

## **INTRODUCTION**

This narrative and the referenced drawings, specifications, and related documents referenced herein, provide for the “Final Basis of Design” for the Portland Building Reconstruction Project. This Final Basis of Design delineates the scope of work for the project and provides the key design and program elements that will be included in project. This Final Basis of Design narrative and referenced documents summarize the outcomes of the design phases of the project as of October 22, 2017, and sets the scope of the Guaranteed Maximum Price for the project as the Project Team transitions into construction of the project.

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## **SUSTAINABILITY**

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## **SITE/CIVIL**

The Portland Building is located within the Central Commercial (CX) Zone and is subject to the requirements therein. It is also within the boundary for the Central City Plan District and is subject to the Central City Fundamental Design Guidelines.

### **VEHICLE CIRCULATION**

Vehicle circulation around the perimeter of the project will remain unchanged when this project is completed. Parking lanes and select road closures will occur during construction activities. Removal and reinstallation of parking pay stations and signage will be work performed by Portland Bureau of Transportation (PBOT).

### **LOADING DOCK AND DELIVERY ACCESS**

Given the limited functionality of the existing loading dock, the loading dock shall be removed from the buildings. As part of the Type III Land Use Review process, the project secured a zoning adjustment to reduce the required loading spaces within the buildings footprint from 2 down to 0. The adjustment allows the existing loading dock to be removed and replaced with a new glazed opening enabling the building to better engage with the parks & greenspace to the East. The building will utilize on-street loading spaces on 4<sup>th</sup> Avenue and enter the building through an overhead door leading to an internal loading ramp and an elevator providing access to the trash room and freight elevator located in the basement.

### **PARKING**

The basement level parking shall be removed from the building program to allow for a significantly increased bike parking area and building support spaces (telephone/data rooms, enlarged plumbing & electrical rooms, and a fitness room with associated locker rooms). Vehicle parking is not required by the Portland Zoning Code for the CX zone.

### **BIKE PARKING**

The Portland Zoning Code contains minimum requirements for both short-term and long-term bicycle parking. For the proposed use, the code minimum would be for 10 short-term and 38 long-term spaces. The project is currently proposing bike parking that far exceeds these requirements. See the Sustainability section below for additional bike parking information relating to LEED. Baseline exterior and interior bike parking is included per the BOD drawings.

### **LANDSCAPE DESIGN**

The extent of landscaping at the Portland Building site is primarily limited to street trees. Trimming or temporary tree removal/replacement required to accommodate construction activities will be coordinated with Urban Forestry.

The level 15 roof and penthouse green roof, where disrupted by construction activities, shall be reinstalled in a like manner to the existing roof.

### **PUBLIC RIGHT OF WAY IMPROVEMENTS**

Site alterations are concentrated on the 4<sup>th</sup> Avenue side of the site. The project includes infill of the existing mid-block driveway (required with the closure of the garage entrance) with new sidewalk and curb and replacement of the existing corner curb cuts with new to meet ADA requirements and PBOT standards. No other improvements are assumed.

### **SITE UTILITIES**

Existing building utilities have been evaluated and appear to have sufficient capacity to serve the needs of the building without revisions. Consideration has been given to increasing occupancy in the building and utility capacity appears to still be sufficient in that scenario at this time.

**Electrical Service** - The Portland Building is energized from an existing underground distribution vault from Portland General Electric (PGE). The existing PGE vault on the corner of SW Fifth and Madison Street houses an existing utility spot network and is of sufficient capacity to reuse in place. Connection to new distribution and utility metering equipment will be provided on the customer side of the system.



**Water Service** - The existing water service into the building is off the main in SW Fourth Avenue which will continue to serve the domestic water system.

**Fire Water Service** - The existing fire water service into the building off the main in SW Fourth Avenue will continue to serve the fire protection system.

**Natural Gas Service** – There are three (3) existing gas services to the building located at the Southwest corner of the site. Two of these services will continue to be required for the new building program under this project, and the third potentially required for the future day care space (Owner decision TBD). It is assumed that Owner will address any utility company coordination required for the project.

**Communications** – To accommodate structural revisions related to the seismic upgrade scope of work, and to improve efficiency of communications management, a new Main Point of Entry (MPOE) and MDF space will be constructed in the basement. Communications cabling, inclusive of outside service providers (e.g. Century Link, Comcast), shall be rerouted to enter through the new MPOE.

## **BUILDING ENVELOPE**

To properly address the systematic water infiltration issues on the project, the new building envelope final basis of design is to provide a pressure-equalized rainscreen system to the exterior of the building. The rainscreen solution will be applied over the existing building skin and provide both protection and moisture management for the building. In addition, this system will allow for proper detailing of the many existing transitions that currently rely on the use of sealants.

As required by the project charter, the rainscreen system has been designed to generally replicate the existing building facade in consideration of preserving the historic integrity of the building, while providing component systems to create a long term solution to eliminate the water & moisture infiltration issues. The team's decision to move forward with this approach was approved by the City of Portland's Historic Landmarks Commission and subsequently Portland City Council through the Type III Land Use Review process.

The basis of design rainscreen system is as follows:

Levels 1-3: Glazed terra cotta tile rainscreen system with bidder engineered support system and mineral wool insulation over liquid applied weather barrier. Silicone sealant at joints between tiles. Tile to be glazed custom color. The tile size shall be provided on a 19" by 19" module. Windows to be aluminum framed glazed curtainwall.

Levels 4-14: Unitized curtainwall system

- o At opaque areas: Thermally broken unitized panels with 3mm formed aluminum cladding and integral mineral wool insulation. Aluminum to be pre-finished with 2 coat Duranar custom color.
- o At "keystone" Levels 11-14: Same as opaque areas, but with pre-finished aluminum placards applied to face of unitized panel to simulate ceramic tile.
- o At decorative elements such as column capitals and medallions: Pre-finished aluminum panels either integrated into the unitized panels or set in the field
- o At glazed areas: Thermally broken unitized panels with aluminum framed glazing. (Glazing as described below) Frames are to be pre-finished with 2 coat Duranar black.
- o The decision to utilize a Unitized Curtainwall system at these levels is memorialized in the D3 decision making document: *D3 No.08 – 2017-Floors 4-15 Envelope Solution*.

At level 15: 3mm formed aluminum panels with support system and mineral wool insulation over liquid applied weather barrier. Aluminum panels are to be pre-finished with 2 coat Duranar custom color.

Glazing: Double paned with a low-e coating to maximize visible light and minimize solar heat gain.

- o Clear (Typical conditions): Viracon VE 1-2M
- o Reflective (East and West center area Levels 4-10): Viracon VRE 1-59
- o Patterned (4<sup>th</sup> Ave and some loggia areas): Viracon VE 1-2M with custom digital printing

Loggia glazing system: Full height aluminum framed glazed curtainwall with structural silicone glazing.


Roofs: Existing to remain. Patch and repair as required to accommodate new work.



The Portlandia Statue will be protected in place during construction. No modifications to the statue are included in this scope.

To meet one of the primary requirements of the project we shall provide a seismic upgrade solution to increase the performance level of the building and to reduce the hazard to occupants during a seismic event. As originally designed, the lateral load-resisting system consists of 3" reinforced concrete slab diaphragms (integral with the waffle slab) that transfer lateral loads (wind and seismic) to the vertical elements. The vertical elements consist of reinforced concrete moment frames and reinforced concrete shear walls.

Recent studies by KPFF and others have identified deficiencies in the existing lateral force resisting system relative to current code requirements that will be addressed as part of this project. The main deficiency is that the existing exterior walls resist much more load than the concrete moment frames during a seismic event but do not have sufficient strength to resist the anticipated seismic loads. The discontinuity of the existing exterior walls at the 3rd floor requires that the vertical seismic forces in the walls transfer to the columns supporting them, and that the horizontal seismic forces in the walls transfer through the floor diaphragm. Both the existing columns and the floor diaphragm are not sufficient to resist the additional seismic loading created by this discontinuity.

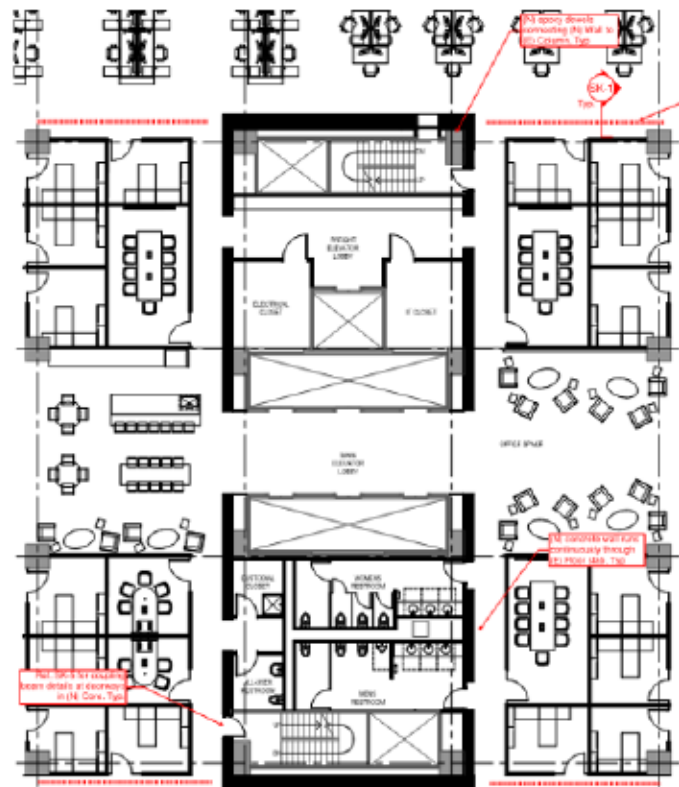


The diagram illustrates the lateral force resisting system. It shows a series of columns and walls. A red callout box points to a column with the text: "The spring directly supporting this wall is insufficient." A red diamond labeled "SK-1" is also present, indicating a specific location or component.

We shall provide a seismic upgrade to the building. Building codes currently recognize that it can be technically and economically challenging to retrofit an existing building, and that often these buildings have a shorter life expectancy than that of a new building. Therefore, the building codes establish a lower requirement for existing buildings than they do for new buildings. For the Portland Building, the basis of design seismic criteria has been upgraded by using the new building hazard levels such that the expected seismic performance of the retrofitted building would be consistent with that of a new building constructed to current building codes.

The seismic solution, as determined after analyzing the various architectural, mechanical, and historic constraints, is the installation of a reinforced concrete shear wall installed up through the center core of the building. A concrete shear wall system is an effective lateral system for this building due to its high relative stiffness versus other lateral force resisting systems. The lateral system and location works well from an architectural perspective due to the fact that it is located on the perimeter of the core which already contains the elevator and stair shafts, main mechanical shafts, bathrooms, and electrical rooms. These elements stack in the core of the building throughout the building height and therefore will not be in

The seismic solution also provides for supplemental concrete columns at the perimeter of the building to support the floors in the event of a seismic event which damages the perimeter load bearing concrete wall to the point where it can no longer support gravity loading.



Graphic of Seismic Shear Wall Location – black lines indicate shear walls at core



The perimeter concrete walls transition to concrete columns at the 3rd floor. The retrofit plan includes wrapping select columns on levels B thru 3 in carbon fiber which will increase their capacities.

The new concrete shear wall core will be supported by a new concrete foundation. This new concrete foundation will be placed on top of the existing mat foundation. The new foundation will connect to the existing footing, effectively thickening it to 4'-6" thick.

The decision to provide this seismic solution is documented in the decision making document *D3 No. 2016-07 Seismic Solution*, which provides for more a detailed description of the seismic performance criteria for the project.

## **CORE & SHELL**

### **ARCHITECTURAL**

The architectural core of the building, for definition purposes on this project, consists primarily of the space located between gridlines 3-6 and gridlines D-E. This space is generally typical on all floors and consists of men's & women's restrooms, an electrical closet, an IDF IT closet, two (2) sets of exit stairs, two (2) mechanical/ plumbing riser shafts, a janitor's closet, six (6) passenger elevators, and one (1) freight elevator. The seismic upgrade solution effectively surrounds this set of core elements with shear walls.

To minimize cost expenditures on the project, this project intends to retain these elements in their current layout and configuration where feasible, with construction activities being limited to finish upgrades to the spaces and space reconfigurations to support technical and/or program requirements. In the restrooms, the toilet partitions will be replaced to accommodate current required ADA clearance and privacy requirements. Plumbing fixtures will be reused in most instances and will be temporarily removed from the wall to allow for finish upgrades, and then reinstalled at their prior locations except where ADA clearance and changed use requires spacing revisions. New light fixtures will be installed.

The electrical and IT closets will increase in size to support modern technology needs and code requirements.

### **STAIRS**

The primary stairs in the building core will remain as installed, with the addition of revisions to the handrails and guardrails to meet current code requirements. The egress path for the North stair in the core shall be revised to transition to the exterior of the building on level 3 (previously on level 1) to remove the required rated corridor from the public spaces on levels 1 & 2 in support of better programming of the space.

### **ELEVATORS**

The six (6) passenger elevators located within the core of the building were upgraded recently and are not intended to be improved as part of the Reconstruction project. The existing passenger elevator (PE#08) that currently serves the basement to level 1 will be demolished and removed. The existing freight elevator will remain as installed with the exception of the interior finishes which will be replaced/ upgraded. A new 4-stop freight elevator will be located on the East side of the building to support building loading activities through a 4<sup>th</sup> Avenue loading access door. A new equipment lift operating between level 15 and the penthouse/roof level will support movement of MEP equipment to and from the roof level.

## **TENANT IMPROVEMENTS**

### **HISTORIC LOBBY**

The historic two-story main lobby will be remodeled with the following restoration scope of work:

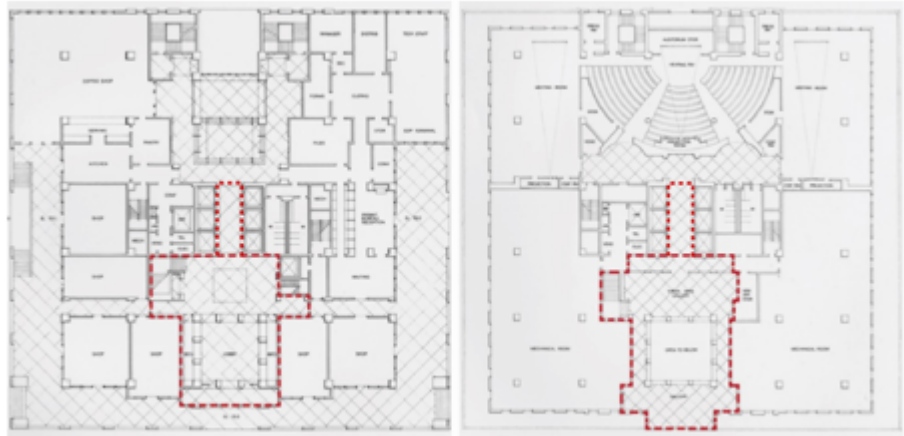
#### **Flooring:**

The existing black terrazzo floors in the immediate main floor lobby and gallery space will be retained and refurbished where feasible with revised stair and wall locations adjacent to historic lobby area.



**Walls and wall-tile:**

The West lobby will be restored to the original architectural intent where functionally feasible including removing ceiling soffits, signage, and doors that were not included in the original design. The historic wall tile and bullnose in the immediate lobby and gallery space will be retained and refurbished. It should be noted that additional treatment to walls with bullnose trim may be required to meet ADA requirements. Walls and ceiling will be repainted to meet the original design intent of spatial definition but light reflectance of selected colors will be considered when selecting new colors for the lobby area to help improve light levels in the lobby.



*Graphics show historic lobby areas – Left shows level 1 and Right shows level 2*

**Lighting:**

Pendants added during the 1991 remodel will be removed and replaced with fixtures that recreate the original architectural lighting design intent using current lighting technology. The custom built architectural exaggerated sconces that were part of the original were removed as part of a previous renovation. They will not be restored to original but replaced with appropriate up/down light custom fixtures to replicate the lighting effect intended originally.

**Stairs:**

The existing lobby stairs between the first and second floor of the entry lobby area will be demolished, relocated and reconfigured to accommodate the new structural shear wall. The new stair finishes and railings will be designed to complement and reinforce the original design intent in the lobby area.

**Portlandia Scaled Statue:**

To be retained in its original location

**Wall Clock and Seal:**

Clock will be removed and seal returned to its original location

**East Lobby:**

This lobby will be remodeled entirely. Original finishes will not be retained or restored.

**Elevator Lobbies on First and Second Floors:**

The original finishes and architectural character of these lobbies will be retained and restored. It should be noted that additional treatment to walls with bullnose trim may be required to meet ADA requirements.

**FLOOR PROGRAMMING**

As a result of Phase 1 and Phase 2 programming efforts, the room layouts for tenant improvement spaces, inclusive of room counts, sizes of spaces, and room functions for the project have been determined as delineated in the Snapshot#4 plan drawings. Minor refinements to hard wall locations may occur as interior detailing and ceiling conditions are finalized. General programming provided on each floor is as follows:

**Level 00 (Basement):** Lockers and Showers; Bike Parking; Fitness Areas; Wet Storage; Facilities Maintenance and Equipment



**Level 01:** Shared meeting space accessible to the public; public engagement counters; Customer service center; "Micro market" small vending locations at east lobby; event space with restrooms and catering pantry; pre-function and large conference room for public use.

**Level 02:** Shared meeting space accessible to the public; display areas; pre-function spaces.

**Level 03:** Storage area with space available for individual storage for each bureau; shared meeting space; unique bureau program areas best located on level 03 to maintain flexibility of standard workplace functions on typical floors

**Levels 04 - 14:** Open office; standardized enclosed office and other hardwall location; support spaces

**Level 15:** All-employee support space; catering pantry; space for "Micro Market" vendor (TI for Micro Market to be provided by vendor); shared meeting space; and approximately 5,000 SF of workplace

**Penthouse:** Mechanical, Plumbing, & Elevator Equipment.

## **BUREAU WORKPLACE**

As a result of Phase 1 and Phase 2 programming efforts, the functional tenant improvement spaces for the project have been determined in support of bureau program requirements. The quantity, size, and general function of rooms and open spaces on the typical floors have been set as recorded in the decision making document *D3 No. 4 2016 Hard Wall Layout (Typical Floors)*. Minor refinements to hard wall locations may occur as interior detailing and ceiling conditions are finalized. The hard wall locations adjacent to the public service counters are included in the public service area zone and as such are subject to revision as part of a City operations and design process scheduled for the first quarter of 2018 (revisions to this area are part of a City titled "Customer Service Desk").

Minor hard wall variations are included in the basis of design for levels 04 and 14. Level 04 is adjusted to achieve a secure separation of bureau workplace areas from shared lobby and conference areas. Level 14 is adjusted to respond to outdoor balcony spaces that occur on that level. These variations are represented in the Snap Shot #4 plans.

Assumes all interior glazing as 1/2" tempered glazing set in an aluminum 1" x 1" sill and 1" x 1/5" head channel (unless this needs to be thicker due to span). This supersedes the Interiors Basis of Design package example.

Includes providing open ceilings in accordance with D3 No. 11 – Acoustical Ceiling in Open Spaces (dated 10/02/17).

## **FUTURE DAYCARE SPACE**

The tenant improvements of the daycare space on level 1 are not included in the basis of design of this project.

## **FURNITURE, FIXTURES, & EQUIPMENT (FF&E)**

The design, furnish and installation of Furniture, Fixtures, and Equipment is currently not included in the project scope. But as part of the interior tenant improvement planning, a kit of parts concept was developed for workstation planning which allows for multiple layout options using a standardized set of furniture components. Future FF&E planning efforts shall allow the selected components to emphasize ergonomic choices, ease of reconfiguration, and individual customization. A standardized kit of parts reduces move costs substantially allowing staff to customize workstations at a new location instead of relocating the furniture itself. Reference decision making document *D3 no. 05 2017 Furniture and "Kit of Parts"* for specific City direction and scope allocation for the furniture kit of parts.

## **PLUMBING SYSTEMS**

The plumbing system includes reuse of the domestic booster pumps, roof drains and storm drain system, main sanitary and vent risers, and plumbing fixtures on Levels 3 thru 15. The existing fixtures to be reused are low flow fixtures and only a few years old.

Refer to Sustainability section of this BOD for water use reduction requirements included in the basis of design. Water Sense labeled fixtures will be provided where appropriate. Sinks will provide for a 10" water column.





## DOMESTIC COLD WATER SYSTEM

The existing water service into the building off the main in SW Fourth Avenue will continue to serve the domestic water system. In order to meet City of Portland code requirements, the existing double check assembly will be replaced with dual reduced pressure backflow assemblies (RPBA). Dual RPBAs will be installed to allow

Plumbing Piping Sizing Criteria	
<b>Domestic Water Piping</b>	
Minimum Pressure	35 PSI at most remote outlet
Maximum Pressure	80 PSI
Static Pressure Loss	Maximum 6 psi per 100 feet
Velocity	Maximum 8 feet per second (Cold Water) Maximum 5 feet per second (Hot Water)
<b>Storm Drainage</b>	
Rainfall Rate	Maximum 1.3 Inch/hr
Piping Slope	Minimum 1/8" per foot
<b>Waste and Vent Piping (including waste/vent piping)</b>	
Sizing	Per Chapter 7 of 2014 OPSC
Piping Slope	Minimum 1/4" per foot

building operation during annual testing of the devices. The existing domestic water booster pumps located in the basement will be reused. A new vertical domestic water riser will be provided which will serve horizontal distribution piping at each floor.

Freeze-proof hose bibs to be distributed around the perimeter of building in the approximate location of existing hose bibs, and will be provided at the main recycle and trash room.

## DOMESTIC HOT WATER SYSTEM

Domestic hot water for the basement fixtures will be generated by a water source heat pump water heater. A storage tank with backup electric heat will be provided for redundancy. Domestic water will be heated to 140 degrees F, tempered to 120 degrees F with a master mixing valve, and distributed to fixtures in the basement. A hot water circulating pump will be used to maintain loop temperature.

Domestic hot water for Levels 1 thru 15 will be generated by electric tank type water heaters located on every third floor. Domestic water will be heated to 140 degrees F, tempered to 120 degrees F with a master mixing valve, and distributed to fixtures. Hot water circulating pumps will be used to maintain loop temperature.

## PLUMBING FIXTURES

In general, given plumbing fixtures were recently replaced with low flow fixtures, it is assumed that existing fixtures will be reused to the extent possible. Commercial grade low flow fixtures will be provided where indicated on the architectural drawings. Refer to table below for representative flow rates for each type of fixture.

Plumbing Fixture Types and Flow Type						
Fixture Type	Code Flow	Low Flow	Ultra-Low Flow	No Flow	ASHRAE 189	Proposed
Water Closet	1.6 GPF	1.6/1.1 GPF Dual Flush	1.1 GPF	Composting	1.28 GPF	1.1 GPF
Urinal	1.0 GPF	0.5 GPF	0.125 GPF	Waterless	0.5 GPF	0.5 GPF
Lavatory – Commercial	.5 GPM	1.0 GPM	0.5 GPM	--	0.5 GPM	0.5 GPM
Shower	2.5 GPM	2.0 GPM	1.5 GPM	--	2.0 GPM	1.5 GPM
Kitchen Faucet	2.5 GPM	2.2 GPM	2.0 GPM	--	2.2 GPM	1.8 GPM
GPF = Gallons per Flush      GPM = Gallons per Minute						

## STORM DRAIN SYSTEM

The existing roof and overflow drain system is assumed to remain in place as much as possible. Some modifications to the existing system will be necessary to accommodate the new architectural program. It is assumed that the combined storm and overflow system will remain and be reused. The upper roof is an eco-roof which will remain in place. There is no new additional storm water filtration to be provided.

## SANITARY SEWER SYSTEM

It is planned to reuse a majority of the sanitary waste and vent piping in the core area of the building, with revisions provided to extend to new toilet rooms, break rooms, wellness rooms, and other spaces as required. A hydro-pneumatic type grease interceptor will be provided to treat waste water from the Level 1 pantry area as required by code.



Sewage ejector pumps will be provided at the basement level where required.

## **FUEL OIL SYSTEM**

The existing, single wall, below grade fuel oil tank serving the existing emergency generator will be decommissioned and abandoned in place (under slab). Previous studies of the fuel tank determined there was no evidence of contaminated soils associated with this tank. The decommissioning approach is due to the age of the tank and potential degradation, and its location at the Southwest corner of the basement which will have limited accessibility for servicing given the new program planned on this level.

A new fuel oil system with an approximate 600 gallon capacity will be provided to deliver and filter fuel for the on-site generator which is currently located on the Northeast corner of the site. The fuel tank will be an above grade, double wall containment tank. The fuel oil system will include fuel tank, fuel oil filter system, remote fuel fill station, and controls.

## **NATURAL GAS SYSTEM**

There are currently three gas services to the building, with two (2) serving the existing retail areas on level 1, and one (1) for the generators located on Level 2 roof currently primarily serving the data center (at this time).

The existing service to the generators will remain. The existing gas service for the current Portlandia restaurant shall be looked at to remain in place to service the future daycare space buildout. The third service shall be demolished.

## **FIRE PROTECTION SYSTEM**

An existing fire water main located in SW Fourth Avenue serves the existing fire water system. The existing water service and fire pumps, which are tested annually and appear to be in good operating condition, are assumed to remain in place.

The existing fire protections risers, mains, and branch lines appear to be in good operating condition and are assumed to remain with the following adjustments. The entire building will be assessed and adjusted to be provided with fire sprinklers in accordance with NFPA 13, NFPA 14, NFPA20, and local Fire Marshal requirements. The program assumes the existing suspended ceilings will be removed and will remain primarily open to structure. Existing semi-recessed pendent sprinklers will be removed and exposed upright or pendent sprinklers installed on existing exposed branch lines. We anticipate the relocation or addition of approximately 20% of the existing sprinkler head count to comply with the revised floor plan. New seismic attachments will be provided to align with seismic upgrade requirements. The project assumes the replacement of all existing standard response type sprinkler heads with quick response type sprinkler heads throughout the building.

Includes providing a new double-interlock pre-action system riser to be installed in the pump room to protect the basement critical data areas (part of make ready scope).

## **FIRE PROTECTION DESIGN CRITERIA**

Dry pipe sprinkler systems will be provided for areas subject to freezing. These areas include building exterior overhangs. Dry pipe systems will be galvanized inside and out, threaded or with cut grooves. New dry pipe system piping will be black schedule 40.

	Hazard Level	
	FM Global	2013 NFPA 13
Parking Areas	HC-2	Ordinary Hazard, Group 1
Mechanical/Boiler/Storage Areas	HC-2	Ordinary Hazard, Group 2
Generator Room	HC-2	Ordinary Hazard, Group 2
Office Areas	HC-1	Light Hazard



## **MECHANICAL SYSTEMS**

The mechanical basis of design provides for demolition of the existing mechanical systems, and providing new systems. Demolition of equipment will include the main air handling units on Level 2, chillers and pumps on Level 2, closed circuit fluid coolers on Level 2, electric boiler on Level 3, and closed circuit fluid coolers and pumps on the roof. Most of the existing ductwork, HVAC piping, and variable air volume terminal units within the building will be replaced with new to accommodate the new location of central equipment and new space programming.

The HVAC system shall include air cooled heat recovery heat pumps with the ability to generate both chilled water and heating water simultaneously. Chilled water will be distributed to air handling units and heating water will be distributed to air handling units and reheat coils. Two, variable air volume air handling units located on the roof will serve series fan powered terminal units located throughout the building. Because of Portland's moderate climate, this type of system will utilize a high percentage of outside air for space conditioning during most of the year, resulting in efficient energy use and an increase in ventilation air over code. This equipment will be located on the roof of the building which will ease accessibility for maintenance of the equipment as well as free up the highly desirable floorplate area around the two story lobby.

### **HVAC SYSTEMS DESIGN CRITERIA**

Design Criteria		
Outdoor Conditions	Summer	Winter
ASHRAE 0.4% Summer and 99.6% Winter Data	91.4°F DB/ 67.3°F WB	25.2°F

Design Criteria		
Indoor Conditions	Summer	Winter
Offices	75°F	70°F
Conference / Meeting Rooms	75°F	70°F
Storage Rooms	80°F	60°F
Mechanical & Electrical Spaces	80°F	60°F
Relative Humidity	<50% ±5%RH	No Min. Humidity

Equipment and Lighting Load Targets		
Space	Equipment Load (W/SF)	Lights (W/SF)
Offices	1.5	0.75
Conference / Meeting Rooms	1.0	1.0
Lobbies / Corridors	0.5	1.0
Storage Rooms	0.25	0.75
Mechanical & Electrical Spaces	TBD	TBD
Parking Garage	0.25	0.75
Retail	1.5	1.0

Required Ventilation Rates (Outside Air)		
Space	CFM / Person	CFM / SF
Offices	5	0.06
Conference / Meeting Rooms	5	0.06
Mechanical & Electrical Spaces	-	-
Retail	7.5	0.12



Duct and Pipe Sizing Criteria	
<b>Low-Pressure Ductwork</b>	
Static Pressure Loss	Maximum 0.1 inches WC per 100 feet
Main Velocity	Maximum 1200 feet per minute
Branch Velocity	Maximum 600 fpm
Flexible Ducts	Maximum length 7 feet/minimize total 90° bends.
<b>Medium-Pressure Ductwork</b>	
Static Pressure Loss	Maximum 0.20 inches WC per 100 feet
Main Velocity	Maximum 2,000 feet per minute
Branch Velocity	Maximum 1,200 fpm
<b>Hydronic Piping</b>	
Static Pressure Loss	Maximum 4 feet WC per 100 feet
Velocity	Maximum 8 feet per second

## CENTRAL HEATING AND COOLING SYSTEMS

The building will operate independently from other buildings. Building constraints do not allow the Portland Building to be the location for a future campus/ district central plant system.

### Basis of design: Air Cooled Heat Recovery Chillers

The basis of design utilizes six ea. 120 ton, air cooled heat recovery chillers to generate chilled water and hot water simultaneously for conditioning ventilation and for reheat. The size and count of chillers may be adjusted through procurement efforts, with Owner involvement, to ultimately obtain 720 tons of capacity. This may directly affect the layout of the roof equipment and its associated platform. Three variable flow distribution pumps will distribute chilled water to main air handling units and heat exchangers serving a condenser water loop. Three variable flow distribution pumps will distribute heating water to air handling units and terminal unit reheat coils, separated by a heat exchanger. Effort will be made to keep the heating water temperature as low as possible in order to increase the efficiency of the air cooled chillers.

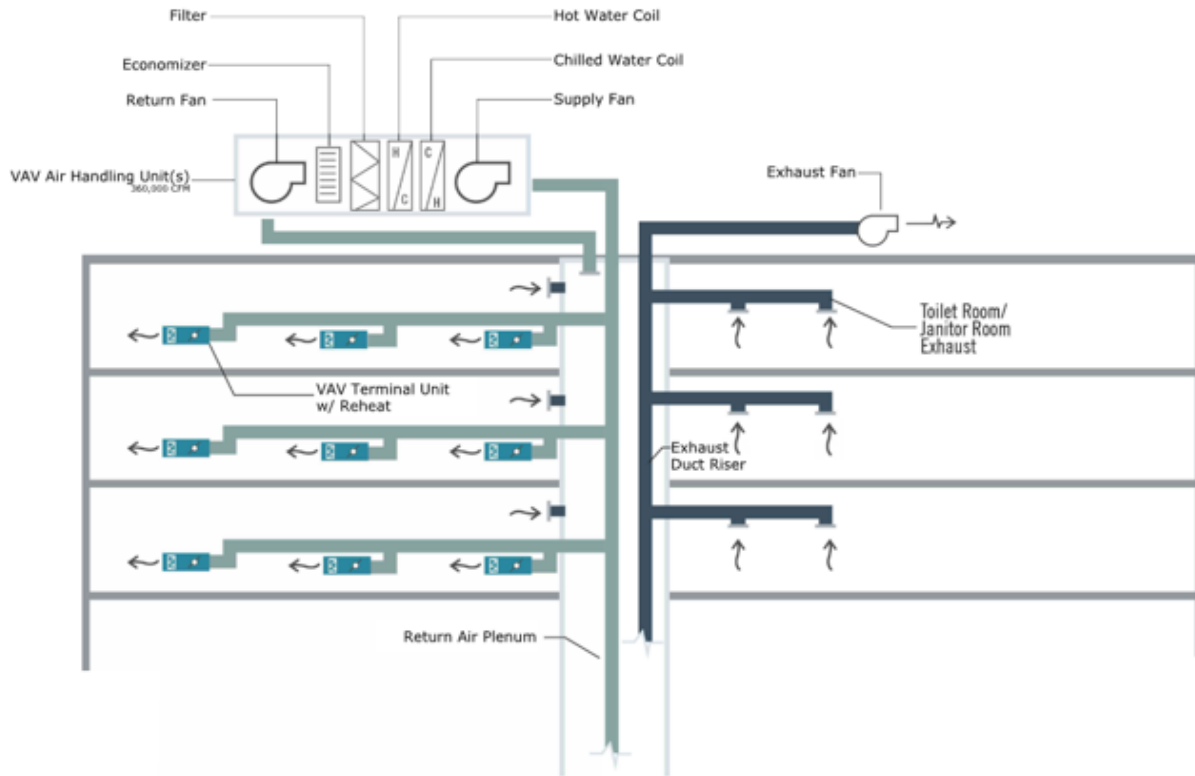
The heating water loop in the mechanical penthouse will include 8-inch mains, with 6-inch risers down the building and 3-inch taps on each floor to serve reheat coils. The 44 degree F chilled water loop in the mechanical penthouse will include 10-inch mains. A 4" condenser water riser will serve water cooled equipment for IT rooms, water source heat pumps in the basement, water source heat pump water heater, and elevator machine room cooling. Exterior piping which does not include glycol shall be heat traced.



## AIR HANDLING SYSTEMS

### Basis of design: Variable Air Volume Air Handling Units

The air handling system will be a traditional variable air volume system, with return fan(s), mixing box, filters (MERV 13 plus space for carbon filters), heating water coil, chilled water cooling coil, and supply fan(s). Multiple fans or a fan array will be



*Diagram: Basis of design – VAV Air Distribution*

considered to provide system redundancy and reduce overall equipment footprint. The system will be sized for full airside cooling, approximately 200,000 cfm. This will be provided by two symmetrical units, each sized for 50% of the load (100k cfm each). The air handling equipment shall be located on the roof level on an elevated platform sized in a manner to accommodate the final selected equipment.

The air handling units will supply air to series fan powered VAV terminal units with hot water reheat coils. Return air will be via a return air plenum above the ceiling or at open ceilings through a transfer openings at the riser shafts. In general VAV's will be provided for 1.) each conference room, 2.) a VAV for up to 4 ea. enclosed offices, 3.) at separations of perimeter and interior zones, 4.) at a maximum of 1,000sf of open space per zone, and 5.) at select specialty rooms.

Ductwork serving conference rooms shall have internal acoustic lining from terminal unit to outlet(s). Ductwork serving other areas shall have internal acoustic lining for 15ft downstream of terminal unit. Ductwork in exposed ceilings shall be exposed galvanized metal, with jointing provided in a clean and neat manner.

## EXHAUST SYSTEMS

Exhaust from toilet rooms, janitor closets, and other spaces requiring exhaust will be ducted to exhaust fan(s) located on the roof and on Level 3. Exhaust from locker rooms in the basement will be routed to exhaust fans on Level 3.



The final basis of design excludes parking from the building and the need for vehicle exhaust management. The program excludes any grease cooking or requirements for a grease exhaust system. A new exhaust fan (located in the basement) and associated air path will be established in order to maintain airflow to the existing PGE electrical vault.

### **MISCELLANEOUS FANS AND AC UNITS**

Small fans for conditioning storage rooms, electrical rooms, and other spaces will be provided as necessary to meet temperature and ventilation requirements. Self-contained water cooled AC units serviced from the building condenser water loop will be used to condition electrical rooms, IT rooms, and other spaces with process loads.

Per the Owners request and considering the conversion of the parking garage into occupied space, the existing generator is to remain as installed in the basement and the generator heat discharge system which currently rejects heat into the garage, is not to be discharged through the first floor future day care space. As a result, a discharge route adjacent to stair#1 has been planned with a booster fan. This pathway will be routed to a louvered penthouse on Level 3, pending AHJ approval.

### **STAIR AND ELEVATOR PRESSURIZATION**

The two existing stairwell pressurization fans will be replaced with new fans, located outside on the roof. An additional pressurization fan located on Level 2 will provide pressurization of the existing stair (grid A.5/3.5) which offsets horizontally on Level 3. New pressurization fans for the two main elevator hoistways will be provided in lieu of providing rated elevator lobbies. Each elevator hoistway (2 total) will have a dedicated fan on a VFD. A pressure relief fan located on the roof will be provided to avoid over-pressurization of the building.

### **BUILDING CONTROLS**

A direct digital control (DDC) system will be provided to control and monitor all HVAC equipment and systems. Valve and damper actuation will be electric type. The control system will perform all required control functions, including optimization of equipment and system performance, reliability, equipment life and energy consumption. An extensive measurement and verification system is anticipated to monitor all of the building's energy use. Some of the systems that will be metered are listed below, however, this is not a complete list.

1. Main Electrical Service Meters
2. Generator and Emergency Power Distribution
3. Electrical Panels
4. Domestic Water
5. Natural Gas
6. Chilled / Heating Water Make Up
7. Air Cooled Chiller Power Input
8. Pump Power Consumption
9. Air Handling Unit Fan Power Consumption

**High Density Spaces:** CO2 sensors will be provided in all densely occupied spaces (25 p or more per 1,000 sf). Thermometers, switches, electrical relays, and other devices used on the project will not contain mercury.

## **ELECTRICAL SYSTEMS**

The electrical basis of design assumes demolition and removal of the existing buildings electrical system which is at or near the end of its useful life. Select equipment items such as the 600 kW diesel generator set, the 2ea. natural gas generator sets and select distribution gear, are planned to be re-used and incorporated into the design as appropriate.

### **SERVICE**

The Portland Building has an existing underground distribution vault from Portland General Electric (PGE). The existing PGE vault on the corner of SW Fifth and Madison Street feeds the building from an existing collector bus with two 4000A, 480V, 3 phase, 4 wire services. EUSERC metering cabinets and main service disconnects are currently located within the basement level of the building adjacent to the PGE vault.



At this time, the current service type and size to the building has been determined to be sufficiently sized for the renovation. A new collector bus shall be provided in coordination with PGE, and new secondary service feeders will be provided to new EUSERC metering cabinets and the main service disconnects that will replace the old, end-of-its-usable-life equipment. Note that the team will work with PGE to investigate reuse of the existing collector bus if feasible, as a cost savings option.

## **DISTRIBUTION**

Downstream of the utility point of service, new building distribution will be provided.

Service 1 – 4000A, 480Y/277V (named 4D-00-01)

Service 2 – 4000A, 480Y/277V (named 4D-00-02)

The Main Distribution Switchboards will be freestanding, metal-enclosed type construction and will contain molded-case circuit breakers for the main and distribution sections. Each MDP will contain EUSERC metering provisions for utility secondary metering. The panelboards will be arranged to allow front access to each.

## **SUB-DISTRIBUTION - BUILDING RISERS**

The two services will feed 480Y/277V distribution gear that will include plug-in bus-way risers through vertically stacked electrical rooms centrally located in the building.

Service 1 '4D-00-01' will be configured to serve the normal side of the automatic transfer switches and the general lighting and power loads on each level.

Service 2 '4D-00-02' will be configured to serve the mechanical loads on each level and the normal mechanical loads located on the roof.

## **VERTICAL DISTRIBUTION**

Above the basement level, floorplates will contain one electrical room per floor. These electrical rooms will vertically stack. The primary method of distributing power vertically will be using aluminum busduct/busway assemblies. The busducts will route within the stacked electrical rooms and will serve floor transformers and distribution panels located within each floor electrical room for plug loads. Transformers and distribution panels for mechanical and lighting will be located on every third floor to serve the associated loads. Utilizing busduct allows for future flexibility and requires a relatively small footprint within the electrical rooms. The busducts have been arranged to serve building load types such as "mechanical", "receptacle/general power", and "lighting" panelboards at each floor. Reference the electrical one-line diagram per the reference documents for additional information. All vertical busduct and conduit/wire distribution will be routed within the confines of the stacked floor electrical rooms. A standby power riser will be routed to support IDF rooms through the building.

## **BRANCH CIRCUIT WIRING**

The branch circuit basis of design will primarily be copper conductor in EMT raceway. Branch circuit distribution will occur along the ceiling cavities at each floor. Poke through feeds will be used to service for roughly half of the workstation furniture feeds, with the balance of the feeds coming from adjacent walls. It is assumed that workstation furniture shall be provided with wire whips for a single point on connection. Conference furniture shall be serviced with poke through boxes for both power and data. The use of MC Cable is included for connections to lighting only. Value engineering options shall be considered in the future for use at other locations. Ground fault circuit interrupter receptacles will be provided in toilet rooms at sinks, roof, outdoor and wet areas.

## **POWER MONITORING/ METERING PROVISIONS**

Enhanced electrical measurement and verification strategies will be implemented on the project. Installation of end-use specific electrical sub-metering will allow facilities personnel a greater level of clarity on energy usage as compared to a single building level utility meter.

End-use sub-meters will aid in identifying when systems are not functioning properly and may assist in a preventative maintenance program. The project's electrical infrastructure will implement sub-metering to monitor the following building systems at minimum:

HVAC systems



MDF and IDF equipment power  
Lighting  
Plug Loads (Per Floor)  
Process Loads (such as elevators)

Meter data will be stored locally and accessible via a metering network. The metering system will display aggregate and instantaneous kWh, kW, kVAR, and total harmonic distortion (THD). The metering network will be integrated into the M&V system implemented via the building automation system (BMS).

## **GROUNDING SYSTEM**

Two grounding criteria will be addressed, safety and performance. A safe grounded power system will be provided in compliance with the 2014 NEC. This ground system consists of the building service ground. New grounding electrode conductors will reestablish the new service equipment connection to the existing grounding electrodes. Grounding will be extended throughout the electrical system through equipment grounding conductors. A ground riser will be established vertically throughout the building for connection of distributed separately derived systems.

Performance grounding includes a separate ground riser for telecommunications distribution rooms. The performance ground system will tie into the code required safety grounding system at the main grounding bus bar in the main electrical room.

## **EMERGENCY POWER SYSTEMS**

**Life Safety Power System** - The code required system will be provided to automatically supply illumination, power, or both, to equipment or parts of the building in the event of a normal power loss, that are considered essential for safety to human life. In the event of a normal power loss, power will be restored to these loads within 10 seconds. Life Safety loads include egress lighting, exit signs, and fire alarm equipment. A separate transfer switch off the diesel generator distribution will serve the life safety riser.

**Legally Required Standby Power System** – This code required system will be provided and includes loads such as elevator pressurization, stair pressurization, and elevators used for building egress. In the event of a normal power loss, power must be restored to these systems within 60 seconds. A separate transfer switch off the diesel generator distribution will serve these code required risers.

**Optional Standby Power System** – Services to be fed by an optional standby power system are the technology spaces through-out the building (MPOE, MDF, & one rack in each IDF). Optional standby power include technology spaces, mechanical equipment supporting technology spaces, and passenger elevators (One Per Bank). See generator section below.

## **EMERGENCY GENERATORS**

The basis of design for the emergency power system is to reuse the existing 600kW diesel generator in the Basement Level to support code required NEC 700 Life Safety and 701 Legally Required Standby loads including but not limited to the equipment listed on the referenced table.



The diesel generators fuel system will be revised inclusive of decommissioning and abandoning the existing underground fuel tank and replacing the existing day tank on the Basement level with a 600 gallon tank located in the diesel generator room. The tank size is provided to support the code required generator runtime of 8 hours based on the NFPA 20 requirement for fire pump operation. A remote fill station and associated piping will be provided to a sidewalk accessible location on NW 4<sup>th</sup> Ave.

<b>GENERATOR LOADS</b>						
<b>NEC ARTICLE 700 LOADS</b>	<b>Description</b>	<b>Voltage</b>	<b>Phase</b>	<b>HP</b>	<b>KW</b>	<b>Starter</b>
FP-1	Fire Pump	480	3	50	48.6	Soft Start
FP-2	Fire Pump	480	3	50	48.6	Soft Start
JP-1	Jockey Pump	480	3	5	5.67	Across the Line
	Emergency Lighting	277	1		85.5	N/A
	Fire Alarm System	120	1		0.9	N/A
	DAS System	120	1		0.9	N/A
<b>NEC ARTICLE 701 LOADS</b>						
ELEV-1	Elevator (1 cab per bank)	480	3	50	48.6	Soft Start
ELEV-2	Elevator (1 cab per bank)	480	3	50	48.6	Soft Start
SP-1	Stair Pressurization Fan	480	3	2	2.52	VFD
SP-2	Stair Pressurization Fan	480	3	2	2.52	VFD
EPF-1	Elevator Pressurization Fan	480	3	7.5	8.19	VFD
EPF-2	Elevator Pressurization Fan	480	3	7.5	8.19	VFD
EPF-3	Elevator Pressurization Fan	480	3	20	20.16	VFD
SRF-1	Smoke Removal Fan	480	3	10	10.44	VFD
					<b>TOTAL</b>	<b>339.4</b>

In addition to the emergency power system supported by the diesel generator, optional standby power service shall be provided through the reuse of the two (2) natural gas generators located on the level 2 roof to support technology services located in the MDF, MPOE, and IDF rooms on the project. These two existing 300kW natural gas generators will be temporarily removed from the site during construction, then reinstalled and recommissioned by the manufacturer inclusive of general maintenance for filters, plugs, etc.

No equipment warranty shall be included for the existing three (3) generators and the UPS system once commissioned and accepted by Owner.

## **LIGHTING AND LIGHTING CONTROL**

The lighting will be a 277V system consisting of all LED lighting fixtures. Open office spaces will be lit by suspended linear fixtures. Conference rooms will be a combination of downlights and recessed and/or suspended linear fixtures. The basis for budgeting the lighting scope is as provided in the lighting package documents in [Snap\[cw1\]](#) Shot #4.

The emergency egress lighting will be powered by the existing building generator. Per Oregon energy code, the lighting will be capable of being switched off when the building is not occupied.

Lighting controls will be a mixture of local occupancy sensor control and lighting control panel switching. In offices, conference rooms, and other small spaces, either passive infrared or ultrasonic sensors will be used to turn lighting off when the spaces aren't in use. In corridors and open office environments the lighting will be fed via a lighting control panel which is capable of automatic shut-off (i.e. time clock sweep). The emergency lighting in the open office areas will also be connected via the lighting controls panel, which contains UL 924 relays to ensure the lighting is turned on and brought to full brightness in the event of a utility power failure. Per Oregon energy code, photocells will be used to dim lighting that is adjacent to windows.

## **LOW VOLTAGE SYSTEMS**

### **FIRE ALARM SIGNAL SYSTEM**

The existing fire alarm system and associated components are at the end of their useful life and shall be demolished and replaced. A new building fire alarm system will be provided consisting of a supervised, fully addressable, Class B hard wired system. Notification will consist of voice evacuation speakers and visual notification as required by ADA guidelines. A fire command center will be located on the ground level of the building (Level 1) per high-rise building code.





The fire command center location will be coordinated with the fire marshal and will contain all requirements per IBC 403.8 and any specific additional requirements of the City of Portland fire marshal. It will also be in compliance with IBC section 911 and contain the following equipment/features:

- ☑ The emergency voice/alarm communication system unit.
- ☑ The fire department communications unit.
- ☑ Fire detection and alarm system annunciator unit.
- ☑ Annunciator unit visually indicating the location of the elevators and whether they are operational.
- ☑ Status indicators and override controls for air-handling systems.
- ☑ The firefighter's control panel required by IBC 909.16 for smoke control systems installed in the building.
- ☑ Controls for unlocking stairway doors simultaneously.
- ☑ Sprinkler valve and water-flow detector display panels.
- ☑ Emergency and standby power status indicators.
- ☑ A telephone for fire department use with controlled access to the public telephone system.
- ☑ Fire pump status indicators.
- ☑ Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, firefighting equipment and fire department access.
- ☑ Generator supervision devices, manual start and transfer features.
- ☑ An add alternate for a public address system as part of the fire alarm system shall be provided.

The central control panel within the fire command center will include the following features:

- ☑ Fire detection and alarm annunciation and controls.
- ☑ Sprinkler system water flow detection and valve position indication annunciation.
- ☑ Relay modules for control of fans and fire/smoke dampers.
- ☑ Remote annunciation panel located in the designated fire department entrance lobby.
- ☑ Manual pull station mounted adjacent to remote annunciation panel.
- ☑ Control of fire alarm evacuation speaker located in paths of egress, common spaces, and stairs.
- ☑ Relay modules will be connected to security system, mechanical controls, elevator controller, and elevator power module.

For high-rise buildings, photoelectric smoke detectors are required in the Fire Command Center (FCC), elevator lobbies, and for mechanical equipment (duct detectors). Smoke and thermal detectors are required in elevator equipment room and in the top of all elevator shafts. Thermal detectors are required in the elevator pits.

## **SECURITY SYSTEM**

The security systems basis of design includes demolition and removal of the existing system to be replaced by a new integrated security system to operate a card access control system, a CCTV monitoring system, and a duress call system which will work in combination with physical barriers to manage accessibility to the space and to provide the ability to monitor and record activities at select areas. The parameters for the integrated security system have not been programmed or designed as of the time of GMP submission, but a set of assumption drawings indicating proposed device counts and locations has been developed for budgetary purposes. For security purposes, the breadth of this scope is confidential and is contained in a separate report not included in this basis of design document. The budget for this scope is included as an Target Value Design Budget.

## **AUDIO VISUAL**

The audio visual (A/V) scope of work is EXCLUDED from the project scope as provided in the GMP, inclusive of equipment, cabling, computers, and supports. A Target Value Design Budget has been provided in support of infrastructure (i.e. AV cabling pathways) to be utilized once the scope is designed. The basis of design for the project DOES include power and network connectivity to conference rooms at locations where AV equipment is typically installed.





## **TELECOMMUNICATIONS / DATA SYSTEMS / TECHNOLOGY SUPPORT SPACES**

With the reconstruction project, we are afforded a once-in-a-lifetime opportunity to clean house and set a new direction for the Portland Building based on current industry best practices while planning for the future. As a result, it is planned to demolish and remove most all systems from the building and replace them with new systems and distribution pathways. Select systems shall be salvaged and reused or segregated to a small area of the building during construction as further discussed below.

### **TECHNOLOGY SUPPORT SPACES**

Three (3) types of rooms will be provided in support of the Portland Building's new design. One (1) MDF, One (1) MPOE/DEMARC and seventeen (17) IDF locations. The basis of design is that all Technology Support Spaces in the Portland Building become shared spaces that support multiple systems and operating groups. Technology Support Spaces will be supported by a centralized Generator System and UPS System reused from the existing building installation. All Technology Support Spaces will include HVAC, grounding, cable distribution support, power distribution, wall-mounting support and cable raceways required to move signal cables in and out of these spaces.

*Main Point of Entry and Demarcation Room (MPOE/DEMARC)* – This space is where non-radio, technology-related raceway and signals enter and leave the building. This space will house connections and active components that deliver services to and from the building. The DEMARC Room will be the Point of Presence (POP) for service providers like CenturyLink and Comcast. The adjacent MPOE will deliver the same in/out function for City of Portland connections. The MPOE will also support primary connection equipment for PBOT, BTS and others. Cabinets and Racks shall be included along support for normal and emergency power, AC-DC power conversion and local UPS, in-rack/cabinet power distribution, fiber and other cable distribution.

The new MPOE/DEMARC shall be completed as part of the Make Ready scopes of work. The MPOE/DEMARC shall be independently supported by temporary HVAC & emergency electrical systems during construction. The MPOE/DEMARC shall have environmental monitoring, security access controls, intrusion detection and CCTV monitoring. Temporary fiber and copper cabling will be installed to support the migration of signals away from the existing 3<sup>rd</sup> floor connections prior to start of construction. New cables will be installed to City Hall and the Justice Center as replacements for current 3<sup>rd</sup> floor connections.

Prior to start of Portland Building demolition and reconstruction, the project will migrate approximately 100 fiber circuits, 60 copper circuits, 3-4 racks of BTS equipment from 325D and 2 cabinets of PBOT equipment from the 3<sup>rd</sup> floor PBOT Signal Room into the new MPOE/DEMARC room. The MPOE will be the permanent home for the majority of the migrated BTS and PBOT equipment and circuit connections.

*Main Distribution Facility (MDF)* – An MDF room to be located in the basement of the building adjacent to the MPOE/DEMARC room. The MDF will include shared rack and cabinets. Raceway shall be included to connect the MDF to the MPOE/DEMARC and to the IDF's up through the building. This is a high-security location that shall include security access controls and CCTV monitoring funded from the Target Value Design Budget for Security.

*Intermediate Distribution Facility (IDF)* – A total of 17 ea. IDF rooms will be provided vertically up through the building on each floor from the basement through the penthouse. These spaces are planned to be approximately 10ft x 12 ft in size to allow adequate space for the planned installation and sufficient space for growth in the future. These rooms are planned to include 4 positions for racks or cabinets, in addition to ample wall space. These rooms will also have security access controls and CCTV monitoring. Emergency power in these spaces will likely be limited to supporting critical LAN equipment and select other equipment.

### **SHARED TECHNOLOGY CABLING INFRASTRUCTURES (VERTICAL & HORIZONTAL)**

New vertical cabling shall be provided as CAT6 cable, Single Mode Fiber, Multi-Mode Fiber, CAT3 cabling, and cable television backbone cabling. Existing horizontal (station and similar) cabling shall be replaced with CAT6 cabling from the station location to the supporting IDF. Typically, 2 CAT6 cables will be installed to each workstation. Each Wireless LAN Access Point location shall include 2 new CAT6A cables to the supporting IDF. Cable tray shall be provided around the core



of the building where large bundles of cabling occur. All cabling ran outside of the cable tray will be installed in J Hook cable supports.

### **WIDE AREA NETWORK (WAN)**

Data and telephone services connect to the Portland Building in a variety of ways. Primary network connections to the building (WAN) will be installed as part of the Make Ready effort in preparation for construction. Upon return to the Portland Building, some WAN equipment is required to reconnect adequate data and telephone connections. Given the life cycle of this equipment at the return to TPB, it is assumed that the WAN equipment will be provided for outside the project budget and closely coordinated with the move of occupants to and from the temporary relocation spaces.

### **WIRED LOCAL AREA NETWORK (LAN)**

A wired local area network will be provided including data switches and patch cables to connect user's workstations to the internet, CoP systems and other LAN services. This network will also carry the security camera signals, VOIP telephone signals, and many others. Given the life cycle of this equipment at the return to TPB, it is assumed that the LAN data switches will be provided for outside the project budget and closely coordinated with the move of occupants to and from the temporary relocation spaces.

### **WIRELESS LOCAL AREA NETWORK (WLAN)**

A wireless local area network (WLAN) shall be provided utilizing Wireless Access Points (WAP's) distribution through the building to provide 100% coverage of the interior spaces. Some Access Points were purchased new as part of the temporary office relocation project and will be reused in the Portland Building. Given the life cycle of other existing WLAN equipment, it is assumed that the WAP's will be replaced outside the project budget. Labor to move and re-install WAPs, as well as new patch cables will be supplied by the project. Any new WAP's are assumed to be provided by Owner.

### **VOIP & OTHER TELEPHONE SERVICES**

It is assumed that the City's VOIP telephone system will be utilized and will operate over the new IT infrastructure. Accommodations for a small number of new VOIP handset locations are assumed. New patch and station cables will be supplied by the project to attach handsets and other VOIP equipment to the new Horizontal Cable Infrastructure.

A limited number of non-VOIP telephone connections to the Portland Building will be provided.

### **MISCELLANEOUS RADIO SYSTEMS**

Provisions for two (2) rooftop radio systems are included. This includes a radio systems cable raceway infrastructure to the rooftop from the Penthouse IDF and around the rooftop to antenna installation points at the building corners and possible 1 additional location. Furnish and installation of radio equipment is assumed to be by Owner.

## **SUSTAINABILITY**

The basis of design for sustainability is to provide for LEED Gold v.3.0. See the referenced LEED c3 Scorecard-n-Narrative summary dated 9/8/2017 for specifics of targeted elements for this certification. Separately, the design shall meet or exceed city policy requirements.

## **ACOUSTICS**

Please see attached acoustics criteria report *The Portland Building Reconstruction Architectural Acoustics GMP Basis of Design* for acoustics Basis of Design requirements.

## **REFERENCE DOCUMENTS**

See attachment dated 10/30/2017 titled "Final Basis of Design Reference Documents" for drawings, specifications, and supplementary documents which further define the Basis of Design.

## **FINAL BASIS OF DESIGN REFERENCE DOCUMENTS**

The following reference documents provide supporting information for the Final Basis of Design narrative and the Guaranteed Maximum Price Amendment for the Portland Building Reconstruction Project.

### **DRAWINGS (2.02)**

Document Number	Description	Set	Date of Document
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#### **GENERAL**

G0.0	COVER SHEET	SNAP SHOT 4	8/15/2017
G0.1	SHEET INDEX AND PROJECT DIRECTORY	SNAP SHOT 4	8/15/2017
G0.2	SYMBOLS & ABBREVIATIONS	SNAP SHOT 4	8/15/2017
CP0.0	CODE NARRATIVE	SNAP SHOT 4	8/15/2017
CP0.1	ZONING COMPLIANCE PAGE, LU 17-154313 HRM AD	SNAP SHOT 4	8/15/2017
CP0.2	CODE SUMMARY	SNAP SHOT 4	8/15/2017
CP1.0	CODE INFORMATION	SNAP SHOT 4	8/15/2017
CP2.0	CODE PLAN, LEVEL 00 (BASEMENT)	SNAP SHOT 4	8/15/2017
CP2.1	CODE PLAN, LEVEL 01	SNAP SHOT 4	8/15/2017
CP2.2	CODE PLAN, LEVEL 02	SNAP SHOT 4	8/15/2017
CP2.3	CODE PLAN, LEVEL 03	SNAP SHOT 4	8/15/2017
CP2.4	CODE PLAN, LEVEL 04	SNAP SHOT 4	8/15/2017
CP2.5	CODE PLAN, TYPICAL LEVEL (05-13)	SNAP SHOT 4	8/15/2017
CP2.14	CODE PLAN, LEVEL 14	SNAP SHOT 4	8/15/2017
CP2.15	CODE PLAN, LEVEL 15	SNAP SHOT 4	8/15/2017
CP2.16	CODE PLAN, PENTHOUSE	SNAP SHOT 4	8/15/2017
CP2.17	CODE PLAN, ELEVATOR MACHINE ROOM	SNAP SHOT 4	8/15/2017

#### **CIVIL**

ST0.1	COVER SHEET	NA	7/7/2017
ST1.0	SW 4TH AVE PLAN & TYPICAL SECTION	NA	7/7/2017
ST2.0	CURB RAMP DETAILS	NA	7/7/2017
ST3.0	DETAILS	NA	7/7/2017
ST3.1	DETAILS	NA	7/7/2017

#### **DEMOLITION**

AD1.0	SOFT DEMOLITION PLAN, LEVEL 00 (BASEMENT)	PERMIT SET	7/14/2017
AD1.1	SOFT DEMOLITION PLAN, LEVEL 01	PERMIT SET	7/14/2017
AD1.2	SOFT DEMOLITION PLAN, LEVEL 02	PERMIT SET	7/14/2017
AD1.3	SOFT DEMOLITION PLAN, LEVEL 03	PERMIT SET	7/14/2017
AD1.4	SOFT DEMOLITION PLAN, LEVEL 04	PERMIT SET	7/14/2017
AD1.5	SOFT DEMOLITION PLAN, LEVEL 05	PERMIT SET	7/14/2017
AD1.6	SOFT DEMOLITION PLAN, LEVEL 06	PERMIT SET	7/14/2017
AD1.7	SOFT DEMOLITION PLAN, LEVEL 07	PERMIT SET	7/14/2017

AD1.8	SOFT DEMOLITION PLAN, LEVEL 08	PERMIT SET	7/14/2017
AD1.9	SOFT DEMOLITION PLAN, LEVEL 09	PERMIT SET	7/14/2017
AD1.10	SOFT DEMOLITION PLAN, LEVEL 10	PERMIT SET	7/14/2017
AD1.11	SOFT DEMOLITION PLAN, LEVEL 11	PERMIT SET	7/14/2017
AD1.12	SOFT DEMOLITION PLAN, LEVEL 12	PERMIT SET	7/14/2017
AD1.13	SOFT DEMOLITION PLAN, LEVEL 13	PERMIT SET	7/14/2017
AD1.14	SOFT DEMOLITION PLAN, LEVEL 14	PERMIT SET	7/14/2017
AD1.15	SOFT DEMOLITION PLAN, LEVEL 15	PERMIT SET	7/14/2017
AD1.16	SOFT DEMOLITION PLAN, LEVEL 16(PENTHOUSE)	PERMIT SET	7/14/2017
AD2.1	SOFT DEMOLITION HISTORIC AREAS - LEVEL 1	PERMIT SET	7/14/2017
AD2.2	SOFT DEMOLITION HISTORIC AREAS - LEVEL 2	PERMIT SET	7/14/2017
AD2.3	SOFT DEMOLITION HISTORIC AREAS - REFLECTED CEILING PLANS	PERMIT SET	7/14/2017
AD21.0	HARD DEMOLITION PLAN, LEVEL 00 (BASEMENT)	PERMIT SET	8/14/2017
AD21.1	HARD DEMOLITION PLAN, LEVEL 01	PERMIT SET	8/14/2017
AD21.2	HARD DEMOLITION PLAN, LEVEL 02	PERMIT SET	8/14/2017
AD21.3	HARD DEMOLITION PLAN, LEVEL 03	PERMIT SET	8/14/2017
AD21.4	HARD DEMOLITION PLAN, LEVEL 04	PERMIT SET	8/14/2017
AD21.5	HARD DEMOLITION PLAN, LEVEL 05	PERMIT SET	8/14/2017
AD21.6	HARD DEMOLITION PLAN, LEVEL 06	PERMIT SET	8/14/2017
AD21.7	HARD DEMOLITION PLAN, LEVEL 07	PERMIT SET	8/14/2017
AD21.8	HARD DEMOLITION PLAN, LEVEL 08	PERMIT SET	8/14/2017
AD21.9	HARD DEMOLITION PLAN, LEVEL 09	PERMIT SET	8/14/2017
AD21.10	HARD DEMOLITION PLAN, LEVEL 10	PERMIT SET	8/14/2017
AD21.11	HARD DEMOLITION PLAN, LEVEL 11	PERMIT SET	8/14/2017
AD21.12	HARD DEMOLITION PLAN, LEVEL 12	PERMIT SET	8/14/2017
AD21.13	HARD DEMOLITION PLAN, LEVEL 13	PERMIT SET	8/14/2017
AD21.14	HARD DEMOLITION PLAN, LEVEL 14	PERMIT SET	8/14/2017
AD21.15	HARD DEMOLITION PLAN, LEVEL 15	PERMIT SET	8/14/2017
AD21.16	HARD DEMOLITION PLAN, LEVEL 16 (PENTHOUSE)	PERMIT SET	8/14/2017
AD21.17	HARD DEMOLITION PLAN, LEVEL 17 (MACHINE ROOM)	PERMIT SET	8/14/2017
AD24.17	HARD DEMOLITION ROOF PLAN, LEVEL 17 (MACHINE ROOM)	PERMIT SET	8/14/2017
AD25.1	HARD DEMOLITION BUILDING ELEVATION, 5TH AVE	PERMIT SET	8/14/2017
AD25.2	HARD DEMOLITION BUILDING ELEVATION, 4TH AVE	PERMIT SET	8/14/2017
AD25.3	HARD DEMOLITION BUILDING ELEVATION, MAIN ST	PERMIT SET	8/14/2017
AD25.4	HARD DEMOLITION BUILDING ELEVATION, MADISON ST	PERMIT SET	8/14/2017
AD25.5	HARD DEMOLITION BUILDING ELEVATION, LOGGIA AND PERGOLAS	PERMIT SET	8/14/2017
AD25.6	HARD DEMOLITION BUILDING ELEVATION, PENTHOUSE	PERMIT SET	8/14/2017

#### ARCHITECTURAL

A0.1	ROOM FINISH SCHEDULE	SNAP SHOT 4	8/15/2017
A0.5	WALL TYPES, WALL DETAILS, WALL TYPE NOTES & GENERAL	SNAP SHOT 4	8/15/2017
A1.0	FLOOR PLAN, LEVEL 00 (BASEMENT)	SNAP SHOT 4	8/15/2017
A1.1	FLOOR PLAN, LEVEL 01	SNAP SHOT 4	8/15/2017



A1.2	FLOOR PLAN, LEVEL 02	SNAP SHOT 4	8/15/2017
A1.3	FLOOR PLAN, LEVEL 03	SNAP SHOT 4	8/15/2017
A1.4	FLOOR PLAN, LEVEL 04	SNAP SHOT 4	8/15/2017
A1.5	FLOOR PLAN, TYPICAL LEVEL (5-13)	SNAP SHOT 4	8/15/2017
A1.14	FLOOR PLAN, LEVEL 14	SNAP SHOT 4	8/15/2017
A1.15	FLOOR PLAN, LEVEL 15	SNAP SHOT 4	8/15/2017
A1.16	FLOOR PLAN, LEVEL 16 (PENTHOUSE)	SNAP SHOT 4	8/15/2017
A1.17	FLOOR PLAN, LEVEL 17 (ELEV MACH RM)	SNAP SHOT 4	8/15/2017
A2.0	LARGE SCALE CORE PLAN & RCP, LEVEL 00	SNAP SHOT 4	8/15/2017
A2.1	LARGE SCALE CORE PLAN & RCP, LEVEL 01	SNAP SHOT 4	8/15/2017
A2.2	LARGE SCALE CORE PLAN & RCP, LEVEL 02	SNAP SHOT 4	8/15/2017
A2.3	LARGE SCALE CORE PLAN & RCP, LEVEL 03	SNAP SHOT 4	8/15/2017
A2.5	LARGE SCALE CORE PLAN & RCP, TYPICAL LEVEL (4-13)	SNAP SHOT 4	8/15/2017
A2.15	LARGE SCALE CORE PLAN & RCP, LEVEL 15	SNAP SHOT 4	8/15/2017
A2.16	LARGE SCALE CORE PLANS, PENTHOUSE & ELEV MACH RM	SNAP SHOT 4	8/15/2017
A2.20	LARGE SCALE PLANS, RESTROOMS	SNAP SHOT 4	8/15/2017
A2.21	LARGE SCALE PLANS	SNAP SHOT 4	8/15/2017
A2.22	LARGE SCALE PLANS, HISTORIC	SNAP SHOT 4	8/15/2017
A3.0	REFLECTED CEILING PLAN, LEVEL 00 (BASEMENT)	SNAP SHOT 4	8/15/2017
A3.1	REFLECTED CEILING PLAN, LEVEL 01	SNAP SHOT 4	8/15/2017
A3.2	REFLECTED CEILING PLAN, LEVEL 02	SNAP SHOT 4	8/15/2017
A3.3	REFLECTED CEILING PLAN, LEVEL 03	SNAP SHOT 4	8/15/2017
A3.4	REFLECTED CEILING PLAN, LEVEL 04	SNAP SHOT 4	8/15/2017
A3.5	REFLECTED CEILING PLAN, TYPICAL LEVEL (5-13)	SNAP SHOT 4	8/15/2017
A3.14	REFLECTED CEILING PLAN, LEVEL 14	SNAP SHOT 4	8/15/2017
A3.15	REFLECTED CEILING PLAN, LEVEL 15	SNAP SHOT 4	8/15/2017
A3.16	REFLECTED CEILING PLAN, LEVEL 16 (PENTHOUSE)	SNAP SHOT 4	8/15/2017
A3.17	REFLECTED CEILING PLAN, LEVEL 17 (MACHINE ROOM)	SNAP SHOT 4	8/15/2017
A3.20	CEILING DETAILS	SNAP SHOT 4	8/15/2017
A4.0	ROOF PLAN, OVERALL	SNAP SHOT 4	8/15/2017
A5.1	BUILDING ELEVATION, 5TH AVE	SNAP SHOT 4	8/15/2017
A5.2	BUILDING ELEVATION, 4TH AVE	SNAP SHOT 4	8/15/2017
A5.3	BUILDING ELEVATION, MAIN ST	SNAP SHOT 4	8/15/2017
A5.4	BUILDING ELEVATION, MADISON ST	SNAP SHOT 4	8/15/2017
A5.5	BUILDING ELEVATION, LEVEL 01	SNAP SHOT 4	8/15/2017
A5.6	BUILDING ELEVATION, LEVEL 02	SNAP SHOT 4	8/15/2017
A5.7	BUILDING ELEVATION, LEVEL 03	SNAP SHOT 4	8/15/2017
A5.8	BUILDING ELEVATION, LEVEL 14, 15 & PENTHOUSE	SNAP SHOT 4	8/15/2017
A7.10	WALL SECTION & DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A7.11	WALL SECTION & DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A7.12	WALL SECTION & DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A7.13	WALL SECTION & DETAILS, EXTERIOR – GROUND FLOOR CURTAIN	SNAP SHOT 4	8/15/2017
A7.14	WALL SECTION & DETAILS, EXTERIOR – UNITIZED (4-14)	SNAP SHOT 4	8/15/2017





A7.15	WALL SECTION & DETAILS, EXTERIOR – UNITIZED (4-14)	SNAP SHOT 4	8/15/2017
A7.16	WALL SECTION & DETAILS, EXTERIOR – LEVEL 15 & PENTHOUSE	SNAP SHOT 4	8/15/2017
A7.17	WALL SECTION & DETAILS, EXTERIOR – SPECIAL CONDITIONS	SNAP SHOT 4	8/15/2017
A7.20	WALL SECTIONS, INTERIOR	SNAP SHOT 4	8/15/2017
A7.21	WALL SECTIONS, INTERIOR	SNAP SHOT 4	8/15/2017
A8.11	STAIR 1 & 3, PLANS & SECTIONS	SNAP SHOT 4	8/15/2017
A8.12	STAIR 2 & 3, PLANS & SECTIONS	SNAP SHOT 4	8/15/2017
A8.15	MISC. STAIRS & RAMPS, PLANS & SECTIONS	SNAP SHOT 4	8/15/2017
A8.20	ELEVATORS, PLANS & SECTIONS	SNAP SHOT 4	8/15/2017
A8.21	VERTICAL TRANSPORTATION DETAILS	SNAP SHOT 4	8/15/2017
A9.10	EXTERIOR DOOR & FRAME SCHEDULE	SNAP SHOT 4	8/15/2017
A9.11	DOOR & FRAME ELEVATIONS, EXTERIOR	SNAP SHOT 4	8/15/2017
A9.20	INTERIOR DOOR AND FRAME SCHEDULE	SNAP SHOT 4	8/15/2017
A9.21	INTERIOR DOOR AND FRAME SCHEDULE	SNAP SHOT 4	8/15/2017
A9.22	DOOR & FRAME ELEVATIONS, INTERIOR	SNAP SHOT 4	8/15/2017
A10.10	GENERAL BUILDING DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A10.11	GENERAL BUILDING DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A10.12	GENERAL BUILDING DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A10.13	GENERAL BUILDING DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A10.14	GENERAL BUILDING DETAILS, EXTERIOR – TERRACOTTA CLADDING	SNAP SHOT 4	8/15/2017
A10.15	GENERAL BUILDING DETAILS, EXTERIOR – GROUND FLOOR	SNAP SHOT 4	8/15/2017
A10.16	GENERAL BUILDING DETAILS, EXTERIOR – GROUND FLOOR	SNAP SHOT 4	8/15/2017
A10.17	GENERAL BUILDING DETAILS, EXTERIOR – GROUND FLOOR	SNAP SHOT 4	8/15/2017
A10.18	GENERAL BUILDING DETAILS, EXTERIOR – UNITIZED (LEVELS 4-14)	SNAP SHOT 4	8/15/2017
A10.19	GENERAL BUILDING DETAILS, EXTERIOR – LEVEL 15	SNAP SHOT 4	8/15/2017
A10.30	GENERAL BUILDING DETAILS, INTERIOR	SNAP SHOT 4	8/15/2017

#### STRUCTURAL

S0.1	DRAWING INDEX AND LIST OF ABBREVIATIONS	PERMIT SET	8/14/2017
S0.2	GENERAL STRUCTURAL NOTES	PERMIT SET	8/14/2017
S0.3	GENERAL STRUCTURAL NOTES CONT.	PERMIT SET	8/14/2017
S0.4	SPECIAL INSPECTION AND TESTING PROGRAM	PERMIT SET	8/14/2017
S0.5	SPECIAL INSPECTION AND TESTING CONT.	PERMIT SET	8/14/2017
S1.0	PLAN, FOUNDATION	PERMIT SET	8/14/2017
S1.1	PLAN, FRAMING FIRST LEVEL	PERMIT SET	8/14/2017
S1.2	PLAN, FRAMING SECOND LEVEL	PERMIT SET	8/14/2017
S1.3	PLAN, FRAMING THIRD LEVEL	PERMIT SET	8/14/2017
S1.4	PLAN, FRAMING FOURTH LEVEL	PERMIT SET	8/14/2017
S1.5	PLAN, FRAMING TYPICAL (5, 6, 7, 8, 9, 12, 13, 14)	PERMIT SET	8/14/2017
S1.10	PLAN, FRAMING TENTH AND ELEVENTH LEVELS	PERMIT SET	8/14/2017
S1.15	PLAN, FRAMING FIFTEENTH LEVEL	PERMIT SET	8/14/2017
S1.16	PLAN, FRAMING ROOF	PERMIT SET	8/14/2017
S3.1	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017



S3.2	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017
S3.3	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017
S3.4	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017
S3.5	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017
S3.6	SHEAR WALL ELEVATION	PERMIT SET	8/14/2017
S3.7	SHEAR WALL ELEVATION AT PENTHOUSE	PERMIT SET	8/14/2017
S4.1	CONCRETE COLUMN SCHEDULE AND DETAILS	PERMIT SET	8/14/2017
S4.2	COLUMN ENCASEMENT SCHEDULE & DETAILS	PERMIT SET	8/14/2017
S5.1	TYPICAL CONCRETE DETAILS	PERMIT SET	8/14/2017
S5.2	TYPICAL CONCRETE DETAILS	PERMIT SET	8/14/2017
S5.3	TYPICAL FOUNDATION DETAILS	PERMIT SET	8/14/2017
S5.4	SHEAR WALL DETAILS	PERMIT SET	8/14/2017
S5.5	SHEAR WALL DETAILS	PERMIT SET	8/14/2017
S5.6	CONCRETE DETAILS	PERMIT SET	8/14/2017
S5.7	TYPICAL MASONRY DETAILS	PERMIT SET	8/14/2017
S6.1	TYPICAL STEEL DETAILS	PERMIT SET	8/14/2017
S6.2	TYPICAL STEEL DETAILS	PERMIT SET	8/14/2017

#### MECHANICAL

MD0.1	SYMBOLS, LEGENDS AND ABBREVIATIONS -MECHANICAL	PERMIT SET	7/14/2017
MD1.0U	UNDERGROUND LEVEL MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.0	LEVEL 00 (BASEMENT) MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.1	LEVEL 01 MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.2	LEVEL 02 MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.3	LEVEL 03 MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.5	LEVEL 05 MECHANICAL DEMO PLAN (TYPICAL FOR LEVELS 04-14)	PERMIT SET	7/14/2017
MD.1.15	LEVEL 015 MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
MD.1.16	LEVEL 16 PENTHOUSE AND ROOF MECHANICAL DEMO PLAN	PERMIT SET	7/14/2017
M0.1	SYMBOLS, LEGENDS AND ABBREVIATIONS -MECHANICAL	SNAP SHOT 4	8/15/2017
M0.2	SCHEDULES - MECHANICAL	SNAP SHOT 4	8/15/2017
M0.3	SCHEDULES - MECHANICAL	SNAP SHOT 4	8/15/2017
M1.0	LEVEL 00 (BASEMENT) HVAC PLAN	SNAP SHOT 4	10/17/2017
M1.1	LEVEL 01 HVAC PLAN	SNAP SHOT 4	8/15/2017
M1.2	LEVEL 02 HVAC PLAN	SNAP SHOT 4	8/15/2017
M1.3	LEVEL 03 HVAC PLAN	SNAP SHOT 4	8/15/2017
M1.5	LEVEL 05 HVAC PLAN (TYPICAL FOR LEVELS 04-14)	SNAP SHOT 4	8/15/2017
M1.15	LEVEL 15 HVAC PLAN	SNAP SHOT 4	8/15/2017
M1.16	LEVEL 16 PENTHOUSE AND ROOF HVAC PLAN	SNAP SHOT 4	8/15/2017
M2.0	LEVEL 00 (BASEMENT) MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M2.1	LEVEL 01 MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M2.2	LEVEL 02 MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M2.3	LEVEL 03 MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M2.5	LEVEL 05 MECHANICAL PIPING & ZONE PLAN (TYPICAL FOR LEVEL	SNAP SHOT 4	8/15/2017



M2.15	LEVEL 15 MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M2.16	LEVEL 16 PENTHOUSE AND ROOF MECHANICAL PIPING & ZONE PLAN	SNAP SHOT 4	8/15/2017
M5.1	DETAILS - MECHANICAL	SNAP SHOT 4	8/15/2017
M5.2	DETAILS - MECHANICAL	SNAP SHOT 4	8/15/2017
M5.3	DETAILS - MECHANICAL	SNAP SHOT 4	8/15/2017
M6.1	FLOW DIAGRAMS - MECHANICAL	SNAP SHOT 4	8/15/2017
M6.2	FLOW DIAGRAMS - MECHANICAL	SNAP SHOT 4	8/15/2017

#### PLUMBING

P0.1	SYMBOLS, LEGENDS AND ABBREVIATIONS - PLUMBING	SNAP SHOT 4	10/17/2017
P0.2	SCHEDULES - PLUMBING	SNAP SHOT 4	10/17/2017
P1.0U	UNDERGROUND LEVEL PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.0	LEVEL 00 (BASEMENT) PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.1	LEVEL 01 PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.2	LEVEL 02 PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.3	LEVEL 03 PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.5	LEVEL 05 PLUMBING PLAN (TYPICAL FOR LEVELS 04-14)	SNAP SHOT 4	10/17/2017
P1.15	LEVEL 15 PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P1.16	LEVEL 16 PENTHOUSE AND ROOF PLUMBING PLAN	SNAP SHOT 4	10/17/2017
P4.1	PARTIAL PLANS - PLUMBING	SNAP SHOT 4	10/17/2017
P4.2	PARTIAL PLANS - PLUMBING	SNAP SHOT 4	10/17/2017
P4.3	PARTIAL PLANS - PLUMBING	SNAP SHOT 4	10/17/2017
P4.4	PARTIAL PLANS - PLUMBING	SNAP SHOT 4	10/17/2017
P5.1	DETAILS - PLUMBING	SNAP SHOT 4	10/17/2017
P6.1	WASTE AND VENT RISER DIAGRAM	SNAP SHOT 4	10/17/2017
P6.2	DOMESTIC WATER RISER DIAGRAM	SNAP SHOT 4	10/17/2017

#### ELECTRICAL

ED0.1	SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL	PERMIT SET	7/14/2017
ED1.0	LEVEL 00 (BASEMENT) POWER DEMO PLAN	PERMIT SET	7/14/2017
ED1.1	LEVEL 01 POWER DEMO PLAN	PERMIT SET	7/14/2017
ED1.2	LEVEL 02 POWER DEMO PLAN	PERMIT SET	7/14/2017
ED1.3	LEVEL 03 POWER DEMO PLAN	PERMIT SET	7/14/2017
ED1.5	LEVEL 05 POWER DEMO PLAN (TYPICAL FOR LEVELS 04-14)	PERMIT SET	7/14/2017
ED1.15	LEVEL 15 POWER DEMO PLAN	PERMIT SET	7/14/2017
ED1.16	LEVEL 16 PENTHOUSE AND ROOF POWER DEMO PLAN	PERMIT SET	7/14/2017
E0.1	SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL	SNAP SHOT 4	8/15/2017
E2.0	LEVEL 00 (BASEMENT) POWER PLAN	SNAP SHOT 4	8/15/2017
E2.1	LEVEL 01 POWER PLAN	SNAP SHOT 4	8/15/2017
E2.2	LEVEL 02 POWER PLAN	SNAP SHOT 4	8/15/2017
E2.3	LEVEL 03 POWER PLAN	SNAP SHOT 4	8/15/2017
E2.5	LEVEL 05 POWER PLAN (TYPICAL FOR LEVELS 04-14)	SNAP SHOT 4	8/15/2017
E2.15	LEVEL 15 POWER PLAN	SNAP SHOT 4	8/15/2017
E2.16	LEVEL 16 PENTHOUSE AND ROOF POWER PLAN	SNAP SHOT 4	8/15/2017

E4.1	LIGHTING CIRCUITING PLANS	SNAP SHOT 4	8/15/2017
E4.2	LIGHTING CIRCUITING PLANS	SNAP SHOT 4	8/15/2017
E5.1	PARTIAL PLANS - ELECTRICAL	SNAP SHOT 4	8/15/2017
E5.2	PARTIAL PLANS AND SECTION - ELECTRICAL	SNAP SHOT 4	8/15/2017
E5.3	PARTIAL PLANS - ELECTRICAL	SNAP SHOT 4	8/15/2017
E5.4	PARTIAL PLANS - ELECTRICAL	SNAP SHOT 4	8/15/2017
E6.1	DETAILS - ELECTRICAL	SNAP SHOT 4	8/15/2017
E7.1	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.2	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.3	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.4	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.5	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.6	DIAGRAMS - ELECTRICAL - ONE LINE	SNAP SHOT 4	8/15/2017
E7.10	GROUNDING RISER DIAGRAM	SNAP SHOT 4	8/15/2017
E7.20	FIRE ALARM RISER DIAGRAM	SNAP SHOT 4	8/15/2017
E8.1	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.2	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.3	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.4	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.5	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.6	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.7	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E8.8	PANEL SCHEDULES	SNAP SHOT 4	8/15/2017
E9.1	MECHANICAL ELECTRICAL EQUIPMENT CONNECTION SCHEDULE	SNAP SHOT 4	8/15/2017

#### **LIGHTING**

EL3.00	SYMBOLS AND LEGENDS	SNAP SHOT 4	8/28/2017
EL3.01	LIGHTING SCHEDULE	SNAP SHOT 4	8/28/2017
EL3.0	OVERALL BASEMENT FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.1	OVERALL 1ST FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.2	OVERALL 2ND FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.3	OVERALL 3RD FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.4	OVERALL 4-14 FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.5	OVERALL 15TH FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL3.6	OVERALL 16 <sup>th</sup> & 17 <sup>th</sup> FLOOR LIGHTING	SNAP SHOT 4	8/28/2017
EL4.0	LIGHTING CONTROL RISER	SNAP SHOT 4	8/28/2017
EL4.1	LIGHTING CONTROL RISER	SNAP SHOT 4	8/28/2017
EL5.0	COMcheck	SNAP SHOT 4	8/28/2017

#### **MPOE MAKE READY**

TA0.1	MPOE MAKE READY PERMIT PACKAGE COVER SHEET	PERMIT SET	5/19/2017
TA1.1	MPOE MAKE READY PACKAGE - PLANS, SECTIONS & DETAILS	PERMIT SET	5/19/2017
TM1.1	MPOE MAKE READY PACKAGE - MECHANICAL PLANS	PERMIT SET	5/19/2017



TE0.1	MPOE MAKE READY PACKAGE - ELECTRICAL SYMBOLS, ONE-LINE	PERMIT SET	4/25/2017
TE1.1	MPOE MAKE READY PACKAGE - ELECTRICAL PLANS	PERMIT SET	5/19/2017

#### **SIGNAGE**

SG1.0	SIGN LOCATION PLAN, LEVEL 00	SNAP SHOT 4	8/15/2017
SG1.1	SIGN LOCATION PLAN, LEVEL 01	SNAP SHOT 4	8/15/2017
SG1.2	SIGN LOCATION PLAN, LEVEL 02	SNAP SHOT 4	8/15/2017
SG1.3	SIGN LOCATION PLAN, LEVEL 03	SNAP SHOT 4	8/15/2017
SG1.4	SIGN LOCATION PLAN, LEVEL 04	SNAP SHOT 4	8/15/2017
SG1.5	SIGN LOCATION PLAN, LEVEL 05	SNAP SHOT 4	8/15/2017
SG1.6	SIGN LOCATION PLAN, LEVEL 06	SNAP SHOT 4	8/15/2017
SG1.7	SIGN LOCATION PLAN, LEVEL 07	SNAP SHOT 4	8/15/2017
SG1.8	SIGN LOCATION PLAN, LEVEL 08	SNAP SHOT 4	8/15/2017
SG1.9	SIGN LOCATION PLAN, LEVEL 09	SNAP SHOT 4	8/15/2017
SG1.10	SIGN LOCATION PLAN, LEVEL 10	SNAP SHOT 4	8/15/2017
SG1.11	SIGN LOCATION PLAN, LEVEL 11	SNAP SHOT 4	8/15/2017
SG1.12	SIGN LOCATION PLAN, LEVEL 12	SNAP SHOT 4	8/15/2017
SG1.13	SIGN LOCATION PLAN, LEVEL 13	SNAP SHOT 4	8/15/2017
SG1.14	SIGN LOCATION PLAN, LEVEL 14	SNAP SHOT 4	8/15/2017
SG1.15	SIGN LOCATION PLAN, LEVEL 15	SNAP SHOT 4	8/15/2017
SG1.16	SIGN LOCATION PLAN, LEVEL 16	SNAP SHOT 4	8/15/2017

#### **TELECOM**

T0.1	SYMBOLS AND LEGENDS	PERMIT SET	8/28/2017
T4.1	OVERALL BASEMENT PLAN	PERMIT SET	8/28/2017
T4.2	OVERALL 1ST FLOOR PLAN	PERMIT SET	8/28/2017
T4.3	OVERALL 2ND FLOOR PLAN	PERMIT SET	8/28/2017
T4.4	OVERALL 3RD FLOOR PLAN	PERMIT SET	8/28/2017
T4.5	OVERALL 4-14 FLOOR PLAN	PERMIT SET	8/28/2017
T4.7	OVERALL 15TH FLOOR PLAN	PERMIT SET	8/28/2017
T4.8	MPOE AND CARRIER LAYOUT	PERMIT SET	8/28/2017
T4.9	MPOE AND CARRIER LAYOUT	PERMIT SET	8/28/2017
T4.10	MDF-0.1 LAYOUT	PERMIT SET	8/28/2017
T4.11	MDF-0.1 LAYOUT	PERMIT SET	8/28/2017
T4.12	MDF RACK ELEVATIONS	PERMIT SET	8/28/2017
T4.13	MDF RACK ELEVATIONS	PERMIT SET	8/28/2017
T4.14	IDF ROOM TYPICAL LAYOUTS	PERMIT SET	8/28/2017
T4.15	IDF RACK ELEVATIONS (TYPICAL)	PERMIT SET	8/28/2017
T4.16	ENLARGED PLANS	PERMIT SET	8/28/2017
T5.1	TELECOM RISER DIAGRAM	PERMIT SET	8/28/2017
T5.2	MULTIMODE FIBER BACKBONE RISER DIAGRAM	PERMIT SET	8/28/2017
T5.3	SINGLE MODE FIBER BACKBONE RISER	PERMIT SET	8/28/2017
T5.4	CAT-3 COPPER BACKBONE	PERMIT SET	8/28/2017





T5.5	CAT-6A COPPER BACKBONE	PERMIT SET	8/28/2017
T5.6	CATV COAXIAL BACKBONE	PERMIT SET	8/28/2017
T5.7	CAT-6A COPPER BACKBONE	PERMIT SET	8/28/2017
T6.1	IDF ROOM EZ-PATH DETAIL	PERMIT SET	8/28/2017
T6.2	CONDUIT DETAIL	PERMIT SET	8/28/2017
T6.3	EZ-PATH DETAIL	PERMIT SET	8/28/2017

#### **SPECIFICATIONS (2.03/2.04)**

<b>Document Number</b>	<b>Description</b>	<b>Set</b>	<b>Date of Document</b>
00 0000	COVER PAGE	SNAP SHOT 4	8/15/2017
00 0107	SEALS PAGE FORM	SNAP SHOT 4	8/15/2017
00 0110	SPECIFICATIONS TABLE OF CONTENTS	SNAP SHOT 4	8/15/2017
00 3132	GEOTECHNICAL DATA	SNAP SHOT 4	8/15/2017
01 2500	PRODUCT SUBSTITUTION PROCEDURES	SNAP SHOT 4	8/15/2017
01 2500.01	SUBSTITUTION REQUEST FORM	SNAP SHOT 4	8/15/2017
01 3001	ELECTRONIC MEDIA AGREEMENT	SNAP SHOT 4	8/15/2017
01 3300	SUBMITTAL PROCEDURES	SNAP SHOT 4	8/15/2017
01 3300.01	SUBMITTAL MATRIX	SNAP SHOT 4	8/14/2017
01 3330	SUSTAINABILITY REQUIREMENTS	SNAP SHOT 4	8/15/2017
01 3330.01	LEEDv3 SCORECARD	SNAP SHOT 4	8/15/2017
01 3330.02	LEED MATERIAL BUYOUT FORM	SNAP SHOT 4	8/15/2017
01 3330.03	LEED SPECIFICATION TOC MATRIX	SNAP SHOT 4	8/15/2017
01 3591	HISTORIC TREATMENT PROCEDURES	SNAP SHOT 4	8/15/2017
01 4100.1	REGULATORY REQUIREMENTS	SNAP SHOT 4	8/15/2017
01 4216.1	DEFINITIONS	SNAP SHOT 4	8/15/2017
01 4339	BUILDING ENCLOSURE MOCKUPS	SNAP SHOT 4	8/15/2017
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01 5721	INDOOR AIR QUALITY MANAGEMENT	SNAP SHOT 4	8/15/2017
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01 7000	EXECUTION AND CLOSEOUT REQUIREMENTS	SNAP SHOT 4	8/15/2017
01 7419	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	SNAP SHOT 4	8/15/2017
01 7423	FINAL CLEANING	SNAP SHOT 4	8/15/2017
01 7823	OPERATIONS AND MAINTENANCE DATA	SNAP SHOT 4	8/15/2017
01 7839	PROJECT RECORD DOCUMENTS	SNAP SHOT 4	8/15/2017
01 7900	DEMONSTRATION AND TRAINING	SNAP SHOT 4	8/15/2017
01 9113	GENERAL COMMISSIONING REQUIREMENTS	SNAP SHOT 4	8/15/2017
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03 0130.72	STRENGTHENING CAST-IN-PLACE CONCRETE	PERMIT SET	8/14/2017
03 3000	CAST-IN-PLACE CONCRETE	PERMIT SET	8/14/2017
03 3713	SHOTCRETE	PERMIT SET	8/14/2017



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05 5000	METAL FABRICATIONS	SNAP SHOT 4	8/15/2017
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06 6119	QUARTZ SURFACING FABRICATIONS	SNAP SHOT 4	8/15/2017
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22 2113	PIPE AND PIPE FITTINGS PLUMBING	SNAP SHOT 4	8/15/2017
22 2123	PUMPS FOR PLUMBING	SNAP SHOT 4	8/15/2017
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23 0553	IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT	SNAP SHOT 4	8/15/2017
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23 0993	SEQUENCE OF OPERATIONS FOR HVAC CONTROLS	SNAP SHOT 4	8/15/2017
23 2113	PIPE AND PIPE FITTINGS HVAC	SNAP SHOT 4	8/15/2017
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26 2200	LOW VOLTAGE TRANSFORMERS	SNAP SHOT 4	8/15/2017
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26 2416	PANELBOARDS	SNAP SHOT 4	8/15/2017
26 2500	ENCLOSED BUS ASSEMBLIES	SNAP SHOT 4	8/15/2017
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27 1300	TELECOMMUNICATIONS BACKBONE CABLING	SNAP SHOT 4	8/28/2017
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27 1119	TELECOMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS	SNAP SHOT 4	8/28/2017
28 3001	FIRE DETECTION AND COMMUNICATIONS	SNAP SHOT 4	8/15/2017

SUPPLEMENTARY DOCUMENTS 2.05 thru 2.20

<b>GMP Document Number</b>	<b>Description</b>	<b>Set</b>	<b>Date of Document</b>
2.05	TPB LEEDv3 SCORECARD & PROGRAM SUMMARY	NA	9/08/2017
2.06	INTERIORS BASIS OF DESIGN (32 pages)	SNAP SHOT 4	9/13/2017
2.07	MATERIAL LIFT LVL 15 TO PENTHOUSE (1 SHEET)	NA	08/28/17
2.08	LIGHTING DRAWINGS (OEG – 12 SHEETS, SEE DRWG LIST ABOVE)	SNAP SHOT 4	08/28/17
2.09	D3 No. 03 - 2016 BUILDING SQUARE FOOTAGE ALLOCATIONS	NA	12/05/2016
2.10	D3 No. 04 – 2016 HARD WALL LAYOUT (TYPICAL FLOORS)	NA	12/05/2016
2.11	D3 No. 05 – 2016 FURNITURE & KIT OF PARTS	NA	12/05/2016
2.12	D3 No. 06 – 2016-07 SEISMIC SOLUTION	NA	12/02/2016
2.13	D3 No. 11 – 2017 ACOUSTICAL CEILINGS IN OPEN SPACES	NA	10/02/2017
2.14	TELECOM SPECIFICATIONS (OEG 3 SPECS. – SEE SPEC LIST ABOVE)	SNAP SHOT 4	08/11/2017
2.15	TELECOM DRAWINGS (OEG 26 SHEETS-SEE DRWG LIST ABOVE)	SNAP SHOT 4	08/11/2017
2.16	ARCHITECTURAL ACOUSTICS BASIS OF DESIGN	SNAP SHOT 4	09/14/2017
2.17	SS#4 ARCHITECTURAL CHANGE SUMMARY	SNAP SHOT 4	10/17/2017
2.18	SS#4 MECHANICAL CHANGE SUMMARY	SNAP SHOT 4	09/07/2017
2.19	TARGET VALUE DESIGN BUDGET DEFINITIONS	NA	10/27/2017
2.20	CITY ALLOWANCE DEFINITIONS	NA	10/27/2017
2.21	SECURITY SCOPING DOCUMENT (TVD BUDGET)	NA	9/12/2017
2.22	CLOSEOUT DOCUMENT FORMAT	NA	10/30/2017



# 300005394 AMENDMENT FOUR EXHIBIT B

## Assumptions and Clarifications to the GMP Proposal

Project: The Portland Building Reconstruction Project

Date: 10/30/2017

The following assumptions, clarifications, and exclusions form the basis of the Guaranteed Maximum Price proposal, and are to be incorporated into a GMP Amendment accordingly. Items included in the assumptions and clarifications supersede those items included in the Basis of Design documents.

1	Design & Permitting
1.1	The project's design is based upon the 2014 Oregon Structural Specialty Code (OSSC) and related applicable codes and standards as further detailed on sheet CP0.2 of the basis of design drawings and applicable specifications dated 8/15/17.
1.2	Includes providing for LEED Gold v3.0 Certification with LEED 4.0 Materials & Resources goals included. See attached target scorecard and narrative included with the Basis of Design.
1.3	The GMP scope and budget excludes providing for WELL Building certification. The DBR team shall consider WELL Building certification criteria where minimal cost and effort is included shall perform to both criterias accordingly. This is provided to enable the City to potentially pursue WELL Building certification at a future date.
1.4	GMP includes \$125,000 for revisions to the existing PBOT street lights adjacent to the building per a meeting held 9/14/17. This scope, and the projects responsibility for these items, is unclear and requires resolution.
1.5	Excludes providing for potential PBOT permanent traffic signal improvements on adjacent streets to the project. DBR Contractor shall be responsible for any revisions required for temporary construction purposes (i.e. crane erection) or damages during construction.
1.6	Assumes AHJ approval of the basement generator exhaust plan and the associated accessing of the generator room through the exhaust air plenum as indicated on the 8/15/17 drawing set. If not approved, Owner agrees to approve floor program revisions to allow the exhaust path to be designed and constructed for an equal or lesser cost; or Owner can pay for the difference for an increased cost option.
1.7	As per the Landmarks Conditional approval of the building, Owner shall enact a covenant on the Portland Building.
2	Scope
2.1	Excludes demolition and removal of FF&E from the three (3) existing tenant spaces (Portlandia Café, Bento, Amenity Store). Assumed to be by tenants.
2.2	Assumes all artwork (except the exterior Portlandia sculpture) will be removed from the Project site by others prior to start of construction on 12/1/17.
2.3	Excludes basement parking striping removal. Parking striping to be removed prior to the start of construction (by Owners hazmat removal vendor)
2.4	Excludes any repairs to services or hazardous materials remediation resulting for laboratory operations in the building.
2.5	Excludes revisions to the NW Natural gas meters located at the southwest corner of the site at level 1. Meters shall be protected in place during construction for reuse in the new building. Excludes any utility company costs related to this plan.
2.6	Excludes providing for vehicle parking for new building (D3 decision).
2.7	Excludes mitigation or remediation of existing subgrade foundation slab or walls water leaks. DBR Contractor shall retain responsibility for any new penetrations or conditions resulting from its work.
2.8	Excludes upgrades or revisions to the existing passenger (6ea.) elevators finishes. A TVD budget is included for the upgrade of the Service Elevator interiors. Scope includes the cleaning of the existing terrazo flooring in the passenger elevators similar to the historic lobby cleaning.
2.9	Includes the addition security card access controls to the (6ea.) existing passenger elevators, the existing (1ea.) service elevator, and the new service elevator on 4th Ave.
2.10	Excludes interior tenant improvements to the day care space located on the Northeast corner of the first level. Space to be constructed as a cold shell (with no terminal units included).
2.11	Excludes providing for furniture, workstations, chairs, conference room furniture, shelving, storage, etc. As per approved D3 No. 05 -2016 Furniture & Kit of Parts, and subsequent budget discussions, it is assumed that Owner shall provide for all new furniture for tenant use in moving back into the building, to be installed per the schedule durations provided in DBR Contractor's Project Schedule. DBR Contractor to provide for power whips to workstation point of connections and data drops as shown on BOD drawings, and shall coordinate services (power & data) and installation with the furniture vendor.

# Assumptions and Clarifications to the GMP Proposal

**Project: The Portland Building Reconstruction Project**

**Date: 10/30/2017**

2.12	Excludes tenant improvement budgets for the space planning and buildout of 2 1/2 floors of the typical office buildout. These floors are included in the budget as cold shell floors. Typical tenant improvement scope is defined as occurring on levels 5 through 13, outside of the buildings interior Core Shear Walls (between grid 3-6, D-E). Core buildout of these floors is included. This scope of work to be funded and/or contracted independent from this GMP Amendment (Space Optimization), but is assumed to be executed as part of the project schedule. The GMP project schedule includes durations for buildout of these floors provided funding is authorized prior to January 1, 2019.
2.13	Excludes painting of the exposed waffle slab ceiling in support areas and the bike parking area of the basement level.
2.14	Assumes standard ACT edge trim at all ACT ceilings.
2.15	Assumes a budget of \$10/sf for furnish and install of floating cloud elements included in the architectural RCP's in the Basis of Design.
2.16	Excludes buildout of vendor food spaces.
2.17	Assumes existing main stairs for the building to remain as installed, with the exception of revisions to the guardrails, handrails and photoluminescent striping as required to meet code requirements. Includes repainting of stair interiors and light fixture upgrades. See BOD drawings for planned handrail/guardrail improvements included.
2.18	Excludes providing for a new building maintenance system for servicing level 1 thru 15. It is assumed that maintenance access will continue to be provided (as per current operations) through the use of vendor provided swingstage/ boatswain's chair. Note that the unitized curtainwall on levels 4-14 includes tie-off buttons in support of this program.
2.19	Assumes the existing roofing systems on the 2nd, 3rd, 4th, 14th, 15th, roof, and penthouse roof levels to remain. Includes providing for protection of all roofing as necessary for construction activities, and all cutting and patching for installation new scope elements (plenum work, mechanical platforms & supports, fall protection, roof hatch, new exterior wall transitions). The level 15 roof and penthouse green roof, where disrupted by construction activities, shall be reinstalled in a like manner to the existing roof.
2.20	Excludes providing bird control provisions on the building.
2.21	Assumes abandoning in place the underground diesel fuel tank for the emergency generator located sub-grade to the building at grid G/6. A new tank for the generator shall be provided adjacent to the generator. This includes de-certification, infill of the tank, and abandonment of any underground piping. Excludes any hazardous materials remediation for existing conditions if discovered as part of this effort.
2.22	Assumes that the facilities shop program will not be relocating back into to the building.
2.23	As a cost savings measure and in consideration of good condition of the fire protection system, the GMP proposal includes the reuse of existing fire sprinkler riser and sprinkler distribution piping where feasible for function and reasonable aesthetics. Additionally, the existing fire pump system is assumed to be reused. At project completion, Contractor shall provide for a code compliant automatic fire sprinkler system with a Class I standpipe system. All fire sprinkler heads shall be replaced with quick-response head. The system shall be hydrostatically tested prior to Substantial Completion.
2.24	New fire sprinkler heads to be white or chrome semi-recessed type in finished ceilings, and brass upright or pendant type in areas open to structure. Sprinklers in ACT ceilings to be installed in flexible drops.
2.25	Excludes special fire suppression systems for IDF rooms.
2.26	With the reuse of the fire pump equipment and controls, no warranty is provided related to this equipment.
2.27	Includes temporary decommissioning of the two (2) natural gas generators and one (1) fuel oil generator during construction. GMP includes safeoff, storage, and recommissioning of the equipment prior to occupancy. Given the reuse of this equipment, no manufacturers warranties are included for reused equipment and controls.
2.28	Heat trace is included to be provided for plumbing and mechanical piping lines external the building that do not carry glycol.
2.29	Excludes providing audio-visual systems including projector equipment, video screens, projection screens, associated computer equipment/racks, and A/V cabling. GMP includes a TVD budget for AV infrastructure provisions. Base GMP scope includes provisions for power and telecommunications to support typical audio-visual services in conference and event rooms.
2.30	Includes providing a public address function as part of the fire alarm system on a floor by floor basis. Note that the quality of this public address system is not commensurate to a commercial grade stand-alone public address system, but will allow for minimum acceptable communications for fire-life safety purposes to floors.

# Assumptions and Clarifications to the GMP Proposal

**Project: The Portland Building Reconstruction Project**

**Date: 10/30/2017**

2.31	Excludes providing for a Data Center in the new building. (D3 decision)
2.32	Excludes providing for IT / computer equipment and provisions (servers, LAN switches, WAP's, routers, CPU's, monitors, etc.). DBR Contractor to provide for computer equipment related to building controls and MEP systems.
2.33	Excludes providing for phone equipment (VOIP or analog). It is assumed that connectivity for phones shall primarily be provided as a voice over internet utilizing the CAT6 cabling as indicated on the GMP BOD documents.
2.34	Excludes hazardous materials removal (by Owner). Owner to perform removal work in a timely manner such as to support Contractor's project schedule included with this GMP proposal. Owner to provide "clean building" letters to provide to the AHJ on a floor by floor basis to support scheduled demolition activities.
2.35	Assumes concrete shearwall will be constructed using a shotcrete method in accordance with ACI 506. Shotcrete applications will have a hard trowel finish and a natural concrete color (i.e. no coloring agents). Shotcrete shall be applied to a metal stud framed form wall which shall act as formwork and will be abandoned in place, except where in conflict with floorplan layouts per the BOD.
2.36	All new exposed cast in place concrete will be Class B level of finish as defined by ACI.
2.37	Assumes that the exterior concrete walls and in many areas the existing concrete waffle deck (bottom side) shall remain exposed. Contracting has included a budget of \$1/sf of the exterior wall area for treatment of the exposed surfaces to be mutually select with the Owner and DBR team.
2.38	The existing basement level includes select areas which are sloped. It is assumed, that with the exception of those select areas indicated on the BOD drawings, that sloped areas shall remain (no float or fill).
2.39	Excludes providing power monitoring on office floors per accepted BRT item #1313.
2.41	Excludes providing power for auto flush faucets at restrooms per BRT item #1312. Faucets to be battery operated.
2.42	Includes providing Press-Fit fittings for both hydronic and plumbing systems.
2.43	Includes providing for a manufacturers start-up of the relocated UPS system (3rd Flr to Basement MDF). No manufacturers warranty provided beyond existing warranty.
2.44	Includes providing TrippLite Horizontal PDU devices shown in OEG Permit Set Drawings. Excludes providing Vertical PDU design in each Technology Support Space Cabinet. See BRT#1406 which provides a budget for Certical PDU's if required.
<b>3</b>	<b>General Requirements</b>
3.1	Includes providing for a full time project safety manager on the project, with support from the Howard S. Wright OR Safety Director for the hours indicated on the General Conditions labor forecast. Assumes that the costs for both individuals are reimbursable under the GMP.
3.2	As it relates to General Conditions section 104.14, DBR Contractor has included all temporary service provisions including piping, wiring, lamp and equipment for construction operations. This GMP estimate EXCLUDES all utility usage costs for these services (power, water, sewer, natural gas; by Owner).
3.3	Assumes AHJ will allow for trimming of trees around the perimeter of the building to allow for operation of a tower crane to land materials on all four (4) sides of the building. Separately, assumes AHJ approval for removal of the two (2) trees on either side of the existing loading dock entrance.
3.4	Proposal assumes that Contractor and Subcontractors may use the existing buildings elevators during construction for the movement of personnel and materials throughout the building. Assumes that Owner shall continue to pay for its existing elevator service and maintenance agreement through its current term ending approximately 12/31/17. At that time, DBR Contractor plans to temporarily decommission the South set of three (3ea.) passenger elevators for the duration of construction until Phase 1 temporary certificate of occupancy or January 1, 2020 which ever comes first. And also at that time, DBR Contractor shall contract with Otis Elevator to condition the North set of three (3ea.) passenger elevators and the freight elevator to be used as construction elevators until Phase 1 temporary certificate of occupancy or January 1, 2020, which ever comes first. During construction, DBR Contractor shall engage in a service agreement with Otis Elevator to provide required maintenance and service during use as construction elevators. Prior to the Phase 1 re-occupancy of the building, DBR Contractor shall provide for Otis Elevator to recommission and relicense the elevators with the Oregon State Elevator Inspectors office for use by the public. Upon receipt of phase 1 issuance of temporary cerficate of occupancy, it is assumed that Owner shall take over responsibility for all new and existing elevators in the building, inclusive of the elevator service agreements.

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3.5	Assumes the removal of select elements of the existing exterior concrete wall structure to allow for the loading of materials into the building through use of a crane and manbasket. All openings shall be designed, engineered, and approved for removal by the structural engineer of record prior to start of work.
3.6	Assumes providing a majority of the hoisting on the project through use of a tower crane located in the existing East stairway to the North. It's assumed that the cranes foundation and associated micropiles will be abandoned in place.
3.7	Owner has requested that Contractor negotiate for and procure air rights operating agreements on its behalf with adjacent property owners. Tower crane equipment basis is a Liebherr Hammerhead Tower Crane. All costs related to such operating agreements, or replacement crane basis with another configuration due to not being granted operating rights or having rights rescinded, including any monetary or schedule impact resulting from their temporary or permanent interruption or loss, will be paid to Contractor by Owner, unless such monetary or schedule impact is solely caused by Contractor. It is agreed that air right easements (and associated costs) for City of Portland owned or managed properties (e.g. City Hall, City Parks, . . .) shall not be required for use of the Tower Crane and required mobile cranes used in the execution of the work.
3.8	Excludes all utility costs for the Co-Location Office Space (included w/ lease), with the exception of internet service.
3.9	Includes costs for the fabrication of material loading baskets to hoist materials to respective floors for efficiency.
3.10	Excludes parking lane and sidewalk closure permitting fees. To be by Owner.
<b>4</b>	<b>Contract Terms</b>
4.1	As per the General Conditions section 108.07 Permits, it is understood that Owner will pay the "plan check fee(s)", "Building Permit Fee(s)", PBOT Right of Way Fees, SDC Charges, and Water Bureau Fees for Water meter and fire hydrant plan review.
4.2	Includes all work as authorized in Early Work Amendments # 01 thru 14, and EWA#16, inclusive of all assumptions, qualifications, and clarifications.
4.3	Assumes that GMP retains authorization criteria for phase 1 and phase 2 work related to programming, criteria design, detailed design, implementation document, and pre-construction phases as follows: Phase 1 Services - Lump Sum Phase 2A & 2B Services for Designers (and Benson) - Lump Sum Phase 2A & 2B Subcontractor Trade Partners and Consultants - Not-to-Exceed per approved rates Phase 2A & 2B Contractor - Not-to-Exceed Actual Costs * Rates for Subcontractor Trade Partners were approved at time of selection.
4.4	Contractor insurance and fee for Phase 2A and Phase 2B services, is as approved per Amendments 1 and 3.
4.5	Includes providing Subcontractor Default Insurance for subcontractors performing work on the main Portland Building Renovation project. This insurance is provided in lieu of subcontractor bonding, provided that subcontractors are capable of being approved through Balfour Beatty Constructions pre-qualification process. Should select subcontractors not qualify to be accepted into the Default Insurance program, DBR Contractor shall reserve the right to require subcontractor to provide performance and payment bonds or select alternate subcontractor(s) to perform the work as a cost of the work. The charge rate for the Subcontractor Default Insurance Program is agreed to be a fixed 1.0% of the cost of Subcontractor, Equipment, and Material costs for the new building. This supersedes General Conditions item 107.01.C.7.
4.6	Assumes that costs for "excusable delays" as defined by the Contract, can be funded from Contractor Contingency.
4.7	Excludes providing for a Contractor Controlled Insurance Program (CCIP) with Workers Compensation Coverage.
<b>5</b>	<b>Schedule</b>
5.1	Assumes EWA and/or GMP Amendment approvals shall be provided to support construction activities included in the GMP Project Schedule dated October 30, 2017.
5.2	The Project Substantial Completion date is provided as April 29, 2020.

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5.3	In consideration of the lease timing for the temporary relocation spaces, the project schedule has been developed to accommodate a two (2) phase re-occupancy of the building. The project schedule indicates completion of the Basement through 9th floor being completed as part of phase 1 re-occupancy, and the 10th thru 15th floors being completed as phase 2 re-occupancy. Owner acknowledges that City employees may need to re-occupy the building while construction activities on levels 10 thru 15 are still being completed. In addition, Owner acknowledges that workers associated with completing work on these floors will require access during regular working hours to complete their work. Any loud noise generating activities or large material deliveries shall be coordinated to occur off hours.
5.4	In consideration of the re-occupancy phasing and acknowledging the revision to section 106.05 A.4 of the General Conditions, it is agreed that Owner will take operational control of the building at the time of first occupancy inclusive of all utilities, insurance, security, maintenance, etc. for the building. Contractor shall retain responsibility for janitorial and security services for areas still under construction.
5.5	It is assumed that warranties and products for services provided under this contract will commence upon Owners first re-occupancy and beneficial use of the building, or issuance of a certificate of substantial completion, whichever comes first.
5.6	Assumes the City shall vacate the building of personnel as per the schedule included in EWA#09 - Move Services and the building shall be vacated of all non-construction related team members by December 1, 2017. Assumes that building power and all associated information technology services not identified to be relocated to the Demarc and MPOE rooms, shall be able to be disconnected by December 15, 2017.
5.7	The stack and block of bureau's returning to the Portland Building from temporary relocation spaces is critical in consideration of the construction sequence of the tenant improvements as they relate to the lease expiration dates. Owner shall provide stack and block information by no later than June 30, 2018, such that Contractor evaluate and potentially resequence the floor buildout sequence if required.
<b>6</b>	<b>Other</b>
6.1	The design solution(s) provided for the Portland Buildings exterior façade are considered by select individuals and organizations in the architectural preservationist community to be controversial. Even with consideration of the design approach being approved by the Owner, by the City of Portland's Historic Landmarks commission, and approved through an appeal with the City of Portland's City Council, there is a risk that upon project completion that the United States National Park Service, given its interpretation of the National Historic Landmarks Programs requirements, may remove the Portland Building from the Register of Historic Places. In executing this Guaranteed Maximum Price amendment, Owner acknowledges the potential risk for delisting the building from the register and will hold harmless the DBR Contractor and its project team members from any implications for the delisting.
6.2	At the time of GMP submission, the building remains significantly occupied such that an extensive survey for differing site conditions in accordance with 103.06 of the General Conditions could not reasonably be performed. At the time of GMP submission, vacation of the building has started and a more extensive & progressive investigation of the building is underway. DBR Contractor has included provisions in this GMP to address conditions as evaluated through a sampling of structural and visual surveys of the space. But if once the building is vacated and Contractor has been provided an opportunity to provide for an extensive survey of the building additional significant differing conditions are identified, reserves the right to request additional compensation in accordance with the Agreement.
6.3	As part of the collaborative design-build teaming process, Howard S. Wright with the participation of the City of Portland, DAY CPM representatives, and design team members, engaged in a Subcontractor Trade Partner selection process for the Mechanical, Electrical, Fire Protection and Curtainwall scopes of work. Selected firms were engaged to provide services related to the programming, criteria design, detailed design, and pre-construction service phases of the project. The basis of this GMP Proposal is that each of the Subcontractor Trade Partners agree to work under a Guaranteed Maximum Price for their scope of work utilizing the same terms and conditions of the Owner agreement as Howard S. Wright. Subcontractors shall each execute a Guaranteed Maximum Price Not to Exceed Subcontract agreement, and perform work on an open book basis with a stated percentage fee on the cost of work in accordance with Exhibit 1-A-1 Cost Responsibility Matrix of the Owner Agreement. The stated fees approved for these Subcontractors are included in the proposed revisions to the Exhibit 1-A-1 Cost Responsibility Matrix, included as part of this GMP Proposal.
6.4	Assumes Owner will remove all cleaning supplies and hazardous materials (paint, etc.) from the building prior to start of construction on 12/1/17. Assumes Owner shall enable all vendor provided recycling and trash containers from the building by 12/1/17.



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6.5	Owner, in vacating the building to the temporary relocation spaces, has and continues to leave behind personal property and equipment. Owner agrees, that unless specifically identified by the Owner in writing, all items left behind on a floor once vacated by the tenants, shall be disposed of by Contractor via reuse, recycling, or disposal. Contractor shall have no liability for lost, damaged, or demolished materials left behind after said date(s). Unless directed in writing by Owner, Contractor shall dispose of materials at its discretion.
6.6	Excludes costs of 3rd Party Building Envelope Commissioning Agent. Excludes all costs related to independent testing laboratory, geotechnical engineering, and special inspections.
6.7	Excludes all lease costs of temporary relocation spaces for City of Portland employees. Assumes Owner shall provide for temporary construction office space offsite of 4,000 usf to house the DBR Team during construction.
6.8	Excludes all brokerage fees and associated real estate consulting fees (by Owner).
6.9	Includes coordination and completion of the art plan for the project with the Regional Arts & Culture Council (RACC). Excludes design services associated with the actual art installation on the project.
6.10	The primary form of as-built documents are qualified to be provided as an interactive PDF document linking the drawings, RFI's, Submittals, and Operations & Maintenance manuals in a reasonably interactive manner. Excludes interface with the building management system and the Revit model. Additionally, the Revit model files shall be provided.
6.11	Excludes mechanical, plumbing, electrical, and fire alarm trade permit fees. By Owner per Owner's direction.
6.12	Excludes costs to revert the 1st & Jefferson Bike Parking to its original condition.