EXHIBIT G – METRO TRANSIT LAY-OVER TERMINAL AND PASSENGER WAITING AREAS

GENERAL DESCRIPTION

A major requirement of the development is a terminal facility for Metro Transit. The lay-over facility in the lower level and passenger waiting areas provided at grade shall meet the requirements as defined in the RFP and by the following specifications. It will be the responsibility of the Developer to design and construct the shell elements and utility rough-in. The City and Metro Transit will fit-out the spaces under separate contract. At a minimum, floor plans (lower level and grade level), sections, and structural designs shall be provided in the proposal response. Plans shall identify all components to be constructed by the Developer.

TRANSIT FACILITIES – TERMINAL SHELL

The City is looking to the selected developer to construct the shell of the Terminal. The Terminal is defined as the street level and below grade level within the footprint of the building where buses operate. The selected developer shall complete the final construction plans, specifications and cost estimate for the below grade terminal to the satisfaction of the City Engineer, the Metro Transit General Manager, and the FTA. At a minimum, the terminal plan shall include the following elements: below-grade floor and wall placement, grade level floor plan, bus ramps, and all utility connections and services required for the total structure that reasonably should be placed as part of the terminal construction. The design must conform to the following general operating assumptions and specifications, including:

- The flow of buses must be coordinated with pedestrian, automobile, and truck traffic.
- Bus circulation paths must enter the development from South 3rd Street, drop off passengers at an integrated, street level, passenger loading and unloading station, and either exit onto Washington Avenue or descend a ramp to the bus parking level.
- Entry and exit ramps from the buildings interior street level to the below grade terminal.
- All curves in ramps shall be counter-clockwise flow.
- Bus ramp lengths are to be maximized to reduce slopes.
- Once in the lower level bus parking, the majority of bus movements and circulation shall be in counter-clockwise flow.
- No less than 24 dedicated, uninhibited, bus parking spaces, including four, 60-foot, articulated buses, shall be provided. All bus parking spaces shall allow pull-in and pullout without affecting adjacent buses or stalls. Placement of columns and drive lanes shall provide adequate maneuverability.
- Bus operators will leave buses to access driver facilities (500 sqft.) within the terminal including restrooms, break room, supervisor's office, vertical circulation, and vending machines.
- Adequate space for mechanical and eletrical equipment while maintaining a 14 foot clearance height.

- Buses exit the lower level terminal via an ascending ramp, pick up passengers at an integrated, street level, passenger loading and unloading station, and exit onto Washington Avenue.

TRANSIT FACILITIES – PASSENGER WAITING AREAS

The City and Metro Transit developed concepts for passenger waiting areas. Three passenger waiting area have been identified:

- a 700 square foot area at the corner of South 3rd Street and Hennepin Avenue,
- a 345 square foot area along Nicollet Mall, and
- a 500 square foot area on the buildings interior as the last stop for buses laying over in the below grade terminal or as the first stop for buses leaving.

The at grade passenger waiting area shall be configured to allow a loading platform to accommodate two buses loading/unloading passengers simultaneously. The platform shall include standing area for transit patrons as well as an enclosed space, including seating. The enclosed space shall be configured in order to provide visual inspection of the space from the exterior. The space shall be configured with areas that can be observed from the platform. The passenger loading area shall be located in a manner that allows patrons to access the platform without crossing bus, truck, or car circulation lanes. Passenger waiting areas should be accessible from the street level of the project. These facilities will be part of the building's transit element, and will be operated and maintained by the Metro Transit. All future maintenance of the building's structural elements and exterior facades, including those accommodating the passenger waiting areas and sidewalks will remain the responsibility of the private development owner.

The design of these facilities shall address operational efficiency, with the intent to reduce loading and trip time. Design assumptions should include the following:

- The waiting area at South 3rd Street and Hennepin Avenue will serve 28 different routes, including 276 Hennepin Avenue buses and 132 South 3rd Street buses daily,
- The waiting area on the Nicollet Mall will serve 9 different routes or 522 bus stops daily,
- The passenger waiting area on the building's interior will serve approximately 500 buses daily. This waiting area shall include a raised concrete platform similar to sidewalk height in relation to the bus drive lane. It shall also, provide an interior common space to traverse between this passenger space and the Nicollet Mall passenger waiting area.

The passenger waiting areas must be designed and constructed to accommodate the following:

- Power and security infrastructure routed from the below grade terminal's utility source,
- A security camera system both within the waiting areas, on adjacent pedestrian walkways, and in the building skyways.
- Power and communication for transit information system board,
- Space heating and cooling with dedicated equipment,
- Adequate interior and exterior lighting,

- Building finishes comparable to other Metro Transit public facilities that can withstand public use including graffiti coatings,
- Entry and exit doors that will accept Transit key system and electronic time clock control for passenger waiting areas.
- Building aesthetics including a high quality environment which will encourage transit,
- Full width and height exterior glass to maximize visibility both in and out of the spaces, and
- Passenger comfort and protection from the weather, including exterior canopy where permitted.

TERMINAL OPERATIONS

The terminal will be a 24-hour, 7 day per week facility with an estimated 600 buses arriving and departing from the facility per day, and peak flows of 120 buses per hour between 3 PM and 6 PM. Coordinate flow of buses with automobile and truck traffic. Bus circulation paths must enter the development from 3rd street, drop off passengers at an integrated, street level, passenger loading and unloading station, and either exit onto Washington Avenue or descend a ramp to the bus parking level. All curves in ramps shall be counter-clockwise flow. Bus ramp lengths are to be maximized to reduce slopes. Once in the lower level bus parking, the majority of bus movements and circulation shall be in counter-clockwise flow. No less than 24 dedicated, uninhibited, parking spaces shall be provided. All parking spaces shall allow pull-in and pull-out without affecting adjacent buses or stalls. Placement of columns and drive lanes shall provide adequate maneuverability. Bus operators will leave buses to access lower level driver facilities. Buses exit the lower level terminal via an ascending ramp, pick up passengers at an integrated, street level, passenger loading and unloading station, and exit onto Washington Avenue.

BUS TURNING/MOVEMENT REQUIREMENTS

The most critical element of the terminal design is the turning and movement of buses (in the terminal area, through the at-grade area, to and from the terminal area, and from and to the street). The developer shall provide plans that indicate the movement of buses in all of these areas. Minimum criteria that must be met relative to these movements include:

- Circulation lanes shall be dedicated on only one mode of traffic (i.e. buses) with the exception of the entry and exit lanes from the building.
- Bus entry and exit points to the building shall be configured so that a bus can enter or exit the building from the inner most lane of the street. Entry and exit configurations that force buses into the second or third lane are not acceptable.
- Private automobile traffic shall be separated from buses and commercial vehicles.
- The minimum clear height requirement in the terminal shall be 14 foot 0 inches.
- Ramps shall have a minimum flat landing of 65 feet at both upper and lower ends.
- Ramp slope shall not exceed ten percent on the main slope. However, ramps shall transition to lesser slopes at the top and bottom to avoid break-over problems with low floor buses. The proposer shall provide break-over calculations for each of the slope transitions to indicate that buses can transition properly.
- The minimum bus turning radius (a 90 degree turn to or from a parking space) is 65’-0”.

BUS PARKING REQUIREMENTS

- Bus parking shall be configured in a manner that does not require backingof any bus.
- Entry to and exit from all parking spaces shall be accomplished without moving other buses.

REFERENCES

- Refer to Metro Transit's "Guidelines for the Design of Transit Related Roadway Improvements": issued May 18, 1983.

CONSTRUCTION STANDARDS

This document describes minimum requirements for the design and construction of the Metro Transit portion of the facility. Final design requirements and design shall be established between the Developer, the City, and Metro Transit.

Regulatory requirements include: IBC, Minnesota State Building Code, NFPA 80 and 101, Americans with Disabilities Act (ADA).

03300 - CAST-IN-PLACE CONCRETE

1. GENERAL

A. Architectural concrete finishes: Provide a job mock-up of sample formwork panel for architectural concrete surfaces receiving special treatment or finish.

B. Construction joints: Design construction joint detail and specify locations.

C. Control joints: Design control joint detail and specify location. Use silicone sealant for control joints in vehicle areas.

2. WATERPROOFING ELEMENTS AND CONSIDERATIONS FOR CONCRETE CONSTRUCTION

A. Concrete surfaces to receive waterproofing: Formed smooth in true plane, without honeycombs, voids, or sharp protrusions.

B. Vehicular driving surfaces: Coarse broom finish, 3M traffic coat.

C. Below grade concrete construction joints: Bentonite waterstops, 75 percent minimum bentonite content.

D. Do not install a liquid cure membrane or sealer to concrete surfaces that are to receive a bonded waterproofing unless the cure or sealer is completely removed first by grinding, sandblasting or other appropriate means.

E. Duct banks penetrating waterproofed wall: Flash waterproofing around individual conduits or pipes before encasing them in concrete; do not flash to outside of concrete duct bank. Maintain minimum 10 inches clearance between each conduit and pipe.

F. Pipe, conduit, or sleeve cast into waterproofed concrete: Provide bentonite waterstop around the outside.

3. SPECIAL FINISHES

A. Prohibited: Exposed aggregate finishes on concrete stairs and treads. because of the frequency that deicing chemicals are used.

B. Specify concrete tolerances, flatness, and levelness.

C. Exposed concrete stair treads and ramps: ADA compliant non-slip finish.

D. Curing compound: Do not use on slabs to receive topping or setting beds for tile flooring. Compounds used for other slabs shall be compatible with floor sealer or adhesives used for finishing floors. Cure concrete in accordance with ACI 308.

E. Floor hardener: Interior exposed concrete floors without other coatings, two coats of colorless chemical hardener.

04300 - MASONRY

A. In accordance with ACI-530.

05000 - STRUCTURAL SYSTEM CRITERIA

1. GENERAL PROVISIONS

A. The information furnished in these documents is for use by the A/E/C as one source of user information, (Architect/Engineer/Contractor as engaged by the Developer), for development of detailed design and construction documents for delivery of this project.

B. The scope of structural work related to this project includes all structural work required to satisfy the requirements and criteria indicated in this document. The structural work is generally partitioned into two physical portions of the building systems referred to here as the “substructure” and the “superstructure”. The “substructure” consists of the structural systems at and below grade, which enclose and support the Metro Transit bus facility and related functions. The “superstructure” consists of all structural systems originating at grade and extending above, to enclose and support the ground level and elevated functions in this development including such functions as retail, storage and residential.

C. The A/E/C shall be responsible for designing the substructure and the superstructure complete, with all required structural elements, in compliance with user and occupancy requirements, and accommodating impacts of all systems interfacing with this facility, including architectural, mechanical, electrical, life-safety, security, etc.

D. All work shall conform to all applicable codes, and regulations, including ordinances and laws of the City of Minneapolis, the State of Minnesota and the International Building Code 2000. Applicable material codes include current use versions of A.C.I.-318, AWS D1.1, A.S.C.E.-7, and the AISC Specification for Design of Structural Steel.

2. SUBSTRUCTURE SYSTEMS DESIGN

A. Geotechnical and Utilities: A/E/C shall perform geotechnical exploration as required to address subgrade issues including type of foundations required, anticipated long

and short term settlements, impact on adjacent properties, streets and utilities, temporary, retention and excavation impacts, hydrologic and environmental impacts.

B. Loadings: Design structures for live loads specified in the IBC 2000 and for other criteria referenced in item D above, for related functions. In addition to those loads, design for all imposed current dead loads and also consult with Metro Transit staff for maximum vehicle wheel loads and combinations including WB-40 buses, standard 40 foot buses and articulated buses. Maximum design vehicle loads are to accommodate all Metro Transit vehicles as well as commercial delivery vehicles and any temporary loading during construction such as heavy equipment and shoring/formwork loads. Minimum design vehicle loads to be used are based on a Metro Transit 3-axle bus with axle spacing of 24 feet and 18 feet, and a single axle load of 19.3 KIPS and total vehicle weight of 53.4. KIPS. Design current work for anticipated dead and live loads related to future construction not included as part of this work (for example the future skyway, retail, residential, and auto parking structure).

C. Structural Materials:Structural materials for subgrade structures are anticipated to be cast-in-place concrete. Due to the length and turning radius of the vehicles planned for use in the subgrade facility, a long span post-tensioned (P.T.) beam/slab system is anticipated to roof over the bus garage. Columns, walls, and foundations are anticipated to be conventionally reinforced cast-in-place concrete structure. The pavement forming the driving surfaces in the bus garage are anticipated to be cast-in-place concrete slab on grade, to accommodate the heavy vehicular loadings noted above, and designed using an approved PCA or ACI methodology.

D. Structural Geometry: The 4’-0” maximum depth P.T. roof structure over the bus garage is anticipated to span to a widely spaced grid of columns as noted on the attached drawings. A minimum clear height of 14’-0” must be maintained between subgrade driving surfaces and the underside of the exposed P.T. roof structure above. This P.T. roof structure is not anticipated to support any significant point loads from the superstructure, (such as column loads). Maximum slopes on vehicular drives and access ramps shall be less than 10% and the maximum slope of areas within parking stalls shall be 2%.

E. Performance: Design systems to satisfy structural performance criteria required by code. In addition, design structures to minimize transmission of vibration (due to buses) from areas occupied by vehicles to areas of human occupancy. Limit transmitted vibration to “barely perceptible” levels. Transmission of bus generated noise from areas occupied by vehicles, to areas of human occupancy, must also be adequately addressed to reduce ambient noise levels in human occupancy areas to those dictated by OSHA standards for bus operations and other occupancies.

F. Protection: Where the structure is exposed to exterior or interior environmental impacts, moisture or de-icing salts, provide protection against chlorides, corrosion, or freeze-thaw deterioration, to improve durability and provide a 25 year minimum period till the onset of any significant structural repairs. Where structure is at risk of vehicular impact, provide commensurate built in impact resistance or impact protection such as bollards , headache bars, etc. Where potential moisture entry to the subgrade space may occur (such as at the roof and walls of the bus garage), provide waterproofing or equivalent protective measures.

3. SUPERSTRUCTURE SYSTEMS DESIGN

A. Geotechnical and Utilities: See above.

B. Loadings: See above.

C. Structural materials: Structural steel framing with braced frames and staggered floor to floor trusses (or interstitial trusses) above grade, is anticipated for ease of load transfer on the long spans and wide column spacing driven by the unique space requirements for bus circulation at the subgrade structure below. The A/E/C however is free to pursue alternative approaches above grade, as long as the criteria in item D below are satisfied.

D. Structural geometry: The A/E/C may design the superstructure layout based on economies related to the above grade functions, except that column loads from the superstructure, where brought down to bear at ground level, must align with the column grids in the subgrade structure.

E. Performance: See above.

F. Protection: See above.

05120 - STRUCTURAL STEEL

A. In accordance with AISC Specification for Structural Steel Buildings.

05300 - METAL DECKING

A. Steel decks: Galvanized.

05500 - METAL FABRICATIONS

A. Miscellaneous exposed steel items: Galvanized per ASTMA123, 2 ounces per square foot, after fabrication.

B. Exposed welds: Continuous, ground smooth.

06100 - ROUGH CARPENTRY

A. Wood in contact with concrete, masonry, or earth: Pressure treated, ACQ.

B. Other lumber: Fire-retardant treated.

07100 -WATERPROOFING

A. Provide a design that prevents moisture from entering the building envelope below grade, or below a wearing surface, for 50 years.

B. Provide subsurface drainage provisions against the waterproofing membrane.

C. Prohibited: Waterproofing products that rely on the biodegradation of one or more components of the product.

D. Wall joints, cast-in-place concrete: Continuous bentonite waterstops.

E. Slabs on grade: Poured over continuous waterproofing membrane.

07200 - THERMAL INSULATION

A. Below grade: Extruded polystyrene.

07250 - SPRAYED FIREPROOFING

A. Materials shall remain in place and intact when subjected to anticipated exposure to elements that may dislodge, crack, delaminate or erode the fireproofing.

08110 - STEEL DOORS AND FRAMES

A. Steel frame construction shall comply with Steel Door Institute standards ANSI/SDI 100, Grade II Type level for interior applications, Grade III for exterior applications.

B. Frames: Standard 2 inches. One-piece units; units too large for shipment fabricated with concealed splice connections for field assembly.

C. Doors: Seamless.

D. Rabbet, soffit, and stop joints: Tightly closed miter or butt joints, corners completely back-welded, exposed welds ground smooth.

E. Steel reinforcement, welded to frames:

1. Hinge and pivot reinforcement: 3/16 inch by 1-1/2 inches by 9 inches
2. Closer and holder: 12 gauge by 14 inches by frame width
3. Floor clips: 16 gauge by 3-1/2 inches

F. Mortise cover boxes: Mortar-tight, full-enclosure, steel.

G. Door core:

1. Exterior openings: Face sheets laminated to foam core, ANSI/SDI 100, Grade III - Extra Heavy Duty, Seamless.
2. Interior: Vertical 22 gauge, back-to-back, steel stiffeners 6 inches apart, insulated with mineral or glass fiber.

H. Reinforcement:

1. Hinge and pivot reinforcement: 3/16 inch by 1-1/2 inches by 9 inches
2. Closer and holder: 12 gauge by 3-1/2 inches by 14 inches. Provide reinforcements as required to receive surface applied hardware. Provide flush watertight top closures for all exterior doors.

I. Glass stops: Removable from interior face only.

J. Finish: Shop-painted, baked-on primer with rust inhibitor.

K. Frames in concrete or masonry: Filled solid with grout or concrete. Anchors for frames in steel stud partition systems screwed, bolted, or welded to both flanges of studs.

08300 - SPECIAL DOORS

A. Coordinate (with Metro Transit) the rough-in size for High-speed roll-up doors: Insulated. Rytec, Marathon, or approved.

08700 - FINISH HARDWARE

A. Electronic hardware: Provide a description of functions for the intended use.

B. Employ an AHC certified specifier to meet with owner and review opening

requirements, and to review submittals.

C. Rated for heavy-duty institutional use.

D. Exterior openings: Extra-heavy, stainless steel hinges with ball bearings and non-removable pins.

E. Electric hinges: Eight-wire, UL10C listed for labeled doors.

F. Locksets: Mortise, ANSI A156.13-1994, Series 1000, Grade 1 Operational, Grade 2 Security and A117.1 Accessibility Code.

1. Corbin/Russwin: Series ML2000, Lever Design (LSR) LWM
2. Sargent: Series 8200, Lever Design LE1J
3. Schlage: Series L, Lever Design 03L
4. Yale: Series 8700FL, Lever Design CRE

G. Lock spindle: Designed to break away under 120-pound load at end of lever.

H. Lever: Solid cast with end return.

I. Verify with owner and building code official if openings are to be failsecure or failsafe.

J. Exit devices: ANSI A156.3-1994, Grade 1 operational. Internal components coated to prevent corrosion. Dogging by keyed cylinder.

1. Corbin/Russwin: Series ED5000, Lever Design Series L900
2. Sargent: Series 80, Lever Design ETJ
3. Von Duprin: Series 99, Lever Design 992L x 03
4. Yale: Series 7000, Lever Design Series CR600

K. Closers: ANSI A156.4-1994, Grade 1 Operational standard.

L. Barrier free capability: Fully adjustable sizing from 1-6. Comply with ADA and ANSI A117.1 requirements.

1. LCN: Series 4011/4111EDA
2. Norton: Series 7500/7500BF
3. Sargent: Series 281 (omit Pressure Relief Valve)
4. Yale: Series 4400/4400BF

M. Where wall-mounted stops cannot be used, concealed overhead stops or closers with integral stops may be used.

N. Finishes:

1. Exterior hardware: US32D.
2. Interior hardware: US26D.

08720 - AUTOMATIC DOOR OPENERS

A. Low energy, swing type, electro-hydraulic or electro-mechanical, field adjustable. Power open/spring close operation with hydraulic control features, hard wired.

1. LCN: Series 4610/4620 4630/4640
2. Gyro-tech: Series GT710

B. Electrical service disconnect adjacent to power door operator.

09250 - GYPSUM DRYWALL SYSTEMS

A. Minimum 5/8 inches thick, type X.

10400 - SIGNAGE

A. Coordinate any sign package with Metro Transit.

14240 - HYDRAULIC ELEVATORS

A. Type: Passenger, two stops, ADA compliant, non-proprietary control system.

MECHANICAL SYSTEMS CRITERIA

15000 - GENERAL PROVISIONS

A. Provide mechanical infrastructure and services into each space for purposes of connection by the fit-out contractor including natural gas, water, storm and sanitary sewer, fresh air, and exhaust air. Size and capacities shall be coordinated with Metro Transit. Fire Protection systems shall be installed by the Developer as part of the shell construction

15050 - BASIC MATERIALS AND METHODS

A. Seal and caulk all penetrations through walls, floor and ceilings. Use UL listed methods for penetrations of fire rated structures.

B. Perform all excavation and back fill for installation of underground service piping as recommended by the owner's geotechnical report.

C. Provide adequate access to all mechanical equipment.

15070 - FIRE STOPPING

A. Through-penetration fire-stopping of pipes and ducts in fire rated construction.

B. Manufacturers: 3M or approved equal.

15140 - SUPPORTS AND ANCHORS

A. Install hangers, supports, clamps and attachments to support piping properly from building structure; comply with MSS SP-69, SP-89 and SMACNA.

B. Make allowances for adequate distribution of load to structural members, thermal expansion and pipes requiring slope.

C. Provide protective saddles and shields on insulated pipelines.

15240 - VIBRATION CONTROL

A. Neoprene pads, springs, flexible duct and pipe connectors, inertia bases as required to control vibration.

15250 - MECHANICAL INSULATION

A. Insulate all piping per the Minnesota Energy Code requirements.

B. Insulate all concealed exhaust (from building exhaust outlet to 15 feet beyond the damper) and outside air ductwork with 1-1/2" exterior vapor barriered fiberglass batt insulation wrap and taped vapor barrier seams in concealed areas and 1-1/2" exterior rigid fibrous board and taped vapor barrier seams where ductwork is exposed (2” for outside air ducts).

15300 - FIRE PROTECTION

A. Fire protection system shall be designed, installed, and tested to meet or exceed the requirements of the local fire marshal, NFPA-13, 20, 231-D and the Owner’s insurance carrier.

B. The fire protection contractor shall obtain information from the city to determine the water supply flow and pressure conditions at a fire hydrant located in within close proximity to the suggested service connection point.

C. Coordinate the fire protection service requirements with the requirements of the entire facility. Where required by inadequate supply pressures, a UL/FM approved package of a fire pump, jockey pump and the associated starters and controls shall be provided.

15400 - PLUMBING

1. GENERAL

A. Plumbing systems shall be installed to meet or exceed the requirements of the Minnesota Plumbing Code, Latest Addition.

B. Special Considerations

1. Coordinate quantity of restrooms and breakroom fixtures with Metro Transit.
2. Provide adequate water supply for two -1-1/2” hose bibs for floor maintenance wash down activities in the vehicle parking area.

2. SANITARY DRAINAGE AND VENT SYSTEMS

A. Parking Area Drains: Trench drains at the base of vehicle entrance and exit doors sized to accommodate rainwater infiltration; and 12” area drains in the vehicle parking areas. Position area drains under vehicle parking areas and not in primary driving lanes. Route all drains through flammable waste interceptors and sand interceptors as required by Code.

3. NATURAL GAS SYSTEM

A. Install gas meter furnished by utility company. Provide service, pressure regulators, relief valves, vents, wall sleeves, and seals. Verify available gas pressures with the local utility.

15500 - HEATING VENTILATING AND AIR CONDITIONING (HVAC) DESIGN CRITERIA

A. General design criteria: The design conditions for the Minneapolis area are indicated in 2001 ASHRAE Fundamentals hand book chapter 27. Contractor shall use the 99.6% value of -16°F, for winter heating design and the 0.4% cooling value of 91°F

dry bulb and 73° F wet bulb, for summer cooling design. Fan, condensing unit and boiler selections calculations shall be corrected for site elevation (approx. 1000 ft above sea level).

B. Below grade terminal area: The HVAC system is anticipated to consist of heating-only, direct-fired makeup air units and exhaust fans sized to provide approximately 100,000 cfm of outside air ventilation.. Units shall be suspended or locate in an area dedicated for mechanical equipment. The anticipated design includes ventilation rates of 0.5 cfm/sf (approx 37,500 cfm) continuous ventilation rate and a purge sequence that provides a peak ventilation rate (100,000 cfm) of fresh air. Redundancy is required.

1. The equipment shall be sized to maintain adequate indoor air quality as required per ASHRAE, OSHA, and MN Code. Provide minimum ventilation rates as defined in ASHRAE. Equipment airflow ventilation rates shall be calculated based on rate required for dilution of vehicle emissions. Contractor shall collect tested engine emissions from the vehicle manufacturers and calculate the concentration of known contaminants such as Carbon Monoxide, Nitric Oxide, Nitrogen Dioxide, and particulate matter. This calculation shall consider the operational characteristics of the vehicles (i.e. number of vehicles, engine load, rate of departure/arrival, idle time, etc) in determining the adequate ventilation rate.
2. Locate intake louvers above grade and as high as possible in order to limit the capture of street emissions. Maximum intake velocity shall be 500 fpm across free area. Max exhaust velocity shall be 800 fpm. Louvers shall be drainable. Exhaust systems may terminate in dry wells, above grade louvers or similar termination points.

C. Break Room and interior passenger waiting area HVAC Systems**:** The anticipated HVAC system shall consist of split system fan-coil units with electric heat Units shall include condensing unit, filters, Direct Expansion (DX) cooling coil, electric (or natural gas-fired) heating section, supply fan and controls. Make provisions to locate condensing unit within the garage, suspended from the structure or located in a position not subject to vehicle damage or vandalism. When applicable, burner flues shall be terminated at the building exterior in accordance with Code. Provide outside air to the unit in accordance with ASHRAE Guidelines. Pressurize the occupied areas through the use of outside air and related relief in order to limit vehicle exhaust infiltration.. Electric radiant heat devices are also anticipated to condition outside of the Transit Waiting Spaces located at street level.

D. Restroom ventilation: Restrooms shall be exhaust ventilated at a rate of 2 CFM per square foot. Interlock fan with light switch. Exhaust air makeup shall be provided from the building HVAC system.

E. Garage Radiant Heat Systems gas-fired radiant heat systems is anticipated within the entrance and exiting ramp areas to limit the formation of ice on the sloped surface.

F. Duct Sizing Criteria

a. Supply Ducts: 0.1”/ft WC maximum
b. Return Ducts: 1200 FPM

ELECTRICAL SYSTEMS CRITERIA

16010 - GENERAL PROVISIONS

A. Provide electrical infrastructure and services into each space for purposes of connection by the fit-out contractor including power, phone, data, CCTV, 800 MHz, and Fire Alarm. Size and capacities shall be coordinated with Metro Transit.

16050 - BASIC MATERIALS AND METHODS

A. Compliance with current editions of local and state codes is required throughout. A partial listing of governing codes are as follows:

1. Occupational Safety and Health Act – OSHA
2. American National Standards Institute – ANSI
3. American Society for Testing and Materials – ASTM
4. National Fire Protection Association – NFPA
5. National Electric Code – NEC
6. Underwriters Laboratories – UL
7. National Electrical Manufacturer's Association – NEMA
8. Institute of Electrical and Electronics Engineers – IEEE
9. International Building Code – IBC.
10. Minnesota Building Code - MBC, Current Edition with Amendments
11. Americans with Disabilities Act - ADA

B. Seal and caulk all penetrations through walls, floors and ceilings. Use UL listed methods for penetrations of fire rated structures. Manufacturers: 3M or approved equal.

C. Perform all excavation and back filling for installation of underground electrical feeders and branch circuits as recommended by the geotechnical report.

D. Provide adequate access to all electrical equipment.

E. Provide permanent labeling of all panelboards, disconnect switches, motor starters, switchboards (and switches within), and other electrical equipment. Labeling to consist of engraved plastic nameplates permanently attached to the equipment cover.

16164 - DISTRIBUTION AND BRANCH CIRCUIT PANELBOARDS

A. Panels shall be provided in an electrical room located on the bus parking level to accommodate 208Y/120 volt power and 480Y/277 volt requirements. Panels shall also be located in each passenger waiting area. All panels shall originate from one dedicated meter.

16205 - EMERGENCY POWER

A. Emergency power shall be extended from the main building generator (provided elsewhere in the project) to panels for critical and life safety loads in the Bus Terminal and waiting areas.

B. The emergency power system shall serve the following critical and life safety loads upon loss of utility power:

1. Egress Lighting
2. Exit Signage
3. Fire Alarm System
4. Motorized Doors
5. Vehicle Exhaust System
6. Elevator(s)
7. Security System
8. Ventilation System
9. Control Systems
10. Fast roll-up doors

16500 - LIGHTING

A. Provide temporary light fixtures.

B. For building design purposes, anticipated fixtures are as follows:

1. Bus Parking and Ramp Areas - 250 watt metal halide pendant mounted, garage luminaries spaced in a grid pattern. Fixtures to provide an average maintained lighting level of 5 footcandles in the bus parking areas; and 20 footcandles at passenger loading areas, drive lane intersections and on the ramps. Lighting levels must meet a minimum of one footcandle in all locations.
2. Transit Waiting Areas - 3-lamp 2 x 4 lensed lay-in light fixtures,average maintained lighting level between 30 and 40 footcandles.
3. Passenger Loading and Lobby Areas - recessed metal halide downlights and decorative pendants/wall mounted fixtures in all areas, average maintained lighting levels between 20 and 30 footcandles.
4. Driver Break Room - 2’ x 4’ 3-lamp lensed fluorescent fixtures, average maintained lighting levels between 40 and 50 footcandles.
5. Bathrooms - 2-lamp strip fluorescent fixtures, average maintained lighting levels between 20 and 30 footcandles.

16721 - FIRE ALARM AND DETECTION SYSTEM

A. Extend the main building addressable fire alarm and detection system (provided elsewhere in the project) as required to meet all Local, State and National Life Safety Code requirements with the capacity for the following:

1. Smoke detectors in mechanical and electrical equipment spaces, normally unoccupied spaces, etc.
2. Heat detectors throughout.
3. combination horn and strobe units throughout the space. Locate strobe units as required by ADA.
4. monitoring of sprinkler flow and tamper switches.
5.
6. auto-dialer for off-site alarm notification.

16741 - VOICE/DATA RACEWAY SYSTEM

A. Provide empty conduit rough-in for voice/data cabling provided by others. Rough-in to include outlet boxes and conduit stubs to nearest accessible ceiling spaces.

B. Provide telecommunications sleeving and raceway for ample access and interconnections among voice and data, systems wiring.

16780 - CCTV SECURITY SYSTEM

A. Provide conduit from passenger waiting areas to below grade terminal for a complete CCTV type monitoring and recording system f.

16790 - TRAFFIC SIGNALS AND SIGNAGE

A. Provide LED directional signage in the bus parking areas and traffic signal at the top of exit ramp.

16795 - 800 MHZ RADIO SYSTEM

A. Coordinate with Metro Transit system on an 800 MHz radio system, , within the bus parking area to transfer radio communication signals between inside and outside the building. Radiax cable or approved.