



Project Name CoT - OC 55 John St 12th  
Project No. Floor  
Date 24025  
August 09, 2024

## ADDENDUM No. 3

To: All bidders

Owner:  
Veronica Lorenzo  
City of Toronto  
55 John St,  
Toronto, Ontario,  
M5V 3C6

**Discipline: Contractor**

**Reference: Various**

### Summary of Items

1. Refer to Electrical Addendum E001 dated August 9, 2024.
2. Supply and install signage type A-XX at perimeter columns / walls where indicated. Refer to attached Signage Plan ID1.08 for locations and Signage Details ID1.12 for specifications.
3. Supply & install new storeroom function lockset, card reader / key pad combo, electric strike and surface mounted door closer at existing Hub Room door on 17th floor. Refer to Electrical Addendum E001.
4. Refer to attached Room Data sheets for reference.

### Distribution

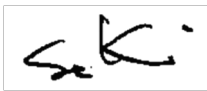

End of Report

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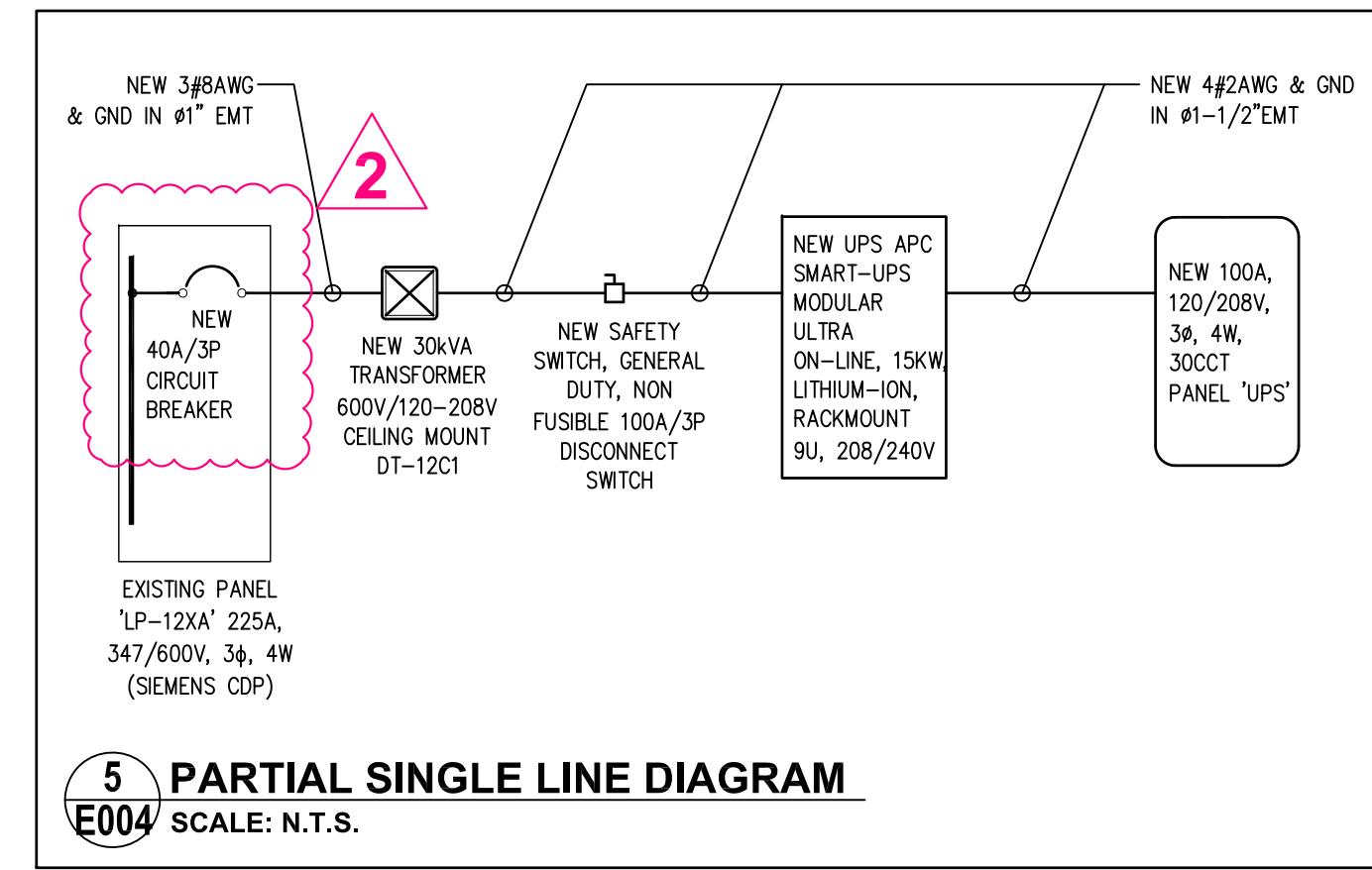
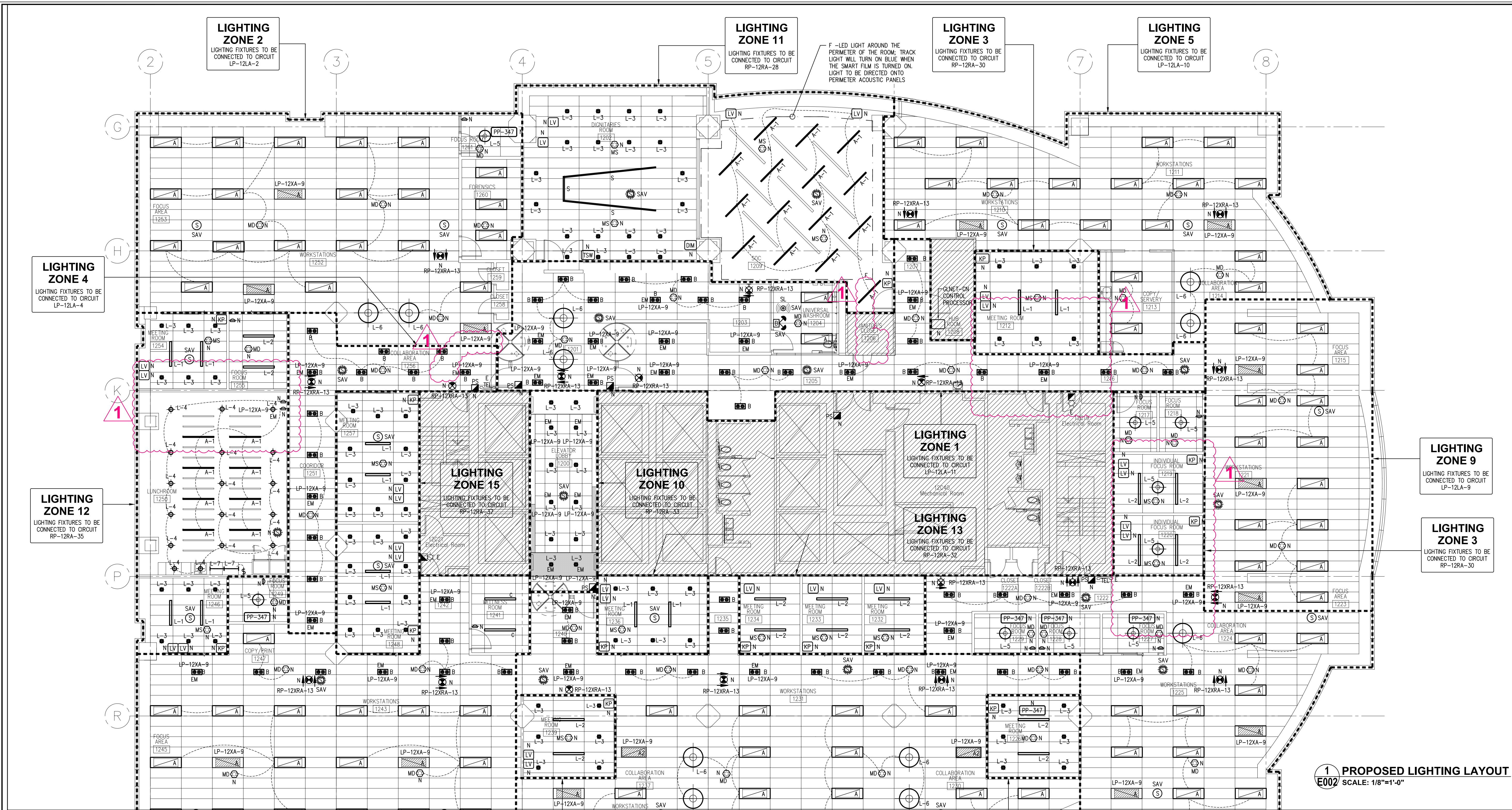
# Algal Engineering Ltd.

515 Consumers Rd, Suite 100  
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## Addendum

<b>Addendum Number:</b> AE-24047-ADDN-E001	<b>Revision:</b> 00	<b>Date:</b> 2024-08-08	
<b>Project Name:</b> City of Toronto – Metro Hall Cyber Command Centre			
<b>Project Address:</b> 55 John St., Toronto, ON			
<b>Client Project Number:</b> 24025			
<b>Algal Project Number:</b> AE-24047			
<b>Client Name:</b> INFRASTRUCTURE INTERIOR DESIGN			
<b>Client Address:</b> 73A Mutual St Suite Toronto, ON			
<b>Attn:</b> Catherine Angle			
<b>Subject:</b> Electrical changes/additions			
<b>References:</b> Electrical drawings			
<b>Note:</b> The Contractor is hereby instructed with the following changes/clarifications to the contract documents as described below. All materials and workmanship are to be as described in the contract documents unless stated otherwise.			
<b>Description of work:</b> 1. Lighting layout has been changed as indicated on attached sketch ADDN#1, item 1. 2. All data/voice cabling to be Cat 6A, refer to attached specification. 3. Bell to remove all redundant communication cabling back to source. 4. The partial single line diagram has been changed as indicated on attached sketch ADDN#1, item 2. Contractor to include for the MOP (Method of Procedure) to connect the new 30kVA transformer to existing emergency panel LP-12XA. 5. Supply and install one card reader/security keypad combo HID reader, electric strike, door contact and request for exit motion detector on the 17 <sup>th</sup> floor HUB room door. Connect the card reader to the existing card access control panel. For pricing purpose, consider the distance 100ft.			
<b>Comments:</b> Include in the bid price all the changes/additions.			
<b>Prepared by:</b>			
<b>Simona Saki</b>	<b>Associate</b>		<b>2024-08-08</b>
<b>Name</b>	<b>Title</b>	<b>Signature</b>	<b>Date</b>
<b>Approved by:</b>			
<b>Marian Ruiulescu</b>	<b>Principal</b>		<b>2024-08-08</b>
<b>Name</b>	<b>Title</b>	<b>Signature</b>	<b>Date</b>





**infrastructure**  
interior design

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- NOTES:**
- DO NOT SCALE DRAWINGS.
  - MATERIALS MAY NOT BE SUBSTITUTED WITHOUT DESIGNER'S WRITTEN APPROVAL.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SPECIFICATIONS AND DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO INFRASTRUCTURE INTERIOR DESIGN LTD. PRIOR TO CONSTRUCTION.
  - ALL DRAWINGS ARE PROPERTY OF INFRASTRUCTURE INTERIOR DESIGN LTD. THEY ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS (ARCHITECTURAL, STRUCTURAL, MECHANICAL AND/OR ELECTRICAL) AS ISSUED AS THIS PROJECT'S DOCUMENTATION.

**Toronto**

Corporate Real Estate Management  
Project Management Office

Metro Hall, Toronto, ON  
M5V 3C6

**ALGA**

ALGAL ENGINEERING LTD.  
CONSULTING ENGINEERS

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R01 ISSUED FOR ADDENDUM #1 2024-08-08  
NO ISSUED YY.MM.DD

Client:  
**CITY OF TORONTO  
CYBER COMMAND CENTRE  
55 JOHN STREET  
12TH FLOOR  
TORONTO, ONTARIO  
M5V 3C6**

Drawing Title:  
**Addendum #1**

Scale: 1/8"=1'-0"  
Proj. No: 24025  
Date: ARP.22.2024  
Designed By: S.M.  
Checked By: S.S.  
Code: 24025

Drawing No:  
**ADDN#1**

ARCH D - 24X36

Cadfile Name: AE-24047-DRAW-E001-E007-R01



## 1 GENERAL

### 1.01 REFERENCE STANDARDS

Standard	Title	Date
TIA-568.0-E	Generic telecommunications cabling for customer premises	2020
TIA-568.1-E	Commercial Building Telecommunications Cabling Standard	2020
TIA-568.2-D	Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components	2018
TIA-568.3-E	Optical Fibre Cabling Components Standard	2022
TIA-568.4-E	Broadband Coaxial Cabling and Components Standard	2022
TIA-568.5	Balanced Single Twisted-pair Telecommunications Cabling and Components Standard	2022
TIA 606-D	Administration standard for telecommunications infrastructure	2021
TIA- 607-D	Generic telecommunications bonding and grounding (earthing) for customer premises	2019
TIA-569-E	Telecommunications Pathways and Spaces	2019
TIA-862-C	Structured Cabling Infrastructure Standard for Intelligent Building Systems	2022
TIA-1152-A	Requirements for field test instruments and measurements for balanced twisted-pair cabling	2016
TIA-1005-A	Telecommunications infrastructure standard for industrial premises	2012
TIA-526-14-C	Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant; Modification of IEC 61280-4-1 edition 2, Fiber-Optic Communications Subsystem Test Procedures- Part 4-1: Installed Cable Plant-Multimode Attenuation Measurement	2015
	Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant, Adoption of IEC 61280-4-2 edition 2: Fibre-	

TIA-526-7-A	Optic Communications Subsystem Test Procedures – Part 4-2: Installed Cable Plant – Single-Mode Attenuation and Optical Return Loss Measurement	2015
TIA-TSB-162-B	Telecommunications Cabling Guidelines for Wireless Access Points	2021
TIA-TSB-184-A	Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling	2017
TIA-604-10-C	FOCIS 10 Fiber Optic Connector Intermateability Standard- Type LC	2021
BICSI TDMM	Telecommunications Distribution Methods Manual, 14th Edition	2020
ANSI/BICSI 002-2019	Data Center Design and Implementation Best Practices	2019
ANSI/BICSI 007-2020	Information Communication Technology Design and Implementation Practices for Intelligent Buildings and Premises	2020
ANSI/BICSI 008-2018	Wireless Local Area Network (WLAN) Systems Design and Implementation Best Practices	2018

## 1.02 ACTION AND INFORMATIONAL SUBMITTALS

- Submit in accordance with Section 01 33 00 - Submittal Procedures.
- Shop Drawings shall be submitted to the City of Toronto IT staff for final review before proceeding with any works.
- The shop drawings and all submissions shall be reviewed and sealed by the RCDD Contractor's PM and re-reviewed and sealed by the Consultant's RCDD before reaching the City for final review.
- Final design drawings/construction drawings shall be submitted to the City of Toronto IT staff for final review and before proceeding with any works. These drawings shall be reviewed by PM RCDD Contractor and re-reviewed and approved by RCDD Consultant before reaching to the City for final review.
- The CADD drawings shall meet the City's CADD standards. Any non-compliance shall be at the Consultants own expense.
- Submit proposed cable and enclosure tag labels to the Contract Administrator and the City of Toronto IT Technical Representative for approval before proceeding with this work.
- Submit red-lined Site Drawings identifying the proposed location of all enclosures including Telecommunication Enclosures, Termination Panels and Work Area Outlets prior to installation and as part of shop drawing submittals.
- Submit site drawings identify the fibre optic backbone cable routes and horizontal cabling routes to be used prior to installation and as part of the shop drawing submittals.
- Prior to x-raying and coring access holes submit red-lined Site Drawings showing the proposed location of the holes.
- Submit red-lined annotated working Drawings to the Contract Administrator, to clearly document the as-built network including details related to: location (closets, work area outlets), cabling (size, length, type,

routing), tagging (cable ducting, cabling, closets and work area outlets).

- Submit all submissions in both a hardcopy and electronic native format. Handwritten submissions are not acceptable. Also, submit electronic files in a PDF digital format that is indexed and searchable.
- Submit the following documentation prior to starting the site acceptance test:
  - o City of Toronto IT/Network Services — Cable Test Results
  - o Operations and Maintenance Manual of any and all electronic equipment to or is installed.
  - o Revise and annotate Contract Drawings, to clearly document the as-built network including details related to: location (closets, terminations panels) cabling (size, length, type, routing), tagging (cable ducting, cabling, closets and termination panels) final as built drawings, cabling schematics, pathways and conduits drawings (containment system), any other documents, reports and drawings needed by the City of Toronto during or after work is completed.
- Consultants shall review and approve all submissions prior to final review by the City.
- Consultant is responsible to submit the final as-built drawings of the project / facility to the City.

### **1.03 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect communications equipment from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 19 - Waste Management and Disposal.

## 2 PRODUCTS

### 2.01 APPROVED MANUFACTURERS

- All backbone fibre optic cables, connectors, patch cords, patch panels, cassettes and adaptors shall be from Belden.
- All CAT6A modular jacks, faceplates, U/UTP patch cords and Category 6A cables shall be from Belden.
- Where cross connect punch down is required at Entrance Facility for termination of all voice backbone cables, it shall be from Belden.
  - o [www.belden.com](http://www.belden.com)
- All fire-stopping EZ-PATH components shall be from Specified Technologies Inc.
  - o [www.stifirestop.com](http://www.stifirestop.com)
- For UPS and Power Distribution Unit, Liebert - Emerson and APC shall be the manufacturers.
  - o [www.emersonnetworkpower.com](http://www.emersonnetworkpower.com) ; [www.apc.com](http://www.apc.com)
- Manufacturer Substitution of any part other than those specified in this standard is strictly prohibited without the written consent of the City of Toronto Information Technology (IT) Network Services Division.

### 2.02 WORK AREA OUTLETS FOR OFFICE AREA

- All modular jacks, faceplates and furniture inserts shall be Belden and performance rated to Category 6A.
- Provide one 4-port, single-gang, work area outlet in each work area for termination of the horizontal CAT6A cables with faceplates or decora module frames.
- It is recommended that the outlet boxes be 100mm X 100mm X 54mm deep, complete with a mud ring cover specifically designed for single gang faceplates intended for flush mounting to the wall. This single gang outlet box aids in the maintaining of Category 6A and higher bend radius requirements.
- Where walls are not suitable or have insufficient depth, stand electrical size outlet boxes shall be used.
- One (1) 4-port, work-area outlet shall be associated with as many ports necessary (in groups of 4 or 2) on the snap-in faceplate installed in the patch panel of the TE or TR as is provided.
- Within each office outlet, only two of the ports shall be terminated at the work area faceplate and patch panel unless otherwise specified.
- Space shall be left in each conduit and faceplate for a third and fourth cable to be added at a later time.
- One (1) 4-port, work-area outlet shall be installed within each systems furniture cubical work area partition.
- Within systems furniture, only two of the four positions shall be terminated with work area jacks and on the patch panels unless otherwise specified.

- Space shall be left in conduits and faceplates for the inclusion of a third and fourth cable at a later time.

### **2.03 FACEPLATES**

- Faceplates shall be modular Belden white format opening to allow the possibility of changing connector types in the future without replacing the entire unit.
- Faceplates shall be equipped with small form factor terminating connectors to fit the individual outlet's requirements
- Faceplates shall be equipped with a minimum of four (4) openings for modules. Contractors are to equip the faceplate with the required number of blank inserts as required.

### **2.04 WORKSTATION FACEPLATES AND ADAPTERS – CUBICLES**

- Workstation outlets shall be supplied and installed for all terminations at the workstation end and as further specified below to suit the application.
- The Communications Consultant shall confirm the color of outlets prior to placing order.
- Modular Furniture Faceplates
  - Modular furniture faceplates shall be installed in all furniture outlets that have a modular furniture knockout shall consist of 4 ports.
  - Each outlet shall be installed with the specified termination modules or a blank insert. No openings shall remain exposed.
  - Belden MDVO modular furniture adapter, 4 port, white
  - Belden MDVO modular furniture adapter, 4 port, black
- Surface Mount Boxes
  - Surface mount boxes shall be installed for all furniture outlets that do not have a modular furniture knockout, exposed ceiling outlets or any location not provided with an electrical back box.
  - The surface mounted box shall consist of a minimum of two (2) ports.
  - Each outlet shall be installed with the specified termination modules or a blank insert. No openings are to remain exposed.
  - Belden MDVO side entry box, white
  - Belden MDVO side entry box, black

### **2.05 RJ45 CAT6A JACKS**

- Belden Eight-position modular jack (RJ45), type Category 6A to TIA-568 shall be green color and shall have the following minimum performance characteristics:
  - Modular jack current rating: 1.5 Amperes maximum



- Modular jack durability 1,000 mating cycles
  - Modular jack contact Pressure: 100 grams minimum per contact
  - Dielectric voltage strength: 1,000 V RMS at 60Hz for 1 minute
  - Insulation resistance: 200 milli-ohms minimum
  - Contact resistance 1 milli-ohms per contact
- The contact material of the jack in a modular jack connector shall be phosphor bronze with 50 micro-inches of gold over nickel.
- UTP termination modules shall be of the same category as the UTP cabling to ensure that manufacturer end to end warranties can be attained.
- All UTP termination modules shall be Belden MDVO type.
- Belden CAT6A modular jack, MDVO style, green color.
- Belden ID data tab, MDVO style, green color.

## **2.06 COPPER PATCH PANEL (CPP)**

- All horizontal CAT6A U/UTP cabling shall be terminated on 1U, 24 ports, Belden CAT6A modular patch panel.
- All copper patch panels shall be black.
- All modular patch panels shall be populated with CAT6A UTP modules/jacks as required.
- The modular copper patch panel shall mount to standard TIA 482.6 mm (19") rack.
- Contractor to refer to installation instructions provided with the patch panel for proper installation.

## **2.07 COPPER CAT 6A HORIZONTAL CABLE ( U/UTP)**

- 2.08 Belden, four-pair, 100 ohm balanced unshielded-twisted-pair (U/UTP) cable, appropriate flame test classification, Category 6A (CAT 6A) shall be in compliance to TIA-568 standard.
- All cables fully contained within conduit or areas that are not plenum rated shall use CMR/FT4 rated cable.
- Any cable, regardless of length passing through a return air plenum ceiling and not in conduit shall be rated CMP/FT6.
- All UTP cables shall meet requirements identified below:
  - Color: Blue
  - Rating: CMR/FT4 (riser rated or in conduit) or CMP/FT6 (plenum areas or in J-hooks)
  - Category: 6A
  - 23 AWG, spool-in-a-box
- All CAT6A horizontal cables shall be eligible for the Belden 25 years Certification Warranty.
- Cabling shall be installed and terminated as per the BICSI Installation Methods Manual, Belden Certification training and the manufacturers' installation instructions.

**2.08 COPPER CAT6A PATCH CORD ( U/UTP)**

- Patch cord shall be manufactured of stranded conductor cable with 8-position, 4-pair terminations at both ends.
- All patch cords shall be manufactured by Belden and performance rated to CAT 6A.
- All patch cords shall be of the same or higher performance category and manufacturer of the U/UTP horizontal cabling system that shall be warranted as part of the end-to-end solution.
- All patch cords shall be standard compliant and minimum of FT4 or LSZH rated.
- All patch cords shall be manufactured and certified, 4-pair stranded conductors copper cables, field assembled patch cords are not allowed.
- All patch cords shall be gray in color.
- The Contractor shall supply patch cords in the following length:
  - At patch panel location, provide 0.5 metres long patch cords for all terminated horizontal cables unless otherwise advised by Consultant or CoT-IT.
  - At workstation or work area outlet location, provide patch cords of suitable length and not longer than 5 metres (typically 2.1 metres but Project Consultant to finalize) for every terminated horizontal cable unless otherwise advised by Consultant or CoT-IT.
- Patch cords shall be installed and terminated into the final device by the Contractor as per the BICSI Installation Methods Manual, Belden Certification training and the manufacturer's installation instructions.

**2.09 INDOOR BACKBONE MULTIMODE OM4 FIBREOPTIC CABLE**

- The cable is performance rated to OM4 and shall be used only if the backbone link length is less than or equal to 150 meters.
- Primary and redundant, 12 strands in each cable shall run between the equipment room and the telecom room. Total of 2 x 12 strands shall run with diverse pathways between the equipment and telecom rooms.
- All cables shall be fully contained within conduit or areas that are not plenum rated shall use OFNR/FT4 rated cable.
- Any cable, regardless of length passing through a return air plenum ceiling and not in conduit or using cable tray / J-hook shall be rated OFNP/FT6.
- Fiber cables shall be protected when entering the patch panel with a black color flexible conduit.
- Core-locked, tight-buffered, black, indoor/outdoor fiber-express distribution cables.
- 50/125-micron core/cladding, laser optimized.
- 4700 MHz-km bandwidth at 850nm wavelength (EMB).
- 3500 MHz-km bandwidth at 1300nm wavelength.
- Only cables from Belden shall be accepted.
- All fibre optics cables shall be installed and terminated into fibre optic adapters contained in fibre optic patch panels by the Contractor as per the BICSI Installation Methods Manual, Belden certification training and installation instructions.
- Belden:
  - OFNR/FT4

- OFNP/FT6

## **2.10 FIBREOPTICS PATCH PANEL (FPP)**

- Fibre optics cabling shall be terminated in patch panels intended for fibre optic cable management.
- Belden Fibre optics Rack Mount Enclosure for Telecommunication Enclosures shall be:
  - 3U - 19" Rack Mount Enclosure
  - Durable black powder coat finish
  - Be equipped with cable strain relief and slack storage
- Belden Blank Fibre Adapter Panel shall be:
  - Blank Fibre Adapter Panel to fit Fibre Adapter Patch Panel
  - Durable black powder coat finish
- Belden Fibreoptics LC Fibre Adapter Strip shall be:
  - Loaded with TIA-604 FOCIS-10 compatible adapters, TIA-568.3 standard compliant
  - Split sleeve: Zirconia Ceramic
  - Adapter housing colors follow TIA-568.3 suggested color identification scheme.
  - Belden part number for 6 LC duplex adapter strip
- Belden 1U fibre cover, smoked plexiglas
- Belden Splice Case / Modules / Trays for OM4 Cable Terminations shall be:
  - Belden splice tray for 3U rack mount fibre enclosure

## **2.11 FIBREOPTICS LC CONNECTOR FOR FIELD TERMINATION OF OM4 CABLE**

- Optical fibre terminations for OM4 cable shall be made for field termination with a pre-polished connector and shall be of the same manufacturer and LC style to suit the cabling installed.
- Fibre connectors shall match the performance of the fibre optics cable (OM4).
- Fibre terminations shall be made with a ceramic ferrule and cable boot.
- Optical fibre cables shall be terminated with pre-polished connectors having the characteristics as below:
  - Return loss: >20dB (multimode)
  - Termination Style: Pre-Polished
  - Connector Type: LC

- Ferrule Type Zirconia Ceramic
- The connector shall include connector body / ferrule assemblies, crimp sleeves, dust caps, clip, and appropriate boot.
- All Fibre optics connector terminations and adapters shall be contained in fibre optic patch panels from Belden by the Contractor as per the BICSI Installation Methods Manual, Belden certification training and installation instructions

#### **2.12 FIBREOPTICS LC PIGTAIL FOR FIELD TERMINATION OF OM 4 CABLE**

- Optical fibre OM4 cable shall be fusion spliced to pig-tails for field termination and shall be of the same manufacturer and LC style to suit the cabling installed.
- Pigtail shall be OFNR (FT4) or LSZH rated and stamped/printed accordingly.
- The pigtail shall be 100% factory terminated and inspected end face geometry in compliance with Telcordia GR-326-CORE, issue 3.
- Typical insertion loss per pigtail connection: 0.25dB.
- Field assembled pigtails are not allowed.
- The Contractor shall supply and fusion splices every strand of the fibre backbone cable with a pigtail. The pigtail length shall be 1m.
- Belden OM4 pigtail
- Belden fusion splice heat shrink protector sleeves

#### **2.13 FIBREOPTICS MULTIMODE LC-LC DUPLEX PATCH CORDS – OM4**

- All patch cords shall be CSA/TIA/UL approved, CMR (FT4) or LSZH rated and printed accordingly.
- All optical fibre patch cords shall be OM4.
- All optical fibre patch cords shall be manufactured and certified, 1-pair (duplex, 2 strands). Field assembled patch cord is not allowed.
- The Contractor shall supply a minimum two (2) patch cords for every OM4 backbone cable:
- At patch panel in the telecom room (TE), provide one (1) 2-meter-long patch cord unless otherwise specified by CoT IT.
- At patch panel location in the equipment room (ER), entrance facility (EF), or any other space provide one (1) 2-meter-long patch cord unless otherwise specified by CoT IT.
- All optical fibre patch cords shall be LC to LC duplex.

#### **2.14 PATHWAY SYSTEM – CONDUIT AND CABLE TRAY**

- All pathway (conduit and cable tray) systems shall be designed in accordance with the latest version of the ANSI/TIA-569-E Standard which exceeds the minimum requirements of Canadian Electrical Code. Pathway systems that are designed only to the Canadian Electrical Code and do not include all requirements of the ANSI/TIA-569-E standard will be considered substandard and removed until such time as they are in compliance.

#### **2.15 ELECTRICAL METALLIC TUBING CONDUIT – EMT**

- To be used within the office areas only (if applicable).
- Electrical Metallic Tubing shall be electro-galvanized steel.

## 2.16 FITTINGS

- Fittings for electrical metallic tubing shall be single screw indenter fittings for conduits up to 2" and double screw indenter fittings for conduits 2" and larger.
- Die-cast or pressure cast fittings are not permitted.
- Connectors shall have insulated throat up to and including 1" size. For sizes 1-1/4" and larger, provide plastic insulating bushing.
- Provide conduit body types, shapes and sizes as required to suit application and NEC requirements. Provide matching gasket covers secured with corrosion-resistant screws.

## 3 EXECUTION

### 3.1 GENERAL

- Contractors / Technicians shall be certified with Belden and Fluke Networks to perform installations and testing / commissioning.
- Contractors must have an RCDD installation Team Lead / Project Manager.
- Technicians who have not completed the appropriate certification or training shall not pull, terminate or otherwise be involved in the installation of the telecommunications physical infrastructure with the exception of bonding to ground.
- Installers performing the testing (SAT, Acceptance, Commissioning, etc.) shall be Certified Cabling Test Technician on Fluke DSX / Versiv and Optifibre OTDR equipment.
- Following are the procedures to follow for successful project handing over:
  - o Cable Acceptance Testing (CAT) – See Appendix for correct Sample Test Results and Compliance Sheet
  - o Site Acceptance Testing (SAT) - See Appendix for Sample SAT Documents
  - o As-built Drawings and Documents (ADD)
  - o Consultant Review and Comments (CRC)
  - o CoT-IT Approval of Satisfaction (AoS) – Signing off.2

### 3.2 HORIZONTAL CABLE INSTALLATION

- All cables and components shall be installed as per the Belden's instruction sheets, ANSI/TIA standards and the BICSI Installation Methods Manual to complete the project.
- All testing of the Category 6A cabling system shall be with Fluke DSX-5000 / 8000 Versiv Cable Analyzers.
- All cables and components shall be installed as per Belden's instruction sheets, ANSI/TIA standards and the BICSI Installation Methods Manual to complete the project.
- All testing of the fibre optic installation shall be with test equipment from Fluke DSX-5000 / 8000 Versiv and if required (upon CoT-IT request) Optifibre OTDR..4 Install armoured cables by direct burial using:
  - .1 Cable plow.
  - .2 Trench.



### 3.3 FIBRE OPTIC CABLE INSTALLATION

- All cables and components shall be installed as per Belden's instruction sheets, ANSI/TIA standards and the BICSI Installation Methods Manual to complete the project.
- All testing of the fibre optic installation shall be with test equipment from Fluke DSX-5000 / 8000 Versiv and if required (upon CoT-IT request) Optifibre OTDR.

### 3.4 CABLE ACCEPTANCE TESTING

- This section specifies the acceptance testing requirements for backbone fibre optic as well as horizontal UTP cabling.
- Supply all of the test equipment required to conduct acceptance tests.
- Submit acceptance documentation as defined in this section.
- All of the installed cabling must be tested and successfully pass all test criteria.
- Standards referenced in this section include:
  - o ANSI/TIA-568: Telecommunications Cabling Standard. All standards referenced within the TIA- 568, where applicable, constitute standard provisions of this specification.
  - o ANSI/TIA-526-14: Optical Power Loss Measurement, Multimode
  - o ANSI/TIA-526-7: Optical Power Loss Measurement, Single-mode
  - o ANSI/TIA-1152: Requirements for field test instruments and measurements for balanced twisted-pair cabling
- Visually inspect all cables, cable reels and shipping cartons to detect possible cable damage incurred during shipping and transport. Visibly damaged goods shall be returned to the supplier and replaced at no additional cost to the City.
- All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA-568 standard. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed without cost to the City.

### 3.5 COPPER PERMANENT LINK TESTING – HORIZONTAL CABLING

- All unshielded twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens and performance to Category 6A. Horizontal cabling shall be tested using a minimum level IIIe test unit for Category 6A performance compliance.
- Continuity - Each pair of installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. The test shall be recorded as pass/fail as indicated by the test unit and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.
- Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set

forth in the ANSI/TIA-568.2 standard. Cable length shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cable, the shortest pair length shall be recorded as the length for the cable.

- Horizontal twisted pair cable shall meet or exceed the permanent link, performance requirements specified in ANSI/TIA-568.2 for Category 6A, Unshielded Twisted Pair (U/UTP).
- All tests shall be conducted using permanent link configuration on the testing equipment. Double wire armour cables in [deep water][strong tides][heavy ice formations].

### 3.6 COPPER TEST EQUIPMENT

Category 6A Test Equipment - Category 6A test equipment shall meet the following minimum criteria:

- All test equipment of a given type shall be from the same manufacturer and have compatible electronic results output. Acceptable test equipment manufacturer is Fluke Networks. Unless the manufacturer specifies a more frequent calibration cycle, calibration date shall be not more than a year from cable test date. Recommended test equipment is a Fluke Networks DSX 5000 / 8000 Versiv Cable Analyzer.
- Test adapters must be approved by the manufacturer of the test equipment. Adapters from other sources are not acceptable. For horizontal cabling, permanent link adapters shall be used.
- Baseline accuracy of the test equipment must meet or exceed TIA Level IIIe, as indicated by independent laboratory testing.
- Test equipment must be capable of certifying Category 6A to TIA-568.2 standard.
- Test equipment must have a dynamic range of at least 100 dB to minimize measurement uncertainty.
- Test equipment must be capable of storing full frequency sweep data for all tests.
- Test equipment must include S-Band time domain diagnostics for NEXT and return loss (TDNXT and TDRL) for accurate and efficient troubleshooting.
- Test equipment must be capable of running individual NEXT, return loss, etc., measurements in addition to auto tests. Individual tests increase productivity when diagnosing faults.
- Test equipment must make swept frequency measurements in compliance with ANSI/TIA-568.2 standard.
- The measurement reference plane of the test equipment shall start immediately at the output of the test equipment interface connector. There shall not be a time domain dead zone of any distance that excludes any part of the link from the measurement.
- The calibration of equipment shall be valid within one (1) year of the test date.

### 3.7 HORIZONTAL CABLE TESTING DOCUMENTATION – COPPER

Category 6A (UTP) Documentation - As a minimum, test reports shall include the following information for each U/UTP CAT6A cabling element tested:

- o Wiremap results that indicate the cabling has no shorts, opens, split, reversed, or crossed pairs and end-to-end connectivity is achieved.
- o Attenuation, NEXT, PSNEXT, Return Loss, ELFEXT and PSELFEXT data that indicate the worst-case result, the frequency at which it occurs, the limit at that point and the margin. These tests shall be performed in a swept frequency manner from 1 MHz to highest relevant frequency, using a swept frequency interval that is consistent with TIA and ISO requirements. Information shall be provided for all pairs or pair combinations and in both directions when required by the appropriate standards.
- o Length (in meters), propagation delay and delay skew relative to the limit.
- o Any individual test that fails the relevant performance specification shall be marked as a FAIL.
- o Cable manufacturer, cable model number/type and NVP.
- o Tester, manufacturer, model, serial number, hardware version and software version.
- o Circuit ID number (Cable Tag Id) and Facility name.
- o Test criteria used.
- o Overall pass/fail indication.
- o Date and time of test.

### 3.8 BACKBONE FIBRE OPTIC TESTING

- Backbone fibre optic cable shall meet or exceed the permanent link, performance requirements specified in ANSI/TIA-568.3 for multimode and singlemode fibre.
- Test link attenuation with an OLTS:
  - o For multimode fibre, make reference measurements in accordance with TIA-526-14, Annex A – One cord reference method. Measure optical loss on each fibre at 850nm and 1300nm. It is required to measure loss on each fibre from each direction (bi-directional).
  - o For singlemode fibre, make reference measurements in accordance with TIA-526-7, one cord reference method. Measure optical loss on each fibre at 1310nm and 1550nm. It is required to measure loss on each fibre from each direction (bi-directional).
- Measure link length optically or calculate using cable sheath length markings.
- Multimode backbone fibre optic cabling shall meet the following loss and length criteria:
  - o Attenuation @ 850nm shall be less than or equal to: fibre length (km) x 3.0 dB/km + number connector pairs x 0.5 dB + number of splices x 0.3 dB.
  - o Attenuation @ 1300nm shall be less than or equal to: fibre length (km) x 1.5 dB/km + number connector pairs x 0.5 dB + number of splices x 0.3 dB.

- o Length shall be less than or equal to 150 meters.
- VCSEL driver is preferred to be used for testing as the SFP active modules on the switch runs with VCSEL drivers up to 10Gbps.
- Singlemode backbone fibre optic cabling shall meet the following loss and length criteria:
  - o Attenuation @ 1310nm shall be less than or equal to: fibre length (km) x 0.4 dB/km + number connector pairs x 0.75 dB + number of splices x 0.3 dB.
  - o Attenuation @ 1550nm shall be less than or equal to: fibre length (km) x 0.4 dB/km + number connector pairs x 0.75 dB + number of splices x 0.3 dB.
  - o Length more than 150 metres and shall be less than or equal to 10000 meters.

### 3.9 FIBRE OPTIC TEST EQUIPMENT

- All test equipment of a given type shall be from the same manufacturer and have compatible electronic results output. Acceptable test equipment manufacturer is Fluke Networks. Unless the manufacturer specifies a more frequent calibration cycle, calibration date shall not be more than a year from cable test date. Recommended test equipment is a Fluke Networks DSX-5000 /8000 Versiv Cable Analyzers using VCSEL fibre modules (preferred) for multimode testing and/or OptiFiber OTDR (if advised by CoT-IT).
- The calibration of equipment shall be valid within one (1) year of the test date.
- Fibreoptics test equipment shall meet the following minimum criteria:
  - o Test equipment shall be capable of measuring relative or absolute optical power in accordance with TIA-526-14, "Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant."
  - o Test equipment shall be capable of measuring relative or absolute optical power in accordance with TIA-526-7, "Optical Power Loss Measurement of Installed Single-mode Fibre Cable Plant."
  - o Test equipment shall not include the loss or length of the test jumpers in the cable plant measurements.
  - o Multimode test equipment shall incorporate both 850nm and 1300nm VCSEL/LED sources.
  - o Single-mode test equipment shall incorporate both 1310nm and 1550nm laser sources.
  - o Sources and meters shall automatically synchronize wavelengths to prevent calibration- related errors.
  - o Test equipment shall employ a communications port to facilitate uploading of saved information from tester to PC.
  - o Test equipment capable of measuring a Tx/Rx fibre pair simultaneously is recommended to enhance productivity. It is recommended that test equipment utilizing dual function main and remote units be used for bi-directional testing, eliminating the need to swap optical source and power meter.

### 3.10 CABLE TEST RESULTS MANUAL

- Consulting Engineer shall first review and comment on the test report. CoT-IT shall only receive the report after the review and approved comments of the Consulting Engineer. CoT-IT will finally provide their final

review comment.

- Submit test reports in both a hardcopy and electronic format (native file). Hand-written test reports are not acceptable. If test results cannot be converted to a PDF format then provide any necessary proprietary/native software to view the results at no cost to the City.
- Fibre optic backbone cable test results shall be incorporated in the City of Toronto, Network - Cable Test Results manual. Submit two (2) copies of the Cable Test Results manual for each facility. The manual consists of hardcopy test result reports placed into lockable 'D' ring binders with a cover and spine that clearly indicates the title of the manual. Put a CD with the electronic copies of test reports in a pocket in the Cable Test Results manual.
- The Contractor (RCDD) PM must sign hardcopy reports before submitting it to the Consultant.

### 3.11 TEST COMPLIANCE SHEET

- A compliance sheet shall be prepared for every project of City of Toronto - IT. The criteria is summarized as below:

1	Test equipment with latest software version	8	Test results limits - TIA
2	Test equipment with latest test limit version	9	Test results based on VCSEL/LED Encircled Flux for OM4
3	Calibration of test equipment	10	Test results based on Laser for OS2
4	Test results submitted in native format and PDF format	11	MM testing at 850nm and 1300nm wavelength
5	Test result cable ID in compliance	12	SM testing at 1310nm and 1550nm wavelength
6	Permanent Link testing performed on copper (CAT6A)	13	Bi-directional testing
7	Test result cable type (copper and fibre) in compliance	14	Accurate quantity of adapters and splices

### 3.12 SITE ACCEPTANCE TEST (SAT)

- A Site Acceptance Test (SAT) will NOT test functionality of the system or its components. Site Acceptance Tests will evaluate the workmanship and verify installation against the *Installation* and *Layout* drawings.
- The SAT plan shall be submitted to CoT-IT, two (2) weeks in advance of commencement.



- The SAT plan shall have a checklist and identify tests with a schedule for CoT-IT to review and coordinate staff. Submit to the Contract Administrator/Project Manager and Consultant, three weeks prior to the commencement of the test, for review. The Contractor shall conduct the test when directed by the Contract Administrator. As a minimum, the Contract Administrator/Project Manager, Consultant and CoT-IT shall witness the test.
- The plan shall be sealed by the Installation Project Manager RCDD, followed by the RCDD Consultant.
- Prior to SAT, the Consultant shall review and approve all copper and fibre cabling testing, bonding and grounding inspections and any other criteria as may be described in the project tender.
- The SAT shall evaluate workmanship and verify construction and components against the Layout Drawings and associated Component Schedules submitted to and reviewed by the Consultant.
- The SAT shall be completed only when all items in the checklist have been witnessed and installed by the Contract Administrator/Project Manager, Consultant and CoT-IT as being in conformance with the design as specified.
- SAT of Equipment Room / Telecom Room
  - Each facility shall have one or more equipment room / telecom room, which house the server and network core closets. Each equipment / telecom room shall undergo a witnessed SAT.
  - The Consultant is responsible for the equipment / telecom room UPS, lighting panel and any ER/TR modifications noted in the tender drawings and specifications. The extent of ER/TR modifications varies for each facility.
  - In addition to the above, the ER/TR SAT shall include the evaluation of the server and core closet installation, power supplies to each closet and external cable management (e.g. cable tray). For the purpose of the ER/TR SAT the server and core closets shall be empty except for the installation of duplex receptacles to receive the UPS.
- SAT of Telecom Enclosure
  - As a minimum, the complete Telecom Enclosure for the SAT shall include the installation of copper patch panels, fibre patch panel, power supplies, horizontal cable terminations, cable management and patch cords.
  - At each facility, the Contractor shall provide one complete telecom enclosure, associated accessories and horizontal cable for the SAT. Following acceptance, the Contractor will be directed to proceed with the installation of the remaining TEs and horizontal cabling. The Contractor is to note that the fibre optic backbone cable installation will be included in the core closet SAT.
  - The City reserves the right to do a random inspection of the telecom enclosure and those that do not comply with the above shall be made compliant at no expense to the City.

### 3.13 FIELD SUPPORT

- Provide 160 hours of on-site support for each facility beginning immediately after successful site acceptance test at that facility for a period of 24 months following Substantial Performance.
- Respond within 24 hours to a request for on-site support.

- The minimum site time per support call will be four (4) hours.
- The cost for the on-site field support shall be paid based on the rates quoted in the Schedule of Prices.

### **3.14 MAINTENANCE**

- For a period of twelve (12) months following Final Acceptance, the Contractor shall provide a qualified technician/electrician to assist in the resolution of network related problems. The Contractor shall be given twenty-four (24) hours notice as to their requirement on-site.
- The Contractor will be compensated at the per diem rate quoted by the Contractor in the Form of Tender. However, if the source of the problem is discovered to be a result of work or components supplied by the Contractor, the Contractor shall not be compensated.

### **3.15 WARRANTY**

- Testing and certification of the Building Network Distribution Cabling System shall be by the installer and shall include the provision of a Belden Warranty covering performance, products and installation.
- The Warranty shall cover the full repair and/or replacement of any component failing or failure to meet the design requirements within one (1) year.
- Warranty shall be delivered by the Contractor in coordination with Belden to the Client's Project Manager with the Testing and Certification documents. The project site shall receive manufacturer's plaque. All coordination regarding warranty and handing over of the manufacturer's plaque is the responsibility of the Contractor.
- The manufacturer shall warrant the project for twenty-five (25) years against application assurance and extended product manufacturing defects.
- The Contractor shall warrant installation against all product installation defects and that all approved cabling components meet or exceed the specified requirements for a period of twenty-five (25) years following acceptance.
- The Contractor shall warrant that all permanent fibre optic links meet or exceed the performance requirements of TIA-568.3 for multimode and singlemode fibre.
- The Contractor shall warrant that all permanent twisted pair links meet or exceed the performance requirement of TIA-568.2 for category 6A, unshielded twisted pair.
- Contractor must provide complete end to end mapping of all connectivity at the end in both hard and softcopy formats. This includes but not limited to horizontal data / voice cable number, copper and fibre backbone cable and active equipment ports.
- Within ten (10) days after testing, the cable installer shall provide the Project Manager with documentation, which shall include cable test results, a marked-up copy of the as-built cable network drawing and an electronic copy of the completed installation in Bentley Microstation Ver. 8 and AutoCAD or as per City's CAD guidelines.

- Contractor shall provide a manufacturer written certificate, plaque and warranty that the structured cabling platform is installed and fully operating in accordance with this standard and manufacturers specification.
- The warranty must guarantee that the design or installation negligence on the part of the Cabling Contractor shall not negate or void any portion of the certified system. The manufacturer must guarantee that all material, components and labour are covered in this circumstance for the full certification period of twenty-five (25) years. It must also guarantee that in the event a Cabling Contractor is no longer able to service the warranty, the full certification remains valid and is responsibility of the manufacturer.
- If a warranty issue arises for the cabling, the Warrantor must make arrangements to undertake the repair or replacement of warranty issues within 24 hours of notification. This may require the repair/replace of cabling components outside regular working hours at no additional cost.
- The warranty for the cabling must be such that the cable meets or exceeds the requirements of TIA-568 'Transmission Performance Specifications for 100 Ohm 4-pair Category 6A Cabling' including all Standards stated in this Contract.
- The Cabling Contractor shall forward the Structured Cabling Platform certification request form(s) to the proper authority and ensure that a Plaque and Certificate is issued to the Customer / Project Site along with the Structured Cabling Platform user manual. The successful bidder shall provide a certification number within two weeks of award of this project. Please  
note that the Plaque/Certificate must have the Customer name/Project name on the Plaque/Certificate.
- The Cabling Contractor shall provide letter(s) of Certification within two weeks of substantial completion of the project to the Customer. This document will include the following: verification of the performance of the installed system, identification of the installation by location and project number and a copy of the warranty.
- Upon request and at no additional cost to the Customer the Cabling Contractor must provide a manufacturer's technical representative to conduct an on-site visit to ensure complete technical compliance.
- The Cabling Contractor must supply a copy of an unexecuted warranty statement (at the time of bidding) including all related terms and conditions. This copy shall be the Standard to which the warranty will be held. No changes shall be accepted unless it is deemed to benefit the Customer. Any proposed changes to the warranty must be submitted in writing to the Customer/their representative for review. The changes will then be accepted or declined by the Customer at their discretion. This is to remain valid for the entire warranty period.
- All cable Cabling Contractor technicians on site must be trained by the manufacturer of the Structured Cabling Platform being installed.
- Any defective or improperly installed products shall be replaced, or correctly reinstalled at no cost to the Customer.

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### 3.16 QUALIFICATIONS AND TRAINING

- An on-site training may be required for the Client to understand the system and installation.
- Contractors shall be certified with Belden and Fluke Networks to perform installations and testing.
- Contractors must have an RCDD installation Project Manager.
- Technicians who have not completed any certification program shall not pull, terminate or otherwise be involved in the installation of the telecommunications physical infrastructure with the exception of bonding to ground.
- Installers performing the testing (SAT, Acceptance, Commissioning, etc.) shall be certified CCTT on Fluke DSX and/or Optifibre OTDR.
- All Fluke credentials shall be submitted to the City during project award process for validation.
- The testing equipment shall be valid and calibrated within one (1) year as per manufacturer specifications.
- The cable installer shall have full working knowledge of cabling low voltage applications such as, but not limited to, Non-Secure Data/Voice communications cabling systems.
- Provide references of the type of installation provided for in this specification.
- Have knowledge of all applicable Telecommunication Standards such as but not limited to: CSA, TIA, IEEE and ANSI.
- Have experience in the installation of pathways and support for horizontal and backbone cabling.
- Be experienced in the installation and testing of telecommunication network cabling system, including the use of a light meter and OTDR.
- Provide proof of being a manufacturer certified installer for all cable network components being installed such as but not limited to cables, connectors and end termination equipment. The use of a non-manufacturer certified installer is not permitted.

### 3.17 AS-BUILT DRAWINGS

- The drawings shall include cable routes and outlet locations.
- Outlet locations shall be identified by their sequential number as defined elsewhere in this document.
- Numbering, icons and drawing conventions used shall be consistent throughout all documentation provided.
- For new infrastructure project, the Consultant shall provide the design drawings /

tender drawings / floor plans in paper and electronic (Microstation) formats on which as-built construction information can be added.

- For an existing infrastructure upgrade, the Owner may provide floor plans in paper and electronic (Microstation) formats on which as-built construction information can be added.
- These documents shall be modified accordingly by the Telecommunications Contractor to denote as-built information as defined above and returned to the Owner.
- The Contractors shall annotate the base drawings and return a hard copy (same plot size as originals) and electronic (Microstation) form.

### 3.18 FINAL ACCEPTANCE

- Once all work has been completed including all documentation submissions, the City will notify the satisfaction to the Consultant in writing of formal acceptance of the system.
- Consultant must warrant in writing that 100% of the installation meets the design requirements as specified.
- Contractor must warrant in writing that 100% of the installation meets the requirements specified in the tender documents.
- The CoT-IT reserves the right to conduct, using Contractor equipment and labour, a random re- test of up to five (5) percent of the cable plant to confirm documented results. Any failing cabling shall be re-tested and restored to a passing condition. In the event more than two (2) percent of the cable plant fails during re-test, the entire cable plant shall be re-tested and restored to a passing condition at no additional cost to the Owner.
- Acceptance shall be subject to completion of all work, successful post-installation testing which yields 100% PASS rating and receipt of full documentation as specified.
- The City may agree to allow certain cable runs to exceed acceptable standardized performance criteria. If required these cable runs will be exempt from meeting the specified standards. However, the Contractor will still be required to test these cable runs to validate component and installation performance.
- Documentation: The Contractor shall submit the following documentation for final acceptance:
  - City of Toronto - IT Network — Cable Test Results Manual.
  - Cable Acceptance Test (CAT) – Compliance Sheet
  - Site Acceptance Test (SAT)
  - As-built Drawings and Documents (ADD)



- Consultant Review and Comments (CRC)
- CoT-IT Approval of Satisfaction (AoS) – Signing off

### **3.19 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

### **3.20 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by communications equipment installation.

## APPENDIX-A: SAMPLE OF CABLE ACCEPTANCE TEST (CAT)



## CITY OF TORONTO - CABLE TEST RESULTS COMPLIANCE SHEET

Project Name		Contract/Project Number	
Facility Name		Facility Address	
Location		Closet/Rack Number	
Consultant		Contractor	
Original Submission Date	Second Submission Date	Third Submission Date	Fourth Submission Date
City Reviewer	Date Issued	Status <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	

**General**

No.	GENERAL	Comply	Does Not Comply	Not Applicable
1	Cable test equipment DSX-5000 / 8000 with latest software version			
2	Cable test equipment DSX-5000 / 8000 with latest limit version			
3	Calibration certificate of the cable test equipment provided to the City			
4	Cable test results supplied to the City in PDF and Native format			
5	Test result specify the project name and / or contract number			
6	Test result specify site name or facility code			

**Copper Test Results**

No.	COPPER	Comply	Does Not Comply	Not Applicable
1	Permanent link testing performed			
2	Patch cord testing performed			
3	Test result cable identification in compliance with CoT-IT Standard			
4	Test result cable type in compliance with CoT-IT Standard – TIA-568 Horizontal			

**Fiberoptics Test Results**

No.	FIBRE	Comply	Does Not Comply	Not Applicable
1	Test results based on LED/VCSSEL for OM4 50/125 um MM fibre cabling			
2	Test results based on FP Laser for OS2 9/125 um SM fibre cabling			
3	MM testing at 850nm and 1300nm modal bandwidth			
4	SM testing at 1310nm and 1550nm modal bandwidth			
5	Test result cable identification in compliance with City of Toronto-IT Standard			
6	Test result cable type in compliance with City of Toronto-IT Standard and TIA-568 Backbone MM/SM			
7	Test link attenuation in accordance with TIA-526-14 or TIA-526-7 makes reference measurements in accordance with METHOD-B (one jumper cable measurement for MM) or METHOD-A.1 (one jumper cable measurement for SM). Measure optical loss on each fibre at 850nm and 1300nm (for MM) or 1310nm and 1550nm (for SM).			
8	Measure loss on each fibre from each direction (bi-directionally) as per CoT-IT Standard			
9	Accurate quantity of adapter and splices			
10	Smart Remote mode used for testing dual-fibre strands			

**APPENDIX-B: SAMPLE OF SITE ACCEPTANCE TEST (SAT) DOCUMENTS**

<b>Facility:</b>	<b>Project Name:</b>
<b>Contract No.:</b>	<b>Telecom Enclosure / Network / Core Closet Tag:</b>
<b>Building:</b>	<b>Sub-Location:</b>
<b>Consultant:</b>	<b>Contractor:</b>
<b>Date:</b>	<b>CoT-IT Staff:</b>

**TELECOM ENCLOSURE (TE) / NETWORK / CORE CLOSET LAYOUT AND AS-BUILT DRAWINGS****Procedure:**

- Verify that the as-built drawings are present.
- Verify the Telecom Enclosure components match the bill of materials.
- Verify equipment layout is as shown in the as-built drawings.
- Verify all components are tagged and wiring is labeled as per the drawings. (Enclosure, Patch Panels, Copper Patch Panel(s) Work Area Outlets, Cables, Power Distribution Components, etc.)
- Verify the horizontal and backbone fibre cable terminations and labeling.

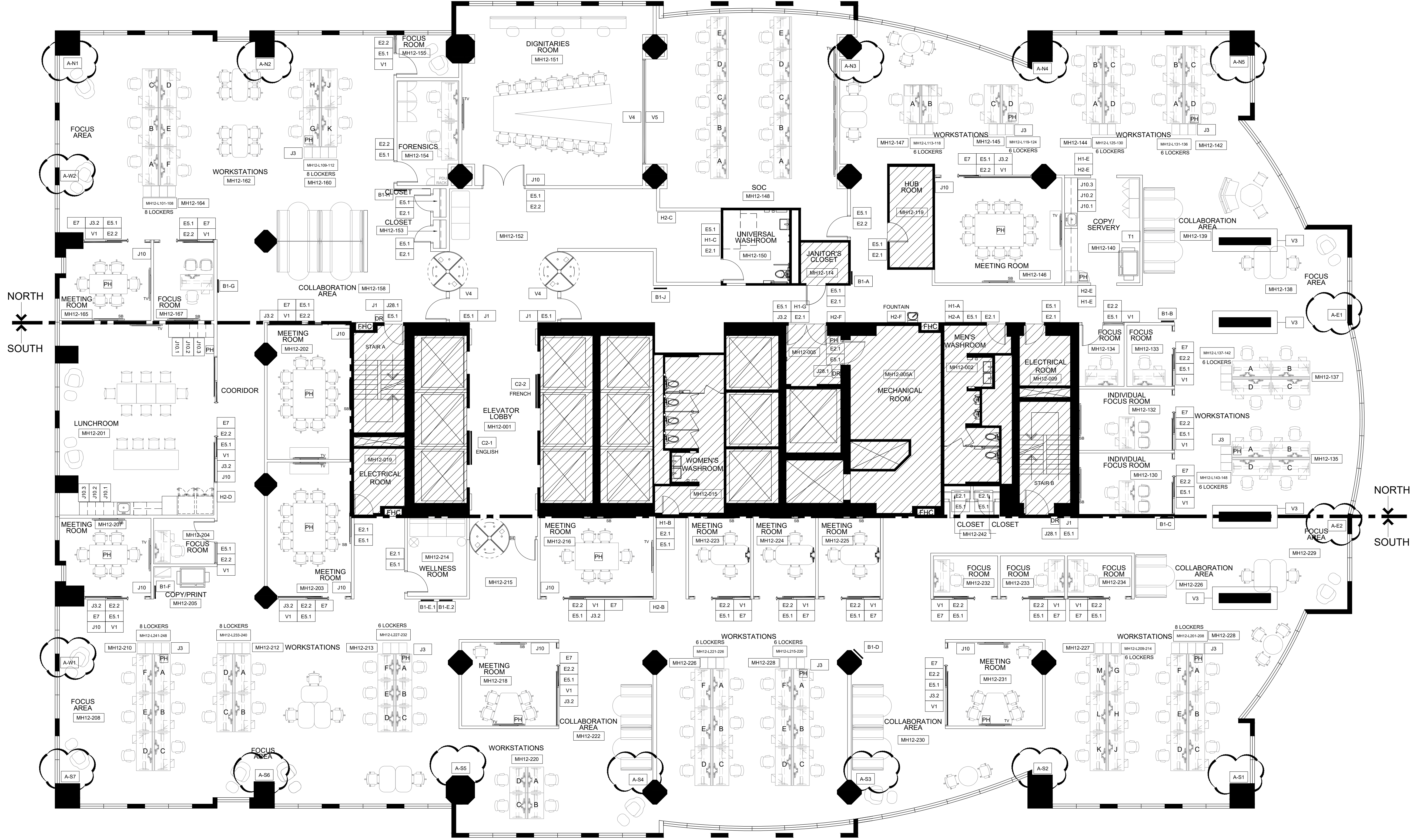
If any comments are necessary, enter a note number in the test form column and record the comment in the comments form at the end of this document.

**Acceptance Criteria:**

Telecom Enclosure construction and labeling shall match the as-built drawings.

As Built Drawings Verification			
Item No.	Description	Pass/Fail	Notes
1	As built drawings present		
2	Bill of materials in compliance		
3	Layout / arrangement of components in compliance		
4	All components tagged as per as-built drawings. (Enclosure, Patch Panels, Copper Patch Panel(s) Work Area Outlets, Power Distribution Components, etc.)		
5	All wiring labeled as per as-built drawings		

**END OF SECTION**



TAG LEGEND	
E2.1	ROOM ID - TYPICAL
E2.2	ROOM ID - WITH ROOM NO.
E5.1	ROOM ID - FRAME TAG W/ ROOM NO.
H1	ROOM ID - WALL MOUNTED WITH AMENITY ICON
H2	ROOM ID - PROJECTED WITH AMENITY ICON
MSU3	METRO HALL LOCKER ID
MH-W1	METRO HALL WORKSTATION SIGNAGE
J28.1	EMERGENCY NOTICE SIGN @ STAIR
J3	WALL MOUNTED SERVICE ID SIGN ON WORKSTATION (IE EMERG PHONE)
J3.2	WALL MOUNTED SERVICE ID SIGN ON GLAZING (IE EMERG PHONE)
J1	FIRE & SAFETY NOTICE
J10.1	VINYL GRAPHICS ON MILLWORK - RECYCLE
J10.2	VINYL GRAPHICS ON MILLWORK - GARBAGE
J10.3	VINYL GRAPHICS ON MILLWORK - ORGANICS
E7	SLIDING DOOR OPEN DIRECTIONAL SIGN
J10	OCCUPANT LOAD
T1	TACKABLE BOARD HEADER - OH&S
T2	RESERVED
V1	48"H PRIVACY WINDOW FILM
V2	PLACEHOLDER
V3	DISTRACTION VINYL ON COLUMNS - ±228" TYPICAL - SITE VERIFY
V4	3" DISTRACTION VINYL ON GLAZING
B1	DIRECTIONAL WALL SIGNAGE
CS	LOBBY SIGNAGE
A-XX	AREA SIGNAGE

- NOTES:**
- DO NOT SCALE DRAWINGS.
  - MATERIALS MAY NOT BE SUBSTITUTED WITHOUT DESIGNER'S WRITTEN APPROVAL.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SPECIFICATIONS AND DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO INFRASTRUCTURE INTERIOR DESIGN LTD. PRIOR TO CONSTRUCTION.
  - ALL DRAWINGS ARE PROPERTY OF INFRASTRUCTURE INTERIOR DESIGN LTD. THEY ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS (ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND/OR ELECTRICAL) AS ISSUED AS THIS PROJECT'S DOCUMENTATION.



**ARIDO**  
KELLY STOBBE  
Association of Registered Interior Designers of Ontario

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code.

**QUALIFICATION INFORMATION**  
Required unless design is exempt under 2.17.3.1 of the building code

ARIDO MEMBER	25405	
NAME	SIGNATURE	CONVECTION
Kelly Stobbe		
REGISTRATION INFORMATION		
Required unless design is exempt under 2.17.3.1 of the building code		
INFRASTRUCTURE	KSAP	
REV NAME	CONVECTION	

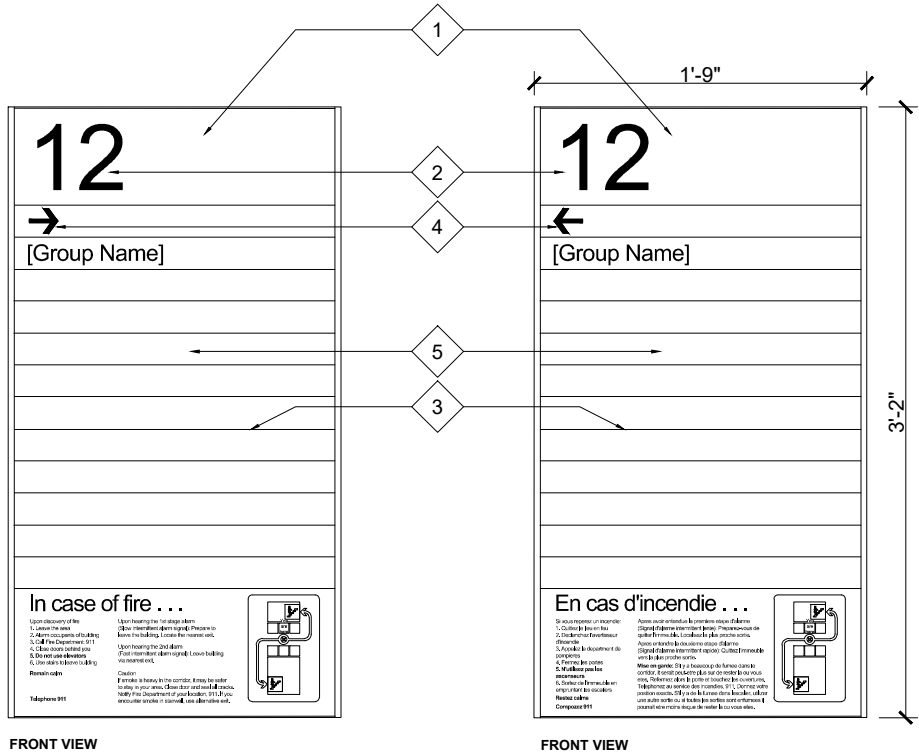
4.	ADDENDUM 03	24.08.09
3.	RE-ISSUE TENDER	24.07.31
2.	95% CLIENT REVIEW	24.07.19
1.	75% CLIENT REVIEW	24.06.28
NO.	ISSUED	YY.MM.DD

Client:  
**CITY OF TORONTO  
CYBER COMMAND CENTRE  
55 JOHN STREET  
12TH FLOOR  
TORONTO, ONTARIO  
M5V 3C6**

Drawing Title:  
**SIGNAGE PLAN**

Scale: 1/8" = 1'-0"  
Proj. No: 2024-001  
Date: MAY 1, 2024  
Drawn By: CA  
Checked By: KS  
Code: 24025  
Drawing No:





DETAIL - 1"=1'-0"

SIGN PANEL

- 1 Satin Aluminum slot 1/8" x 1/2"
- 2 3M Opaque White 7725-10 Vinyl Letters
- 3 Satin Aluminum U-Channel 3/8" x 1/2"
- 4 Matthews Paint MP3066 Coy Grey (Check with Sample) with 3M 180C-211 Cutout Vinyl Arrow

INSTALLATION

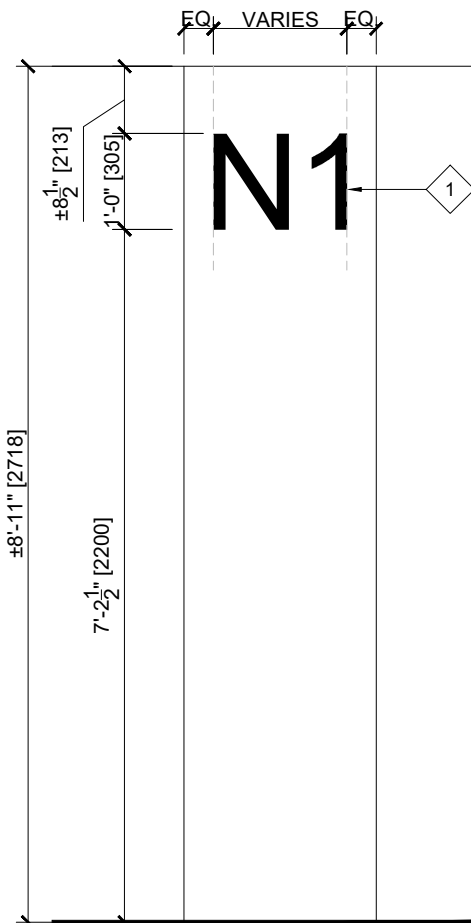
- 5 29" AFF., align to the centre of elevator and buttons.

FONT

Helvetica Regular,, Size: 100.8pt, Spacing: Auto, Kerning: Opt

NOTES

Text and layout to be based on City of Toronto Standards and confirmed by tenant.



ELEVATION - 1/2"=1'-0"

GRAPHICS

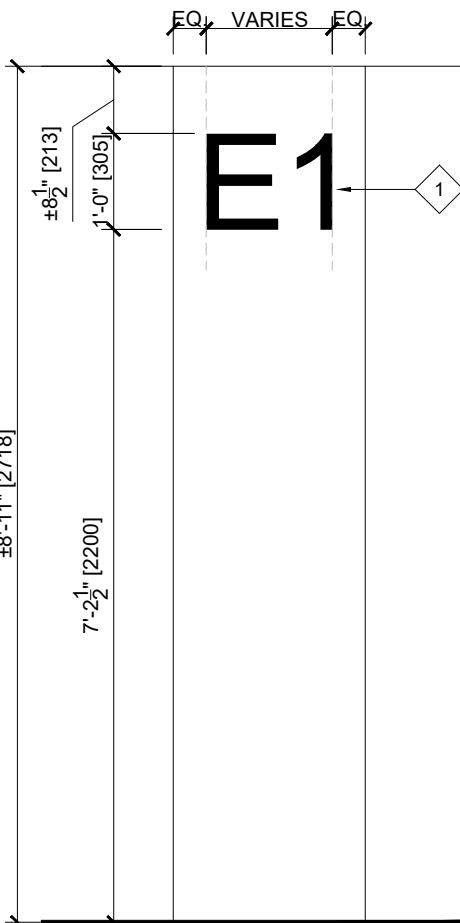
- 1 3m 180c OPAQUE VINYL CUTOUT LETTERS TO MATCH 2ND FLOOR. COLOUR: 211 CHARCOAL METALLIC TO MATCH 2ND FLOOR.

INSTALLATION

- 2 APPLY DIRECTLY TO PERIMETER COLUMN / WALL WHERE INDICATED.

NOTES

Refer to Signage Plan for area number at each location.



ELEVATION - 1/2"=1'-0"

GRAPHICS

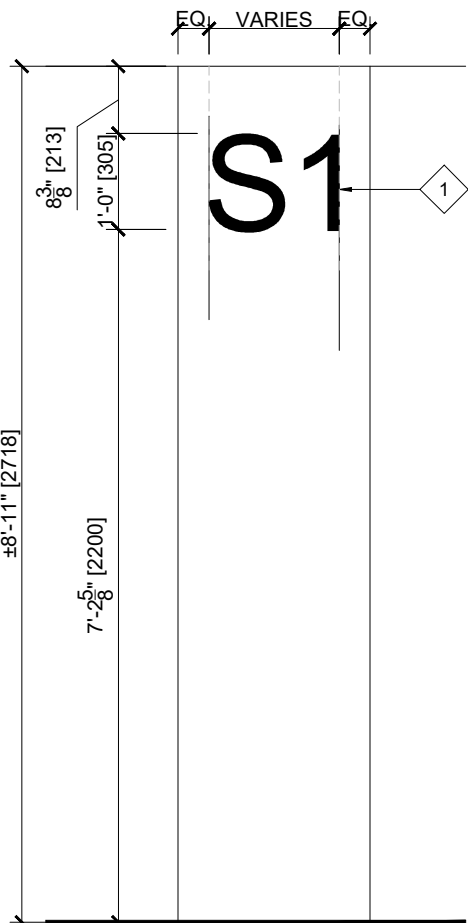
- 1 3m 180c OPAQUE VINYL CUTOUT LETTERS TO MATCH 2ND FLOOR. COLOUR: BLUE TO MATCH 2ND FLOOR.

INSTALLATION

- 2 APPLY DIRECTLY TO PERIMETER COLUMN / WALL WHERE INDICATED.

NOTES

Refer to Signage Plan for area number at each location.



ELEVATION - 1/2"=1'-0"

GRAPHICS

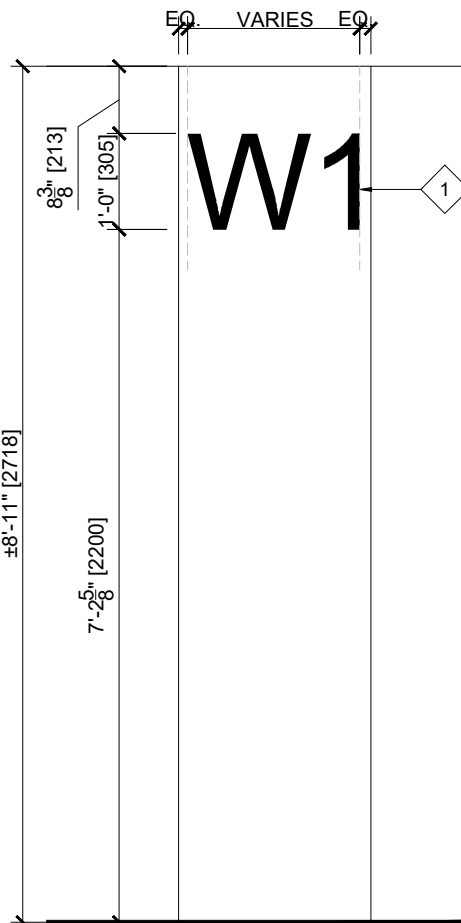
- 1 3m 180c OPAQUE VINYL CUTOUT LETTERS TO MATCH 2ND FLOOR. COLOUR: RED TO MATCH 2ND FLOOR.

INSTALLATION

- 2 APPLY DIRECTLY TO PERIMETER COLUMN / WALL WHERE INDICATED.

NOTES

Refer to Signage Plan for area number at each location.



ELEVATION - 1/2"=1'-0"

GRAPHICS

- 1 3m 180c OPAQUE VINYL CUTOUT LETTERS TO MATCH 2ND FLOOR. COLOUR: GREEN TO MATCH 2ND FLOOR.

INSTALLATION

- 2 APPLY DIRECTLY TO PERIMETER COLUMN / WALL WHERE INDICATED.

NOTES

Refer to Signage Plan for area number at each location.

SIGN TYPE: C2 - ELEVATOR LOBBY DIRECTORIES - FRENCH AND ENGLISH

SIGN TYPE: A-NX - AREA SIGNAGE

SIGN TYPE: A-EX - AREA SIGNAGE

SIGN TYPE: A-SX - AREA SIGNAGE

SIGN TYPE: A-WX - AREA SIGNAGE

infrastructure  
interior design  
73A Mutual Street  
Toronto, Ontario M5B 2A9  
T: 416-217-0525  
mail@infra-structure.com

NOTES:

- DO NOT SCALE DRAWINGS.
- MATERIALS MAY NOT BE SUBSTITUTED WITHOUT DESIGNER'S WRITTEN APPROVAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL SPECIFICATIONS AND DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO INFRASTRUCTURE INTERIOR DESIGN LTD. PRIOR TO CONSTRUCTION.
- ALL DRAWINGS ARE PROPERTY OF INFRASTRUCTURE INTERIOR DESIGN LTD. THEY ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS (ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND/OR ELECTRICAL) AS ISSUED AS THIS PROJECT'S DOCUMENTATION.



Corporate Real Estate Management  
Project Management Office  
Metro Hall, Toronto, ON  
M5V 3C6



The undersigned has reviewed and takes responsibility for this design, and for the qualifications and design the requirements set out in the Ontario Building Code.		
QUALIFICATION INFORMATION		
Required unless design is exempt under 2.17.3.1 of the building code		
KELLY STOBBE	2405	
NAME	SIGNATURE	CONVECTION
REGISTRATION INFORMATION		
Required unless design is exempt under 2.17.3.1 of the building code		
INFRASTRUCTURE	2405	
PRO NAME	CONVECTION	

2.	ADDENDUM 03	24.08.09
1.	RE-ISSUE TENDER	24.07.31
NO.	ISSUED	YY.MM.DD

Client:

CITY OF TORONTO  
CYBER COMMAND CENTRE  
55 JOHN STREET  
12TH FLOOR  
TORONTO, ONTARIO  
M5V 3C6

Drawing Title:

SIGNAGE DETAILS

Scale: AS NOTED

Proj. No: 2024-001

Date: MAY 1, 2024

Drawn By: CA

Checked By: KS

Code: 24025

Drawing No:

ID1.12

ARCH E1 - 30x42

Metro Hall - 12th Floor

Program element

Office Floor

Title:	Forensics	Program number	
Number of rooms	1	Room number	1260

Geometry			
Area	148 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input checked="" type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Slab door, solid core, paint grade
STC:	<input type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: A
<input type="checkbox"/> Facade	Type:	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type:	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type: Static Dissipative VCT		STC:
STC (drywall partition): 55	Type:		<input type="checkbox"/> Special		

Millwork description			
N/A			

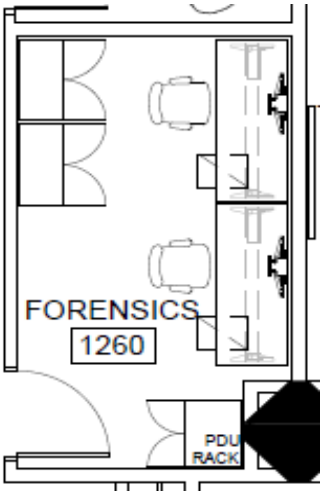
Architectural - Equipment			
2x height adjustable workstations 30x72; 2x storage cabinets; 1x PDU rack			

Architectural - General Comments			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input checked="" type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Dignitaries Room	Program number	
Number of rooms	1	Room number	1202

Geometry			
Area	768 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input checked="" type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: B
<input checked="" type="checkbox"/> Facade	Type: WP2	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	Glass
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition): 55			<input type="checkbox"/> Special		

Millwork description			
N/A			

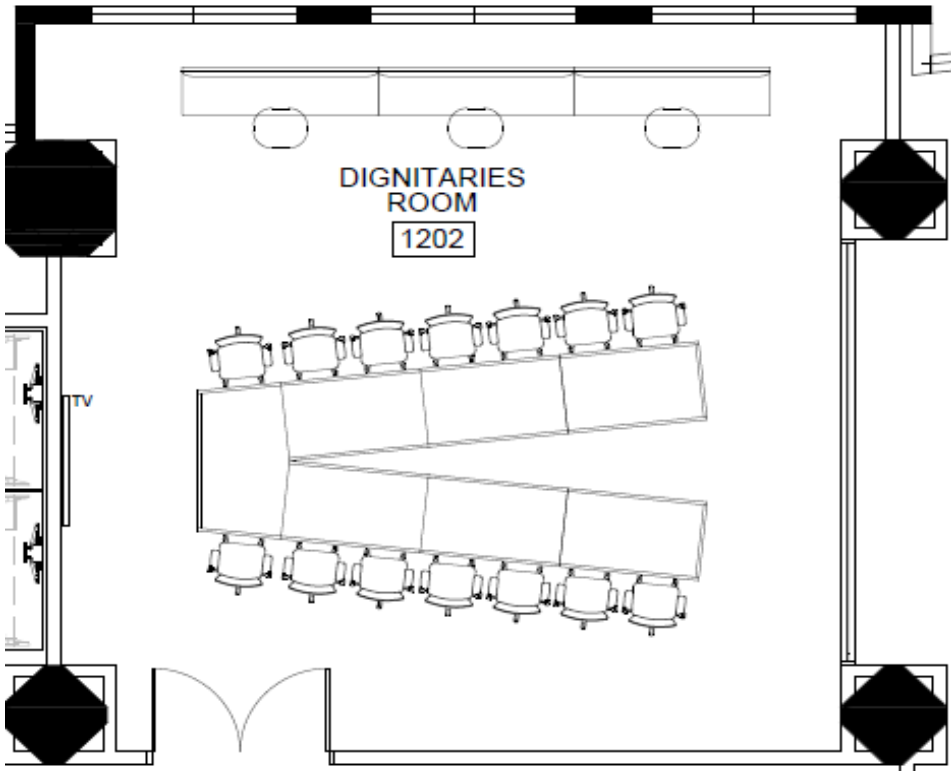
Architectural - Equipment			
V' shape meeting table (wood laminate finish); 3x benches with laptop tables			

Architectural - General Comments			
Roller shades, smart film			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Connectrac with power/data/AV under the table. 2. Suspended linear light fixtures over boardroom table. 3. Recess single gimble fixtures around perimeter of room. 4. 75" wall mounted monitor.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input checked="" type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	
	<input type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	
	<input type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input checked="" type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input checked="" type="checkbox"/> Video Conferencing	
<input checked="" type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	





Metro Hall - 12th Floor

Program element

Office Floor

Title:	SOC	Program number	
Number of rooms	1	Room number	1209

Geometry			
Area	892 SF	Room height	+/-11'-1"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input checked="" type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type:	
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: A
<input checked="" type="checkbox"/> Facade	Type: WP3	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	Slab door, solid core, paint grade
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input checked="" type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input checked="" type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition): 55		<input type="checkbox"/> Special			

Millwork description			
N/A			

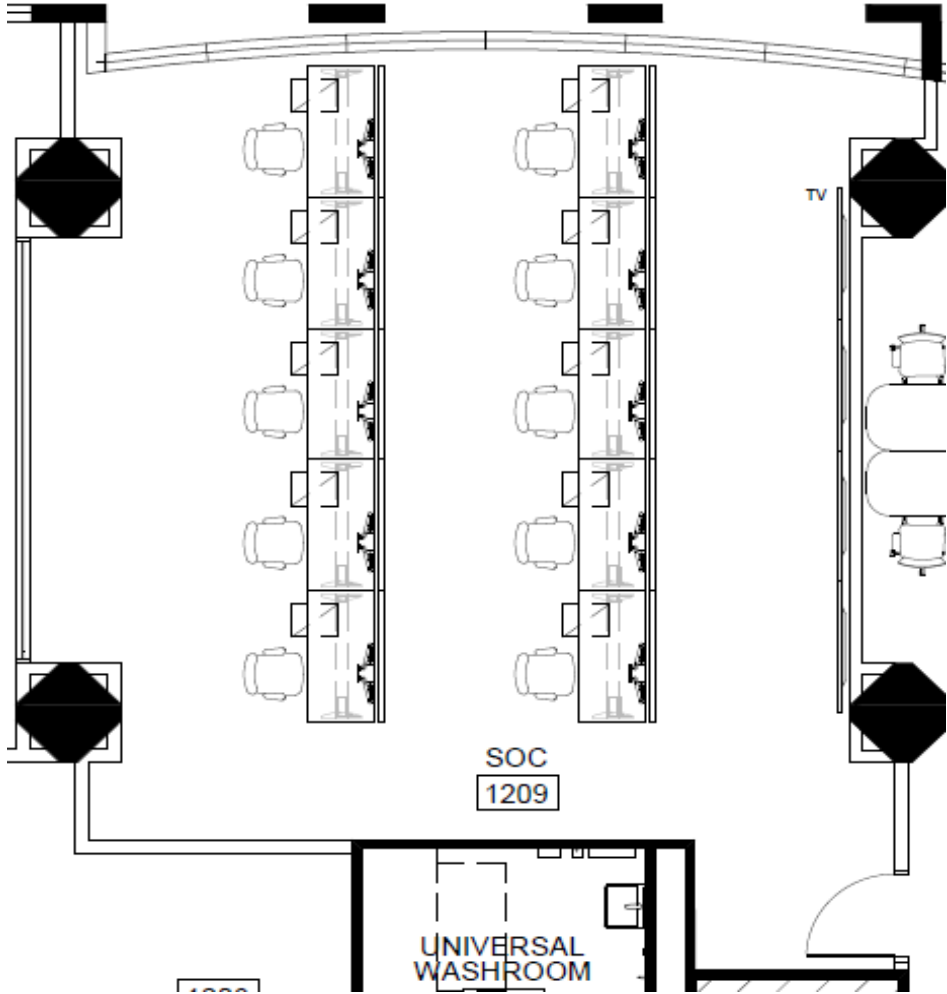
Architectural - Equipment			
10x height adjustable workstations 30x60 with low panels			

Architectural - General Comments			
Roller shades, smart film			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input checked="" type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input checked="" type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Wiremold with power/data for furniture feed. 2. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density. 3. Suspended linear light fixtured. 4. 8x 65" wall mounted monitors.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input checked="" type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	
	<input type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	
	<input type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input checked="" type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input checked="" type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input checked="" type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Unassigned Focus/Meeting Room (3P)	Program number	
Number of rooms	4	Room number	1232, 1233, 1234, 1255

Geometry			
Area	118 SF, 118 SF, 118 SF, 112 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding door
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input type="checkbox"/> Facade	Type: WP1	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C2	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition room to room): 50			<input type="checkbox"/> Special		
STC (drywall partition room to corridor): 45					
STC (drywall partition focus room to lunch room): 55					

Millwork description	
N/A	

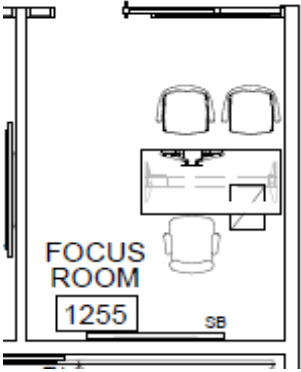
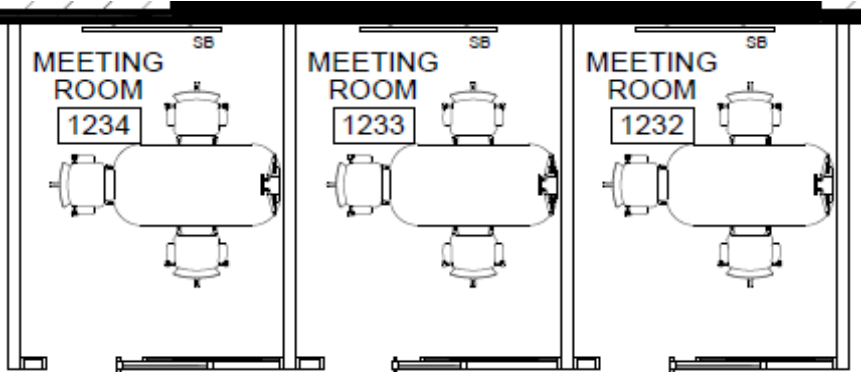
Architectural - Equipment	
1x height adjustable workstations 30x72 or meeting table	

Architectural - General Comments	

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat (varies)	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 3 duplex receptacles, 1 data drop at work wall. 2. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density. 3. Suspended linear light fixtures.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input checked="" type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Wellness Room	Program number	
Number of rooms	1	Room number	1241

Geometry			
Area	113 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input checked="" type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: A
<input type="checkbox"/> Facade	Type: WP2	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	Slab door, solid core, paint grade
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input checked="" type="checkbox"/> Special		Type:		STC:
STC (drywall partition room to elevator lobby): 55 STC (drywall partition room to corridor): 45	Wall graphic WG3		<input type="checkbox"/> Special		

Millwork description					
N/A					

Architectural - Equipment					
Sofa and side table					
Architectural - General Comments					

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Suspended linear light fixtures.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Meeting Room - Small (4P)	Program number	
Number of rooms	2	Room number	1226, 1239

Geometry			
Area	185 SF, 185 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding door
STC:	<input type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input type="checkbox"/> Facade	Type: WP2	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C3	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition): 45			<input type="checkbox"/> Special		

Millwork description	
N/A	

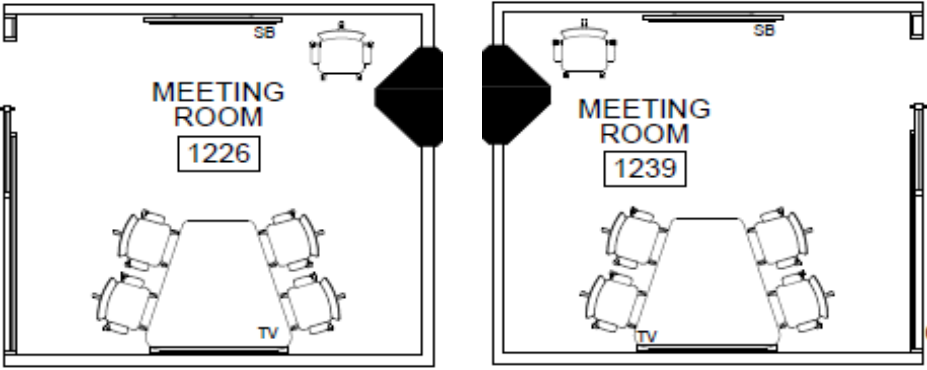
Architectural - Equipment	
Video converence trapezoidal shaped meeting table	

Architectural - General Comments	

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	2. 2 duplex receptacles, 2 data drops, 1 AV with grommet on wall below table.
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	3. Wall mounted convenience duplex receptacles.
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard.
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	This would provide an adequate light level while meeting sustainability requirements on lighting power density.
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input checked="" type="checkbox"/> Television/Monitor	5. Suspended linear light fixtures and recessed single gimble fixtures around perimeter of room.
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	6. 75" wall mounted monitor.
<input checked="" type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input checked="" type="checkbox"/> Video Conferencing	
<input checked="" type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input checked="" type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Meeting Room - Medium (6P)	Program number	
Number of rooms	3	Room number	1236, 1246, 1254
Geometry			
Area	215 SF, 160 SF, 162 SF	Room height	+/-8'-11"
Room description			

Architecture

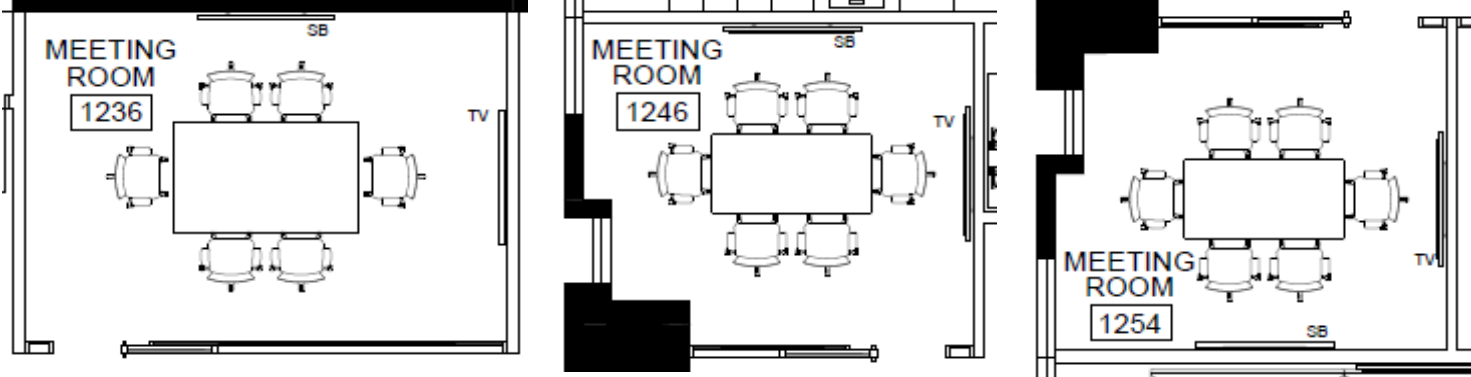
Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding door
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input checked="" type="checkbox"/> Facade	Type: WP2	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C3	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition meeting room to elevator lobby): 55 STC (drywall partition room to corridor): 45 STC (drywall partition meeting room to focus room): 50 STC (drywall partition meeting room to lunch room): 55			<input type="checkbox"/> Special		

Millwork description
N/A
Architectural - Equipment
Rectangular 6 person meeting table, size to suit room
Architectural - General Comments
Roller shades for Meeting Room 1254

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	2. 2 duplex receptacles, 2 data drops, 1 AV with grommet in Connectrac under the table.
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	3. Wall mounted convenience duplex receptacles.
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density.
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	5. Suspended linear light fixtures and recessed single gimble fixtures around perimeter of room.
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input checked="" type="checkbox"/> Television/Monitor	6. 75" wall mounted monitor.
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input checked="" type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input checked="" type="checkbox"/> Video Conferencing	
<input checked="" type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input checked="" type="checkbox"/> Smart Board	





Metro Hall - 12th Floor

Program element

Office Floor

Title:	Meeting Room - Large (10P)	Program number	
Number of rooms	3	Room number	1212, 1249, 1257

Geometry			
Area	314 SF, 265 SF, 266 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding door
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input type="checkbox"/> Facade	Type: WP2	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C3	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	
	<input type="checkbox"/> Special		Type:		STC:
STC (drywall partition): 55			<input type="checkbox"/> Special		

Millwork description			
N/A			

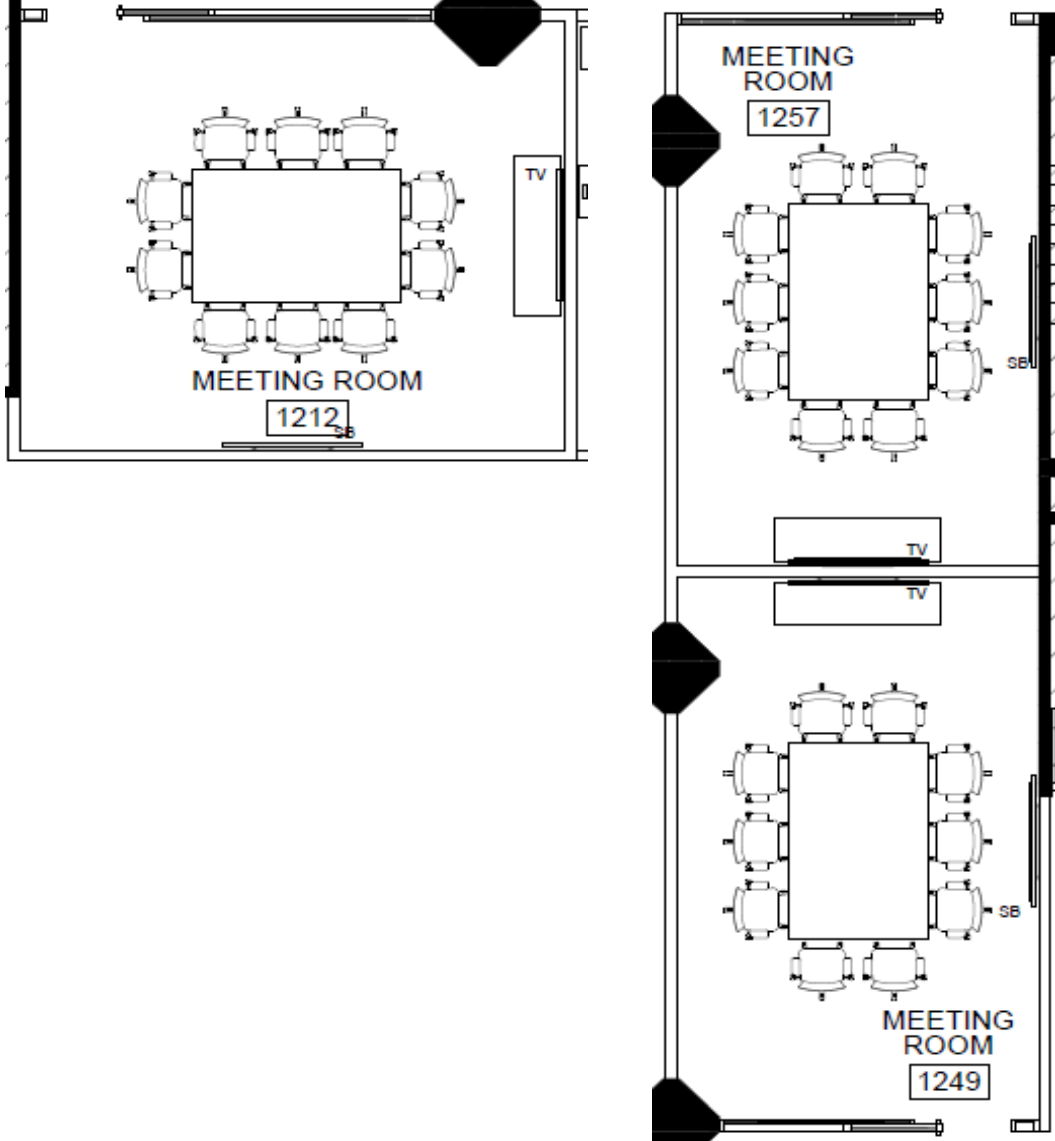
Architectural - Equipment			
Rectangular 10 person meeting table, size to suit room; credenza			

Architectural - General Comments			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	2. 2 duplex receptacles, 2 data drops, 1 AV with grommet in Connectrac under the table.
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	3. Wall mounted convenience duplex receptacles.
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard.
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	This would provide an adequate light level while meeting sustainability requirements on lighting power density.
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	5. Suspended linear light fixtures and recessed single gimble fixtures around perimeter of room.
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	6. 75" wall mounted monitor.
<input checked="" type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input checked="" type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input checked="" type="checkbox"/> Room Booking Device	
			<input checked="" type="checkbox"/> Smart Board	



# Metro Hall - 12th Floor

Program element

## Office Floor

Title:	Individual Focus Room	Program number	
Number of rooms	2	Room number	1219, 1220

Geometry			
Area	135 SF, 135 SF	Room height	+/-8'-11"

Room description			

## Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding door
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input type="checkbox"/> Facade	Type: WP1	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C2	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input type="checkbox"/> Special		Type:		
STC (drywall partition): 50			<input type="checkbox"/> Special		

Millwork description			

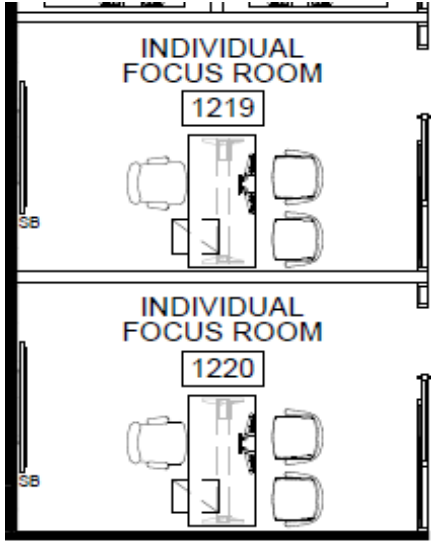
Architectural - Equipment			
1x height adjustable workstation 30x72; guest chairs			

Architectural - General Comments			

## Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat (Varies)	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall. 2. 2 duplex receptacles, 2 data drops, 1 AV with grommet in flush floor box under the table. 3. Wall mounted convenience duplex receptacles. 4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density. 5. Suspended linear light fixtures.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input checked="" type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input checked="" type="checkbox"/> A/V Input/Output Connections	
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input checked="" type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Focus Room	Program number	
Number of rooms	6	Room number	1217, 1218, 1227, 1228, 1229, 1248

Geometry			
Area	66 SF, 66 SF, 62 SF, 62 SF, 62 SF, 66 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input checked="" type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	Glass sliding Door
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C, D
<input type="checkbox"/> Facade	Type: WP1	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C2	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input type="checkbox"/> Special		Type:		
STC (drywall partition focus room to focus or meeting room): 50 STC (drywall partition room to corridor): 45 STC (drywall partition focus room to lunch room): 55			<input type="checkbox"/> Special		

Millwork description	
N/A	

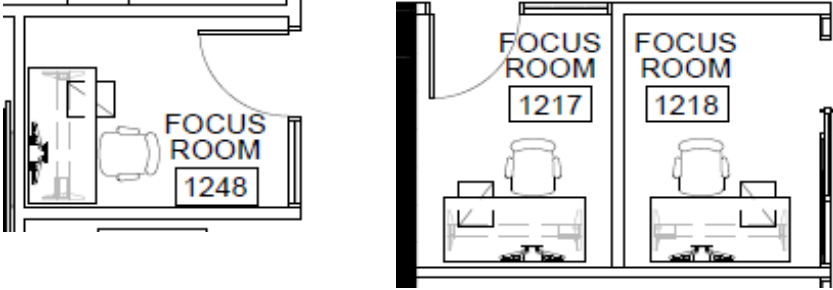
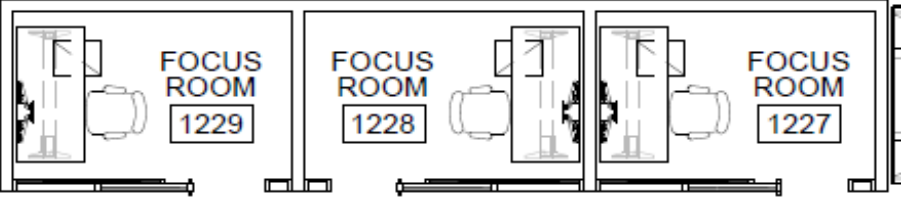
Architectural - Equipment	
1x height adjustable workstation 30x72	

Architectural - General Comments	

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat (Varies)	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input checked="" type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall. 2. 2 duplex receptacles, 2 data drops, 1 AV with grommet in flush floor box under the table. 3. Wall mounted convenience duplex receptacles. 4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density. 5. Suspended drum light fixture.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	





Metro Hall - 12th Floor

Program element

Office Floor

Title:	Phone Room	Program number	
Number of rooms	1	Room number	1261

Geometry			
Area	55 SF	Room height	+/-8'-11"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input checked="" type="checkbox"/> Ceiling System	<input checked="" type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input checked="" type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type: C10	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: C08	
STC:	<input checked="" type="checkbox"/> Wall panels, acoustic	<input type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: D
<input checked="" type="checkbox"/> Facade	Type: WP1	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1, C2	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input type="checkbox"/> Special		Type:		
STC (drywall partition): 55			<input type="checkbox"/> Special		

Millwork description			
N/A			

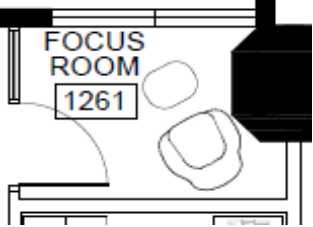
Architectural - Equipment			
Lounge chair and laptop table			

Architectural - General Comments			
Roller shades			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input checked="" type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. 2 duplex receptacles, 2 data drops, 1 AV with HDMI above table on AV wall. 2. 2 duplex receptacles, 2 data drops, 1 AV with grommet in flush floor box under the table. 3. Wall mounted convenience duplex receptacles. 4. We recommend average maintained light level be 350 lux with good uniformity instead of 500 lux required by ModernTO standard. This would provide an adequate light level while meeting sustainability requirements on lighting power density. 5. Suspended drum light fixture.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Lunch Room	Program number	
Number of rooms	1	Room number	1250

Geometry			
Area	687 SF	Room height	+/-11'-1"

Room description			

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input type="checkbox"/> Ceiling System, acoustic	<input checked="" type="checkbox"/> Special
<input checked="" type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type:	Glass sliding door
STC:	<input type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type: C
<input checked="" type="checkbox"/> Facade	Type:	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input checked="" type="checkbox"/> Tile		<input type="checkbox"/> Carpet	<input checked="" type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type: Ceramic wall tile		Type:	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input checked="" type="checkbox"/> Resilient	<input checked="" type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input checked="" type="checkbox"/> Special		Type: LV1		
STC (drywall partition): 55	barnboard		<input type="checkbox"/> Special		

Millwork description			
P.lam uppers and lowers w/ stone countertop and microwave tower. Combination of standard and accessible height lower units. Pull out refuse bins.			

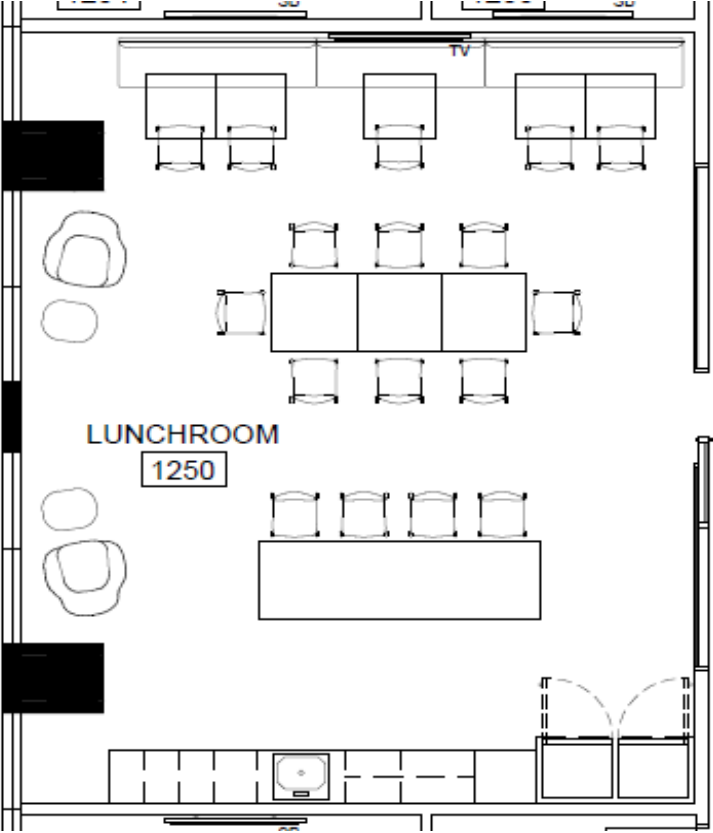
Architectural - Equipment			
Counter height island with stools; square tables and chairs; banquettes; lounge chairs and laptop tables; all fridge, fridge / freezer combo, dishwasher, microwave			

Architectural - General Comments			
Roller shades			

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input checked="" type="checkbox"/> Upright Head	<input checked="" type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input checked="" type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input checked="" type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input checked="" type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Convenience receptacles.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input checked="" type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	2. Power for appliances.
	<input type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	3. Suspended linear light fixtures; suspended accent pendant fixtures.
	<input checked="" type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	4. 75" wall mounted monitor.
Communications	<input checked="" type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input checked="" type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input checked="" type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input checked="" type="checkbox"/> CATV Outlet(s)			<input checked="" type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



# Metro Hall - 12th Floor

Program element

## Office Floor

Title:	Copy/Servery	Program number	
Number of rooms	1	Room number	1213

Geometry			
Area	188 SF	Room height	+/-8'-11"

Room description			

## Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	
STC:	<input type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type:
<input type="checkbox"/> Facade	Type:	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input type="checkbox"/> Open to surroundings	<input checked="" type="checkbox"/> Tile		<input type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type: X		Type:	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input type="checkbox"/> Special		Type: LV1		
STC: N/A			<input type="checkbox"/> Special		

Millwork description			
P.lam uppers and lowers w/ stone countertop and undercounter fridge. Combination of standard and accessible height lower units. Pull out refuse bins.			

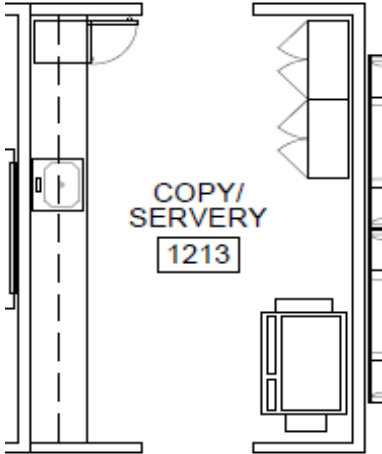
Architectural - Equipment			
2x storage cabinets; copier; bulletin board			

Architectural - General Comments			

## Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input checked="" type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input checked="" type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input checked="" type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input checked="" type="checkbox"/> Duplex Receptacle(s), Normal	<input checked="" type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Convenience receptacles. 2. Power for appliances. 3. Undercounter fridge and copier.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input checked="" type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input checked="" type="checkbox"/> Data Outlet(s)	<input checked="" type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input checked="" type="checkbox"/> Analog Phone(s)	<input type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	



Metro Hall - 12th Floor

Program element

Office Floor

Title:	Copy/Print	Program number	
Number of rooms	1	Room number	1247

Geometry			
Area	49 SF	Room height	+/-8'-11"

Room description

Architecture

Architectural - Room finishes					
Wall Construction	Wall finishes	Wall Base	Floor Finish	Ceiling	Doors
<input checked="" type="checkbox"/> Gypsum Board/Metal studs	<input checked="" type="checkbox"/> Paint	<input type="checkbox"/> Wood flush	<input type="checkbox"/> Terrazzo	<input type="checkbox"/> Ceiling System	<input type="checkbox"/> Single door
<input type="checkbox"/> Concrete Block	<input type="checkbox"/> Epoxy paint	<input type="checkbox"/> Wood standard	<input type="checkbox"/> Sealed Concrete	Type:	<input type="checkbox"/> Double Door
<input type="checkbox"/> Movable partition	<input type="checkbox"/> Wall panels	<input type="checkbox"/> Tile cove	<input type="checkbox"/> Wood	<input checked="" type="checkbox"/> Ceiling System, acoustic	<input type="checkbox"/> Special
<input type="checkbox"/> Glass	Type:	<input type="checkbox"/> Metal cove	Type:	Type: ACT	
STC:	<input type="checkbox"/> Wall panels, acoustic	<input checked="" type="checkbox"/> Resilient	<input type="checkbox"/> Tile	<input type="checkbox"/> Gypsum wall board	Type:
<input type="checkbox"/> Facade	Type:	<input type="checkbox"/> None	Type:	<input type="checkbox"/> Concrete	
<input checked="" type="checkbox"/> Open to surroundings	<input type="checkbox"/> Tile		<input checked="" type="checkbox"/> Carpet	<input type="checkbox"/> Exposed	Refer to door schedule
<input type="checkbox"/> Special	Type:		Type: C1	<input type="checkbox"/> Special	
	<input type="checkbox"/> Exposed		<input type="checkbox"/> Resilient	<input type="checkbox"/> Ceiling Panel, acoustic	STC:
	<input type="checkbox"/> Special		Type:		
STC: Refer to adjacent rooms			<input type="checkbox"/> Special		

Millwork description
N/A

Architectural - Equipment
Copier

Architectural - General Comments
Bulletin board wall mounted.

Engineering Systems

Mechanical				
HVAC	Sprinkler	Plumbing fixtures		Mechanical Comments
<input type="checkbox"/> Thermostat	<input type="checkbox"/> Upright Head	<input type="checkbox"/> Sink		
<input type="checkbox"/> Cooling - 75F +/- 1F 50-60% RH	<input type="checkbox"/> Concealed Head	<input type="checkbox"/> Manual Faucet		
<input type="checkbox"/> Heating - 70F +/- 1F	<input type="checkbox"/> High Temperature Head	<input type="checkbox"/> Lavatory Hands Free Battery		
<input type="checkbox"/> Humidification - 25-30% RH	<input type="checkbox"/> Corrosion Resistant	<input type="checkbox"/> Shower		
<input type="checkbox"/> Chilled Beam	<input type="checkbox"/> Steel Piping	<input type="checkbox"/> Dishwasher		
<input type="checkbox"/> Overhead Supply Air	<input type="checkbox"/> Galvanized Piping	<input type="checkbox"/> Floor Drain(s)		
<input type="checkbox"/> Ventilation	<input type="checkbox"/> Wet Sprinklers	<input type="checkbox"/> Cold Hose Bibb		
<input type="checkbox"/> Exhaust	<input type="checkbox"/> Dry Sprinklers	<input type="checkbox"/> Hot Hose Bibb		
<input type="checkbox"/> Spiral Ductwork	<input type="checkbox"/> Preaction Sprinklers	<input type="checkbox"/> Other:		
<input type="checkbox"/> Other:	<input type="checkbox"/> Gas Fire Supression			

Electrical				
Power	Lighting	Security	Audio Visual	Electrical Comments
<input type="checkbox"/> Duplex Receptacle(s), Normal	<input type="checkbox"/> LED	<input type="checkbox"/> Video Surveillance	<input type="checkbox"/> Audio Speakers	1. Convenience receptacles. 2. Power for copier.
<input type="checkbox"/> Duplex Receptacle(s), Emergency	<input type="checkbox"/> Task/Under Cabinet	<input type="checkbox"/> Access Control	<input type="checkbox"/> A/V Control Interface	
	<input type="checkbox"/> Occupancy Sensor	<input type="checkbox"/> Panic Button	<input type="checkbox"/> A/V Input/Output Connections	
	<input type="checkbox"/> Wall Switch	<input type="checkbox"/> Door Monitoring	<input type="checkbox"/> Projection Screen	
Communications	<input type="checkbox"/> Dimmable	<input type="checkbox"/> Intrusion Detection	<input type="checkbox"/> Projector	
<input type="checkbox"/> Data Outlet(s)	<input type="checkbox"/> Direct	<input type="checkbox"/> Intercom Station	<input type="checkbox"/> Television/Monitor	
<input type="checkbox"/> Analog Phone(s)	<input checked="" type="checkbox"/> In-Direct		<input type="checkbox"/> Microphone	
<input type="checkbox"/> VoIP Phone(s)	<input type="checkbox"/> Lighting Controls (Including Dimming) via Crestron Unit		<input type="checkbox"/> Video Conferencing	
<input type="checkbox"/> CATV Outlet(s)			<input type="checkbox"/> Sound Masking	
			<input type="checkbox"/> Room Booking Device	
			<input type="checkbox"/> Smart Board	

