



**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**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Electrical & Electronics Products Division  
11 Laurier St./11, rue Laurier  
7B3, Place du Portage, Phase III  
Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> ATF-2 Absorber	
<b>Solicitation No. - N° de l'invitation</b> 9F010-160791/A	<b>Date</b> 2017-04-21
<b>Client Reference No. - N° de référence du client</b> 20160791	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$HN-331-72833	
<b>File No. - N° de dossier</b> hn331.9F010-160791	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-05-29</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Turner, Louie	<b>Buyer Id - Id de l'acheteur</b> hn331
<b>Telephone No. - N° de téléphone</b> (873) 469-3342 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> CANADIAN SPACE AGENCY David Florida Laboratory 3701 CARLING AVE C.P. 11490 Succ. H facturationASC.CSAinvoicing@ @asc-csa.gc.ca OTTAWA Ontario K2H8S2 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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### Attachments:

Annex A - Statement of Work  
Annex B - Evaluation Criteria  
Annex C - Reference Pictures and Drawings  
Annex D - Mechanical Drawings  
Annex E - Basis of Payment

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There is no security requirement associated with the requirement.

### **1.2 Statement of Work**

The contractor must provide the goods and services in accordance with the requirements stated in Annex A - Statement of Work; Annex C - Reference Pictures and Drawings; Annex D - Mechanical Drawings; Annex E - Basis of Payment.

#### **1.2.1 Delivery Requirement**

Delivery and installation of the goods and the re-commissioning for service of the ATF2 chamber is requested to be completed by March 30, 2018.

### **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**

This procurement is exempt from trade agreements.

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## 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 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

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
<u>A9033T</u>	Financial Capability	2012-07-16
<u>B1000T</u>	Condition of Material	2014-06-26

### 2.2 Submission of Bids

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. Email proposal will not be accepted.

PWGSC Bids Receiving Unit  
11 Laurier Street  
Place du Portage, Phase 3, Core 0B2  
Gatineau, Québec, K1A 0S5  
Tel.: 819-956-3366  
Fax: 819-997-9776

## **2.3 Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) 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.

### **2.3.1 Improvement of Requirement During Solicitation Period**

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 10 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

## **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.

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## **2.5 Optional Site Visit**

It is recommended that the Bidder or a representative of the Bidder visit the work site.

Arrangements have been made for the site visit to be held at:

Canadian Space Agency  
David Florida Laboratory  
3701, Carling Avenue  
Ottawa, Ontario K2H 8S2  
CANADA

on May 11, 2017 at 9am EDT.

Bidders shall meet at the security gate, where they will be instructed where to park inside the campus.

Bidders are requested to communicate with the Contracting Authority no later than April 27, 2017 to confirm attendance. Requests received after April 27, 2017 may not be accepted.

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

Bidders from outside of Canada will be requested to provide passport information for visit clearance purposes. Clearance could take up to two weeks to be granted.

Bidders will be requested to sign an attendance sheet. Bidders who do not attend or do not send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

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.

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## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

Canada requests that Bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid (3 hard copies) and 2 soft copies
- Section II: Financial Bid (1 hard copy)
- Section III: Certifications (1 hard copy)
- Section IV: Additional Information (1 hard copy)

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

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation 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 (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). 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 demonstrate their capability to handle projects of similar magnitude and with similar objectives. Bidder should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work as indicated in Annex A - Statement of Work; Annex B - Evaluation Criteria; Annex C - Reference Pictures and Drawings; Annex D - Mechanical Drawings; Annex E - Basis of Payment.

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## **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

### **3.1.1 Exchange Rate Fluctuation Risk Mitigation**

1. The Bidder may request Canada to assume the risks and benefits of exchange rate fluctuations. If the Bidder claims for an exchange rate adjustment, this request must be clearly indicated in the bid at time of bidding. The Bidder must submit form PWGSC-TPSGC 450, Claim for Exchange Rate Adjustments with its bid, indicating the Foreign Currency Component (FCC) in Canadian dollars for each line item for which an exchange rate adjustment is required.
2. The FCC is defined as the portion of the price or rate that will be directly affected by exchange rate fluctuations. The FCC should include all related taxes, duties and other costs paid by the Bidder and which are to be included in the adjustment amount.
3. The total price paid by Canada on each invoice will be adjusted at the time of payment, based on the FCC and the exchange rate fluctuation provision in the contract. The exchange rate adjustment will only be applied where the exchange rate fluctuation is greater than 2% (increase or decrease).
4. At time of bidding, the Bidder must complete columns (1) to (4) on form PWGSC-TPSGC 450, for each line item where they want to invoke the exchange rate fluctuation provision. Where bids are evaluated in Canadian dollars, the dollar values provided in column (3) should also be in Canadian dollars, so that the adjustment amount is in the same currency as the payment.
5. Alternate rates or calculations proposed by the Bidder will not be accepted for the purposes of this exchange rate fluctuation provision.

## **Section III: Certifications**

Bidders must submit the certifications required under Part 5.

## **Section IV: Additional Information**

### **3.1.2 Delivery Offered**

While delivery and installation is requested as indicated above, the best delivery that could be offered is\_\_\_\_\_.

## **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 will evaluate the bids.

#### **4.1.1 Technical Evaluation**

The Technical Bid should be concise and address, but not necessarily be limited to, the points that are subject to the evaluation criteria against which the Bid will be evaluated. Bidders should address the evaluation criteria in sufficient depth in their bid. Simply repeating the statement contained in the solicitation document is not sufficient. Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

In order to facilitate the evaluation of the Bid, Canada requests:

- Bidders to address and present topics in the order of the Statement of Work (SOW) under the same headings.
- Bidders to avoid duplication by identifying the specific paragraph and page number where the subject topic has already been addressed in the Bid.

##### **4.1.1.1 Mandatory Technical Criteria**

Simply stating a compliancy to a criteria is insufficient. Bidders must present a clearly organized, printed (i.e., not handwritten) proposal that includes all necessary technical and descriptive information, in order to clearly demonstrate their compliancy to all items presented in the Statement of Work (SOW) at Annex A.

Responses will be evaluated on a simple, stringent pass/fail basis. Proposals not meeting each mandatory requirement will be considered non-responsive (non-compliant) and given no further consideration.

- Address, as described, Annex A, Statement of Work (SOW)
- Bidders must obtain the required minimum points for each of the evaluation criteria, which are subject to point rating.

The technical bid should be structured in the same format as the Statement of Work presented at Annex A, through which the bidder will clearly explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

##### **4.1.1.2 Point Rated Technical Criteria**

The Technical Bid will be evaluated and rated as per Annex B - Evaluation Criteria

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#### **4.1.2. Pricing Basis**

All prices must be firm in Canadian dollars, Delivery Duty Paid (Ottawa, ON), Goods and Services Tax or the Harmonized Sales Tax extra, transportation costs to destination and all applicable Custom Duties and Excise Taxes included.

#### **4.2 Basis of Selection**

To be declared responsive, a bid must:

- a. comply with all the requirements of the bid solicitation;
- b. meet all mandatory technical evaluation criteria.

Bids not meeting (a) or (b) will be declared non-responsive. Neither the responsive bid that receives the highest number of points nor the one that proposed the lowest price will necessarily be accepted.

The responsive bid with the lowest evaluated price per point will be recommended for award of a contract.

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## 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. 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 *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, 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 *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.

<b>Green Practices within the Bidders' organization</b>	<b>Insert a checkmark for each criterion that is met</b>
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

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### **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 ([http://www.esdc.gc.ca/en/jobs/workplace/human\\_rights/employment\\_equity/federal\\_contractor\\_program.page?&\\_ga=1.229006812.1158694905.1413548969](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969)).

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.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

## 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

There is no security requirement applicable to this Contract.

### 6.2 Statement of Work

The contractor must provide the goods and services in accordance with the technical requirements stated in Annex A - Statement of Work; Annex C - Reference Pictures and Drawings; Annex D - Mechanical Drawings; Annex E - Basis of Payment.

#### 6.2.1 SACC Manual Clauses

SACC Reference	Section	Date
<u>B7500C</u>	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 (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

and

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

### 6.4 Term of Contract

#### 6.4.1 Delivery Date

All the deliverables must be received on or before \_\_\_\_\_

##### 6.4.2.1 Inspection and Final Acceptance

1) Inspection

Inspection shall be carried out by the Project Authority or the authorized representative at destination.

2) Final Acceptance

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a) The Contractor shall be required to present the work, for final acceptance, when such work has been designed, manufactured, delivered to site and installed and has successfully passed all tests in strict accordance with the specification and terms and conditions, and the Contractor has performed all other work and complied with all the terms and conditions of the contract.

b) Upon verification of the above, the Project Authority will by written notice to the Contractor so acknowledge, and such notice shall constitute final acceptance.

Final Inspection and acceptance will take place at destination when all goods are delivered / services rendered, and after all deficiencies identified by the Project Authority are rectified and accepted.

## **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

7B3, Place du Portage, Phase III, 11 Laurier Street, Gatineau, QC, K1A 0S5

Telephone: (873) 469-3342

E-mail address: [louie.turner@pwgsc-tpsgc.gc.ca](mailto:louie.turner@pwgsc-tpsgc.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: (will be inserted at contract)

Name:

Title:

Telephone: (xxx) xxx-xxxx Facsimile: (xxx) xxx-xxxx

E-mail:

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 Contractor's Representative**

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

#### **General enquiries**

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Facsimile: \_\_\_\_\_

#### **Delivery follow-up**

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Facsimile: \_\_\_\_\_

## 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 lot prices as specified in Annex E. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.6.2 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

#### 6.6.2.1 Travel and Living Expenses - No allowance for profit and overhead

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Treasury Board Travel Directive, and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

Information on standard rates and allowances may be found at <http://www.njc-cnm.gc.ca/s3/en>

All travel must have the prior authorization of the Project Authority.  
All payments are subject to government audit.

### 6.6.3 Milestone Payments – subject to holdback

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract, up to 90% of the amount claimed and approved by Canada if:
  - a. An accurate and complete claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document 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 90% percent of the total amount to be paid under the Contract;
  - c. All the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
  - d. All work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all Work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted

### 6.6.4 SACC Manual Clauses

SACC Reference	Section	Date
G1005C	Insurance	2016-01-28

#### 6.6.5 Discretionary Audit

The Contractor's certification that the price or rate is not in excess of the lowest price or rate charged anyone else, including the Contractor's most favoured customer, for the like quality and quantity of the goods, services or both, is subject to verification by government audit, at the discretion of Canada, before or after payment is made to the Contractor.

If the audit demonstrates that the certification is in error after payment is made to the Contractor, the Contractor must, at the discretion of Canada, make repayment to Canada in the amount found to be in excess of the lowest price or rate or authorize the retention by Canada of that amount by way of deduction from any sum of money that may be due or payable to the Contractor pursuant to the Contract.

If the audit demonstrates that the certification is in error before payment is made, the Contractor agrees that any pending invoice will be adjusted by Canada in accordance with the results of the audit. It is further agreed that if the Contract is still in effect at the time of the verification, the price or rate will be lowered in accordance with the results of the audit.

#### 6.6.6 Exchange Rate Fluctuation Adjustment

1. The foreign currency component (FCC) is defined as the portion of the price or rate that will be directly affected by exchange rate fluctuation. The FCC should include all related taxes, duties and other costs paid by the Bidder and which are to be included in the adjustment amount.
2. For each line item where a FCC is identified, Canada assumes the risks and benefits for exchange rate fluctuation, as shown in the Basis of Payment. For such items, the exchange rate fluctuation amount is determined in accordance with the provision of this clause.
3. The total price paid by Canada on each invoice will be adjusted at the time of payment, based on the FCC and the exchange rate fluctuation provisions in the contract. The exchange rate adjustment amount will be calculated in accordance with the following formula:  
$$\text{Adjustment} = \text{FCC} \times \text{Qty} \times (i1 - i0) / i0$$

where formula variables correspond to:

  - FCC: Foreign Currency Component (per unit)
  - i0: Initial exchange rate (CAN\$ per unit of foreign currency [e.g. US\$1])
  - i1: exchange rate for adjustments (CAN\$ per unit of foreign currency [e.g. US\$1])
  - Qty: quantity of units
4. The initial exchange rate is typically set as the noon rate as published by the Bank of Canada on the solicitation closing date.
5. For goods, the exchange rate for adjustment will be the noon rate as published by the Bank of Canada on the date the goods were delivered. For services, the exchange rate for adjustment will be the noon rate on the last business day of the month for which the services were performed. For advance payments, the exchange rate for adjustment will be the noon rate on the date the payment was due. The most recent noon rate will be used for non-business days.
6. The Contractor must indicate the total exchange rate adjustment amount (either upward, downward or no change) as a separate item on each invoice or claim for payment submitted under the Contract. Where an adjustment applies, the Contractor must submit with their invoice form PWGSC-TPSGC 450, Claim for Exchange Rate Adjustments.

7. The exchange rate adjustment will only be applied where the exchange rate fluctuation is greater than 2% (increase or decrease), calculated in accordance with column 8 of form PWGSC-TPSGC 450 (i.e.  $[i1 - i0] / i0$ ).

8. Canada reserves the right to audit any revision to costs and prices under this clause.

## **6.7 Invoicing Instructions**

### **6.7.1 Progress Payment Claim (Including Task Authorization Payments)**

The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

- a. all information required on form PWGSC-TPSGC 1111;
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- c. the description and value of the milestone claimed as detailed in the Contract.

Each claim must be supported by:

- a. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
- b. a copy of the monthly progress report.

Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.

The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place. The Contractor must not submit claims until all work identified in the claim is completed.

### **6.7.2 Schedule of Milestones**

Annex E - Basis of Payment provides the schedule of milestones for which payments will be made in accordance with the Contract.

## **6.8 Certifications**

### **6.8.1 Compliance**

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

## 6.8.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms 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 \_\_\_\_\_.

## 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), apply to and form part of the Contract **and** Clause 2010C - 16 and Clause 2010 - 17 of 2010C (2016-04-04), General Conditions - Services (Medium Complexity) apply to and form part of the Contract;
- (c) Annex A - Statement of Work
- (d) Annex B - Evaluation Criteria
- (e) Annex C - Reference Pictures and Drawings
- (f) Annex D - Mechanical Drawings
- (g) Annex E - Basis of Payment
- (h) the Contractor's bid dated \_\_\_\_\_, as clarified on \_\_\_\_\_ " **or** ", as amended on \_\_\_\_\_ "

## 6.11 SACC Manual Clauses (Delivery)

SACC Reference	Section	Date
<u>D9002C</u>	Incomplete Assemblies	2007-11-30

## 6.12 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:

- (a) Delivered Duty Paid (DDP) David Florida Lab, 3701 Carling Ave, Ottawa, Ontario Inco terms 2000 for shipments from a commercial contractor.

## 6.13 Shipping – Scheduling

The Contractor must deliver and install the goods to David Florida Lab, 3701 Carling Ave, Ottawa, Ontario in co-ordination with the Project Manager of this Contract (Project Manager or name of person that will co-ordinate the delivery and installation to be named at contract award)



## **Annex A – Statement of Work for Supply and Installation of Electromagnetic Absorber and Commissioning of the Antenna Test Facility 2 at David Florida Laboratory**

### **1. Background**

The David Florida Laboratory (DFL), part of Canadian Space Agency (CSA), is in the process of refurbishing its large anechoic chamber, also known as the Antenna Test Facility 2 (ATF2). The chamber is housed in the DFL Assembly, Integration & Test (AIT) facility, a temperature and humidity controlled environment, with ISO 14644 Class 8 cleanrooms. The size of ATF2 is approximately 24 x 12 x 20 m or 80 x 40 x 65 ft (L x W x H). It is used for a variety of radio frequency (RF) measurements, mainly for antenna characterization (near field and far field), but also for electromagnetic compatibility (EMC) and passive intermodulation (PIM) tests, all of which can be done at different levels: component, subsystem, system, or for a whole spacecraft. Test articles, in order of priority, include spacecraft, flight antenna and components, INMARSAT aeronautical antennas and components, wireless communications and radar antennas, any other RF component requiring an anechoic test environment.

The ATF2 refurbishment plan currently in place has two phases:

- a) The first phase focuses on the chamber envelope and on its environmental control systems. The goal of this phase is to bring the facility up to the current Building codes and Health and Safety regulations by:
  - adding a new fire detection and suppression (FDS) system,
  - replacing the heating, ventilating and air conditioning (HVAC) system,
  - replacing the lighting and video monitoring (LVM) system, and
  - upgrading the chamber structure walls and EM shield.
- b) The second (current) phase focuses on the installation of new electromagnetic (EM) absorber material in the chamber and on the ATF2 commissioning for service.

When considering fire suppression, and health and safety accountabilities, the priorities, in order of importance, are:

- personal safety,
- high value object (flight hardware),
- the facility.



### 2. List of Abbreviations

AD	Applicable Document
ARO	After Receipt of Order (contract award date)
ATF2	Antenna Test Facility 2
CSA	Canadian Space Agency
DFL	David Florida Laboratory
EM	Electromagnetic
EMC	Electromagnetic Compatibility
FDS	Fire Detection and Suppression
HVAC	Heating, Ventilating and Air Conditioning
ISO	International Organization for Standardization
LVM	Lighting and Video Monitoring
PIM	Passive Intermodulation
RF	Radio Frequency
SOTR	Statement of Technical Requirements
SOW	Statement of Work



### 3. List of Applicable Documents

- a) AD1: Annex C - ATF2 Reference Pictures and Drawings
- b) AD2: Annex D - ATF2 Mechanical Drawing Package (includes chamber shield drawings and all environmental systems - FDS, HVAC, and LVM)
- c) AD3: National Building Code of Canada,
- d) AD4: National Fire Code of Canada,
- e) AD5: National Plumbing Code of Canada,
- f) AD6: National Energy Code of Canada,
- g) AD7: Canada Labor Code – Part 2,
- h) AD8: Ontario Building Code,
- i) AD9: Ontario Fire Code,
- j) AD10: Ontario Plumbing regulations,
- k) AD11: Ontario Electric Safety Code,
- l) AD12: Ontario Occupational Health and Safety Act,
- m) AD13: ASHRAE Standard 62.1-2016, Ventilation for Acceptable Indoor Air Quality,
- n) AD14: ISO 14644-1:2015 Cleanrooms and associated controlled environments.  
Classification of air cleanliness by particle concentration,
- o) AD15: FM Global Property Loss Prevention Data Sheets for Anechoic Chambers 1-53  
(latest edition).



### 4. Objectives

The goal of this project is to install new microwave absorber inside the ATF2 and to commission the facility for RF test services. The project is expected to be completed by the end of March 2018.

The DFL aims to maximize the accuracy of all RF tests that will be performed in the refurbished ATF2. This goal will be achieved with optimal design of the absorber layout, the appropriate selection of absorber products and reliable absorber material installation in the chamber.

### 5. Tasks

In order to achieve all project objectives the Contractor must fulfill the following tasks:

- a) Design and provide to DFL for acceptance the layout of the absorber inside ATF2, considering the new chamber configuration and the new FDS, HVAC, and LVM systems, meeting the set of specifications established in section 6.

The absorber layout must include all walls, ceilings, doors, and floor, with detailed information at sprinkler head locations, air sampling detector locations, HVAC supply and return vents, floor interfaces for positioner hardware and overhead crane rail locations. The most up to date ATF2 mechanical drawings for shielding, walls, FDS, HVAC and LVM systems are provided in AD2, Annex D – ATF2 Mechanical Drawing Package.

- b) Deliver to DFL the high performance absorber, related materials and supplies, tools, hardware and equipment required for chamber absorber installation.
- c) Participate in the ATF2 shielding inspection to make sure that all surfaces (including environmental systems FDS, HVAC, and LVM) are properly prepared for absorber installation, in order to assure a solid, long lasting adhesion of all absorber material.
- d) Make sure that all materials used for installation (the absorber itself, glues, resins, paints, any others) do comply with every applicable code listed (see section 3, List of Applicable Documents).
- e) Install all absorber as per the layout design, without damaging or negatively impacting functionality and performance of the environmental systems (FDS, HVAC, and LVM).
- f) Provide detailed ATF2 RF performance test plan for DFL review and acceptance. (This test plan must be included in the bid package.)

## Annex A - Statement of Work



- g) Execute ATF2 RF performance tests according to the accepted test plan for commissioning and provide final RF performance test report. The tests could employ both Contractor's and DFL's certified equipment and will be carried out under the supervision of DFL qualified operators.
- h) During the bid solicitation period (refer to Part 2 Bidder Instructions section 2.3 of the Request for Proposal) the Bidder may propose alternative solutions on how to modify the chamber environmental systems (FDS, HVAC and LVM) in case one or more chamber RF performance specifications cannot be met. The proposed solutions must be supported by relevant EM simulation results, presenting the comparable performances of both configurations (existing and proposed).

## 6. Technical Requirements

- a) Physical properties of the absorber material
  - i. The absorber material must possess enhanced fire retardancy properties;
  - ii. The absorber material pyramids must have a minimum height of 12" up to a maximum of 48";
  - iii. The absorber to be installed on the walls and ceilings must be rated for ISO 14644-1 Class 8 cleanroom requirements;
  - iv. The absorber to be installed on the floor must have their base coated to minimize absorber material crumbling and dusting. (Consideration should be given to employ ISO 14644-1 Class 7 cleanroom rated absorbers for the floor and for the heavy traffic areas (around access doors);
  - v. The absorber material to be installed throughout the ATF2 chamber must be selected with the purpose to maintain long-term (minimum 20 years) ISO 14644-1 Class 8 cleanroom rating;
  - vi. The Contractor must guarantee the adhesion of all absorber material installed for five years;
  - vii. All custom-cut and pre-drilled absorbers must be paint coated at the factory to prevent crumbling and dusting; and
  - viii. The absorber material installed in the ATF2 must have a homogenous color coating throughout the entire chamber.

## Annex A - Statement of Work



### b) Electromagnetic properties of the absorber material

- i. The absorber power rating must be:  $\geq 75$  mW/sq-cm (or  $\geq 484$  mW/sq-in);
- ii. The absorber reflectivity specifications must be:
  1. 250-500 MHz:  $\leq -25$ dB
  2. 500-1000 MHz:  $\leq -30$ dB
  3. 1-6 GHz:  $\leq -40$ dB
  4. 6-40 GHz:  $\leq -50$ dB

### c) ATF2 Chamber RF performance specifications

The design of the absorber layout must be optimized to minimize the RF signal peak-to-peak ripple amplitude within the ATF2 main test volume. The ATF2 main test volume is defined as a sphere of  $D = 4.88$  m (16 ft) diameter, whose center is located at a height  $H = 6.10$  m (20 ft) above the chamber floor, at  $L = 7.62$  m (25 ft) distance from the rear shield wall, and half way between the shield sidewalls (see Fig. 7 in Annex C - ATF2 Reference Pictures and Drawings).

The maximum acceptable peak-to peak ripple amplitude within the test volume must meet the following requirements:

- i. Peak-to-peak ripple amplitude between 0.25 to 0.50 GHz:  $\leq 1.0$  dB
- ii. Peak-to-peak ripple amplitude between 0.50 to 1 GHz:  $\leq 0.6$  dB
- iii. Peak-to-peak ripple amplitude above 1GHz :  $\leq 0.2$  dB

## 7. Deliverables

The following items must be delivered to DFL on the dates shown (all dates are relative to ARO):

- a) Detailed Project Management Plan (PMP). It must include information on coordination of absorber delivery to DFL, absorber installation schedule, and chamber commissioning. - 2 weeks
- b) Design Document including:
  - Final absorber layout in ATF2. - 5 weeks
  - EM reflectivity simulations results showing expected ATF2 RF performance, particularly inside the test volume and in its close proximity (extended test volume). - 5 weeks
  - Proposed modifications to the environmental systems to mitigate RF performance non-compliances, supported by EM simulation results (for the current configuration as indicated in AD2, and for the proposed configuration). - 2 weeks
- c) Detailed RF test plan for ATF2 commissioning (procedures, equipment, and test setup). - part of the bidding package
- d) All absorber, standard and customized. - TBD

## Annex A - Statement of Work



- e) Test proof of RF performance of each piece of absorber delivered, in electronic format.  
*- to accompany every batch of absorber delivered*
- f) Signed note after ATF2 shielding inspection indicating readiness for absorber installation.  
*- prior to absorber installation start date*
- g) Installation of all absorber, without damaging or negatively affecting the ATF2 environmental systems.  
*- TBD*
- h) RF Performance tests of ATF2 commissioning based on the test plan provided.  
*- TBD*

### 8. Final report

The final report on the project, including the RF performance results of ATF2 commissioning must be delivered by Mar 30, 2018.

### 9. Work Location

Work location is the anechoic chamber ATF2 at DFL/CSA Shirleys Bay Campus, at 3701 Carling Avenue, Ottawa, Ontario, Canada.

Access to the DFL site will be provided to the Contractor and sub-contractor personnel, based on the agreed activity schedule.

Some work related to chamber absorber layout design, preparation of drawings, other required documentation and manufacturing or procurement of absorber, will be performed at the Contractor's facilities.

### 10. Project Organization

DFL will provide Technical Authority for this project. Technical Authority will overlook all aspects of this project including schedule as per internal DFL/CSA regulations.

### 11. Risk Mitigation

Risk mitigation of this project will be provided based on the standard approach for this type of the procurement project. The contractor must comply with all required Health Safety and Security regulations of the DFL/CSA. The personnel will be briefed on the regulations in an orientation session provided by the DFL Facility and Security group.



### 12. Main Milestones for the Project

- |                                   |              |
|-----------------------------------|--------------|
| - Start of absorber installation: | Nov 20, 2017 |
| - Project end date:               | Mar 30, 2018 |

### 13. Meetings

The work consists of off-site work and on-site installation and testing. The Contractor and DFL should hold weekly review meetings via teleconference or WebEx to monitor project progress. The meeting frequency could be modified if mutually agreed.

The kick-off meeting should be organized as teleconference or WebEx but the Final Review Meeting at the end of commissioning of the ATF2 will be arranged on DFL's premises.

### 14. Constraints

- a) Make sure that all company employees or sub-contractors, while present on DFL premises for ATF2 shield inspection, absorber transportation, absorber installation, ATF2 testing for commissioning, or any other activities, do observe all appropriate DFL regulations. The personnel will be briefed on the regulations in an orientation session provided by the DFL Facility and Security group.
- b) Effective communication between DFL and the Contractor is essential to meet ATF2 project schedules. DFL must inform the Contractor when the chamber is ready for inspection (see Tasks - c)). In cooperation with DFL, once the surface preparations are accepted, the Contractor will have 30-days to start the absorber installation.



## **Annex B - Evaluation Criteria**

# **Annex B - Evaluation Criteria of Bidder's Technical Proposal Antenna Test Facility 2 Commissioning at David Florida Laboratory**

## **1. Technical Proposal Evaluation**

The Technical Proposal must demonstrate the bidder is capable of meeting the obligations listed in Annex A - ATF2 Statement of Work (SOW). The proposal must address each SOW task requirements.

Bidder's Technical Proposal will be evaluated using the Mandatory Technical Criteria (MTC) in Section 2, and the Point Rated Technical Criteria (RTC) in Section 3.

A successful bid must meet all mandatory requirements and must obtain the minimum required score in every criterion listed in the RTC. The minimum acceptable cumulative total for RTC is 76 points. Proposals not meeting these requirements will be deemed non-responsive.

## Annex B - Evaluation Criteria

### 2. Mandatory Technical Criteria

The Bidder must meet the mandatory technical criteria specified below. The Bidder must provide the necessary documentation to support compliance with this requirement. Bids which fail to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately.

Bidders are advised that only listing experience without providing any supporting documentation relevant to the requirements will not be considered “demonstrated” for the purpose of this evaluation.

<b>Mandatory Technical Criteria (MTC)</b>			
<b>Bidder's Experience</b>			
<b>No.</b>	<b>Mandatory Technical Criterion</b>	<b>Bidder's Preparation Instructions</b>	
<b>MTC1</b>	<b>Bidder's Experience</b>  The Bidder must demonstrate a minimum of eight (8) years' experience within the last ten (10) years, as of bid closing date, in the sector of large size (minimum 40x40x40 ft) anechoic chamber design for antenna characterization and in the design of at least two of the following types of anechoic chambers: <ul style="list-style-type: none"> <li>• Near field; or</li> <li>• Electromagnetic Compatibility (EMC); or</li> <li>• Passive Intermodulation (PIM)</li> </ul>	In their technical bid, the Bidder must provide the following for each project: <ol style="list-style-type: none"> <li>Start and completion dates;</li> <li>Name of the client for whom the work was done; and</li> <li>Detailed description of the work performed;</li> </ol>	
<b>Resources' Qualifications &amp; Experience</b>			
<b>MTC2</b>	<b>Project Leader</b>  The Bidder must propose one (1) Project Manager. As of bid closing date, the proposed Project Manager must have:  A minimum of eight (8) years demonstrated experience in the last twelve (12) years, in project management of anechoic chamber implementation. Project which include: <ul style="list-style-type: none"> <li>• A large size (minimum 40x40x40 ft) anechoic chamber implementation with environmental systems placed inside the chamber (Fire Detection and Suppression, Heating, Ventilating and Air Conditioning and Lighting and Video Monitoring)</li> </ul>	In their Technical Bid, the Bidder must provide the following for the proposed resource:  A detailed résumé outlining a list of responsibilities and experiences for the project(s) completed within the last twelve (12) years, which must include the following: <ol style="list-style-type: none"> <li>a description of the individual's roles and responsibilities;</li> <li>Detailed description of the work performed;</li> <li>the start and completion dates of the jobs or projects; and the employer or client for whom the work was done.</li> </ol>	
<b>MTC3</b>	<b>Technical Leader</b>  The Bidder must propose two (2) Technical	In their Technical Bid, the Bidder	

## Annex B - Evaluation Criteria

	<p>Leaders. As of bid closing date, the proposed Technical Leaders must each have:</p> <p>A minimum of five (5) years demonstrated experience in the last eight (8) years, in the following area:</p> <ul style="list-style-type: none"> <li>• Electromagnetic design; and</li> <li>• Absorber installation and commissioning of anechoic chamber for radio frequency measurement.</li> </ul> <p>Definition: radio frequency measurement includes near-field and far-field antenna pattern measurement, PIM and EMC/EMI testing.</p>	<p>must provide the following for the proposed resource(s):</p> <p>A detailed résumé outlining a list of responsibilities and experiences for the project(s) completed within the last eight (8) years, which must include the following:</p> <ol style="list-style-type: none"> <li>a description of the individual's roles and responsibilities;</li> <li>Detailed description of the work performed;</li> <li>the start and completion dates of the jobs or projects; and</li> <li>the employer or client for whom the work was done.</li> </ol>	
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## Annex B - Evaluation Criteria

### 3. Point Rated Technical Criteria

Bids which meet all the mandatory technical criteria will be evaluated and scored as specified in the table below.

Any bid which does not pass all mandatory requirements or does not receive the minimum number of points on each of RTC1, RTC2, RTC3, RTC4, and RTC5 will be disqualified. Bids which fail to obtain the required minimum number of points specified below will be declared non-responsive. Each point rated technical criterion should be addressed separately.

Bidders are advised that only listing experience without providing any supporting documentation relevant to the requirements will not be considered “demonstrated” for the purpose of this evaluation.

Bidders are also advised that the months of experience listed for a project whose timeframe overlaps that of another reference project will only be counted once. For example: Project 1 timeframe is July 2011 to December 2011; Project 2 timeframe is October 2011 to January 2012; the total in months of experience for these two projects is seven months.

Point Rated Technical Criteria (RTC) and Scores		Required Minimum Number of Points per Criterion	Maximum Number of Points per Criterion
<b>RTC1</b>	Experience of the Bidder	15	20
<b>RTC2</b>	Experience of the Project Manager	3	5
<b>RTC3</b>	Experience of the Technical Leaders	3	5
<b>RTC4</b>	Work Implementation Plan	25	30
<b>RTC5</b>	Preliminary Design Document	30	40
<b>Overall Score</b>		<b>76</b>	<b>100</b>

Point Rated Technical Criteria (RTC)		
RTC1 Experience of the Bidder		
Number	Criteria	Scoring
RTC1	<p><b>Bidder</b></p> <p>The Bidder's proposed corporate experience will be evaluated as follows:</p> <ul style="list-style-type: none"> <li>a) Eight (8) years of experience within the last ten (10) years;</li> <li>b) Three (3) previous projects of the same nature (large size, minimum 40x40x40 ft) anechoic chamber design for antenna characterization, in the last six (6) years (at bid closing)</li> <li>c) In at least two of the following: design of near-field, EMC or PIM specific anechoic chambers</li> </ul>	<p>The Bidder's proposed <b>corporate experience</b> will be evaluated as follows:</p> <p><b>0 points:</b> The Bidder does not meet RTC1 a), or b), or c).</p> <p><b>15 points:</b> The Bidder meets RTC1 a), and b), and c).</p> <p><b>1 point:</b> for every additional year of experience or for every additional project within the last 10 years, up to a max of 5 points of combined</p>

## Annex B - Evaluation Criteria

		<p>excess experience.</p> <p>The maximum amount of points that can be achieved is 20 points (15 points + 5 additional points for experience).</p> <p><b>The minimum acceptable score for RTC1 criterion is 15 points.</b></p>
<b>RTC2 Experience of the Project Manager</b>		
<b>RTC2</b>	<p><b>Project Manager</b></p> <p>The resource proposed in MTC2 should have eight (8) years demonstrated experience within the last twelve (12) years, as of bid closing date, performing activities including:</p> <ul style="list-style-type: none"> <li>a) Managing anechoic chamber implementation projects;</li> <li>b) A large size, minimum 40x40x40ft, anechoic chamber implementation with environmental systems placed inside the chamber (FDS, HVAC, LVM)</li> </ul>	<p>The Bidder's proposed <b>Project Manager</b> will be evaluated as follows:</p> <p><b>0 points:</b> The Bidder does not meet RTC2</p> <p><b>3 points:</b> The Bidder meets RTC2</p> <p><b>1 point:</b> for every two (2) years of additional experience up to a max of 2 points of combined excess experience</p> <p>The maximum amount of points that can be achieved is 5 points (3 points + 2 additional points for experience).</p> <p><b>The minimum acceptable score for RTC2 criterion is 3 points.</b></p>
<b>RTC3 Experience of the Technical Leaders</b>		
<b>RTC3</b>	<p><b>Technical Leaders</b></p> <p>The resources proposed in MTC3 should have five (5) years demonstrated experience within the last eight (8) years, as of bid closing date, performing activities including:</p> <ul style="list-style-type: none"> <li>a) Electromagnetic designing</li> <li>b) Installing absorber and commissioning of anechoic chamber for radio frequency measurement.</li> </ul> <p>Definition: radio frequency measurement includes near-field and far-field antenna pattern measurement, PIM and EMC/EMI testing.</p>	<p>The Bidder's proposed <b>Technical Leaders</b> will be evaluated as follows:</p> <p><b>0 points:</b> The Bidder does not meet RTC3</p> <p><b>3 points:</b> The Bidder meets RTC3</p> <p><b>1 point:</b> for every two (2) years of additional experience up to a max of 2 points of combined excess experience</p> <p>The maximum amount of points that can be achieved is 5 points (3 points + 2 additional points for</p>

## Annex B - Evaluation Criteria

		experience).  <b>The minimum acceptable score for RTC3 criterion is 3 points.</b>
<b>RTC4 Work Implementation Plan</b>		
<b>RTC4</b>	<p><b>Work Implementation Plan</b></p> <p>The bidder must submit a comprehensive, logical and well defined Work Implementation Plan, with specific tasks to complete all aspects of the project, with a realistic schedule and with appropriate resource allocation. Sufficient detail should be provided to allow for a comprehensive understanding of the work undertaken. The plan should include the following elements:</p> <ul style="list-style-type: none"> <li>- Project phases</li> <li>- Work breakdown structure (WBS)</li> <li>- Team composition and responsibilities</li> <li>- Preliminary schedule</li> <li>- Risk management plan</li> </ul> <p>Evaluation ladder:</p> <p>a) All plan elements are well defined, logical and realistic. The WBS is thorough and assignment of resources to and scheduling of work packages is detailed, realistic and appropriate. Challenges are well identified and addressed for all tasks.</p> <p>b) All plan elements are defined, fairly logical and realistic. The WBS is decent and assignment of resources to and scheduling of work packages is fairly realistic and appropriate. Challenges are identified and addressed for the majority of the tasks.</p> <p>c) Plan elements are defined, but less coherent and/or unrealistic. The WBS is modest while the assignment of resources to and scheduling of work packages is weak. Challenges are identified and addressed for some of the tasks.</p> <p>d) Plan elements are not well defined. The WBS is inadequate and assignment of resources to and scheduling of work packages is not realistic and/or incomplete. Few challenges are identified and/or are addressed ineffectively.</p>	<p>The Bidder's proposed <b>Work Implementation Plan</b> will be evaluated as follows (single selection a) to d)):</p> <p>a) <b>30 points</b></p> <p>b) <b>25 points</b></p> <p>c) <b>20 points</b></p> <p>d) <b>15 points</b></p>

## Annex B - Evaluation Criteria

		<p>The maximum amount of points that can be achieved is 30 points.</p> <p><b>The minimum acceptable score for RTC4 criterion is 25 points.</b></p>
<b>RTC5 Preliminary Design Document</b>		
<b>RTC5</b>	<p><b>Preliminary Design Document</b></p> <p>The bidder must submit a Preliminary Design Document (PDD) which should include:</p> <ul style="list-style-type: none"> <li>- the proposed absorber layout to meet the requirements in SOW,</li> <li>- results of simulation analysis demonstrating that the technical requirements can be met,</li> <li>- information on the absorber quality control processes, and</li> <li>- a detailed chamber commissioning RF test plan.</li> </ul> <p>Evaluation ladder (a - c):</p> <ul style="list-style-type: none"> <li>a) The PDD presents sound and convincing solutions that can undoubtedly meet the technical objectives.</li> <li>b) The PDD presents credible solutions that will likely meet the technical objectives.</li> <li>c) The PDD presents solutions which are unlikely to meet the technical objectives.</li> <li>d) Additional points will be awarded for exceeding the size of the test volume while preserving the maximum ripple level specifications as per Annex A – SOW: one (1) additional point will be awarded for every foot added to the test volume diameter, up to a maximum of ten (10) points.</li> </ul>	<p>The Bidder's proposed <b>Preliminary Design Document</b> will be evaluated as follows (single selection, a) to c)):</p> <ul style="list-style-type: none"> <li>a) <b>30 points</b></li> <li>b) <b>25 points</b></li> <li>c) <b>10 points</b></li> <li>d) <b>1 point:</b> For every foot added to the test volume diameter that exceeds the main test volume in Annex A - SOW, up to a maximum of 10 points.</li> </ul> <p>The maximum amount of points that can be achieved is 40 points (30 points + 10 additional points for test volume diameter).</p> <p><b>The minimum acceptable score for RTC5 criterion is 30 points.</b></p>

## Annex C - Antenna Test Facility 2 Reference Pictures and Drawings

### 1. Reference pictures of the ATF2 chamber before dismantling

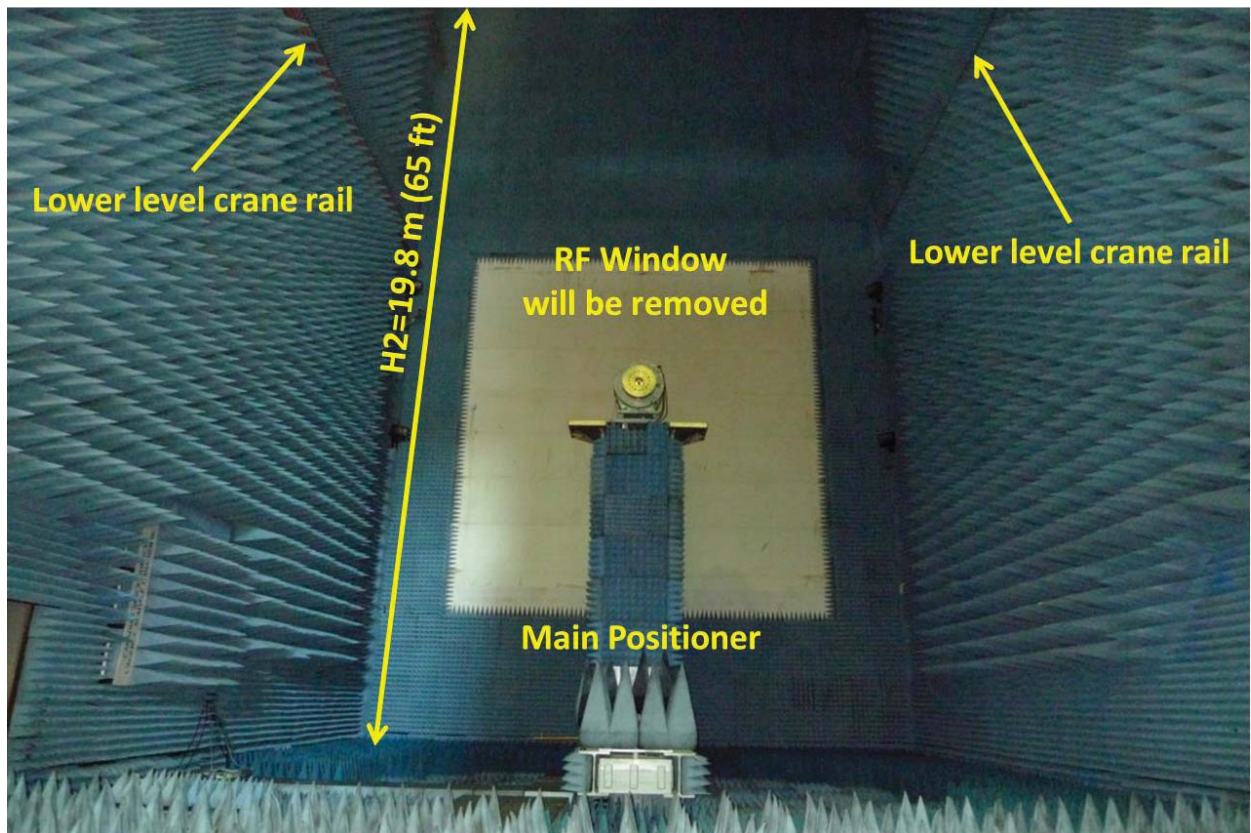


Fig. 1 ATF2 – Picture towards the rear wall

The picture shows the tall section of the ATF2, where the main positioner is located. The RF window on the rear wall will be removed. The opening will be fit with structural elements, shielded and populated with absorber.

The lower level crane travels the entire length of the chamber. During testing, the crane is parked outside of the ATF2.

## Annex C - ATF2 Reference Pictures and Drawings



The second crane available in the ATF2 is located in the tall area of the chamber. Its rails are positioned close to the 65 ft ceiling. During testing, the crane is parked in a compartment (covered with absorber) towards the center of the chamber.



Fig. 2 ATF2 – Picture towards the rear wall

The picture shows the main positioner and surrounding area with the low profile absorbers and walkway.

The arrow points to the side access door location.

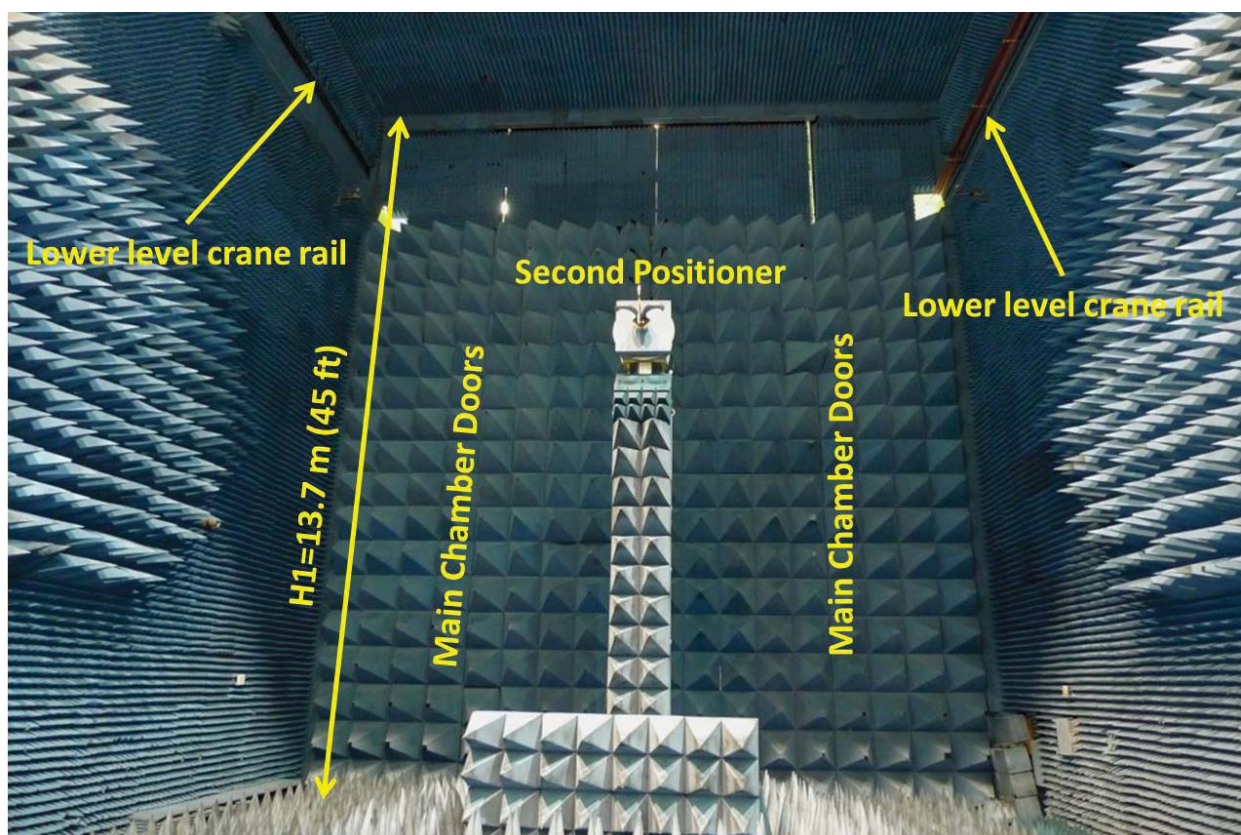


Fig. 3 ATF2 – Picture towards the chamber front

The picture shows the entrance to the chamber with the two large doors and the second positioner. The flaps above the main doors are hinged onto the ceiling to provide access for the crane.

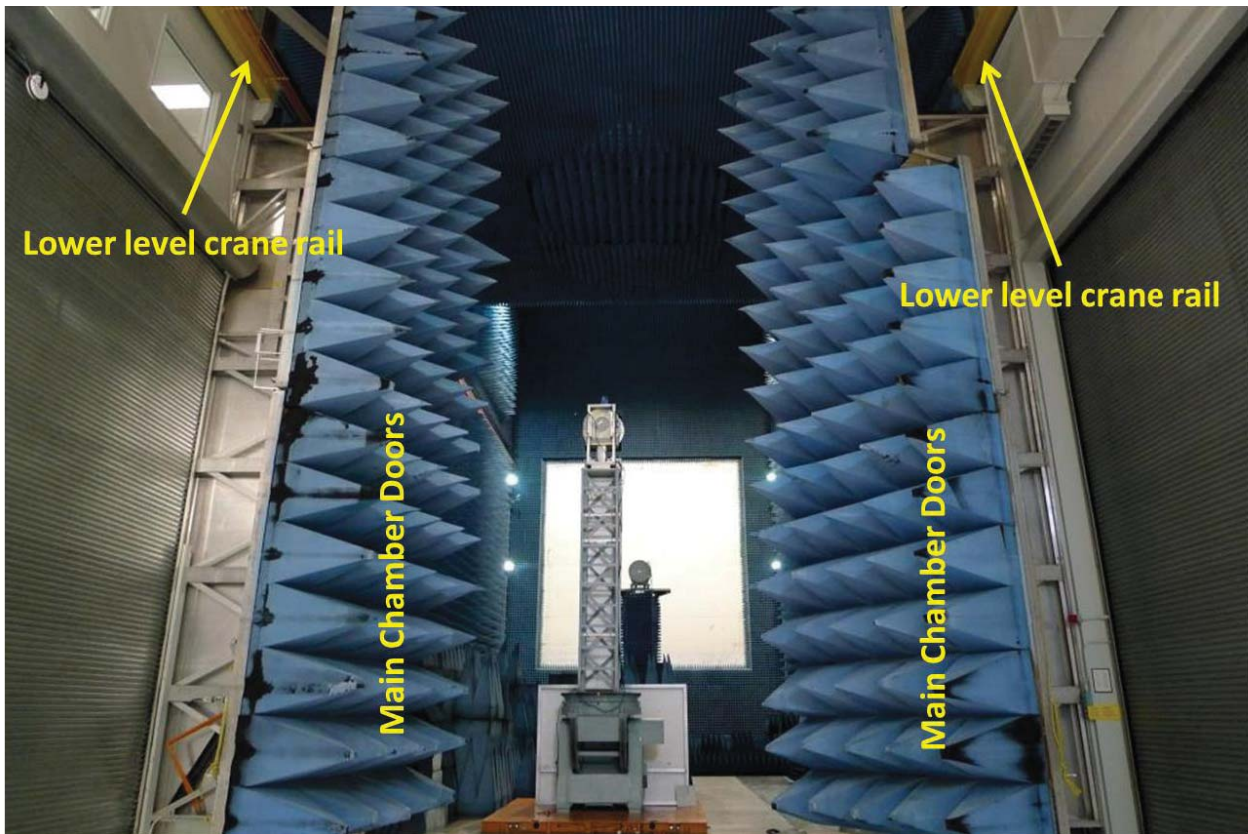


Fig. 4 ATF2 – Picture of the main entrance

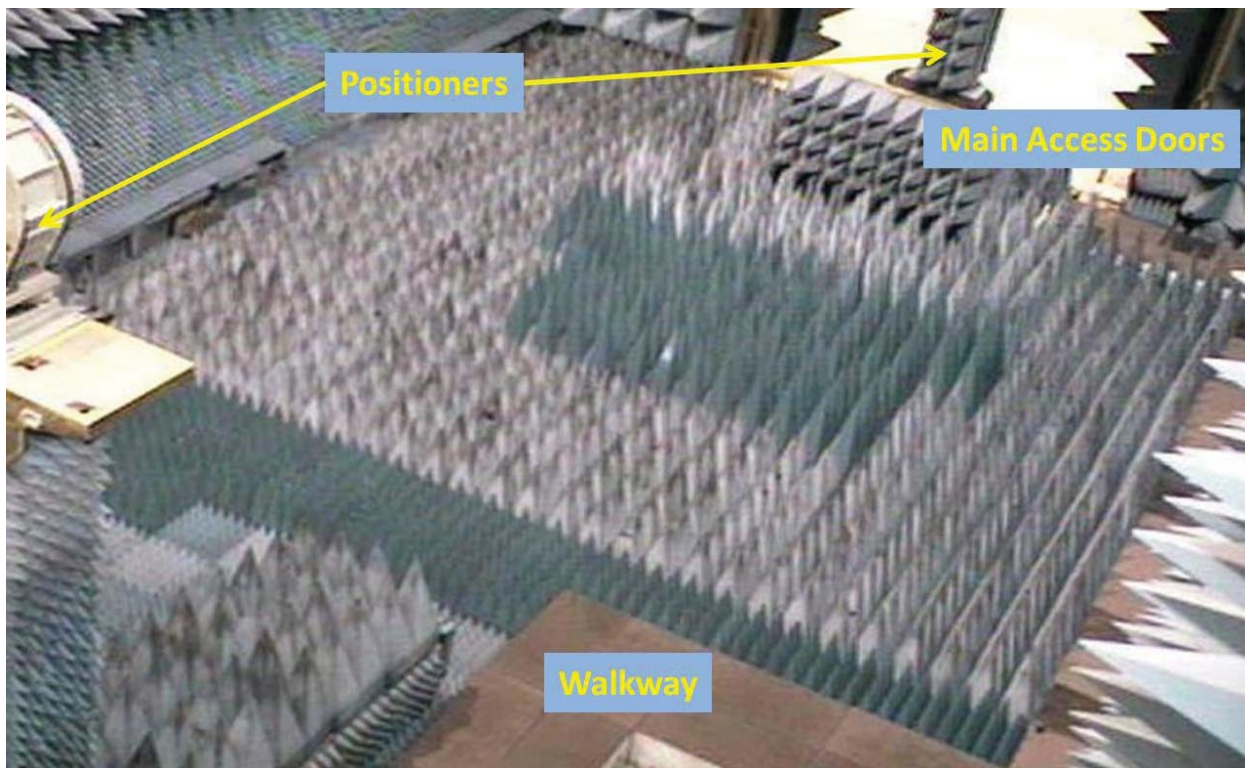


Fig. 5 ATF2 – Picture of the floor towards main entrance

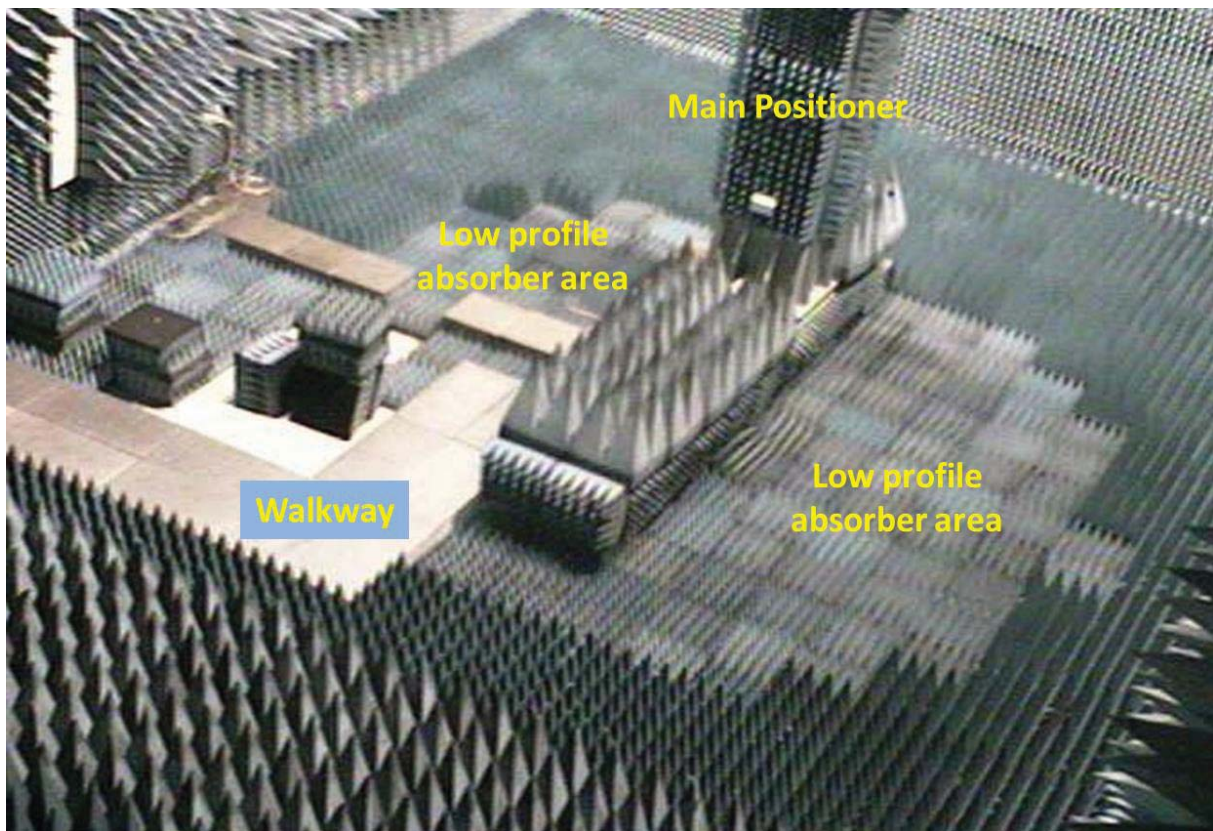


Fig. 6 ATF2 – Picture of the floor around the main positioner

## 2. Reference Drawings

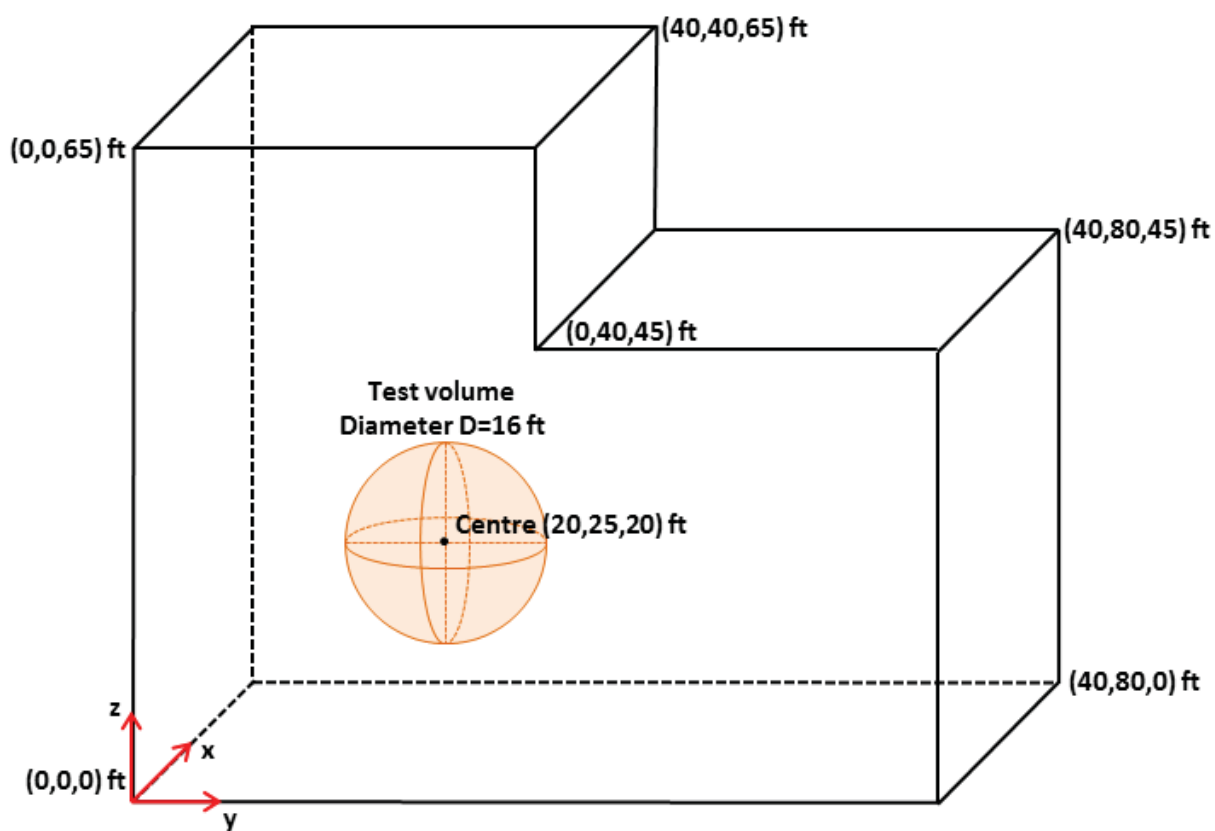


Fig. 7 ATF2 Sketch: dimensions and test volume location

Fig. 7 shows the ATF2 overall shape, its main dimensions, and the location of the test volume.

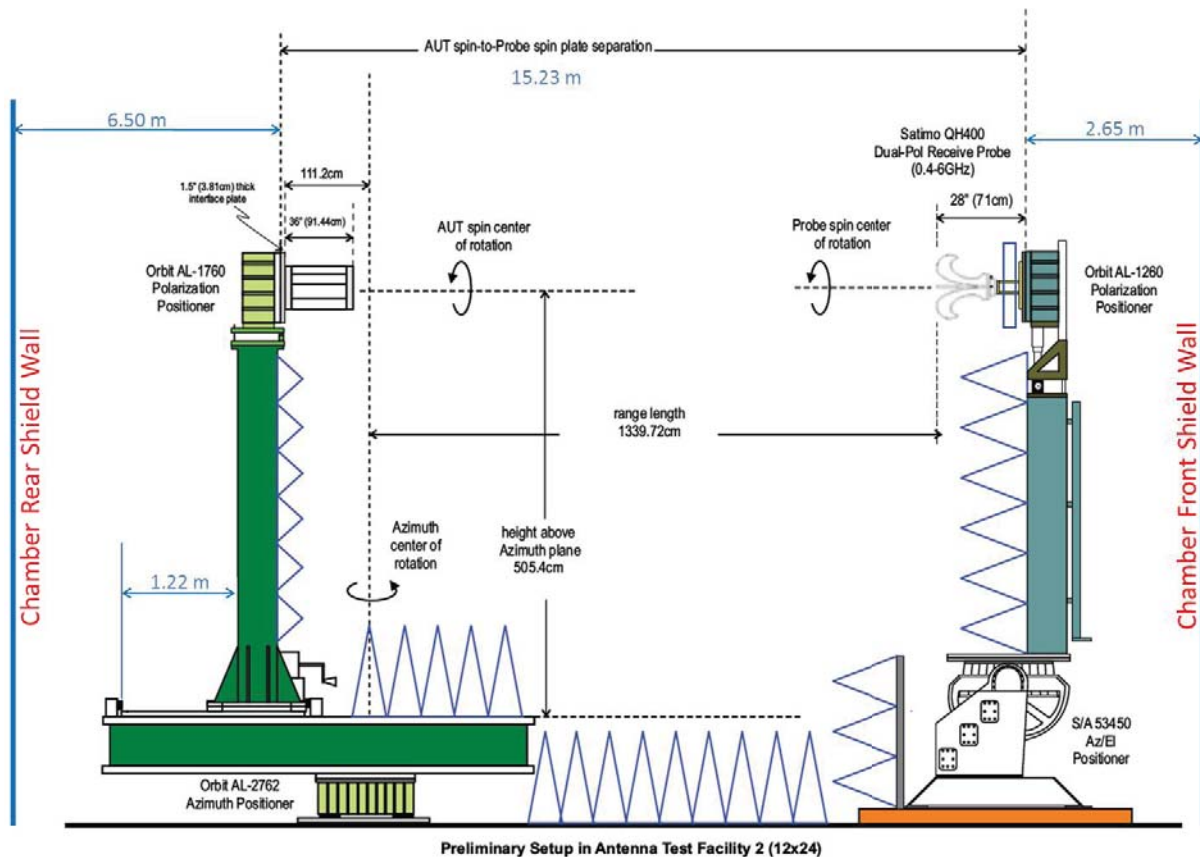


Fig. 8 Preliminary location of the positioners in the ATF2

From Fig.8, we calculate the maximum test range of approximately 13 m (or 43 ft). The main positioner (to the left) can move backwards, towards the rear wall, up to 1.2 m (4 ft).

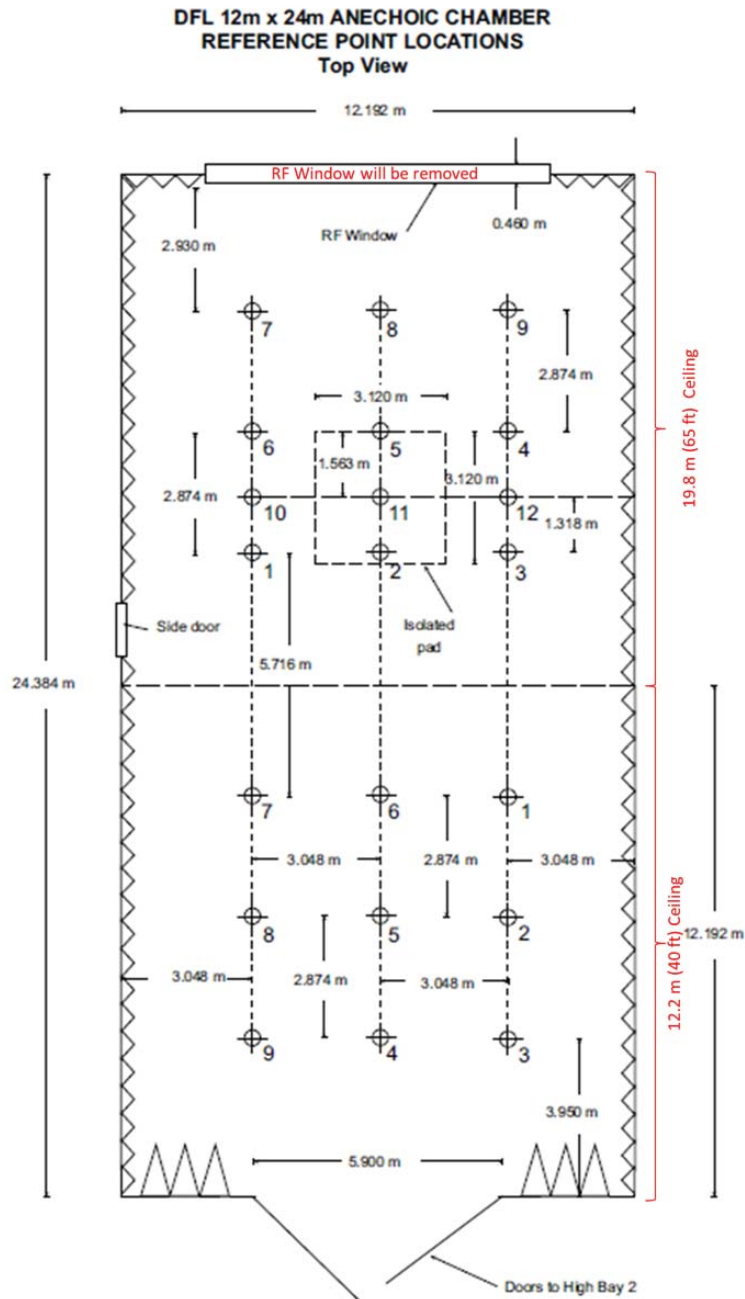
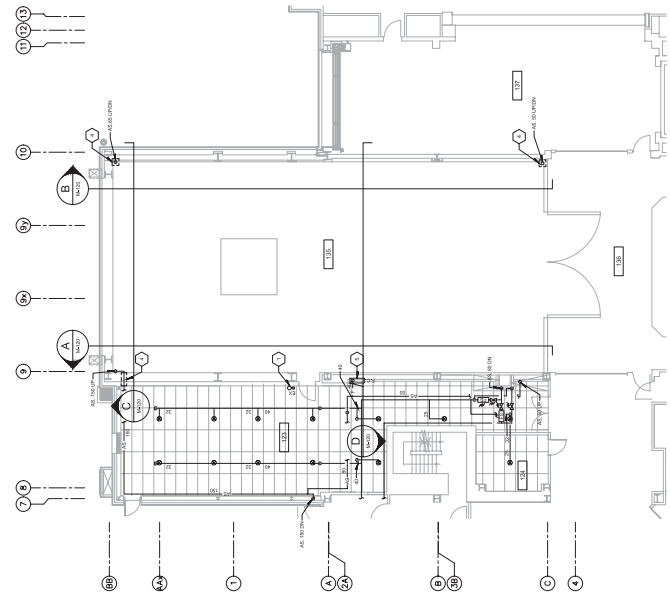


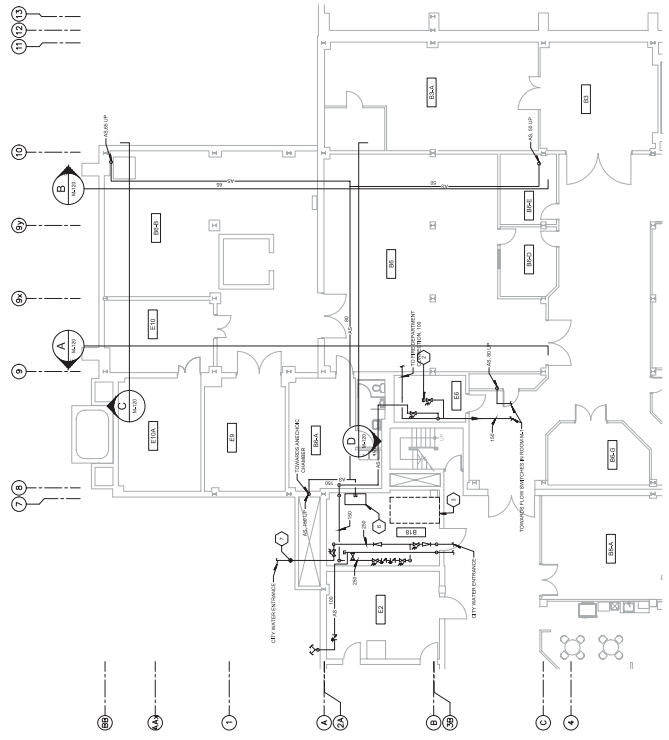
Fig. 9 ATF2 Floor with permanent reference point locations

Fig. 9 is a top view drawing of the ATF2. It shows the main chamber dimensions, the location of the large seismic block (isolated pad) on which the main positioner is mounted, and the locations of all available permanent reference points.

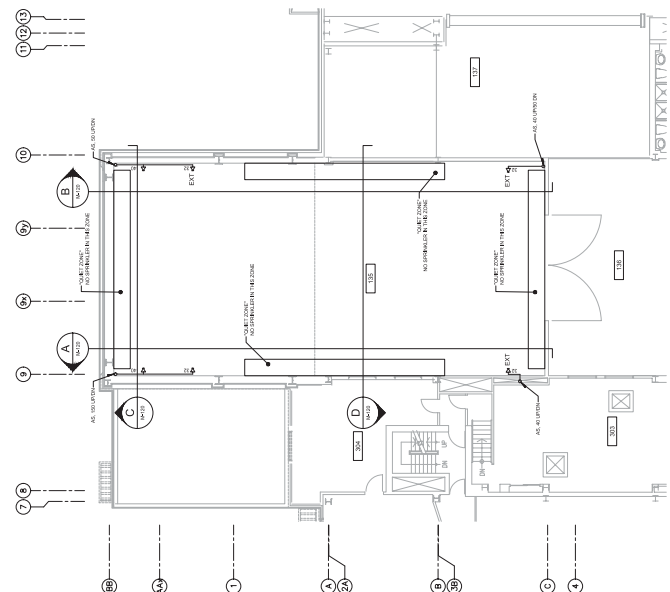
- IDENTIFICATIONS:**
- 1. METAL ROOFING SYSTEM
  - 2. AIR IN THE PROTECTION AREA TO BE CAPTED
  - 3. LOCATION OF FUTURE FIRE PUMP
  - 4. METAL INSULATED THROUGH ROOF STRUCTURAL
  - 5. NEW FIRE RESISTANT ON FIRE OUTLET FIRE HOSE AND NOZZLES
  - 6. NEW BRASS DISCHARGE CONNECTIONS
  - 7. FLOOR CONCRETE AT THE POINT ARE PROVIDED IN THE SPECIFICATIONS



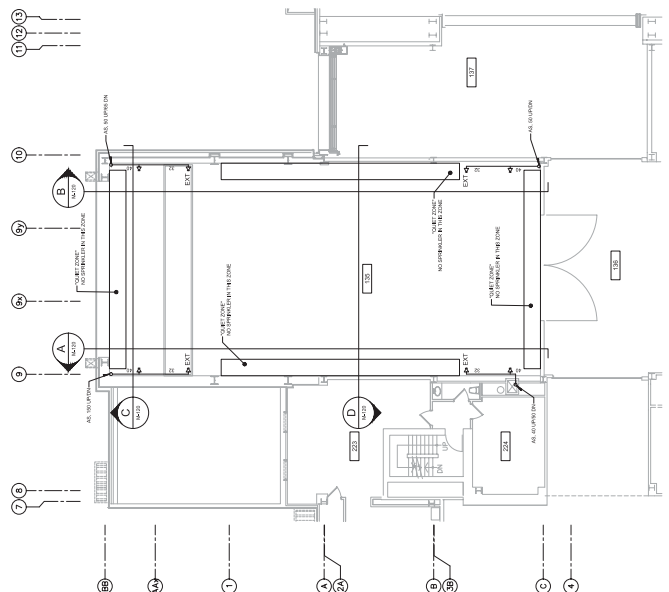
2. GROUND FLOOR  
SCALE = 1/8" = 1'-0"



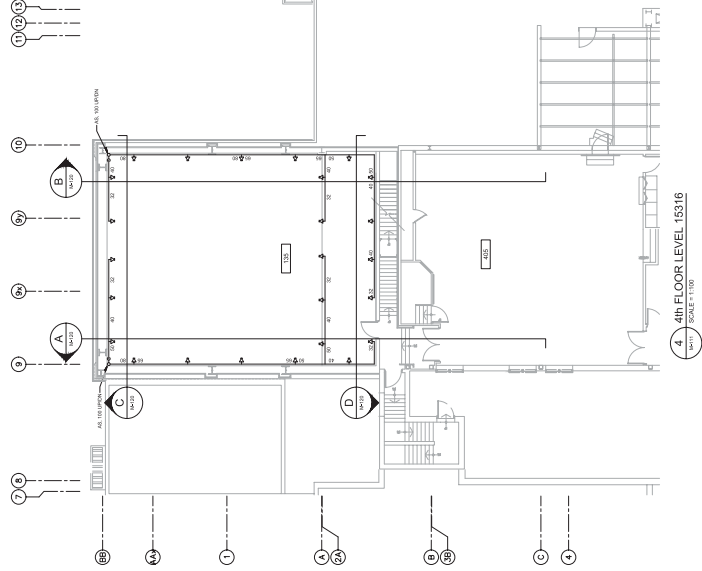
1. BASEMENT  
SCALE = 1/8" = 1'-0"



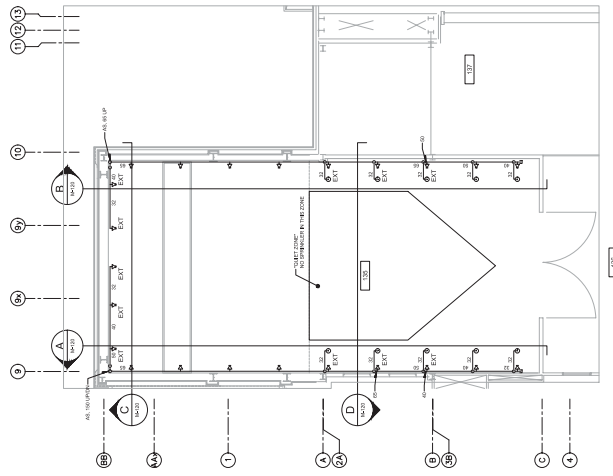
4. 3rd FLOOR LEVEL 7544  
SCALE = 1/8" = 1'-0"



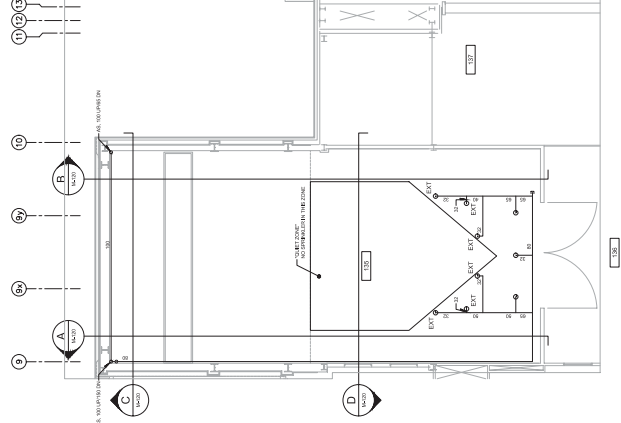
3. 2nd FLOOR LEVEL 4496  
SCALE = 1/8" = 1'-0"



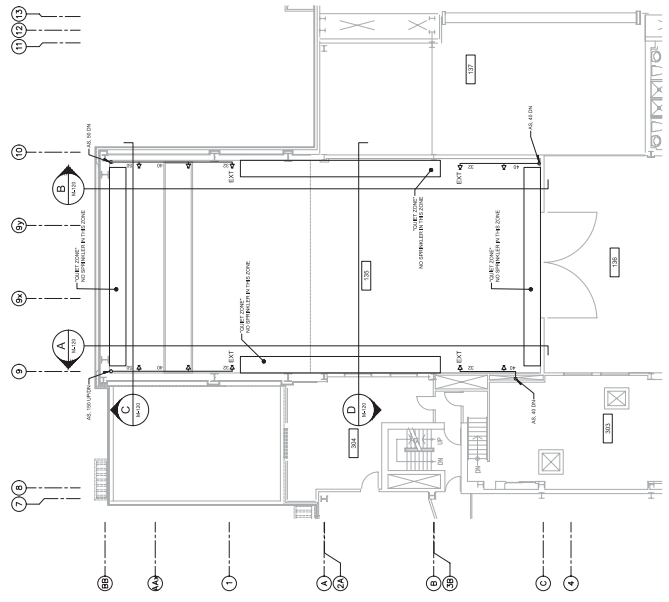
4th FLOOR LEVEL 15316  
SCALE: 1/8\"/>



3rd FLOOR LEVEL 12421  
SCALE: 1/8\"/>



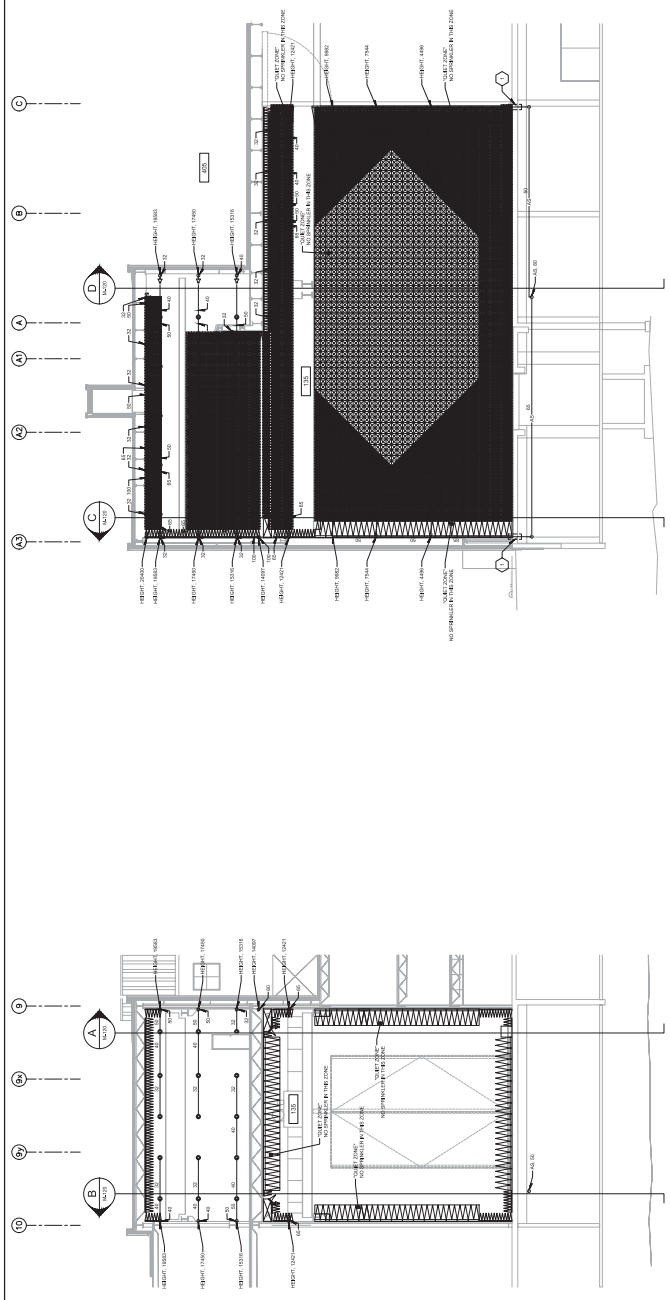
3rd FLOOR LEVEL 14057  
SCALE: 1/8\"/>



3rd FLOOR LEVEL 9982  
SCALE: 1/8\"/>

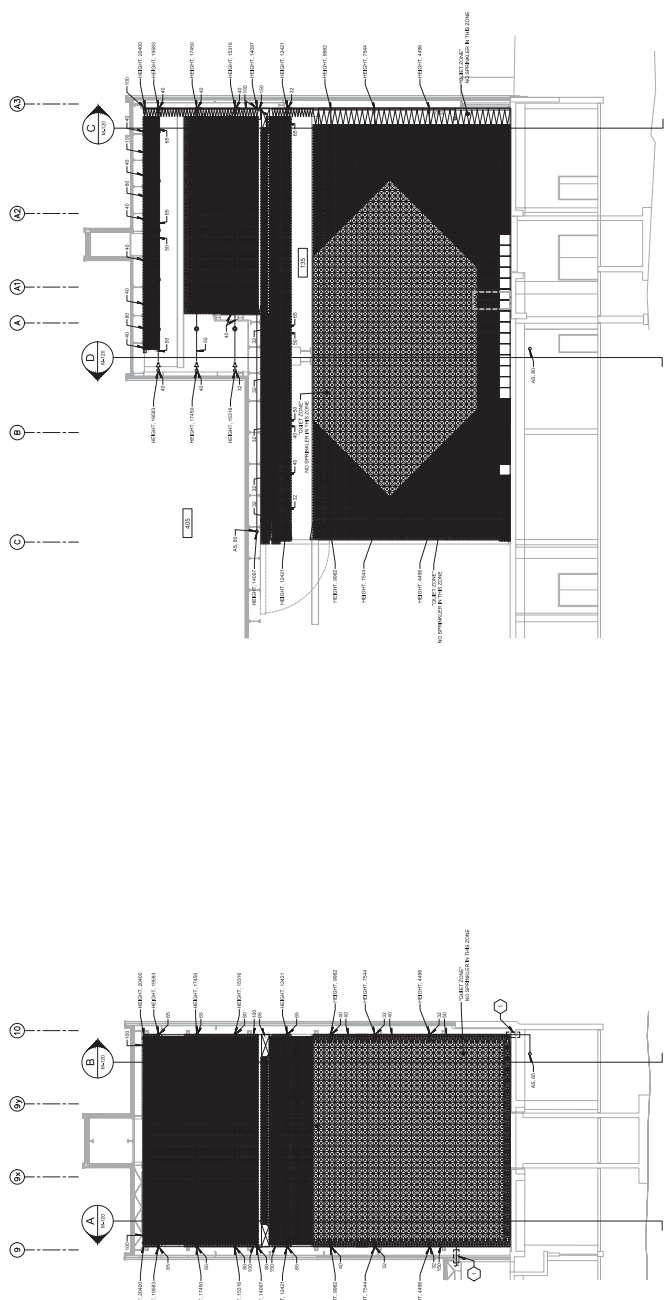


IDENTIFICATIONS:  
A REFLECTORISED THROUGH ROOF PENETRATION



B SECTION  
SCALE 1:100

D SECTION  
SCALE 1:100



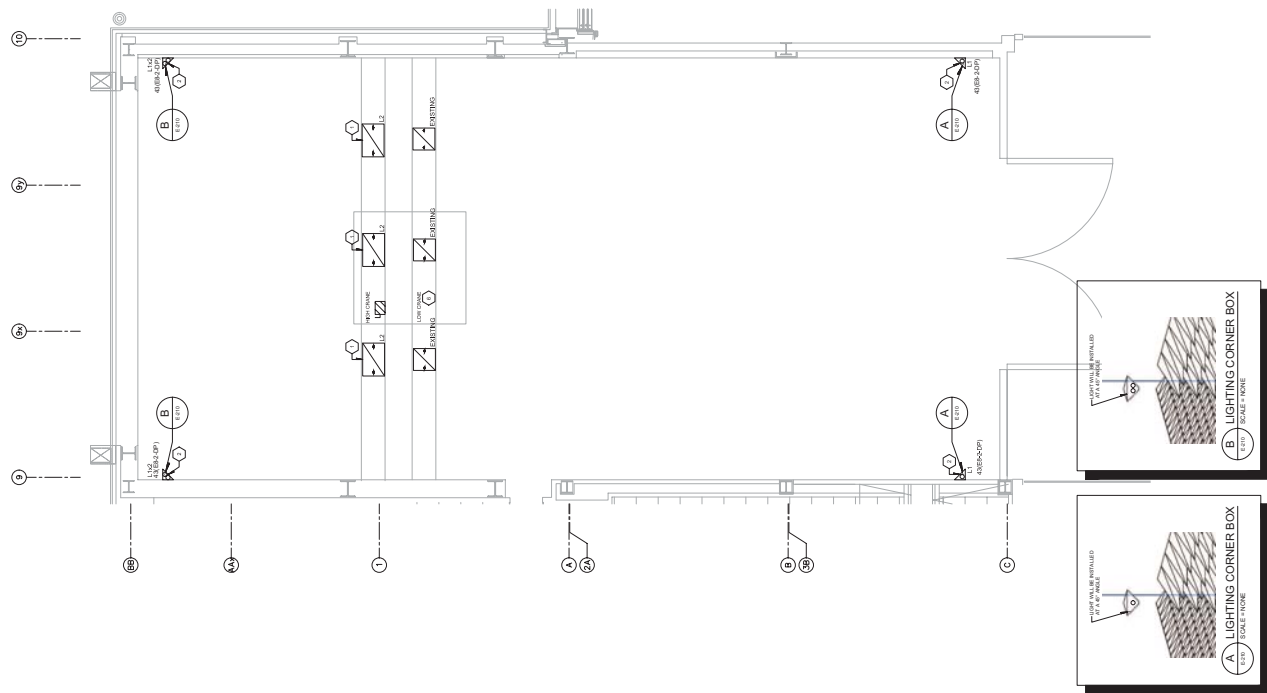
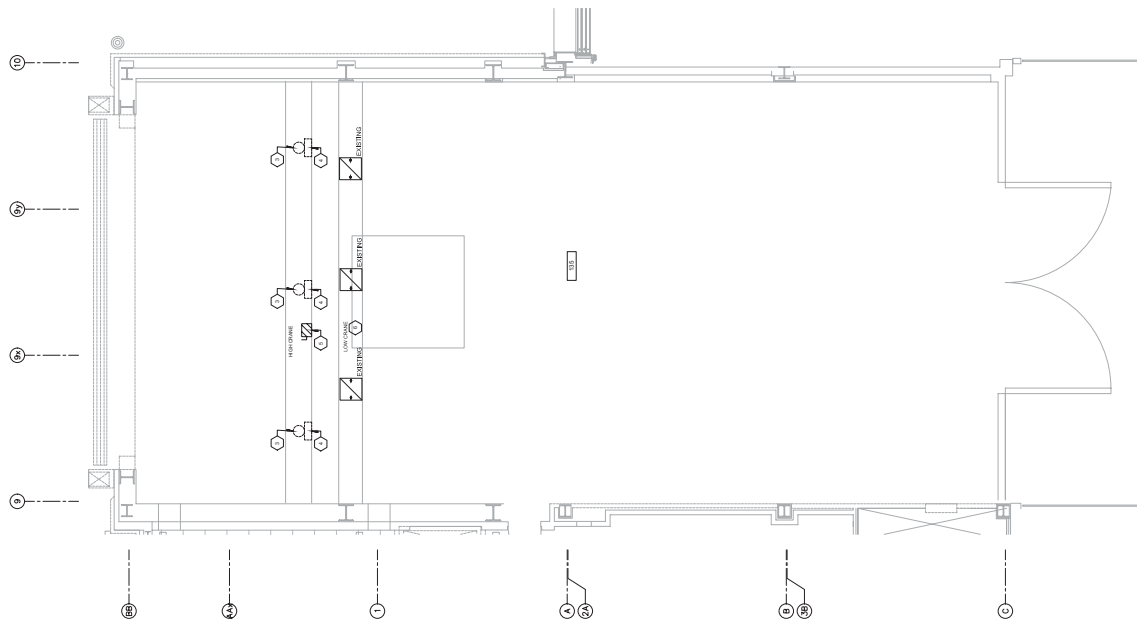
A SECTION  
SCALE 1:100

C SECTION  
SCALE 1:100



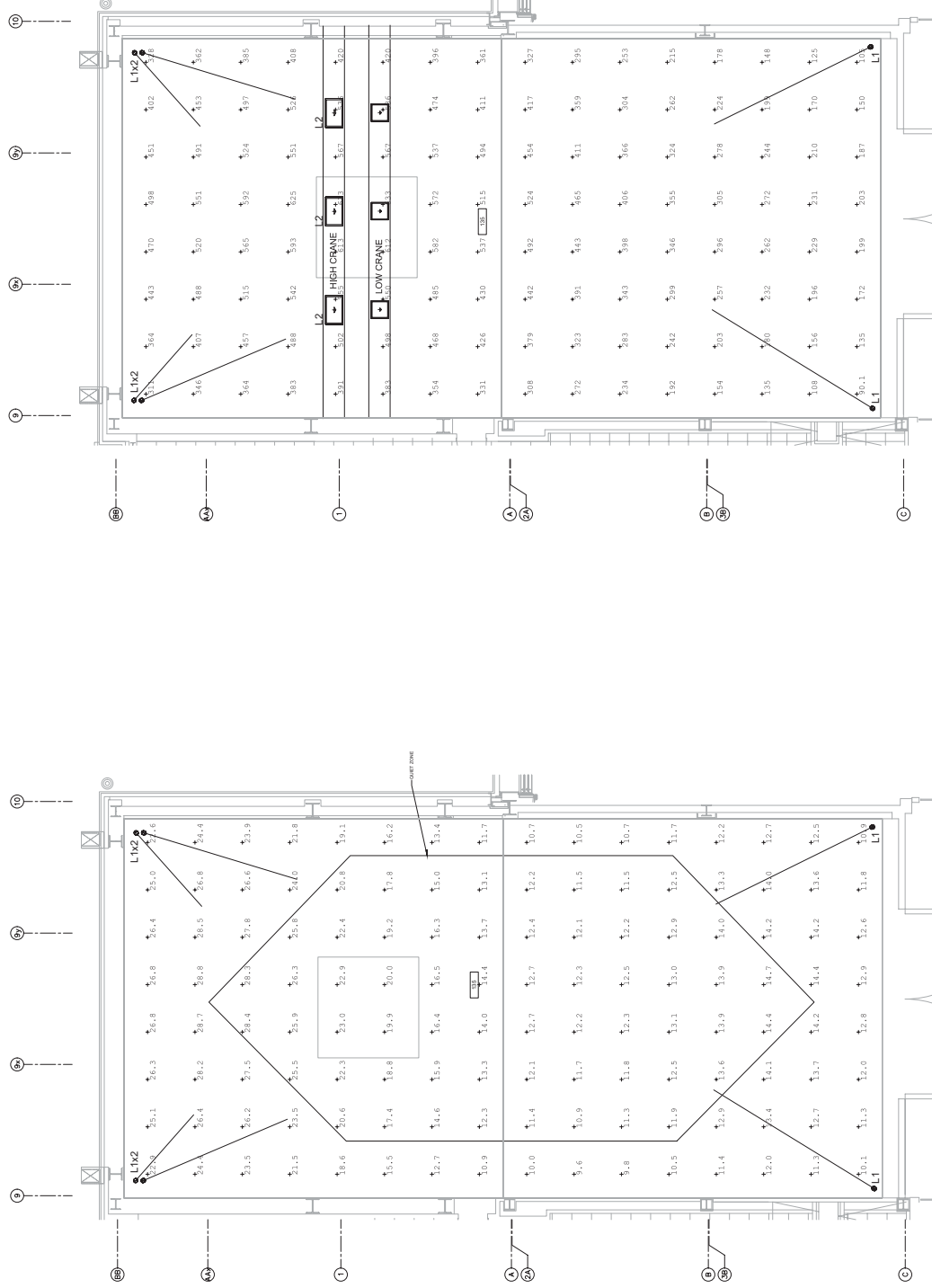




[illegible]

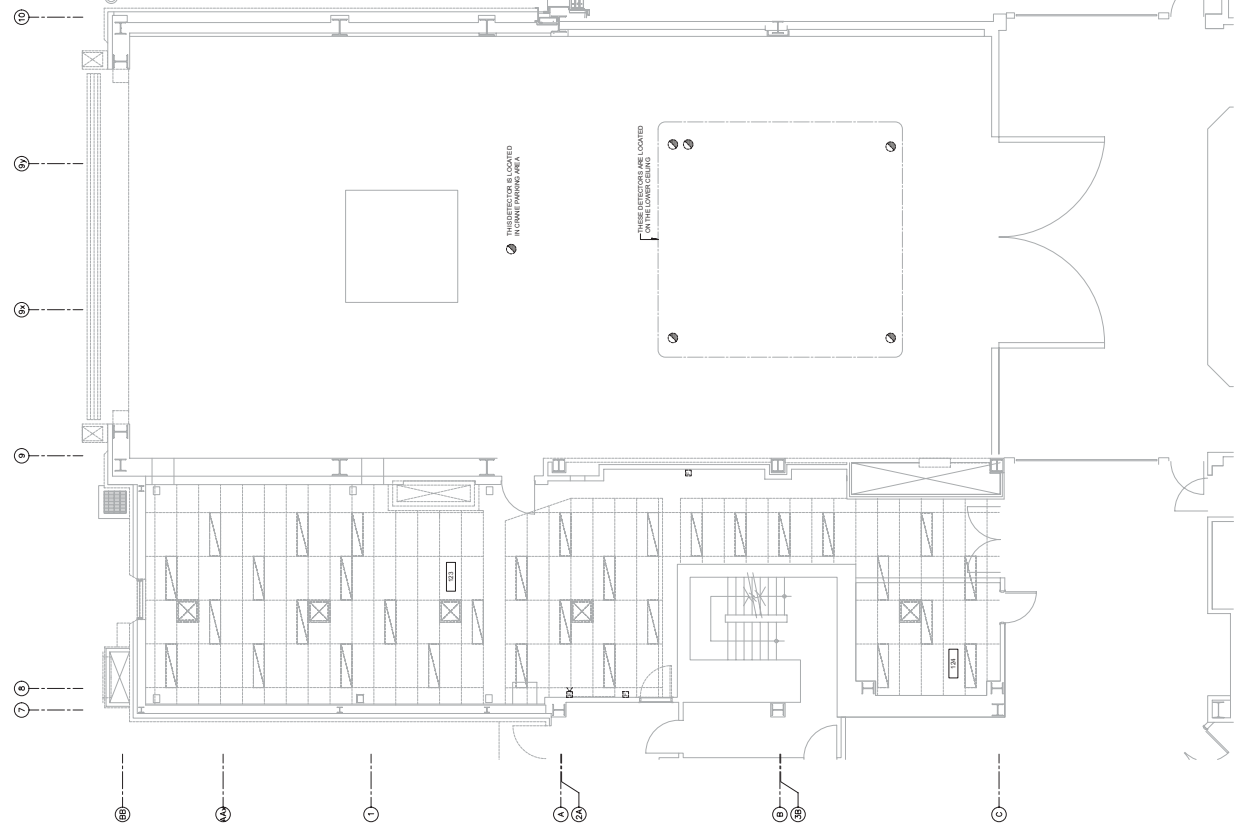
1 LIGHTING - DEMOLITION  
E-210 SCALE = 1:50

2 LIGHTING - NEW LAYOUT  
E 210 SCALE = 1:50

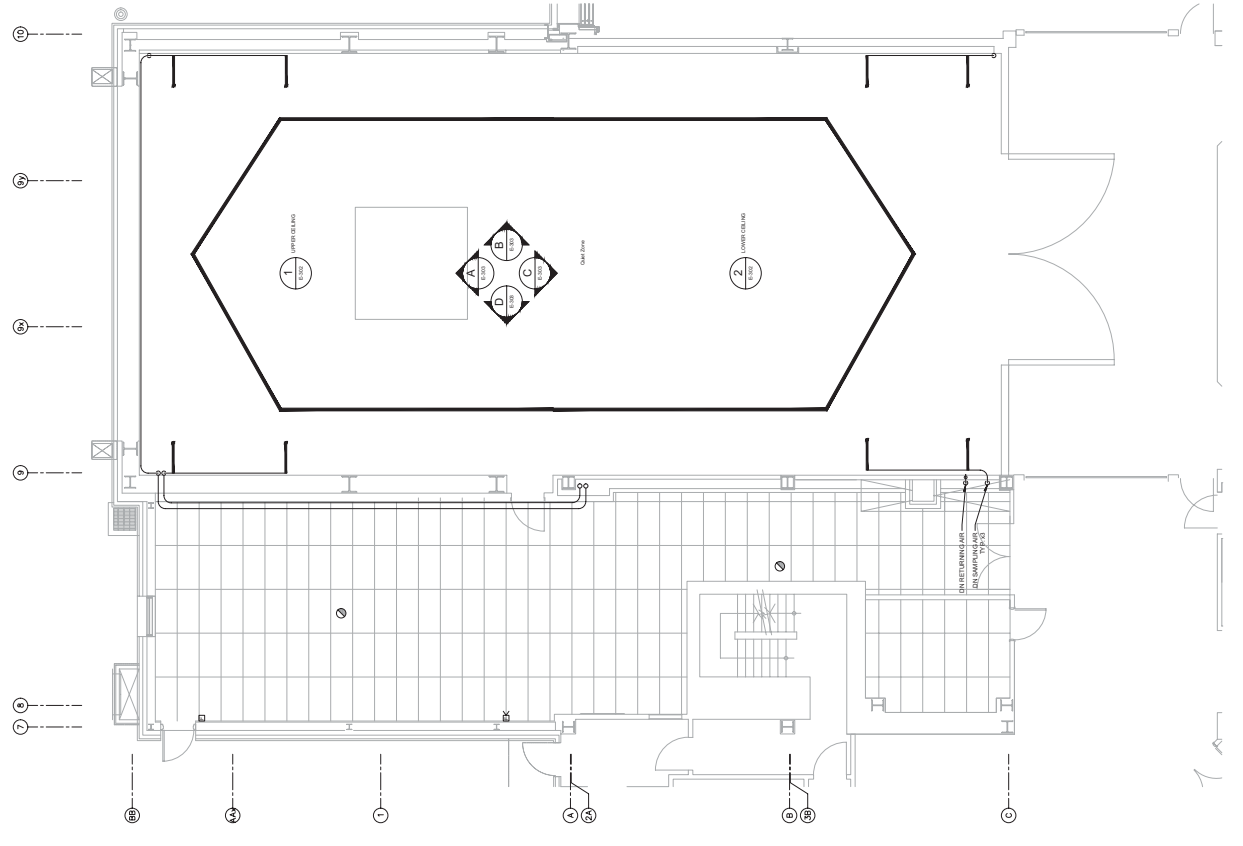


Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Anchorole Floor (With Crane Lights)	Lux	375.32	633	90.1	4.17	7.03
Anchorole Floor (Without Crane Lights)	Lux	16.83	28.0	9.6	1.75	2.80
Anchorole Floor (With Crane Lights)	Footcandles	27.0	45.0	13.0	3.08	5.38
Anchorole Floor (Without Crane Lights)	Footcandles	1.2	2.0	0.8	1.5	2.0

1 LIGHTING PHOTOMETRIC SIMULATION  
E211 SCALE = 1:50

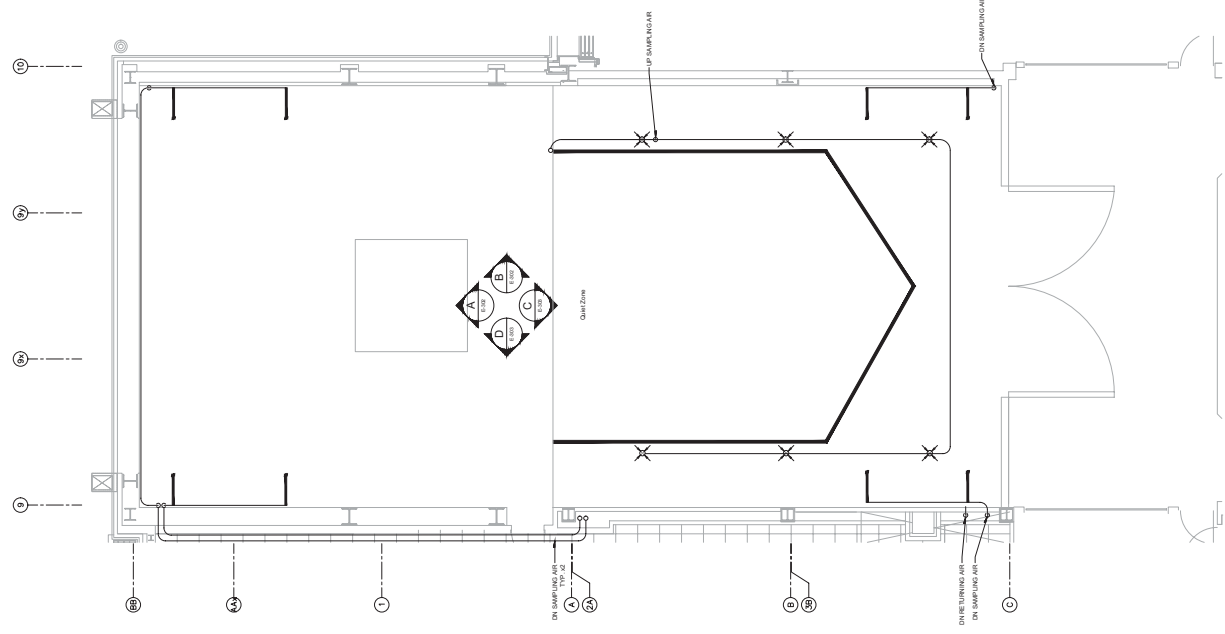
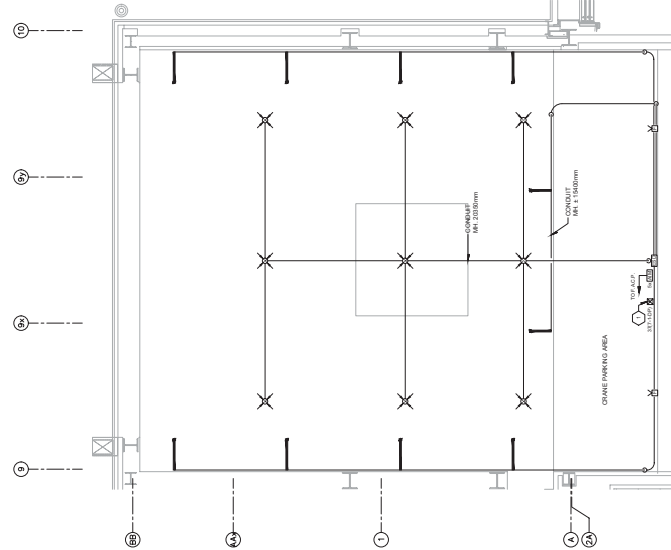


2 GROUND FLOOR - DEMOLITION  
1/300 SCALE = 1/50



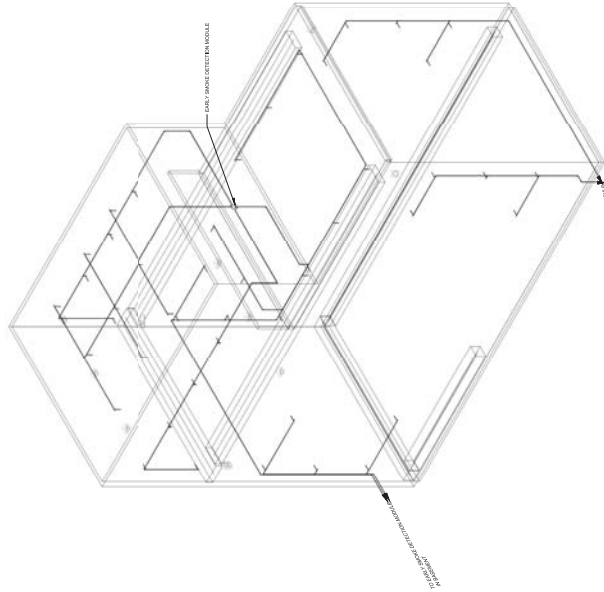
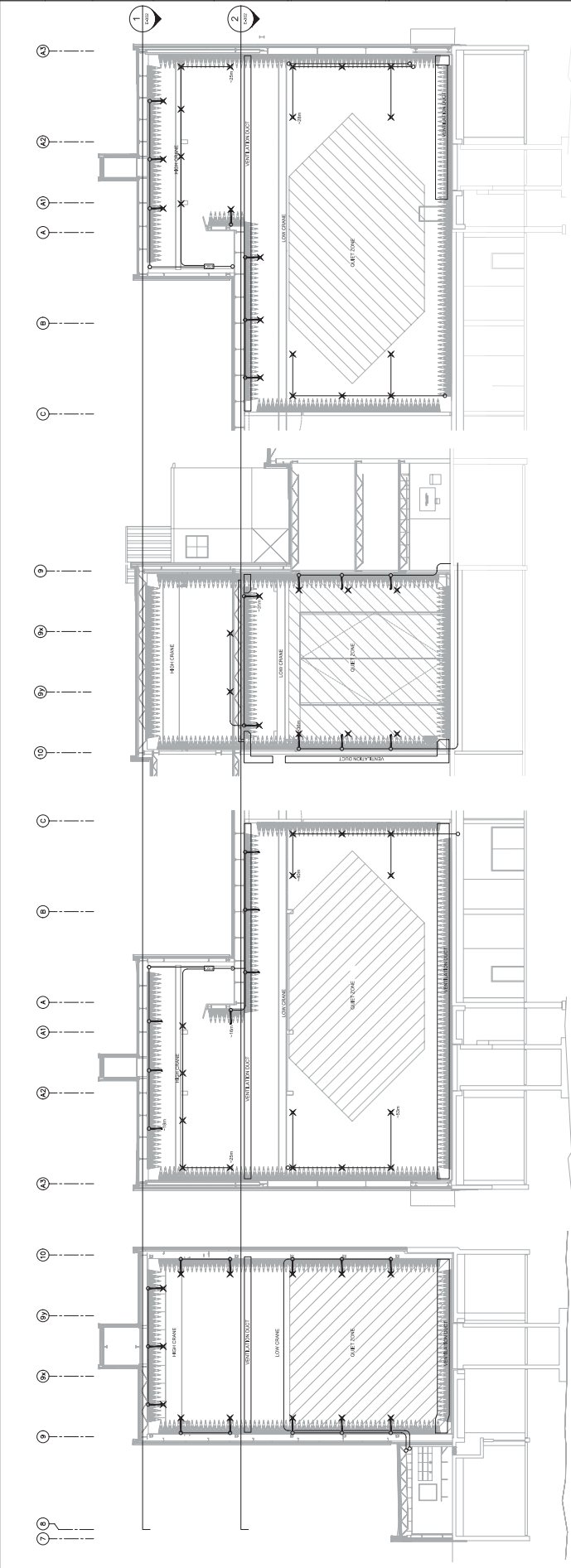
1 GROUND FLOOR - NEW LAYOUT  
1/300 SCALE = 1/50

**IDENTIFICATION(S):**  
 1. ANECHOIC CHAMBER UPPER CEILING  
 2. ANECHOIC CHAMBER LOWER CEILING



1 ANECHOIC CHAMBER UPPER CEILING  
 SCALE = 1:50

2 ANECHOIC CHAMBER LOWER CEILING  
 SCALE = 1:50





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## ANNEX "E" - PRICING SHEET

All prices must be firm in Canadian dollars, Delivered Duty Paid (3701 Carling Ave, Ottawa, Ontario) Goods and Services Tax or the Harmonized Sales Tax extra, transportation costs to destination and all applicable Custom Duties and Excise Taxes included.

### **PART 1 – CONTRACTOR PROPOSED SOLUTION**

#### **1. DESIGN OF THE LAYOUT FOR THE ABSORBER INSIDE ATF-2**

Firm Lot Price for the design.

**DESIGN - FIRM LOT PRICE \$ \_\_\_\_\_**

#### **2. DELIVERY OF ABSORBER (Multiple deliveries may occur)**

Firm Lot Price for all related materials and supplies, tools, hardware and equipment required for chamber absorber installation.

**MATERIALS - FIRM LOT PRICE \$ \_\_\_\_\_**

**Submit a detailed cost breakdown to justify the total evaluated bid price.**

#### **3. INSTALLATION OF ABSORBER**

The price must include all costs related to the installation.

**INSTALLATION - FIRM LOT PRICE \$ \_\_\_\_\_**

**Submit a detailed cost breakdown to justify the total evaluated bid price.**

#### **4. ATF-2 RF PERFORMANCE TEST PLAN**

Firm Lot Price for the plan.

**PLAN - FIRM LOT PRICE \$ \_\_\_\_\_**

#### **5. TESTING OF ABSORBER AND FINAL RF PERFORMANCE TEST REPORT**

Firm Lot Price for Testing and test report.

**TESTING AND REPORT - FIRM LOT PRICE \$ \_\_\_\_\_**

**Total evaluated Bid price,  
excluding applicable taxes (total of items 1-5) \$ \_\_\_\_\_**