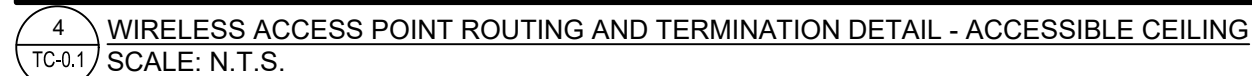




1. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS, HEIGHTS, PARTITION TYPES, CEILING TYPES, CONSTRUCTION DETAILING, MOUNTING DETAILS, FINISHES, AND COLOURS.
2. WHILE EVERY ATTEMPT HAS BEEN MADE TO ENSURE ALL INFORMATION IS CORRECT AND THAT THE PUBLICATION, THE PRODUCTS SPECIFIED ARE AVAILABLE AND THAT THE PART NUMBER IDENTIFIED ARE CORRECT, IT IS THE RESPONSIBILITY OF THE COMMUNICATIONS CONTRACTOR TO VERIFY ALL PART NUMBERS AND TO REPORT ANY OMISSIONS AND/OR OMISSIONS IN THE DRAWINGS AND SPECIFICATIONS WITH THEIR BID SUBMISSION.
3. ALL ITEMS BY COMMUNICATIONS CONTRACTOR UNLESS OTHERWISE NOTED.
4. REVIEW ALL PROJECT RELATED ARCHITECTURAL, MECHANICAL, ELECTRICAL, SECURITY AND AV DRAWINGS AND SPECIFICATIONS, DISCERN AND COORDINATE ALL OVERLAPPING WORK WITH COMMUNICATIONS SYSTEMS TO AVOID COLLISIONS AND CONFLICTS OF DEVICES.
5. DEVICES SHALL NOT BE INSTALLED IN WALL AREAS THAT ARE DESIGNATED TO HAVE MARKER BOARD, FABRIC PANELS, OR ACCENT FINISHES/DETAIL UNLESS INDICATED SPECIFICALLY ON AN ELEVATED DRAWING.
6. DEVICES SHALL NOT BE INSTALLED ABOVE ANY FURNITURE - AND SHALL BE LOCATED WHERE THERE IS ADEQUATE ACCESS FOR USE UNLESS INDICATED SPECIFICALLY ON AN ELEVATED DRAWING.
7. INFORM THE ENGINEER'S REPRESENTATIVE AND GENERAL CONTRACTOR OF ALL DEVICE AND FURNITURE CONFLICTS PRIOR TO INSTALLATION. OBTAIN PERMISSION TO DEVIATE FROM FURNITURE CONFLICTS FROM THE ENGINEER'S REPRESENTATIVE PRIOR TO INSTALLATION.



NOTE: NOT ALL SYMBOLS APPLY. CONTRACTOR TO REFER TO FLOOR PLANS

TC-0.1

NAME: TONY SANTAGUIDA
TEL: 647-943-0263
EMAIL: tony.santaguida@smithandandersen.com

1100 - 100 Sheppard Ave. East, Toronto On, M2N 6N5
416 487 8151 f 416 487 9104 smithandandersen.com

Central York Firehall 4-1 Interior Renovations
984 Gorham Street
Newmarket, Ontario

COMMUNICATIONS TELECOM
ROOM DETAILS

SCALE: AS SHOWN

CHECKED BY: TS

SHEET NUMBER: TC-0.2



1. THIS DOCUMENT SPECIFIES THE USE OF AN END TO END STRUCTURED CABLING SOLUTION AS MANUFACTURED, WARRANTED, AND CERTIFIED BY A SINGLE MANUFACTURER. THE ACCEPTABLE MANUFACTURERS ARE AS FOLLOWS: **Belden, ComScope, Panduit, or Hubbell**. NO SUBSTITUTION IS ALLOWED. WORK DONE UNDER THIS SECTION SHALL INCLUDE FURNISHING OF FABRIC, MATERIALS, AND EQUIPMENT REQUIRED FOR INSTALLATION, TESTING, AND PUTTING INTO PROPER OPERATION A COMPLETE COMMUNICATIONS SYSTEMS AS SHOWN, AS SPECIFIED AND AS OTHERWISE REQUIRED.
2. WHILE EVERY ATTEMPT HAS BEEN MADE TO ENSURE ALL INFORMATION IS CORRECT AT THE TIME OF PUBLICATION, THE PRODUCTS SPECIFIED ARE AVAILABLE, AND THAT THE PART NUMBERS IDENTIFIED ARE CORRECT, IT IS THE RESPONSIBILITY OF THE COMMUNICATIONS CONTRACTOR TO VERIFY ALL PART NUMBERS AND TO REPORT AND ERRORS AND/OR OMISSIONS IN THE DRAWINGS AND SPECIFICATIONS WITH THEIR BID SUBMISSIONS.
3. THE COMMUNICATIONS CONTRACTOR SHALL SUPPLY AND INSTALL A COMPLETE STRUCTURED CABLING SOLUTION BASED ON A PHYSICAL STAR WIRING TOPOLOGY THAT IS DESIGNED IN ACCORDANCE WITH, AND SUPPORTED BY A MANUFACTURER BACKED CERTIFICATION AND WARRANTY AS SPECIFIED HEREIN.
4. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO BE ON SITE DURING EACH PHASE/MOVE. THEY SHOULD PROVIDE FOR EIGHT (8) HOURS SUPPORT ON EACH OF THE PHASES/MOVES ON WEEKENDS. THE COMMUNICATIONS CONTRACTOR SHALL INCLUDE IN THEIR BID ALL NECESSARY ALLOWANCES FOR OVERTIME WORK AFTER REGULAR HOURS AND/OR WEEKENDS AS DICTATED BY THE PROJECT SCHEDULE.
5. THE COMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR THE ASSEMBLY OF THE COMMUNICATIONS SYSTEM AND PROTECTION OF THE MATERIAL AND EQUIPMENT AND RELATED ITEMS UNTIL PROJECT CUT OVER. ANY DAMAGE TO MATERIALS AND EQUIPMENT SHALL BE THE LIABILITY OF THE COMMUNICATIONS CONTRACTOR. ALL DAMAGE SHALL BE REPAIRED OR AT THE CLIENT'S REQUEST, THE EQUIPMENT SHALL BE REPLACED AT NO EXTRA CHARGE TO THE CLIENT.
6. PROVIDE EQUIPMENT, MATERIALS, AND LABOUR NOT SPECIFICALLY MENTIONED OR SHOWN WHICH MAY BE NECESSARY TO PERFECT ALL PARTS OF THIS INSTALLATION AND IN COMPLIANCE WITH REQUIREMENTS STATED OR REASONABLY INFERRED BY THE CONTRACT DOCUMENTS.
7. PRIOR TO SUBMITTING THEIR TENDER RESPONSE, THE COMMUNICATIONS CONTRACTOR SHALL PERFORM A SITE SURVEY TO FAMILIARIZE THEMSELVES WITH THE SITE AND THE CONDITIONS OF THE SITE AFFECTED BY THE PROPOSED WORK. NO CLAIMS OR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO DO SO.

- 2.1. THIS PROJECT CONSISTS OF THE SUPPLY AND INSTALLATION OF AN END TO END STRUCTURED CABLING SOLUTION TO SUPPORT DATA APPLICATIONS. THIS SOLUTION SHALL BE INSTALLED, TESTED AND WARRANTED TO A UTP STANDARD CONSISTENT WITH THE GRADE OF CABLE BEING PROVIDED AS DETAILED IN ANSI/TIA-568-C.0, 568-C.1, 568-C.2, AND 568-C.3.
- 2.2. THE COMMUNICATIONS CONTRACTOR IS RESPONSIBLE TO KEEP THE WORKPLACE CLEAN, SAFE, AND FREE FROM ALL DEBRIS. ALL DEBRIS MUST BE REMOVED ON A DAILY BASIS.
- 2.3. THE COMMUNICATIONS CONTRACTOR IS RESPONSIBLE FOR THE STORAGE, HANDLING, DELIVERY AND INSTALLATION OF ALL MATERIALS USED IN THE PERFORMANCE OF THE WORK.
- 2.4. ALL CABLE PAIRS MUST BE TERMINATED AT EACH END USING EIA/TIA T568A, UNLESS OTHERWISE SPECIFIED.
- 2.5. THE CABLE LENGTH TO THE FARTHEST WORK AREA FROM THE I.T. CLOSET WILL BE LIMITED TO 90 METERS (295 FEET). COMMUNICATIONS CONTRACTOR TO PROVIDE A 10 FOOT SERVICE LOOP ON ALL CABLES AT EACH END UNLESS OTHERWISE NOTED. IT IS THE RESPONSIBILITY OF THE COMMUNICATIONS CONTRACTOR TO NOTIFY THE COMMUNICATION ENGINEER'S REPRESENTATIVE IMMEDIATELY UPON DISCOVERY OF ANY CABLE RUN EXCEEDING 90 METERS (295 FEET).

3.1. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING REGULAR HOURS.

3.1.1. ADD _____ DELETE _____

3.2. COMMUNICATIONS CONTRACTOR TO PROVIDE A UNIT PRICE TO SUPPLY AND INSTALL ONE (1) CABLE C/W PERIPHERALS FOR COMPLETE CONNECTIVITY, TERMINATED, TESTED AND LABELED. COMMUNICATIONS CONTRACTOR TO ASSUME THAT CABLE LENGTHS WILL BE APPROXIMATELY 250 FEET AND THAT WORK WILL BE DONE DURING AFTER HOURS.

3.2.1. ADD _____ DELETE _____

- 4.1. THE COMMUNICATIONS CONTRACTOR SHALL SUPPLY HORIZONTAL CABLING AS REQUIRED BY THE CONTRACT DOCUMENTS. THE COMMUNICATIONS CONTRACTOR SHALL USE PATHWAYS (BY DIVISION 16) TO DISTRIBUTE THE CABLES THROUGHOUT THE FACILITY. WHERE THE CABLES LEAVE THE PATHWAYS AND EXTEND TO THE TERMINATION POINT THEY SHALL USE J-HOOKS AS SPECIFIED.
- 4.2. COMMUNICATIONS CONTRACTOR TO PROVIDE A 10 FOOT SERVICE LOOP AT EACH END ON ALL CABLES, UNLESS OTHERWISE NOTED.
- 4.3. ALL COMPONENTS OF THE HORIZONTAL CHANNEL SHALL MEET THE MINIMUM PERFORMANCE CHARACTERISTICS OF:
 - 4.3.1. CATEGORY 6A – 500MHZ AND A DATA RATE OF 10GB/S WITH A OUTSIDE DIAMETER NO GREATER THAN 0.27"
- 4.4. DATA CABLES: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE BLUE.
- 4.5. WIRELESS ACCESS POINT (W.A.P.) DATA: UTP, 24 AWG SOLID CONDUCTOR, CMP CABLE. CABLE COLOUR TO BE BLUE. COMMUNICATIONS CONTRACTOR TO PROVIDE A MINIMUM OF 20 FEET SLACK AT THE OUTLET LOCATION FOR CLIENT TO HAVE THE FLEXIBILITY TO RELOCATE THE OUTLET.

- 5.1. MODULAR JACKS MUST BE MATCHED APPROPRIATELY WITH THE CABLES TO ENSURE THAT END TO END VENDOR WARRANTIES WILL BE APPLICABLE.
- 5.2. MODULAR JACKS TO BE T568A 8P8C MDVO STYLE (OR EQUIVALENT) MODULAR JACK FOR WALL MOUNTED OUTLETS AND T568A 8P8C KEYSTONE (OR EQUIVALENT) STYLE FOR FLOOR AND MEETING ROOM TABLE OUTLETS. THE GRADE AND MANUFACTURER SHALL BE CONSISTENT WITH THE CABLING BEING WARRANTED.
- 5.3. ALL HORIZONTAL CABLING SHALL BE TERMINATED AT EACH END WITH THE MODULAR JACK COLOURS AS FOLLOWS:

<u>CABLE DESIGNATION</u>	<u>COLOUR</u>
DATA	BLUE
WIRELESS ACCESS POINTS	YELLOW

5.4. BLANK INSERT TO BE PROVIDED WHERE PORTS DO NOT CONTAIN JACKS. COLOUR SHALL MATCH FACEPLATE.

- 6.1. WALL OUTLETS TO BE:
 - 6.1.1. 3-PORT AND 1-PORT DECORA + MODULES. COLOUR TO MATCH DIVISION 16 (ELECTRICAL) UNLESS OTHERWISE NOTED. COLOUR TO BE VERIFIED BY INTERIOR DESIGNER PRIOR TO PURCHASE AND INSTALLATION.
 - 6.1.2. SOME LOCATIONS ON THE FLOOR PLAN MAY INDICATE A WALL MOUNT TELEPHONE. PROVIDE A WALL MOUNT FACEPLATE SUITABLE FOR WALL MOUNTING A TELEPHONE SET IN THESE LOCATIONS.
- 6.2. FLOOR AND MEETING ROOM TABLE OUTLETS TO BE:
 - 6.2.1. 3-PORT KEYSTONE DECORA + KEYSTONE MODULES. COLOUR TO MATCH DIVISION 16 (ELECTRICAL) UNLESS OTHERWISE NOTED. COLOUR TO BE VERIFIED BY INTERIOR DESIGNER PRIOR TO PURCHASE AND INSTALLATION.
- 6.3. SYSTEM FURNITURE OUTLETS TO BE:
 - 6.3.1. 3-PORT MODULAR FURNITURE ADAPTER (IF SYSTEM FURNITURE HAS A STANDARD OPENING FOR COMMUNICATIONS CABLING) OR 1-PORT SIDE ENTRY BOX (IF SYSTEM FURNITURE HAS NO OPENING FOR COMMUNICATIONS CABLING) OR TEKNON FURNITURE ADAPTER (IF THE SYSTEM FURNITURE IS TEKNON). COMMUNICATIONS CONTRACTOR TO CONFIRM SYSTEM FURNITURE TYPE ON SITE WITH THE OWNER BEFORE ORDERING FURNITURE ADAPTER.
- 6.4. CEILING MOUNTED OUTLETS TO BE:
 - 6.4.1. 1-PORT OR 2-PORT SURFACE MOUNT BOXES, AS INDICATED ON DRAWINGS. COLOUR TO BE WHITE.

7.1. HORIZONTAL CABLES: ALL HORIZONTAL CABLES SHALL BE TERMINATED ONTO RACK MOUNTABLE UNLOADED MODULAR PATCH PANELS IN THE NEAREST TELECOM ROOM.

8.1. UTP COPPER PATCH CORDS: ALL PATCH CORDS SHALL BE CONNECTED IN THE TELECOM ROOM TO THE CLIENT SUPPLIED ACTIVE EQUIPMENT USING 8 POSITION 4-PAIR PATCH CORDS, WITH A SMALL OUTSIDE DIAMETER. THE PATCH CORDS SHALL BE CMT RATED, FT4, AND STAMPED ACCORDINGLY, AND SHALL BE CONSISTENT WITH THE GRADE AND MANUFACTURER OF THE CABLE BEING WARRANTED. PATCH CORDS TO HAVE STRANDED COPPER CONDUCTORS (WHERE SYSTEM DICTATES) AND DESIGNED TO PROVIDE A MATCHED CONNECTION PERFORMANCE THAT EXCEEDS THE REQUIREMENTS PER ANSI/TIA-568-B. PATCH CORDS TO BE FACTORY ASSEMBLED AND NOT SITE PREPARED, COMPLETE WITH SMOOTH BOOT. THE PATCH CORDS SHALL BE:

8.1.1. AT THE LAN ROOM – QUANTITIES AS PER TOTAL NO. OF CABLES INSTALLED. PATCH CORD LENGTHS ARE TO BE COORDINATED WITH THE IT

<u>CABLE DESIGNATION</u>	<u>TERMINATION</u>	<u>COLOUR</u>	<u>LENGTH</u>
DATA	RJ45/RJ45	BLUE	7 FEET
WIRELESS ACCESS POINTS	RJ45/RJ45	YELLOW	7 FEET

8.1.2. AT THE WORKSTATION – QUANTITIES AS PER TOTAL NO. OF CABLES INSTALLED. PATCH CORD LENGTHS ARE DEPENDENT ON THE TYPICAL LOCATIONS OF THE FURNITURE ADAPTER ON SYSTEMS FURNITURE. COORDINATE PATCH CORD LENGTH WITH THE IT REPRESENTATIVE PRIOR TO ORDERING. PATCH CORD COLOUR TO BE:

<u>CABLE DESIGNATION</u>	<u>TERMINATION</u>	<u>COLOUR</u>	<u>LENGTH</u>
DATA	RJ45/RJ45	BLUE	7 FEET
WIRELESS ACCESS POINTS	RJ45/RJ45	YELLOW	1 FEET

- 9.1. ALL OPENINGS ARE TO BE "FIRE STOPPED" AS REQUIRED PER THE BUILDING AND ELECTRICAL CODES. INSTALL NON-PERMANENT C/A APPROVED INTUMESCENT FIRE STOPPING TO CAP ALL EMPTY SLEEVES AND AROUND CABLES THAT ARE PASSING THROUGH SLEEVES/CORE HOLES LOCATED IN I.T. CLOSET AND TEL. RISER ROOM. ALL FIRE STOPPING MUST MEET OR EXCEED APPLICABLE FEDERAL, PROVINCIAL AND LOCAL BUILDING CODES.
- 9.2. THE COMMUNICATIONS CONTRACTOR SHALL MAKE GOOD ALL FIRE STOPPING AND WATER PROOFING WHERE FIRE STOPPING AND/OR WATER PROOFING HAS BEEN DISTURBED DURING CABLE REMOVAL, OR WHERE FIRE STOPPING AND/OR WATER PROOFING WAS NON-EXISTENT.
- 9.3. THE COMMUNICATIONS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, PRODUCT DATA AND DOCUMENTATION FOR FIRE STOPPING AND/OR WATER PROOFING DEVICES PROVIDED FOR USE. INCLUDE ANY FIRE RETARDANT PAINTS TO BE USED.

- 10.1. CABLE TRAYS AND CONDUITS: COMMUNICATIONS CONTRACTOR SHALL UTILIZE CABLE TRAYS, CONDUITS, FURNITURE FEEDS AND RACEWAYS PROVIDED BY DIVISION 16 (ELECTRICAL) FOR COMMUNICATIONS CABLE PATHWAYS. EXERCISE CAUTION WHEN PULLING CABLES IN PATHWAYS TO AVOID DAMAGE TO ANY EXISTING CABLES AND FOLLOW THE MANUFACTURER'S MAXIMUM PULL-FORCE AND MINIMUM BEND RADIUS.
- 10.3. J-HOOK SUPPORT: WHERE CABLE TRAYS AND CONDUITS HAVE NOT BEEN PROVIDED, J-HOOK SUPPORT IS TO BE INSTALLED BY COMMUNICATIONS CONTRACTOR AT A 4' (MAXIMUM) INTERVAL. CABLES SHALL BE RUN SUCH THAT THE SAG BETWEEN SUPPORTS DOES NOT EXCEED 4". SECURE ALL CABLES TO J-HOOKS WITH VELCRO. ALL CABLES SHALL BE COMPLETELY SUPPORTED BY J-HOOKS SO AS TO NOT TRANSFER ANY WEIGHT TO EXISTING FIXTURES OR STRUCTURES IN THE CEILING SPACE. COMMUNICATIONS CONTRACTOR TO SUPPLY AND INSTALL ALL MATERIAL AND ACCOUNT FOR ANY LABOUR INVOLVED. ALL J-HOOKS ARE TO BE INSTALLED PARALLEL TO BUILDING LINES.
- 10.4. INNERDUCT: COMMUNICATIONS CONTRACTOR SHALL PROVIDE INNERDUCT TO PROTECT FIBER EXCEPT WHERE A DEDICATED FIBER CONDUIT IS INSTALLED THAT IS 1.5" IN DIAMETER OR LESS, OR WHERE ARMORED FIBER CABLE IS SPECIFIED. INNERDUCT SHALL BE C/P (ETP) RATED, FIBER OPTIC CABLES SHALL BE COMPLETELY PROTECTED WITH INNERDUCT FOR THE ENTIRE LENGTH OF THE CABLE RUN. COMMUNICATIONS CONTRACTOR TO SUPPLY AND INSTALL ALL MATERIAL AND ACCOUNT FOR ANY LABOUR INVOLVED. ALL J-HOOKS ARE TO BE INSTALLED PARALLEL TO BUILDING LINES.
- 10.5. NO. OF CABLES AT 70% FILL RATE:

J-HOOK DIA. (INCH)	CROSS-SECTIONAL AREA (SQ. IN)	4-PAIR UTP CATEGORY 5A
1	1.07	15
2	3.97	60
3	9.26	150
4	15.48	220

11.1. LABELING: ALL LABELING SHALL BE PENDUPT PAN-CODE IDENTIFICATION PRODUCTS FOR NETWORK SYSTEMS UNLESS OTHERWISE INDICATED. LABELING SHALL

11.1.1. INCLUDE VINYL, MACHINE PRINTED WRAP-AROUND LABELS WITHIN 4 INCHES OF THE ENDS OF EVERY CABLE,

11.1.2. INCLUDE VINYL OR PVC MACHINE PRINTED LABELS AT ALL PATCH PANELS, IDC TERMINATION BLOCKS, WIRING BLOCKS, FACEPLATES, AND EACH END OF THE TELECOMMUNICATIONS CONDUIT.

11.1.3. CONVENTION SHALL FOLLOW ANSI/TIA-606-B "ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS" AND AS PER CLIENT'S PREFERRED LABELING SCHEME. COMMUNICATIONS CONTRACTOR TO COORDINATE ON SITE WITH THE OWNER'S I.T. REPRESENTATIVE FOR ANY PREFERRED LABELING SCHEME.

11.1.4. HAND-WRITTEN LABELS ARE NOT PERMITTED.

11.2. PROVIDE 25% ADDITIONAL LABELS TO BE LEFT IN EACH TELECOMMUNICATIONS ROOM ON SITE FOR FUTURE GROWTH.

14.1. CABLE TESTING:

14.1.1. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO SUBMIT A CABLE TEST REPORT BASED ON THE CABLE SCHEDULE TO THE COMMUNICATIONS ENGINEER'S REPRESENTATIVE FOR APPROVAL. THE REPORT SHOULD INDICATE FOR EACH INDIVIDUAL CABLE, THE TIME AND DATE OF THE SUCCESSFUL TEST AND THE SIGNATURE OF THE TECHNICIAN WHO PERFORMED THE TEST, LOCATION, CABLE TYPE, CABLE NUMBER AS PER THE CABLE SCHEDULE, AND TESTER NAME.

14.1.2. THE COMMUNICATIONS CONTRACTOR TO USE A LEVEL III OR LEVEL IV TESTER THAT IS CAPABLE OF TESTING THE SPECIFIED CABLE TO THE PERFORMANCE LEVEL(S) INDICATED IN THIS DOCUMENT. THE TESTER SHOULD HAVE THE LATEST VERSION OF FIRMWARE AND SOFTWARE TO TEST THE UTP CABLEING SYSTEM.

14.2. AS-BUILT DRAWINGS:

14.2.1. THE COMMUNICATIONS CONTRACTOR SHALL BE SUPPLIED WITH, UPON WRITTEN REQUEST, A SOFT COPY OF DRAWINGS BY THE COMMUNICATIONS ENGINEER'S REPRESENTATIVE FOR THE PURPOSE OF CREATING AS-BUILT DRAWINGS. THE COMMUNICATIONS CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS IDENTIFYING 100% OF THE INSTALLED CABLES (DATA (AND WIRELESS ACCESS POINT) AND PATCH PANEL), THE AS-BUILTS SHALL INCLUDE ALL ADDITIONAL CABLES INSTALLED DURING THE PROJECT.

14.2.2. IF THE COMMUNICATIONS CONTRACTOR CANNOT COMPLY WITH THIS REQUIREMENT, SMITH + ANDERSEN WILL TRANSFER ALL HAND-DRAWN AS-BUILTS OUTWARD. THE COST FOR THIS SERVICE SHALL BE BASED ON PER DIEM RATES AT THE TIME OF COMPLETION. THE COMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THIS WORK.

14.3. CERTIFICATIONS AND WARRANTY:

14.3.1. THE COMMUNICATIONS CONTRACTOR IS REQUIRED TO PROVIDE A MINIMUM OF A 2-YEAR UNCONDITIONAL PARTS AND LABOR WARRANTY FOR ALL EQUIPMENT AND LABOR PROVIDED UNDER THIS CONTRACT FROM THE DATE OF SUBSTANTIAL COMPLETION, FOR EACH COMMUNICATIONS CABLEING SYSTEM.

14.3.2. COMMUNICATIONS CONTRACTOR SHALL BE CURRENTLY AUTHORIZED AND CERTIFIED BY THE END TO END STRUCTURED CABLEING SYSTEM SOLUTIONS MANUFACTURER TO INSTALL THE RESPECTIVE SYSTEM. THE COMMUNICATIONS CONTRACTOR SHALL BE CAPABLE OF ISSUING WARRANTY ON MATERIALS AND WORKMANSHIP. THEY MUST ALSO ISSUE A MANUFACTURER'S CERTIFICATION IN NAME OF THE CLIENT. IF CERTIFICATION BY THE MANUFACTURER IS NOT ALLOWED, THE CERTIFICATION SHALL SPAN A DURATION OF 2 YEARS TO COVER ALL PRODUCTS WITHIN THE SYSTEM INCLUDING, BUT NOT LIMITED TO JACKS, CABLES, PATCH CORDS, AND CROSS CONNECTS. IN THE EVENT THAT THE CERTIFIED SYSTEM CEASES TO OPERATE, THE COMMUNICATIONS CONTRACTOR SHALL COMMIT TO PROMPTLY IMPLEMENT CORRECTIVE ACTION. RESPONSE TIME FOR WARRANTY ITEMS SHALL BE 24 HOURS.

14.4. THE PROJECT SHALL NOT BE CONSIDERED COMPLETE AND A HOLDBACK WILL BE RETAINED UNTIL THE CLIENT RECEIVES THE COMMUNICATION ENGINEER'S REPRESENTATIVE APPROVED CLOSE-OUT DOCUMENTATION PACKAGE. THE VALUE FOR THE CLOSE-OUT DOCUMENTATION PACKAGE FOR PAYMENT PURPOSES, SHALL BE SET AT 10% OF THE BASE CONTRACT OF \$5000; WHICHEVER IS GREATER. THIS AMOUNT WILL BE WITHHELD FROM THE COMMUNICATIONS CONTRACTOR UNTIL TESTING AND CORRECTION OF DEFICIENCIES IS 100% COMPLETE.

14.5. THE COMMUNICATIONS CONTRACTOR SHALL PROVIDE THE CLIENT WITH A LAMINATED, FULL SIZE, AS-BUILT DRAWING FOR EACH FLOOR MOUNTED IN THAT FLOOR'S RESPECTIVE LAN ROOM. WHERE THERE ARE MULTIPLE LAN ROOMS PER FLOOR, PROVIDE ONE LAMINATED, FULL SIZE, AS-BUILT DRAWING IN EACH ROOM ON THAT FLOOR.

- 15.1. COMMUNICATIONS COMPONENTS INCLUDING, BUT NOT LIMITED TO OUTLETS, DEVICES, RACKS, CABINETS, BRACKETS AND BACKBOARDS MAY BE RELOCATED PRIOR TO INSTALLATION, FROM THE LOCATIONS SHOWN ON THE CONTRACT DOCUMENTS, TO A MAXIMUM DISTANCE OF 3.05m (10 FEET) WITHOUT ADJUSTMENT TO THE CONTRACT PRICE.
- 15.2. CABLES WILL BE SUPPORTED SUCH THAT A MINIMUM OF 3 INCHES OF CLEAR VERTICAL SPACE WILL BE MAINTAINED DIRECTLY ABOVE THE CEILING TILES. THIS CLEAR SPACE WILL BE FREE OF CABLES, RACEWAYS AND CABLES AND RACEWAYS SUPPORTS.
- 15.3. SPIRAL WRAP: CABLES RUNNING FROM SYSTEM FURNITURE FEED POINTS TO THE SYSTEM FURNITURE SHALL BE NEATLY WRAPPED. SIZE THE SPIRAL WRAP ACCORDING TO QUANTITY OF CABLES, NO CABLES SHALL BE EXPOSED. COORDINATE LOCATIONS ON ARCHITECTURAL DRAWINGS
- 15.4. CABLE BUNDLES AND TIES: CABLES SHALL BE ARRANGED IN BUNDLES OF NO MORE THAN 24 CABLES PER BUNDLE. CABLES SHALL BE SECURED IN BUNDLES WITH VELCRO TIE-WRAPS. UNDER NO CIRCUMSTANCES ARE PLASTIC TIE-WRAPS TO BE USED. IF PLASTIC TIE-WRAPS ARE USED, THE COMMUNICATIONS CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE ALL AFFECTED CABLES AT THEIR OWN EXPENSE.
- 15.5. DIMENSIONS SHOWN ON DRAWINGS ARE APPROXIMATE. VERIFY DIMENSIONS BY REFERENCE TO SHOP DRAWINGS AND FIELD MEASUREMENTS.
- 15.6. QUANTITIES OR LENGTHS INDICATED IN ANY OF THE CONTRACT DOCUMENTS ARE APPROXIMATE ONLY AND SHALL NOT BE HELD TO GAUGE OR LIMIT THE WORK.

15.7. COMMUNICATIONS CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE FURNITURE AND CARPET INSTALLERS FOR FURNITURE COMMUNICATIONS OUTLETS CABLING CONNECTION.

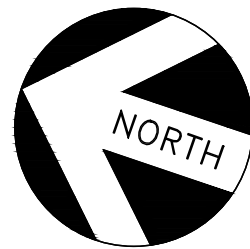
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STAMP:

NAME: TONY SANTAGUIDA
TEL: 647-943-0263
EMAIL: tony.santaguida@smithandandersen.com

THIS DRAWING SHALL BE READ IN CONJUNCTION
WITH COMMUNICATIONS SPECIFICATION SUBMITTED
FOR THIS PROJECT.

NORTH:



Smith + Andersen

1100 - 100 Sheppard Ave. East, Toronto On, M2N 6N5
416 487 8151 f 416 487 9104 smithandandersen.com

PROJECT:

Central York Firehall 4-1 Interior Renovation
984 Gorham Street
Newmarket, Ontario

SHEET TITLE:

COMMUNICATIONS DRAWING SPECIFICATIONS

PROJECT NUMBER:

25274.001.D.001

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AS SHOWN

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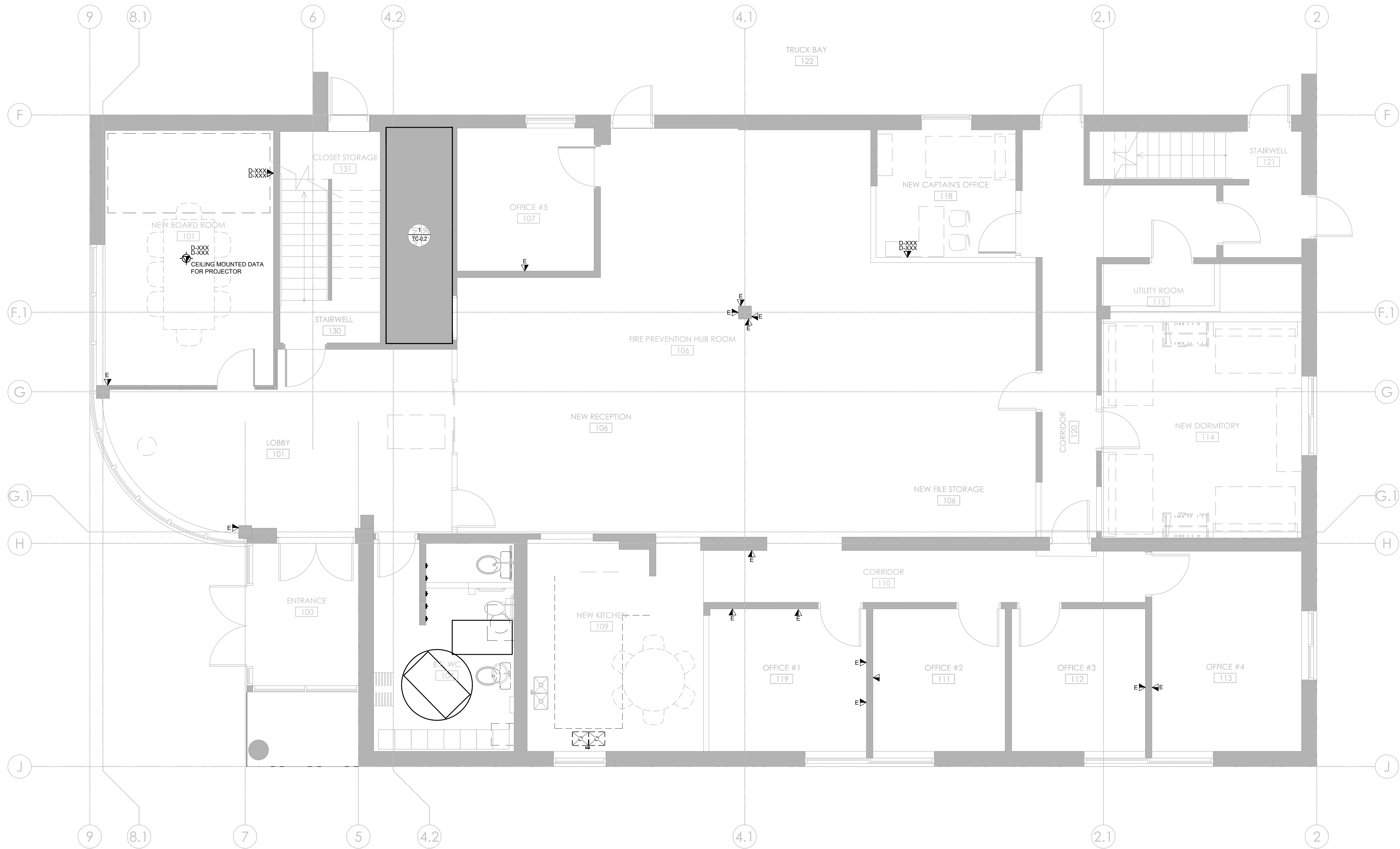
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SHEET NUMBER:

TC-0.3

SHEET NUMBER: TC-1.1



REVISIONS

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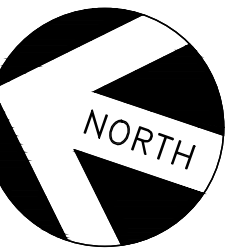
STAMP:

PROJECT CONTACT

NAME: TONY SANTAGUIDA
TEL: 647-943-0263
EMAIL: tony.santaguida@smithandandersen.com

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WITH COMMUNICATIONS SPECIFICATION SUBMITTED
FOR THIS PROJECT.

NORTH:



CONSULTANT:



Smith + Andersen

1100 - 100 Sheppard Ave. East, Toronto On, M2N 6N5
416 487 8151 f 416 487 9104 smithandandersen.com

PROJECT:

Central York Firehall 4-1 Interior Renovations
984 Gorham Street
Newmarket, Ontario

SHEET TITLE:

1ST FLOOR WIRELESS ACCESS POINT PLAN

PROJECT NUMBER:

25274.001.D.001

SCALE:

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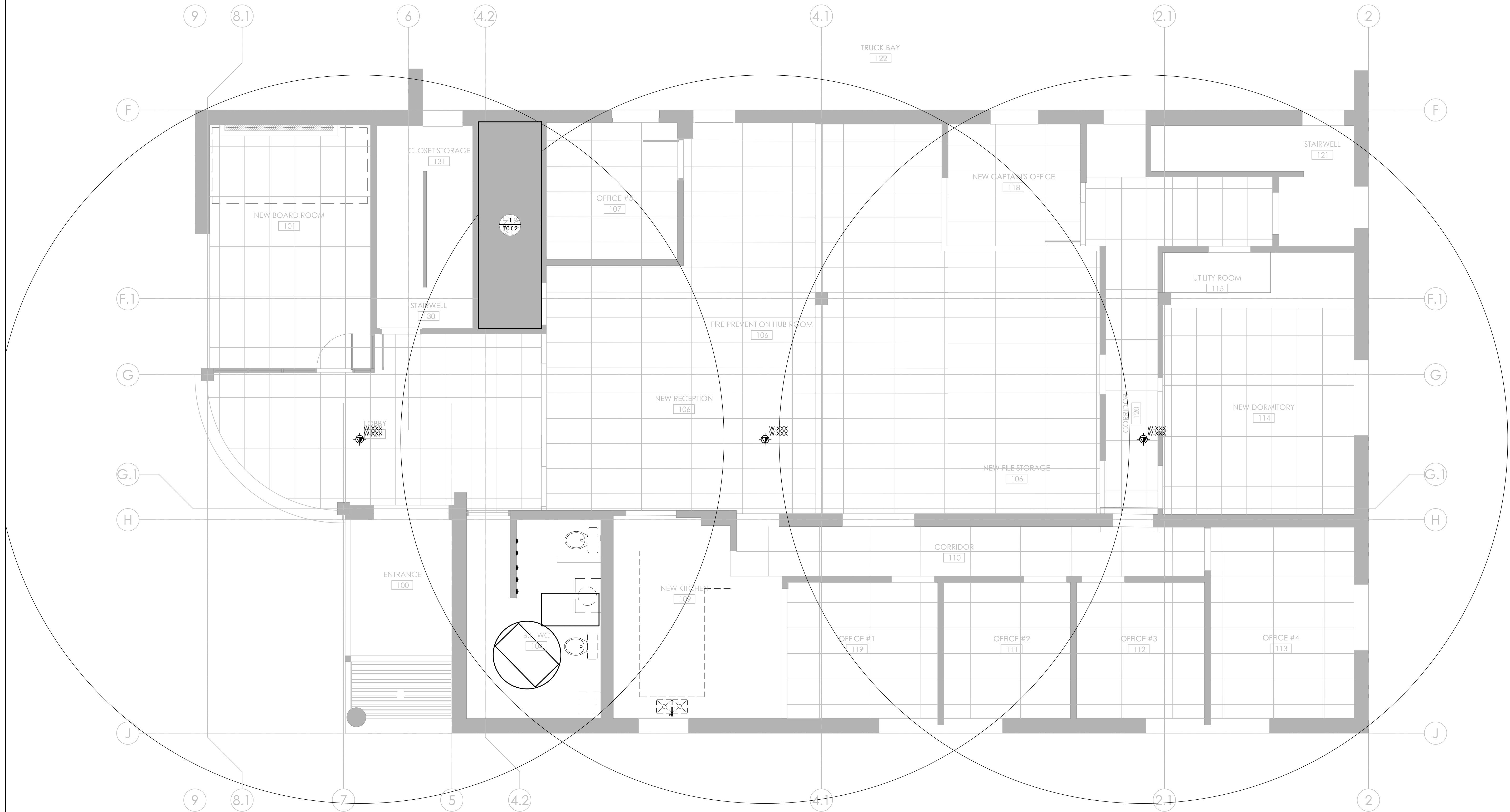
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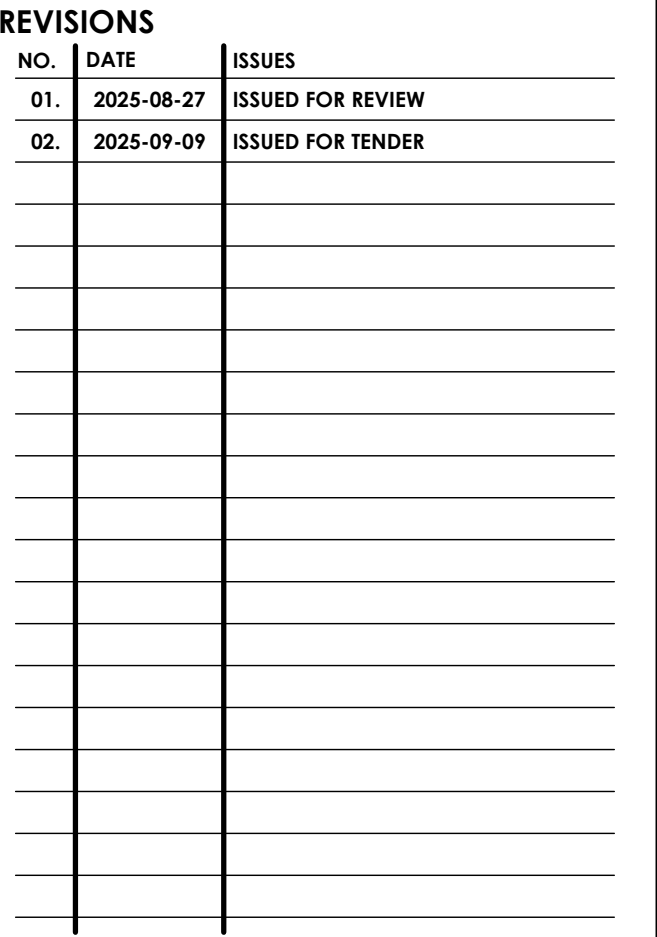
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SHEET NUMBER:

TC-1.2





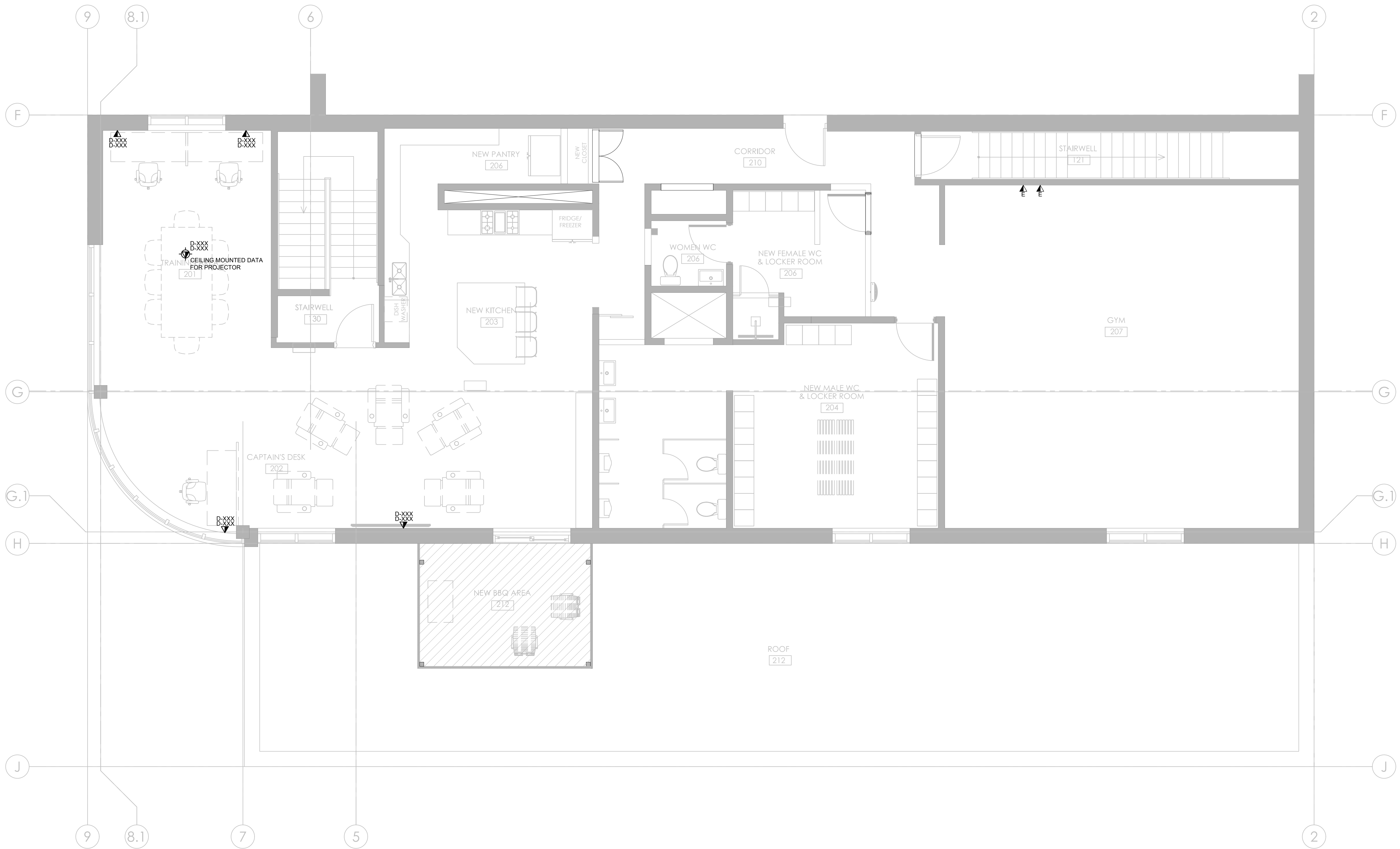
NAME: TONY SANTAGUIDA

TEL: 647-943-0263

EMAIL: tony.santaguida@smithandandersen.com

2ND FLOOR COMMUNICATIONS LAYOUT

SHEET NUMBER: TC-2.1



SHEET NUMBER: TC-2.2

