RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage, Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

There is a security requirement associated with this procurement.

Issuing Office - Bureau de distribution

Electrical & Electronics Products Division
L'Esplanade Laurier
East Tower, 4th floor,
Ottawa
Ontario
K1A 0S5

Title - Sujet
CCG Atlantic Hdqtrs Audio/Video

Solicitation No. - N° de l'invitation	Date
F6879-196003/A	2019-07-11

Client Reference No. - N° de référence du client
F6879-196003

GETS Reference No. - N° de référence de SEAG
PW-$$HN-331-77468

File No. - N° de dossier	CCC No./N° CCC - FMS No./N° VME
hn331.F6879-196003	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2019-08-02

Time Zone
Fuseau horaire
Eastern Daylight Saving Time EDT

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☑ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	Buyer Id - Id de l'acheteur
Turner, Louie	hn331

Telephone No. - N° de téléphone	FAX No. - N° de FAX
(613) 297-3769 ( )	( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
DEPARTMENT OF FISHERIES AND OCEANS
Real Property, Safety and Security
P.O BOX 5667
ST JOHNS
Newfoundland and Labrador
A1C5X2
Canada

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
2019-10-31	

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM Destination	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	New CCG Atlantic Headquarters, St. John's NL. Supply and install fully functional AudioVideo Systems as per: Appendix A - Statement of Work Appendix B – Audiovisual System Specifications for AV Installation Appendix C – Contract Data Requirements List (CDRL) Appendix D - General Installation and Performance Requirements Appendix E – AV Drawing Package Appendix F – 20171012Electrical IFC 19 (Electrical Drawings for reference only) Appendix G - Mandatory Technical Evaluation Criteria • Alternate or Equivalent part numbers will be considered as identified in room/parts lists in Appendix B • Pricing to be completed in Annex A	F6879	F6879	1	Each	$	XXXXXXXXXX	2019-10-31	

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Attachments:

Annex A - Pricing
Annex B - Security Requirement Checklist (SRCL)
Annex C - Schedule of Milestones Payments

Appendix A - Statement of Work
Appendix B – Audiovisual System Specifications for AV Installation
Appendix C – Contract Data Requirements List (CDRL)
Appendix D - General Installation and Performance Requirements
Appendix E – AV Drawing Package
Appendix F – 20171012Electrical IFC 19 (Electrical Drawings for reference only)
Appendix G - Mandatory Technical Evaluation Criteria

Bidder Submission Checklist

	Pricing for each of the room types.
	Optional pricing for maintenance services.
	Names, CVs, and qualification certificates for each of the proposed personnel as required in Mandatory Technical Evaluation Criteria.
	Specification sheets for all proposed equipment substitutions.
	Signal flow line drawings demonstrating device connectivity for proposed equipment substitutions should the proposed system connectivity differ from the drawings Appendix E.
	Corporate summary and listing of Canadian branch locations.
	Summary of project management approach and systems deployment operational process.
	Proposed installation timeline.

PART 1 - GENERAL INFORMATION

1.1 Security Requirements

1. At the date of bid closing, the following conditions must be met:

   (a) the Bidder must hold a valid organization security clearance as indicated in Part 6 - Resulting Contract Clauses;

   (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work sites must meet the security requirements as indicated in Part 6 - Resulting Contract Clauses;

   (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;

2. For additional information on security requirements, Bidders should refer to the Contract Security Program of Public Works and Government Services Canada (http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) website.

1.2 Statement of Work/Requirement

The contractor must provide the goods and services in accordance with the technical requirements stated herein.

1.2.1 Delivery Requirement

Delivery is requested to be completed by October 31, 2019.

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.4 Trade Agreements

The requirement is subject to the provisions of the Canadian Free Trade Agreement (CFTA).

1.5 epost Connect service

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

The 2003 standard instructions is amended as follows:

- Section 08, entitled Transmission by facsimile or by epost Connect, is amended as follows:
  Subsection 2 is deleted entirely and replaced with the following:

2. epost Connect

   a. Unless specified otherwise in the bid solicitation, bids may be submitted by using the epost Connect service provided by Canada Post Corporation.
      i. PWGSC, National Capital Region: The only acceptable email address to use with epost Connect for responses to bid solicitations issued by PWGSC headquarters is:

tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

or, if applicable, the email address identified in the bid solicitation.

      ii. PWGSC regional offices: The only acceptable email address to use with epost Connect for responses to bid solicitations issued by PWGSC regional offices is identified in the bid solicitation.

   b. To submit a bid using epost Connect service, the Bidder must either:
      i. send directly its bid only to the specified PWGSC Bid Receiving Unit, using its own licensing agreement for epost Connect provided by Canada Post Corporation; or
      ii. send as early as possible, and in any case, at least six business days prior to the solicitation closing date and time, (in order to ensure a response), an email that includes the bid solicitation number to the specified PWGSC Bid Receiving Unit requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered.
   c. If the Bidder sends an email requesting epost Connect service to the specified Bid Receiving Unit in the bid solicitation, an officer of the Bid Receiving Unit will then initiate an epost Connect conversation. The epost Connect conversation will create an email notification from Canada Post Corporation prompting the Bidder to access and action the message within the conversation. The Bidder will then be able to transmit its bid afterward at any time prior to the solicitation closing date and time.

d. If the Bidder is using its own licensing agreement to send its bid, the Bidder must keep the epost Connect conversation open until at least 30 business days after the solicitation closing date and time.
e. The bid solicitation number should be identified in the epost Connect message field of all electronic transfers.
f. It should be noted that the use of epost Connect service requires a Canadian mailing address. Should a bidder not have a Canadian mailing address, they may use the Bid Receiving Unit address specified in the solicitation in order to register for the epost Connect service.
g. For bids transmitted by epost Connect service, Canada will not be responsible for any failure attributable to the transmission or receipt of the bid including, but not limited to, the following:

    i. receipt of a garbled, corrupted or incomplete bid;
    ii. availability or condition of the epost Connect service;
    iii. incompatibility between the sending and receiving equipment;
    iv. delay in transmission or receipt of the bid;
    v. failure of the Bidder to properly identify the bid;
    vi. illegibility of the bid;
    vii. security of bid data; or,
    viii. inability to create an electronic conversation through the epost Connect service.

h. The Bid Receiving Unit will send an acknowledgement of the receipt of bid document(s) via the epost Connect conversation, regardless of whether the conversation was initiated by the supplier using its own license or the Bid Receiving Unit. This acknowledgement will confirm only the receipt of bid document(s) and will not confirm if the attachments may be opened nor if the content is readable.
i. Bidders must ensure that that they are using the correct email address for the Bid Receiving Unit when initiating a conversation in epost Connect or communicating with the Bid Receiving Unit and should not rely on the accuracy of copying and pasting the email address into the epost Connect system.
j. A bid transmitted by epost Connect service constitutes the formal bid of the Bidder and must be submitted in accordance with section 05.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 90 days

2.1.1 SACC Manual Clauses

SACC Reference	Section	Date
A9033T	Financial Capability	2012-07-16
B1000T	Condition of Material	2014-06-26

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the bid solicitation.

Note: For bidders choosing to submit using epost Connect for bids closing at the Bid Receiving Unit in the National Capital Region (NCR) the email address is:

tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions 2003, or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

Bids must be submitted ONLY TO THE BID RECEIVING UNIT by the date, time and place indicated on page 1 of the bid solicitation. Do not send proposal directly to the Contracting Officer.

PWGSC Bids Receiving Unit
11 Laurier Street, Place du Portage, Phase 3, Core 0B2,
Gatineau, Québec, K1A 0S5
Tel.: 819-420-7201 Fax: 819-997-9776

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

2.5 Mandatory Site Visit

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the following:

July 24, 2019 at 10:00 am Newfoundland time

Location: Canadian Coast Guard, Atlantic Headquarters, 250 Southside Road, St Johns, Newfoundland, meet in front lobby

Bidders will be required to sign an attendance form at the required site visit. Bidders will be required to show Government Issued photo ID. Bidders should confirm in their bids that they have attended the site visit. Bidders who do not attend or send a representative to the site visit will not be given an alternative appointment and their bids will be rejected as non-compliant.

The onus is on the bidders to arrive at the site visit in a timely manner. Bidders arriving late may not be permitted to attend the site visit. The Bidder must have at least one attendee at the site visit.

To apply for the site visit, contact the Contracting Authority: louie.turner@pwgsc-tpsgc.gc.ca .

The site visit request must be submitted no later than July 22, 2019, 2:00 pm, est

Bidders **must** clearly identify the name of the participant(s), the name of the company they represent, telephone number and e-mail address.

Bidders are advised that any clarifications or changes resulting from the site visit shall be included as an amendment to the bid solicitation document.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

- If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

  The bid must be gathered per section and separated as follows:

  - Section I: Technical Bid
  - Section II: Financial Bid
  - Section III: Certifications

- If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

  - Section I: Technical Bid (2 hard copies) (and 2 soft copies on a medium such as CD, DVD or USB key)
  - Section II: Financial Bid (1 hard copy)
  - Section III: Certifications (1 hard copy)

  If there is a discrepancy between the wording of the soft copy on electronic media and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

- If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will have priority over the wording of the other copies.

Canada requests that bidders follow the format instructions described below in the preparation of hard copy of their bid:

(a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
(b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573). To assist Canada in reaching its objectives, bidders should:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

3.1.1 Equivalent Product (Except where stated in Appendix B, System Specifications Room Types)

1. Products that are equivalent in form, fit, function and quality to the item(s) specified in the bid solicitation will be considered where the Bidder designates the brand name and model and/or part number of the substitute product;

2. Products offered as equivalent in form, fit, function and quality will not be considered if:
   (a) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute product; or
   (b) the substitute product fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.

3. In conducting its evaluation of the bids, Canada may, but will have no obligation to, request bidders offering a substitute product to provide technical information demonstrating the equivalency (e.g. Drawing, specifications, engineering reports and/or test reports), or to demonstrate that the substitute product is equivalent to the item specified in the bid solicitation, at the sole cost of bidders, within three (3) business days of the request. If the bidder fails to provide the requested information within the specified timeframe, Canada may declare the bid non-responsive.

3.1.2 Equivalent Products - Samples

If the Bidder offers an equivalent product, Canada reserves the right to request a sample from the Bidder in order to determine its equivalency in form, fit, function, quality and performance to the item specified in the bid solicitation.

The Bidder must, upon request from the Contracting Authority, provide a sample to the Technical Authority, transportation charges prepaid, and without charge to Canada, within ten (10) calendar days from the date of request. The sample submitted by the Bidder will remain the property of Canada and will not be considered as part of the deliverables in any resulting contract. If the sample does not meet the requirements of the bid solicitation or the Bidder fails to comply with the request of the Contracting Authority, the bid will be declared non-responsive.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

3.2.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, identify which ones are accepted.

( ) VISA Acquisition Card;
( ) MasterCard Acquisition Card;
( ) Direct Deposit (Domestic and International);
( ) Electronic Data Interchange (EDI);
( ) Wire Transfer (International Only);
( ) Large Value Transfer System (LVTS) (Over $25M)

If none are chosen, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.2.2 Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid non-responsive.

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

3.2.3 Bid Firm Lot Price Cost Breakdown

Prior to contract award Bidders must provide a line by line breakdown of the material used to calculate the Bid Prices for Equipment identified within Room Type 1, Room Type 2, Room Type 3, Room Type 4 and Spares-Spare Equipment in Appendix “B” – Bid Specifications.

The pricing provided will be used to calculate the cost of any applicable Contract Amendments throughout the life of the contract.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

You are reminded that this solicitation requires the compliance and/or completion of requirements attached as an Annex and forming part of this document.

4.1 Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada and The Attain Group will evaluate the bids.

4.1.1 Technical Evaluation

All bids must be completed in full and provide all of the information requested in the bid solicitation to enable full and complete evaluation.

4.1.1.1 Mandatory Technical Criteria

The following Mandatory requirements must be submitted with the bid for evaluation

- Technical compliance herein;
- Appendix G - Mandatory technical Evaluation Criteria

4.1.2 Financial Evaluation

The following Mandatory factors will be taken into consideration in the evaluation of each offer:

- Compliance with Pricing Basis

The Offer price will be determined by processing items at Annex A as follows:

a. Sum of all items total price (unit price x qty.)

4.1.2.1 Pricing Basis

The bidder must quote firm prices in Canadian dollars, DDP Delivered Duty Paid (250 Southside Road, St Johns, Newfoundland), Applicable Taxes extra, as applicable. Freight charges to destination and all applicable Custom duties and Excise taxes must be included.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the "lowest evaluated price on an aggregate basis" will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the Forms for the Integrity Regime website (http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 General Environmental Criteria Certification

The Bidder must select and complete one of the following two certification statements.

A) The Bidder certifies that the Bidder is registered or meets ISO 14001.

_____ _____

Bidders' Authorized Representative Signature Date

OR

B) The Bidder certifies that the Bidder meets and will continue to meet throughout the duration of the contract, a minimum of four (4) out of six (6) criteria identified in the table below.

The Bidder must indicate which four (4) criteria, as a minimum, are met.

Green Practices within the Bidders' organization	**Insert a checkmark for each criterion that is met**
Promotes a paperless environment through directives, procedures and/or programs	
All documents are printed double sided and in black and white for day to day business activity unless otherwise specified by your client	
Paper used for day to day business activity has a minimum of 30% recycled content and has a sustainable forestry management certification	
Utilizes environmentally preferable inks and purchase remanufactured ink cartridges or ink cartridges that can be returned to the manufacturer for reuse and recycling for day to day business activity.	
Recycling bins for paper, newsprint, plastic and aluminum containers available and emptied regularly in accordance with local recycling program.	
A minimum of 50% of office equipment has an energy efficient certification.	

_____ _____

Bidders' Authorized Representative Signature Date

5.2.3 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

6.1.1 The following security requirements (SRCL and related clauses provided by the Contract Security Program) apply and form part of the Contract.

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer/Supply Arrangement, hold a valid Designated Organization Screening (DOS), issued by the Canadian Industrial Security Directorate (CISD), Public Services and Procurement Canada (PSPC)
2. The Contractor/Offeror personnel requiring access to sensitive work site(s) must EACH hold a valid **reliability status**, granted or approved by CISD/PSPC
3. Subcontracts which contain security requirements are not to be awarded without the prior written permission of CISD/PSPC
4. The Contractor/Offeror must comply with the provisions of the:
    1. Security Requirements Check List and security guide (if applicable), attached at Annex B
    2. Industrial Security Manual (Latest Edition)

6.2 Statement of Work/Requirement

The contractor must provide the goods and services in accordance with the technical requirements and quantities stated herein.

6.2.1 Optional Goods/Services

The Contractor grants to Canada the irrevocable option to acquire the services described at Appendix A, notes16 - b, c and d of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, in whole or in part, through a contract amendment.

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

6.2.2 SACC Manual Clauses

SACC Reference	Section	Date
B1501C	Electrical Equipment	2018-06-21
B7500C	Excess Goods	2006-06-16

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010A (2018-06-21), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

and

2010C (2016-04-04), General Conditions - Services (Medium Complexity) sections 2010C 16 and 2010C 17 apply to and form part of the Contract.

6.3.1.1 Warranty

Section 09 of general conditions 2010A is amended to include notes 16a, b, c and d of Appendix A

All other provisions of the warranty section remain in effect.

6.4 Term of Contract

6.4.1 Period of the Contract

The contractor is to start work on the contract immediately following contract award.

All the fully functional Audio Video system deliverables must be received on or before _____ (Delivery as offered and as accepted will be inserted at contract award).

6.4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to one additional one year period under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment. This option period ends one year after contract award date.

Canada may exercise this option at any time by sending a written notice to the Contractor at any time before the expiry of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Louie Turner – Supply Specialist
Public Works and Government Services Canada - Acquisitions Branch
Logistics, Electrical, Fuel and Transportation Directorate - "HN" Division
Building L'Esplanade Laurier, East Tower 140 O'Connor St, 4th floor, Ottawa ON K1A 0R5

Telephone: 613- 297-3769
E-mail address: louie.turner@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Project Authority

The Project Authority for the Contract is:

Name: _____
Telephone: _____
Facsimile: _____
E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Technical Authority

The Technical Authority for the Contract is: (will be inserted at contract)
Name: _____
Telephone: _____
Facsimile: _____
E-mail address: _____

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority; however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.4 Contractor's Representative

(Name and telephone number of the person responsible for: (will be inserted at contract)

General enquiries
Name: _____
Telephone: _____
Facsimile: _____
E-mail: _____

Delivery follow-up
Name: _____
Telephone: _____
Facsimile: _____
E-mail: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm prices as specified in the contract in Annex A for a cost of $ _____ (insert the amount at contract award). Customs duties are included and Applicable Taxes are extra.

Due to the urgent nature of the project being completed asap, the outlined installation related labour rates in Annex A will apply for urgent or expedited requirements, authorized by Contract amendment. Additional transportation charges may be required to expedite delivery of equipment to site, also to be authorized by contract amendment.

6.6.2 Limitation of Price

SACC Manual clause C6000C (2017-08-17) Limitation of Price

6.6.3 Milestone Payments – Not subject to holdback

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract at Annex C and the payment provisions of the Contract, up to 100 percent of the amount claimed and approved by Canada if:
   a. an accurate and complete invoice for payment required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
   b. the total amount for all milestone payments paid by Canada does not exceed 100 percent of the total amount to be paid under the Contract;
   c. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.

6.6.4 Insurance - No Specific Requirement

SACC Manual clause G1005C (2016-01-28) Insurance - No Specific Requirement

6.6.5 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

a. Visa Acquisition Card;
b. MasterCard Acquisition Card;
c. Direct Deposit (Domestic and International);
d. Electronic Data Interchange (EDI);
e. Wire Transfer (International Only);
f. Large Value Transfer System (LVTS) (Over $25M)

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

2. Invoices must be distributed as follows:
(a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

(b) One (1) copy must be forwarded to the Contracting Authority identified under the Section 5. Authorities

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

(a) the Articles of Agreement;
(b) the general conditions 2010A (2016-04-04), General Conditions - Goods (Medium Complexity and 2010C (2016-04-04), General Conditions - Services (Medium Complexity) sections 2010C 16 and 2010C 17;
(c) Appendix A, Statement of Work/Requirement;
(d) Annex B, Security Requirements Check List;
(e) the Contractor's bid dated _____ ", as clarified on _____" ***or*** ", as amended on_____"

6.11 SACC Manual Clauses (Delivery)

SACC Reference	Section	Date
D9002C	Incomplete Assemblies	2007-11-30

6.11.1 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:
(a) Delivered Duty Paid (DDP) 250 Southside Road, St Johns, Newfoundland Incoterms 2000 for shipments from a commercial contractor.

6.11.2 Shipping – Scheduling

The Contractor must deliver and install the goods to 250 Southside Road, St Johns, Newfoundland and all aspects of the project must be co-ordinated with (to be completed at contract award)

Annex A - Pricing

Item	Make	Description	Qty	UoM	Price			
1	Supply and install	Type 1 room (414.5) as per Appendix B	1	lot				
2	Supply and install	Type 2 room (413) as per Appendix B	1	lot				
3	Supply and install	Type 3 room (405) as per Appendix B	1	lot				
4	Supply and install	Type 4 room (471) as per Appendix B	1	lot				
5	Maintenance/warranty Optional requirement	Optional service as per Appendix A, note 16 - b, c and d	1	year				
6	Supply only	Spares – Spare Equipment as per Appendix B	1	lot				
7								
8	**Note:**	Pricing of room types must include all costs associated with the supply, install and commissioning of fully functional A/V systems (reference Appendix A, note 6)						

The following outlined installation and related labour rates will apply for urgent or expedited requirements, authorized by Contract amendment.

The bidder must submit a firm hourly rate for the listed categories during and outside normal working hours for each labour category required.

The rates quoted will not be used in the financial evaluation.

Labour Categories	Hourly Rate During Regular Hours	Hourly Rate Outside Regular Hours
Installation/Labour	$	$
Engineering/Design	$	$
Programming	$	$

ANNEX B

COMMON-PS-SRCL#2

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
F.579-19.023 001-HM
Security Classification / Classification de sécurité UNCLASSIFIED

SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine: DFO	2. Branch or Directorate / Direction générale ou Direction: HRCS - RPSS
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant

4. Brief Description of Work / Brève description du travail: Supply and installation of audio visual equipment in the Regional Operations Centre, C.C.G Atlantic Headquarters, 250 Southside Rd, St. John's, NL

5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	☑ No Non ☐ Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	☑ No Non ☐ Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis	
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)	☑ No Non ☐ Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	☐ No Non ☑ Yes Oui
6. c) Is this a commercial courier or delivery requirement with **no** overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale **sans** entreposage de nuit?	☑ No Non ☐ Yes Oui

7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès

Canada ☐	NATO / OTAN ☐	Foreign / Étranger ☐
7. b) Release restrictions / Restrictions relatives à la diffusion		
No release restrictions Aucune restriction relative à la diffusion ☐ Not releasable À ne pas diffuser ☐ Restricted to: / Limité à : ☐ Specify country(ies): / Préciser le(s) pays :	All NATO countries Tous les pays de l'OTAN ☐ Restricted to: / Limité à : ☐ Specify country(ies): / Préciser le(s) pays :	No release restrictions Aucune restriction relative à la diffusion ☐ Restricted to: / Limité à : ☐ Specify country(ies): / Préciser le(s) pays :
7. c) Level of information / Niveau d'information		
PROTECTED A / PROTÉGÉ A ☐ PROTECTED B / PROTÉGÉ B ☐ PROTECTED C / PROTÉGÉ C ☐ CONFIDENTIAL / CONFIDENTIEL ☐ SECRET / SECRET ☐ TOP SECRET / TRÈS SECRET ☐ TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) ☐	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ ☐ NATO RESTRICTED / NATO DIFFUSION RESTREINTE ☐ NATO CONFIDENTIAL / NATO CONFIDENTIEL ☐ NATO SECRET / NATO SECRET ☐ COSMIC TOP SECRET / COSMIC TRÈS SECRET ☐	PROTECTED A / PROTÉGÉ A ☐ PROTECTED B / PROTÉGÉ B ☐ PROTECTED C / PROTÉGÉ C ☐ CONFIDENTIAL / CONFIDENTIEL ☐ SECRET / SECRET ☐ TOP SECRET / TRÈS SECRET ☐ TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) ☐

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat

Security Classification / Classification de sécurité
UNCLASSIFIED

PART A *(continued)* / PARTIE A *(suite)*

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets? ☑ No / Non ☐ Yes / Oui
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?
If Yes, indicate the level of sensitivity:
Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets? ☑ No / Non ☐ Yes / Oui
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?

Short Title(s) of material / Titre(s) abrégé(s) du matériel :
Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

☑ RELIABILITY STATUS / COTE DE FIABILITÉ	☐ CONFIDENTIAL / CONFIDENTIEL	☐ SECRET / SECRET	☐ TOP SECRET / TRÈS SECRET
☐ TOP SECRET – SIGINT / TRÈS SECRET – SIGINT	☐ NATO CONFIDENTIAL / NATO CONFIDENTIEL	☐ NATO SECRET / NATO SECRET	☐ COSMIC TOP SECRET / COSMIC TRÈS SECRET
☐ SITE ACCESS / ACCÈS AUX EMPLACEMENTS			

Special comments:
Commentaires spéciaux : _____

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work? ☑ No / Non ☐ Yes / Oui
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?
If Yes, will unscreened personnel be escorted? ☑ No / Non ☐ Yes / Oui
Dans l'affirmative, le personnel en question sera-t-il escorté?

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises? ☑ No / Non ☐ Yes / Oui
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?

11. b) Will the supplier be required to safeguard COMSEC information or assets? ☑ No / Non ☐ Yes / Oui
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises? ☑ No / Non ☐ Yes / Oui
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data? ☑ No / Non ☐ Yes / Oui
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency? ☑ No / Non ☐ Yes / Oui
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
[illegible]
Security Classification / Classification de sécurité
UNCLASSIFIED

PART C - *(continued)* / PARTIE C - *(suite)*

For users completing the form **manually** use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire **manuellement** doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form **online** (via the internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category / Catégorie	PROTECTED / PROTÉGÉ			CLASSIFIED / CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET	NATO RESTRICTED / NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL / NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET / COSMIC TRÈS SECRET	PROTECTED / PROTÉGÉ A	PROTECTED / PROTÉGÉ B	PROTECTED / PROTÉGÉ C	CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET
Information / Assets / Renseignements / Biens																
Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☑ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☑ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).

COMMON-PS-SRCL#2

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
F1579-196213 CG HN
Security Classification / Classification de sécurité UNCLASSIFIED

PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
Janette Dwyer	Project Officer	Janette Dwyer

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
709-772-4127	709-772-3097	janette.dwyer@dfo-mpo.gc.ca	June 21 '19

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
SCOTT NOSEWORTHY	Regional Security Officer	Scott Noseworthy

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
709-772-7796		scott.noseworthy@dfo-mpo.gc.ca	June 21/19

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached? Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes? ☐ No / Non ☐ Yes / Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
LOUIE TURNER	SUPPLY SPECIALIST	Louie Turner

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date
613-297-3769		louie.turner@tpsgc-pwgsc.gc.ca	June 21/2019

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
		Saumur, Jacques 0 — Digitally signed by Saumur, Jacques 0 DN: c=CA, o=GC, ou=PWGSC-TPSGC, cn=Saumur, Jacques 0 Date: 2017.02.02 11:38:22 -05'00'

Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date

Jacques Saumur
Contract Security Officer
Contracts Security Division|Division des contrats sécurité /
Contract Security Program|Programme de sécurité des contrats /
Public Services and Procurement Canada| Services publics et Approvisionnement Canada
Jacques.Saumur@tpsgc-pwgsc.gc.ca
Telephone | Téléphone 613-948-1732
Facsimile | Télécopieur 613-948-1712

Annex C - Schedule of Milestone Payments

1. Kickoff Meeting, contract award.	5%
2. Contractor prepares the acceptance test plan, electronic schematics, hardware drawings, systems diagrams, schedules and lists in accordance with SOW.	5%
3. All equipment is delivered.	60%
4. Install completion of 100% of the total number of rooms.	20%
5. Test results, training, manuals, handbooks, as-built drawings, configuration and programming files, and acceptance completed	10%

Audio Visual Installation

CCG Southside Rd Fit-up 4th Floor

St. John's, NL

Definitions

1. Within the context of this specification, the following definitions must apply:
    a. "Project": Refers to the Audio Video installation located at Southside Rd, St. John's NL.
    b. The term "Furnish" means design, supply, deliver, store, protect, and demonstrate to the Technical Authority (TA) as specified in this document.
    c. The term "Install" means implement, label, terminate, test, commission, and demonstrate to the TA as specified in this document.
    d. The term "Provide" means to Furnish and Install.
    e. The term "Government Furnished Equipment" or "GFE" refer to equipment provided by the Technical Authority (TA) to the Contractor to install and integrate.
    f. "Client": Refers to the Crown, Government of Canada, PSPC
    g. "CA": Refers to Contracting Authority
    h. "TA": Refers to Technical Authority.

INTRODUCTION

2. Background. The Client has a requirement to fit-up the new space with complete audio/ video systems throughout the new space.

3. Scope. The work includes: equipment, engineering, design, project management, fabrication, assembly, software programming, installation, documentation, training, and warranty of the audiovisual systems.

4. This requirement consists of this document plus 5 separate sub-documents:
    1. Appendix A – SOW – EN (current document)
    2. Appendix B – Bid Spec – EN
    3. Appendix C – Appendix A – CDRL – EN
    4. Appendix D – General Installation and Performance Requirements – EN
    5. Appendix E – AV Drawing Package
    6. Appendix F - 20171012 Electrical IFC 19 (Electrical Drawings for reference only)

UNDERSTANDING AND INSTRUCTIONS

5. The contractor must provide AV equipment as described in the room description and bill of materials for the following rooms:

Room Type		Room Numbers	Qty
Type 1	ROC	414.5	1
Type 2	Briefing Room	413	1
Type 3	AC Strategic Emergency Operation Centre	405	1
Type 4	Telecom Room	471	1
		Total	4

6. The Contractor must provide all system engineering and design necessary to develop the complete systems described herein. Engineering and design must include preparation of all electronic schematics, hardware drawings, systems diagrams, schedules and lists as per

Appendix C - CDRL. These documents must be provided in both hard copy (paper) and soft copy (USB drive). Data file formats must be in PDF and AutoCAD Version 2015 at the completion of the installation.

7. The Contractor must provide all necessary project management and supervisory personnel required to assure the accurate, professional and timely implementation of the project.

8. The Contractor must procure and assemble all hardware and equipment and any additional materials, as required, to produce completely functioning systems.

9. The Contractor must perform all control systems software programming required to develop a complete operational system in accordance with these specifications, including all control logic and graphical user interface programming. The Contractor must revisit the site, up to 90 days from the acceptance date, if minor changes are required to the touch panel layout and operation.

10. The Contractor must use a programmer/field engineer/technician that is Crestron NVX Certified and a control system programmer that is a minimum of Crestron Master Silver Certified. The certificates must be provided with the proposal.

11. The Contractor must install all equipment, cables, wiring, connectors, plates and other material at the Project location and provide fully functioning audio video systems.

12. The Contractor must test its installation work with the Client's PCs, laptops or tablets. The Contractor must coordinate this activity with the Client and must be completed prior to final acceptance testing.

13. The Contractor must follow all installation and performance requirements as outlined in **Appendix D – General Installation and Performance Requirements**.

14. Before acceptance tests are scheduled, the Contractor must perform its own system checkout. The Contractor must furnish all required test equipment and must perform all work necessary to determine and/or modify performance of the system to meet the requirements of the statement of work. When these initial tests and adjustments are completed, the Contractor must notify the Project Authority that the systems are in compliance with the specifications and are ready and complete for acceptance tests.

15. The Contractor must provide technical training to user and technician as outlined in **Appendix C - CDRL**.

16. The Contractor must provide warranty coverage and support services and must include the following:

a. Basic Warranty: Shall warrant the audiovisual systems to be free from faults and defects in system design and workmanship. Basic Warranty coverage shall include all custom designed equipment and the overall audiovisual system design and installation. Basic Warranty shall be effective for a period of one (1) year from the date of audiovisual system acceptance by the Client. Within the period of Basic Warranty coverage, individual manufacturers' equipment warranties shall apply to all purchased equipment. In the event that the manufacturer's warranty has expired on a failed device (equipment warranty of less than one year), the AVC shall be responsible for the actual cost of any required repairs. All manufacturers' equipment warranties shall be effective as of the date of acceptance test completion. If equipment modification by the AVC voids the manufacturers' warranty, the AVC shall assume the equivalent equipment warranty. Response time for Warranty service work shall be no longer than the next business day from date of request for service. The AVC shall warrant that all equipment, materials and components will be new. No used or reconditioned equipment will be acceptable.

b. The Contractor must provide optional pricing for annual maintenance services. Maintenance services are defined as:
    i. Supplemental support to Basic Warranty coverage that shall apply for the same period as the Basic Warranty. Maintenance Support shall provide a minimum of two (2) visit, at regular intervals, to perform operational checks of the equipment, to clean any equipment or equipment parts, as required to maintain optimum system performance.
    ii. This deliverable will be used to assist the Client's planning for future maintenance requirements that are currently out of the scope of this requirement.

c. Response time (call back) for warranty service no longer than 4 hours from time of request for servicing;

d. A warranty period that is automatically extended by the duration of any period or periods where the systems are unavailable for use or cannot be used because of a defect or non-conformance during the original warranty period. This warranty applies to any part of the systems replaced, repaired or corrected, for the greater of:

    i. The warranty period remaining, including the extension; or
    ii. Ninety (90) days or such other period as may be specified for that purpose by agreement between the Contractor and Project Authority.

17. The Contractor must obtain any permits required for the installation of the audio-visual system.

18. The Contractor must respect all deadlines of the AV project schedule.

    a. The work will be performed during business hours (Monday to Friday, 08:00-17:00). The Contractor must notify DFO at least two (2) weeks in advance before scheduling the

work, in order to provide DFO with sufficient time to arrange access to the space and escorts as required.

19. Contractors must make arrangements for hording on-site with the Client. Coordinate secure storage onsite with the Project Authority.

20. The Contractor must update and deliver to the Project Authority the Weekly Checklist below. The report is due every Tuesday by noon for the duration of the contract via email (email address to be provided at contract award).

Weekly Checklist			
	Report Items	Date Completed	Comments
1	Contract awarded		
2	Contract received		
3	Contractor site review completed		
4	Identification of all critical dimensions		
5	Detailed AV project schedule		
6	Detailed Acceptance Test		
7	Provide preliminary screen shots of the touch panel layout depicting “Look and Feel”		
8	Weekly progress summary		
9	Schedule percentage complete		
10	Identified schedule pressures		
11	Installation complete		
12	Acceptance testing complete		
13	Documentation delivered		
14	Training		
15	Final deliverables received (CDRL)		
17	Project sign off		

21. The Contractor must ensure supplied equipment can be transported from the loading area, to the installation area. Access to the elevator must be coordinated with the GC or Building Management.

22. The Contractor must protect the structures and furniture within the building contracted work area.

23. The security of any equipment and/or tools provided by the Contractor for the purpose of installing this system remains the responsibility of the Contractor.

24. Five (5) days prior to the commencement of on-site work, the Contractor must have completed the following items:

    a. a review of all relevant project documentation, including HVAC requirements, electrical power and grounding/earth connection;

    b. a visit to the project site to ensure familiarity with physical conditions of the project affecting the work conditions; and

    c. a finalized detailed project schedule to the Project Authority.

25. At project completion, the Contractor must deliver the following items:

    a. System Operating Handbook describing the basic operation of the AV system by end users and technical support staff. This document must be graphical and written in non-technical terminology for ease of use. It must include a principle of operation for all components of the system. Should the project be broken up into milestones, i.e. delivery of a floor, then a draft of the handbook must be produced to allow users that move in to trained;

    b. Manufacturers Operating/User Manuals for each piece of equipment installed; and

    c. Complete system design documentation including electronic schematics, hardware drawings, system diagrams schedules and lists for approval by the Project Authority as specified in **Appendix C - CDRL**.

26. Project site condition notes:

    a. All electrical and cable pathways (conduit) are in place, including raised floor in the ROC Room.

    b. DFO will be occupying parts of the building when the installation is to take place. The work area will need to kept tidy and not impede access to occupied areas of the building. There may be times that installation work will need to cease temporarily should

there be a situation that DFO Canada Coast Guard deems an emergency. Should this situation occur, DFO staff will provide instructions to the installation team on which areas will have temporary access or noise restrictions.

AUDIOVISUAL SYSTEM SPECIFICATIONS

FOR

AUDIO VISUAL INSTALLATION OF

CCG Southside Rd 4th Floor Fit-up

Table of Contents

CODES AND STANDARDS

1. If, in the opinion of the Contractor, an installation practice is required which is contrary to the specifications or drawings, such installation must not commence until a written request for change has been made to the Project Authority and the request has received approval. The Project Authority is to respond to this request within two (2) business days.
2. If an item of recommended equipment, condition or installation practice as specified does not meet governing code requirements, the Contractor must bring such conflict to the attention of the Project Authority and must facilitate resolution of conflict with all parties concerned.

SYSTEMS DESCRIPTION

3. The Contractor must provide the fully integrated Audio Video systems as detailed below. Refer to the room description and bill of materials for each room type below and the AV drawings accompanying this AV Specification for connection details. The Contractor must propose equipment that meets the capabilities and features of the components listed in the bill of materials; reference section EQUIPMENT SUBSTITUTIONS in Appendix B. All sources are HDMI unless otherwise noted. Adapter dongles may be used to accommodate connectivity.
4. The complete system solutions detailed within this AV Specification are configured with professional commercial hardware. Note that the client may be providing some of the equipment. Refer to the room description and bill of materials for details.
5. Each room system must, as a minimum, have the capabilities and features listed in the room description and bill of materials below:
    a. The following is a detailed description of the rooms by room type. All equipment listed is based on an indicative design. All equipment and part numbers are indicated to convey design intent. All components listed below are minimum acceptable equipment. The Contractor may offer other equipment equivalent to or greater than the list below unless the item is marked as “no substitutes”. The Contractor must provide all miscellaneous cables and small parts that are not listed to provide a complete turnkey system.

Room Type		Room Numbers	Qty
Type 1	ROC	414.5	1
Type 2	Briefing Room	413	1
Type 3	AC Room	405	1
Type 4	Telecom Room	478	1
Spares	Spare equipment (supply only)	N/A	

Type 1 – ROC 414.5 - Description

GENERAL

This space is an operations room equipped with a main video wall (7Wx2H) and (4) auxiliary flat panel displays (one enabled with touch), audio system, wireless presentation system, video conferencing, (2) dedicated room computers for content presentation, (8) operator stations and (1) supervisor station each, all controlled by touch control panels situated around the room. This space is linked to the Briefing Room for content presentation in either direction.

ENVIRONMENT

Approx. 130m^2, suspended ceiling, NW, NE, and SE exterior windows with light filtering roller shades, clustered sit/stand operator stations (8 generally facing the main video wall, 1 supervisor station). The entire ROC room is raised floor.

DISPLAY(S)

Provide and install (14) wall mounted FHD (1920x1080) native resolution, 700nit brightness, commercial ultra narrow bezel (0.9mm bezel or smaller) video wall displays using extendable and adjustable video wall mounts. The displays must be designed for 24/7 operation. The displays must be installed and positioned with manufacturer recommended gaps between and surrounding the video wall perimeter. The displays must be colour, white balance, black level, and brightness balanced after installation using the manufacturer recommended methods and tools.

Provide and install (3) ceiling mounted FHD (1920x1080) native resolution, 700nit brightness, commercial flat panel displays. The displays must be colour, white balance, black level, and brightness balanced after installation using the manufacturer recommended methods and tools.

Install (1) ceiling mounted owner furnished 70" commercial flat panel display.

AUDIO SYSTEM

Provide and install (10) ceiling loudspeakers for reproduction of all program audio. The ceiling speakers shall be configured in (2) zones with independent volume and muting for each zone.

Provide and install (2) digital wireless tabletop microphones with push on/off buttons for in-room audio pickup.

Provide and install a wireless access point so that all wireless microphones can be used concurrently.

Provide and install a charging station so that all wireless microphones can be charged concurrently.

Provide, install, configure and tune an audio DSP processor (see Type 4 – Telecom Room) to handle:

- microphone audio mixing, gating, AEC, and levels. Each microphone channel/zone from microphone array shall have a distinct AEC channel/processing and muting controls.
- program audio levels.
- Telephone audio conferencing for (1) analog telephone lines.

Provide and install a 70V commercial audio power amplifier (see Type 4 – Telecom Room) to power the loudspeakers.

VIDEO SYSTEM

User Connection Points

The user will connect laptops using the USB based wireless presentation system or the auxiliary HDMI cable connection points.

Video Infrastructure

Provide, install, and configure a video matrix switching/distribution system capable of supporting up to 3840x2160 @ 60Hz 4:4:4 over IP ethernet switches.

Provide, install, and configure (4) 48-port ethernet switches capable of supporting the IP based video distribution system and other IP based devices within the system (see Type 4 – Telecom Room).

The video distribution system is a single integrated system for Type 1 – ROC, Type 2 – Briefing Room, and Type 4 – Telecom Room. The system will allow for presentation of any connected source device on any connected system display device (ROC main video wall, ROC NW ceiling displays, BR front wall, and BR side wall). The video distribution system in the ROC and Briefing Room can send (1) video feed to the Type 3 – AC Room for display on the AC Room system.

Provide, install, and configure (4) quad-view video image processors to allow for up to (4) displays within the system to show (4) source devices simultaneously on a single display device (see Type 4 – Telecom Room).

Source Device(s)

Integrate (2) owner furnished computers, located at Operator Station 1, each with (4) HDMI video outputs into the video distribution system. A USB connection between the computers and the video distribution encoder will provide remote keyboard and mouse access to the computers.

At each of (8) operator stations and (1) supervisor station; integrate (1) owner furnished computer with (3) HDMI video outputs to local owner furnished desktop monitors and (1) HDMI video output into the video distribution system and local owner furnished desktop monitor.

Install (2) owner furnished TV Tuner boxes with HDMI output into the video distribution system (see Type 4 – Telecom Room). Cable distribution and services feeding the TV Tuner boxes are provided by the owner or owner's service provider.

Provide and install (3) auxiliary HDMI cable connection points into the video distribution system, (1) each at Operator Stations 1, 2, and the Supervisor Station.

Provide and install (1) auxiliary HDMI cable connection point into the video distribution system for an owner furnished/installed security camera multiplex device.

Provide and install a USB based, dual screen wireless presentation system, located in an Operator Station so the device is accessible for device pairing and configuration. The presentation device shall not connect to the client network.

USB REMOTE PC CONTROL

A USB connection between the (2) Operator Station 1 dedicated Room PC's and the video distribution system will allow for remote keyboard and mouse control from each of (8) Operator Stations and (1) Supervisor station.

(9) owner furnished wired USB keyboard & mouse combos shall connect to the video distribution system at (8) Operator Stations and (1) Supervisor Station (1 each).

The USB switching control shall be via the touch control panels (see System Programming and Configuration).

VIDEO COLLABORATION SYSTEM

Cameras

Install (1) owner furnished HD video conferencing system with Pan/Tilt/Zoom camera capable of 1920x1080 native resolution for use with the hardware VTC codec.

Hardware Conferencing

Install an owner furnished HD video conferencing system capable of 1920x1080 native resolution for use on the client's IP network.

CONTROL

Control of the system shall be via a programmed central control system with touch control user interfaces.

Provide, install, and program a control processor system (see Type 4 – Telecom Room).

Provide, install, and program (9) tabletop touch control panels, (1) at each of (8) Operator Stations and (1) Supervisor Station.

ENVIRONMENTAL CONTROLS

The system will not connect to room environmental/lighting controls.

FURNITURE & EQUIPMENT STORAGE

Rack mounted equipment will be installed in Type 4 – Telecom Room as per the drawing package.

All room furniture and Operator Stations are owner furnished and owner installed.

POWER DISTRIBUTION

Provide and install power strips as needed in the (8) Operator Stations, (1) Supervisor Station and behind the displays to energize the AV system devices.

SYSTEM CONFIGURATION & PROGRAMMING

The system shall be configured to provide on-display wireless presentation connection instructions, with the customer's logo/crest/emblem on the instruction screen when the wireless presentation device is presenting to one of the room system displays.

The DSP audio processor shall be configured and tuned for optimal audio quality for the environment, including EQ, and levels.

The touch control panels shall be programmed to comply with Avixa touch control system GUI guidelines and match the framework layouts provided by the owner. The framework layouts shall be provided to the successful proponent after award.

A graphic user interface preliminary design shall be provided to the customer and The Attain Group for review, comment, and approval prior to final system programming.

The control system shall have the following functionality at a minimum, but be capable of controlling all AV devices and their functions for common system usage and any functionality/usage described within this narrative and AV drawing package:

- The touch control panels shall operate independently in each room.
- The touch control panels at each Operator Station shall have the same GUI but operate independently.
- The touch control panels shall be fully bilingual (French / English) and be switchable from any page.
- Splash activity start-up page shall have the customer's logo/crest/emblem as approved by the customer.
- Display device status, power control, and input control.
- Video and audio source switching.
    - A selection of 5 pre-set layouts, with pre-set source devices shall be available for quick reconfiguration of all room displays.
    - Each of the 5 pre-set layouts may include display devices (physical display) and logical displays (quad-view window, multi-display window).
    - Any source to any destination (current layout's display devices or logical displays) video switching shall be available.

    - Source selection buttons shall clearly indicate if the source is currently connected/available for switching.
    - Briefing Room source buttons shall clearly indicate if the source is currently connected/available AND locked/unlocked for switching.
- Video conference dialing with video codec address book access, full on-screen keyboard, codec menu navigation controls, PTZ camera controls, PTZ camera memory controls, microphone muting, and DTMF tones.
- USB switching for Operator Station keyboard & mouse to dedicated Room PC remote control. The USB switching page shall clearly indicate which operator station has current control of each of the dedicated Room PCs. When an operator selects a Room PC to take keyboard & mouse control, a prompt confirming selection shall be displayed and indicate the current operator that has control.
- Room program audio selection, volume controls, audio zone muting, and microphone privacy muting shall be available on all touch control pages after the splash page.
- System shutdown shall be available on all touch control pages after the splash page. The system shutdown shall have a confirmation prompt before executing the shutdown. Upon confirmation of system shutdown, all switch routes shall be broken, audio muted, all displays power off, and all touch control panels return to the splash screen.

There is no requirement for authorization and/or permissions within the touch control panel for selecting a new pre-set layout or making video switch changes within the ROC.

There shall be a ROC VIDEO SECURITY page that allows for each ROC video source to be available/unavailable for display within the Briefing Room and AC Room via a locked/unlocked button and indicator. A lock/unlock all video sources shall be provided. A “request access to Briefing Room/AC Room sources” button shall be available and if pressed display a prompt on the Briefing Room/AC Room touch control panel indicating the request with the option to Accept (unlock all) or Deny (maintain source lock). The Accept/Deny response shall be indicated on the requesting touch panel.

All pre-compiled programming source code and graphical user interface files will be provided to the customer upon project completion. The programming and graphical user interface files shall be password free and compile free of errors and warnings.

Type 1 – ROC 414.5 – Bill of Materials

ROC		Bill of Materials		
Room Type Qty:	1			
ITEM	MFR	DESCRIPTION	QTY	SUBSTITUTIONS CONSIDERED
	DISPLAY(S)			
UN551S	NEC	55" Ultra-Narrow Bezel, S-IPS Video Wall Display, 700nits	14	
LVSXU	CHIEF	ConnexSys™ Video Wall Landscape Mounting System without Rails	14	NO
P484	NEC	48" Professional-Grade Large Format Display, 700nits	3	
LCM3X1U	CHIEF	FUSION™ Large Ceiling Mounted 3 x 1 Menu Board	1	
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	18	
KT-55UN-OF4	NEC	Overframe Bezel Kit for the UN551S and UN551VS	7	
CSACK06B	CHIEF	Side Cover Kit with ConnexSys Brackets, 6"	1	
LCM1U	CHIEF	FUSION™ Large Flat Panel Ceiling Mount	1	
CPA330	CHIEF	Pin Connection Offset Ceiling Plate	1	
CPA072P	CHIEF	72" CPA Column	1	
	AUDIO SYSTEM			
MXWAPT8	SHURE	Access Point Transceiver - 8CH	1	
MXWNCS8	SHURE	Networked Charging Station	1	
MXW6/C	SHURE	Boundary Wireless Microphone Transmitter	2	
AD-C4T-LP	QSC	4.5" 2-way low profile ceiling loudspeaker - White - Pair	5	
	VIDEO SYSTEM			
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	11	
DM-NVX-E30	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder	11	
R9861580NA	BARCO	ClickShare CSE-800 Base Unit System w/ 4 Buttons and tray	1	NO
	CONTROL SYSTEM			
TSW-1060-NC-W-S	CRESTRON	10.1” Touch Screen Without Camera or Microphone, White Smooth	9	
TSW-1060-TTK-W-S	CRESTRON	Tabletop Kit for TSW-1060, White Smooth	9	
	VIDEO COLLABORATION SYSTEM			
HD-TXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Transmitter w/IR & RS-232, Surface Mount	1	
HD-RXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Receiver w/IR & RS-232, Surface Mount	1	
	OWNER FURNISHED EQUIPMENT			
PNL703B	SHARP	70" TOUCH DISPLAY	1	
Room PC	TBD	Room PC w/ 4 HDMI outputs	11	
Desktop Monitor	TBD	Desktop Monitor w/ HDMI input	36	
	INCIDENTALS			
Incidentals	AV Contractor	All additional incidental materials required to complete the installation such as, but not limited to: cabling, connectors, anchors, trim rings, installation support hardware, cable ties, labels, interface plates, blank and vent rack panels, rack lacing bars, rack screws.	1	

//END Type 1

Type 2 – Briefing Room 413 - Description

GENERAL

This space is briefing/meeting room equipped with dual main flat panel displays and (3) auxiliary flat panel displays, audio system, audio and video conferencing, wireless presentation system, dedicated room computer for content presentation, and (8) table connection points, all controlled by a touch control panel on the table. This space is linked to the ROC for content presentation in either direction.

ENVIRONMENT

Approx. 52m^2, suspended ceiling with decorative tiles above table, NW + NE exterior windows with light filtering roller shades, 18-20 person table.

DISPLAY(S)

Provide and install (2) wall mounted UHD (3840x2160) native resolution, 500nit brightness, commercial displays using adjustable wall mounts. The displays must be designed for 24/7 operation.

Provide and install (3) wall mounted UHD (3840x2160) native resolution, 500nit brightness, commercial displays using adjustable wall mounts. The displays must be designed for 24/7 operation.

AUDIO SYSTEM

Provide and install (8) ceiling loudspeakers for reproduction of all program and conference audio.

Provide and install (10) digital wireless tabletop gooseneck microphones with push on/off buttons for in-room audio pickup.

Provide and install wireless access points so that all wireless microphones can be used concurrently.

Provide and install charging stations so that all wireless microphones can be charged concurrently.

Provide, install, configure and tune an audio DSP processor (see Type 4 – Telecom Room) to handle:

- microphone audio mixing, gating, AEC, and levels. Each microphone channel/zone from microphone array shall have a distinct AEC channel/processing and muting controls.
- program audio levels.
- Telephone audio conferencing for (1) analog telephone lines.

The room microphone audio shall be available to the Room PC, delivered via USB connection, for software communication (ie Webex, GoToMeeting, Skype for Business).

Provide and install a 70V commercial audio power amplifier (see Type 4 – Telecom Room) to power the loudspeakers.

VIDEO SYSTEM

User Connection Points

The user will connect laptops using the USB based wireless presentation system or the table HDMI cable connection points.

Video Infrastructure

Provide, install, and configure a video matrix switching/distribution system capable of supporting up to 3840x2160 @ 60Hz 4:4:4 over IP ethernet switches.

Provide, install, and configure (4) 48-port ethernet switches capable of supporting the IP based video distribution system and other IP based devices within the system (see Type 4 – Telecom Room).

The video distribution system is a single integrated system for Type 1 – ROC, Type 2 – Briefing Room, and Type 4 – Telecom Room. The system will allow for presentation of any connected source device on any connected system display device (ROC main video wall, ROC NW ceiling display, BR front wall, and BR side wall). The video

distribution system in the ROC and Briefing Room can send (1) video feed to the Type 3 – AC Room for display on the AC Room system.

Source Device(s)

Integrate (1) owner furnished computer, located in the credenza millwork with (3) HDMI video outputs into the video distribution system. A USB connection between the computers and the video distribution encoder will provide remote keyboard and mouse access to the computer.

(3) table connection compartments will be provided and installed by the furniture manufacturer in the table each with (1) HDMI connection point.

Provide and install a USB connection plate for installation within one of the furniture connection compartments.

Provide and install a USB based, dual screen wireless presentation system, located in the millwork credenza so the device is accessible for device pairing and configuration. The presentation device shall not connect to the client network.

USB REMOTE PC CONTROL

A USB connection between Room PC and the video distribution system will allow for remote keyboard and mouse control from an owner furnished USB keyboard & mouse combo located on the table.

The USB switching control shall be via the touch control panel (see System Programming and Configuration).

VIDEO COLLABORATION SYSTEM

Cameras

Install and configure an owner furnished auto-tracking/framing PTZ camera system, wall mounted.

Provide and install (1) HD video conferencing system with Pan/Tilt/Zoom camera capable of 1920x1080 native resolution for use with the hardware VTC codec and USB Room PC for software conferencing.

	Hardware Video Conferencing	Software Video Conferencing (USB)	Automatic Camera Framing	Manual Control from Touch Panel
Primary Auto-tracking Camera	✓	✗	✓	✓
Secondary PTZ Camera	✓	✓	✗	✓

Hardware Conferencing

Install an owner furnished HD video conferencing system capable of 1920x1080 native resolution for use on the client's IP network.

Software Conferencing

The active camera image shall be available to the Room PC, delivered via USB connection, for software communication (ie Webex, GoToMeeting, Skype for Business).

CONTROL

Control of the system shall be via a programmed central control system with touch control user interfaces.

Provide, install, and program a control processor system (see Type 4 – Telecom Room).

Provide, install, and program a tabletop touch control panel.

ENVIRONMENTAL CONTROLS

The system will not connect to room environmental/lighting controls.

FURNITURE & EQUIPMENT STORAGE

Rack mounted equipment will be installed in Type 4 – Telecom Room as per the drawing package.

All room furniture and millwork are owner furnished and owner installed.

POWER DISTRIBUTION

Provide and install power strips as needed in under the table, in the millwork, and behind the displays to energize the AV system devices.

SYSTEM CONFIGURATION & PROGRAMMING

The system shall be configured to provide on-display wireless presentation connection instructions, with the customer's logo/crest/emblem on the instruction screen when the wireless presentation device is presenting to one of the room system displays.

The DSP audio processor shall be configured and tuned for optimal audio quality for the environment, including optimized microphone AEC, gating, EQ, and levels.

The touch control panels shall be programmed to comply with Avixa touch control system GUI guidelines and match the framework layouts provided by the owner. The framework layouts shall be provided to the successful proponent after award.

A graphic user interface preliminary design shall be provided to the customer and The Attain Group for review, comment, and approval prior to final system programming.

The control system shall have the following functionality at a minimum, but be capable of controlling all AV devices and their functions for common system usage and any functionality/usage described within this narrative and AV drawing package:

- The touch control panels shall operate independently in each room.
- The touch control panels shall be fully bilingual (French / English) and be switchable from any page.
- Splash activity start-up page shall have the customer's logo/crest/emblem as approved by the customer.
- Display device status, power control, and input control.
- Activity based start-up (Presentation, Audio Conferencing, Video Conferencing, Briefing)
- Video and audio source switching.
    - A selection of 3 pre-set layouts, with pre-set source devices shall be available for quick reconfiguration of all room displays.
    - Any source to any destination video switching shall be available.
    - Source selection buttons shall clearly indicate if the source is currently connected/available for switching.
    - ROC source buttons shall clearly indicate if the source is currently connected/available AND locked/unlocked for switching.
- Audio conference dialing with microphone muting and DTMF tones.
- Video conference dialing with video codec address book access, full on-screen keyboard, codec menu navigation controls, PTZ camera controls, PTZ camera memory controls, microphone muting, and DTMF tones.
- USB switching for table keyboard & mouse to remotely control the ROC dedicated Room PCs remote control. The USB switching page shall clearly indicate which ROC operator station has current control of each of the dedicated Room PCs. When the user selects a Room PC to take keyboard & mouse control, a prompt confirming selection shall be displayed and indicate the current operator that has control.

- Room program audio selection, volume controls, audio muting, and microphone privacy muting shall be available on all touch control pages after the splash page.
- System shutdown shall be available on all touch control pages after the splash page. The system shutdown shall have a confirmation prompt before executing the shutdown. Upon confirmation of system shutdown, all switch routes shall be broken, audio muted, all displays power off, and all touch control panels return to the splash screen.

There is no requirement for authorization and/or permissions within the touch control panel for selecting a new pre-set layout or making video switch changes within the Briefing Room.

There shall be a BRIEFING ROOM VIDEO SECURITY page that allows for each Briefing Room video source to be available/unavailable for display within the ROC via a locked/unlocked button and indicator. A lock/unlock all video sources shall be provided. A "request access to ROC sources" button shall be available and if pressed display a prompt on the ROC touch control panels indicating the request with the option to Accept (unlock all) or Deny (maintain source lock). The Accept/Deny response shall be indicated on the requesting touch panel.

All pre-compiled programming source code and graphical user interface files will be provided to the customer upon project completion. The programming and graphical user interface files shall be password free and compile free of errors and warnings.

Type 2 – Briefing Room 413 – Bill of Materials

BRIEFING ROOM		Bill of Materials		
Room Type Qty:	1			
ITEM	MFR	DESCRIPTION	QTY	SUBSTITUTIONS CONSIDERED
	DISPLAY(S)			
V554Q	NEC	55" 4K UHD Professional Display, 500 nits	3	
LTM1U	CHIEF	Large Fusion Micro-Adjustable Tilt Wall Mount	3	
V654Q	NEC	65" 4K UHD Professional Display, 500 nits	2	
LTM1U	CHIEF	Large Fusion Micro-Adjustable Tilt Wall Mount	2	
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	5	
CSACK06B	CHIEF	Side Cover Kit with ConnexSys Brackets, 6"	2	
	AUDIO SYSTEM			
MXWAPT8	SHURE	Access Point Transceiver - 8CH	2	
MXWNCS8	SHURE	Networked Charging Station	3	
MXW8	SHURE	Gooseneck Microphone Base Transmitter	10	
MX410RLPDF/C	SHURE	10" Cardioid Dualflex Gooseneck Microphone with red light ring	10	
I/O-USB	QSC	QSC Q-SYS USB Bridge	1	NO
AD-C4T-LP	QSC	4.5" 2-way low profile ceiling loudspeaker - White - Pair	4	
	VIDEO SYSTEM			
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	2	
DM-NVX-E30	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder	11	
FT2-1400-ELEC-AL	CRESTRON	FlipTop™ FT2 Series, 1400 Size, Electrical, Alloy	4	
FT2A-CBLR-GR-4K-HD	CRESTRON	Gravity Cable Retractor for FT2 Series, HDMI® to HDMI, 18 Gbps	8	
FT2A-PLT-BLANK-10	CRESTRON	Blank Plate Modules for FT2 Series, Qty. 10	1	
FT2A-PWR-US-2	CRESTRON	AC Power Outlet Module for FT2 Series, Dual, US NEMA 5, Type B, w/2 Under-Table Outlets & Cord	8	
FT2A-CHGR-USBA/C	CRESTRON	USB Rapid Charging Module for FT2 ELEC Series, USB Type-C & Type-A High Power Charging Ports, Bus Powered	8	
FT2A-CBLR-GR-CAT6	CRESTRON	Gravity Cable Retractor for FT2 Series, RJ-45 to RJ-45, CAT6	8	
FT2A-PLT-PT-10	CRESTRON	Cable Pass-Through Plate Modules for FT2 Series, Qty. 10	1	
FT2A-UTK-PWS	CRESTRON	Power Supply for FT2 ELEC Series	4	
R9861580NA	BARCO	ClickShare CSE-800 Base Unit System w/ 4 Buttons and tray	1	NO
	CONTROL SYSTEM			
TSW-1060-NC-W-S	CRESTRON	10.1" Touch Screen Without Camera or Microphone, White Smooth	1	
TSW-1060-TTK-W-S	CRESTRON	Tabletop Kit for TSW-1060, White Smooth	1	
	VIDEO COLLABORATION SYSTEM			
PTZ-IP 12x72	QSC	PTZ-IP Conference Camera	2	NO
HD-TXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Transmitter w/IR & RS-232, Surface Mount	2	
HD-RXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Receiver w/IR & RS-232, Surface Mount	2	
	OWNER FURNISHED EQUIPMENT			

SX80 Kit w/ Speaker Track	CISCO	VTC Codec kit, with SpeakerTrack 60 camera (IN TELECOM ROOM)	1
Room PC	TBD	Room PC w/ 3 HDMI outputs	1
	INCIDENTALS		
Incidentals	AV Contractor	All additional incidental materials required to complete the installation such as, but not limited to: cabling, connectors, anchors, trim rings, installation support hardware, cable ties, labels, interface plates, blank and vent rack panels, rack lacing bars, rack screws.	1

//END Type 2

Type 3 – AC Room 405 - Description

GENERAL

This space is meeting room equipped with dual main flat panel displays, audio system, audio and video conferencing, wireless presentation system, and (1) table connection point, all controlled by a touch control panel on the table. This space is linked to the ROC for content receiving from the ROC.

ENVIRONMENT

Approx. 35m^2, suspended ceiling, NW exterior windows with light filtering roller shades, 10-12 person table.

DISPLAY(S)

Provide and install (2) wall mounted UHD (3840x2160) native resolution, 500nit brightness, commercial displays using adjustable wall mounts. The displays must be designed for 24/7 operation.

AUDIO SYSTEM

Provide and install (4) ceiling loudspeakers for reproduction of all program and conference audio.

Provide and install a ceiling mounted microphone array capable of steerable/tunable audio pick-up areas

Provide, install, configure and tune an audio DSP processor to handle:

- microphone audio mixing, gating, AEC, and levels. Each microphone channel/zone from microphone array shall have a distinct AEC channel/processing.
- program audio levels.
- Telephone audio conferencing for (1) analog telephone lines.

The room microphone audio shall be available to the Room PC, delivered via USB connection, for software communication (ie Webex, GoToMeeting, Skype for Business).

Provide and install a 70V commercial audio power amplifier to power the loudspeakers.

VIDEO SYSTEM

User Connection Points

The user will connect laptops using the USB based wireless presentation system or the table HDMI cable connection point.

Video Infrastructure

Provide, install, and configure a video matrix switching/distribution system capable of supporting up to 3840x2160 @ 60Hz 4:4:4 over IP ethernet switches and a control matrix presentation switcher.

Provide, install, and configure (1) 24-port ethernet switch capable of supporting the IP based video distribution system and other IP based devices within the system.

The system will allow for presentation of any connected source device within the AC Rm on any connected system display device (AC Room displays). The video distribution system in the ROC and Briefing Room can send (1) video feed to the Type 3 – AC Room for display on the AC Room system.

Source Device(s)

Integrate (1) owner furnished computer, located in the credenza millwork with (1) HDMI video output into the video distribution system. A USB connection between the computers and the video distribution encoder will provide remote keyboard and mouse access to the computer.

Provide and install (1) table connection compartment in the table with (1) HDMI connection point.

Provide and install a USB connection plate for installation within the table connection compartments.

Provide and install a USB based, dual screen wireless presentation system, located in the millwork credenza so the device is accessible for device pairing and configuration. The presentation device shall not connect to the client network.

USB REMOTE PC CONTROL

A USB connection between Room PC and the video distribution system will allow for remote keyboard and mouse control from an owner furnished USB keyboard & mouse combo located on the table.

The USB switching control shall be via the touch control panel (see System Programming and Configuration).

VIDEO COLLABORATION SYSTEM

Cameras

Install (1) owner furnished HD video camera system with Pan/Tilt/Zoom camera capable of 1920x1080 native resolution for use with the hardware VTC codec.

Hardware Conferencing

Install (1) owner furnished HD video conferencing system with capable of 1920x1080 native resolution for connection to the client's IP network.

CONTROL

Control of the system shall be via a programmed central control system with a touch control user interface.

Provide, install, and program a control processor system integrated within a matrix presentation switcher.

Provide, install, and program a tabletop touch control panel.

ENVIRONMENTAL CONTROLS

The system will not connect to room environmental/lighting controls.

FURNITURE & EQUIPMENT STORAGE

Provide and install a credenza equipment rack to house the racked equipment.

All other room furniture is owner furnished and owner installed.

POWER DISTRIBUTION

Provide and install (2) rack mounted power strips in the credenza and any other power strips required behind displays or under table to energize the AV equipment.

SYSTEM CONFIGURATION & PROGRAMMING

The system shall be configured to provide on-display wireless presentation connection instructions, with the customer's logo/crest/emblem on the instruction screen when the wireless presentation device is presenting to one of the room system displays.

The DSP audio processor shall be configured and tuned for optimal audio quality for the environment, including optimized microphone AEC, gating, EQ, and levels.

The touch control panel shall be programmed to comply with Avixa touch control system GUI guidelines and match the framework layouts provided by the owner. The framework layouts shall be provided to the successful proponent after award.

A graphic user interface preliminary design shall be provided to the customer and The Attain Group for review, comment, and approval prior to final system programming.

The control system shall have the following functionality at a minimum, but be capable of controlling all AV devices and their functions for common system usage and any functionality/usage described within this narrative and AV drawing package:

- The touch control panels shall operate independently in each room.
- The touch control panels shall be fully bilingual (French / English) and be switchable from any page.
- Splash activity start-up page shall have the customer's logo/crest/emblem as approved by the customer.
- Display device status, power control, and input control.
- Activity based start-up (Presentation, Audio Conferencing, Video Conferencing)
- Video and audio source switching.
    - Any source to any destination video switching shall be available.
    - Source selection buttons shall clearly indicate if the source is currently connected/available for switching.
    - ROC source buttons shall clearly indicate if the source is currently connected/available AND locked/unlocked for switching.
- Audio conference dialing with microphone muting and DTMF tones.
- Video conference dialing with video codec address book access, full on-screen keyboard, codec menu navigation controls, PTZ camera controls, PTZ camera memory controls, microphone muting, and DTMF tones.
- USB switching for table keyboard & mouse to remotely control the dedicated Room PC remote control.
- Room program audio selection, volume controls, audio muting, and microphone privacy muting shall be available on all touch control pages after the splash page.
- System shutdown shall be available on all touch control pages after the splash page. The system shutdown shall have a confirmation prompt before executing the shutdown. Upon confirmation of system shutdown, all switch routes shall be broken, audio muted, all displays power off, and all touch control panels return to the splash screen.

A "request access to ROC sources" button shall be available and if pressed display a prompt on the ROC touch control panels indicating the request with the option to Accept (unlock all) or Deny (maintain source lock). The Accept/Deny response shall be indicated on the requesting touch panel.

All pre-compiled programming source code and graphical user interface files will be provided to the customer upon project completion. The programming and graphical user interface files shall be password free and compile free of errors and warnings.

Type 3 – AC Room 405 – Bill of Materials

AC RM		Bill of Materials		
Room Type Qty:	1			
ITEM	MFR	DESCRIPTION	QTY	SUBSTITUTIONS CONSIDERED
	DISPLAY(S)			
V654Q	NEC	65" 4K UHD Professional Display, 500 nits	2	
LTM1U	CHIEF	Large Fusion Micro-Adjustable Tilt Wall Mount	2	
	AUDIO SYSTEM			
MXA910W	SHURE	24" Ceiling Array Microphone with Shure® IntelliMix® DSP Suite - White	1	NO
CORE 110F	QSC	DSP Audio processor, 16CH AEC, POTS, VOIP	1	NO
SL-QSE-110-P	QSC	Scripting deployment license for CORE110f	1	NO
SPA2-60	QSC	Energy Star Commercial Amplifier, 2Ch x 60W (1Ch x 250W @ 70V)	1	
AD-C4T-LP	QSC	4.5" 2-way low profile ceiling loudspeaker - White - Pair	2	
	VIDEO SYSTEM			
DMPS3-4K-350-C	CRESTRON	3-Series® 4K DigitalMedia™ Presentation System 350	1	
DM-RMC-4K-SCALER-C	CRESTRON	4K DigitalMedia 8G+® Receiver & Room Controller w/Scaler	2	
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	2	
FT2-1400-ELEC-AL	CRESTRON	FlipTop™ FT2 Series, 1400 Size, Electrical, Alloy	1	
FT2A-CBLR-GR-4K-HD	CRESTRON	Gravity Cable Retractor for FT2 Series, HDMI® to HDMI, 18 Gbps	1	
FT2A-PLT-BLANK-10	CRESTRON	Blank Plate Modules for FT2 Series, Qty. 10	1	
FT2A-PWR-US-2	CRESTRON	AC Power Outlet Module for FT2 Series, Dual, US NEMA 5, Type B, w/2 Under-Table Outlets & Cord	2	
FT2A-CHGR-USBA/C	CRESTRON	USB Rapid Charging Module for FT2 ELEC Series, USB Type-C & Type-A High Power Charging Ports, Bus Powered	2	
FT2A-CBLR-GR-CAT6	CRESTRON	Gravity Cable Retractor for FT2 Series, RJ-45 to RJ-45, CAT6	4	
FT2A-PLT-PT-10	CRESTRON	Cable Pass-Through Plate Modules for FT2 Series, Qty. 10	1	
FT2A-UTK-PWS	CRESTRON	Power Supply for FT2 ELEC Series	2	
R9861580NA	BARCO	ClickShare CSE-800 Base Unit System w/ 4 Buttons and tray	1	
	CONTROL SYSTEM			
TSW-1060-NC-W-S	CRESTRON	10.1" Touch Screen Without Camera or Microphone, White Smooth	1	
TSW-1060-TTK-W-S	CRESTRON	Tabletop Kit for TSW-1060, White Smooth	1	
SG350X-24MP	CISCO	24-Port Gigabit PoE Stackable Managed Switch	1	
	VIDEO COLLABORATION SYSTEM			
535-2000-241	VADDIO	Thin Profile Wall Mount for Cisco Precision 60	1	
HD-TXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Transmitter w/IR & RS-232, Surface Mount	1	
HD-RXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Receiver w/IR & RS-232, Surface Mount	1	
	EQUIPMENT STORAGE			
C5-FF27-3	MIDDLE ATLANTIC	C5 Series, C5-FF27-3, 3 Bays, 27 D	1	

C5-VENT3-SM	MIDDLE ATLANTIC	C5 Silver Vent	1
C5K3A1SSHA3ZP001	MIDDLE ATLANTIC	Pre-Configured HPL Wood Kit, Asian Night for C5-FF27-3, locks and handles included (COLOUR TO BE CONFIRMED WITH CLIENT)	1
	POWER DISTRIBUTION		
PD-915R	MIDDLE ATLANTIC	Rackmount Power, 9 Outlet, 15A, Basic Surge	2
	OWNER FURNISHED EQUIPMENT		
CTS-SX80-IP60-K9	CISCO	Cisco SX80 Codec, Precision 60 Cam, Touch 10	1
	INCIDENTALS		
Incidentals	AV Contractor	All additional incidental materials required to complete the installation such as, but not limited to: cabling, connectors, anchors, trim rings, installation support hardware, cable ties, labels, interface plates, blank and vent rack panels, rack lacing bars, rack screws.	1

//END Type 3

Type 4 – Telecom Room 478 - Description

GENERAL

This space is a server/telecom room to house the head-end AV equipment within an equipment rack. The room shall have adequate physical access control (by others) and adequate cooling (by others).

AUDIO SYSTEM

Provide, install, configure and tune an audio DSP processor to handle:

- microphone audio mixing, gating, AEC, and levels. Each microphone channel from microphone arrays and wireless microphones shall have a distinct AEC channel/processing.
- program audio levels.
- Telephone audio conferencing for (1) analog telephone line.

Provide and install a two channel 70V commercial audio power amplifier to power the loudspeakers in the ROC.

Provide and install a single channel 70V commercial audio power amplifier to power the loudspeakers in the Briefing Room.

VIDEO SYSTEM

Video Infrastructure

Provide, install, and configure a video matrix switching/distribution system capable of supporting up to 3840x2160 @ 60Hz 4:4:4 over an IP ethernet switch.

Provide, install, and configure a video network management server for video endpoint and video routing management of the video distribution system.

Provide, install, and configure (4) quad-view video image processors to allow for up to (4) displays within the system to show (4) source devices simultaneously on a single display device.

Provide, install, and configure (4) 48-port ethernet switches capable of supporting the IP based video distribution system and other IP based devices within the system. The system shall be configured in such a way that if a single ethernet switch fails, the connections can be re-patched and functional on the remaining (3) ethernet switches.

CONTROL

Control of the system shall be via a programmed central control system with touch control user interfaces located within the ROC and Briefing Room.

Provide, install, and program (2) control processor systems; one managing ROC system control and one managing the Briefing Room control.

FURNITURE & EQUIPMENT STORAGE

Provide and install a 40U equipment rack with castor based.

Provide and install any/all lacing bars and rack shelves needed.

Provide and install all blank rack panels to fill the gaps between the racked equipment.

All cabling in/out of the equipment shall have a nylon sock wrapped service loop long enough to allow the equipment rack to be pulled out of the Telecom Room into the hallway for servicing. The service loop shall be dressed in such a way to not be run over or bind on the equipment rack's castors.

POWER DISTRIBUTION

Provide and install (2) vertical power strips with 24 outlets each and basic surge protection for installation within the equipment rack.

Type 4 – Telecom Room 478 – Bill of Materials

Telecom Room		Bill of Materials		
Room Type Qty:	1			
ITEM	MFR	DESCRIPTION	QTY	SUBSTITUTIONS CONSIDERED
	AUDIO SYSTEM			
CORE510I	QSC	Q-SYS Integrated Core Processor (DSP Processor)	1	NO
CIML4-KIT	QSC	Mic/Line Input Card - 4Ch	2	NO
COL4-KIT	QSC	Line Output Card - 4Ch	2	NO
CTEL4-KIT	QSC	Analog Telephony Card (POTS)	1	NO
SL-QSE-510-P	QSC	Scripting deployment license for CORE510i	1	NO
CDN64-KIT	QSC	Dante Card - 64Ch	1	NO
SPA4-60	QSC	Energy Star Commercial Amplifier, 4Ch x 60W (2Ch x 250W @ 70V)	1	
SPA2-60	QSC	Energy Star Commercial Amplifier, 2Ch x 60W (1Ch x 250W @ 70V)	1	
	VIDEO SYSTEM			
DM-XIO-DIR-160	CRESTRON	DigitalMedia™ XiO Director – Virtual Switching Appliance for 160 Endpoints	1	
DMF-CI-8	CRESTRON	DigitalMedia™ Card Chassis for DM-NVX-C & DMCF, 8 Slots	4	
DM-NVX-D30C	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Decoder Card	20	
DM-NVX-E30C	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder Card	11	
HD-WP-4K-401-C	CRESTRON	4K Multi-Window Video Processor with HDBaseT® & HDMI® Outputs	4	
	CONTROL SYSTEM			
CP3	CRESTRON	3-Series Control System®	2	
C9300-48P-E	CISCO	Cisco Catalyst 9300 - Network Essentials - switch - 48 ports - managed	4	
C9300-NM-2Q	CISCO	9300 Series 2x 40G Network Module	4	
	VIDEO COLLABORATION SYSTEM			
CTS-SX80-IPST60-K9	CISCO	Cisco SX80 Codec, Speaker Track 60, Touch 10	1	
	EQUIPMENT STORAGE			
ERK-4028LRD	MIDDLE ATLANTIC	ERK SERIES RACK, 40 RU, 28"D, W/O REAR DOOR	1	
CBS-ERK-28	MIDDLE ATLANTIC	CASTOR BASE	1	
	POWER DISTRIBUTION			
PD-2415SC	MIDDLE ATLANTIC	SLIM POWER STRIP, 24 OUTLET, 15A, BASIC SURGE	2	
	OWNER FURNISHED EQUIPMENT			
GEN-TVTUNER	GENERIC	CATV / SAT / IP Television Tuner w/ HDMI video output	3	
SX80 Kit w/ Speaker Track	CISCO	VTC Codec kit, with SpeakerTrack 60 camera	1	
	INCIDENTALS			
Incidentals	AV Contractor	All additional incidental materials required to complete the installation such as, but not limited to: cabling, connectors, anchors, trim rings, installation support hardware, cable ties, labels, interface plates, blank and vent rack panels, rack lacing bars, rack screws.	1	

//END Type 4

Spares – Spare Equipment - Description

GENERAL

The following equipment shall be provided as spare equipment. No installation or configuration of this equipment is required.

Provide an inventory list including QTY, MANUFACTURER, MODEL, DESCRIPTION, and SERIAL NUMBER for all spare equipment.

The spare equipment will be stored by the client, at the client site.

Spares – Spare Equipment – Bill of Materials

Spares (Supply Only) **Bill of Materials**

Room Type Qty: 1

ITEM	MFR	DESCRIPTION	QTY	SUBSTITUTIONS CONSIDERED
	VIDEO SYSTEM			
DMF-CI-8	CRESTRON	DigitalMedia™ Card Chassis for DM-NVX-C & DMCF, 8 Slots	1	
DM-NVX-D30C	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Decoder Card	1	
DM-NVX-E30C	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder Card	1	
DM-NVX-350	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder/Decoder	2	
DM-NVX-E30	CRESTRON	DigitalMedia™ 4K60 4:4:4 HDR Network AV Encoder	1	
HD-TXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Transmitter w/IR & RS-232, Surface Mount	1	
HD-RXC-101-C-E	CRESTRON	DM Lite – HDMI® over CATx Receiver w/IR & RS-232, Surface Mount	1	
	CONTROL SYSTEM			
CP3	CRESTRON	3-Series Control System®	1	

//END Spares

MULTI-TRADE RESPONIBILITY CHART

The following scope allocation is to establish commonly miscommunicated responsibilities creating dual ownership and/or non-ownership. It is not intended to detail all contractor or subcontractor responsibilities under the GC or Client.

Task		AVC	Client	Need by Date	Task done
	General Construction				
1	Ensure Client security requirements are met	✔	✔		
2	Site acceptance, unloading and delivery	✔			
3	Provide a secure and dust free holding area.		✔		
4	Furnish and install AC power receptacles		✔		
5	Field confirmation of AC power receptacles	✔			
6	Furnish and install- AV junction boxes, conduit, raceways and rough-in items		✔		
7	Field confirmation of AV junction boxes, conduit, raceways and rough-in items	✔			
8	Provide all pathways, J-hooks for AV related cabling.	✔			
9	Furnish and install AV related plates	✔			
10	Furnish and install All AV related blocking and infrastructure support requirements (ex Projectors, LCD, etc)		✔		
11	Furnish low voltage AV cables and connectors	✔			
12	Field confirmation of all Cat6 cabling needed by AV systems	✔			
13	Install AV cable pulls, terminations, labeling and tests cables.	✔			
14	Provide final position of work area displays		✔		
15	Furnish and install Projector / screens /LCD screens, mounts, low voltage interfaces and wall switches.	✔			
16	Install ceiling speakers, backboxes, tile bridges, transformers and grilles	✔			
17	Provide lighting systems & associated low voltage interfaces		✔		
18	Furnish and install ceiling hatches, if required.		✔		
19	Lighting and dimmer pre-sets and control (if applicable)		✔		
20	Rubbish removal related to AV installation daily	✔			
21	Provide any table modifications to support microphones		✔		
22	Furnish and install data cabling drops (pertaining to AV equipment)		✔		

23	Provide data drop connectivity (pertaining to AV equipment)		✔
24	Provide static IP Addresses (pertaining to AV equipment)		✔
25	Confirm all AV Voice/Data/Power (by others) have been included in base contract		✔
26	Provide all AV equipment as per Tender to supply a turn-key system	✔	
27	Testing, commissioning, training and closeout documentation	✔	

SIGN-OFF/CLOSE-OUT

1. A mandatory on-site meeting consisting of the Contractor's project team (Project manager, lead tech and programmer) and the Project Authority must be scheduled at the projects conclusion to review and resolve all outstanding issues. The goal is to address any and all programming issues, confirm functionality and sign-off.

2. Two (2) USB drive must be provided as specified in the Appendix B CDRL:
   a. Manufacturer Operating Manuals;
   b. System Operating Handbook and Quick Reference Guides (cheat sheets);
   c. Equipment inventory;
   d. Acceptance test results;
   e. Latest control system program source code required for a full functional re-install;
   f. Latest DSP program source code required for a full functional re-install;
   g. Screen shots of all touch screens for troubleshooting purposes; and
   h. As-Built drawings;

Contract Data Requirements List

(CDRL)

CONTRACT DATA REQUIREMENTS LIST

ITEM No.	TITLE/SOW PARA	QTY	DELIVER TO	DUE DATE	REMARKS
01	Acceptance Test Plan	1	Technical Authority	Acceptance plan due 5 days prior to room testing and acceptance	Electronic copy
02	Acceptance Tests	3	Technical Authority	Acceptance test results due 3 days following sign-off from the Technical Authority	Hardcopies (qty 2) and electronic copy
03	System Operating Materials	1 per type of room	Technical Authority	Draft materials due 20 days prior to room testing and acceptance. Final materials due 30 days following room testing and acceptance	Hardcopies (qty 2) and electronic copy
04	Training	8 hours	Technical Authority	2 hours end user training for each of the ROC and BRIEFING ROOMs 1 hour end user training for the AOC ROOM. 3 hours technical training for all installed systems	
05	Manufacturer Data Sheets/User Manuals	1	Technical Authority	Data Sheets and User Manuals due 3 days following sign-off from Project Authority	Hardcopy and/or electronic copy
06	As-Built Drawings / Equipment Inventory	1 set per type of room	Technical Authority	Draft drawings and inventory due 5 days prior to room testing and acceptance. As-Built drawings and inventory due 30 days following room testing and acceptance	Hardcopies (qty 2) and electronic copy
07	Programming Source and DSP Code	1 set per room (as applicable)	Technical Authority	Due 30 days following room testing and acceptance	Electronic copies

DATA ITEM DESCRIPTION	
TITLE: Acceptance Testing **SUBTITLE: Acceptance Test Plan** **Hardware and System**	

DESCRIPTION/PURPOSE

1. The Acceptance Test Plan must include the procedures on how to perform the tests that will be used by the Contractor to demonstrate the complete integration and proper operation of the hardware and system software. It will describe the general procedures terms and conditions governing the planning, preparation and completion of acceptance tests covering the system submitted for acceptance.

2. The Contractor must submit an outline of a sample acceptance test plan with the bid. Outline must contain sufficient detail to understand sequence and timing.

PREPARATION OF THE ACCEPTANCE TEST PLAN

3. The Contractor must prepare and submit an Acceptance Test Plan 2 weeks prior to scheduled system testing. It must include step-by-step procedures on how each test will be performed. The tests procedures must be in a table format. The table must contain columns for the following information:

    a. System/sub-system name scope of the test;
    b. Control parameters;
    c. Test equipment provided by Contractor to perform the test(s);
    d. Results: Pass/Fail; and
    e. Spaces/columns at each test for Contractor and Project Authority signatures.

4. Test Parameters – The Contractor must perform end-to-end testing of all signal flows to verify proper functionality. The testing must adhere to the suggested manufacturer testing protocol.

5. Cable Testing – All Contractor-fabricated cables must be tested and results submitted to the Project Authority:

    a. Continuity tests;

    b. Short tests; and

    c. Wiremap tests.

6. The audiovisual system must be tested in accordance to the InfoComm International Standard for Audiovisual Systems performance verification (ANSI/INFOCOMM 10:2013).

    a. As part of ANSI/INFOCOMM 10:2013, the functional categories to be tested must include the following:

        (1) Audio System Performance;

        (2) Video System Performance;

        (3) Audio/Video System Performance:

(4) Cable Management, Termination and Labeling:

(5) Control System Performance;

(6) System and record Documentation:

(7) Electrical:

(8) Information Technology;

(9) Operations and Support;

(10) Physical Environment;

(11) Physical Installation; and

(12) Serviceability.

DATA ITEM DESCRIPTION	
TITLE: Documentation **SUBTITLE: System Operating Materials**	

DESCRIPTION/PURPOSE

1. The purpose of the System Operating Materials is to show the users how to set-up, use and operate the presentation and audio conferencing systems as well as basic troubleshooting procedures.

PREPARATION OF SYSTEM OPERATING MATERIALS

2. The Contractor must submit to the Project Authority for his review and approval a manual titled System Operating Materials. These materials must contain the required information for a novice user to set-up the presentation or make an audio call. Use of block diagrams, laminated “cheat sheets” and cross-references to the Manufacturer Operating Manuals shall be included in the technical section of the materials. One copy of the quick refence guides “cheat sheets” (final version) must be left in each room. One copy, in handbook form, must be delivered to the Project Authority.

3. As a minimum, the handbook must include the following information:

a. Overview of the local presentation, audio conferencing, video conferencing and annotating components;
b. How to set-up, adjust and use all the features of all the components procured or installed;
c. Pictorial representation of the steps needed to start, connect and present using the different equipment installed within each room. Written verbiage to accompany each step in the process.
d. The technical section of the System Operating Materials must contain:
   I. A complete list of all the settings for the equipment used, including a snap shot or screen capture of each configuration page.
   II. A troubleshooting guide section that contains sufficient information to allow a technician to pinpoint which equipment has failed in case of problems, and to ensure that the problem is not due to a bad set up or connection;
   III. It shall also include directions on how to bypass the video and audio switching equipment in case of failure to allow the conference or local presentation to be conducted by manually switching the audio and video sources;
   IV. Provide a description of each module used in the local presentation installation, unless this information is contained somewhere else in the off-the-shelf documentation. In this case, it must provide a reference to this information;
e. If necessary, the Materials must make reference to sections of the documentation contained in the Off-the-Shelf Equipment Operating Manuals.

4. The System Operating Materials must be prepared in English and French.

5. The System Operating Materials must also be provided on USB media, in Microsoft Word format, version 2010 or later to the Departmental Representative.

Note: The technical section of the System Operating Materials must be included with the As-Built/Installed Drawings.

DATA ITEM DESCRIPTION	
TITLE: Training **SUBTITLE: Training Syllabus**	

DESCRIPTION/PURPOSE

1. To provide detailed training sessions to end users and technical staff.

PREPARATION OF TRAINING SYLLABUS

The Contractor must provide on-site training to end users and technical staff instructing them on the AV systems capabilities, maintenance and troubleshooting. Specific structure and scheduling of training must be established in cooperation with Project Authority prior to the completion of the installation. The Contractor must provide a total of 5 hours of end user training (train the trainer) and 3 hours of technical training. The Project Authority will create the training schedule and allocate the number of training hours based on the room complexity.

1. The training syllabus must be centered on content of the System Operating Handbook and must cover system set-up, functions, operations, and instructions on how to operate the software allowing interactive whiteboarding.

2. The training must teach end users with no previous experience:

   a. How to set-up and display a local presentation;

   b. How to set-up a teleconference call;

   c. How to set-up a video conference call;

   d. How to select layouts and switch sources on all displays including the video wall; and

   e. How to set-up, adjust and use all the system features.

3. In addition to the end user syllabus, the technical staff training must cover:

   a. Determine which equipment has failed and determine the cause of the problem;
   b. Steps to bypass the video and audio switching equipment; and
   c. Review the as-built drawings including schematics, rack layouts and floor plans.

4. Training must take place at the Project location using the equipment as a training aid.

5. Training must be available in English. Coordinate with Technical Authority.

6. Training must take place within 2 weeks of system installation completion.

DATA ITEM DESCRIPTION	
TITLE: Drawing **SUBTITLE: As-Built Drawings and Equipment Inventory**	

DESCRIPTION/PURPOSE

1. The as-built drawings must indicate the location of all major components of each system and how these components are interconnected.

PREPARATION OF AS-BUILT DRAWINGS AND EQUIPMENT INVENTORY

As-Built Drawings

2. The Contractor must supply drawings pertinent to those components, systems, and work supplied under the contract.

3. The as-built drawings must include a schematic comprising of video, audio and control interconnectivity, rack layout and floor plan of each room.

4. The as-built drawings must conform to PSPC drawing standards as described in Doing Business with PWGSC English available here: https://buyandsell.gc.ca/cds/public/2018/08/20/4ac636ad2c6a2dbc572c233fdd93eb16/en_doing_business_pwgsc_-_01-12-2018.pdf

5. The as-built drawings must be submitted to the Project Authority for his review and approval no later than 15 days after site testing and acceptance.

6. Two (2) copies of all as-built drawings must be delivered to the Project Authority.

7. An electronic version of all as-built drawings must be provided to the Project Authority on a USB drive (AutoCAD 2015 and PDF).

Equipment Inventory

8. The Contractor must provide a spreadsheet itemizing the make, model number, serial number, location, and warranty information of all installed equipment.

9. The spreadsheet must be provided to the Project Authority on a USB drive (Microsoft Excel 2010).

GENERAL INSTALLATION AND PERFORMANCE REQUIREMENTS

Table of Contents

GENERAL INSTALLATION

INSTALLATION

1. Installation must include the following:

    a. Uncrating, setting in place, fastening to walls, floors, ceilings, counters, or other structures where required of all equipment except as otherwise noted;
    b. Interconnect wiring of the components of the system;
    c. Equipment alignment and adjustment; and
    d. All other work whether or not expressly required herein which is necessary to result in a completely tested and operating system.

2. All equipment must be firmly secured in place unless requirements of portability dictate otherwise. Fastenings and supports must be adequate to support their loads with a safety factor of at least three (3) times.

3. All boxes, equipment, etc. must be plumb and square.

CONTRACTOR PERFORMANCE

4. All assembly and material cutting must be limited to a working area specifically designated for this purpose.

5. Cable and wire stripping scrap and conductor strands must be kept away from sensitive electronic equipment such that loose pieces do not become lodged inside equipment.

6. All racks, consoles, connection boxes and other equipment enclosures must be degreased and vacuum cleaned prior to installation of equipment or panels.

7. The Contractor must take measures to protect all cabinets, casework, finished flooring, wall coverings, equipment, etc. from damage resulting from its work. This must include, but not limited to, the installation of temporary protective coverings. Any such damage must be corrected by the Contractor at no additional cost to the Client.

8. All equipment racks and sub-assemblies must be substantially constructed at the Contractor's premises. This will include, but not be limited to, wiring, labeling, dressing, supports, and ventilation.

9. All spaces must be cleaned as an ongoing activity. The Contractor must vacuum clean all work areas and remove all debris, scrap and waste at least daily and after any substantial debris accumulation. At the conclusion of the work in a given room area, a final vacuum cleaning of all such access spaces must be performed. All loose items, including those which were existing at the start of the project must be removed. Wet mopping must be performed on flooring only when other dry cleaning methods are insufficient. No brushing or wet cleaning of equipment must be permitted.

10. The Contractor must generate any additional drawings or information required for fabrication, installation and wiring of the system.

11. The Contractor must be responsible for the proper alignment, adjustment and calibration of all audiovisual equipment and must provide all personnel and test equipment for the system test and adjust.

12. The Contractor must be responsible for verifying the compatibility of all equipment and related hardware with related work performed by others. This includes, but is not limited to, electrical, mechanical, structural, and all finish work.

13. The Contractor must furnish all software necessary to operate software controlled audiovisual equipment or sub-systems (e.g. remote control system, audio DSP). Whether produced by the Contractor or supplied by a software manufacturer, all software will be installed and tested prior to the delivery of equipment to the site.

EQUIPMENT RACKS

14. The Contractor must use equipment racks of required height to mount all necessary equipment.

15. Equipment mounting must conform to the industry standards of 1-3/4" rack units.

16. The Contractor must only use rack rails that are tapped for #10-32 screws (no clip nuts shall be used). A #10-32 x 3/4" inch black truss head Philips rack screw with nylon washer must be utilized throughout the facility.

17. The Contractor must implement a general ventilation scheme for all racks in the systems.

18. All racks must be vacuumed and wiped clean prior to new equipment installation.

19. All racks must be inspected carefully prior to installation of equipment. All rough or sharp edges that may cause injury to personnel or damage equipment or cabling must be deburred or a permanent protective covering applied.

20. Provide blank rack panels in all rack openings not occupied by equipment. Blank filler panels must not exceed three rack units in size. Panel color must be matte black. Perforated panels may be used to aid in proper ventilation.

21. Allow sufficient space for installation of all owner furnished equipment such as PC's, etc.

22. Allow some space for future expansion where possible. All devices within equipment racks must be mounted to the equipment rack. No devices shall be resting atop (monitor excepted) or mounted to other devices within the equipment racks unless otherwise noted.

23. Devices will be mounted in the racks in logical order. Generally, signal flow should move from the top of the rack to bottom. Heavier devices should be mounted in the lower portion to ensure that the assembly is not too top heavy. Frequently used devices will be mounted at the optimal elevation for operator use.

24. Contractor rack logo panels shall not be accepted.

CABLE DRESS

25. In general, cable dressing must be considered from a maintenance standpoint. Suitable service loops must be provided to allow removal of equipment, or to extend equipment that is mounted in the rack on rack slides. Where there is no rear access to the rack mounted equipment, this requirement must be carefully addressed, and cabling must be of sufficient length to enable the removal and replacement of any individual piece of equipment with all others in place.

26. It is expected that the Contractor will fabricate some portions of the system off-site. Pre-wiring is acceptable provided that the pre-wired assembly can easily be transported to its final location without complication, and without risk of cable or equipment damage.

27. The Contractor must be responsible for determining the proper length of all cables whether manufactured on or off the job site.

28. The Contractor must determine the desired method of securing cables. All of the following requirements must be met by the system:

    a. Velcro cable ties are the preferred method of cable lacing. Lay-in systems are not acceptable except as applied to a horizontal cable tray;
    b. Wires and cables must be installed in a neat and orderly fashion, with like cable types following similar paths. Groups of cables must be neatly combed and harnessed. Harnessed groups of cables must be anchored at suitable intervals to reduce and relieve wire strain, especially strain on connections. Adequate service loops must be provided at all cable endpoints;
    c. Some rack-mounted equipment utilizes slide assemblies for front extension while in operation. For this type of mounting, additional, carefully dressed service loops on all cables must be provided and installed with spring operated cable retractor assemblies to gather and recoil the service loop;
    d. For all schemes of cable routing, no point in the path shall be subjected to a bend radius of less than eight (8) times the cable diameter, or minimum cable bend radius specified by the manufacturer;
    e. Captive cables must not be laced in such a manner as to prevent removal of the equipment to which they are captive;
    f. Wires and cables must be segregated according to signal type. In addition, audio cable must be subdivided into three (3) classes: microphone level circuits, line level circuits, and speaker level circuits;
    g. Microphone level audio circuits must be kept at least three inches (3”) from any other type of parallel signal circuits and at least six inches (6”) from any parallel AC power circuits;
    h. Speaker level audio circuits must be kept a minimum of three inches (3”) from line level audio and AC power circuits. All other signal circuits must be kept at least three inches (3”) away from any parallel AC power circuits;
    i. Where circuits of different types must cross, they must do so at right angles and then return to the above required separations in as short a distance as possible;
    j. Conductors, wires, and cables must be continuous between termination points. Splices are not acceptable; and

k. Rack mounting rails must not be used for cable lacing. Lacing bars and/or tie mount bases mounted to cabinets or console must be provided where appropriate.

CABLE TYPES

29. All cables installed must meet appropriate governing codes and standards.

30. The Contractor is encouraged to suggest alternate cable types where a significant cost savings may be realized without any loss of quality, reliability and performance. Alternates must be approved by the Departmental Representative prior to use.

31. The Contractor must determine building and other regulating authority requirements for cables installed as part of the AV scope of the Project. This requirement applies to cables in return air plenums as well as other areas. If the cable type indicated does not comply with these requirements, the Contractor shall propose alternate cable types, and/or encasement in complying raceways or conduits. All cabling not in conduit must be plenum-rated.

POWER CORDS

32. All equipment power cords must terminate in a standard plug that must be wired in compliance with governing codes and standards.

33. The power cord connector type at the equipment must be provided by the manufacturer. Custom field terminated power connectors must not be ordered. If the manufacturer provides a choice, a removable power cord that attaches to the equipment with an IEC 320/CEE 22 connector is preferred. The use of factory manufactured custom length cables are acceptable.

34. The power cord may be laced to the rack as long as the cord is removable at the power connector on the piece of equipment. This is to allow removal of the equipment without undoing the cable lacing. Power cords must not be laced in the same bundle with signal or control cables. If the power cord is an active component of the equipment, the cable must be dressed separately from all other cables terminating at the equipment to facilitate easy removal of the equipment. All power cords must be plugged into an AC power distribution strip which will be pre-wired into the rack prior to delivery to site.

CABLE TERMINATION

35. Wire and cable termination must be performed in accordance with industry standards and the guidelines of generally accepted installation practices.

36. With respect to audio equipment interconnects, the Contractor must make every effort to use equipment with balanced inputs and outputs. When this is not possible, such as the case to meet specification, the following are recommended (in order of preference):

a. An electronic balancing device (professional interface) or balancing transformer should be utilized;
b. In the case of an unbalanced output driving a balanced input, forward referencing should be utilized; and
c. An active-balanced to unbalanced interconnect is not recommended.

37. It is ultimately the Contractor's responsibility to choose the best wiring practices to achieve maximum sonic quality.

38. Wire and cable termination must include all aspects of equipment connection, including, but not limited to, the following:

    a. Wire and cable length;
    b. Protective jacket removal;
    c. Conductor separation, dressing and trimming;
    d. Conductor stripping; and
    e. Connector device installation including, but not limited to, the following:

        i. Conductor termination;
        ii. Shell assembly;
        iii. Strain relief installation; and
        iv. Locking/latching device installation.

39. Cable designation installation on each distinct wire or cable, except where the color code or pair number of individuals of pairs of a multi-pair eliminates the need for this.

    a. These must be installed within two inches of connectors, unless this interfered with disassembly of the connector.
    b. These must be installed in such a manner as to be visible without unlacing any harnesses.

40. All cables and patch points on input panels shall be labelled to denote their source device or input panel location, cable number and destination device.

    a. The cable shall be individually identified with a cable designator, which shall be clearly indicated on the engineering drawings;
    b. Label both ends of each cable;
    c. The label shall be a Panduit Self Laminating Ink Jet or Laser Labels (e.g. LJSL5-Y3-2.5 for small diameter cables and LJSL11-Y3-1 for larger diameter Video, VGA and RGBHV). Cables lettering shall be a minimum of 3/32 inch (2.5 mm) high and shall be black ink on a white background; and
    d. Cable Numbering shall start with the Upper Case A for Audio Cables, C for Control Cables, N for Network Cable, P for Remote Power Cables and V for Video, S-Video, VGA or RGBHV. Cables followed by a three digit numeric designation (e.g. V015, C001, etc). Hand Lettered Labels or PAN Code tm Tape style markers will not be accepted.

43. It is the responsibility of the Contractor to determine and affirm the type and extender of all required mating connectors. Since manufacturers of equipment may exercise their right to make changes in

connector types and wiring, it must remain the responsibility of the Contractor to verify this aspect of the design prior to cable fabrication and installation.

44. Exposed portions of shield must be protected with PVC heat shrinkable sleeving. Exposed ends of outer jackets on shielded cables must be insulated with sleeves to eliminate the possibility of portions of the cut off foil shielded touching adjacent shields or metal. Either rubber "Kellerman" type sleeves or heat shrink sleeves must be used. Bare shield drain wires must be insulated with small diameter clear Teflon or PVC heat shrink (as appropriate) from under the sleeve to within 0.125 inch of the point of termination.

45. Conductors and/or cables interconnecting assemblies shall be formed into a bundled harness and dressed to preclude damage from adjacent surfaces and sharp edges,

46. Cabling required in pedestrian areas such as hallways, shall be contained in conduit and conform to the vertical and horizontal directions of the walls and ceilings;

47. Cable runs shall be continuous, without splices or adapters from terminal to terminal;

48. Primary power and electronic wiring shall not be co-located in conduit;

49. Marette type connectors are not permitted, nor is the use of nail rings or staples to secure cable harnesses to structures.

CABLE AND CONDUCTOR PREPERATION

50. All cables must be prepared in such a way that the individual conductors, shield or their insulation are not nicked or cut in any way. The cable outer jacket must be cut square.

51. Insulation must be removed from conductor in such a manner that conductor strands must be nicked to the extent that base metal shows through the plating and wire strands remain in the original lay, and are not combed out. The conductor's insulation must be cut square within ¼" of the outer diameter of the insulated conductor. If required, the conductor must be tinned with a minimum amount of 60-40 or 63-37 solder (tin/lead with resin flux).

CONNECTORS

52. Only premium quality cable connectors shall be used. All cable mounted connectors must be covered by a metal shell connector hood or must have crimp ferrules which securely grasp the cable outer jacket to provide protection to the rear connections made on the connector and provide strain relief for the cable. All connectors must have incorporated a mechanical means of attaching the connector to its mate to assure that a connector will not fall off unless intentionally removed.

53. Audio Connector Requirements - Circular (XLR type): These must be premium quality connectors with tarnish resistant contact surfaces. No connection must be made to the shell unless specifically called out in the drawings.

54. Video Connector Requirements: Only connectors with tarnish resistant contact surfaces must be used. Kings TRS finish ("bright nickel") or equal is recommended. The CENTRE conductor pin and socket must be captive and finished with gold or silver surfaced over nickel. All connectors must be specified by the manufacturer as to be acceptable with the specific cable being used. Kings crimp BNC connectors or approved alternate must be used.

55. Panel Mounted Connectors: Care must be taken to insure that the sleeves of panel mount connectors to not make contact with the mounting panel.

    a. Audio (microphone, line level): Locking XLR type;
    b. Audio (speaker level): locking/latching "Speakon" type;
    c. Audio (line level): ¼" diameter locking/latching, tip/ring/sleeve;
    d. Video: HDMI or DVI type;
    e. Serial Data: DB-9 or DB-25, metal shell; and
    f. Video/Audio: Shielded Cat cable from Manufacturer of Video extenders (Tx / Rx).

SOLDER CONNECTIONS

56. Only the finest quality 60-40 or 63-37 solder (tin/lead) with rosin flux must be used. The solder must be as manufactured by Kester, Ersin, or approved alternate, and must be designed for electronic use. Solder fillets must wet and flow around conductor and terminal. In no case shall the general outline of the conductor be visible in excessive solder. The insulation must not be charred, melted or burned by the soldering operation. There must be no evidence of either lead or terminal contamination. The final solder joint must be bright and shiny and must show no evidence of being a "cold" joint.

57. Mechanical connections made to terminals prior to soldering must be the minimum required to reliably retain wire, usually a simple bend around solder eyelet or post. Avoid practice of multiple wraps on solder terminals, as that practice makes conductor removal very difficult after soldering.

INSULATION DISPLACEMENT CONNECTIONS

58. Insulation displacement connections such as ribbon cables and the telephone connector technology must only be installed with termination tooling as specified by the connector manufacturer. If shown in the connector manufacturer's data, the controlled-cycle crimp tool must be selected. If the manufacturer has a multi-conductor mass-termination tool available, this must be selected for all connectors of ten pins or more.

59. Individual conductors of cables installed on terminal blocks must not be stripped, and must be punched down with a spring loaded impact tool designed for this specific purpose. Bare cable conductors must be insulated with Teflon, PVC heat shrink or other insulating sleeve (as appropriate) prior to being punched down on terminal block. During the punch down process, the free end of the conductor must be cut off, and the installer must ascertain that this cut off end is not left within the block or block assembly.

60. Only cables designed specifically for insulation displacement termination with the specific termination device employed must be used.

CRIMP CONNECTIONS

61. Where crimp connectors are utilized, they must be installed using the manufacturer recommended controlled cycle crimp tool that assures that the proper crimp pressure has been applied. The Contractor must develop a procedure to insure that the crimp tooling is properly checked for compliance with the manufacturer's standards, and that it is producing crimp-type connections within the required tolerances. The frequency of this depends on the usage and on the length of time a particular tool holds its calibration.

62. Only tooling recommended by the manufacturer must be used. Only pins and connectors of the proper size and design for the cable to which they are to be applied must be used. There must be no abnormal deformation of the contact during the crimping operation. There must be no damage to the contact during the crimping operation that could interfere with its retention in its shell or its mating. There must be no damage done to the conductor which either severs strands or exposes the individual strands base metal by the crimping operation.

SCREW CONNECTIONS

63. Only insulated crimp on spade terminals must be used for application to barrier strips. Multiple gang lugs or ring lugs are not acceptable for this purpose. This is only applicable to stranded conductor wires. It is suggested that stranded conductor wire be "double over" on the crimp end prior to crimping. Solid conductors may be attached directly to the barrier strip.

64. All conductors must be stripped prior to installation underneath screws on terminals. Unlike the stranded control cable, solid conductor wire does not require crimp lugs on individual conductors. All screw terminated solid connectors must be wrapped in the same direction as screw rotation during tightening.

GROUNDING PRACTICES

65. The audiovisual system will be serviced by the earthing conductor that is provided with the mains supply.

    a. All devices in the audiovisual system racks will be serviced with a grounded AC outlet. Devices having two (2) prong power cords will also have a fourteen (14) gauge green copper wire connected from the chassis to the grounded copper buss bar mounted to the equipment rack frame. Under no circumstances will the prong of a three (3) prong power cord be removed;

    b. Audio cables shield must be connected to ground at one point only. Exceptions may be made for phantom powered microphones and some ICM and IFB systems. This ground point must be at the system ground of the destination device, which must be strapped to the system ground in the rack. For intra-rack wiring this requires the shield to be connected at both ends, but grounded at only one end;

    c. All video receptacles must be insulated from the mounting panel, outlet box, or wireway. Unless otherwise detailed, this must be accomplished by using insulated-from-panel type receptacles; and

d. The Contractor should take care to consider ground references within each device and the grounding factors on site.

MATERIALS

66. General: Materials used in installations must be chosen with due consideration being given to the intended use, safety, durability, retention of appearance and avoidance of corrosion or other chemical effects.

67. Toxic Materials: Material capable of producing harmful toxic effects under operating conditions, equipment malfunction, or accidental other causes, must not be used.

68. Metals: Metals used must be corrosion-resistant or treated to resist corrosion in atmospheric conditions to which the installation will be subjected.

69. Plastics: Plastics must be durable and resistant to cracking, brittleness, discolouration, deformation or similar defects, upon ageing or when subjected to hot or cold thermal extremes.

70. Natural Rubber: The use of natural rubber is prohibited unless directly specified, or approved for its use is obtained from the Departmental Representative.

GENERAL PERFORMANCE REQUIREMENTS

STANDARDS

71. General Standards used in the design and installation of the audiovisual system must conform to the highest quality Broadcast Industry standards. The following list provides a general indication of the type of industry organizations with published technical standards, and is not intended to be all-inclusive.

a.	AVIXA	AudioVisual and Integrated Experience Association (Formally Infocomm)
b.	AES	Audio Engineering Society: Audio Standards
c.	EIA	Electronic Industry Association: Equipment mounting, construction, tooling
d.	IEEE	Institute of Electrical and Electronic Engineers: Electrical/ Signal Standards
e.	CEC	Canadian Electrical Code: Electrical Standards
f.	NCAC	National Council of Acoustical Consultants: Acoustic Standards
g.	ASTM	American Society for Testing and Materials: Test and materials Standards
h.	BICSI	Building Industry Consulting Service International
j.	CSA	Canadian Standards Association

MAINTAINABILITY

72. The Contractor must provide a fully functioning system that is easily accessible for service while the system is operational. Where this is not practical due to mutually accepted circumstances, service functions will be designed to allow a minimal amount of equipment and support disassembly. The audiovisual system design, construction and installation will allow components to be accessible for inspection, maintenance and repair with a minimal disassembly of other components or surrounding equipment.

SAFETY

73. The audiovisual system will be inherently safe, when operated and maintained in compliance with the Contractor provided operations and maintenance / technical manuals. In addition, equipment will meet or exceed governing standards and requirements for safety. This must include provisions and installation of seismic bracing and restraints.

EQUIPMENT MODIFICATIONS

74. The audiovisual systems must be designed to utilize new “off the shelf” equipment. Every effort must be made to avoid the use of custom or modified equipment. However, some AV equipment may require modifications to accommodate installation, remote control or other integration requirements.

75. Where equipment must be modified to conform to system specifications and design parameters, the modifications made must in no way affect the performance of the equipment as published by the manufacturer. Equipment modifications may also be impacted by and must comply with the terms of other sections of this AV Specification.

EQUIPMENT SUBSTITUTIONS

76. Requests for use of alternate equipment to that recommended in the Equipment Specification will be considered on an item by item basis. Equipment substitutions will be considered in cases where a specific component of the system is no longer available, or where the alternate equipment is shown to provide equal or greater quality and performance.

77. After commencement of work on the Project, equipment substitutions will be considered only where the contracted equipment becomes unavailable, where unanticipated lead times could delay the Project or for other legitimate practical considerations. Equipment substitutions submitted after commencement of work on the Project must be approved by the Project Manager and Contracting Authority in writing.

78. Approval of equipment substitutions must not imply release of Contractor responsibility for meeting all requirements and design objectives as outlined in this AV Specification.

CUSTOM / MODIFIED EQUIPMENT

79. It must be the responsibility of the Contractor to provide all appropriate design, engineering and fabrication in the provision of specified custom or modified equipment.

80. All specified custom or modified equipment must be included in the scope of the Contractor's work. No portion may be omitted from the scope of the Contractor's work. Bids excluding any portion of the custom or modified equipment will be deemed non-responsive.

    a. Substitutions of "off the shelf" equipment for specified custom equipment will be considered when submitted per the procedures noted for Equipment Substitutions.

SYSTEM SOFTWARE AND SOFTWARE PROGRAMMING

82. The Contractor must be responsible for providing a complete and working system in the provision of software programming.

83. All software programming must be included in the scope of the Contractor's work. No portion may be omitted from the scope of the Contractor's work.

84. Contractor must supply system software as specified in the Assembly and Installation Requirements.

85. The Contractor must supply a complete set of system software, software programming code and documentation as follows:

    a. In the case of commercial software, a complete set of software including the license and documentation for all devices, utilities, and tools used in the operation and maintenance of the audiovisual system.

    b. In the case of non-commercial or custom software, a complete set of software is required, including license (if applicable) and documentation for all devices, utilities, and tools used in the operation and maintenance of the audiovisual system. Documentation must be presented in such a way as to allow the Client the ability to perform unassisted operation,

maintenance, troubleshooting and programming.

c. All commercial software provided by the Contractor as part of the Project must be procured and transferred in full compliance with the publisher's copyright, licensing and other requirements of ownership and use. All software license agreements must be registered in Client's name.

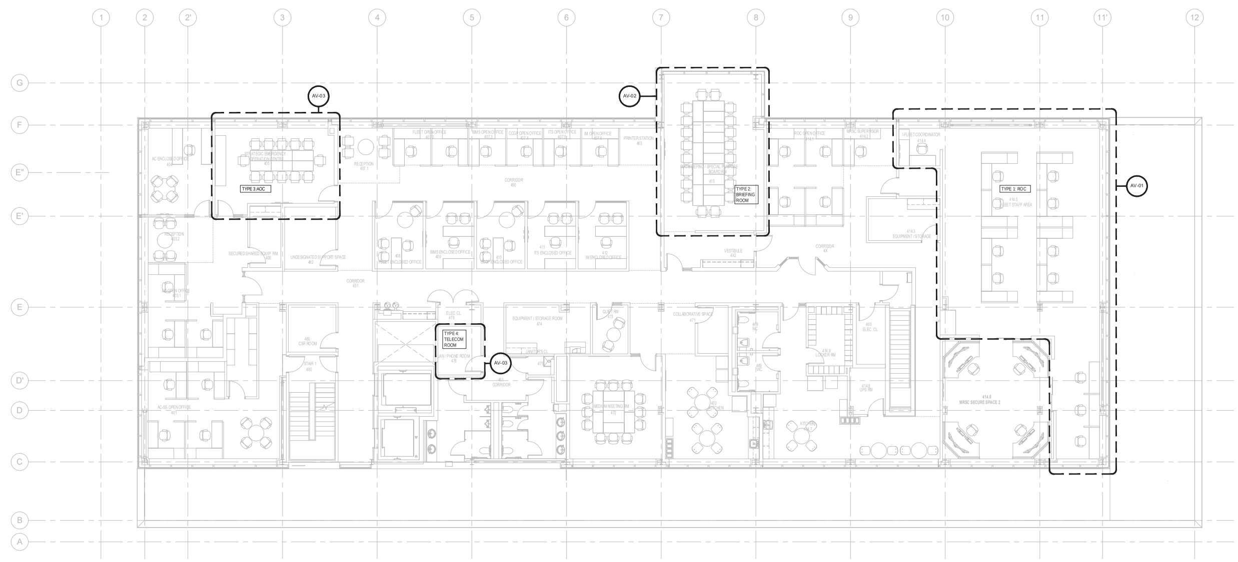
d. Client must retain full rights to all custom software, programming, and software programming code developed by the Contractor as part of the project. This must include the right to use, reproduce and modify the software and software programming code as reasonably required to operate the audiovisual systems and to support their ongoing maintenance and development.

CCG SOUTHSIDE RD 4TH FLOOR FIT-UP

ST. JOHN'S, NL

AUDIO-VISUAL SYSTEMS DRAWING LIST:

AV-00	KEY PLAN, DRAWING LIST AND DRAWING LEGEND
AV-01	TYPE 1: ROC PLAN AND ELEVATIONS
AV-02	TYPE 2: BRIEFING ROOM PLAN AND ELEVATIONS
AV-03	TYPE 3: AOC PLAN AND ELEVATIONS / TYPE 4: RACK ELEVATION
AV-04	SIGNAL DIAGRAM - TYPE 1: ROC
AV-05	SIGNAL DIAGRAM - TYPE 1: ROC (CONTINUED)
AV-06	SIGNAL DIAGRAM - TYPE 2: BRIEFING ROOM
AV-07	SIGNAL DIAGRAM - TYPE 3: AOC
AV-08	SIGNAL DIAGRAM - TYPE 4: TELECOM ROOM



01 AV-00 4TH FLOOR KEY PLAN 1:100

DRAWING LEGEND:

S	CEILING-MOUNTED LOUDSPEAKER (70V @ 7.5W)
M	MICROPHONE BASE TRANSMITTER
WAP	MICROPHONE WIRELESS ACCESS POINT TRANSCEIVER
CAM	VIDEO-CONFERENCING CAMERA

the attaingroup
208-1680 WOODWARD DR.
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TOLL FREE 866.439.9424

PROJECT NORTH

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
- SHEET WHERE DETAIL IS PLACED

DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
02	2019-05-07	FOR TENDER	SB	BC
01	2019-04-16	FOR 99% REVIEW	SB	BC

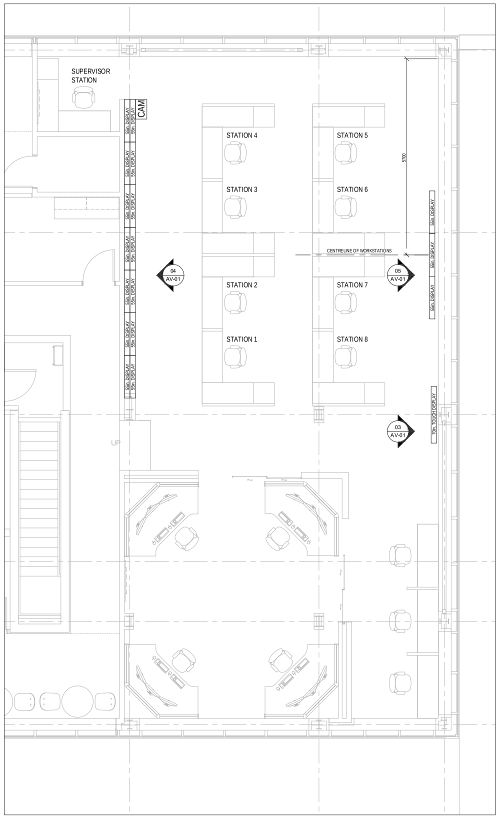
NOTES

1. DO NOT SCALE DRAWINGS.
2. UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETERS.
3. DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATIONS PACKAGE
4. CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT TO ENGINEER ANY ERRORS AND OR OMISSIONS PRIOR TO START OF CONSTRUCTION.

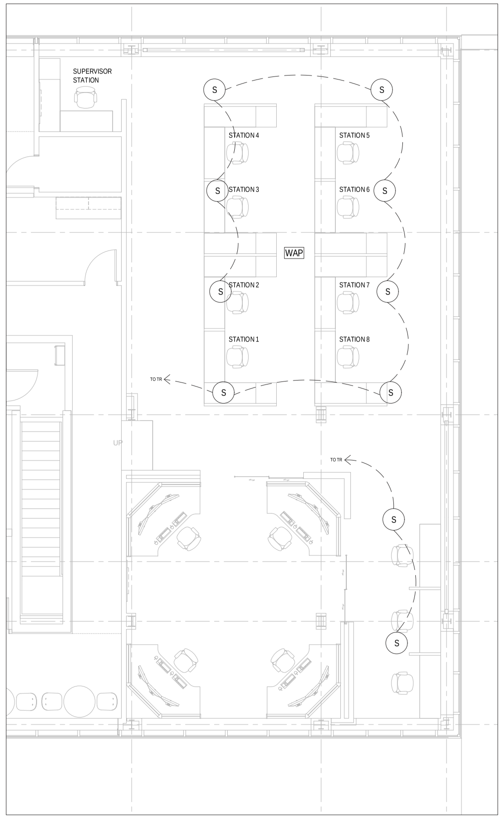
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
KEY PLAN, DRAWING LIST AND DRAWING LEGEND

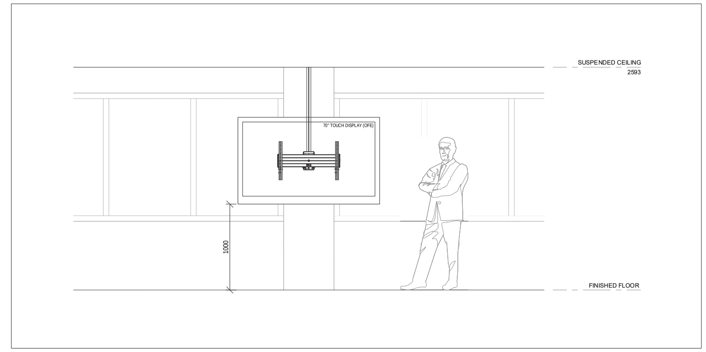
DESIGNED BY | DRAWN BY
CHECKED BY | APPROVED BY
DATE | SCALE
DRAWING NUMBER AV-00



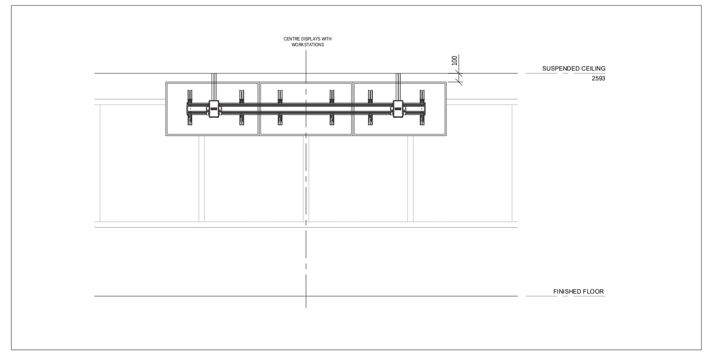
01 AV-01 TYPE 1: ROC (RM 415) PLAN - TABLE
1:50



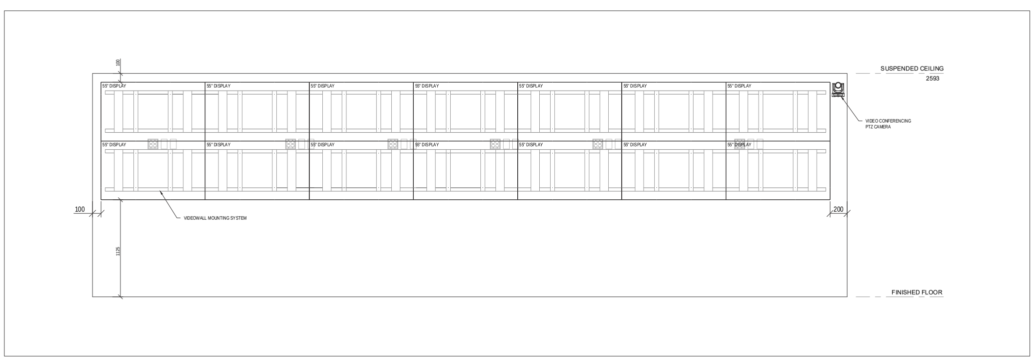
02 AV-01 TYPE 1: ROC (RM 415) PLAN - CEILING
1:50



03 AV-01 TYPE 1: ROC (RM 415) EAST WALL ELEVATION - TOUCH DISPLAY
1:20



05 AV-01 TYPE 1: ROC (RM 415) EAST WALL ELEVATION - 3X1 DISPLAYS
1:20



04 AV-01 TYPE 1: ROC (RM 415) WEST WALL ELEVATION
1:20

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PROJECT NORTH

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
- SHEET WHERE DETAIL IS PLACED

DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

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02	2019-05-07	FOR TENDER	SB	BC
01	2019-04-16	FOR 99% REVIEW	SB	BC

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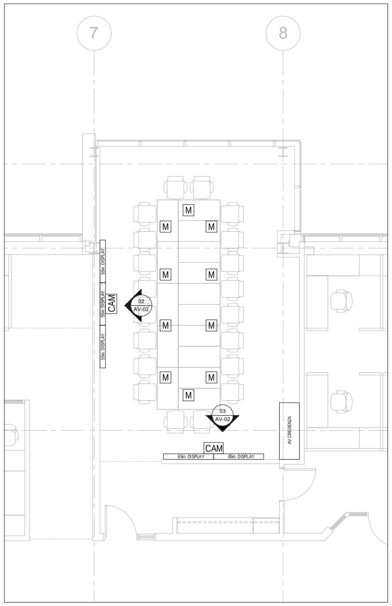
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

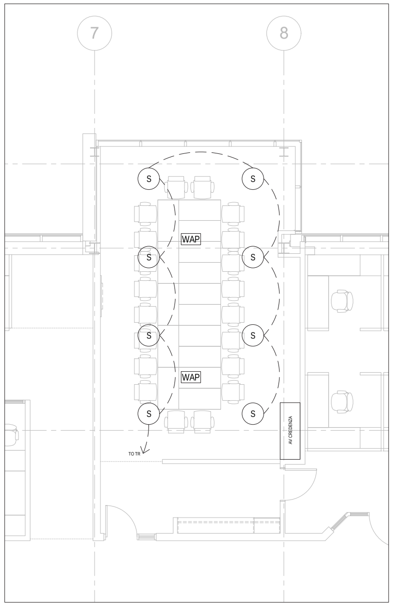
SUBJECT
TYPE 1: ROC PLAN AND ELEVATIONS

DESIGNED BY	DRAWN BY
CHECKED BY	APPROVED BY
DATE	SCALE

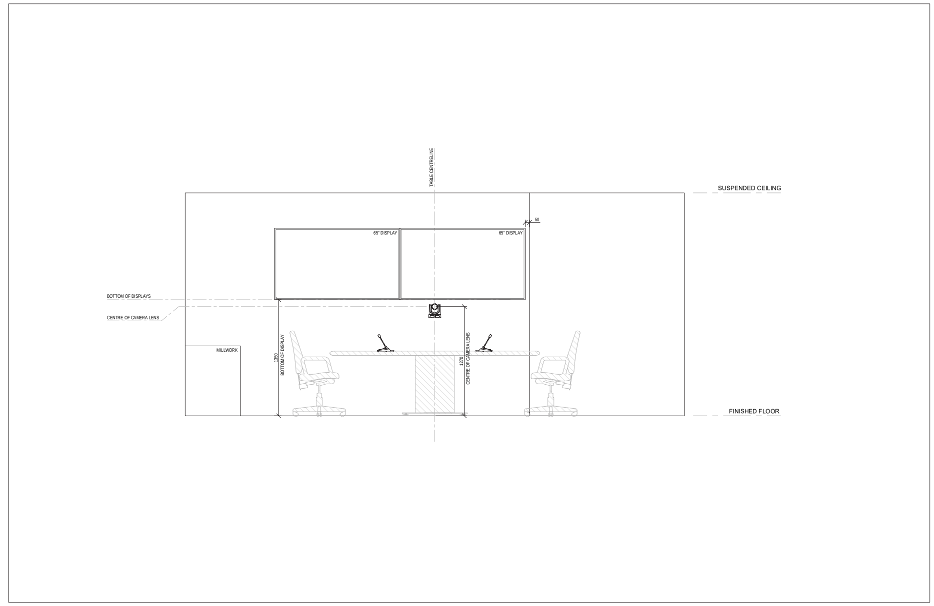
DRAWING NUMBER
AV-01



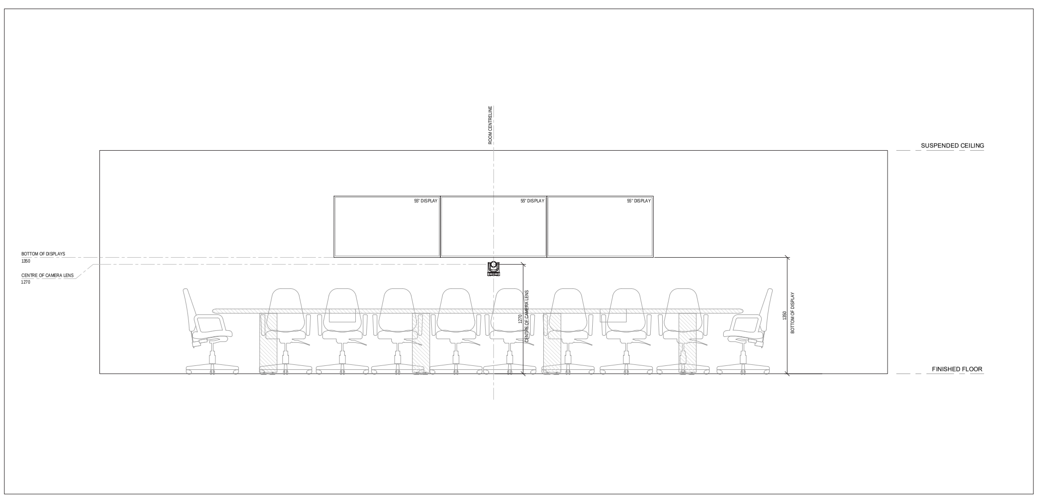
01 AV-02 TYPE 2: BRIEFING ROOM (RM 413) PLAN - TABLE
1:30



02 AV-02 TYPE 2: BRIEFING ROOM (RM 413) PLAN - CEILING
1:30



03 AV-02 TYPE 2: BRIEFING ROOM (RM 413) SOUTH WALL ELEVATION
1:20



04 AV-02 TYPE 2: BRIEFING ROOM (RM 413) WEST WALL ELEVATION
1:20

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PROJECT NORTH

DRAWING LEGEND

SECTION OR ELEVATION
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DRAWING REFERENCE NUMBER
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- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
02	2019-05-07	FOR TENDER	SB	BC
01	2019-04-16	FOR 99% REVIEW	SB	BC

NOTES

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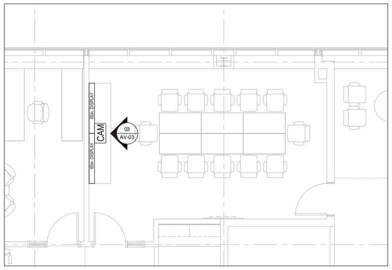
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

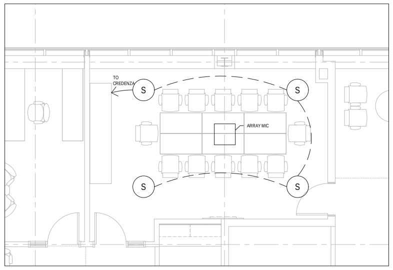
SUBJECT
TYPE 2: BRIEFING ROOM
PLAN AND ELEVATIONS

DESIGNED BY | DRAWN BY
CHECKED BY | APPROVED BY
DATE | SCALE

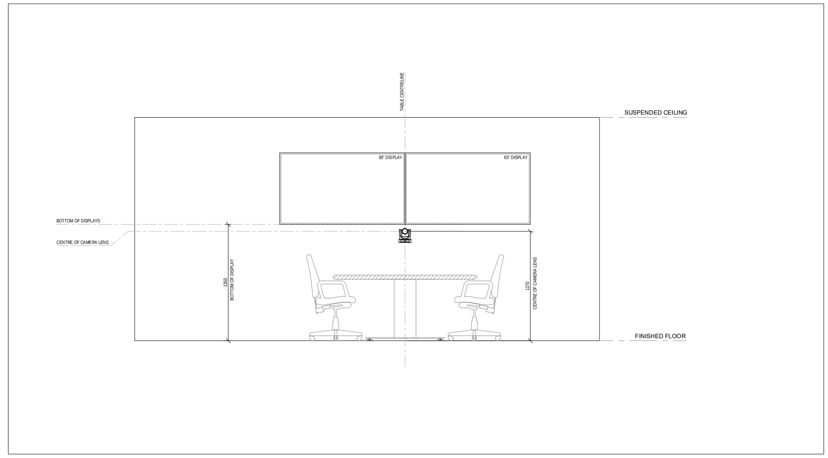
DRAWING NUMBER
AV-02



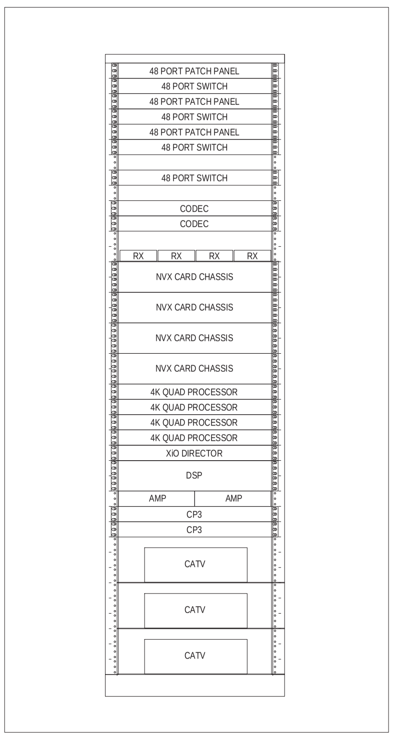
01 AV-03 TYPE 3: AOC (RM 405) PLAN - TABLE
1:30



02 AV-03 TYPE 3: AOC (RM 405) PLAN - CEILING
1:30



01 AV-03 TYPE 3: AOC (RM 405) ELEVATION
1:30



04 AV-03 TYPE 4: TELECOM ROOM (RM 478) RACK ELEVATION
1:5

the attaingroup
208-1660 WOODWARD DR.
OTTAWA, ON K2C 3R7
TEL / FAX 613 739 9424
TOLL FREE 866 439 9424

PROJECT NORTH

N

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
- SHEET WHERE DETAIL IS PLACED

DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
02	2019-05-07	FOR TENDER	SB	BC
01	2019-04-16	FOR 99% REVIEW	SB	BC

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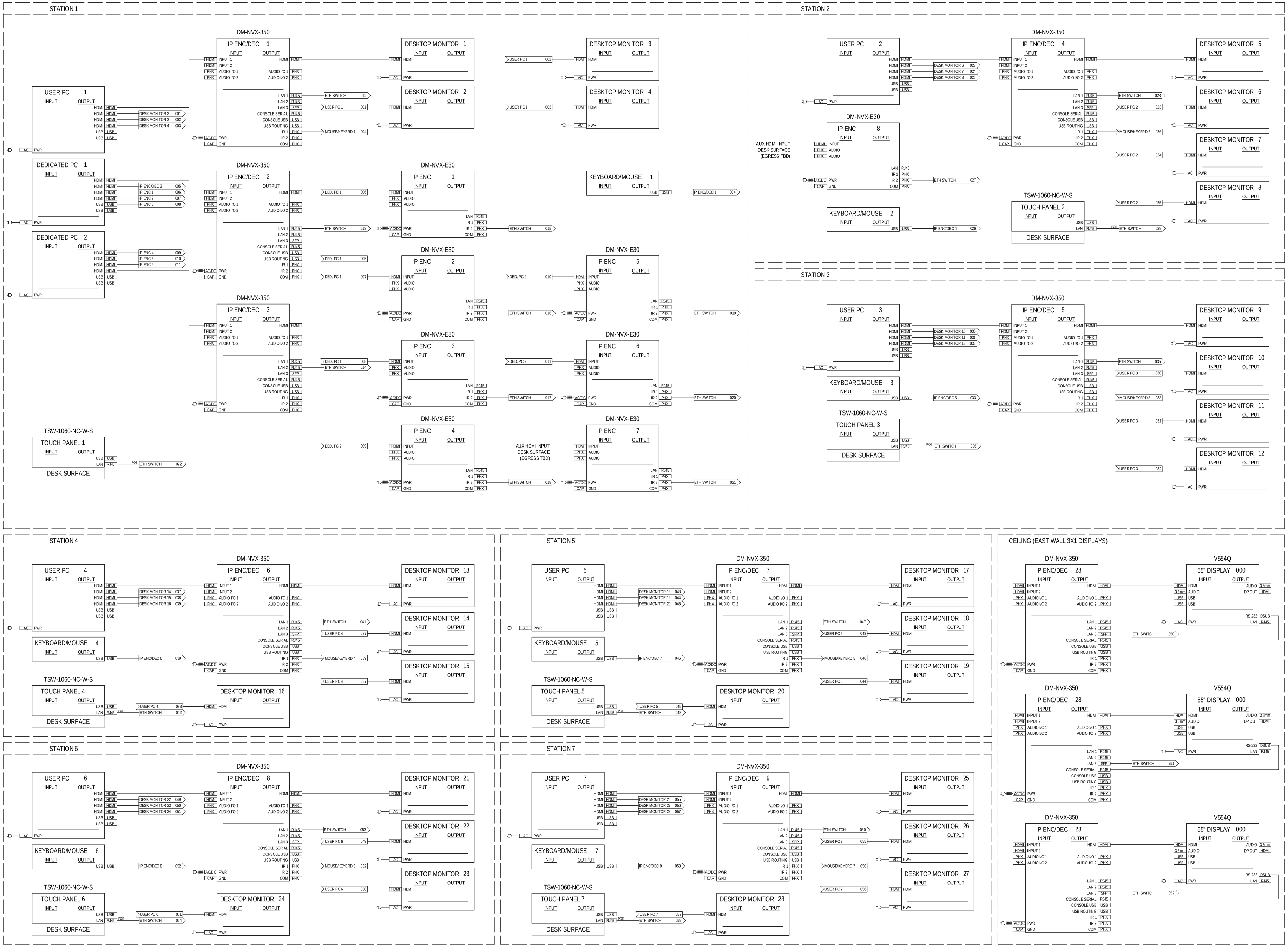
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
TYPE 3: AOC PLAN AND ELEVATIONS /
TYPE 4: RACK ELEVATION

DESIGNED BY | DRAWN BY
CHECKED BY | APPROVED BY
DATE | SCALE

DRAWING NUMBER
AV-03



the attaingroup
208-1680 WOODWARD DR.
OTTAWA, ON K2C 3R7
TEL / FAX 613.739.9424
TOLL FREE 866.439.9424

PROJECT NORTH

N

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
- SHEET WHERE DETAIL IS PLACED

DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

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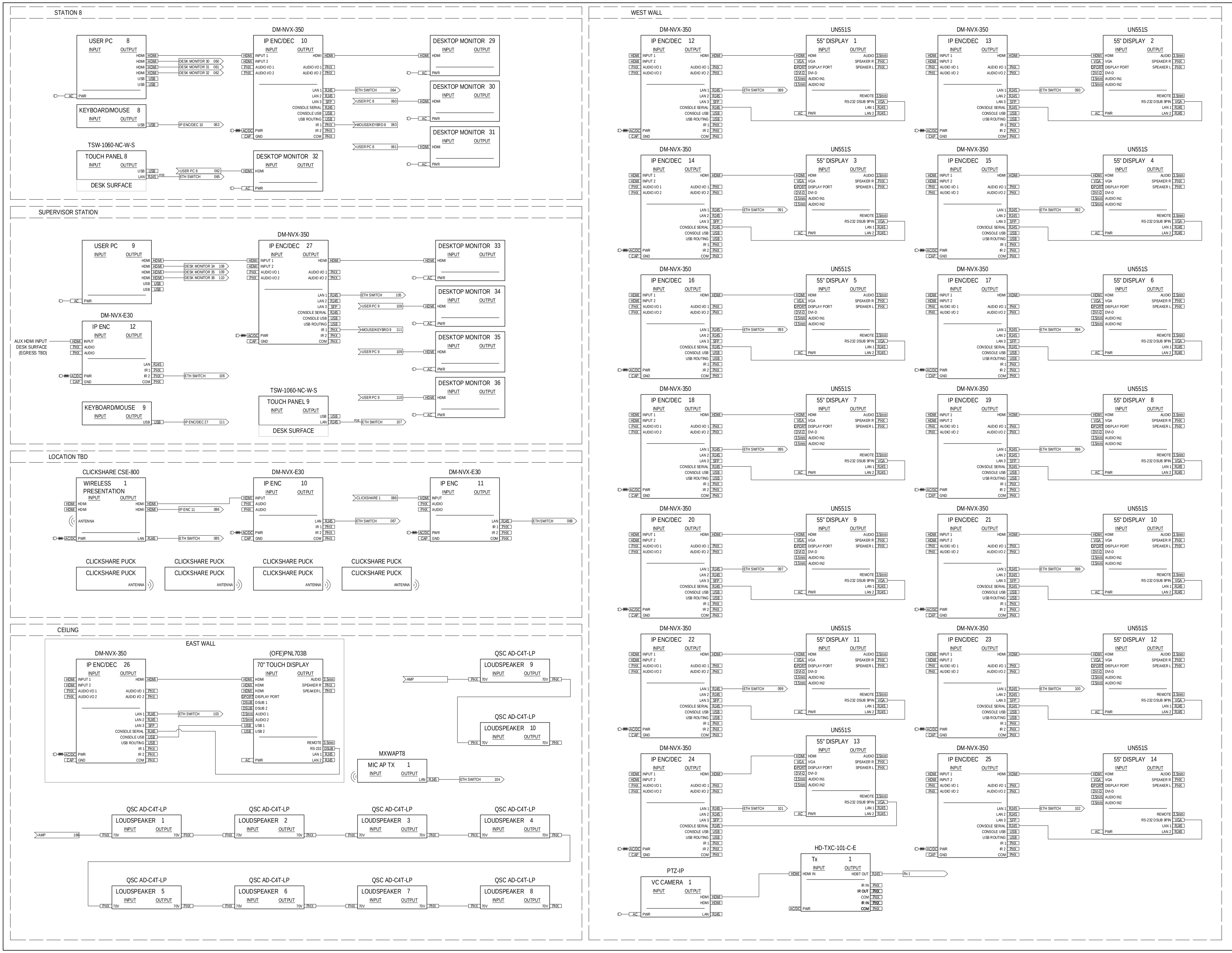
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
SIGNAL DIAGRAM -
TYPE 1: ROC

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE
SCALE

DRAWING NUMBER
AV-04



the attaingroup
208-1680 WOODWARD DR.
OTTAWA, ON K2C 3R7
TEL / FAX 613.739.9424
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PROJECT NORTH

DRAWING LEGEND

SECTION OR ELEVATION
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DRAWING REFERENCE NUMBER
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- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
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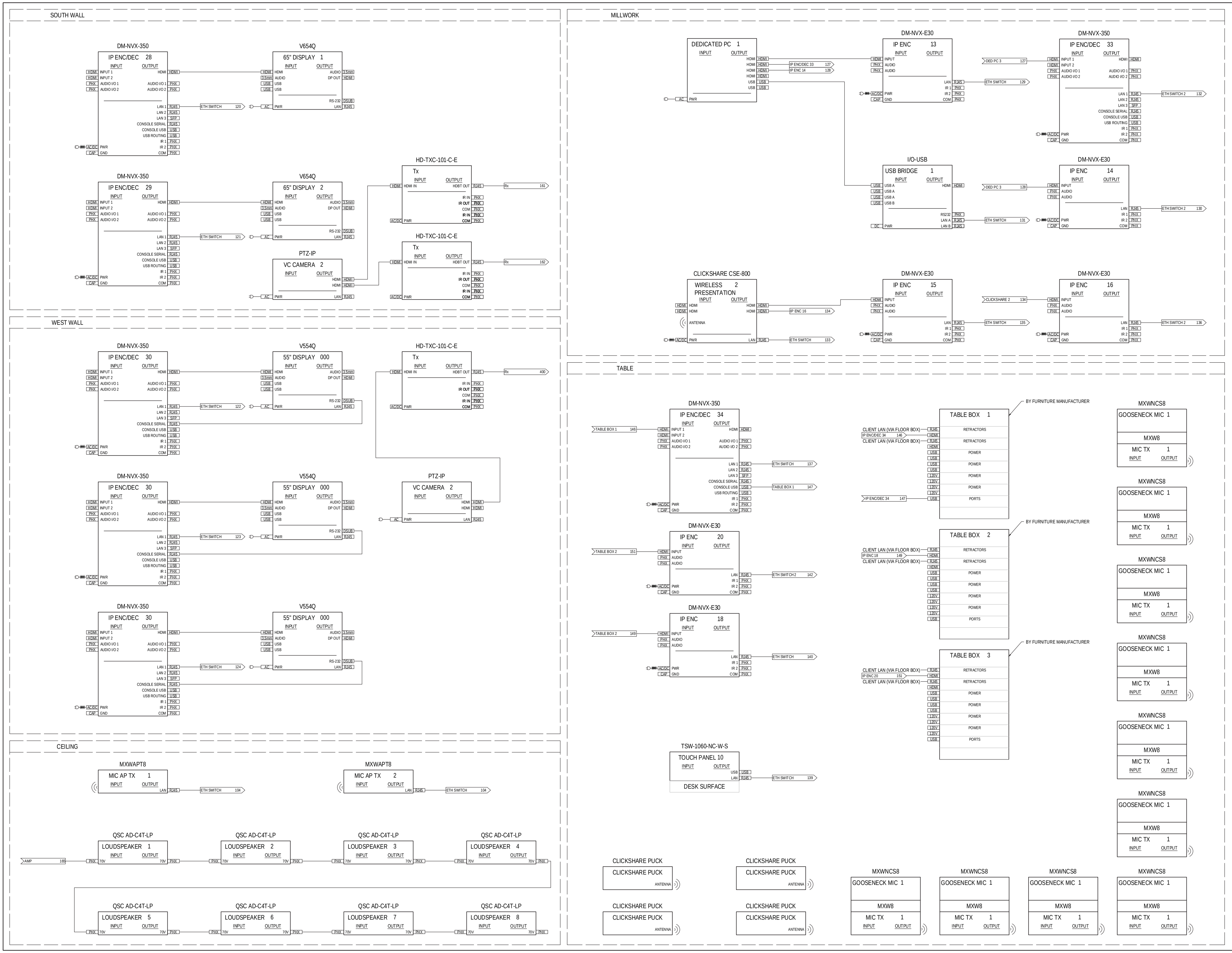
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
SIGNAL DIAGRAM -
TYPE 1: ROC (CONTINUED)

DESIGNED BY	DRAWN BY
CHECKED BY	APPROVED BY
DATE	SCALE

DRAWING NUMBER
AV-05



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TOLL FREE 866.439.9424

PROJECT NORTH

N

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
- SHEET WHERE DETAIL IS PLACED

DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

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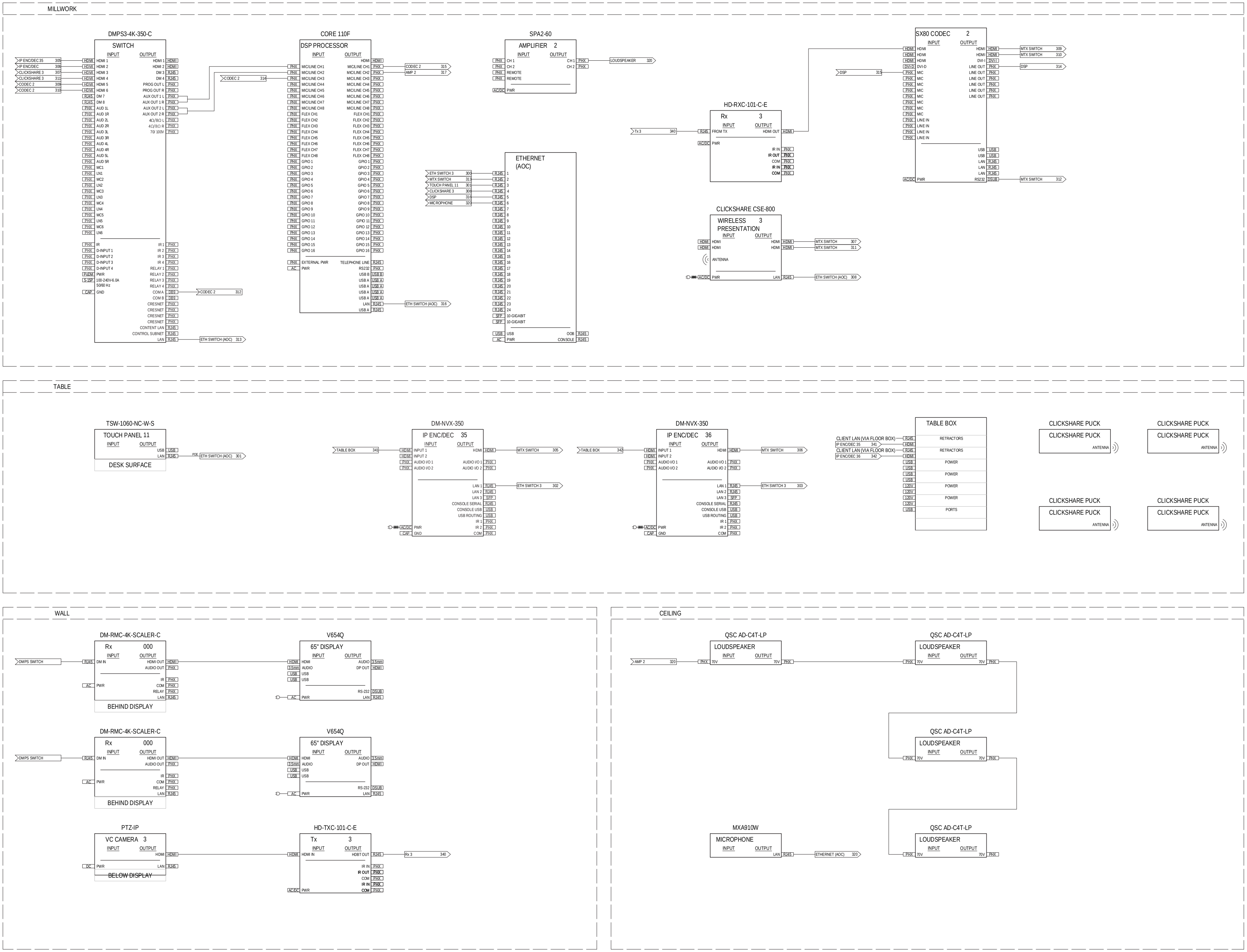
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
SIGNAL DIAGRAM -
TYPE 2: BRIEFING ROOM

DESIGNED BY | DRAWN BY
CHECKED BY | APPROVED BY
DATE | SCALE

DRAWING NUMBER
AV-06



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DRAWING LEGEND

SECTION OR ELEVATION
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DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
- SHEET WHERE DRAWING IS PLACED

A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
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01	2019-04-16	FOR 99% REVIEW	SB	BC

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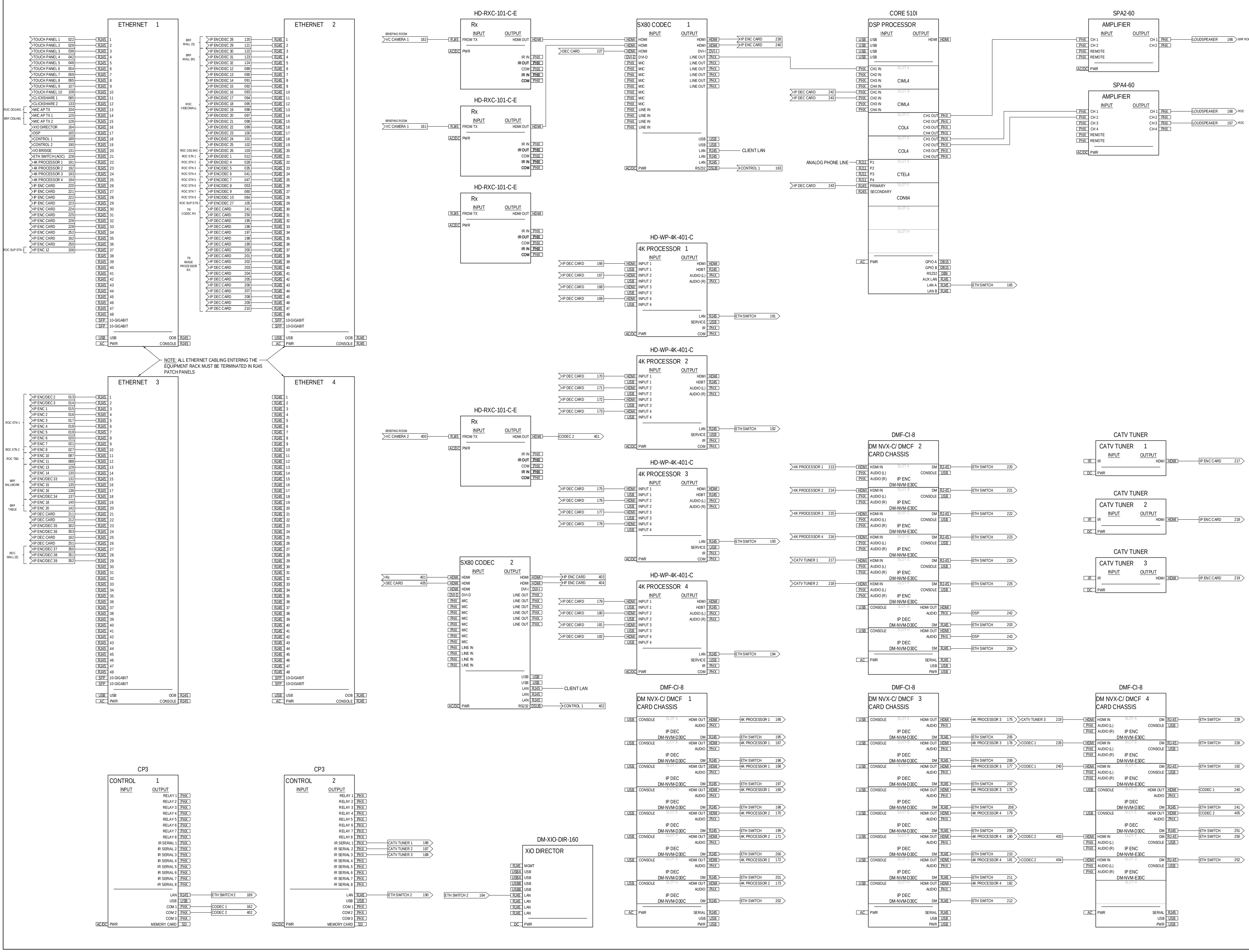
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
SIGNAL DIAGRAM -
TYPE 3: AOC

DESIGNED BY | DRAWN BY
CHECKED BY | APPROVED BY
DATE | SCALE

DRAWING NUMBER
AV-07



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PROJECT NORTH

DRAWING LEGEND

SECTION OR ELEVATION
- DETAIL NUMBER
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DRAWING REFERENCE NUMBER
- DRAWING DETAIL NUMBER
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A.F.F. ABOVE FINISHED FLOOR
U.N.O. UNLESS NOTED OTHERWISE
O.C. ON CENTRES
MTR MAIN TELECOMMUNICATION ROOM

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK
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01	2019-04-16	FOR 99% REVIEW	SB	BC

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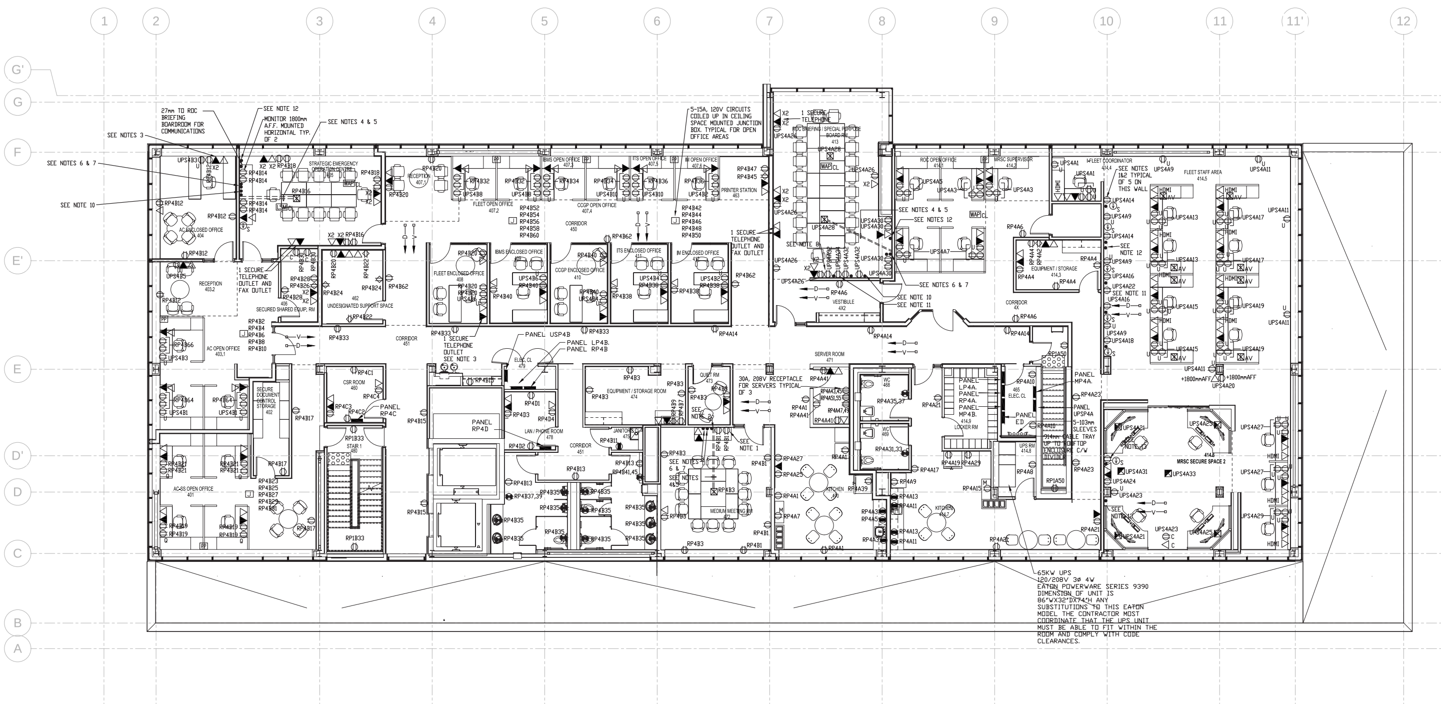
PROJECT LOCATION
CCG SOUTHSIDE RD
4TH FLOOR FIT-UP

SUBJECT
SIGNAL DIAGRAM -
TYPE 4: TELECOM ROOM

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
DATE
SCALE

DRAWING NUMBER
AV-08



NOTES:

1. INSTALL RECEPTACLE FOR MONITOR 1800mm A.F.F. MOUNTED HORIZONTAL CONFIRM EXACT LOCATION WITH AV PROVIDER

2. PROVIDE 1-27mm EMT CONDUITS FROM SINGLE GANG BOX BEHIND DISPLAY TO THROAT BUSHING IN PLENUM SPACE

3. SECURE TELEPHONE IS A PHONE THAT PLUGS INTO AN OMNI SECURE TERMINAL DEVICE WHICH PLUGS IN TO THE WALL TELEPHONE JACK.

4. PROVIDE 27mm EMT CONDUIT FROM FLOOR BOX UP TO CEILING SPACE VIA WALL CAVITY

5. PROVIDE 41mm EMT CONDUIT FROM FLOOR BOX CREDENZA

6. PROVIDE 41mm EMT CONDUIT SINGLE 2-GANG BOX BEHIND CREDENZA AT 406mm AFF TO THROAT BUSHING IN CEILING SPACE

7. PROVIDE 27mm EMT CONDUIT FROM 2-GANG BOX FOR WALL MOUNTED TOUCH DISPLAY LOCATED BELOW DISPLAY

8. INSTALL 3 RECEPTACLES FOR MONITOR 1800mm A.F.F. MOUNTED HORIZONTAL CONFIRM EXACT LOCATION WITH AV PROVIDER

9. PROVIDE 2-27mm EMT CONDUITS FROM SINGLE GANG BOX BEHIND DISPLAY TO THROAT BUSHING IN PLENUM SPACE

10. 2-27mm EMT CONDUITS FROM SINGLE GANG BOX BEHIND EACH DISPLAY TO THROAT BUSHING IN PLENUM SPACE. TOTAL OF 6 CONDUITS

11. RECEPTACLE LOCATED ABOVE WALL MOUNTED DISPLAYS FOR 7 TIME ZONE CLOCK. CONFIRM EXACT MOUNTING HEIGHT OF CLOCK PRIOR TO ROUGH-IN AND MAKE NECESSARY MODIFICATIONS TO RECEPTACLE LOCATION TO SUIT.

12. RUN 1-53mm CONDUIT FROM EACH OF THE FOLLOWING ROOMS 478 LAN ROOM,ROC BRIEFING ROOM, AC STRATEGIC EMERGENCY OPERATIONS ROOM AND ROC/MRSC AREA BACK TO SERVER ROOM 471.

13. FLAT SCREEN TV WALL MOUNTED ABOVE PRINTER. INSTALL RECEPTACLE BEHIND TV, CONFIRM HEIGHT PRIOR TO ROUGH-IN. RUN 1-41mm CONDUIT FROM EACH TV DOWN TO RAISED FLOOR SPACE FOR CONSOLE CONTROL OF TV.

1 / E1-04 GENERAL POWER, DATA AND VOICE SYSTEMS -LEVEL 4
1:100

Revisions

DATE	ISSUED FOR	REV
2017-10-12	ISSUED FOR CONSTRUCTION	0

Professional Permit

PROVINCE OF NEWFOUNDLAND AND LABRADOR
PERMIT HOLDER
This Permit Allows
CORE ENGINEERING INC.
To practice Professional Engineering in Newfoundland and Labrador.
Permit No. as issued by PEG D0209 which is valid for the year 2017

This drawing has been prepared solely for the use of Client and there are no representations of any kind made by Architect to any party with whom Architect has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Key Plan

Design Build Contractor

Lindsay Construction — Building Partners

Seal(s)

REGISTERED PROFESSIONAL ENGINEER — GREGORY S. TUCKER — 2017.10.12 — NEWFOUNDLAND & LABRADOR

MECHANICAL & ELECTRICAL CONSULTANT

CORE ENGINEERING INC.

CORE PROJECT #17-2642

Project Manager GT	Drawn DM
Project Leader GT	Checked GT

Client

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

Project

CANADIAN COAST GUARD ATLANTIC REGIONAL HEADQUARTERS

SOUTHSIDE BASE RECONSTRUCTION, PHASE 3

Drawing Title

GENERAL POWER, DATA AND VOICE SYSTEMS- LEVEL 4

Scale: AS NOTED

Project No.: ECBL16-0253-00

Drawing No.: E1-04

Appendix G - Mandatory Technical Evaluation Criteria

		(M) Mandatory
1	As part of the bid submission, the bidder must provide the name, CV, and Crestron qualification certificate of the proposed **Crestron NVX Design and Application Certified** programmer/technician that will configure the Crestron NVX systems. If a substitute product is proposed, provide the equivalent qualification certificate from the substituted manufacturer. The same technician/programmer can be proposed for all three certifications listed in items 1, 2 and 3.	(M) Compliant Yes / No
2	As part of the bid submission, the bidder must provide the name, CV, and Crestron qualification certificate of the proposed **Crestron DigitalMedia Networking Certified** programmer/technician that will configure the Crestron NVX systems. If a substitute product is proposed, provide the equivalent qualification certificate from the substituted manufacturer.	(M) Compliant Yes / No
3	As part of the bid submission, the bidder must provide the name, CV, and Crestron qualification certificate of the proposed **Crestron Master Silver Certified** programmer that will configure and program the Crestron control systems. If a substitute product is proposed, provide the equivalent qualification certificate from the substituted manufacturer.	(M) Compliant Yes / No
4	As part of the bid submission, the bidder must provide the name, CV, and DSP qualification certificate from the DSP manufacturer of the proposed DSP configuration technician.	(M) Compliant Yes / No
5	As part of the bid submission, the bidder must provide the name and CV of the proposed project manager with a minimum of 10 years of relevant experience.	(M) Compliant Yes / No
6	As part of the bid submission, the bidder must provide the name and CV of the proposed lead onsite installation technician with a minimum of 7 years of relevant experience.	(M) Compliant Yes / No
7	As part of the bid submission, the bidder must provide a corporate summary of the bidder's company including a list of Canadian branch locations (maximum of 2 pages).	(M) Compliant Yes / No
8	As part of the bid submission, the bidder must provide a summary of the bidder's project management approach and systems deployment operational process. (maximum of 3 pages).	(M) Compliant Yes / No
9	As part of the bid submission, the bidder must provide a summary of how the system will be supported locally within St. John's, Newfoundland using qualified technical personnel that can reach the site for servicing when required within 1 business day during the warranty period and any optional warranty/service agreements.	(M) Compliant Yes / No
10	As part of the bid submission, the bidder must provide a proposed installation timeline including all milestones from project contract award through to final documentation hand-over. Contract award is expected to take place within 10 business days following bid due date.	(M) Compliant Yes / No
11	If the bidder is proposing substituted equipment with system connectivity that differs from the specified system; as part of the bid submission, the bidder must provide a detailed signal flow diagram demonstrating the system connectivity of the proposed substituted equipment.	(M) Compliant Yes / No