Ceiling Height: _____
 Occupants: 0 No. of Units: 1

Function: Closet for janitorial supplies and mop sink.
 Character: _____

Adjacency: Required Adjacency None
 Desired Adjacency None
 Required Separation None

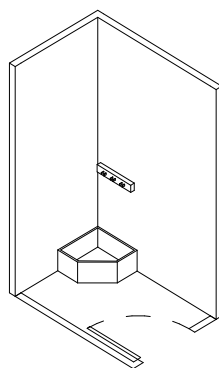
Shared Facilities: None
 Public Access: None



1

JANITORIAL CLOSET

SCALE: 3/16" = 1'-0"



2

JANITORIAL CLOSET

SCALE:

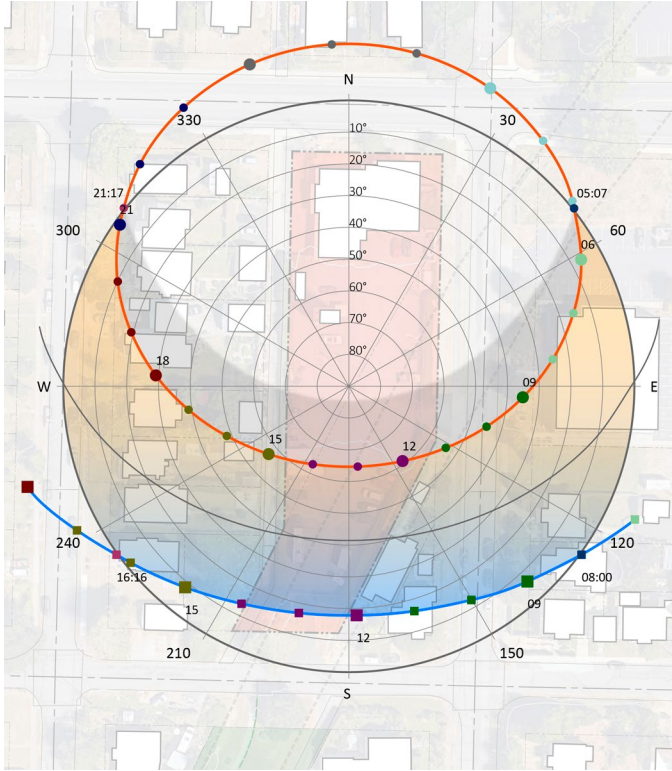
Use		Environmental		Lighting	
Hours of use	Varies	Heating / Cooling	-	Light Levels	
Monday - Friday	Varies	Humidity	-	Daylight (Yes/No)	-
Weekends	Varies	Acoustical	-	LED Light	X
Other		Operable Windows	-	Task Light	-
		Other		Dimmable system	-
				Controls	-
Plumbing		Fire Protection		Other	
Mop Sink	X	Sprinklers	X		
InstaHot	-	Other			
Other					
Electrical		Equipment		Furniture & Fixtures	qty. size
Power	X	Projector	-	Whiteboard	-
Clean power	-	Document Camera	-	Proj. Screen manual	-
Tel/Data	-	Photocopier	-	Proj. Screen motorized	-
Cable TV	-	Fax Machine	-	Tackable Panel	-
CCTV	-	Printer	-	Map Rail	-
Security System	-	Phone	-	Bookshelves	-
Security Cameras	-	Clock	-	Lateral Files	-
Card Access System	-	Other		Pedestal...	-
Other (UPS, Emergency, etc)	-			Desk Chair	-
				Side Chair	-
Finishes		Casework		Desk	-
Floor	VFT/CO...	Uppers (lineal footage)	-	Worksurface	-
Base	RB	Lowers (lineal footage)	-	Table	-
Partial / Full	FULL	Bookshelves (lineal...)	-	Shade - manual	-
Wall Material	GYP	Worksurface	-	Shade - motorized	-
Wall Finish	PNT	Drafting Station	-	Shade - blackout	-
Acoustical wall panels	N/A	Other		Lockers	-
Ceiling material	TBD			Fire Extinguishers	X
Ceiling finish	TBD			Coat Hooks	X
Doors	WD			Mop / Broom Holder	X
Windows	N/A			Shelves	X
Relites / Transoms	N/A			Other	
Other					

Special Considerations

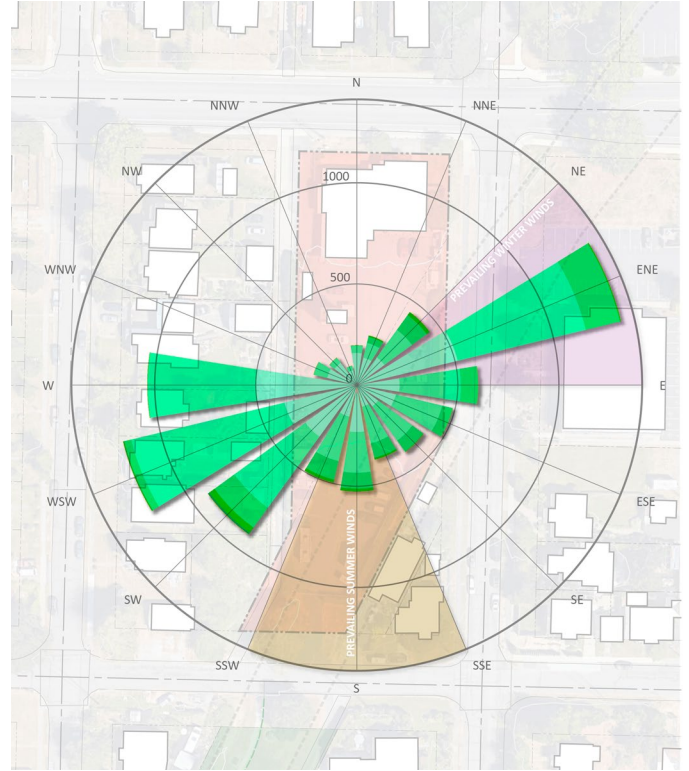
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APPENDIX E:

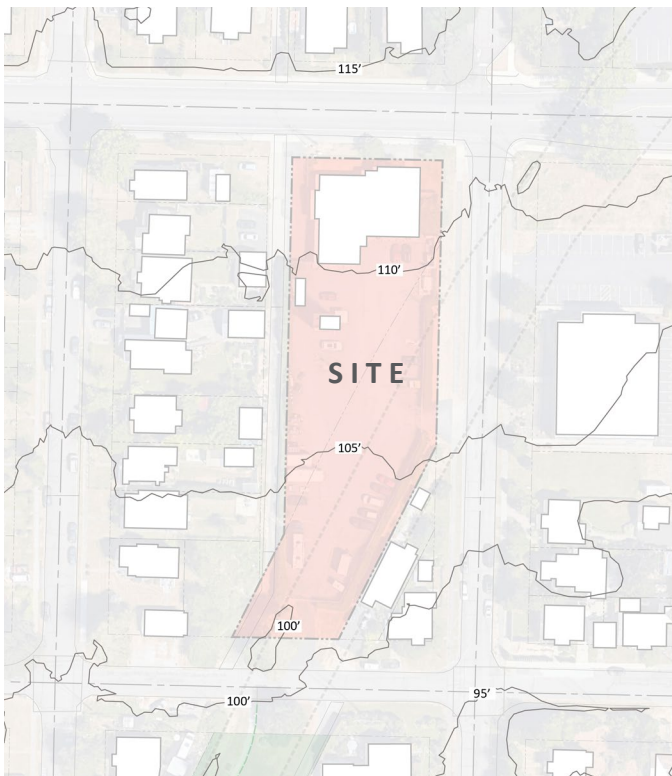
SITE ANALYSIS



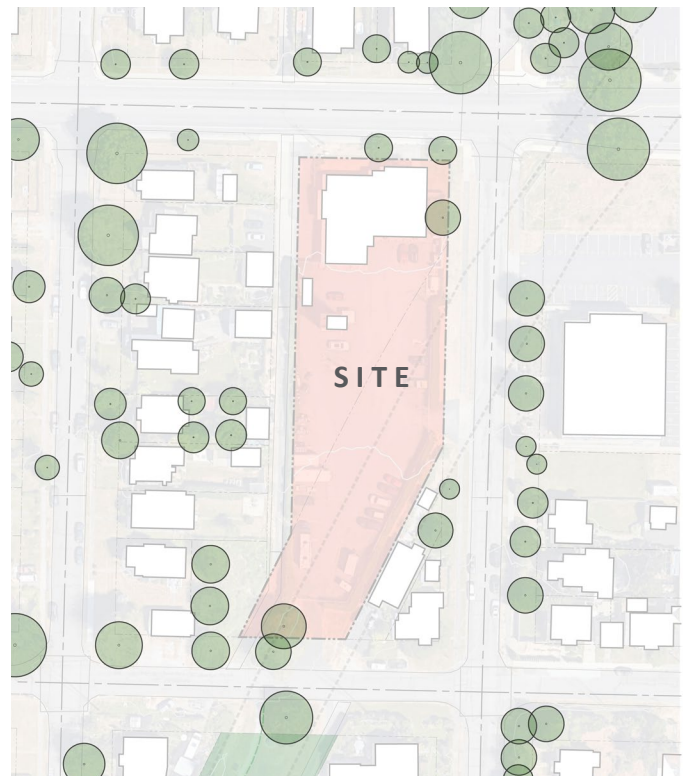
SOLAR ANALYSIS
SCALE 1"=120'-0"



WIND ANALYSIS
SCALE 1"=120'-0"

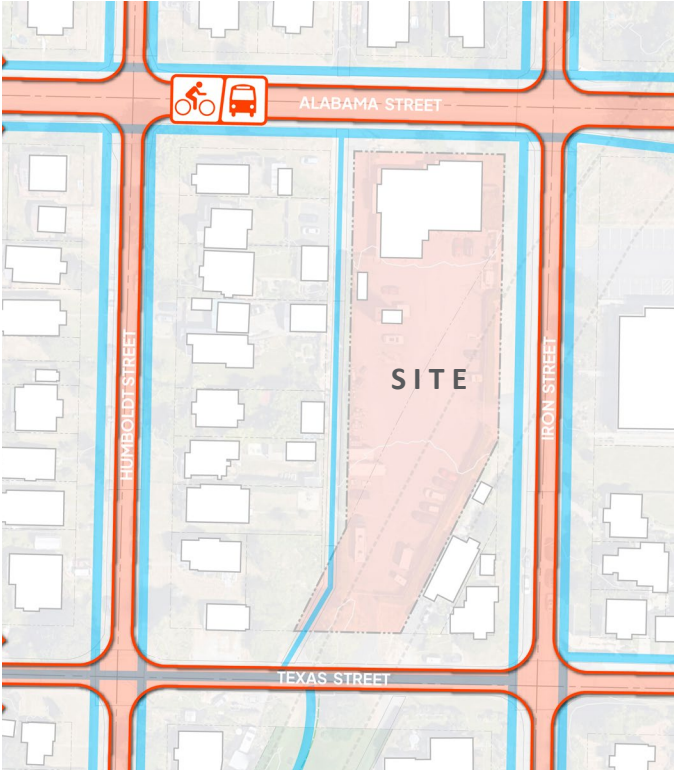


TOPOGRAPHIC ANALYSIS
SCALE 1"=120'-0"

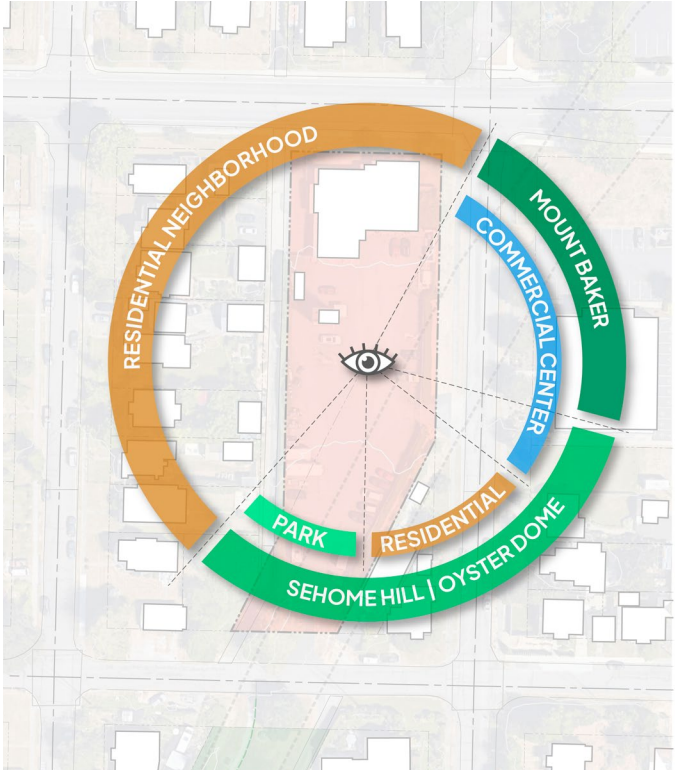


TREE CANOPY COVERAGE
SCALE 1"=120'-0"

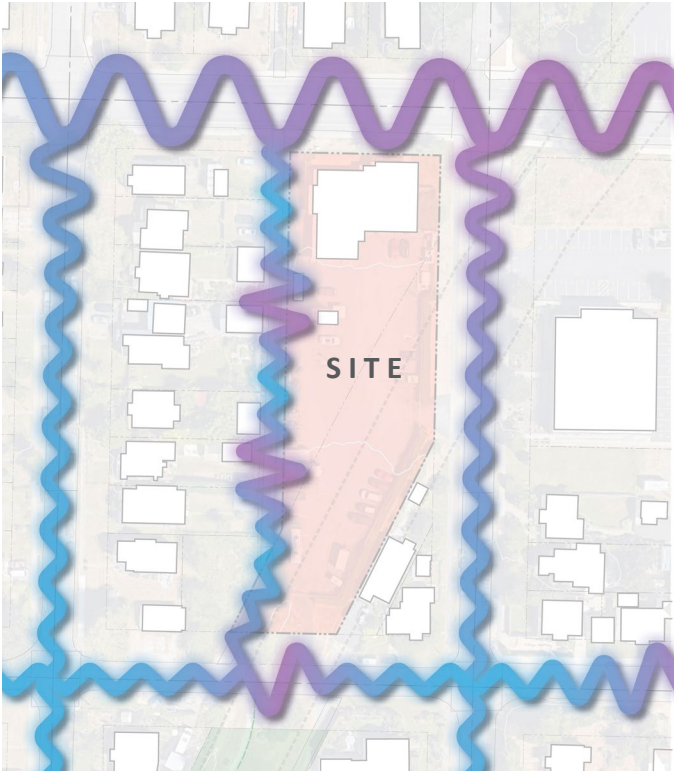




PRIMARY PEDESTRIAN AND VEHICULAR CIRCULATION
SCALE 1"=120'-0"



VIEWS ANALYSIS
SCALE 1"=120'-0"



PRIMARY NOISE SOURCES
SCALE 1"=120'-0"



FIRE ACCESS
SCALE 1"=120'-0"

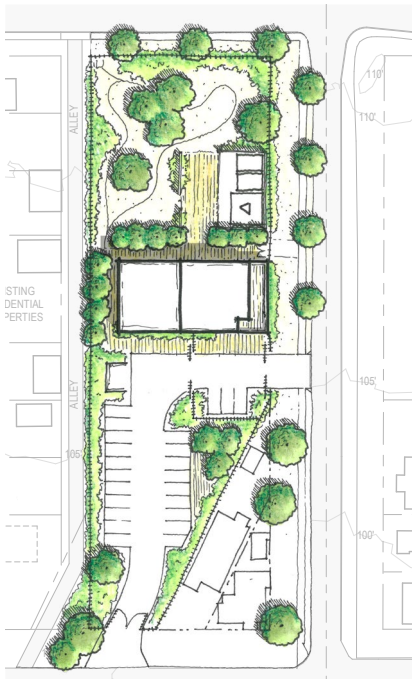


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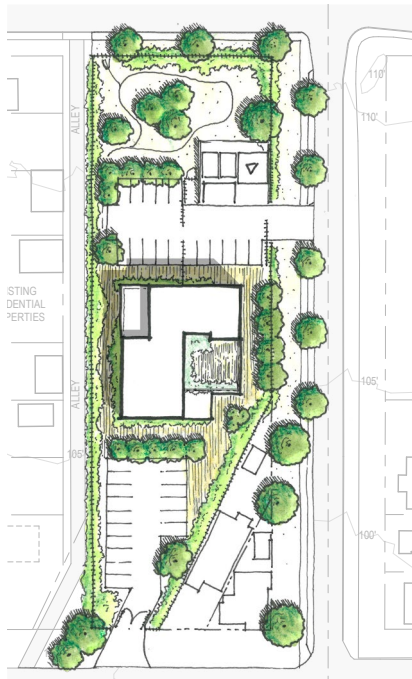
APPENDIX F:

DESIGN OPTIONS ANALYSIS

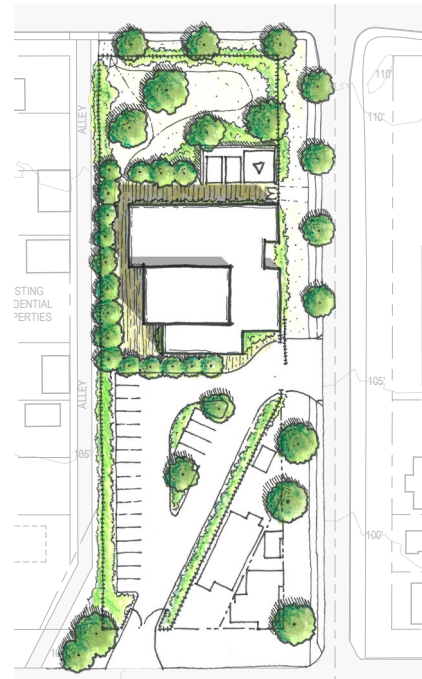
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CONCEPT A:
Glacial Erratic



CONCEPT B:
Coastal Sandstone
(Preferred)



CONCEPT C:
Geode



SITE LAYOUT: CONCEPT A
SCALE: 1"=60'-0"



CONCEPT A: Glacial Erratic

This scheme is articulated as a condensed two-story building which elevates the training and console spaces to the second floor. Stacking these and associated program areas on top of administrative and meeting spaces open retains a significant amount of site for circulation and future uses.

Preliminary Square Footage: 9,310 SF

Preliminary Parking Count: 23 Stalls

Response to Project Goals



- **Safe, Secure Facility**

Pros: Dispatch and training elevated to L2. Separate employee and delivery parking.

Cons: Building built up against east property line.



- **Redundant Systems for Continuous Operation**

Pros: TBD

Cons: TBD



- **Employee Health and Wellness**

Pros: Site and terrace spaces provide access to nature and views. All spaces have daylight access.

Cons:



- **Operational Efficiency**

Pros: Dispatch, training, and kitchen co-located.

Cons: Dispatch and IT on different floors.



- **Neighborhood Scale**

Pros: Smallest site footprint, oriented E-W.

Cons: Tallest portion of structure facing residential properties.

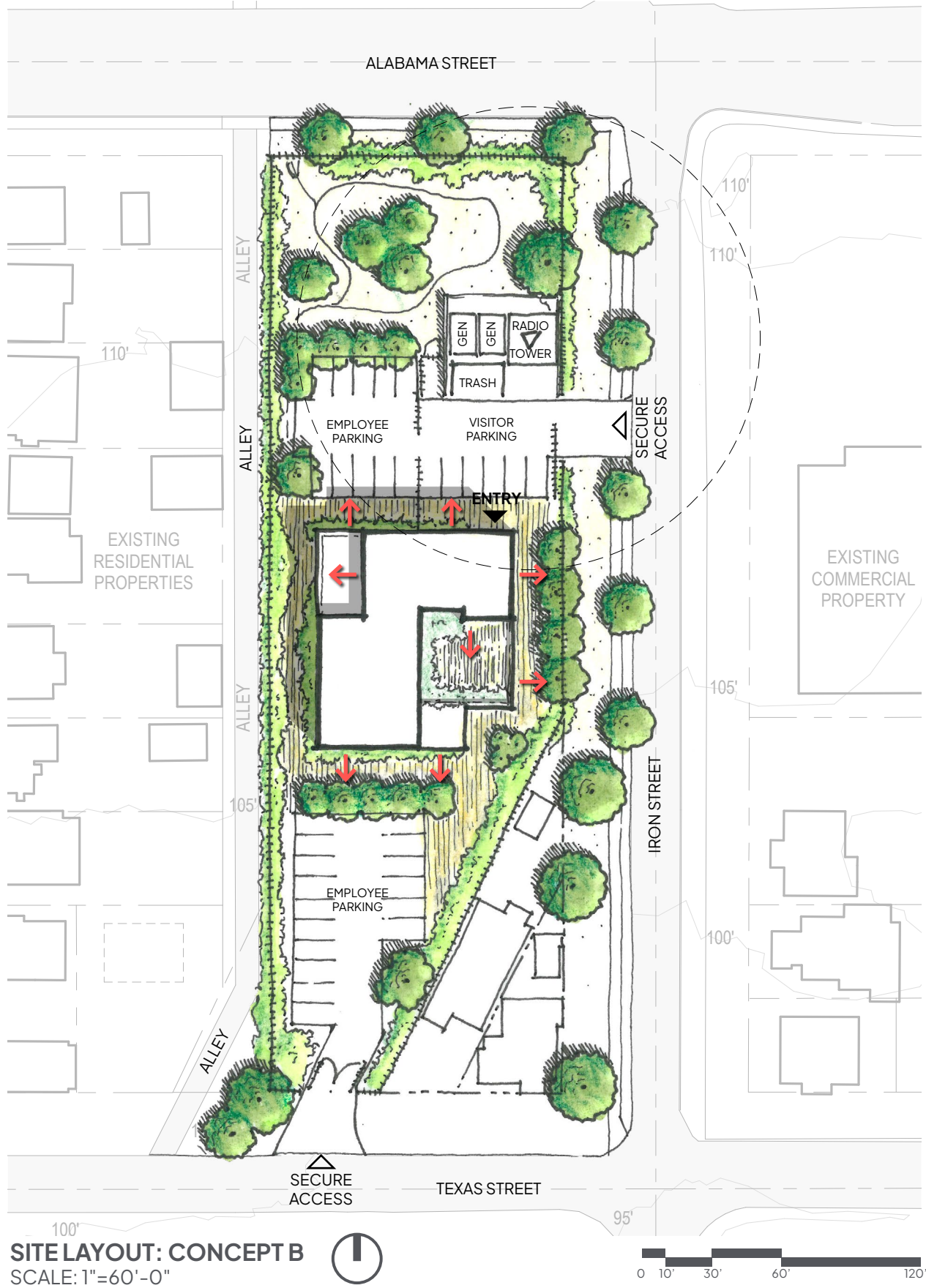


- **Program Flexibility**

Pros: N-S program expansion opportunity

Cons: No E-W program expansion opportunity. Upper level expansion dependent on lower level.





SITE LAYOUT: CONCEPT B
SCALE: 1"=60'-0"

CONCEPT B: Coastal Sandstone (Preferred)

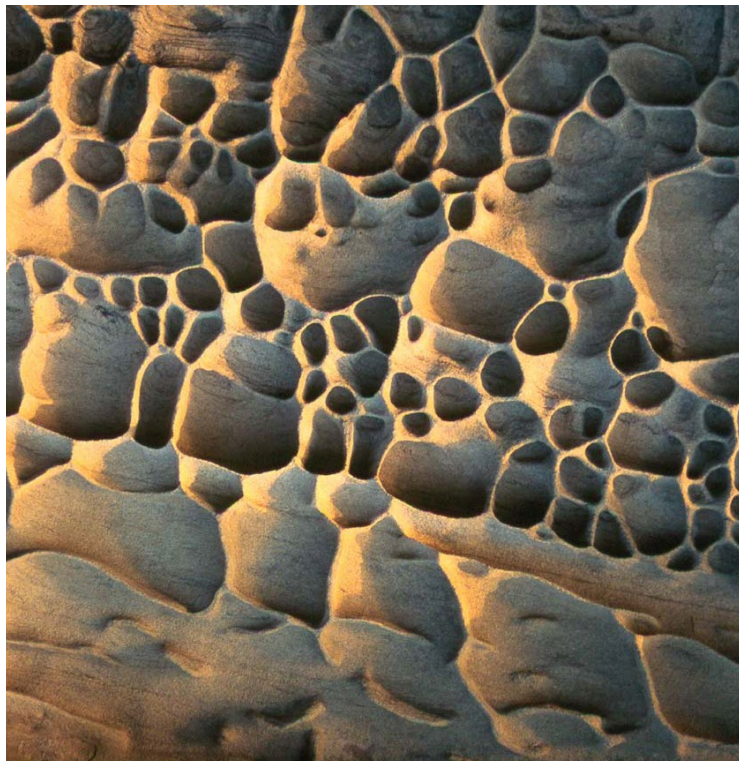
This 2-story scheme keeps training and dispatch on the lower level and elevating the admin offices and employee break areas to the second floor. Opportunities provided by this scheme could support visual and physical connection between spaces on different levels in the building.

Preliminary Square Footage: 9,585 SF

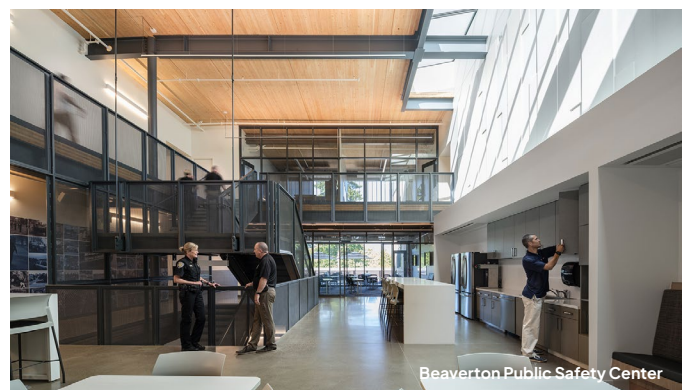
Preliminary Parking Count: 32 Stalls

Response to Project Goals

- ● **Safe, Secure Facility**
 Pros: Site buffer around entire facility with secure parking.
 Cons:
- ● **Redundant Systems for Continuous Operation**
 Pros: TBD
 Cons: TBD
- ● **Employee Health and Wellness**
 Pros: Site and terrace spaces provide access to nature and views. All spaces have daylight access.
 Cons:
- ● **Operational Efficiency**
 Pros: Dispatch and IT are collocated.
 Cons: Director offices separated from other uses .
- ● **Neighborhood Scale**
 Pros: Landscaped buffer around entire facility.
 Cons: Tallest portion of structure adjacent to residential properties.
- ● **Program Flexibility**
 Pros: Program expansion possible in nearly all directions.
 Cons: No ground level program expansion to the west.



Bexar Metropolitan 911



Beaverton Public Safety Center



SITE LAYOUT: CONCEPT C
SCALE: 1"=60'-0"



CONCEPT C: Geode

With all uses on a single level, this option is unique in how it organizes distinct precincts of use around the critical function spaces. Siting it to the north allows for ample parking on day one, and space toward Alabama for future parking or as an employee amenity space.

Preliminary Square Footage: 9,390 SF **Preliminary Parking Count:** 21 Stalls

Response to Project Goals

- • **Safe, Secure Facility**
Pros: Critical functions enveloped by supporting program areas.
Cons: Building built up against east property line with no visitor parking area.
- • **Redundant Systems for Continuous Operation**
Pros: TBD
Cons: TBD
- • **Employee Health and Wellness**
Pros: Site area to the north provides access to nature. Amenity spaces organized to have acoustical separation from each other.
Cons: Least site area for employee use. Access to daylight in central spaces.
- • **Operational Efficiency**
Pros: Distinct precincts of use organized from public-facing to private office and secure dispatch.
Cons: Longest interior path of travel from the lobby to offices and server room.
- • **Neighborhood Scale**
Pros: Single story height relates to neighborhood scale.
Cons: Largest site footprint of the three options.
- • **Program Flexibility**
Pros: North and west program expansion opportunity.
Cons: No east program expansion opportunity.



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APPENDIX G:

PRECEDENT RESEARCH



Robert Libke Public Safety Building - Oregon City, OR

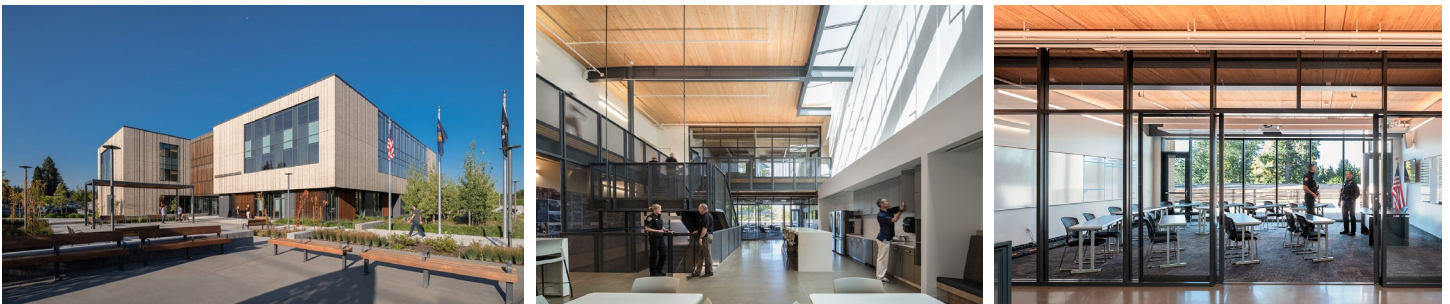
In the case of the Robert Libke Public Safety Building in Oregon City, the firm had the unique opportunity to provide added value by using mass timber as the primary building system and design driver. This was in part possible because the building is a single-story on a large, open site. The result is a clean, simple massing with Cross-Laminated Timber (CLT) bearing shear walls and a roof structure of glu-laminated (glulam) wood beams that were left exposed to the interior, adding warmth and beauty to the interior spaces.

Architect:
FFA Architecture

Engineer:
KPFF: Structural
PAE: MEP

Construction Type:
Type-VB

Structural Materials:
Mass Timber - CLT - GLT - Concrete



Beaverton Public Safety Center - Beaverton, OR

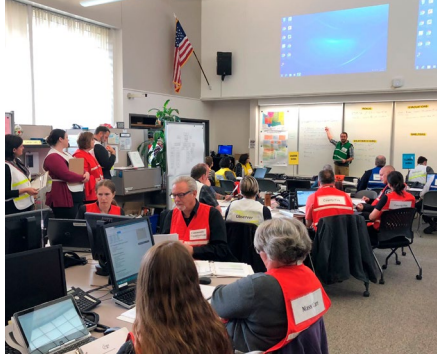
The 72,000 sf facility houses the Beaverton Police Department as well as the Office of Emergency Management. As an essential facility and the home to the Office of Emergency Management, facility resilience was a key design consideration. The building includes carefully considered load management, allowing areas of this 24-hour facility to turn off when not in use. The radiant heating and cooling system provides a high degree of comfort with low energy use. These load management strategies allowed for the team to downsize the emergency generation needs. With the emergency power generation, the team worked with the Office of Emergency Management to identify system risks including the reliability of fuel deliveries in the event of a significant seismic event.

Architect:
FFA Architecture

Engineer:
KPFF: Structural
PAE: MEP

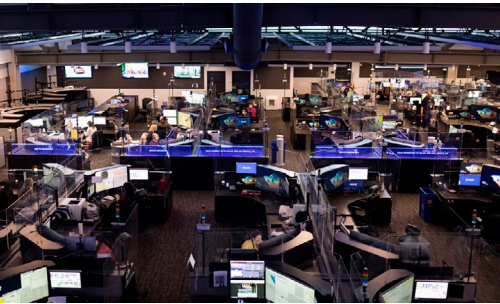
Construction Type:
Type-VB

Structural Materials:
CLT - Steel - Concrete



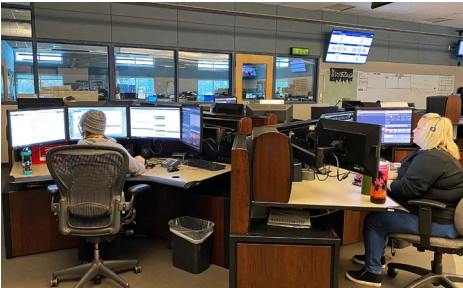
CRESA 911 - Clark County

CRESA 911 is Located in Vancouver, Washington surrounded by other government facilities. Notable features include, double-high dispatch spaces with clerestories, large meeting and conference space, and glass block to provide light but obscure views into the facility.



South Sound 911 - Pierce County

South Sound 911 is a consolidated regional 911 communications center in Tacoma. Relevant features include site program for employee health and wellness, office and meeting room character, vending services, layered security, and system redundancy.



SREC - Spokane County

Located in northeast Spokane next to the Spokane Fire Department Training Center and Spokane River. Defining features include robust planting and landscape around the facility, visual connection from dispatch to other spaces.