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2019-08-15

**REQUEST FOR PROPOSAL  
DESIGN / BUILD SERVICES  
TORONTO ZOO LUMINA NIGHT WALK  
RFP #39 (2019-08)**

You are invited to submit a written proposal to provide Design / Build services for the Toronto Zoo Lumina Night Walk (Lumina) Project.

**Project Briefing:** A project briefing for Consultant / Contractors will be held **Thursday, 2019-08-22, at 1000 hours (10:00 a.m.)**. **Allow three to four hours for the project briefing**. Meet at the Administrative Support Centre, enter at Gate A, 361A Old Finch Avenue, west of Meadowvale Road, Toronto, Ontario, M1B 5K7.

**Proposal:** Provide **four (4)** copies of your proposal, **one (1)** unbound signed and clearly marked as ORIGINAL and **three (3)** copies of the original proposal clearly marked as COPY and **one (1)** electronic copy (Microsoft Word or PDF) on a CD or flash drive in a sealed package or envelope. The original and all copies should be identical (excluding any obvious differences in labeling as noted above). Proposal to be delivered to the office of Purchasing & Supply, Toronto Zoo, Administrative Support Centre, 361A Old Finch Ave., Toronto, Ontario, M1B 5K7 by:

**Due Date:** **Monday, 2019-09-09 by 1200 hours (noon), local time**

Proposals shall remain in effect for a period of one hundred and twenty (120) days from the Proposal due date.

The Board of Management of the Toronto Zoo reserves the right to reject any or all Proposals or to accept any Proposal, should it deem such action to be in its interests.

If you have any queries regarding this request for proposal, please contact Mr. Peter Vasilopoulos, Supervisor of Purchasing & Supply at 416 392-5916 or [pvasilopoulos@torontozoo.ca](mailto:pvasilopoulos@torontozoo.ca). If you require further technical details, please contact Michael Squires, Manager of Computer and Telecom Services, [msquires@torontozoo.ca](mailto:msquires@torontozoo.ca).

Yours truly,

Paul K. Whittam  
Director, Finance & Computer Services

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## 1.0 GENERAL TERMS

- 1.1 The following definitions will apply to this Request for Proposal and to any subsequent Contract:
- 1.1.1 “**Board**” means the Board of Management of the Toronto Zoo;
  - 1.1.2 “**CEO**” means the Chief Executive Officer or designate representative of the Toronto Zoo;
  - 1.1.3 “**Consultant / Contractor**” means the person, firm, partnership or joint venture contracting with the Board to provide the required Services;
  - 1.1.4 “**Contract**” means acceptance by the Toronto Zoo (by way of written acknowledgement, Agreement, Contract or Purchase Order) to furnish Services or Work for money or other considerations;
  - 1.1.5 “**Contract Price**” means the price payable under the contract to the Consultant / Contractor, being the Proposal Price eventually accepted by the Board of Management of the Toronto Zoo subject to any changes pursuant to the Contract Requirements;
  - 1.1.6 “**Project Co-ordinator or Project Manager**” is the person designated by the Board to manage the project for the Toronto Zoo;
  - 1.1.7 “**Proponent**” means an individual person, firm, partnership or joint venture that submits or intends to submit, a proposal in response to this Request for Proposal;
  - 1.1.8 “**Proposal Price**”, “**Contract**” and “**Contract Documents**” have the meanings set out therefore in clauses contained in these documents;
  - 1.1.9 “**Proposal**” or “**Submission**” means a proposal submitted by a Proponent in response to this RFP;
  - 1.1.10 “**Request for Proposal (RFP)**” means the RFP document in its entirety, inclusive of any addenda that may be issued by the Toronto Zoo;
  - 1.1.11 “**Successful Proponent**” means the same as “**Consultant / Contractor**” and
  - 1.1.12 “**Services**” or “**Work**” means everything that is necessary to be performed, furnished delivered by the Consultant / Contractor to meet its obligation under this Contract;

## 2.0 BACKGROUND AND PROJECT OVERVIEW

- 2.1 On February 15, 2019 the Board of Management of the Toronto Zoo (the “Board”) approved the award for the production and installation of a Lumina experience at the Toronto Zoo, to Moment Factory Inc. Moment Factory has completed the conceptual design of the production and has provided the documents required for this RFP to complete the engineering design and proposed build of the wiring and technical / electrical infrastructure(s) (See Appendix I).

### **3.0 PROJECT OBJECTIVES**

- 3.1 The Toronto Zoo is seeking a qualified firm to complete all requirements for the Design / Build work (the “Works”) in accordance with the documents provided by Moment Factory Inc. Appendix I. The engineering design and proposed build of the wiring and technical / electrical infrastructure(s) must be started by September 16, 2019 and the construction work completed no later than November 1, 2019.

### **4.0 SCOPE OF SERVICES AND CONSULTANT / CONTRACTOR DUTIES**

#### **GENERAL**

- 4.1 The scope of work includes all labour, material, equipment, transportation and services necessary to complete the Works as required. The Toronto Zoo will be responsible for procurement of all fibre optic cabling and all fibre optic connectors as per Appendix I. Consultant/Contractor is responsible for informing the Toronto Zoo of total fibre optic cabling required.
- 4.2 All materials shall be supplied as specified in Appendix I. No substitutes allowed.
- 4.3 All measurements to be site verified.
- 4.4 Utilities and lighting required for the work shall be furnished by the Successful Proponent.
- 4.5 All work to be completed in accordance with applicable codes (e.g. Building Code, Electrical Code, Fire Code, etc.)
- 4.6 All required design and engineering services for this project as outlined in this RFP shall be provided by the successful Proponent. Engineers must be licenced in the Province of Ontario.
- 4.7 Include a project methodology that describes how the proponent expects to fulfil the Toronto Zoo’s expectations for this project. As part of the design – build process the proponent will be expected to provide preliminary design ideas for review by Toronto Zoo Staff, leading to a final approved layout which will form the basis for the working drawings and specifications. The proponent should allow for weekly meetings to provide updates to the Toronto Zoo.
- 4.8 Obtaining all necessary permits, plus payment of all costs involved, including, but not exclusive to, licenses, taxes, and labour documents.
- 4.9 The provision of all appropriate maintenance and repair manuals and warranty packages to the Toronto Zoo.
- 4.10 The provision of insurance as required in the General Conditions of Contract.
- 4.11 Construction signage and fencing (six foot high welded wired mesh construction fence interlocking panels) shall be supplied and secured around the perimeter of the Works and the staging area required for storing equipment and materials.

- 4.12 Any work must be carefully coordinated with the Zoo to ensure the safety of visitors, staff and the animals. Ensure that awareness of public safety is considered and protect visitors in the vicinity during the construction period.
- a) Any equipment parked on service roads or public pathways shall be completely surrounded by appropriate barricades to prevent unauthorized personnel from entering the area.
  - b) Any barricade shall be supplied and installed by the Successful Proponent.
- 4.13 Tree protection fencing shall be installed at all locations directly adjacent to the construction “Works” perimeter, service road, and staging areas.
- 4.14 Toronto Zoo will complete required underground utility locates prior to the start of the project.
- 4.15 Normal working hours are between 7:00 am to 5:00 pm however Toronto Zoo will work with the contractor to accommodate after hours work to meet the timeline identified in the RFP.

## **5.0 DELIVERABLES**

- 5.1 Statement of Values to be provided by the Successful Proponent upon notification of award.
- 5.2 Design, Supply and Installation of the “Works”.
- 5.3 Project scheduling and all aspects of requirements outlined in Appendix I.
- 5.4 Planning & Design Documents and Drawings for Toronto Zoo review and approval.
- 5.5 Confirming total fibre optic cabling required.
- 5.6 Detail Construction Drawings for review and approval.
- 5.7 Construction Operations Review (weekly meetings during construction).
- 5.8 Supply the Zoo with copies of relevant certificates and licences for all workers prior to commencement of work.
- 5.9 Construction safety fencing and staging preparations.
- 5.10 Clean up and secure work areas on a daily basis.
- 5.11 Close out documents including, but not limited to, as built drawings, warranty, and inspection certificates.

## **6.0 PROJECT TIMELINE**

- 6.1 **The “Works” are to be completed by November 01, 2019.**

## **7.0 TORONTO ZOO PROVIDED ITEMS**

- 7.1 For the Consultant / Contractor to complete the Requirements, the Toronto Zoo will provide the Consultant / Contractor with the following:
- a) Infrastructure drawings / documents, technical specifications, and workmaps outlined in Appendix I.
  - b) Existing utilities and services plans of the subject area
  - c) Procurement of all fibre optic cabling.

## **8.0 PROPOSED FEES FOR METHODOLOGY**

- 8.1 Appendix II – Proposal Pricing should be submitted in the format included with this RFP and shall represent the total fees to complete the Project including expenses and disbursements.

## **9.0 EVALUATION OF PROPOSALS**

- 9.1 All Proposals will be evaluated for their compliance and suitability with respect to the requirements of the Toronto Zoo by a committee composed of Toronto Zoo staff or designates, which may include third parties.
- 9.2 The Toronto Zoo will review the Proposals submitted to determine whether, in the Toronto Zoo's opinion, Proponents have demonstrated the required experience and qualifications to fulfill the obligations of the services identified in this RFP.
- 9.3 The Toronto Zoo, in its sole discretion, may conduct any inquiries, clarifications or investigations on any or all of the Proposals, without having any duty or obligation to do so for all, including but not limited to contacting references, to verify the statements, documents, and information submitted in connection with the Proposal and may seek clarification from the Proponent's clients regarding any financial and experience issues.
- 9.4 Reference checks may also be conducted by the Toronto Zoo.
- 9.5 Prior to Contract award, the Proponent may be required to demonstrate financial stability. As such, the Proponent may be required to provide annual financial reports or a set of financial statements prepared by an accountant and covering the last 2 (two) fiscal years.
- 9.6 The Toronto Zoo may, prior to Contract award, negotiate changes to the scope of the Work, the materials, the Requirements or any conditions with any one or more of the Proponents without having any duty or obligation to advise any other Proponents or to allow them to vary their prices as a result of changes to the scope of Work, the materials, the Specifications, or any conditions, and the Toronto Zoo shall have no liability to any other Proponent as a result of such negotiations or modifications.

## 10.0 NO LOBBYING

- 12.2 From the date on which this RFP is issued until the RFP process is terminated, Proponents (including any directors, employees, officers, agents, Consultant / Contractors, or representatives) should not communicate with the Toronto Zoo, directly or indirectly, about the RFP or the Project except via the designated Contact Person in Section 5.1.

## 11.0 INFORMATION DISCLAIMER

- 11.1 The Toronto Zoo, including its Designated Representatives and its directors, officers, employees, agents, Consultant / Contractors and advisors are not liable or responsible for any verbal or written information, or any advice, or any errors or omissions, which may be contained in this RFP or otherwise provided to any Proponent pursuant to this RFP.
- 11.2 The Proponent shall conduct its own independent investigations and interpretations and shall not rely on the Toronto Zoo with respect to information, advice, or documentation provided by the Toronto Zoo. The information contained in this RFP is provisional and will be superseded by other agreement documents.
- 11.3 The Toronto Zoo makes no representation, warranty, or undertaking of with respect to this RFP and the Toronto Zoo, its Designated Representatives and its directors, officers, employees, agents, Consultant / Contractors and advisors, shall not be liable or responsible for the accuracy or completeness of the information in this RFP or any other written or oral information made available to any interested person or its advisors, and any liability however arising, is expressly disclaimed by the Toronto Zoo.
- 11.4 While the Toronto Zoo has made considerable efforts to ensure an accurate representation of information in this RFP, the information contained in this RFP is supplied solely as a guideline for the Proponent and is not necessarily comprehensive or exhaustive. Nothing in this RFP is intended to relieve the Proponent from forming its own opinions and conclusions in respect of the matters addressed in the RFP.

## 12.0 BID BOND

- 12.1 All Bidders are to include a Bid Bond on a form approved by the Insurance Bureau of Canada, all issued by a Surety Company(s) licensed to conduct business in the Province of Ontario. The Bid Bond shall be in an amount not less than 10% (ten) percent of the TOTAL QUOTED AMOUNT not less than 10% (ten) percent of TOTAL QUOTED AMOUNT drawn up in the name of the Owner.

## 13.0 WORK PLAN SCHEDULE

- 13.1 Consultant / Contractor's Acknowledgement  
The Consultant / Contractor is responsible for their availability and ability to meet time schedule and completion date with a written acknowledgement of the Consultant / Contractor's ability to deliver the required Services to the Zoo given the Consultant / Contractor's existing workload and future commitments. If the Consultant / Contractor cannot meet the completion date for the 'Design Schedule' or, the target completion

date for the 'Construction Schedule', then this should be **clearly identified on the work plan schedule in the Proposal submission.**

#### **14.0 INSURANCE, INDEMNIFICATION AND POLICIES**

- 14.1 Professional liability insurance in the amount of \$1,000,000 (per claim) and/or \$5,000,000 general liability insurance in respect of injury or death to a single person or for property damage in a manner satisfactory to the Chief Executive Officer, as applicable, must be maintained through the Project and included in the Fee Proposal.
- 14.2 The Consultant / Contractor hereby agrees that the Consultant / Contractor will keep harmless and fully indemnify the Board, the Toronto Zoo of Toronto, the Toronto and Region Conservation Authority, their employees, officers and agents against all actions and claims against all loss, liability, judgments, costs, demands or expenses which they or any of them may sustain as a result of the negligent or intentional acts or omissions of the Consultant / Contractor, its agents, servants, employees or sub-Consultant / Contractors or any of them, in the performance of the Services, save and except and only to the extent that any such loss, liability, judgments, costs, demands or expenses are caused by the Board or those for whom at law it is responsible.
- 14.3 All insurance policies shall be endorsed to provide a minimum advance written notice of not less than thirty (30) days, in the event of cancellation, termination or reduction in coverage or limits, such notice to be made to the Chief Executive Officer.
- 14.4 The Consultant / Contractor shall, as applicable, conform to and enforce strict compliance with the Occupational Health and Safety Act and for purposes of the Act be designated as the "constructor" for the Service.
- 14.5 The Consultant / Contractor must adhere to all relevant Zoo policies, including, but not limited to, the Contractor Safety Policy, Working in the Vicinity of Animal Containments Policy and the Vehicles on Site Policy, copies of which the CEO shall supply to the Consultant / Contractor.
- 14.6 All policies and certificates shall be submitted to the Purchasing & Supply Section before a contract is issued to carry out the work.
- 14.7 All submissions shall be accompanied by an Undertaking of Surety, and Undertaking of Liability Insurance.

#### **15.0 PROPONENT SUBMISSION REQUIREMENTS**

- 15.1 Completion of all submission forms as required in this RFP.
- 15.2 References
  - i. Proponents should provide a list of former and current references for all customers for whom the Proponent has provided the similar services required in this RFP, with an emphasis on local municipalities, for the past 5 (five) years (list all). Proponents should include a brief ½ page summary of the services provided, and the date of services. Include the organization name and address, telephone, and email address of primary contact. The City may, during the



evaluation process, contact the references to confirm statements made in response to this RFP.

15.3 Technical Information

- a) In this section Proponents should provide:

Part 1: Methodology, Work Plan and Schedule

- i. In this section, provide a specific timetable, milestones, meetings and detailed work plan for the Services as outlined in the Project Brief, including timelines for completion of specific tasks, time requirements and identification of specific deliverables.

15.4 Guarantee Project start immediately following successful confirmation of award of the Project, and work to implementation and completion schedule.

**16.0 PROPOSAL EVALUATION AND SELECTION**

16.1 The Proponent is urged to ensure that its Proposal is submitted in the most favourable terms in order to reflect the best possible potential, since less than best potential could result in exclusion of the Proposal from further consideration.

16.2 An Evaluation Team comprised of representatives designated by the Zoo will evaluate responses to the RFP.

16.3 Schedule of Events:

The following is a tentative schedule of events for this RFP process.

The Zoo expects detailed design work to begin immediately upon selection of the successful Consultant / Contractor, and be completed such that all design work is completed as follows:

The final schedule will be developed jointly with the successful proponent in the first week of project execution:

<b>Component</b>	<b>Milestone Dates</b>
<b>Pre-Award</b>	
Release of RFP	<b>2019-08-16</b>
Site Inspection	<b>2019-08-22</b>
Proponents' Question Deadline	<b>2019-08-28</b>
Submission Due	<b>2019-09-09</b>
Notification of Award By the Toronto Zoo	<b>Week of 2019-09-09</b>
Pre-construction Site Meeting	<b>2019-09-16</b>
Project Start Date	<b>2019-09-17</b>
Project Completion Date	<b>2019-11-01</b>

**The Consultant / Contractor to provide a detailed design schedule based on the above dates and including all disciplines. The Consultant / Contractor should notify the Zoo of**

**any component and milestone dates that are missing or changes that are required. Approved changes should be included in the detailed design schedule that is provided by the Consultant / Contractor.**

The RFP process and project will be governed according to the above schedule or other schedule provided by the Consultant / Contractor and approved by the Toronto Zoo. Although every attempt will be made to meet all dates listed, the Toronto Zoo reserves the right to modify any or all dates at its sole discretion. Appropriate notice of change will be provided, in writing, as soon as is feasible so that each Proponent will be given the same non-preferential treatment

16.4 There are two steps to the pre-defined evaluation process:

Step 1 – Initial Review of Responses

Step 2 – Evaluation of Submitted Proposals

16.5 Step 1 – Initial Review of Responses

The Zoo will open only those Proposals received by the Proposal Deadline and time specified within this RFP. Immediately upon opening, the Zoo will review each Proposal for compliance with the instructions and conditions applicable to this RFP. The Zoo, at its option, may seek Proponent retraction and clarification of any discrepancy/contradiction found during its review of Proposals.

16.6 Step 2 – Evaluation of Submitted Proposals

16.6.1 The Evaluation Team will evaluate each submitted Proposal, that has passed through Step 1, on criteria that will include, but not necessarily be limited to, the following:

<b>Evaluation Criteria</b>	<b>Points</b>
Capacity of the firm to complete the Work in the identified timeframe, partially contingent on reference checks.	30
Company reputation and resources; experience and qualifications of those staff to be assigned to the Work. In addition, the Toronto Zoo will place consideration on the Proponent's:  a) Business and areas of expertise that demonstrate the required skills and experience necessary to complete the Works;	10
Design Build Proposal Fee	60
<b>Total maximum score</b>	<b>100</b>

16.6.2 The Zoo may, at its discretion, eliminate a Proposal from further consideration if it deems the overall cost to be prohibitive.

16.7 By responding to this Proposal, the Proponent agrees to accept the recommendation of the Evaluation Team as final.

16.8 All Proposals shall be submitted by the Proponent on the understanding that the

Proposals shall become the property of the Zoo.

- 16.9 The Zoo reserves the right to accept or reject any or all proposals or cancel the RFP. The lowest proposal may not necessarily be accepted, rather will be analyzed to determine best overall value to the Zoo.

## 17.0 PROPOSAL TERMS AND PROVISIONS

The successful Proponent shall be retained through a contractual agreement and/or a purchase order, which includes the terms and conditions of this Request for Proposal.

### 17.1 Consultant / Contractor's Liability and Indemnity:

The Consultant / Contractor will from time to time at all times hereafter well and truly save, defend and keep harmless and fully indemnify the Board, the City of Toronto, and the Toronto and Region Conservation Authority and each of their officers, employees and agents (hereinafter called the "Toronto Indemnities") of, from and against all manner of action, suits, claims, executions and demands which may be brought against or made upon the Toronto Indemnities or any of them and of, from and against all loss, costs, charges, damages, liens and expenses which may be sustained, incurred or paid by the Toronto Indemnities, their officers, employees and agents or any of them by reason of or on account of or in consequence of the execution of this agreement or provision of the business or any other work or matter to be carried out or performed by the Proponent with respect to the Request for Proposal or any agreement that may result from the request for proposal process, and/or the non-execution or imperfect or improper execution thereof and will pay to the Toronto Indemnities on demand any loss, costs, damages and expenses which may be sustained, incurred or paid by the Toronto Indemnities or any of them in consequence of any such action, suit, claim, lien, execution or demand and any monies paid or payable by the Toronto Indemnities or any of them in settlement or discharge on account thereof.

The Consultant / Contractor shall be responsible for any and all damages, or claims for damages for injuries or accidents done or caused by his or her employees, or resulting from the prosecution of the Work, or any of their operations, or caused by reason of the existence of location or condition of the works, or of any materials, plant or machinery used thereon or therein, or which may happen by reason thereof, or arising from any failure, neglect or omission on their part, or on the part of any of their employees to do or perform any or all of the several acts or things required to be done by him or them under and by these General Conditions, and covenants and agrees to hold the Board, the Toronto and Region Conservation Authority and the City of Toronto, their officers, agents, employees, Consultant / Contractors and invitees harmless and indemnified for all such damages and claims for damage; and in case of the Consultant / Contractor's failure, neglect or omission to observe and perform faithfully and strictly, all the provisions of the Work, the CEO may, either with or without notice (except where in these Contract Requirements, notice is specially provided for, and then upon giving the notice therein provided for), take such steps, procure such material, plant trucks and men, and do such work or things as he/she may deem advisable toward carrying out and enforcing the same and any such action by the CEO as he is herein empowered to take, shall not in any way relieve the Consultant / Contractor or his/her surety from any liability under the Contract.

17.2 Incurred costs:

The Proponent shall bear all costs and expenses with respect to the preparation and submission of its Proposal and the Proponent's participation in the proposal process (the "Proposal Costs"), including but not limited to: all information gathering processes, interviews, preparing responses to questions or requests for clarification from the Board and contract discussions and negotiations.

The Toronto Zoo shall not be responsible for or liable to pay any Proposal Costs of any Proponent regardless of the conduct or outcome of the Proposal Request, Purchase Order process, or Contract process.

17.3 The RFP does not constitute an offer or tender by the Toronto Zoo. Receipt of Proposals by the Toronto Zoo pursuant to this RFP or selection or notification confers no rights under any Proposal nor obligates the Toronto Zoo in any manner whatsoever.

17.4 Liability of Errors:

While the Toronto Zoo has used considerable efforts to ensure an accurate representation of information in this Request for Proposal, the information contained in this Request for Proposal is supplied solely as a guideline for Proponents. The information is not guaranteed or warranted to be accurate by the Toronto Zoo, nor is it necessarily comprehensive or exhaustive. Nothing in this Request for Proposal is intended to relieve Proponents from forming their own opinions and conclusions with respect to the matters addressed in this Request for Proposal.

17.5 Toronto Zoo Rights and Options Reserved:

The Toronto Zoo reserves the right to award the contract to any proponent who will best serve the interest of the Toronto Zoo. The Toronto Zoo reserves the right, in its sole discretion, to exercise the following rights and options with respect to the proposal submission, evaluation and selection process under this RFP:

- (a) To reject any or all proposals.
- (b) To re-issue this RFP at any time prior to award of work.
- (c) To cancel this RFP with or without issuing another RFP.
- (d) To supplement, amend, substitute or otherwise modify this RFP at any time prior to the selection of one or more proponents for negotiation.
- (e) To accept or reject any or all of the items in any proposal and award the work in whole or in part.
- (f) To cancel the RFP process and recommence in respect of the same RFP with the same or an amended set of documents, information and requirements
- (g) To waive any informality, defect, non-responsiveness and/or deviation from this RFP and its requirements.
- (h) To permit or reject at the Toronto Zoo's sole discretion, amendments (including information inadvertently omitted), modifications, alterations and/or corrections of proposals by some or all of the proponents following proposal submission.
- (i) To request that some or all of the proponents modify proposals based upon the Toronto Zoo's review and evaluation.

- (j) To request additional or clarifying information or more detailed information from any Proponent at any time, before or after proposal submission, including information inadvertently omitted by the proponent.

This RFP is not an agreement to purchase goods or services. The Toronto Zoo is not obligated to select a Proponent or to proceed to negotiations for a Contract, or to award any Contract.

#### 17.6 Cancellation:

Nothing herein shall be construed as giving the Proponent the right to perform the services contemplated under this agreement beyond the time when such services become unsatisfactory to the Toronto Zoo; and in the event that the Proponent shall be discharged before all the services contemplated hereunder have been completed or the services are for any reason terminated, stopped or discontinued because of the inability of the Proponent to serve under this agreement, the Proponent shall be paid only for the portion of the work which shall have been satisfactorily completed at the time of termination.

#### 17.7 Ownership and Confidentiality of Board-Provided Data:

All correspondence, documentation and information provided by the Toronto Zoo staff to any bidder or prospective Bidder in connection with, or arising out of this RFP, the services or acceptance of the RFP:

- 9.1.1 is and shall remain the property of the Board;
- 9.1.2 must be treated by Proponents and Prospective Proponents as confidential;
- 9.1.3 must not be used for any purpose other than for replying to this RFP, and for fulfillment of any related subsequent agreement.

#### 17.8 Copyright:

The final product and related materials from the work is to be for the exclusive use of the Toronto Zoo. The Toronto Zoo shall be the only and sole owner of the product and related materials for the sole and unfettered use by the Toronto Zoo. Upon payment of the said product and related materials by the Toronto Zoo, the successful bidder shall have no hold, proprietary claim, ownership, use of any kind, intellectual or otherwise nor shall there be any restrictions placed on the final product and related products by the successful bidder. By submitting a Proposal in this response to this RFP, the Bidder shall thereby acknowledge and agrees that the Toronto Zoo has exclusive ownership and sole and unfettered use of this final product and related products.

#### 17.9 Ownership and Disclosure of Proposal Documentation:

The documentation composing any Proposal submitted in response to this RFP, along with all correspondence, documentation and information provided to the Toronto Zoo by any Bidder in connection with, or arising of this RFP, once received by the Toronto Zoo:

- 17.9.1 Shall become property of the Toronto Zoo and may be appended to purchase order issued to the successful Bidder;

17.9.2 Shall be come subject to the Municipal *Freedom of Information and Protection of Privacy Act (“MFIPPA”)* and may be released pursuant to that Act

Because of *MFIPPA*, prospective Bidders are advised to identify in their Proposal material any scientific, technical, commercial, proprietary or similar confidential information, the disclosure of which could cause them injury.

Each Bidder’s name shall be made public. Proposals will be made available to member of the Board on a confidential basis and may be released to members of the public pursuant to *MFIPPA*.

#### 17.10 Conflict of Interest Statement:

In its Proposal, the Proponent must disclose to the Toronto Zoo any potential conflict of interest that might comprise the performance of the Work. If such a conflict of interest does exist, the Toronto Zoo may, at its discretion, refuse to consider the Proposal.

The Proponent must also disclose whether it is aware of any Toronto Zoo employee, member of board, agency or commission or employee thereof having a financial interest in the Proponent and the nature of that interest. If such an interest exists or arises during the evaluation process or the negotiation of the Agreement, the Toronto Zoo may, at its discretion, refuse to consider the Proposal or withhold the awarding of any agreement to the Proponent until the matter is resolved to the Toronto Zoo’s sole satisfaction.

Proponents are cautioned that the acceptance of their Proposal may preclude them from participating as a Proponent in subsequent projects where a conflict of interest may arise. The Consultant / Contractor(s) for this project may participate in subsequent/other Toronto Zoo projects provided the Consultant / Contractor(s) has (have) satisfied pre-qualification requirement of the Toronto Zoo, if any and in the opinion of the Toronto Zoo, no conflict of interest would adversely affect the performance and successful completion of an Agreement by the Consultant / Contractor(s).

If, during the Proposal evaluation process or the negotiation of the Agreement, the Proponent is retained by another client giving rise to potential conflict of interest, then the Proponent will so inform the Toronto Zoo. If the Toronto Zoo requests, then the Proponent will refuse the new assignment or will take steps as are necessary to remove the conflict of interest concerned.

#### 17.11 No Collusion:

A proponent shall not discuss or communicate, directly or indirectly, with any other Proponent or their agent or representative about the preparation of the Proposals, Each proponent shall attest by virtue of signing the Proposal Submission Form that its participation in the RFP process is conducted without any collusion or fraud. If the Toronto Zoo discovers there has been a breach of this requirement at any time, the Toronto Zoo reserves the right to disqualify the Proposal or terminate any ensuing Agreement.

**17.12 Governing Law:**

This RFP and any quotation submitted in response to it and the process contemplated by this RFP including any ensuing Agreement shall be governed by the laws of the Province of Ontario. Any dispute arising out of this RFP or this RFP process will be determined by a court of competent jurisdiction in the Province of Ontario

**18.0 PROPOSAL FORM**

The undersigned Proponent having reviewed and fully understood the RFP and all terms and requirements of the RFP and all terms and conditions of the RFP and information provided, hereby submits the attached Proposal and supporting materials (“the Proposal”) in accordance.

I/We, hereby, have received, allowed for and included as part of our submission all issued Addendum numbered \_\_\_\_\_.

The Board of Management of the Toronto Zoo reserves the right to reject any or all Proposals or to accept any Proposal, should it deem such action to be in its interests.

By submitting a Proposal the Proponent agrees to all of the terms and conditions of this Request for Proposal.

By signing and submitting this proposal, you are agreeing to the release of your proposal information, as deemed necessary by the Board, in order to conduct business associated with this proposal or project.

<b>COMPANY INFORMATION</b>	
Company Name:	
Name of authorized Signing Officer	Title:
Signature:	Date:
Contact Name:	Title:
Address:	
Telephone #:	Fax #:
Email:	Web Site:
HST #:	

<b>DISCOUNT</b>	<b>Discount</b>	<b>Days</b>
Discount allowed for prompt payment and period within which invoice must be paid to qualify.	%	



**SUBMISSION LABEL**

This address label should be affixed to the front of your sealed tender, quotation and proposal envelope/package submission. Toronto Zoo will not be held responsible for envelopes and packages that are not properly labelled or submitted to an address other than the one listed on this label.

---

Vendor Name \_\_\_\_\_

RFP 39 (2019-08) – DESIGN/BUILD SERVICES FOR TORONTO ZOO LUMINA  
Closing: Monday, 2019-09-09, 12:00 (noon) local time

TO BE RETURNED TO

TORONTO ZOO  
C/O SUPERVISOR, PURCHASING & SUPPLY  
ADMINISTRATIVE SUPPORT CENTRE  
361A OLD FINCH AVE.  
TORONTO, ONTARIO  
M1B 5K7

**NOTICE OF NO BID INSTRUCTIONS:**

It is important to the Toronto Zoo to receive a reply from all invited bidders. If you are unable, or do not wish to submit a bid, please complete the following portions of this form. State your reason for not bidding by checking the applicable box(es) or by explaining briefly in the space provided. It is not necessary to return any other Request for Proposal/Quotation/Tender documents or forms. Please just return this completed form by fax or by mail prior to the official closing date. Purchasing and Supply Fax Number: (416) 392-6711.

<b>A Proposal/Quotation/Tender is not submitted for the following reason(s):</b>	
<input type="checkbox"/> Project/quantity too large.	<input type="checkbox"/> Project/quantity too small.
<input type="checkbox"/> We do not offer services or commodities to these requirements	<input type="checkbox"/> Cannot meet delivery or completion requirement
<input type="checkbox"/> We do not offer this service or commodity.	<input type="checkbox"/> Agreements with other company do not permit us to sell directly.
<input type="checkbox"/> Cannot handle due to present commitments.	<input type="checkbox"/> Licensing restrictions
<input type="checkbox"/> Unable to bid competitively.	<input type="checkbox"/> We do not wish to bid on this service or commodity in the future.
<input type="checkbox"/> Insufficient information to prepare quote/proposal/tender	<input type="checkbox"/> Specifications are not sufficiently defined
<input type="checkbox"/> We are unable to meet bonding or insurance requirements.	

Other reasons or additional comments (please explain):

Company Name:	
Address	
Contact Person:	
Signature of Company Representative:	
Date:	
Phone Number:	
Email address	
Fax Number:	

**Appendix II - PROPOSAL PRICING**

DESCRIPTION	Price	complete excluding HST
Design, build, delivery and installation of power and optic cables and connectors in accordance to the specifications and drawings within the RFP.		\$
	HST	
	Total	

COMMITMENT TO INSTALLATION	YES / NO
<p>Please confirm that you are able to complete the work by <b>Friday, 2019-11-01</b>.</p> <p>The Proponent states that they are available to start this project <b>2019-09-16</b> and confirms the <i>Work</i> shall be substantially completed on or before <b>2019-11-01</b>.</p> <p>Estimated duration of the Work _____ days/weeks</p> <p><b>The completion date will be an important consideration in the evaluation.</b></p>	

WARRANTY	Specify
<p><b><i>Proponent agrees to honor manufacturer warranties that are in excess of 1 year from date of substantial completion of the Work.</i></b></p> <p><i>Provide information on Product and Workmanship warranty. (Attach pages as necessary)</i></p> <p>a) <i>Warrant product, materials and workmanship against defects for a minimum period of 2 full operating seasons (1 year) from date of substantial completion of the work.</i></p> <p><i>Confirm warranty period:</i></p>	

VALUE ADDED	Specify
<p><b>VALUE ADDED</b></p> <p>Provide information on what makes your firm innovative, what is your competitive advantage, and what other services your firm provides that would assist or be of benefit to the Toronto Zoo:</p>	

DISCOUNT	Discount	Days
Discount allowed for prompt payment and period within which invoice must be paid to qualify.	%	



TTZ & TORONTO ZOO  
IN - INFRASTRUCTURE  
SCENO ELEMENTS  
Version - R1.0

FOR DISCUSSION ONLY

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Project

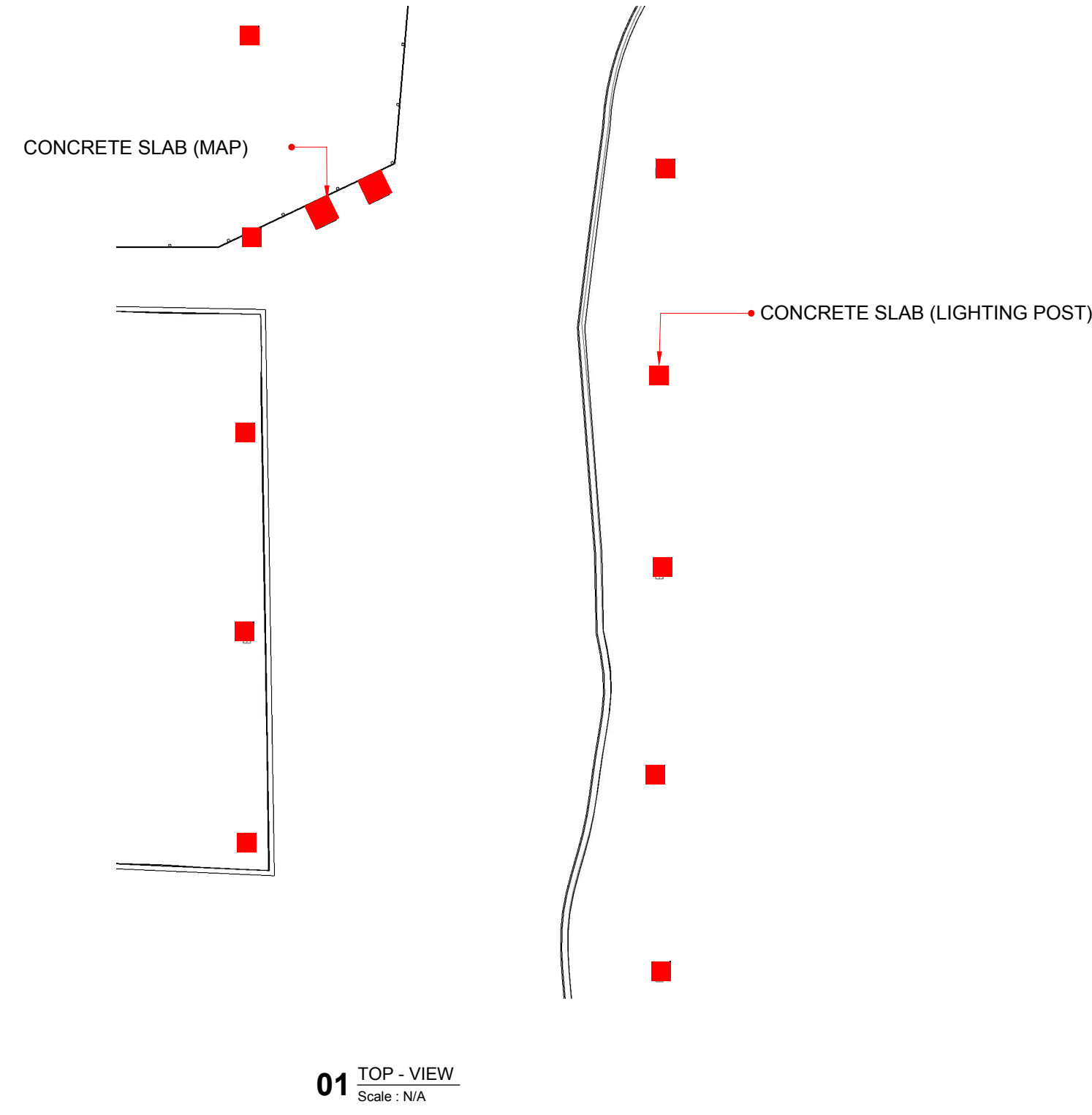
TTZ  
TORONTO ZOO

**MOMENT  
FACTORY**

6250 PARC AVENUE  
MONTREAL (QC), CANADA H2V 4H8  
T 514.843.8433 / F 514.843.8891  
WWW.MOMENTFACTORY.COM

2019-08-09

WELCOME ZONE -  
COCRETE SLAB



WELCOME ZONE -  
COCRETE SLAB (MAP)

2X

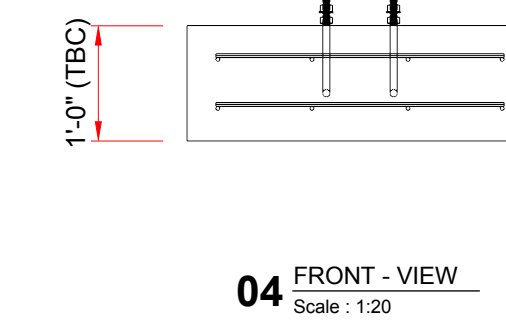
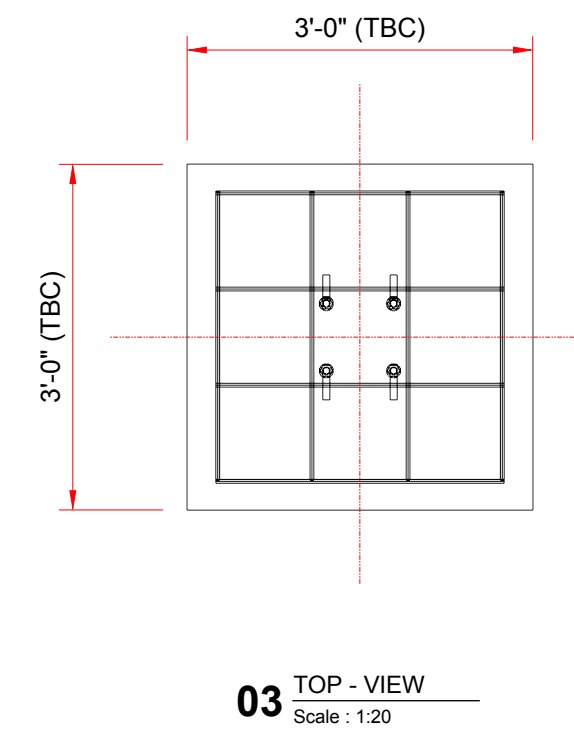
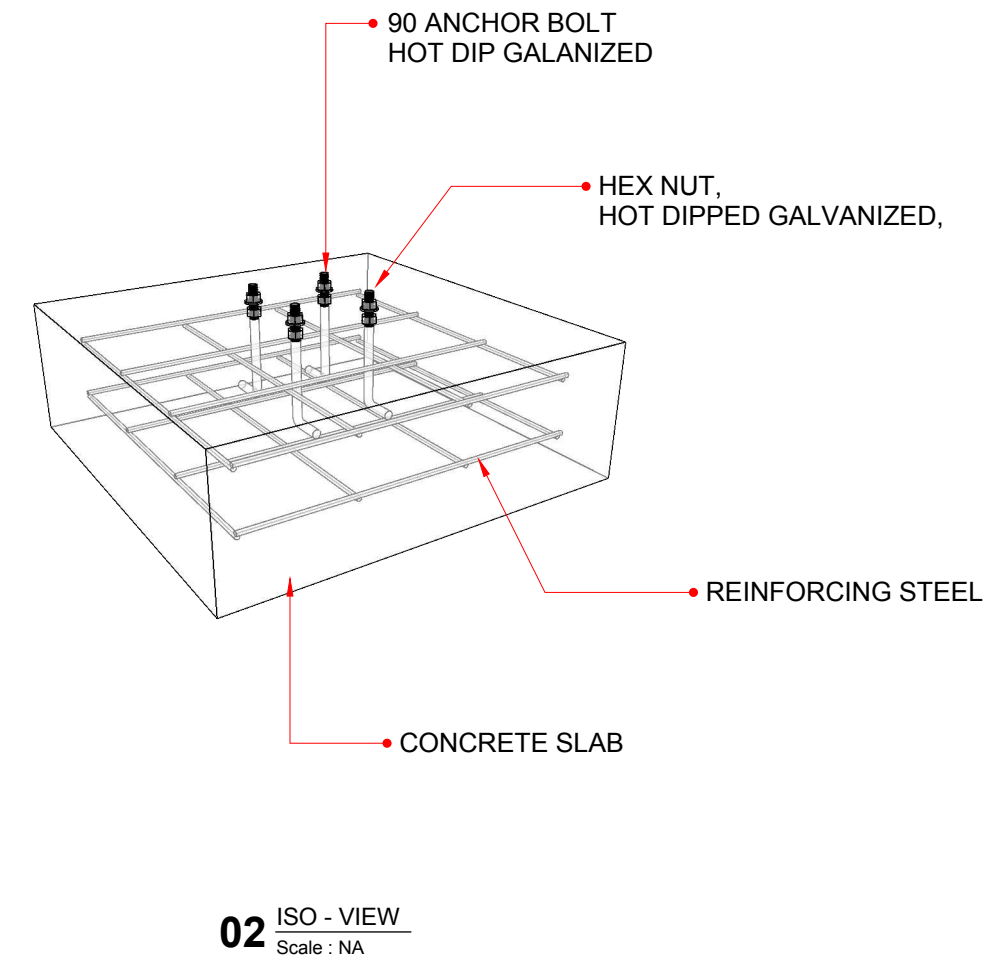
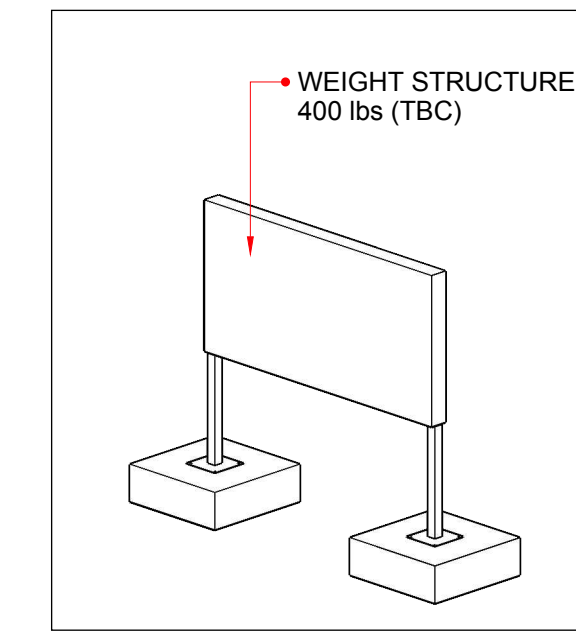


IMAGE REFERENCE



NOTES:  
MATERIAL: ARMED CONCRETE  
COLOR / FINISH: TBC  
FABRICATION PROCESS: POURED

\*\*\*  
DIMENSION AND WEIGHT CONCRETE SLAB  
MUST VALIDATED BY AN ENGINEER

WELCOME ZONE -  
COCRETE SLAB (POST LIGHT)

10X

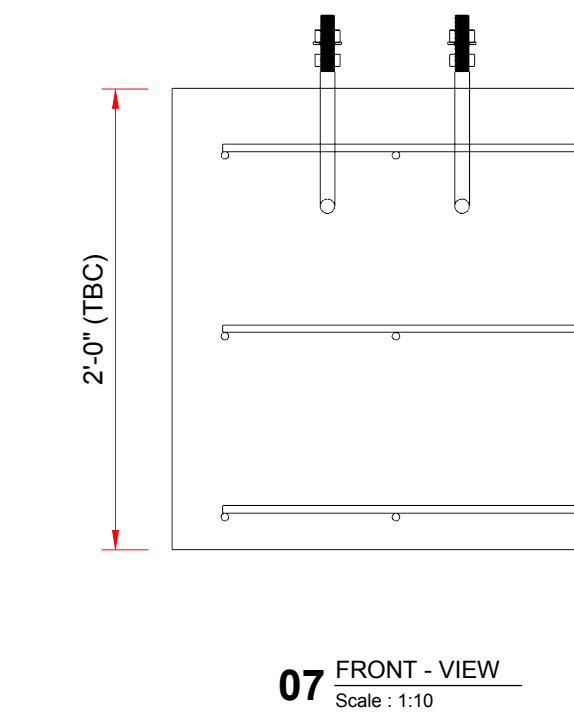
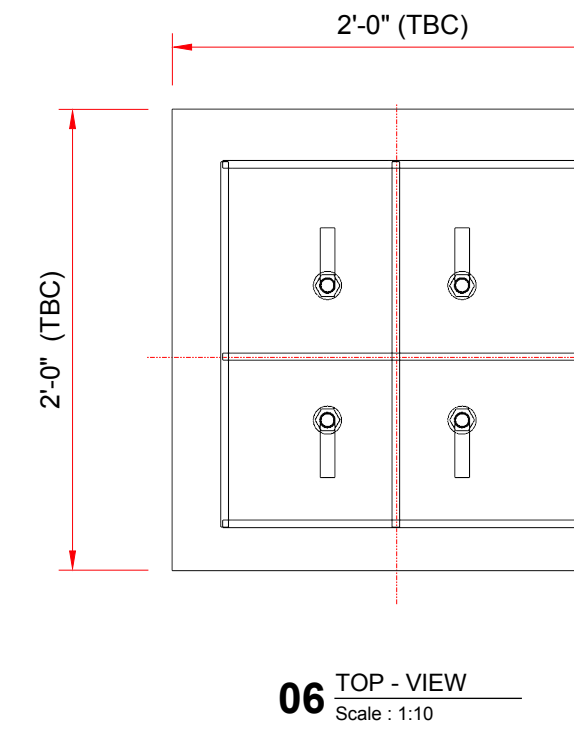
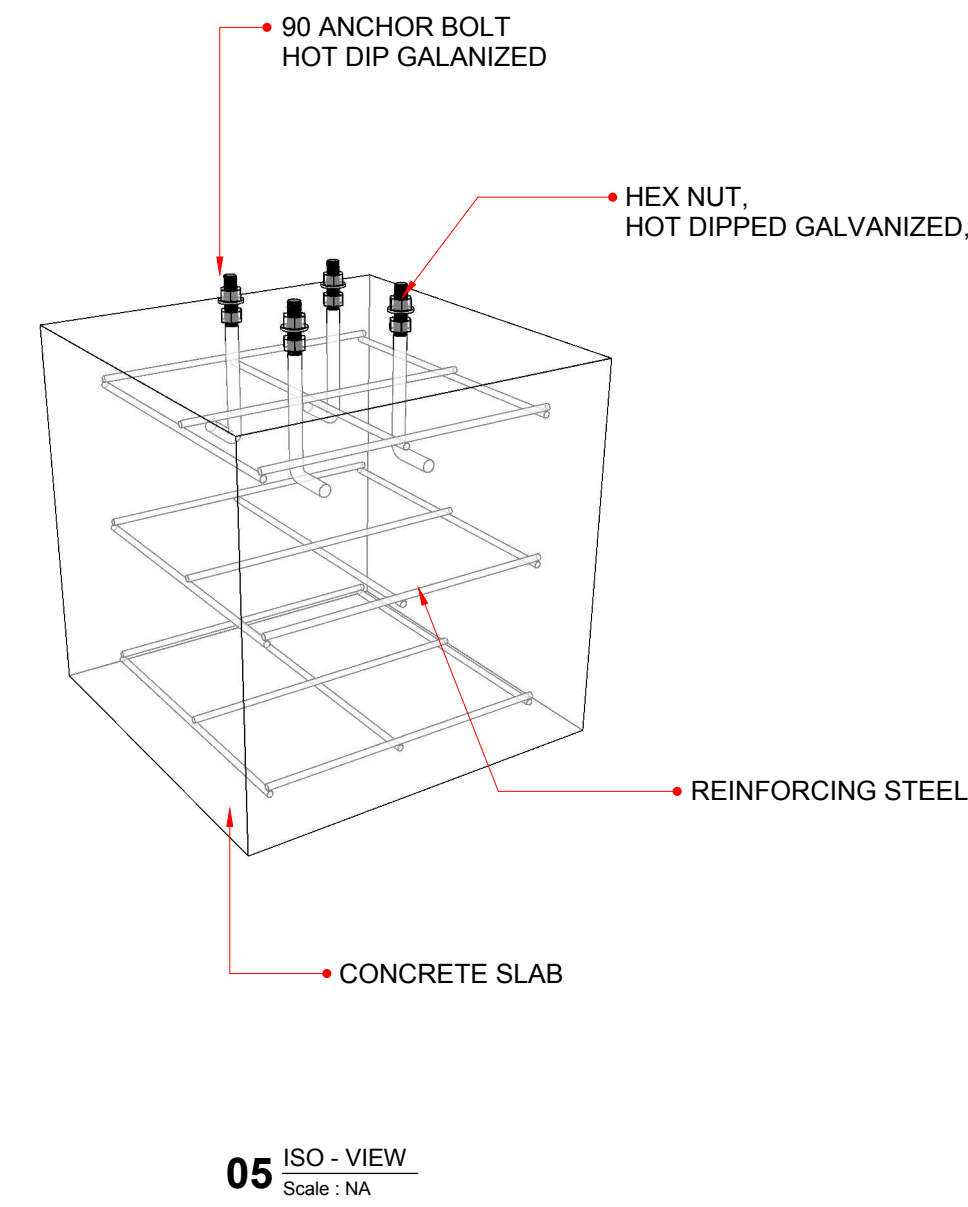
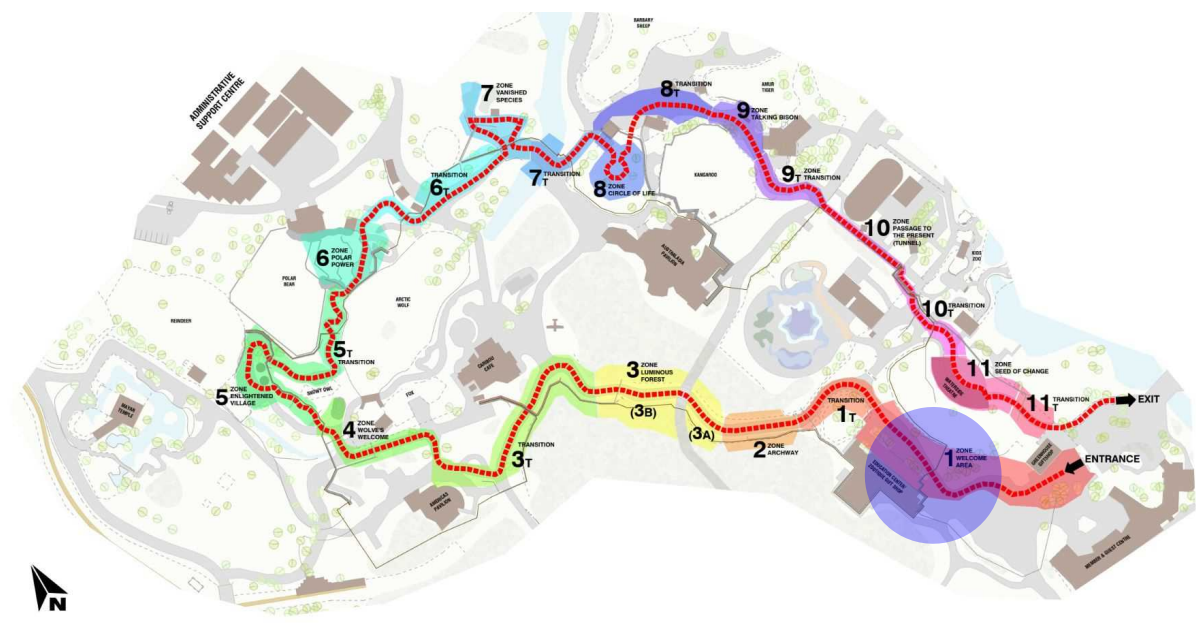
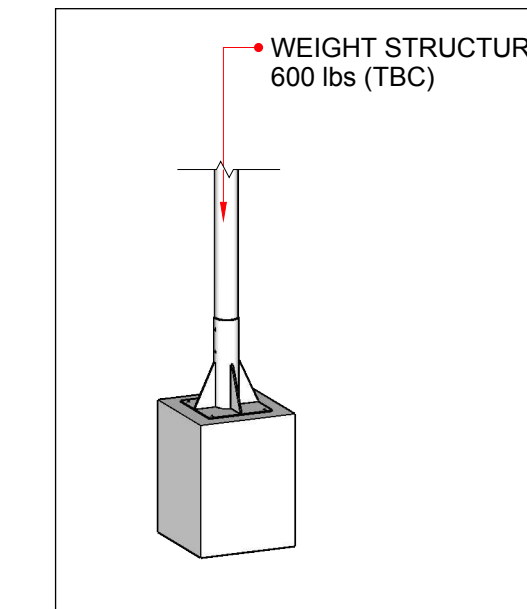


IMAGE REFERENCE



NOTES:  
A LED SCREEN 60"x40", APPROXIMATELY 160 lbs,  
WILL BE INSTALL ON THE POST  
ONE OR TWO LIGHT STRINGS, APPROXIMATELY  
25 lbs EACH, WILL BE STRAINED BETWEEN TWO  
POSTS

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Project

**TTZ**  
TORONTO ZOO

**MOMENT  
FACTORY**

6250 PARC AVENUE  
MONTREAL (QC), CANADA H2V 4H8  
T 514.843.8433 / F 514.843.8891  
WWW.MOMENTFACTORY.COM

Project manager	No.	Date	Description
Jorge Garcia	R1.0	2019-08-07	Issued for Discussion Only
Drawing by			
Camille Ricard			
Approved by			
Dominic Rivard-Proulx			

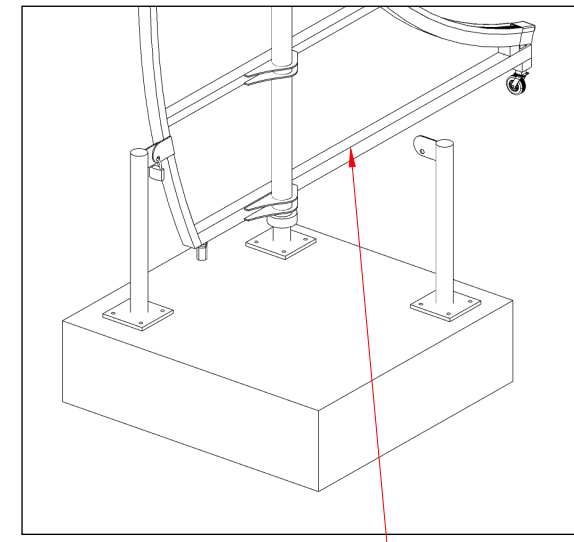
Title	Modified date
<b>IN - CONCRETE SLABS</b> WELCOME ZONE GENERAL DIMENSIONS	2019-08-09
	Scale Format 11 x 17
	Revision R1.0
	Sheet SCN_IN-101

Drawing number  
TTZ\_INFRASTRUCTURE\_SCENO\_ELEMENTS\_190809\_CR-22X34

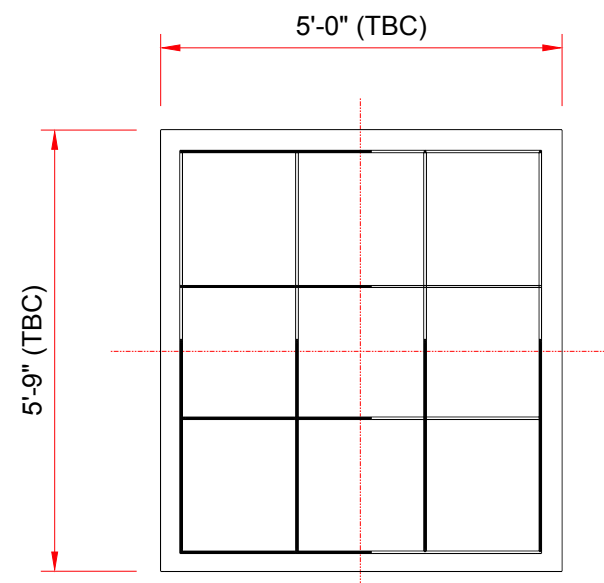
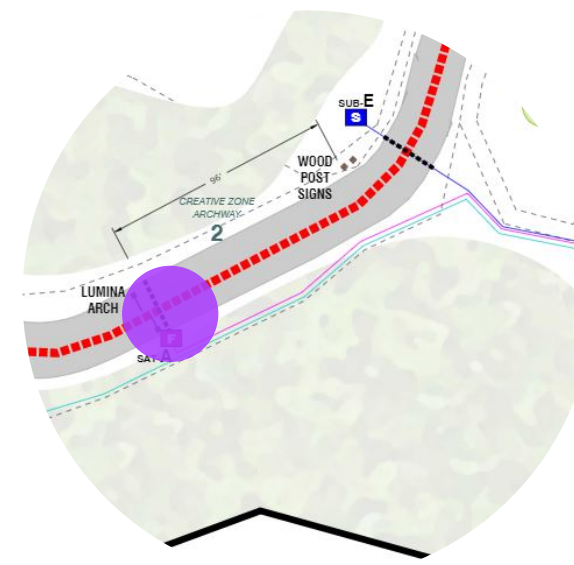
ARCH ZONE -  
CONCRETE SLAB (ARCH)

2X

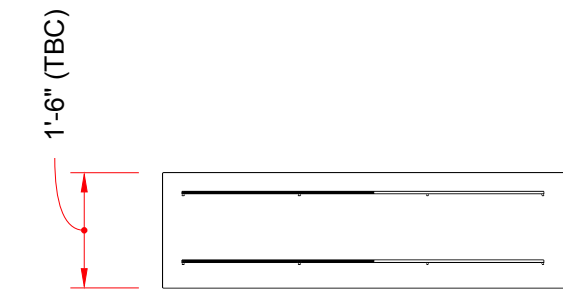
IMAGE REFERENCE



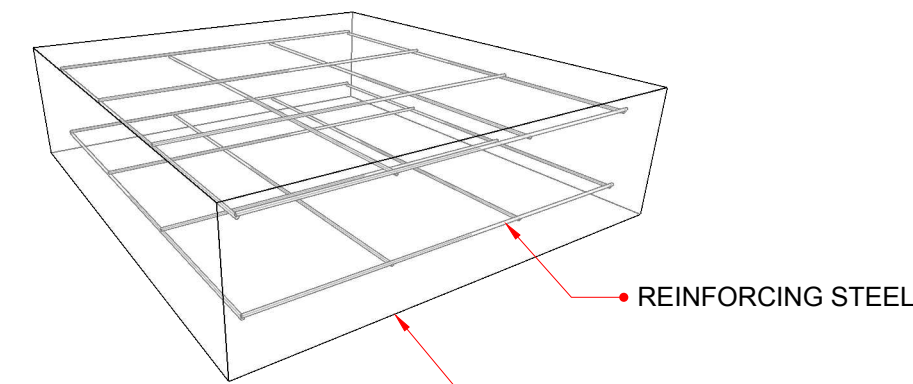
WEIGHT STRUCTURE:  
200 lbs (TBC)



08 TOP - VIEW  
Scale : 1:30



09 FRONT - VIEW  
Scale : 1:30

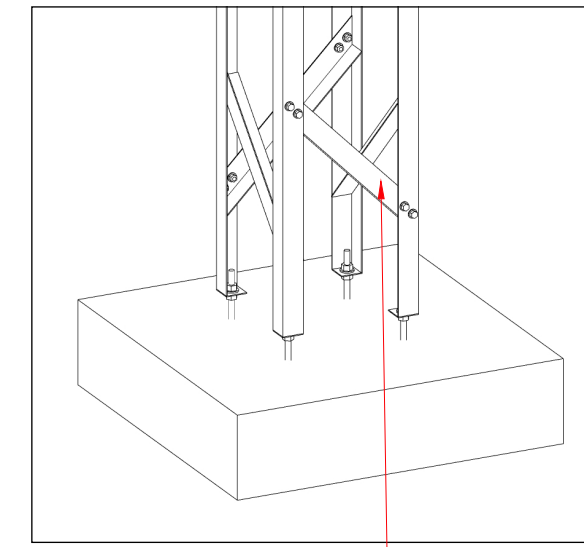


10 ISO - VIEW  
Scale : NA

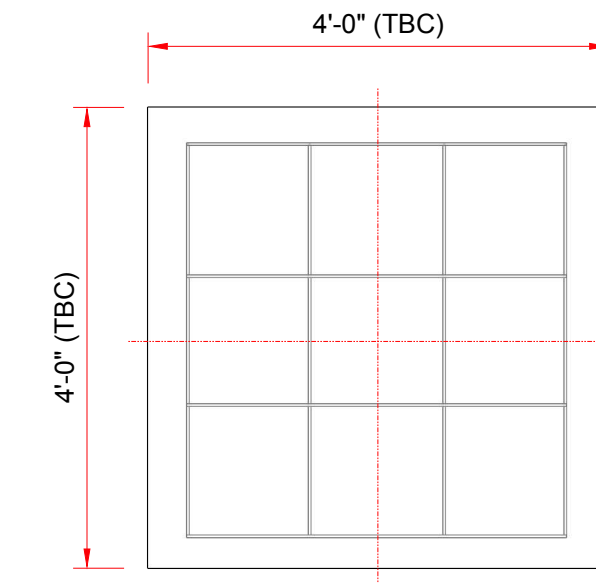
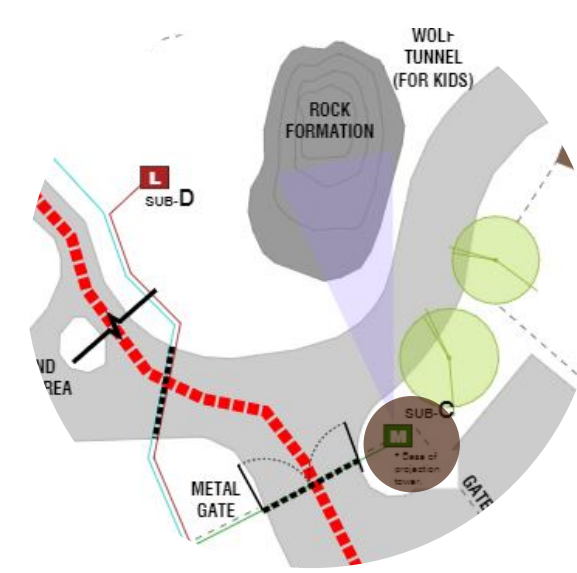
WOLVES ZONE -  
COCRETE SLAB  
(PROJECTION TOWER)

1X

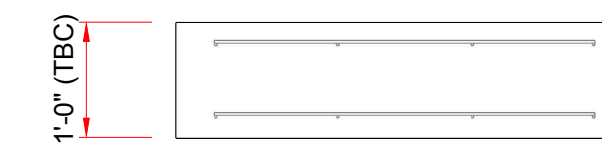
IMAGE REFERENCE



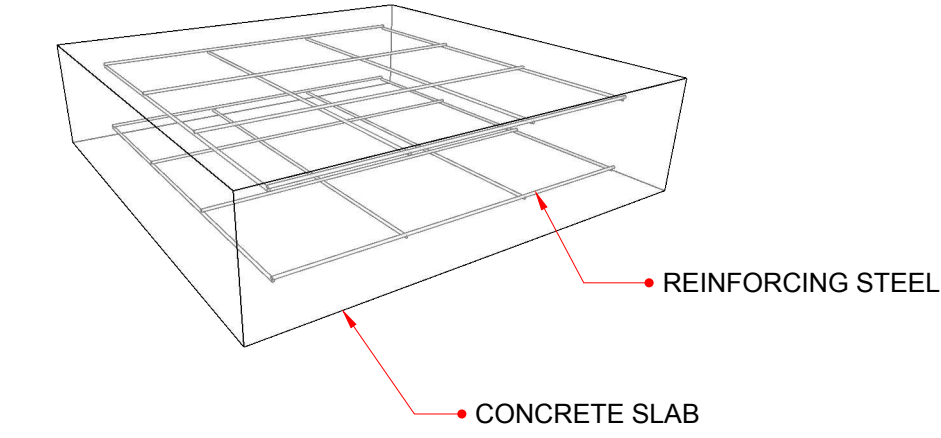
WEIGHT STRUCTURE:  
500 lbs (TBC)



11 TOP - VIEW  
Scale : 1:20



12 FRONT - VIEW  
Scale : 1:20

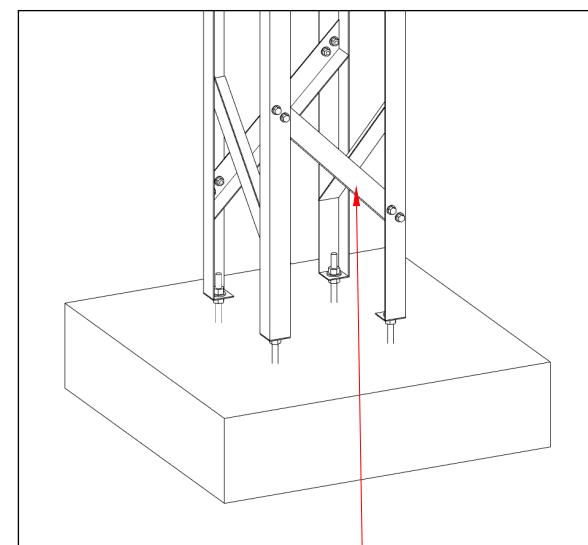


13 ISO - VIEW  
Scale : NA

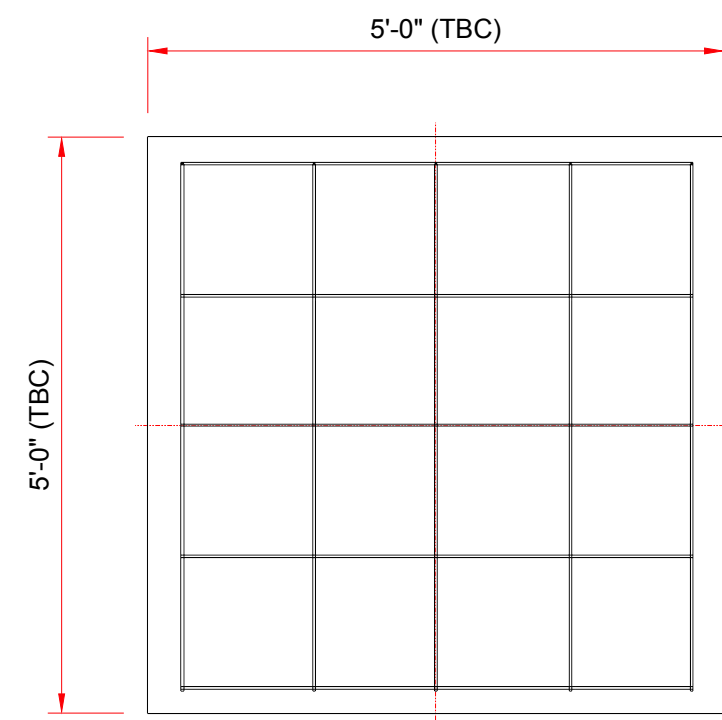
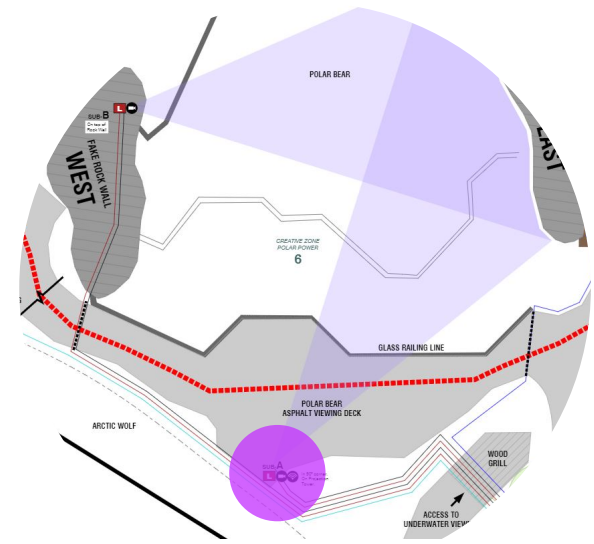
BEAR ZONE -  
CONCRETE SLAB  
(PROJECTION TOWER)

1X

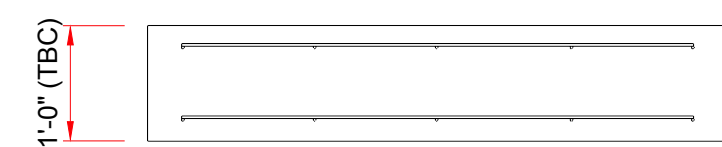
IMAGE REFERENCE



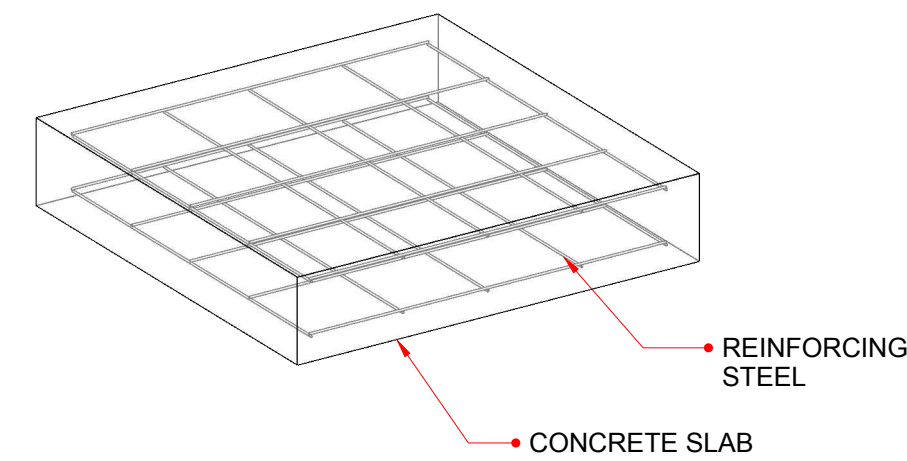
WEIGHT STRUCTURE:  
680 lbs (TBC)



14 TOP - VIEW  
Scale : 1:20



15 FRONT - VIEW  
Scale : 1:20



16 ISO - VIEW  
Scale : NA

NOTES:

MATERIAL: ARMED CONCRETE  
COLOR / FINISH: TBC  
FABRICATION PROCESS: POURED

ANCHORING BY MF

\*\*\*  
DIMENSION AND WEIGHT CONCRETE SLAB  
MUST VALIDATED BY AN ENGINEER

FOR DISCUSSION ONLY

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Project

TTZ  
TORONTO ZOO

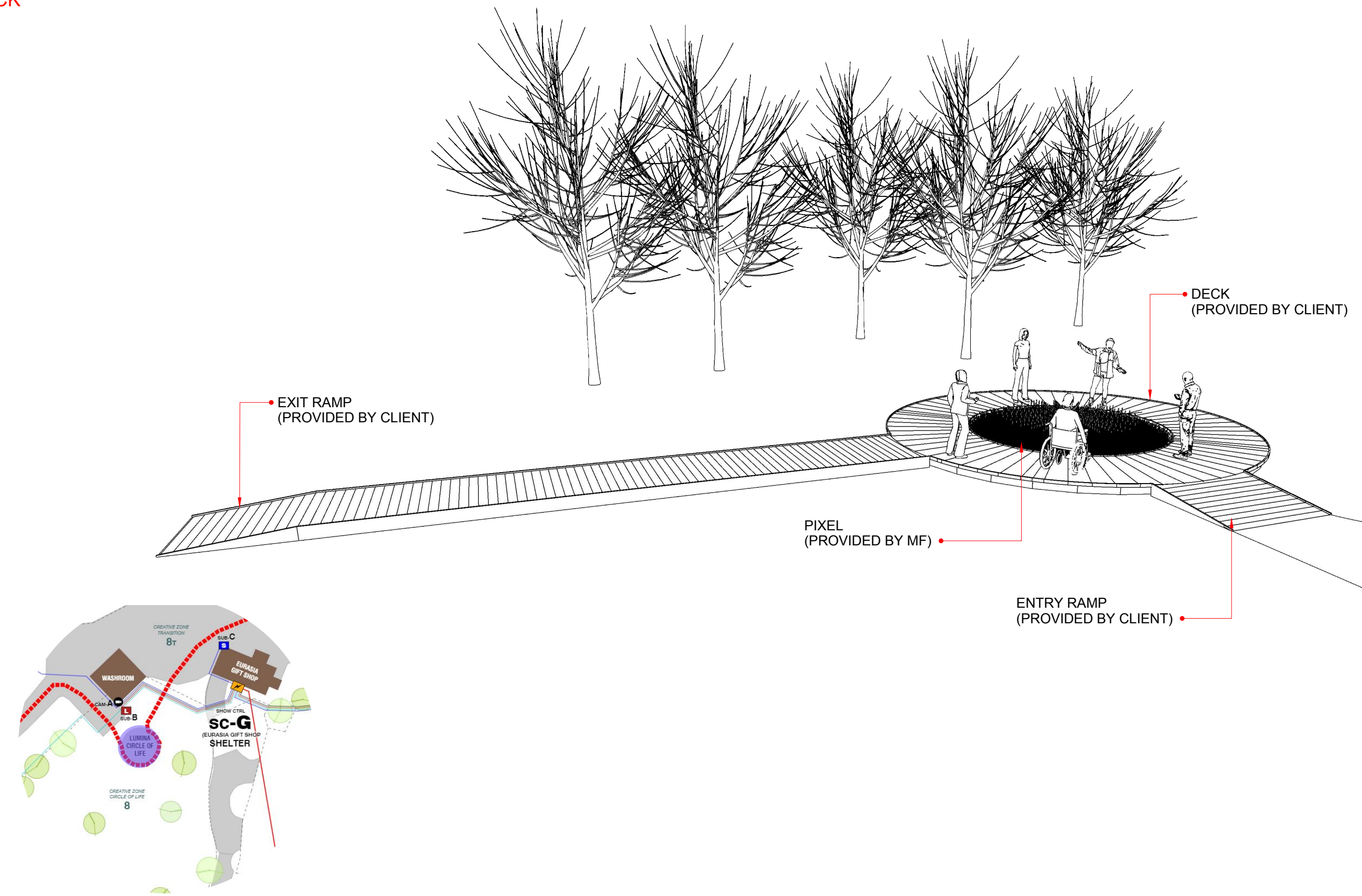
**MOMENT  
FACTORY**

6250 PARC AVENUE  
MONTREAL (QC), CANADA H2V 4H8  
T 514.843.8433 / F 514.843.8891  
WWW.MOMENTFACTORY.COM

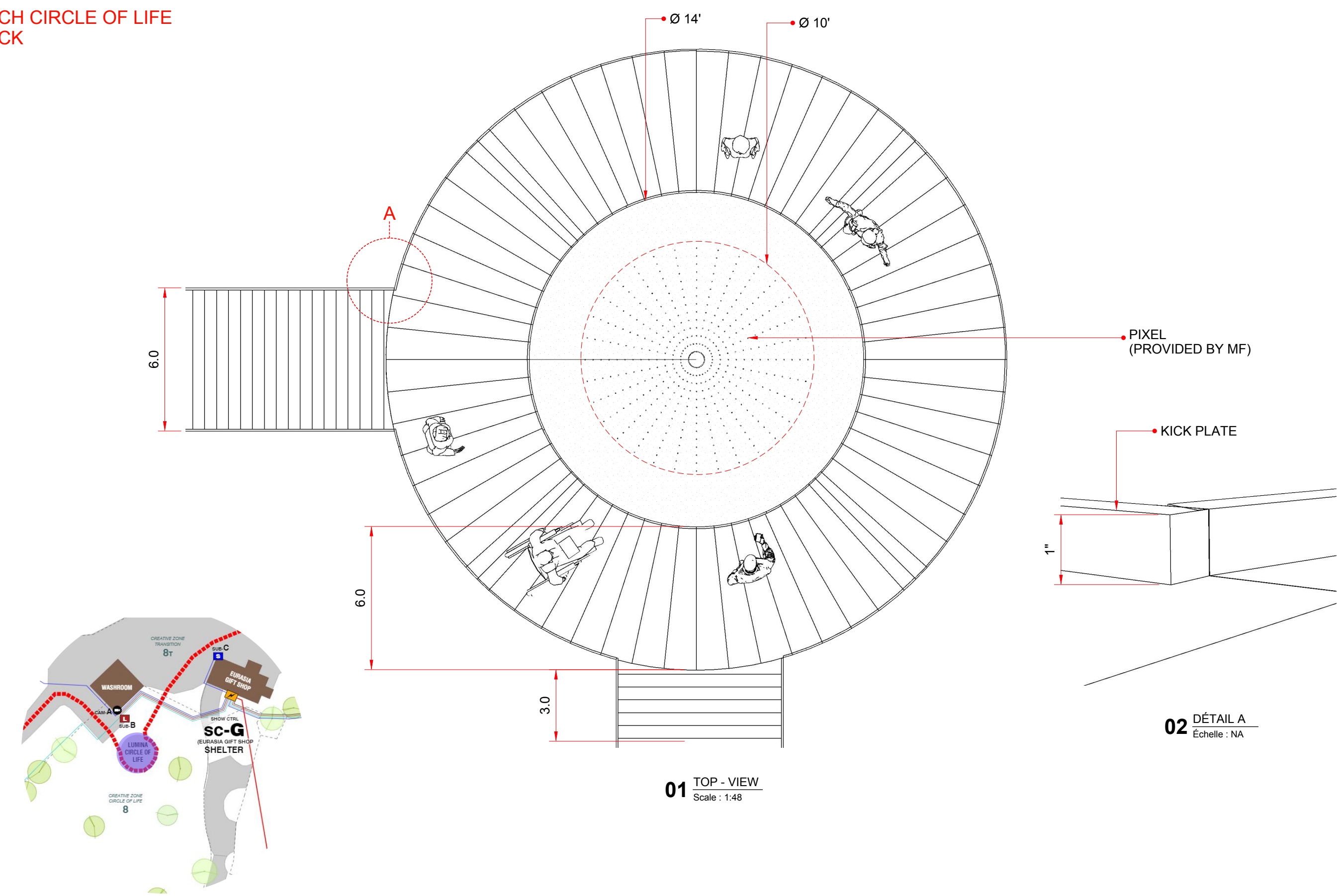
Project manager	No.	Date	Description
Jorge Garcia	R1.0	2019-08-07	Issued for Discussion Only
Drawing by			
Camille Ricard			
Approved by			
Dominic Rivard-Proulx			

Title	Modified date
<b>IN - CONCRETE SLABS</b> ARCH, WOLVES, BEAR GENERAL DIMENSIONS	2019-08-09
	Format 11 x 17
	R1.0
Drawing number	Sheet
TTZ_INFRASTRUCTURE_SCENO_ELEMENTS_190809_CR-22X34	SCN_IN-102

ARCH CIRCLE OF LIFE  
DECK



ARCH CIRCLE OF LIFE  
DECK



NOTES:  
MATERIAL: TREATED WOOD

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Project

**TTZ**  
TORONTO ZOO

**MOMENT  
FACTORY**

6250 PARC AVENUE  
MONTREAL (QC), CANADA H2V 4H8  
T 514.843.8433 / F 514.843.8891  
WWW.MOMENTFACTORY.COM

Project manager	No.	Date	Description
Jorge Garcia	R1.0	2019-08-07	Issued for Discussion Only
Drawing by			
Camille Ricard			
Approved by			
Dominic Rivard-Proulx			

Title	Modified date
<b>IN - CIRCLE OF LIFE</b> DECK GENERAL DIMENSIONS	2019-08-09
	Format 11 x 17
	R1.0
Drawing number	Sheet
TTZ_INFRASTRUCTURE_SCENO_ELEMENTS_190809_CR-22X34	SCN_IN-103



# LUMINA TORONTO ZOO

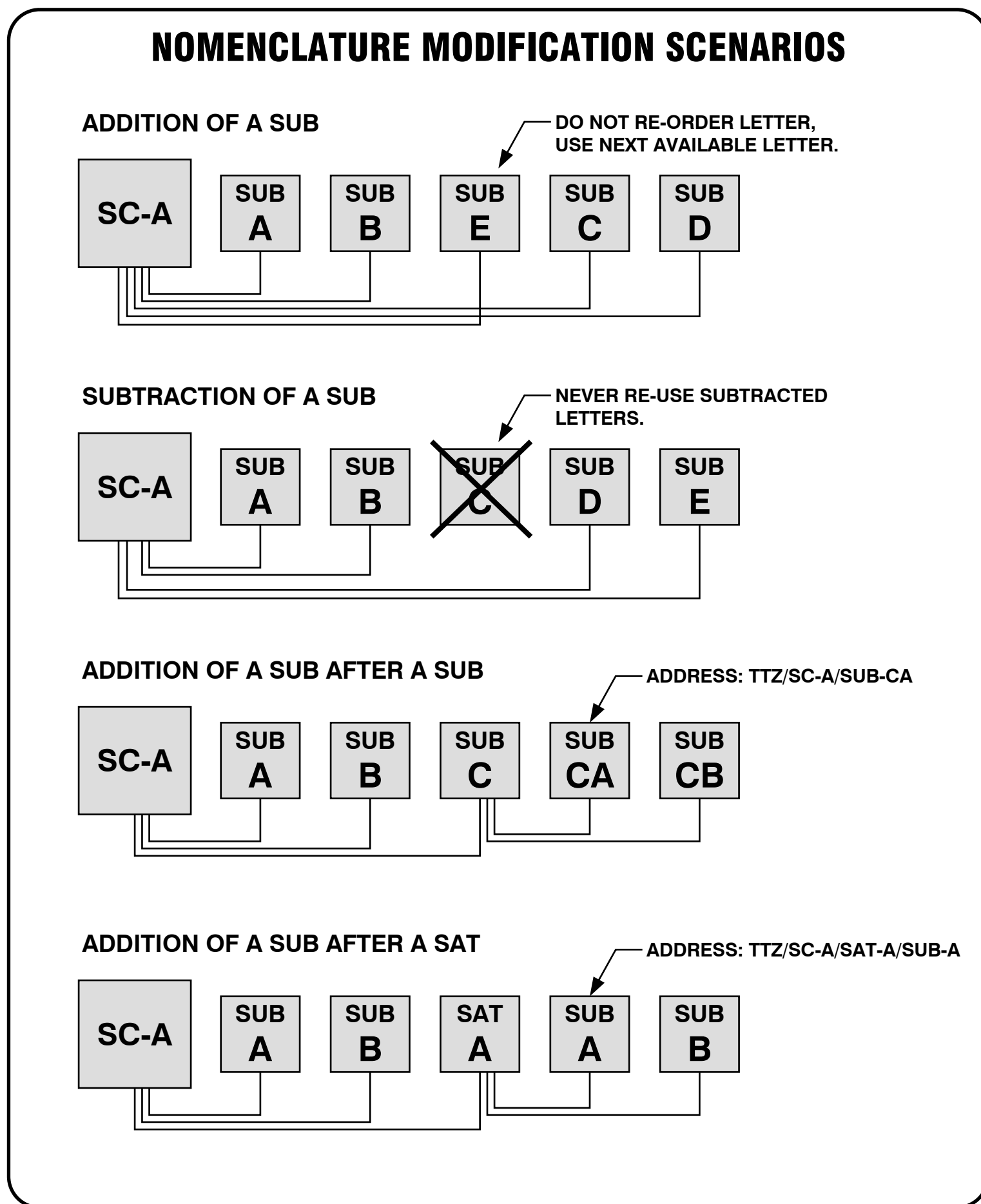
## Toronto Zoo

INFRASTRUCTURE DOCUMENT  
TECHNICAL SPECIFICATIONS  
& WORKMAPS

**PRELIMINARY CONCEPT**

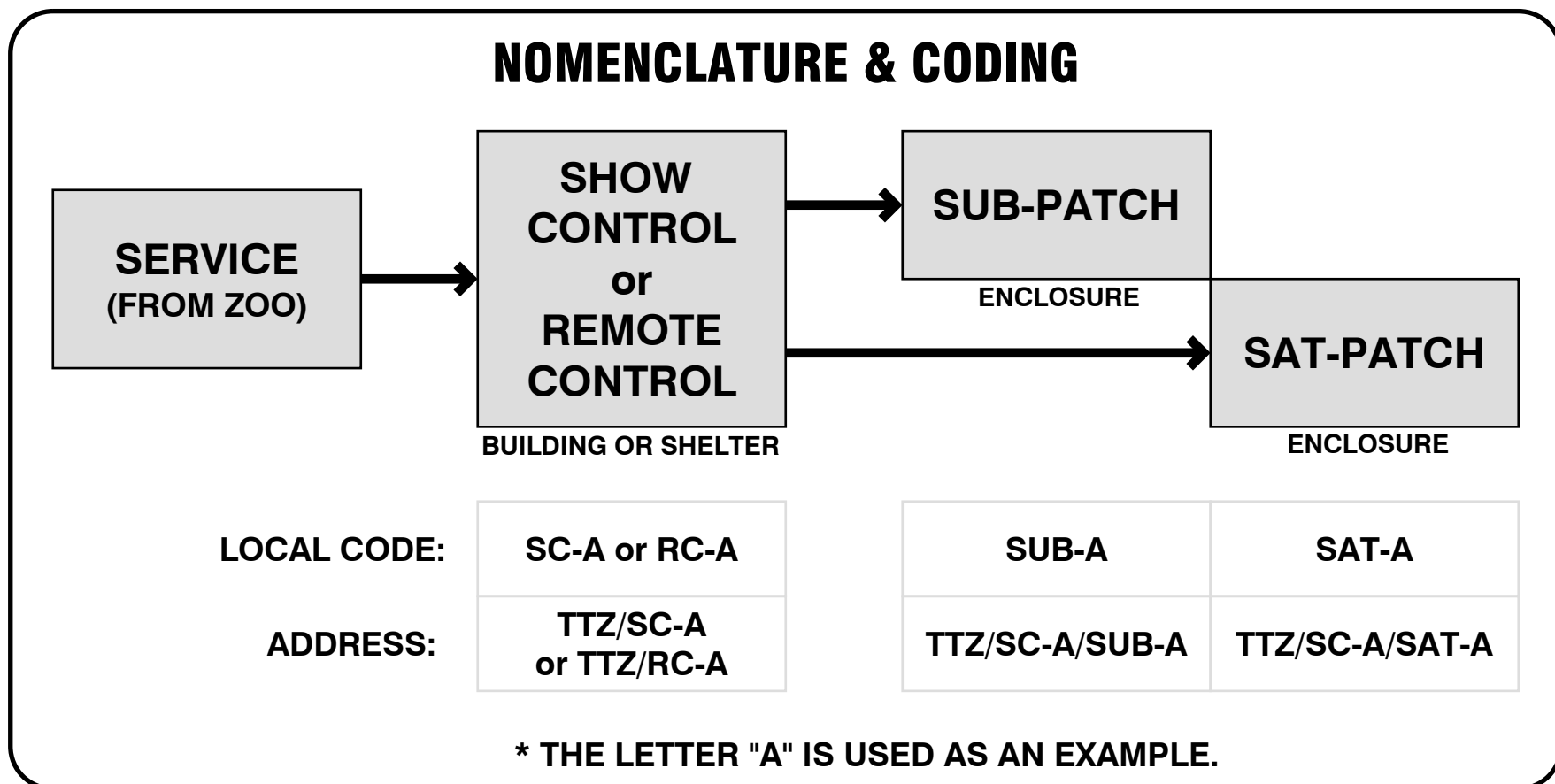
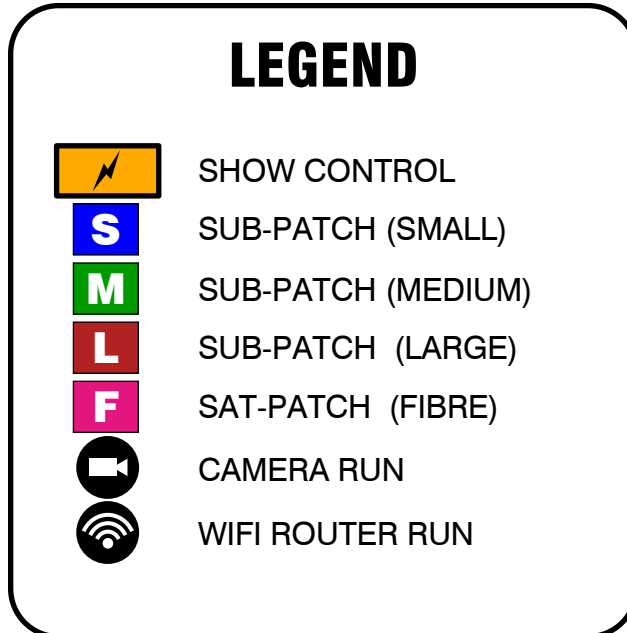
**VERSION 2**  
August 2019

**PLAN LIST**



### ABREVIATION

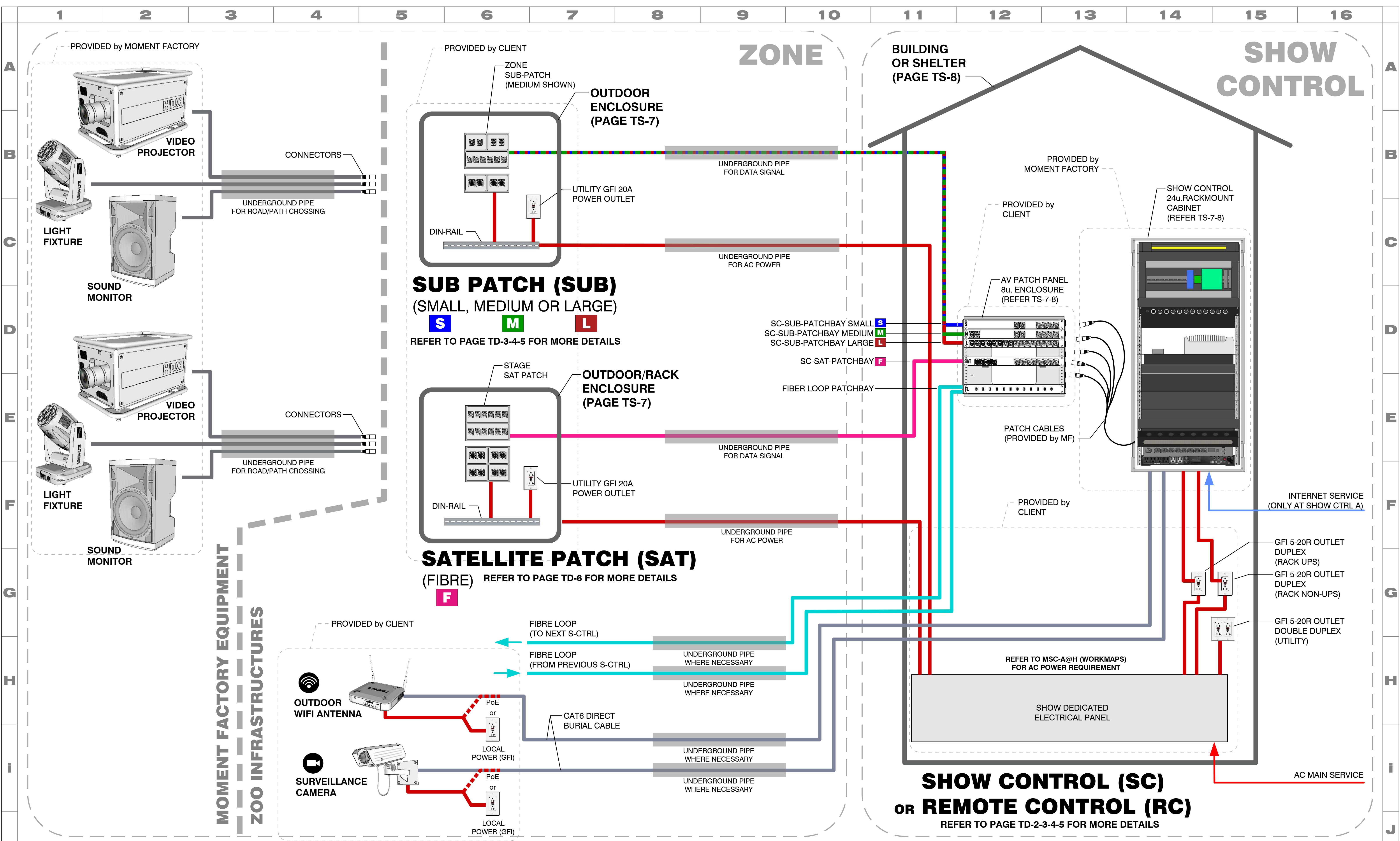
MF	MOMENT FACTORY
TTZ	TORONTO ZOO
SC	SHOW CONTROL
S-CTRL	SHOW CONTROL
RC	REMOTE CONTROL
R-CTRL	REMOTE CONTROL
SUB	SUB PATCH
SAT	SATELLITE PATCH
AC	ALTERNATIVE CURRENT
DC	DIRECT CURRENT
FBR	FIBRE OPTIC
FT	FEET
M	METERS
MM	MILLIMETERS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
ID	INSIDE DIAMETER
OD	OUTSIDE DIAMETER



- ### GENERAL NOTES & DISCLAIMERS
- INITIAL DESIGNS ARE FOR DISCUSSION ONLY. APPROVAL AND COMMENTS OF ELECTRICAL MANUFACTURERS/ SPECIALISTS REQUIRED. DESIGNS/ CIRCUITS/ WIRING WILL VARY BASED ON PROVIDER.
  - ALL UNDERGROUND PIPE MUST CONTENT A FISHING ROPE.
  - MULTIPLE BUNDLES CAN BE RUN IN THE SAME CONDUCT BUT AC POWER CABLES MUST ALWAYS RUN IN SEPARATED CONDUCT TO AVOID INDUCTION.
  - ALL CONNECTOR TYPES, CABLE TYPES, AND LENGTHS SHOULD BE VALIDATED BY A PROFESSIONNAL AV INSTALLER/ELECTRICIAN.
  - ALL MECHANICAL, PLUMBING AND STRUCTURE INSTALLATIONS MUST COMPLY WITH THE NATIONAL BUILDING CODE, CURRENT EDITION, AND ANY OTHER APPLICABLE CODE.
  - ALL ELECTRICAL INSTALLATIONS MUST COMPLY WITH THE ONTARIO ELECTRICAL SAFETY CODE, CURRENT EDITION, AND ANY OTHER APPLICABLE CODE
  - ALL SHELTER SHOULD HAVE VENTILATION AND COOLING AS REQUIRED FOR RACK AND EQUIPMENT LOCATIONS.
  - ALL SITE PREPARATION AND INFRASTRUCTURE SHOULD BE PROVIDE BY CLIENT.
  - STRUCTURAL AND ELECTRICAL ENGINEERING SHOULD BE VALIDATE BY THE INSTALLER.
  - ALL CONSTRUCTION, INSURANCE, PERMITS AND AUTHORITY APPROVALS SHOULD BE PROVIDED BY CLIENT.
  - HEAVY EQUIPMENT AS FORKLIFT, BOOM TRUCK, CRANE AND MASSIVE SCAFFOLDING SET UP ETC WILL BE REQUIRED DURING INTEGRATION AND SHOULD BE PROVIDED BY CLIENT.
  - ANY MODIFICATION TO THIS DOCUMENTS SHOULD BE VALIDATED BY MOMENT FACTORY AND THE INSTALLER.
  - MOMENT FACTORY SHOULD BE INVOLVED PRIOR TO CLIENT ENGAGING ANY SUPPLIER.
  - INTEGRATION DATE IS SUBJECT TO ALL SUPPLIER PERFORMING A SITE ACCEPTANCE TEST SATISFACTORY TO MOMENT FACTORY.
  - ALL EQUIPMENT AND INSTALLATION MUST BE SUITABLE AND RATED FOR A RELIABLE OPERATION IN WINTER CONDITION.

GENERAL	<b>GN-0</b>	PRESENTATION PAGE	
	<b>GN-1</b>	GENERAL NOTES	
	TECHNICAL DOCUMENTS	<b>TD-1</b>	TYPICAL DISTRIBUTION OVERVIEW
		<b>TD-2</b>	GENERIC SHOW CONTROL SCHEMATIC & DETAILS
		<b>TD-3</b>	SMALL SUB-PATCH SCHEMATIC & DETAILS
		<b>TD-4</b>	MEDIUM SUB-PATCH SCHEMATIC & DETAILS
		<b>TD-5</b>	LARGE SUB-PATCH SCHEMATIC & DETAILS
		<b>TD-6</b>	SATELLITE-PATCH SCHEMATIC & DETAILS
		<b>TD-7</b>	NETWORK TOPOLOGY OVERVIEW
	TECHNICAL SPECIFICATIONS	<b>TS-1</b>	CONNECTORS
<b>TS-2</b>		CABLES	
<b>TS-3</b>		AUDIO EQUIPMENT	
<b>TS-4a</b>		LIGHTING EQUIPMENT	
<b>TS-4b</b>		LIGHTING EQUIPMENT	
<b>TS-5</b>		VIDEO EQUIPMENT	
<b>TS-6</b>		CONTROL EQUIPMENT	
<b>TS-7</b>		RACKS & ENCLOSURES	
<b>TS-8</b>	GENERIC SHELTER DETAILS		
OVERALL MAPS	<b>MO-1</b>	ZOO ZONE MAP	
	<b>MO-2</b>	CREATIVE ZONE MAP	
	<b>MO-3</b>	SHOW CONTROL COVERAGE AREA MAP	
SHOW CONTROL AREA MAPS	<b>MSC-A</b>	SHOW CONTROL SC-A	
	<b>MSC-B</b>	SHOW CONTROL SC-B	
	<b>MSC-C</b>	SHOW CONTROL SC-C	
	<b>MSC-D</b>	SHOW CONTROL SC-D	
	<b>MSC-E</b>	SHOW CONTROL SC-E	
	<b>MSC-F</b>	SHOW CONTROL SC-F	
	<b>MSC-G</b>	SHOW CONTROL SC-G	
	<b>MSC-H</b>	SHOW CONTROL SC-H	
SPEAKER LAYOUT AREA MAPS	<b>MSL-A</b>	SPEAKER LAYOUT SC-A	
	<b>MSL-B</b>	SPEAKER LAYOUT SC-B	
	<b>MSL-C</b>	SPEAKER LAYOUT SC-C	
	<b>MSL-D</b>	SPEAKER LAYOUT SC-D	
	<b>MSL-E</b>	SPEAKER LAYOUT SC-E	
	<b>MSL-F</b>	SPEAKER LAYOUT SC-F	
	<b>MSL-G</b>	SPEAKER LAYOUT SC-G	
	<b>MSL-H</b>	SPEAKER LAYOUT SC-H	
LIGHTING LAYOUT AREA MAPS	<b>MLX-A</b>	LIGHTING LAYOUT SC-A	
	<b>MLX-B</b>	LIGHTING LAYOUT SC-B	
	<b>MLX-C</b>	LIGHTING LAYOUT SC-C	
	<b>MLX-D</b>	LIGHTING LAYOUT SC-D	
	<b>MLX-E</b>	LIGHTING LAYOUT SC-E	
	<b>MLX-F</b>	LIGHTING LAYOUT SC-F	
	<b>MLX-G</b>	LIGHTING LAYOUT SC-G	
	<b>MLX-H</b>	LIGHTING LAYOUT SC-H	

**PRELIMINARY CONCEPT**  
 THIS DOCUMENT IS INTENDED TO ONLY DEMONSTRATE CONCEPTS & IDEAS. SHALL NOT BE USED FOR FABRICATION OR CONSTRUCTION.



**NOTES:**

- THIS OVERVIEW SHOWS ONE SAT AND ONE SUB-PATCH BUT A SHOW CONTROL OR A REMOTE CONTROL CAN MANAGE MULTIPLE SAT & SUB PATCH.
- THIS OVERVIEW IS NOT A PATCH LIST. IT ONLY SHOWS THE OVERALL SIGNAL DISTRIBUTION AND THE MAIN ELEMENT OF THE SYSTEM.
- APPROVAL AND COMMENTS OF ELECTRICAL MANUFACTURERS/ SPECIALISTS REQUIRED. DESIGNS/ CIRCUITS/ WIRING WILL VARY BASED ON PROVIDER.

**PRELIMINARY CONCEPT**  
 THIS DOCUMENT IS INTENDED TO ONLY DEMONSTRATE CONCEPTS & IDEAS. SHALL NOT BE USED FOR FABRICATION OR CONSTRUCTION.

**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**

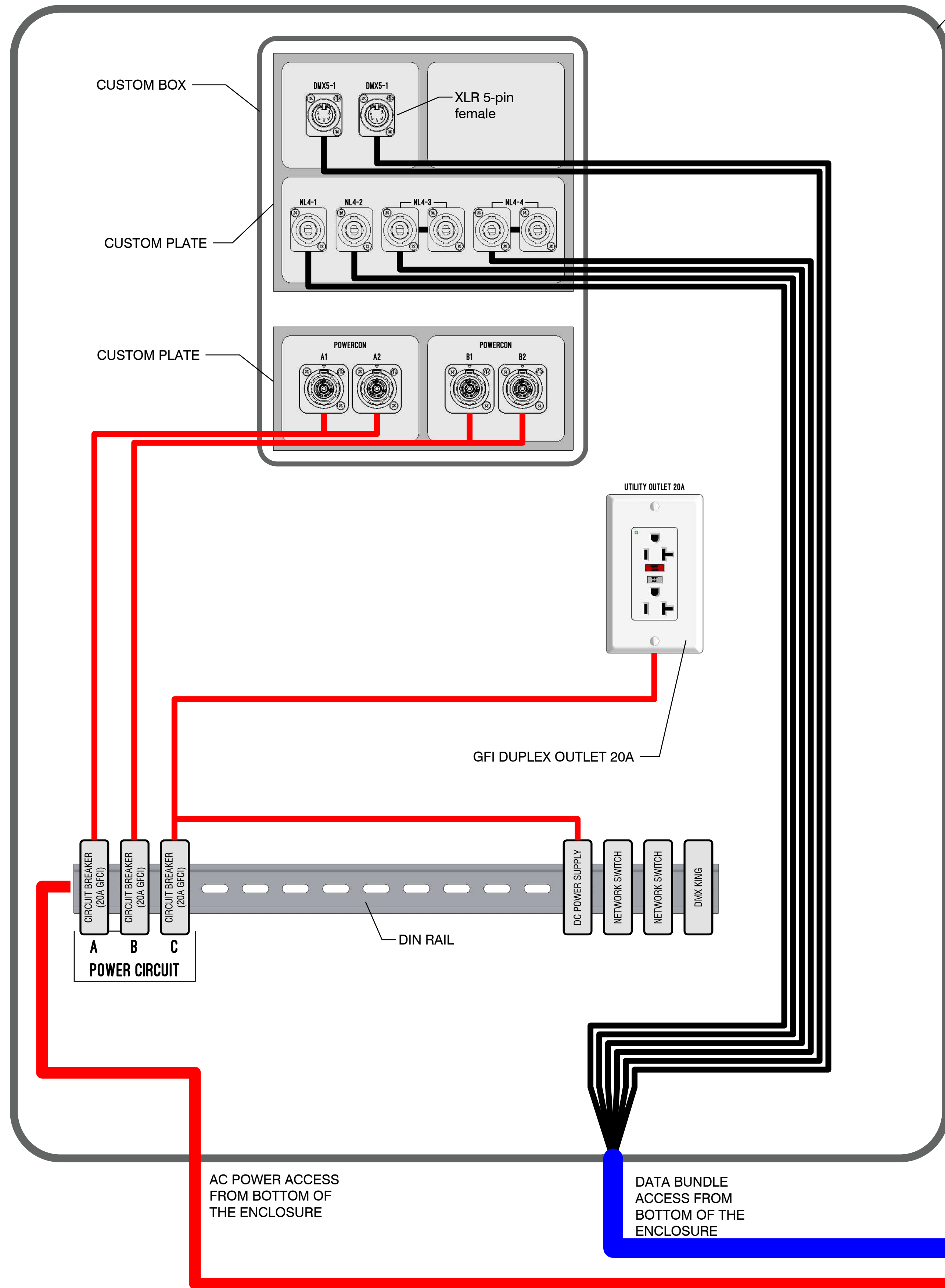
TECHNICAL DIRECTOR Dominic Rivard-Proulx	REVISION	DATE	DESCRIPTION	LAYOUT	REVISION DATE 2019-08-08
ASS. TECHNICAL DIRECTOR Alexandre Dion-Proulx					SCALE 1" = 70' (1:840)
SENIOR INTEGRATOR Paul Chinnery					PAPER ANSI D (22" x 34")
DRAFTER Joe Drafter					REVISION v2r03
DRAWING NUMBER MP_T12_TechDoc/NFA_v03b_MD-TD-1				TYPICAL DISTRIBUTION OVERVIEW TECHNICAL DOCUMENT	

**TD-1**

THIS DRAWING IS CONFIDENTIAL AND MUST NOT BE REPRODUCED OR USED WITHOUT THE CONSENT OF MOMENT FACTORY

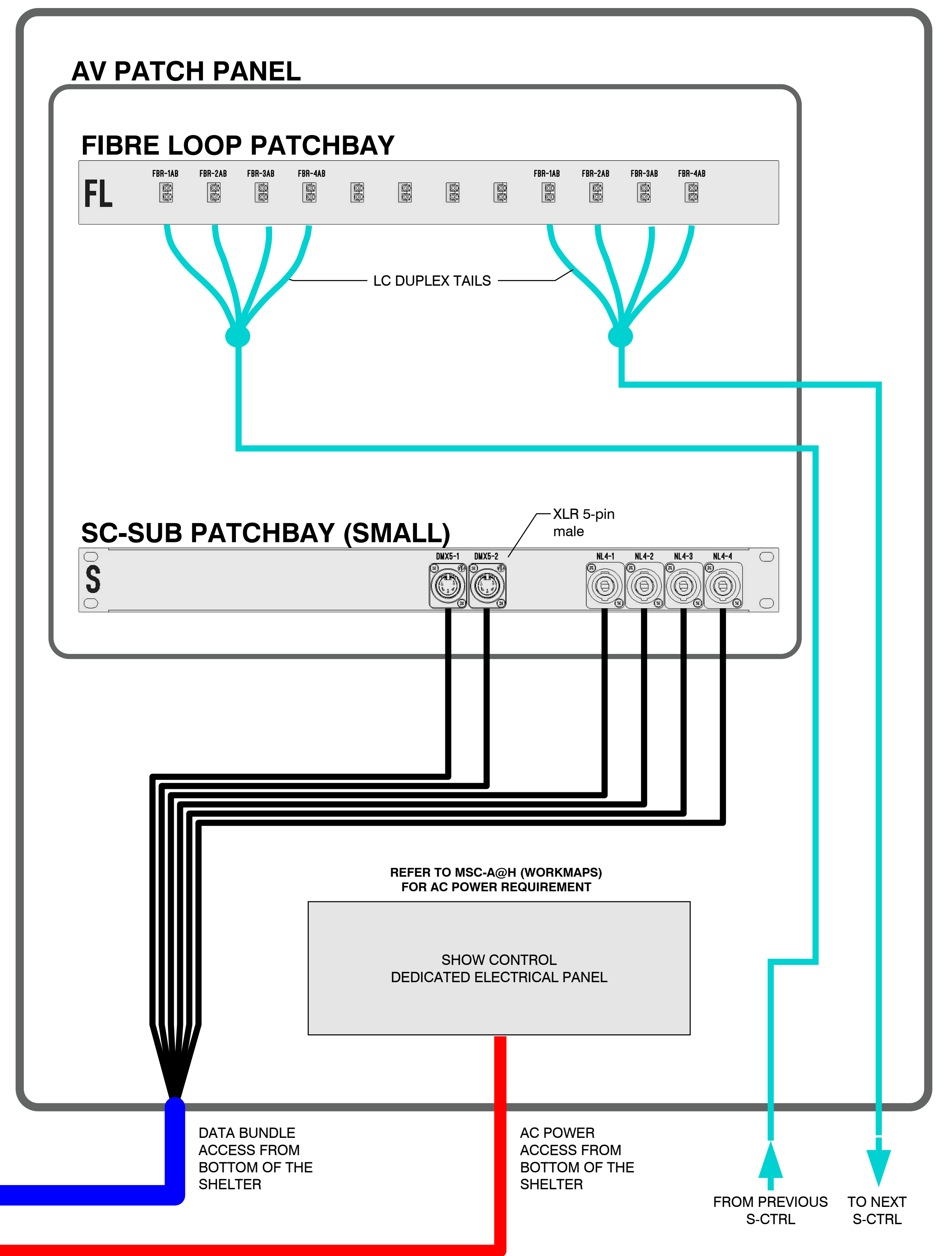
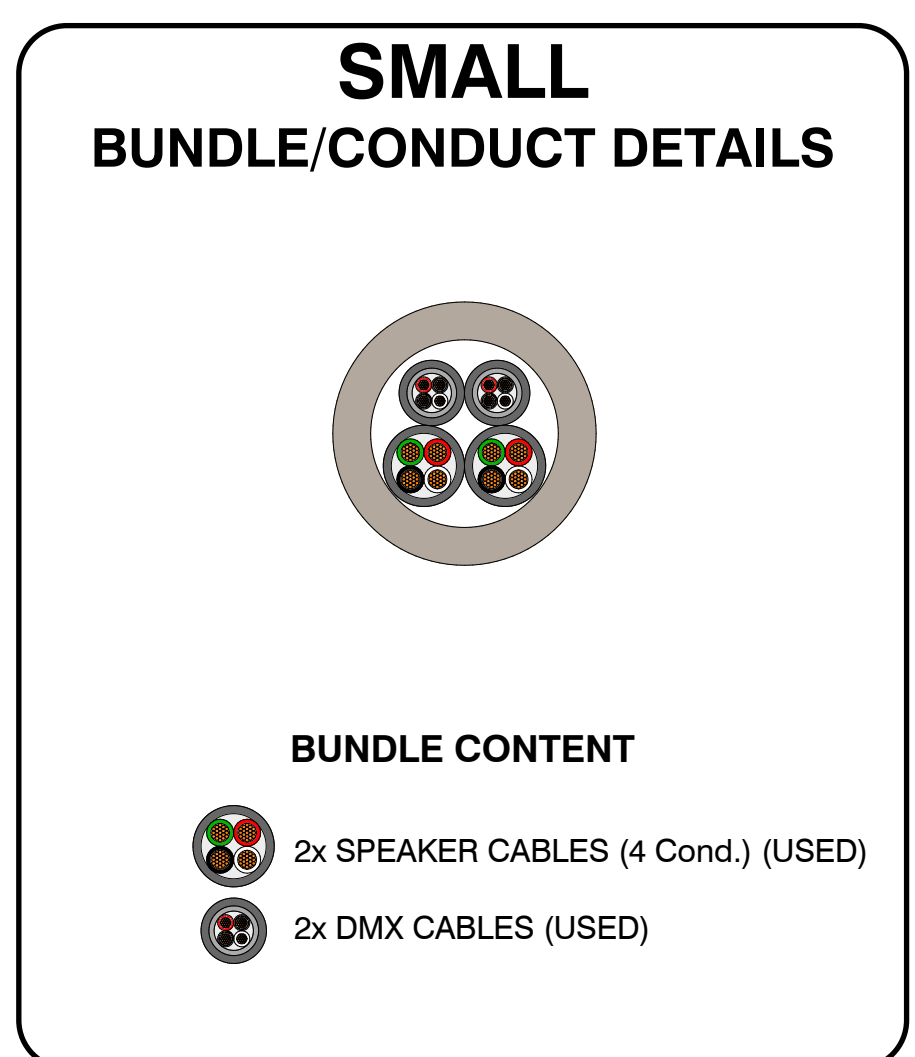
# SMALL SUB-PATCH S

# SHOW CONTROL (PARTIAL SHOWN)



REFER TO TS-1 FOR CONNECTOR SPECIFICATIONS

REFER TO TS-2 FOR CABLE SPECIFICATIONS



WIRE QUANTITY, TYPE AND GAUGE WILL BE DETERMINATED BY PROFESSIONAL ELECTRICIAN OR ELECTRICAL ENGINEER.

**PRELIMINARY CONCEPT**  
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**TTZ19**  
LUMINA TORONTO ZOO  
Toronto Zoo

**MOMENT FACTORY**

TECHNICAL DIRECTOR  
Dominic Rivard-Proulx  
ASS. TECHNICAL DIRECTOR  
Alexandre Dion-Proulx  
SENIOR INTEGRATOR  
Paul Chinnery  
DRAFTER  
Joe Drafter

REVISION	DATE	DESCRIPTION

LAYOUT  
**SMALL SUB-PATCH SCHEMATIC & DETAILS**  
TECHNICAL DOCUMENT

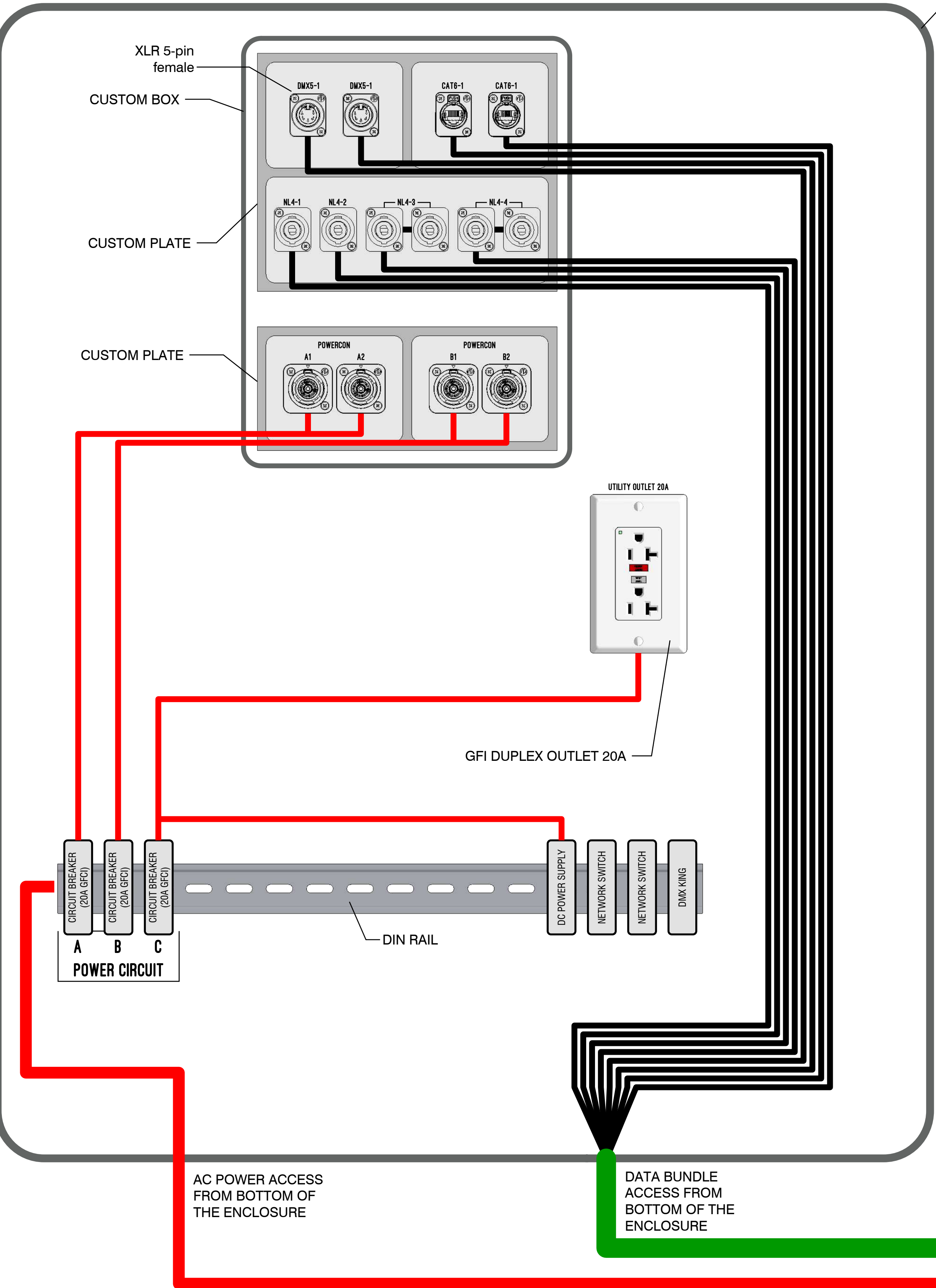
REVISION DATE  
2019-08-08  
SCALE  
1" = 70' (1:840)  
PAPER  
ANSI D (22" x 34")  
REVISION  
**v2r03**

**TD-3**

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# MEDIUM SUB-PATCH M

# SHOW CONTROL (PARTIAL SHOWN)

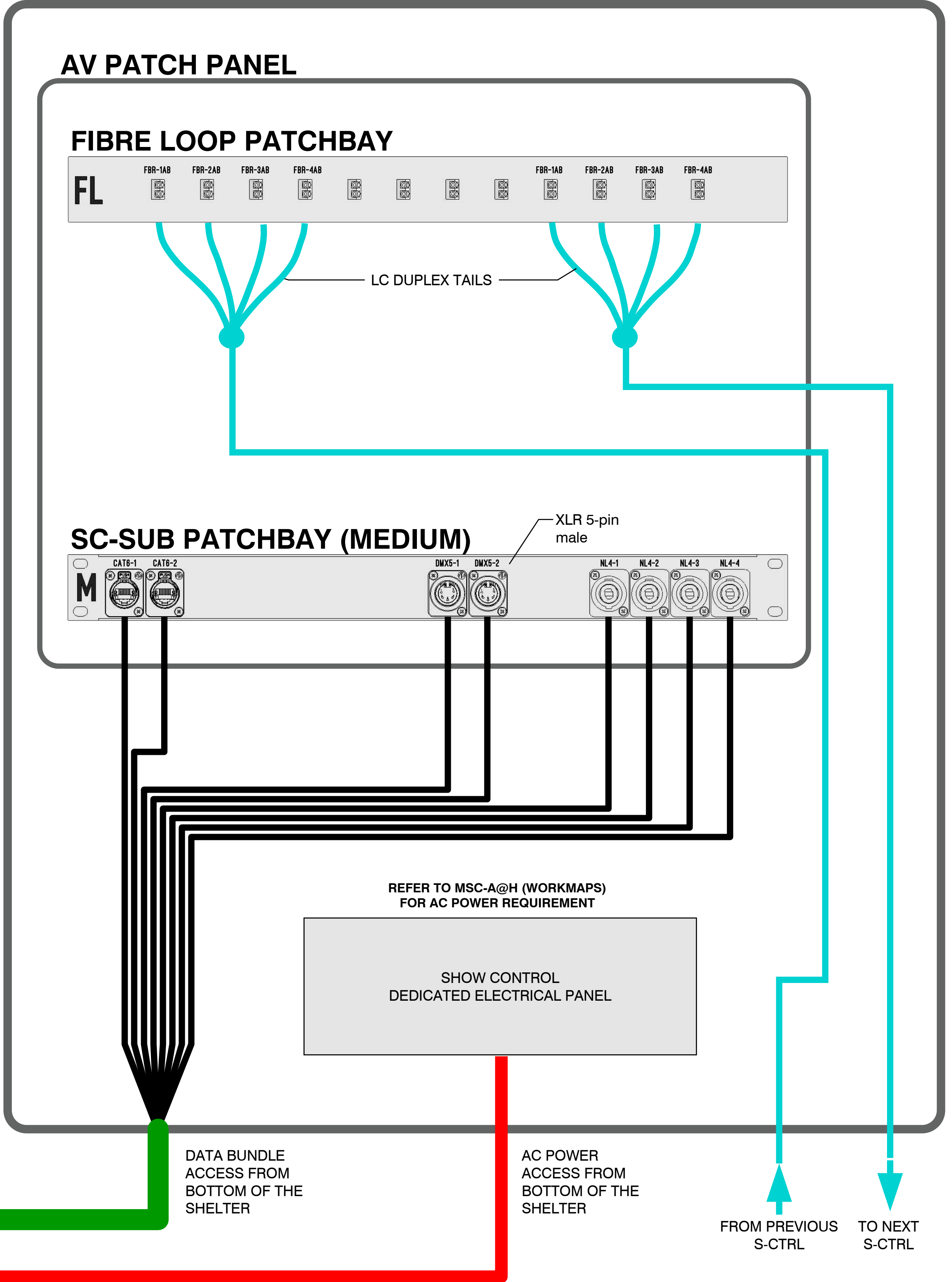


REFER TO TS-1 FOR CONNECTOR SPECIFICATIONS  
REFER TO TS-2 FOR CABLE SPECIFICATIONS

### MEDIUM BUNDLE/CONDUCT DETAILS

**BUNDLE CONTENT**

- 2x SPEAKER CABLES (4 Cond.) (USED)
- 2x DMX CABLES (USED)  
1x DMX CABLES (SPARE)
- 2x CAT6 CABLES (USED)  
1x CAT6 CABLE (SPARE)



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**TTZ19**  
LUMINA TORONTO ZOO  
Toronto Zoo

**MOMENT FACTORY**

TECHNICAL DIRECTOR: Dominic Rivard-Proulx  
ASS. TECHNICAL DIRECTOR: Alexandre Dion-Proulx  
SENIOR INTEGRATOR: Paul Chinnery  
DRAFTER: Joe Drafter

REVISION	DATE	DESCRIPTION

**MEDIUM SUB-PATCH**  
SCHEMATIC & DETAILS  
TECHNICAL DOCUMENT

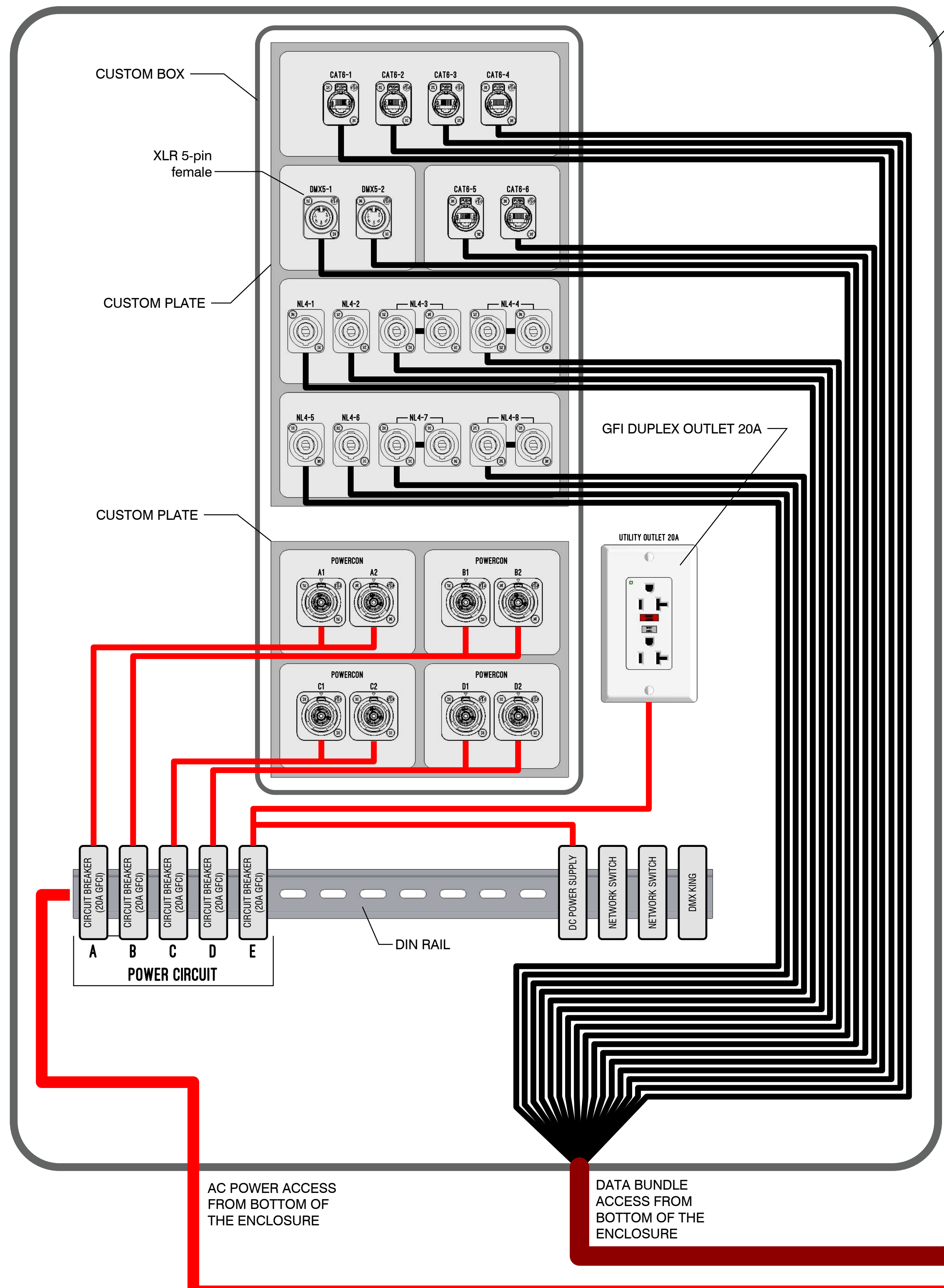
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SCALE: 1" = 70' (1:840)  
PAPER: ANSI D (22" x 34")  
REVISION: **v2r03**

**TD-4**

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# LARGE SUB-PATCH L

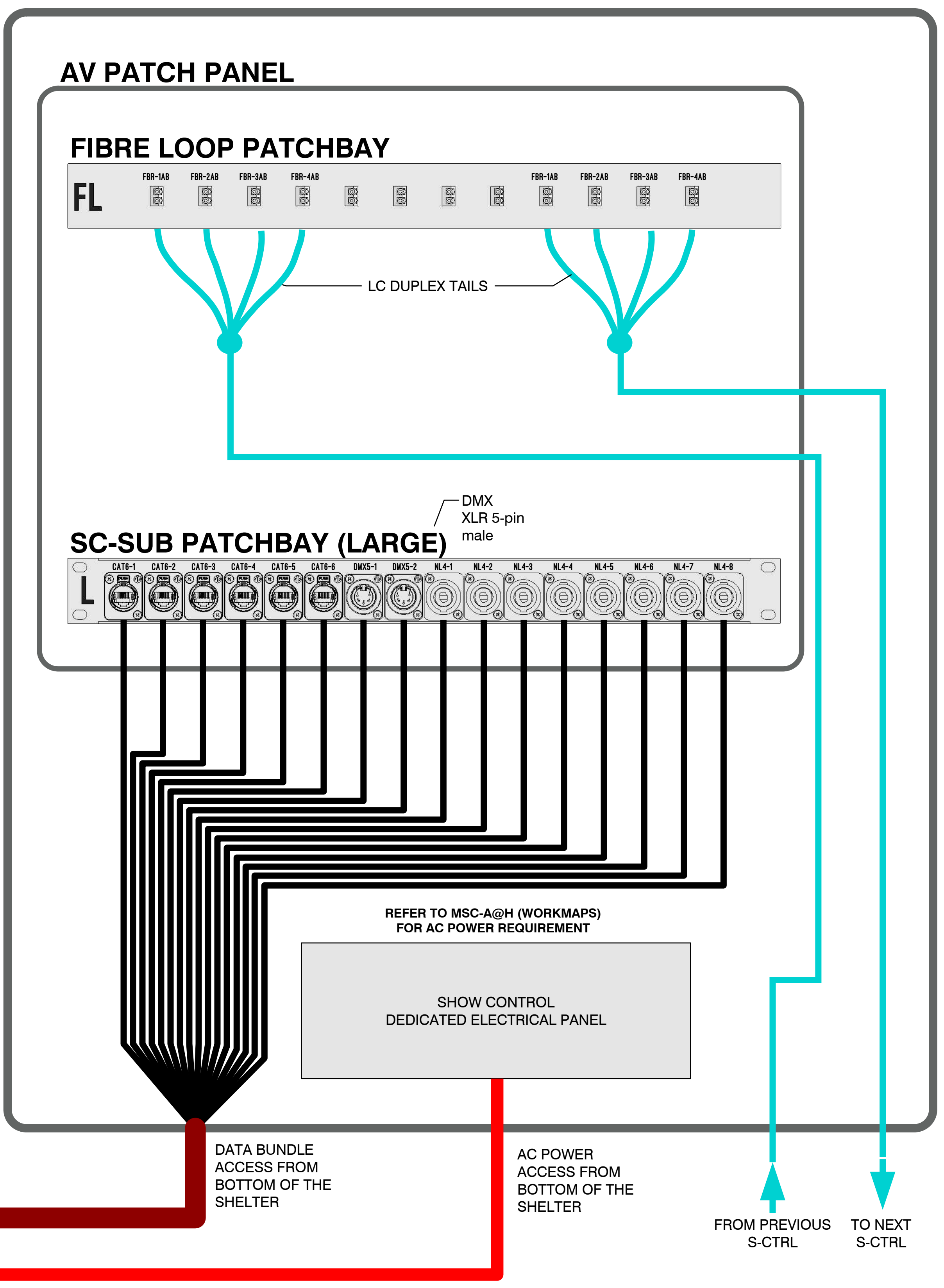
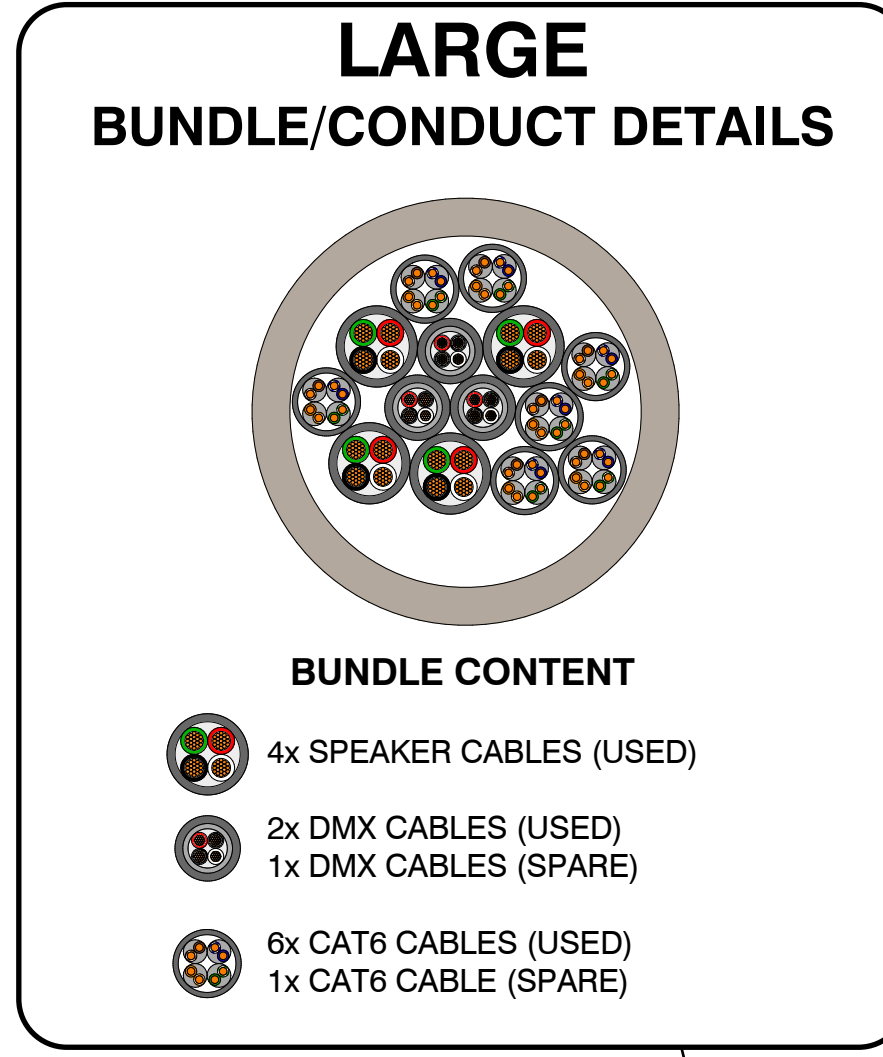
# SHOW CONTROL (PARTIAL SHOWN)



OUTDOOR ENCLOSURE  
(REFER TO PAGE TS-7)

REFER TO TS-1 FOR CONNECTOR SPECIFICATIONS

REFER TO TS-2 FOR CABLE SPECIFICATIONS



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ASS. TECHNICAL DIRECTOR  
Alexandre Dion-Proulx  
SENIOR INTEGRATOR  
Paul Chinnery  
DRAFTER  
Joe Drafter

REVISION	DATE	DESCRIPTION
v200	2019-07-24	ADDED 4x NL4

LAYOUT  
**LARGE SUB-PATCH SCHEMATIC & DETAILS**  
TECHNICAL DOCUMENT

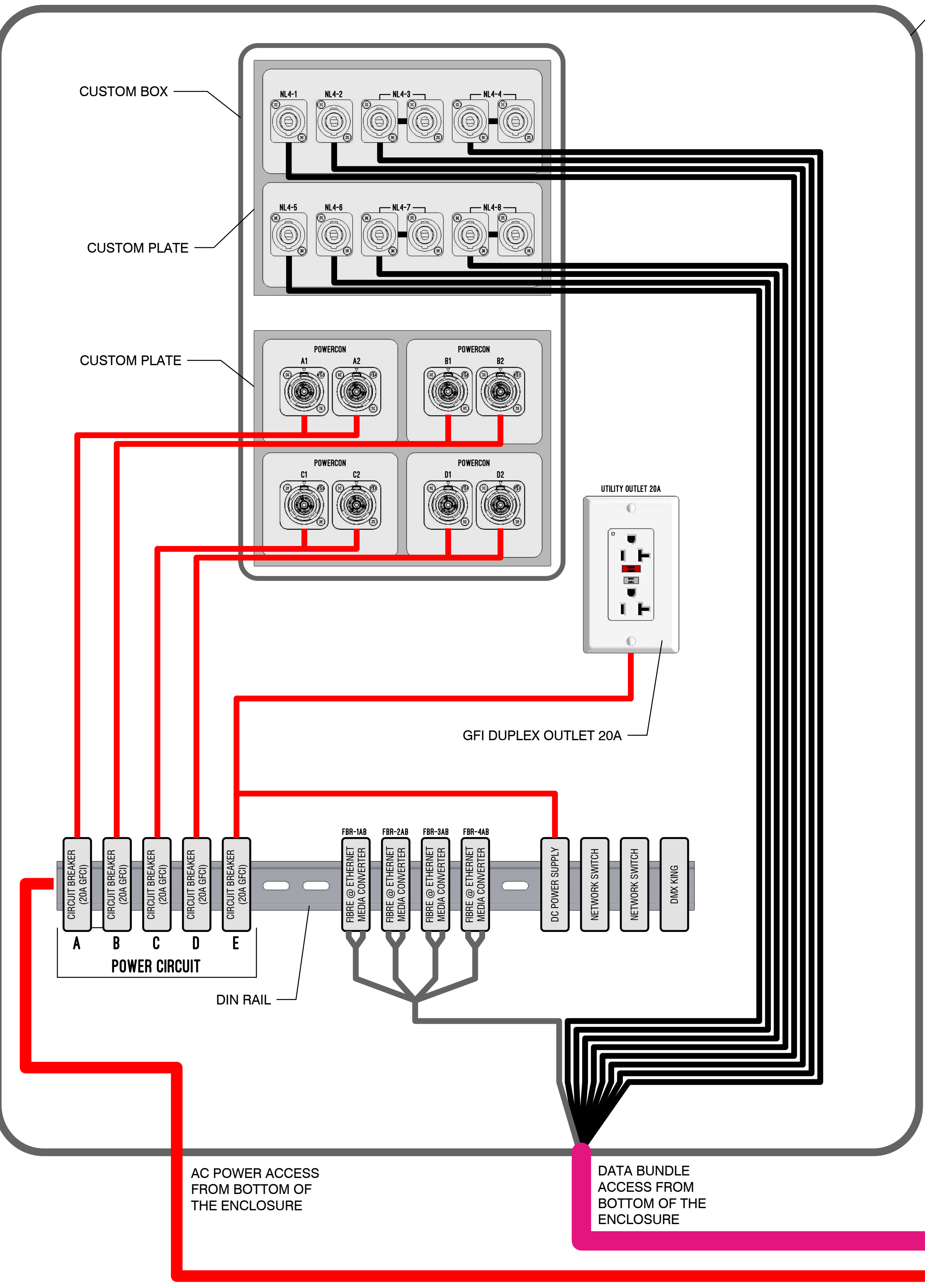
REVISION DATE	REVISION
2019-08-08	v2r03

**TD-5**

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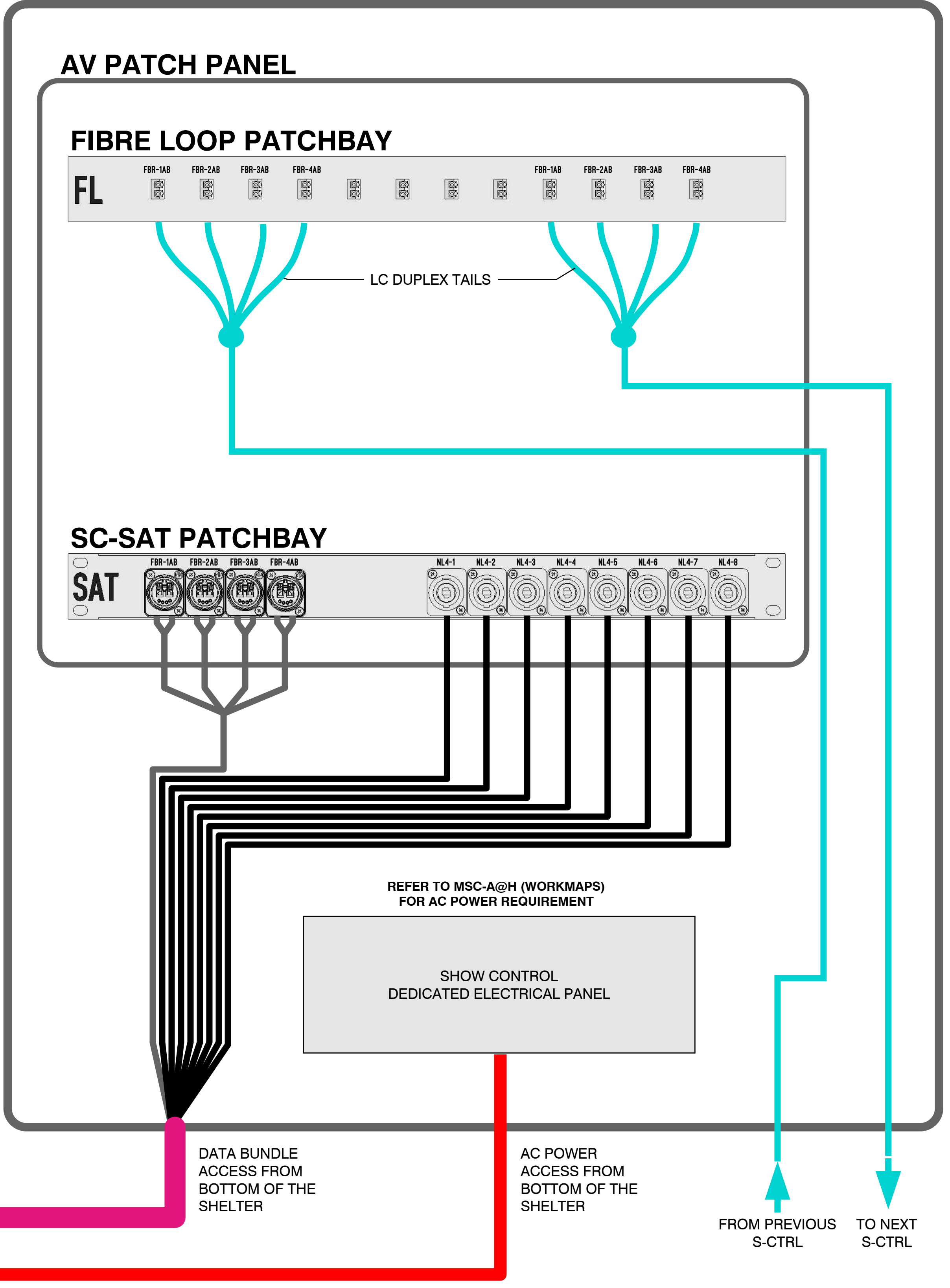
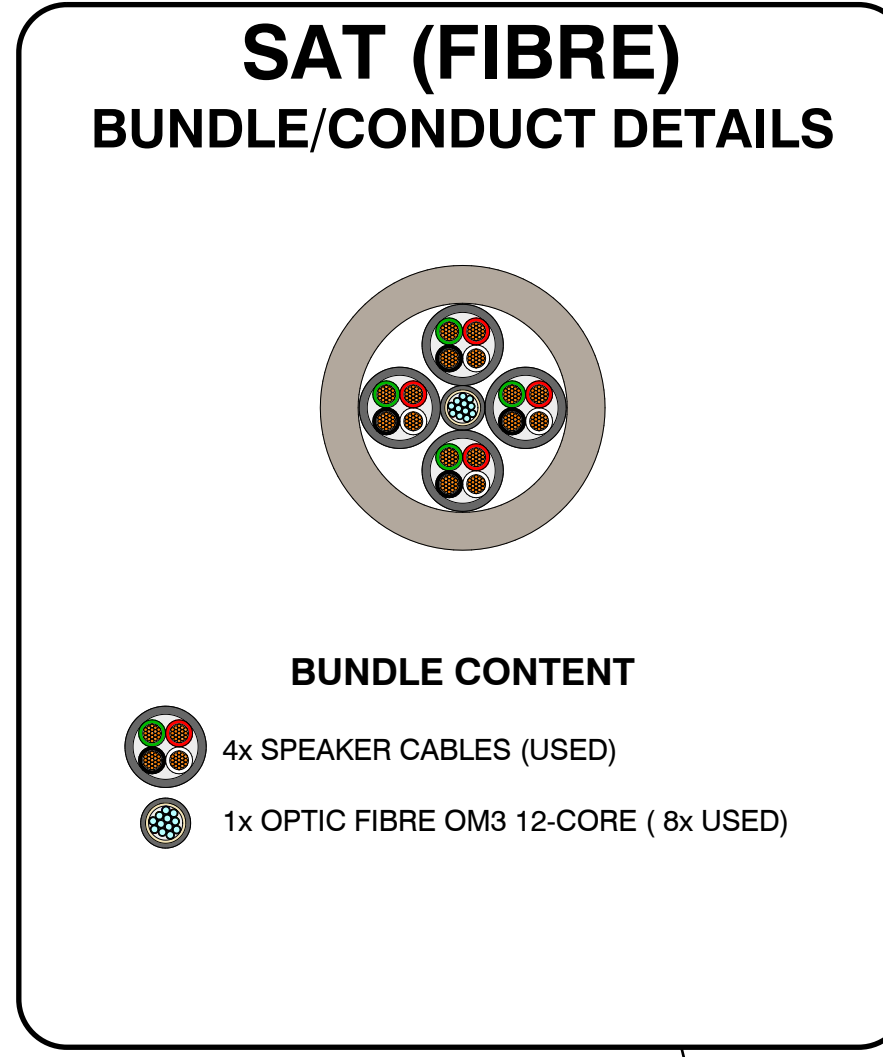
# SATELLITE PATCH F

# SHOW CONTROL (PARTIAL SHOWN)



OUTDOOR ENCLOSURE  
(REFER TO PAGE TS-7)

REFER TO TS-1 FOR CONNECTOR  
SPECIFICATIONS  
REFER TO TS-2 FOR CABLE  
SPECIFICATIONS



REFER TO MSC-A@H (WORKMAPS)  
FOR AC POWER REQUIREMENT

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**TTZ19**  
LUMINA TORONTO ZOO  
Toronto Zoo

**MOMENT  
FACTORY**

TECHNICAL DIRECTOR	Dominic Rivard-Proulx
ASS. TECHNICAL DIRECTOR	Alexandre Dion-Proulx
SENIOR INTEGRATOR	Paul Chinnery
DRAFTER	Joe Drafter

REVISION	DATE	DESCRIPTION

LAYOUT

**SATELLITE PATCH  
SCHEMATIC & DETAILS  
TECHNICAL DOCUMENT**

DRAWING NUMBER  
MP\_T12\_TechDoc\FPA\_v003\_M0-TD-6

REVISION DATE	2019-08-08
SCALE	1" = 70' (1:840)
PAPER	ANSI D (22" x 34")
REVISION	v2r03

**TD-6**

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# CONNECTORS

PROVIDED by CLIENT (for SHOW CONTROL, SAT & SUB PATCH)  
 PROVIDED by MOMENT FACTORY (for LX/AUDIO/VDO FIXTURE & DEVICE)

USE	PICTURE	TYPE	BRAND/PRODUCT No.	TECHNICAL INFORMATION	MOUNTING PLATE
<b>NETWORK</b>		<b>RJ45</b>	<b>SEETRONIC SE8FDNH-13</b>	<ul style="list-style-type: none"> <li>· RJ45 for rough and harsh environment</li> <li>· New design with zinc alloy cast housing and thread</li> <li>· Unique Clip-on type fixture</li> <li>· Be used in many commercial applications, can protect the RJ45 connector, designed to prevent damage to the RJ45 standard connector fragile components</li> <li>· RJ45 receptacle, with feedthrough</li> </ul>	 <p><b>Middle Atlantic Products</b>                  (OR EQUIVALENT)  <b>UNIVERSAL CONNECTOR PANEL</b>  <b>1u. RACKMOUNT</b>                  D Shape Laser-cut Knockouts</p>
<b>DMX</b>	<b>S-CTRL</b>		<b>XLR 5-pin male</b> <b>SEETRONIC MJ5F2C-B</b>	<ul style="list-style-type: none"> <li>· 5pin chassis female connector, housing with black plated and silver contact</li> <li>· Optimal RF protection using 3 shield contact (silver contact)</li> <li>· "D" shape mountable from the front or rear of the panel, quick lock</li> </ul>	
	<b>SUB/SAT</b>		<b>XLR 5-pin female</b> <b>SEETRONIC MK5F2C-B</b>	<ul style="list-style-type: none"> <li>· 5pin chassis female connector, housing with black plated and silver contact</li> <li>· Optimal RF protection using 3 shield contact (silver contact)</li> <li>· "D" shape mountable from the front or rear of the panel, quick lock</li> </ul>	
<b>SPEAKER</b>		<b>SL4 female</b> <b>SEETRONIC SL4MP</b>	<ul style="list-style-type: none"> <li>· 4 pin loudspeaker chassis connector</li> <li>· Glass reinforced materials make it extremely robust and dependable</li> <li>· Precise keyway for secure mating</li> <li>· Accurate twist lock latching system</li> <li>· Metal front plate or metal insert in locking area</li> <li>· Air tight design - optimized for speaker applications</li> <li>· D panel cutouts to be easily mounted on audio industry standard panels</li> </ul>		
<b>POWER</b>		<b>POWERKON power out</b> <b>SEETRONIC SAC3MPX + CNAC-MPX (cover)</b>	<ul style="list-style-type: none"> <li>· New design lockable 3 pin equipment (AC) connector with contacts for line, neutral and pre-mating safety ground</li> <li>· Use for outdoor, can be achieve Ip65</li> <li>· High current capacity, rated at 16A/250V AC</li> <li>· Fast and easy locking system</li> <li>· Extremely robust and reliable</li> <li>· UL recognized components (file NO. E356932)</li> <li>· cable chasis connector, power out, matched with SAC3FX, IP 65</li> </ul>		
<b>FIBRE</b>	<b>SUB/SAT</b>		<b>LC-Duplex female</b> <b>NEUTRIK NO2-4FDW-1-A + NDO (dummyPLUG)</b>	<p><b>ELECTRICAL</b>                      Contact resistance &lt; 7 mΩ                      Dielectric strength 1.5 kV/dc                      Insulation resistance &gt; 2 GΩ (initial)                      Rated current per contact 6 A                      Rated voltage &lt; 50 V (1)                      Ground contact Faston 2.8 x 0.5 (soldering possible)</p> <p><b>MECHANICAL</b>                      Insertion force &lt; 45 N                      Withdrawal force &lt; 45 N                      Lifetime &gt; 5000 mating cycles                      Locking force 1000 N</p> <p><b>WIRESIZE</b>                      Locking device Push-Pull                      Mounting direction Front mounting                      Chassis shape D</p> <p><b>MATERIAL</b>                      Contacts Bronze (CuSn6)                      Insert Polyamide (PA 6, PBT 30 % GR, PBT 50 % GR)                      Shell Zinc diecast (ZnAl4Cu1)                      Shell plating Black chromium                      Split sleeve ceramics</p> <p><b>ENVIRONMENTAL</b>                      Temperature range -40 °C to +75 °C</p> <p><b>OPTICAL</b>                      Insertion loss &lt; 0.4 dB / connection                      Optical connector LC-Duplex Feedthrough</p>	
	<b>S-CTRL</b>		<b>LC-Duplex Couplers (on a plate)</b> <b>GENERIC BRAND</b>	12 Port LC Fibre Patch Panel Multimode 1u. Rackmount Plate 12x Duplex LC Couplers	

**NOTE:**

- ALL CONNECTOR TYPES, CABLE TYPES AND LENGTHS SHOULD BE VALIDATED BY A PROFESIONNAL AV INSTALLER/ELECTRICIAN.
- INITIAL DESIGNS ARE FOR DISCUSSION ONLY. APPROVAL AND COMMENTS OF ELECTRICAL MANUFACTURERS/ SPECIALISTS REQUIRED. DESIGNS/ CIRCUITS/ WIRING WILL VARY BASED ON PROVIDER.
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**TTZ19**  
**LUMINA TORONTO ZOO**  
 Toronto Zoo


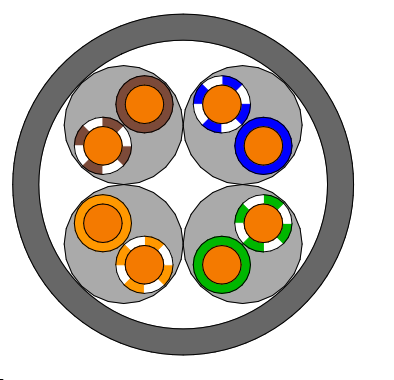

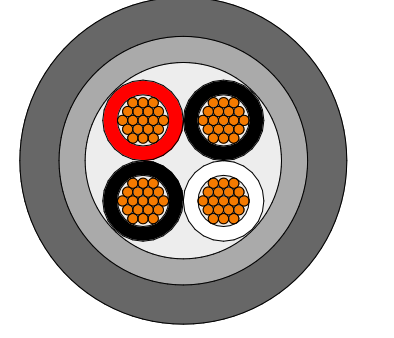

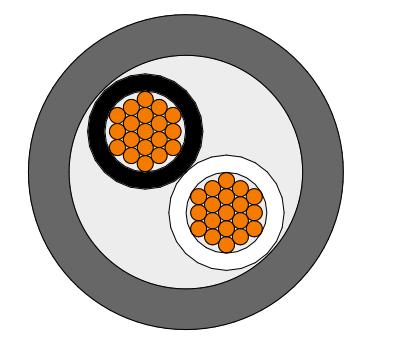
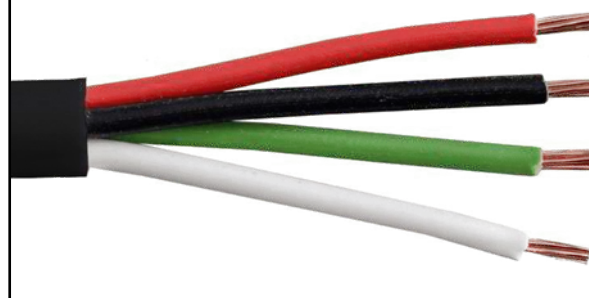
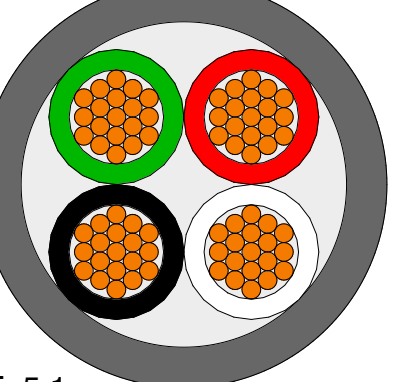

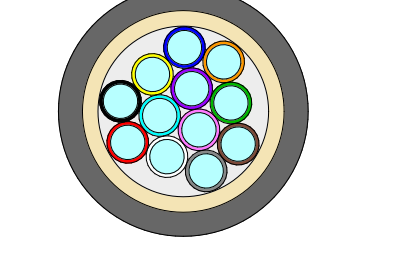
**MOMENT FACTORY**  
 6250 AVENUE DU PARC  
 MONTREAL, QC, CANADA H2V 4H8  
 T 514.843.8433 / F 514.843.8891  
 www.momentfactory.com

TECHNICAL DIRECTOR Dominic Rivard-Proulx	REVISION	DATE	DESCRIPTION	LAYOUT	REVISION DATE 2019-08-08
ASS. TECHNICAL DIRECTOR Alexandre Dion-Proulx					SCALE 1" = 70' (1:840)
SENIOR INTEGRATOR Paul Chinnery					PAPER ANSI D (22" x 34")
DRAFTER Joe Drafter					REVISION <b>v2r03</b>
DRAWING NUMBER MP_T12_TechDionProulx_v03a_MD-TS-1				CONNECTORS TECHNICAL SPECIFICATIONS	



# CABLES

PROVIDED by CLIENT (for SHOW CONTROL, SAT & SUB PATCH)  
 PROVIDED by MOMENT FACTORY (for LX/AUDIO/VDO FIXTURE & DEVICE)

USE	PICTURE	BRAND/PRODUCT No.	DESCRIPTION	FEATURES	TECHNICAL INFORMATION	DIAMETER O.D.	CROSS-SECTION	
<b>CAT6</b>		<b>BELDEN OSP6AU</b>	Multi-Conductor Category 6A Outside Plant Cable	<ul style="list-style-type: none"> <li>• Category 6A (500MHz)</li> <li>• 4-Unbonded-Pair</li> <li>• Outside Plant Cable</li> <li>• 23 AWG Solid Bare Copper Conductors</li> <li>• PO Insulation</li> <li>• Patented X-spline Technology</li> <li>• Gel</li> <li>• Flooded</li> <li>• Inner Polyolefin Jacket</li> <li>• EquiBlock Barrier Tape</li> <li>• Ripcord.</li> <li>• Outer Polyolefin Jacket</li> </ul>	<b>TEMPERATURE RANGE</b> Installation Temp Range: -40°C To +60°C Non-UL Temp Rating: +75°C Storage Temp Range: -40°C To +75°C Operating Temp Range: -40°C To +75°C  <b>MECHANICAL CHARACTERISTICS</b> Cold Bend Test: -40°C Compliance Per UL 1581 Bulk Cable Weight: 48 lbs/1000ft Max Recommended Pulling Tension: 25 lbs Min Bend Radius/Minor Axis: 3.75 in Min Bend Radius/Minor Axis: 3.0 in	<b>STANDARDS</b> NEC/UL Specification: N/A ISO/IEC Compliance: 11801 ed 2.2 (2011) Class EA CPR Euroclass: Fca Data Category: Category 6A ANSI Compliance: S-116-732-2013 Category 6A, ANSI/NEMA WC-66 Category 6A Telecommunications Standards: ANSI/TIA-568-C.2 Category 6A IEEE Specification: IEEE 802.3bt Type 1, Type 2, Type 3, Type 4 Other Specification: Outdoor Use ANSI/ICEA S-56-434, Broadband Outdoor Use ANSI/ICEA S-99-689, Verified Channel/Category 6A	0.355 in. 9.017 mm	 SCALE: 5:1
<b>DMX</b>		<b>BELDEN 9842NH</b>	Multi-Conductor RS485, #24-2pr, PO, O/A Foil+Braid,  LSZH Jkt, 120Ω	<ul style="list-style-type: none"> <li>• Computer EIA RS-485 Cable</li> <li>• 24 AWG stranded (7x32) tinned copper conductors</li> <li>• Polyethylene insulation</li> <li>• 2 twisted pairs</li> <li>• Overall Beldfoil® (100% coverage) + tinned copper braid shield (90% coverage)</li> <li>• 24 AWG stranded tinned copper drain wire, LSZH jacket</li> </ul>	<b>TEMPERATURE RANGE</b> Installation Temp Range: -15°C To +80°C UL Temp Rating: 80°C Storage Temp Range: -45°C To +80°C Operating Temp Range: -20°C To +80°C Operating Temp Range (Flexible Install): -15°C To +80°C Operating Temp Range (Fixed Install): -45°C To +80°C  <b>MECHANICAL CHARACTERISTICS</b> Oil Resistance: IEC 60811-4-04 Bulk Cable Weight: 49 lbs/1000ft Max Recommended Pulling Tension: 395 N Min Bend Radius During Installation: 66.5 mm Min Bend Radius/Minor Axis: 3.25 in	<b>STANDARDS</b> CPR Euroclass: Dca-s2,d2,a1 CENELEC Compliance: EN 50290-2-27	0.341 in. 8.650 mm	 SCALE: 5:1
<b>SPEAKER</b>		<b>BELDEN 8814 2 CONDUCTORS</b>	2 Conductors 14 AWG BC Unshielded CM	<ul style="list-style-type: none"> <li>• 2 Conductor 14 AWG stranded (19x26H) bare copper conductors</li> <li>• PVC/Nylon insulation</li> <li>• PVC jacket.</li> </ul>	<b>TEMPERATURE RANGE</b> Operating Temp Range: -30°C To +75°C Wet; -30°C To +90°C Dry Wet Temp Range: -30°C To +75 °C Dry Temp Range: -30°C To +90°C Dry  <b>MECHANICAL CHARACTERISTICS</b> Bulk Cable Weight: 55 lbs/1000ft Max Recommended Pulling Tension: 95 lbs Min Bend Radius/Minor Axis: 3.5 in	<b>STANDARDS</b> NEC/UL Specification: NPLF, TC, THHN/THWN Singles	0.328 in. 8.331 mm	 SCALE: 5:1
<b>SPEAKER</b>		<b>BELDEN 1312A 4 CONDUCTORS</b>	4 Conductors 12 AWG BC Unshielded CM	<ul style="list-style-type: none"> <li>• Outer Jacket Material: PVC - Polyvinyl Chloride</li> <li>• Nominal Diameter: 0.423 in</li> <li>• Nominal Conductor DCR: 1.6 Ohm/1000ft</li> <li>• Capacitance Conductor to Conductor: 22.3 pF/ft</li> <li>• Nominal Inductance: 0.15 µH/ft</li> <li>• Nominal Velocity of Propagation (VP) [%]: 66 %</li> <li>• Max. Recommended Current [A]: 18 Amps per conductor @ 25°C</li> <li>• UL Voltage Rating 300 V RMS</li> </ul>	<b>TEMPERATURE RANGE</b> UL Temp Rating: 75°C Operating Temp Range: -20°C To +75°C  <b>MECHANICAL CHARACTERISTICS</b> Bulk Cable Weight: 123 lbs/1000ft Max Recommended Pulling Tension: 304 lbs Min Bend Radius/Minor Axis: 4.25 in	<b>STANDARDS</b> NEC/UL Specification: CL3, CM CEC/C(UL) Specification: CM	0.423 in. 10.744mm	 SCALE: 5:1
<b>FIBRE</b>		<b>BELDEN FD3D012R9</b>	Fiber Distribution Cable Indoor / Outdoor Tight Buffer 12x OM3 OFNR Non-Unitized Fiber Color Coding: Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet, Pink, Aqua. Buffer: Thermoplastic 900µm Single Jacket Black Jacket	<ul style="list-style-type: none"> <li>• Effective Modal Bandwidth (EMB): 2000 MHz-km / 500 MHz-km</li> <li>• Fiber Core Diameter: 50/125µm</li> <li>• Max Attenuation at 1300 nm: 1.0 dB/km</li> <li>• Max Attenuation at 850 nm: 3.0 dB/km</li> <li>• Wavelength: 850 nm / 1300 nm</li> <li>• 10 Gigabit Ethernet Performance: 300 m / 300 m</li> <li>• 1 Gigabit Ethernet Performance: - / 550 m</li> <li>• Min Overfilled Launch (OFL) Bandwidth: 1500 MHz-km / 500 MHz-km</li> </ul>	<b>TEMPERATURE RANGE</b> Operating Temp Range: -40C to +70C Installation Temp Range: -20C to +70C Storage Temp Range: -40C to +70C  <b>MECHANICAL CHARACTERISTICS</b> Cable Min. Bend Radius Operation (Long Term) 20x Cable OD Cable Min. Bend Radius Installation (Short Term) 10x Cable OD Cable Max. Tensile Strength Operation (Long Term) 34 N (150 lbf) Cable Max. Tensile Strength Installation (Short Term) 17 N (75 lbf)	<b>STANDARDS</b> UL Rating/Plume Test/Riser CEC/C(UL) Specification: OFNR Telecommunications Standards: ANSI/ICEA S-104-696 RoHS: Yes	0.260 in. 6.6 mm	 SCALE: 5:1

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<b>TTZ19</b> LUMINA TORONTO ZOO Toronto Zoo	<b>MOMENT FACTORY</b> <small>6250 AVENUE DU PARC                  MONTRÉAL, QC H3A 4H8                  T 514.363.8433 / F 514.443.8891                  www.momentfactory.com</small>	TECHNICAL DIRECTOR Dominic Rivard-Proulx	REVISION	DATE	DESCRIPTION	LAYOUT CABLES TECHNICAL SPECIFICATIONS	REVISION DATE 2019-08-08
		ASS. TECHNICAL DIRECTOR Alexandre Dion-Proulx					SCALE 1" = 70' (1:840)
		SENIOR INTEGRATOR Paul Chinnery				PAPER ANSI D (22" x 34")	REVISION v2r03
		DRAFTER Joe Drafter				DRAWING NUMBER MF_T12_TechDoc/NFA_v03a_MO-TS-2	<b>TS-2</b>

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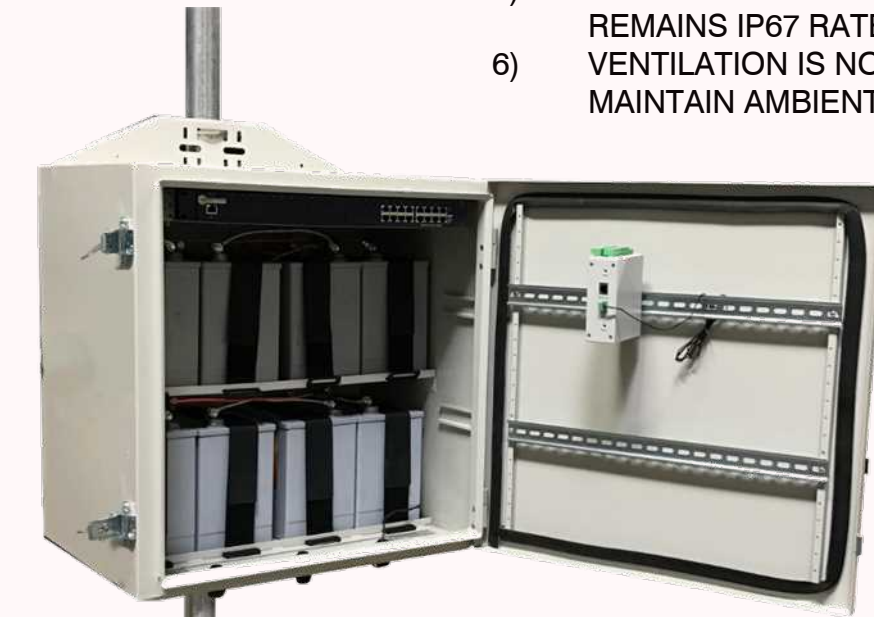
# RACKS & ENCLOSURES

PROVIDED by CLIENT (Pink)  
PROVIDED by MOMENT FACTORY (Green)

**SUB-PATCH (S-M-L)**

## TYCON Systems ENC-STL-24x24x16

Weatherproof Nema 4X / IP65, UV resistant, outdoor enclosures  
Ventilated, Gasket Sealed and Lockable Using Padlocks  
1U 19" Rackmount Shelf  
Two Battery Shelves, Can Hold up to 400Ah of Battery  
Built in Mounting for DIN Rails on Inside Door and Back  
Built in DIN Rails  
Weatherproof Cable Feedthru  
Thermostatically Controlled Ventilation  
Wall and Pole Mountable (Includes Mounting Hardware)



**OUTDOOR ENCLOSURE**

**CRITERIA**

- 1) FIT THE CONTENTS WITH SOME LOOSE SPACE;
- 2) COMPLY TO IP67 RATING;
- 3) CONTENT A DIN RAIL SYSTEM;
- 4) CABLE ACCESS AT THE BOTTOM
- 5) CABLE ACCESS MUST BE SEALED SO THE ENCLOSURE REMAINS IP67 RATED.
- 6) VENTILATION IS NOT REQUIRE BUT A DIN RAIL HEATER IS TO MAINTAIN AMBIENT TEMPERATURE ABOVE 0°C.

**NOTE:**

- ALL EQUIPMENT AND INSTALLATION MUST BE SUITABLE AND RATED FOR A RELIABLE OPERATION IN WINTER CONDITION.
- ALL RACK AND ENCLOSURE DESIGN/BRAND/MODELS ARE ONLY RECOMMENDATIONS. EQUIVALENT OR ACCURATE ALTERNATIVES CAN BE ACCEPTABLE BUT APPROVED by MOMENT FACTORY.
- ALL EQUIPMENT LAYOUT MUST BE APPROVED by MOMENT FACTORY.
- APPROVAL AND COMMENTS OF ELECTRICAL MANUFACTURERS/ SPECIALISTS REQUIRED.

**SAT-PATCH**

## DDB UNLIMITED OD-30DDXC

0.125" Aluminum Construction  
Stainless Steel External Hardware/Hinge  
3 Point Lock System  
Heavy Duty Out-Door Construction  
Front and Rear Access  
Custom Colors Available  
Cream & Red Powder-Coat in Stock  
Flexible and Scalable  
15 Year Warranty  
Quick Shipping  
Approximate Exterior Enclosure Dimensions:  
32"H x 28"W x 47"D  
Shipping Dimensions:  
32"W x 52"L - Palletized  
Approximate Shipping Weight:  
164 lbs.



**15u. OUTDOOR RACKMOUNT ENCLOSURE**

\*PROVIDE A CLIMATE CONTROL SYSTEM AND AN OUTDOOR ELECTRIC BREAKER BOX ATTACHED ON THE SIDE OF THE ENCLOSURE. THE CLIMATE CONTROL SYSTEM MUST BE OPERATIONAL ALL YEAR-AROUND.

## IA ENCLOSURES RCB1112BK15

4U ADJUSTABLE DEPTH  
RACKMOUNT DIN RAIL PANEL  
Rack Space Height 4U  
Din Rail Size 35mm (W) x 7.5mm (H) x 398mm (L)  
PVC Wire duct Size 60mm (W) x 25mm (H) x 398mm (L)  
PVC Wire Management duct Included 2  
Panel Depth Adjustable Yes  
Din Rail height Adjustable Yes  
Max Load Capacity for panel 150LB Max.  
Gross Weight 10 LB  
Dimension W x H x D 18.82" (480.56mm) x 7" (177.8mm) x 9.84" (250mm)



**DIN RAIL ENCLOSURE**

## Middle Atlantic HPM-8-915

GENERAL INFO  
Finish: Black Powder Coat  
Greenguard: Yes  
DIMENSIONS  
Usable Depth: 15  
Usable Height: 14  
Capacity Weight (US): 25  
Depth (US): 15  
Height (US): 14  
Width (US): 19.61  
Rack Units: 8  
TECHNICAL INFORMATION  
Rackrail Type: 10-32  
Static Load Capacity: 25  
Material: Steel  
Mounting: Horizontal



**AV PATCH PANEL MOUNT**

**SHOW CONTROL**

## Storstac 10 foot Portable Office Container

Size:  
10' L x 8' W x 8'6" H, Ground Access  
Electrical:  
120/240V, 100Amp, Single-Phase, 12 Circuit w/Panel,  
One (1) Fluorescent Ceiling Fixture,  
One (1) Light Switch,  
Four (4) Duplex Receptacles,  
Interior Phone/Data Jack Access, CSA Electrical Certified  
Heating & Cooling:  
One (1) 1500Watt Baseboard Heater c/w Thermostat,  
Window Mounted Air Conditioning Unit  
Exterior Finish:  
16 gauge Steel Corrugated Panels,  
Structural Steel Frame Marine Plywood Subfloor,  
All Corten Steel Construction

Windows & Doors:  
One (1) Insulated Slider Window w/Screen, Exterior Security Bars,  
One (1) 3' x 7' High-Security Steel Man Door,  
One (1) deadbolt, Hinges are countersunk & unexposed,  
Wind Check Chain  
Interior Finish:  
Insulated Walls & Ceiling, White, Flat Ceiling Panels,  
HDPE Laminated on 3/8 OSB Panels, Vinyl Floor Tiles

\*REFER TO PAGE TS-8 FOR A LAYOUT PROPOSAL.



**SHELTER**

## TRIPP-LITE SmartRack SR24UB

Factory Preset Rack Depth 71.9cm  
Factory Preset Rack Depth 719mm  
Maximum Device Depth 82.55cm  
Maximum Device Depth 826mm  
Minimum Device Depth 7.62cm  
Minimum Device Depth 76mm  
Rack Height 24U  
Shipping Dimensions H116.99 x W61.47 x D86.51cm  
Shipping Weight 68.95kg  
Unit Dimensions H115.82 x W60 x D85.09cm  
Unit Weight 55.79 kg  
Weight Capacity - Stationary 454kg



**24. RACKMOUNT ENCLOSURE**

## IA ENCLOSURES RCB1112BK15

4U ADJUSTABLE DEPTH  
RACKMOUNT DIN RAIL PANEL  
Rack Space Height 4U  
Din Rail Size 35mm (W) x 7.5mm (H) x 398mm (L)  
PVC Wire duct Size 60mm (W) x 25mm (H) x 398mm (L)  
PVC Wire Management duct Included 2  
Panel Depth Adjustable Yes  
Din Rail height Adjustable Yes  
Max Load Capacity for panel 150LB Max.  
Gross Weight 10 LB  
Dimension W x H x D 18.82" (480.56mm) x 7" (177.8mm) x 9.84" (250mm)



**DIN RAIL ENCLOSURE**

**PRELIMINARY CONCEPT**  
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**TTZ19**  
LUMINA TORONTO ZOO  
Toronto Zoo

**MOMENT FACTORY**

TECHNICAL DIRECTOR  
Dominic Rivard-Proulx  
ASS. TECHNICAL DIRECTOR  
Alexandre Dion-Proulx  
SENIOR INTEGRATOR  
Paul Chinnery  
DRAFTER  
Joe Drafter

REVISION	DATE	DESCRIPTION

LAYOUT  
**RACKS & ENCLOSURES**  
TECHNICAL SPECIFICATIONS

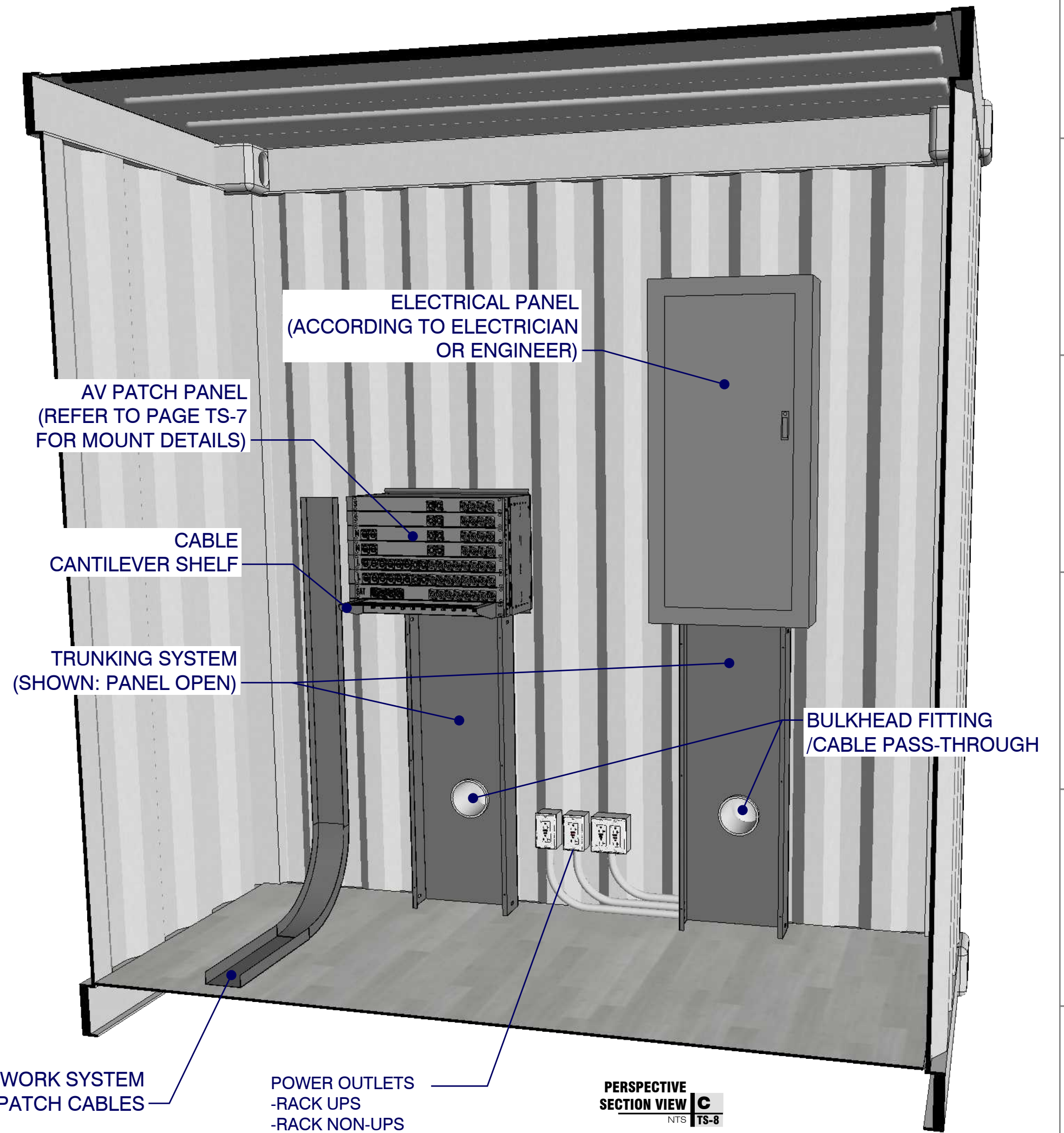
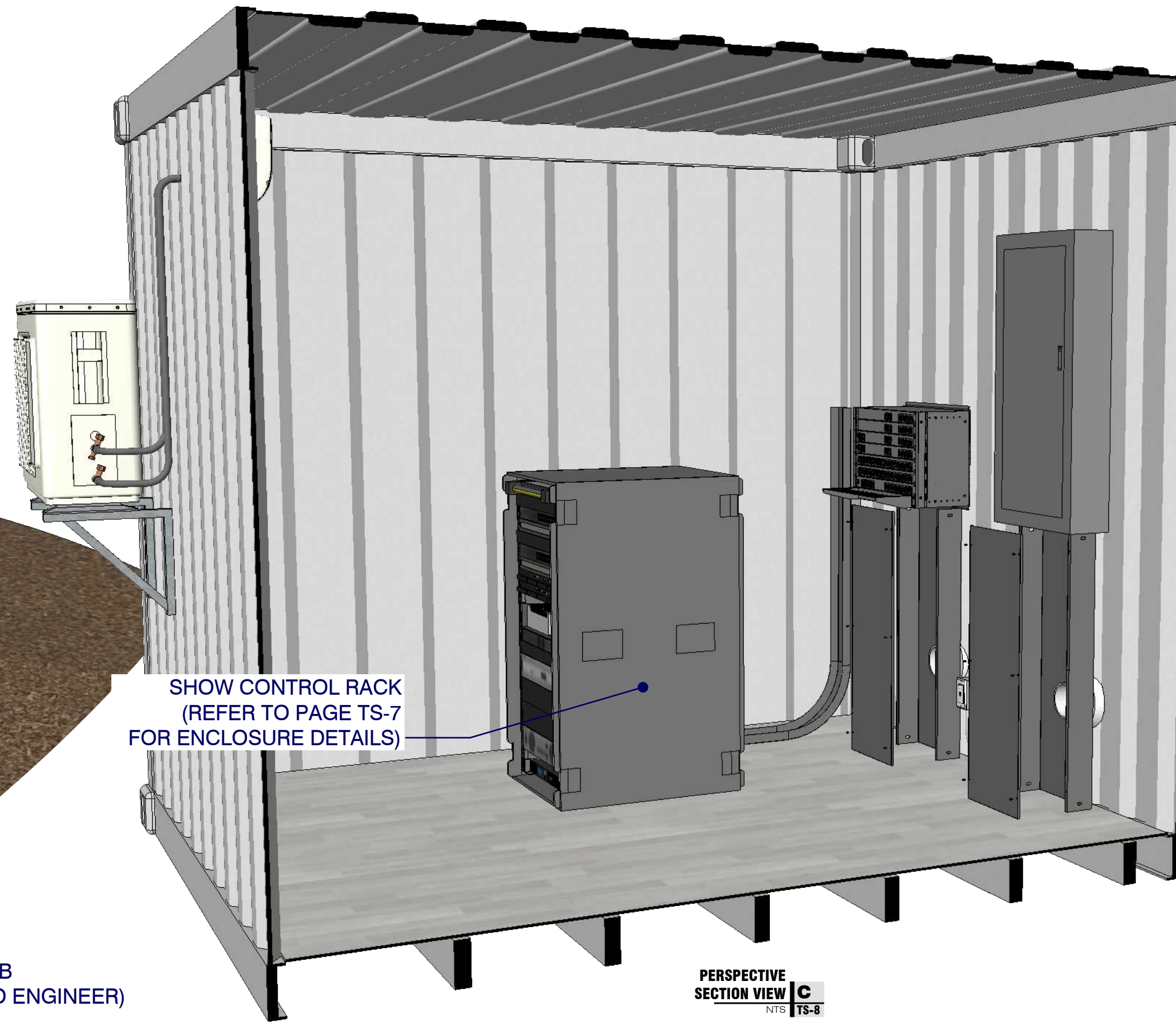
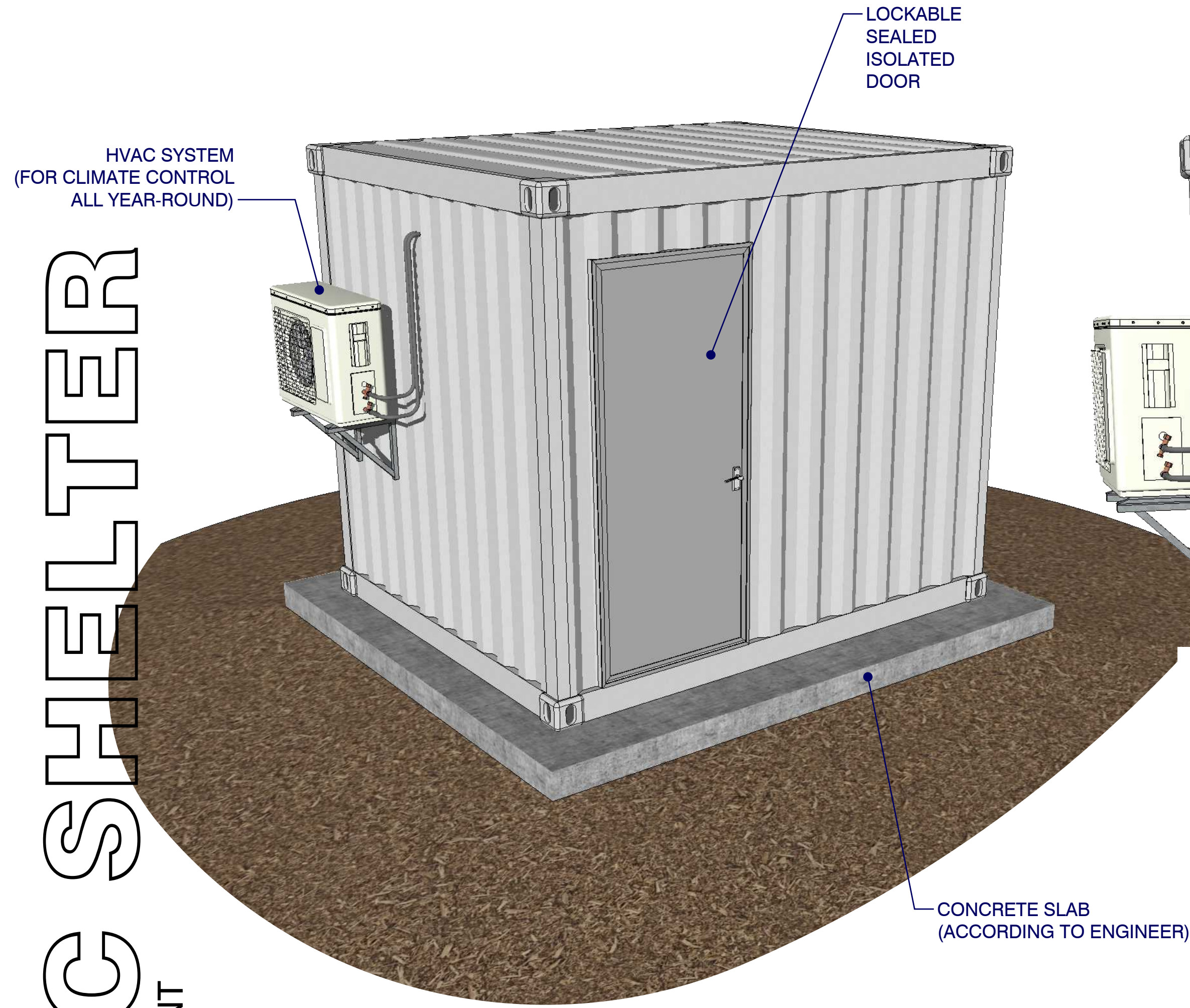
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MP\_T12\_TechDoc/NRA\_v003\_MD-TS-7

REVISION DATE  
2019-08-08  
SCALE  
1" = 70' (1:840)  
PAPER  
ANSI D (22" x 34")  
REVISION  
**v2r03**

**TS-7**

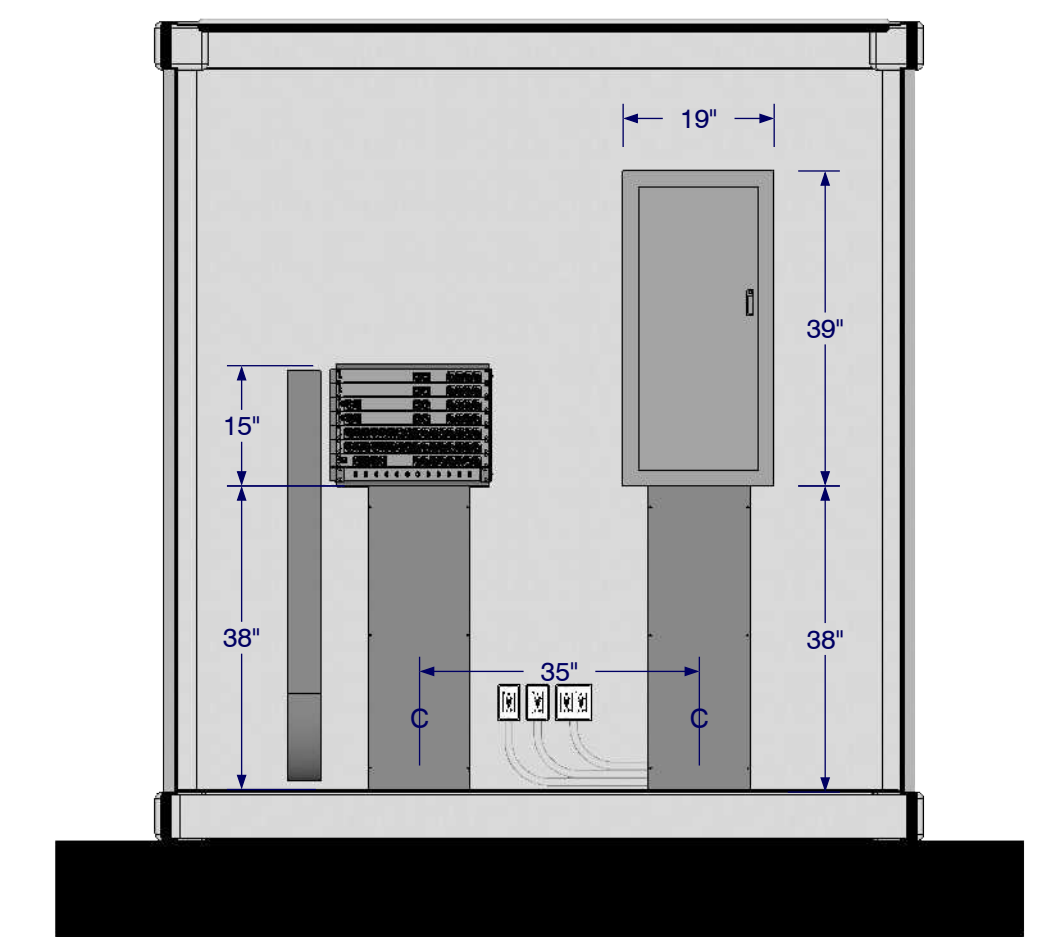
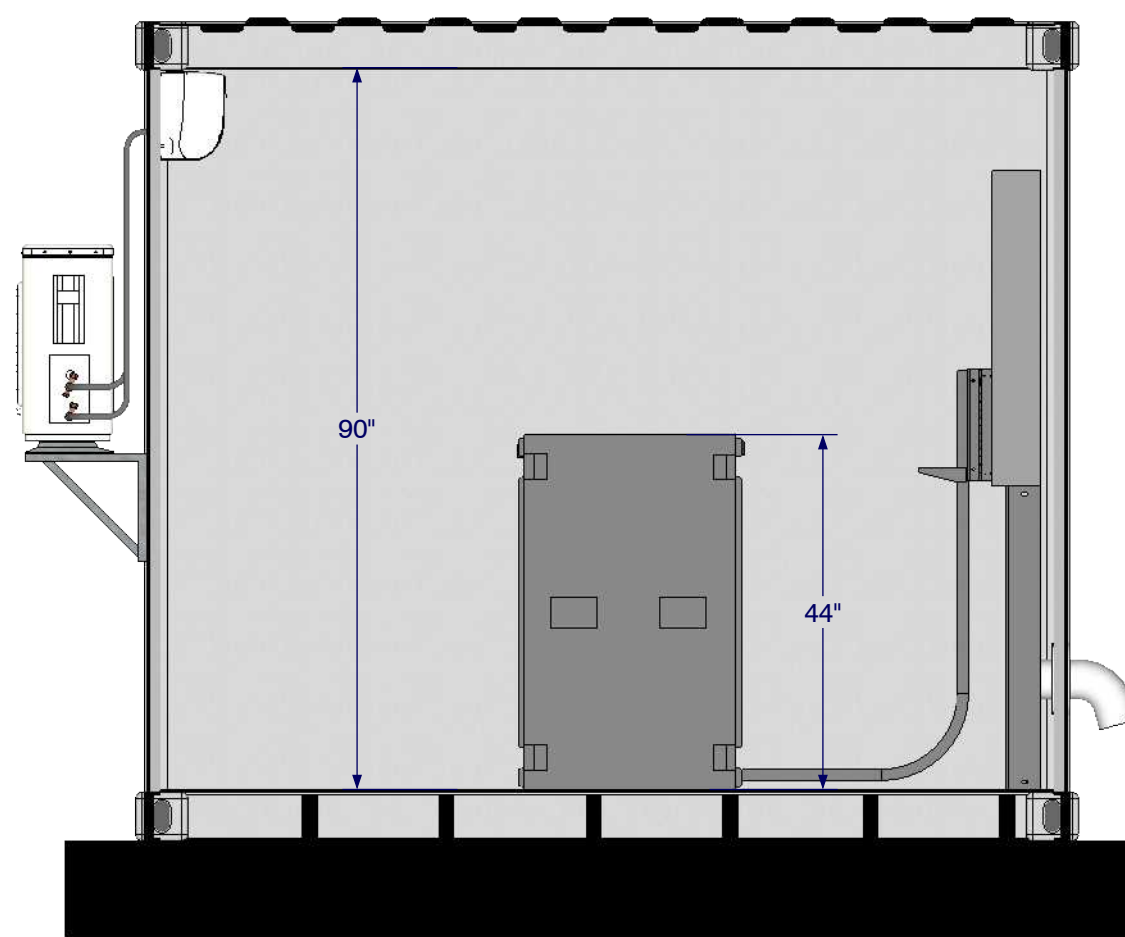
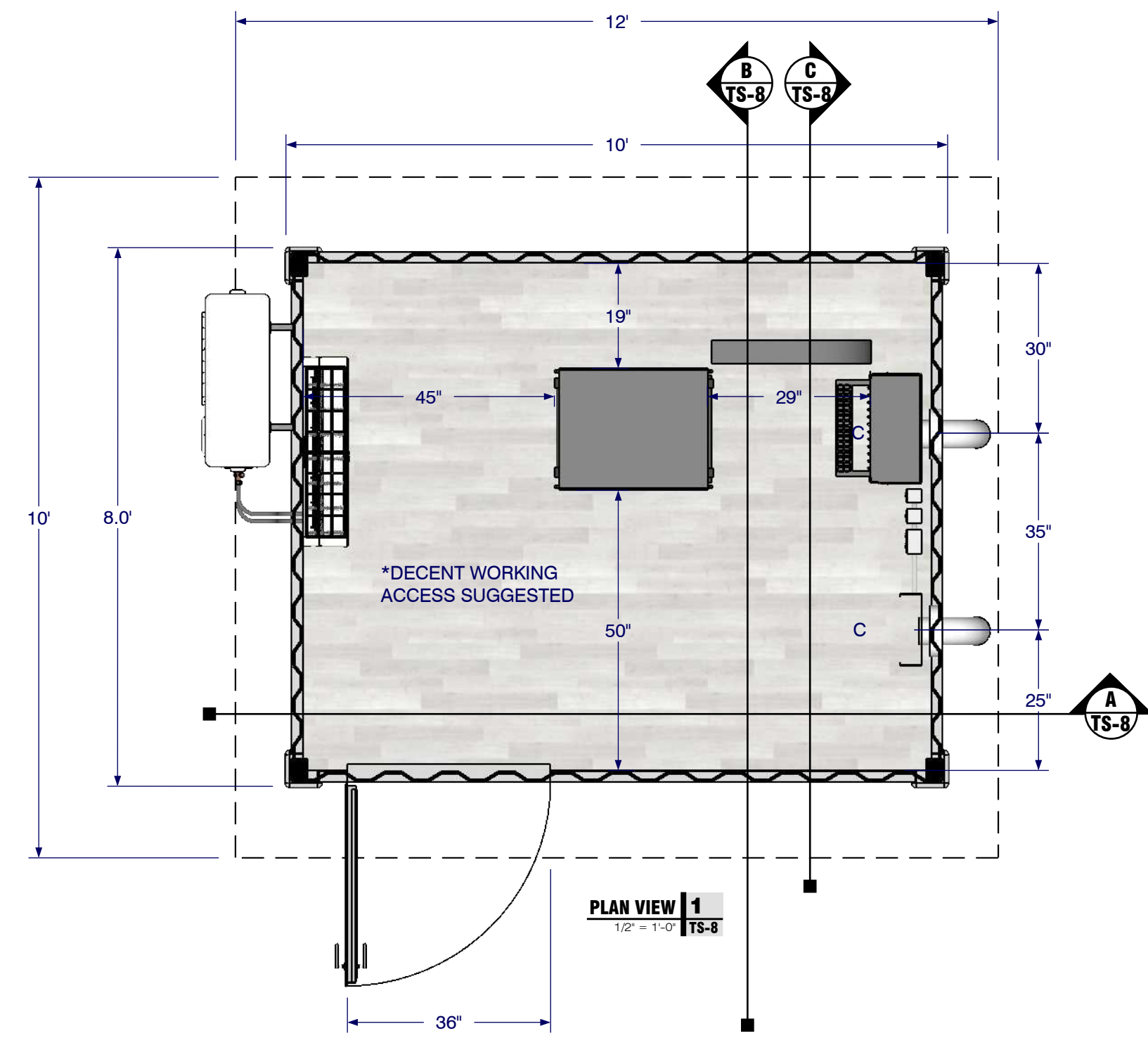
# GENERIC SHELTER

PROVIDED by CLIENT



### SHELTER LAYOUT vs BUILDING LAYOUT

THE EQUIPMENT DISPOSITION IN THIS SHELTER ALSO DEMONSTRATES THE IDEAL EQUIPMENT LAYOUT INTO AN EXISTING BUILDING. A DESCENT WORKING ACCESS, A LOCKABLE ACCESS AND ALL YEAR-ROUND CLIMATE CONTROL IS REQUIRED IN BOTH SITUATION.



NOTE:  
- ALL EQUIPMENT AND INSTALLATION MUST BE SUITABLE AND RATED FOR A RELIABLE OPERATION IN WINTER CONDITION.

**PRELIMINARY CONCEPT**  
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Toronto Zoo

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SENIOR INTEGRATOR  
Paul Chinnery  
DRAFTER  
Joe Drafler

REVISION	DATE	DESCRIPTION

LAYOUT  
GENERIC SHELTER DETAILS  
TECHNICAL SPECIFICATIONS

DRAWING NUMBER  
MP\_T12\_TechDocNFA\_v03a\_MD-TS-8

REVISION DATE  
2019-08-08  
SCALE  
1" = 70' (1:840)  
PAPER  
ANSI D (22" x 34")  
REVISION  
v2r03

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E F G H I J

# EURASIA WILDS

BUTTERFLY MEADOW

RED PANDA

BARBARY SHEEP

AMUR TIGER

EURASIA GIFT SHOP

KANGAROO

SPECIAL EVENTS CENTRE

CONSERVATION CLUBHOUSE

PORTABLE CLASSROOM

KIDS ZOO

# TUNDRA TREK

POLAR BEAR

REINDEER

ARCTIC WOLF

# AUSTRALASIA

TUNDRA AIR RIDE

SPLASH ISLAND

# DISCOVERY ZONE

WATERSIDE HOLDING

# AMERICAS

SNOW GOOSE

SNOWY OWL

WOLF

FOX

CAPRIOLI CAFE

AMERICAS PAVILION

PONY RIDE

EDUCATION CENTER ZOOLOGICAL GIFT SHOP

GREENHOUSE GIFT SHOP

EXIT


MEMBER & GUEST CENTRE

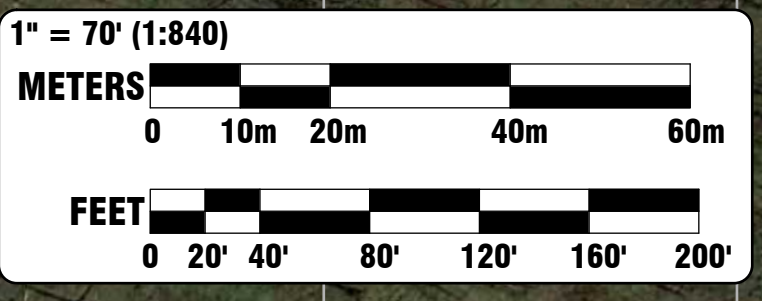
# INDO-MALAYA

INDIAN RHINO

WATUSI

**LEGEND**

 LUMINA PATH



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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**  
 6250 AVENUE DU PARC  
 WESTMONTREAL, QUEBEC H3W 4H8  
 TEL: 514.843.8833 / 514.843.8891  
 www.momentfactory.com

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 ASST. TECHNICAL DIRECTOR  
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 SENIOR INTEGRATOR  
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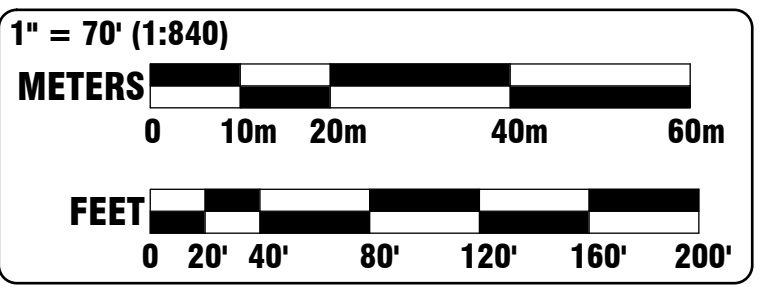
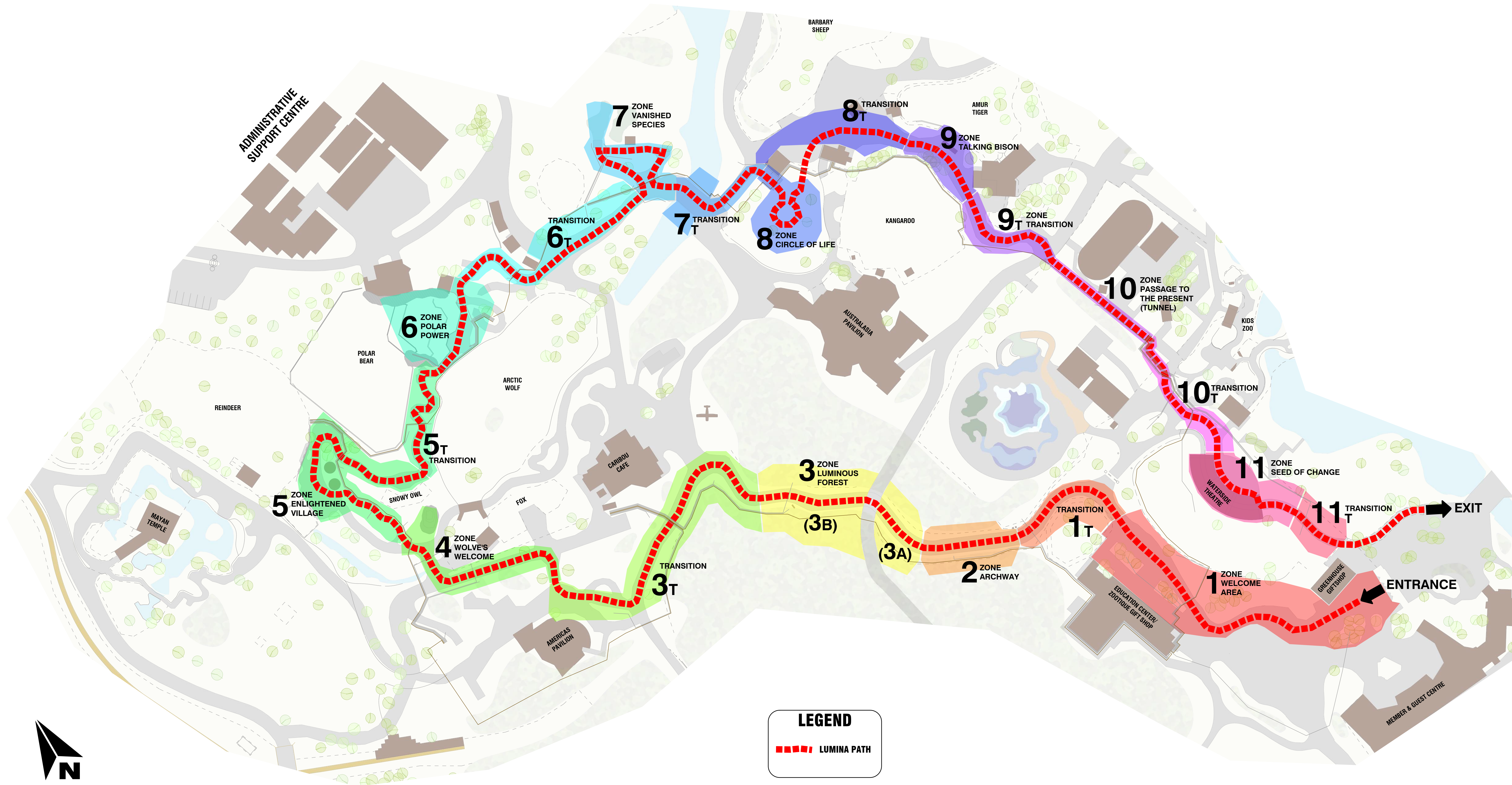
REVISION	DATE	DESCRIPTION

LAYOUT  
**ZOO ZONE MAP OVERALL**  
 DRAWING NUMBER  
 MF\_TTZ19\_WeekMap\_v0105\_MC-1

REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 70' (1:840)  
 PAPER  
 ARCH-D (24" x 36")  
 REVISION  
**v2:05**

**MO-1**

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**LEGEND**  
 LUMINA PATH

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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

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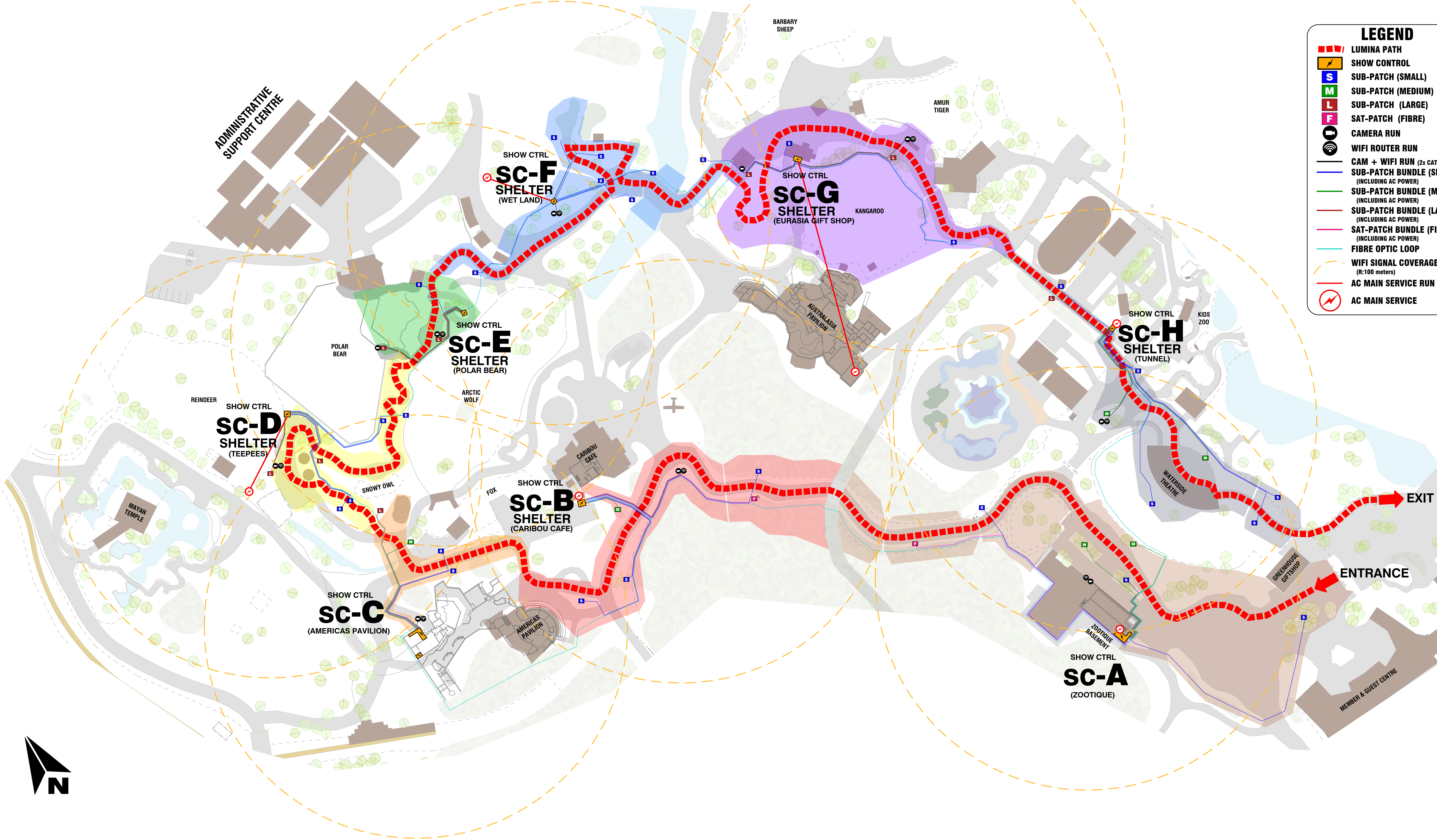
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 Alexandre Dion-Proulx  
 SENIOR INTEGRATOR  
 Paul Chirriery  
 DRAFTER  
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REVISION	DATE	DESCRIPTION

LAYOUT  
**CREATIVE ZONE MAP**  
 OVERALL  
 DRAWING NUMBER  
 MF\_TTZ19\_WorkMap\_v0105\_MC-2

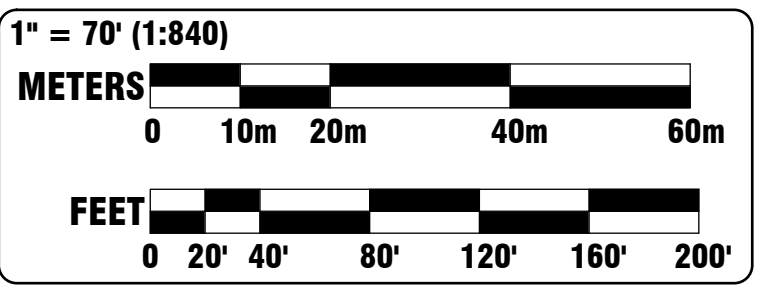
REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 70' (1:840)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2r05**

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**LEGEND**

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- WIFI SIGNAL COVERAGE (R:100 meters)
- AC MAIN SERVICE RUN
- AC MAIN SERVICE



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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

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 SENIOR INTEGRATOR  
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 DRAFTER  
 Joe Drafter

REVISION	DATE	DESCRIPTION

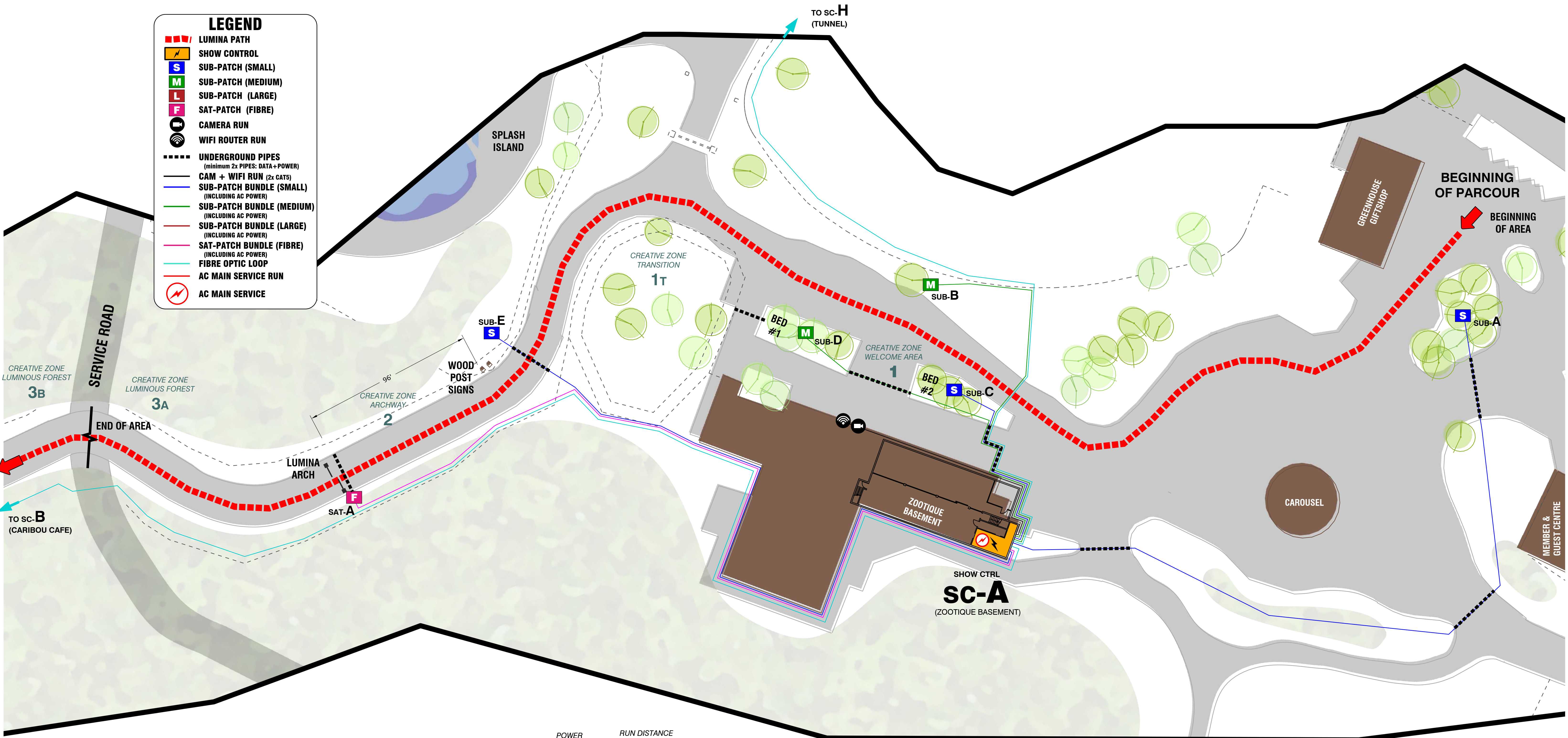
LAYOUT  
**SHOW CONTROL COVERAGE AREA MAP OVERALL**

REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 70' (1:840)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2:05**

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### LEGEND

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

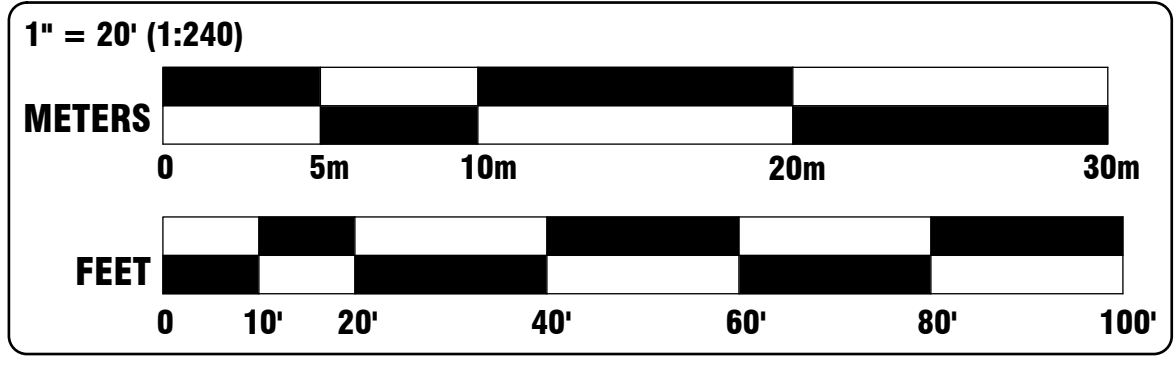


CABLE RUN	TYPE	POWER (RUN WITH IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
SC-A @ SC-B	FIBRE LOOP	None	1154	351.7
SC-A / SUB-A	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	430	131.1
SC-A / SUB-B	SUB-PATCH BUNDLE (SMALL)	2x 20A	229	69.6
SC-A / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	123	37.2
SC-A / SUB-D	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	201	61.1
SC-A / SUB-E	SUB-PATCH BUNDLE (SMALL)	2x 20A	441	134.4
SC-A / SAT-A	SAT-PATCH BUNDLE (FIBRE)	2x 20A	541	164.7
SC-A / CAM	CAMERA FEED	None	137	41.8
SC-A / WIFI	WIFI ROUTER FEED	None	137	41.8

MINIMUM CURRENT REQUIREMENT FOR SC-A: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

#### NOTES:

- TO AVOID INDUCTION, ALL ELECTRICAL AC MUST RUN IN A SEPARATED PIPE FROM DATA OR ALL OTHER TYPE OF SIGNAL.
- ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
- ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.



**PRELIMINARY CONCEPT**  
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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

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 Alexandre Dion-Proulx  
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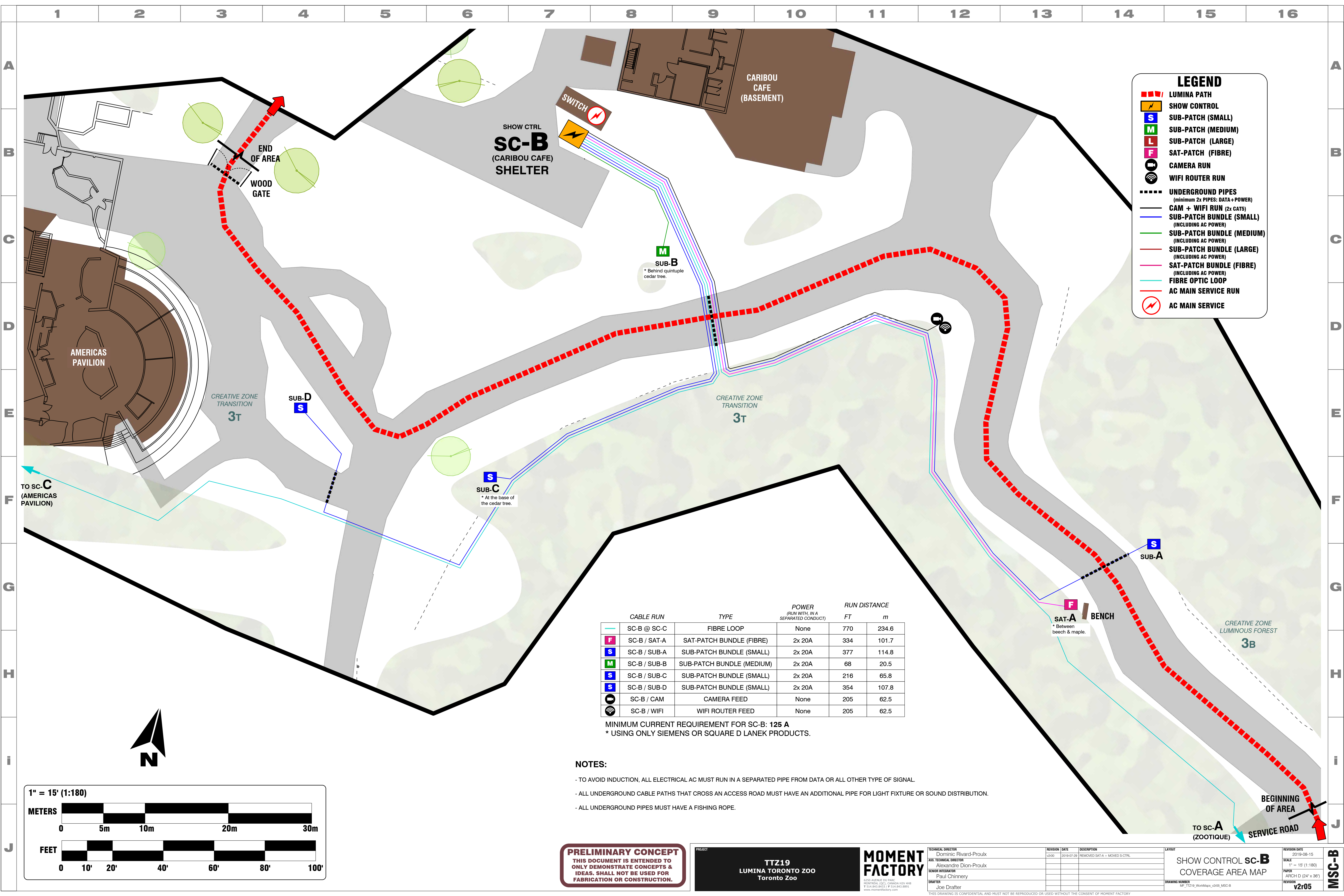
REVISION	DATE	DESCRIPTION
0200	2019-07-20	ADDED SUB-E + CHANGED SUB-B + SUB-D

LAYOUT  
**SHOW CONTROL sc-A**  
 COVERAGE AREA MAP  
 DRAWING NUMBER  
 MF\_TTZ19\_WireMap\_v205\_MSC-A

REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 20' (1:240)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2r05**

**MSC-A**

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### LEGEND

- ▬▬▬ LUMINA PATH
- SHOW CONTROL
- S SUB-PATCH (SMALL)
- M SUB-PATCH (MEDIUM)
- L SUB-PATCH (LARGE)
- F SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

CABLE RUN	TYPE	POWER <small>(RUN WITH IN A SEPARATED CONDUCT)</small>	RUN DISTANCE	
			FT	m
<span style="border-bottom: 1px solid cyan; width: 20px; display: inline-block;"></span> SC-B @ SC-C	FIBRE LOOP	None	770	234.6
<span style="border: 1px solid purple; padding: 2px;">F</span> SC-B / SAT-A	SAT-PATCH BUNDLE (FIBRE)	2x 20A	334	101.7
<span style="border: 1px solid blue; padding: 2px;">S</span> SC-B / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	377	114.8
<span style="border: 1px solid green; padding: 2px;">M</span> SC-B / SUB-B	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	68	20.5
<span style="border: 1px solid blue; padding: 2px;">S</span> SC-B / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	216	65.8
<span style="border: 1px solid blue; padding: 2px;">S</span> SC-B / SUB-D	SUB-PATCH BUNDLE (SMALL)	2x 20A	354	107.8
SC-B / CAM	CAMERA FEED	None	205	62.5
SC-B / WIFI	WIFI ROUTER FEED	None	205	62.5

MINIMUM CURRENT REQUIREMENT FOR SC-B: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

- NOTES:**
- TO AVOID INDUCTION, ALL ELECTRICAL AC MUST RUN IN A SEPARATED PIPE FROM DATA OR ALL OTHER TYPE OF SIGNAL.
  - ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
  - ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.

**1" = 15' (1:180)**

METERS 
0
5m
10m
20m
30m

FEET 
0
10'
20'
40'
60'
80'
100'

**PRELIMINARY CONCEPT**  
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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

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 ASST. TECHNICAL DIRECTOR  
 Alexandre Dion-Proulx  
 SENIOR INTEGRATOR  
 Paul Chirriery  
 DRAFTER  
 Joe Drafter

REVISION	DATE	DESCRIPTION
0200	2019-07-20	REMOVED SAT-A + MOVED S-CTRL

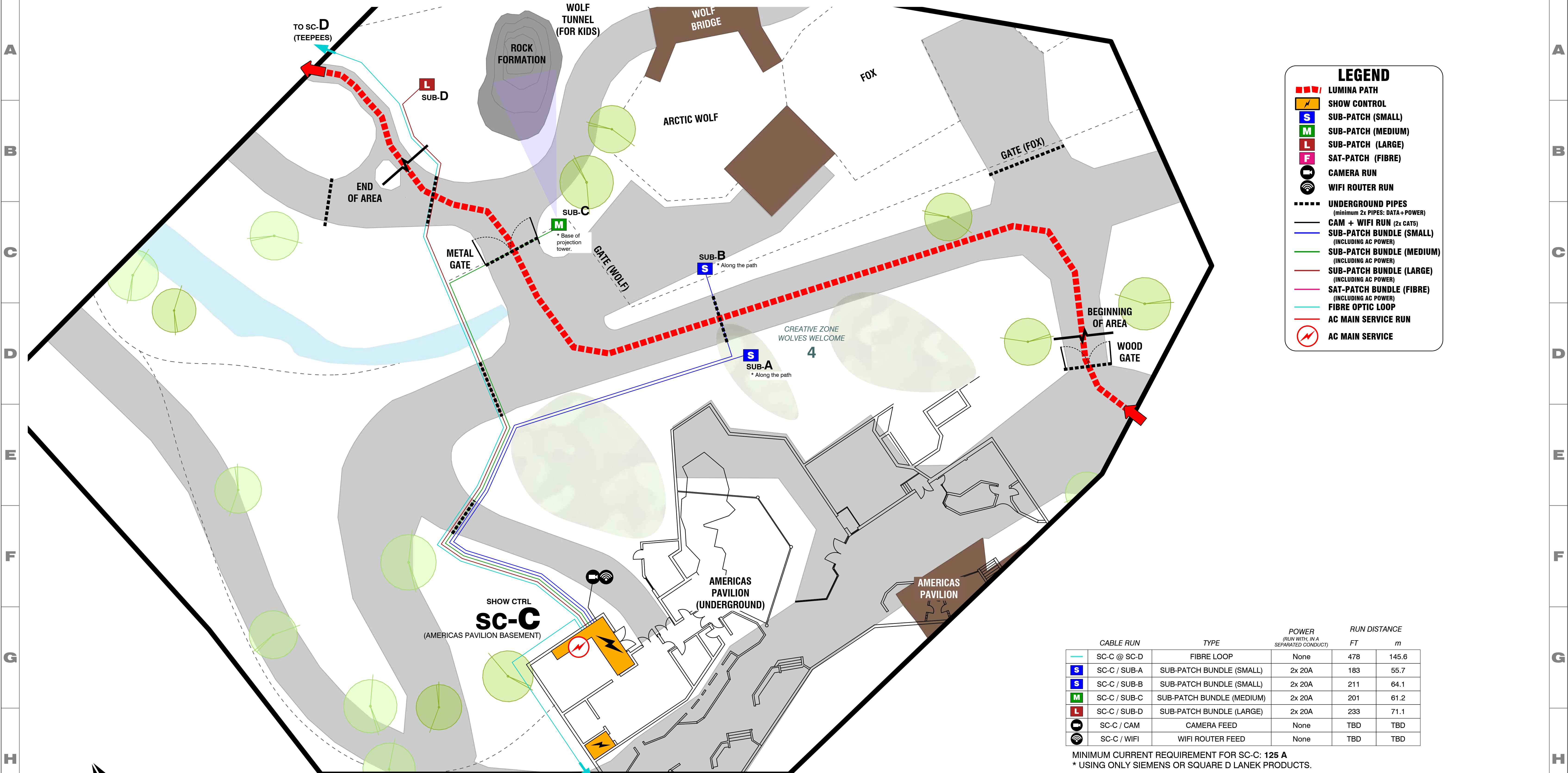
LAYOUT  
**SHOW CONTROL sc-B**  
 COVERAGE AREA MAP  
MP\_TTZ19\_1904Apr\_v0105\_MSC-B

REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 15' (1:180)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
 v2r05

**MSC-B**

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### LEGEND

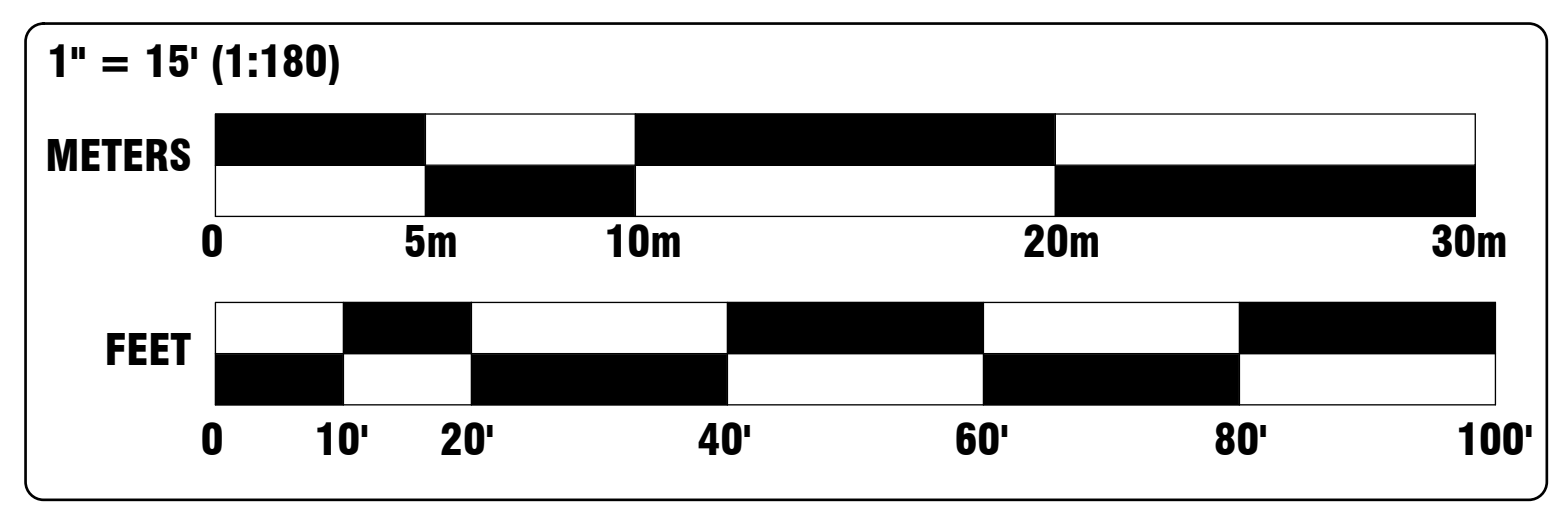
- ▬▬▬ LUMINA PATH
- SHOW CONTROL
- S SUB-PATCH (SMALL)
- M SUB-PATCH (MEDIUM)
- L SUB-PATCH (LARGE)
- F SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

CABLE RUN	TYPE	POWER (RUN WITH, IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
SC-C @ SC-D	FIBRE LOOP	None	478	145.6
<span style="border: 1px solid blue; padding: 2px;">S</span> SC-C / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	183	55.7
<span style="border: 1px solid blue; padding: 2px;">S</span> SC-C / SUB-B	SUB-PATCH BUNDLE (SMALL)	2x 20A	211	64.1
<span style="border: 1px solid green; padding: 2px;">M</span> SC-C / SUB-C	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	201	61.2
<span style="border: 1px solid red; padding: 2px;">L</span> SC-C / SUB-D	SUB-PATCH BUNDLE (LARGE)	2x 20A	233	71.1
SC-C / CAM	CAMERA FEED	None	TBD	TBD
SC-C / WIFI	WIFI ROUTER FEED	None	TBD	TBD

MINIMUM CURRENT REQUIREMENT FOR SC-C: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

**NOTES:**

- TO AVOID INDUCTION, ALL ELECTRICAL AC MUST RUN IN A SEPARATED PIPE FROM DATA OR ALL OTHER TYPE OF SIGNAL.
- ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
- ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.



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**MOMENT FACTORY**  
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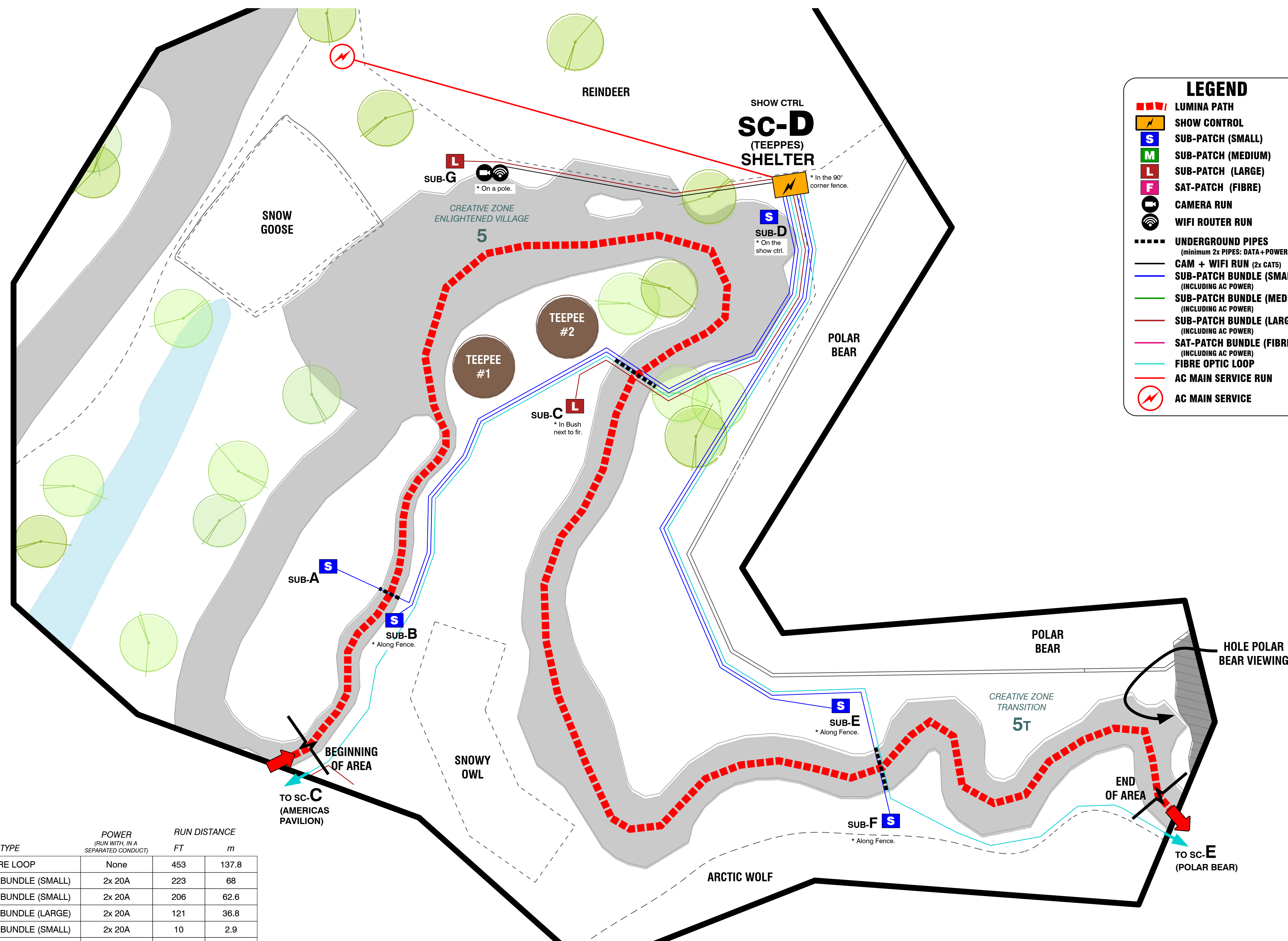
TECHNICAL DIRECTOR  
 Dominic Rivard-Proulx  
 ASST. TECHNICAL DIRECTOR  
 Alexandre Dion-Proulx  
 SENIOR INTEGRATOR  
 Paul Chirriery  
 DRAFTER  
 Joe Drafter

REVISION	DATE	DESCRIPTION
0200	2019-07-20	ACCDED SUB-D + CHANGED SUB-C

LAYOUT  
**SHOW CONTROL sc-C**  
 COVERAGE AREA MAP  
 DRAWING NUMBER  
 MF\_TTZ19\_1904Apr\_v0105\_MSC-C

REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 15' (1:180)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2r05**

**MSC-C**



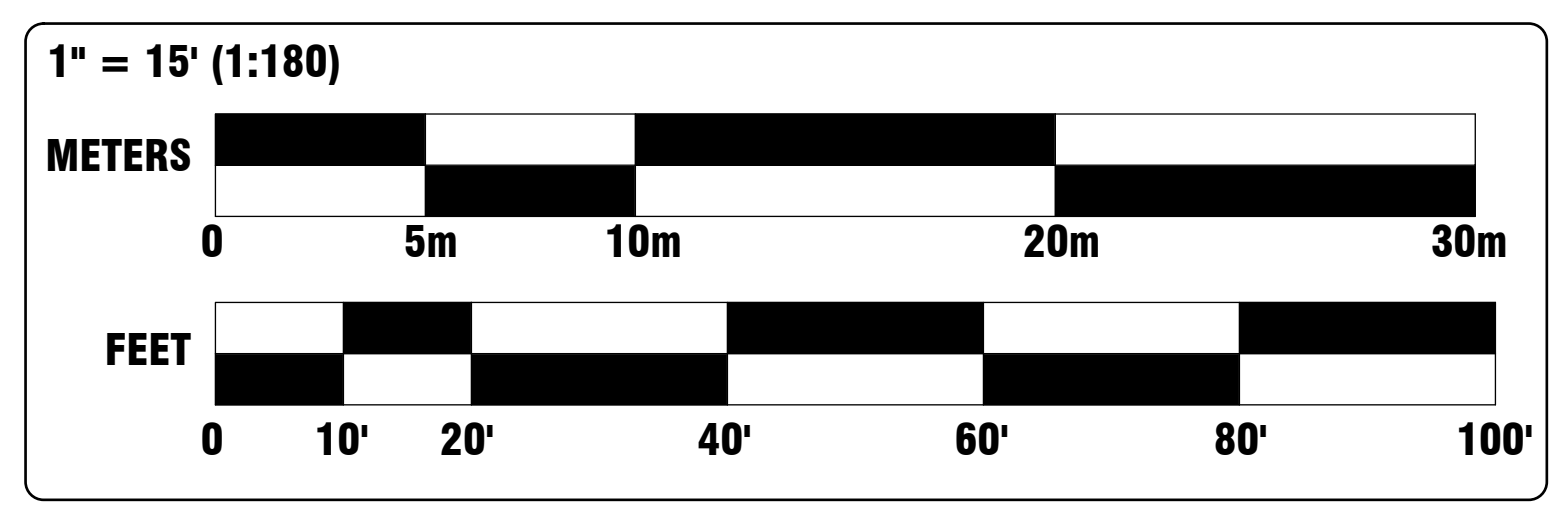
### LEGEND

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

CABLE RUN	TYPE	POWER (RUN WITH IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
—	SC-D @ SC-E	FIBRE LOOP	None	453 137.8
	SC-D / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	223 68
	SC-D / SUB-B	SUB-PATCH BUNDLE (SMALL)	2x 20A	206 62.6
	SC-D / SUB-C	SUB-PATCH BUNDLE (LARGE)	2x 20A	121 36.8
	SC-D / SUB-D	SUB-PATCH BUNDLE (SMALL)	2x 20A	10 2.9
	SC-D / SUB-E	SUB-PATCH BUNDLE (SMALL)	2x 20A	190 57.8
	SC-D / SUB-F	SUB-PATCH BUNDLE (SMALL)	2x 20A	234 71.1
	SC-D / SUB-G	SUB-PATCH BUNDLE (LARGE)	2x 20A	90 27.3
	SC-D / CAM	CAMERA FEED	None	81 24.5
	SC-D / WIFI	WIFI ROUTER FEED	None	81 24.5

MINIMUM CURRENT REQUIREMENT FOR SC-D: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

- NOTES:**
- TO AVOID INDUCTION, ALL ELECTRICAL AC MUST RUN IN A SEPARATED PIPE FROM DATA OR ALL OTHER TYPE OF SIGNAL.
  - ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
  - ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.



**PRELIMINARY CONCEPT**  
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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**

TECHNICAL DIRECTOR  
 Dominic Rivard-Proulx  
 ASST. TECHNICAL DIRECTOR  
 Alexandre Dion-Proulx  
 SENIOR INTEGRATOR  
 Paul Chiriney  
 DRAFTER  
 Joe Drafter

REVISION	DATE	DESCRIPTION
0200	2019-07-20	ADDED SUB-G + CHANGED SUB-C

LAYOUT  
**SHOW CONTROL sc-D**  
 COVERAGE AREA MAP  
 DRAWING NUMBER  
 MF\_TTZ19\_1904Mapr\_v0105\_MSC-D

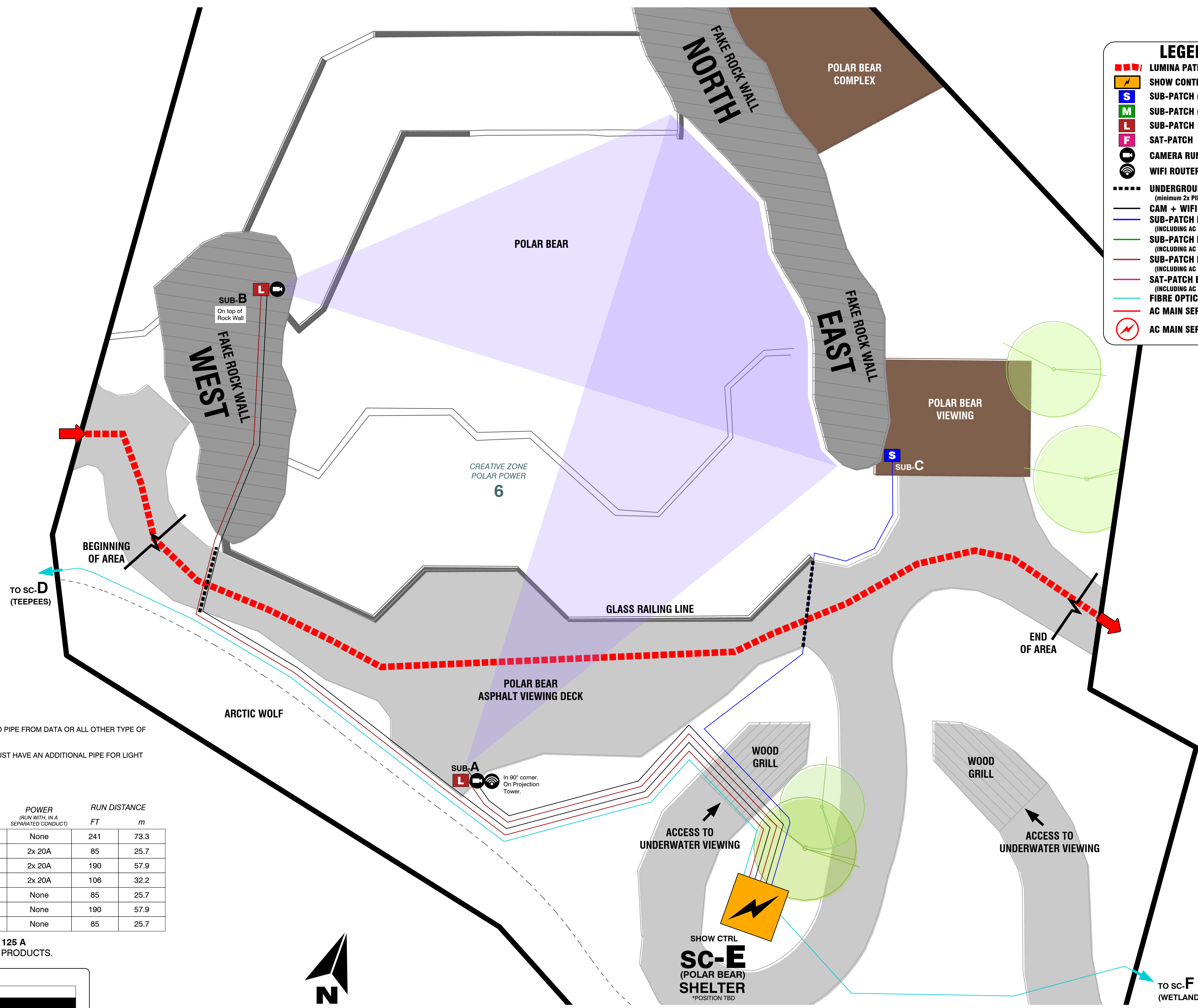
REVISION DATE  
 2019-08-15  
 SCALE  
 1" = 15' (1:180)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2r05**

**MSC-D**

THIS DRAWING IS CONFIDENTIAL AND MUST NOT BE REPRODUCED OR USED WITHOUT THE CONSENT OF MOMENT FACTORY

### LEGEND

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE

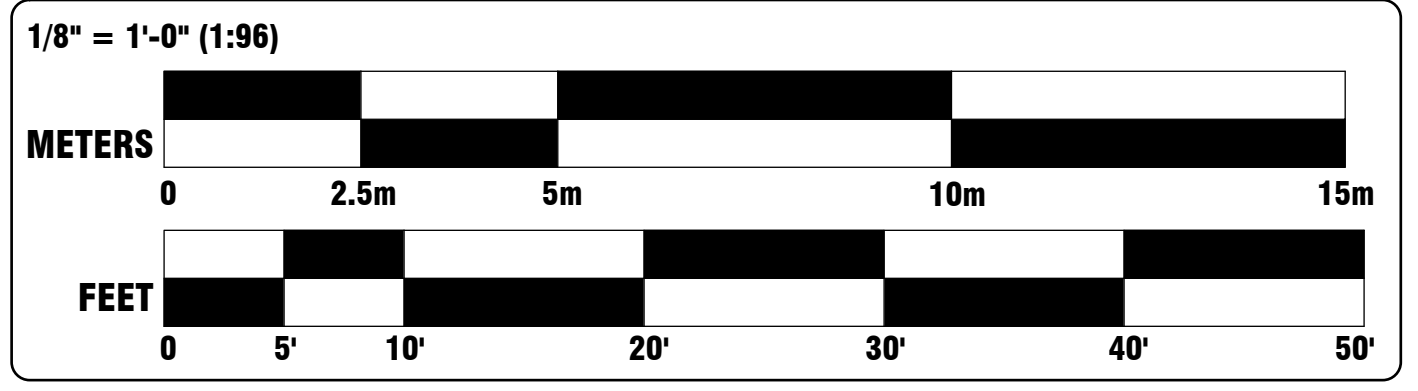


**NOTES:**

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- ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
- ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.

CABLE RUN	TYPE	POWER (RUN WITH IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
SC-E @ SC-F	FIBRE LOOP	None	241	73.3
SC-E / SUB-A	SUB-PATCH BUNDLE (LARGE)	2x 20A	85	25.7
SC-E / SUB-B	SUB-PATCH BUNDLE (LARGE)	2x 20A	190	57.9
SC-E / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	106	32.2
SC-E / CAM-A1	CAMERA FEED	None	85	25.7
SC-E / CAM-B2	CAMERA FEED	None	190	57.9
SC-E / WIFI	WIFI ROUTER FEED	None	85	25.7

MINIMUM CURRENT REQUIREMENT FOR SC-E: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.



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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**  
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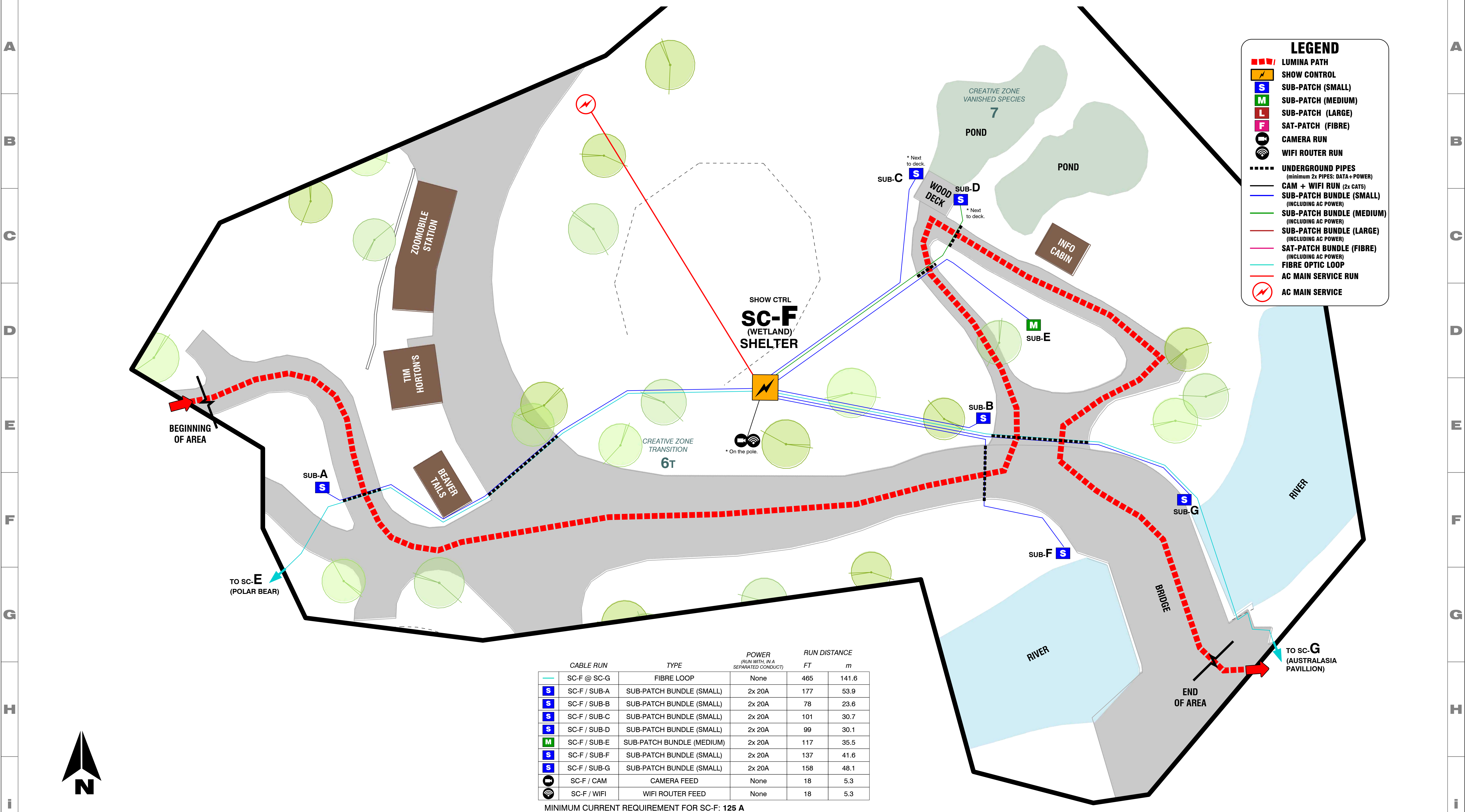
REVISION	DATE	DESCRIPTION
0200	2019-07-22	REMOVED OPTIONS A2 + B1

LAYOUT  
**SHOW CONTROL SC-E**  
 COVERAGE AREA MAP  
 DRAWING NUMBER  
 MF\_TTZ19\_WWWMap\_v205\_MSC-E

REVISION DATE  
 2019-08-15  
 SCALE  
 1/8" = 1'-0" (1:96)  
 PAPER  
 ARCH D (24" x 36")  
 REVISION  
**v2r05**

**MSC-E**

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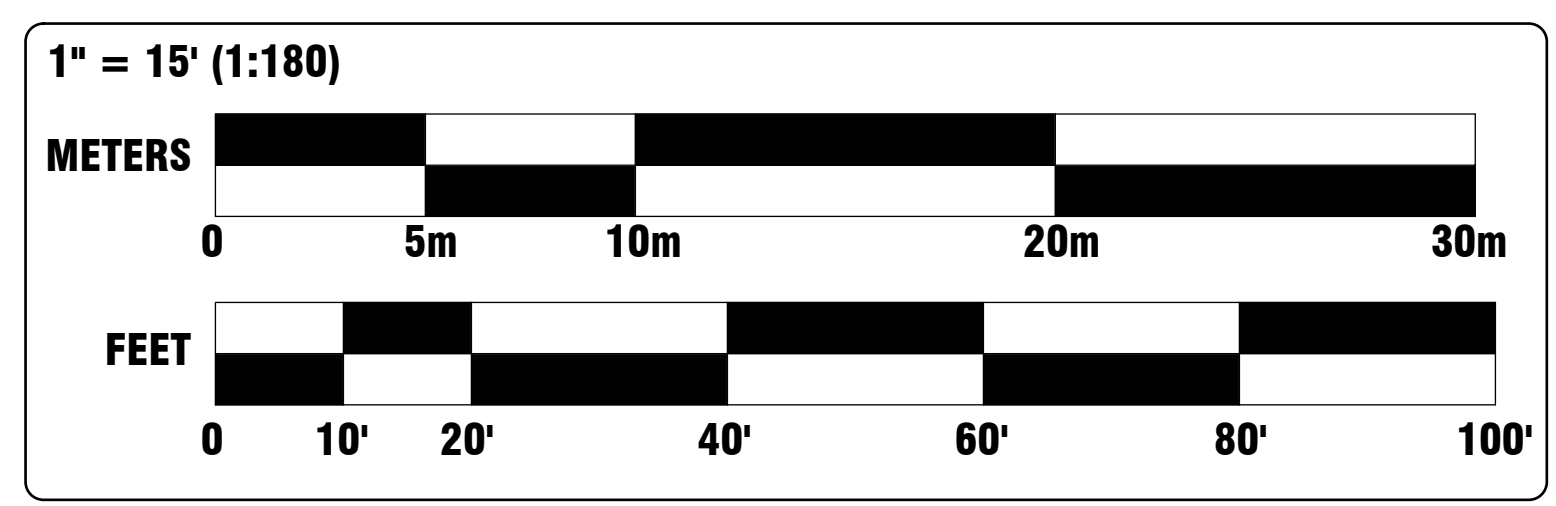
### LEGEND

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

CABLE RUN	TYPE	POWER (RUN WITH IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
— SC-F @ SC-G	FIBRE LOOP	None	465	141.6
SC-F / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	177	53.9
SC-F / SUB-B	SUB-PATCH BUNDLE (SMALL)	2x 20A	78	23.6
SC-F / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	101	30.7
SC-F / SUB-D	SUB-PATCH BUNDLE (SMALL)	2x 20A	99	30.1
SC-F / SUB-E	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	117	35.5
SC-F / SUB-F	SUB-PATCH BUNDLE (SMALL)	2x 20A	137	41.6
SC-F / SUB-G	SUB-PATCH BUNDLE (SMALL)	2x 20A	158	48.1
SC-F / CAM	CAMERA FEED	None	18	5.3
SC-F / WIFI	WIFI ROUTER FEED	None	18	5.3

MINIMUM CURRENT REQUIREMENT FOR SC-F: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

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  - ALL UNDERGROUND CABLE PATHS THAT CROSS AN ACCESS ROAD MUST HAVE AN ADDITIONAL PIPE FOR LIGHT FIXTURE OR SOUND DISTRIBUTION.
  - ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.



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**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**

TECHNICAL DIRECTOR: Dominic Rivard-Proulx  
 ASST. TECHNICAL DIRECTOR: Alexandre Dion-Proulx  
 SENIOR INTEGRATOR: Paul Chirriery  
 DRAFTER: Joe Drafter

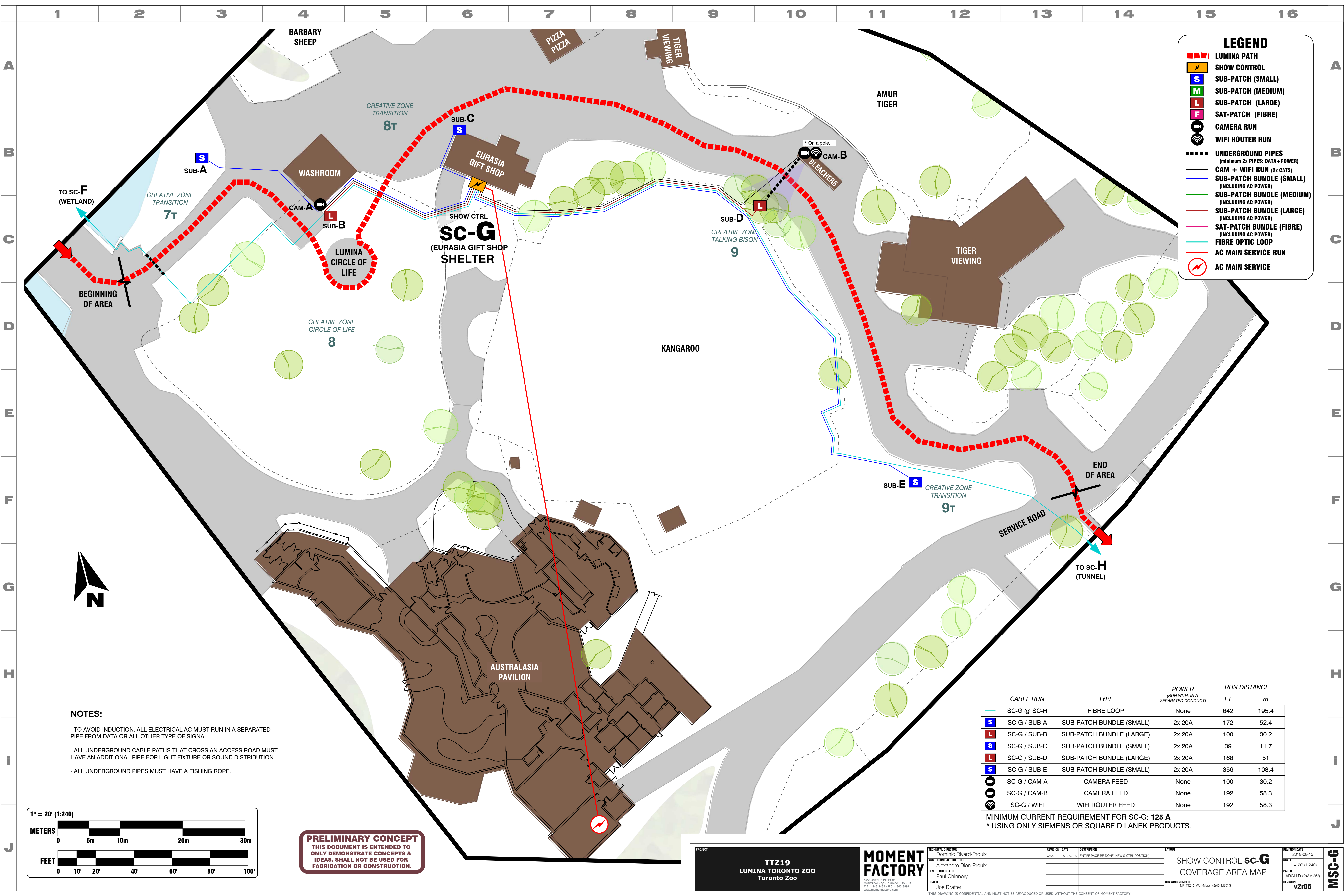
REVISION	DATE	DESCRIPTION
0100	2019-07-20	REMOVED SUB-D1 - SUB-E1 + MOVED SUB-B1
0200	2019-07-20	REMOVED SUB-D, E, F, G, H, I

LAYOUT: SHOW CONTROL **sc-F**  
 COVERAGE AREA MAP

REVISION DATE: 2019-08-15  
 SCALE: 1" = 15' (1:180)  
 PAPER: ARCH D (24" x 36")  
 REVISION: v2r05

**MSC-F**

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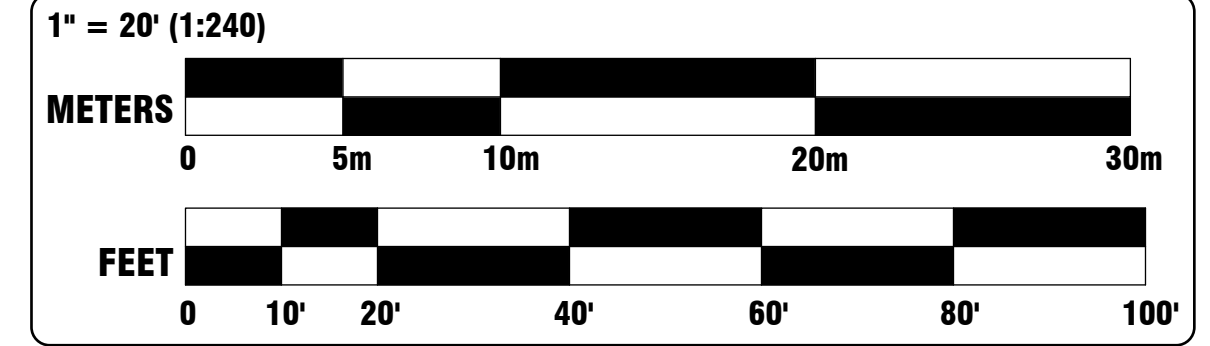


### LEGEND

- LUMINA PATH
- █ SHOW CONTROL
- S SUB-PATCH (SMALL)
- M SUB-PATCH (MEDIUM)
- L SUB-PATCH (LARGE)
- F SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE

**NOTES:**

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CABLE RUN	TYPE	POWER (RUN WITH, IN A SEPARATED CONDUCT)	RUN DISTANCE FT	RUN DISTANCE m
<span style="color: cyan;">---</span> SC-G @ SC-H	FIBRE LOOP	None	642	195.4
<span style="color: blue;">S</span> SC-G / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	172	52.4
<span style="color: red;">L</span> SC-G / SUB-B	SUB-PATCH BUNDLE (LARGE)	2x 20A	100	30.2
<span style="color: blue;">S</span> SC-G / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	39	11.7
<span style="color: red;">L</span> SC-G / SUB-D	SUB-PATCH BUNDLE (LARGE)	2x 20A	168	51
<span style="color: blue;">S</span> SC-G / SUB-E	SUB-PATCH BUNDLE (SMALL)	2x 20A	356	108.4
SC-G / CAM-A	CAMERA FEED	None	100	30.2
SC-G / CAM-B	CAMERA FEED	None	192	58.3
SC-G / WIFI	WIFI ROUTER FEED	None	192	58.3

MINIMUM CURRENT REQUIREMENT FOR SC-G: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

PROJECT: **TTZ19 LUMINA TORONTO ZOO**  
 Toronto Zoo

**MOMENT FACTORY**

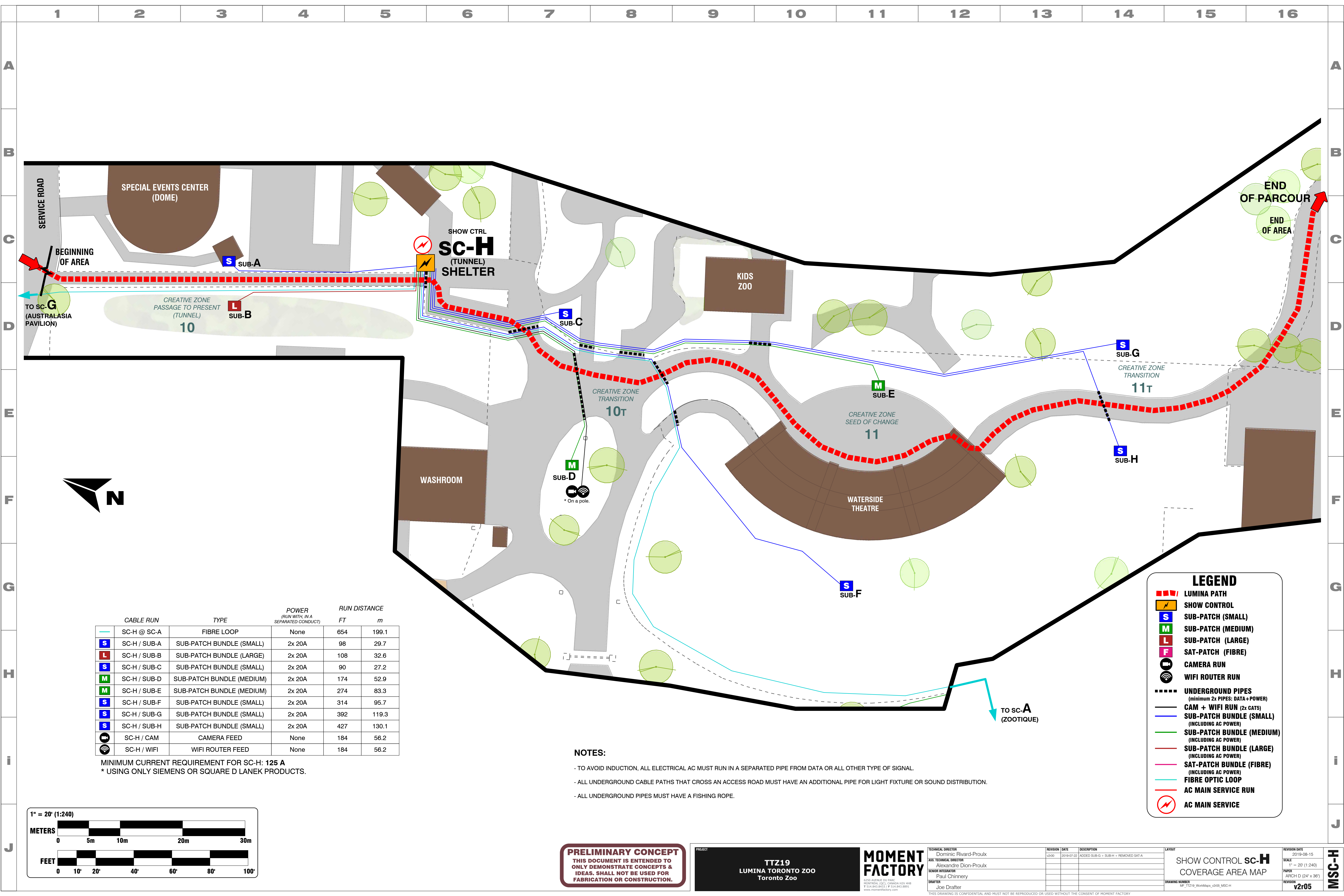
TECHNICAL DIRECTOR: Dominic Rivard-Proulx  
 ASST. TECHNICAL DIRECTOR: Alexandre Dion-Proulx  
 SENIOR INTEGRATOR: Paul Chirriery  
 DRAFTER: Joe Drafter

REVISION	DATE	DESCRIPTION
0200	2019-07-20	ENTIRE PAGE RE-DOING (NEW S-CTRL POSITION)

LAYOUT: SHOW CONTROL **sc-G**  
 COVERAGE AREA MAP

REVISION DATE: 2019-08-15  
 SCALE: 1" = 20' (1:240)  
 PAPER: ARCH D (24" x 36")  
 REVISION: **v2r05**

THIS DRAWING IS CONFIDENTIAL AND MUST NOT BE REPRODUCED OR USED WITHOUT THE CONSENT OF MOMENT FACTORY



CABLE RUN	TYPE	POWER (RUN WITH, IN A SEPARATED CONDUCT)	RUN DISTANCE	
			FT	m
SC-H @ SC-A	FIBRE LOOP	None	654	199.1
SC-H / SUB-A	SUB-PATCH BUNDLE (SMALL)	2x 20A	98	29.7
SC-H / SUB-B	SUB-PATCH BUNDLE (LARGE)	2x 20A	108	32.6
SC-H / SUB-C	SUB-PATCH BUNDLE (SMALL)	2x 20A	90	27.2
SC-H / SUB-D	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	174	52.9
SC-H / SUB-E	SUB-PATCH BUNDLE (MEDIUM)	2x 20A	274	83.3
SC-H / SUB-F	SUB-PATCH BUNDLE (SMALL)	2x 20A	314	95.7
SC-H / SUB-G	SUB-PATCH BUNDLE (SMALL)	2x 20A	392	119.3
SC-H / SUB-H	SUB-PATCH BUNDLE (SMALL)	2x 20A	427	130.1
SC-H / CAM	CAMERA FEED	None	184	56.2
SC-H / WIFI	WIFI ROUTER FEED	None	184	56.2

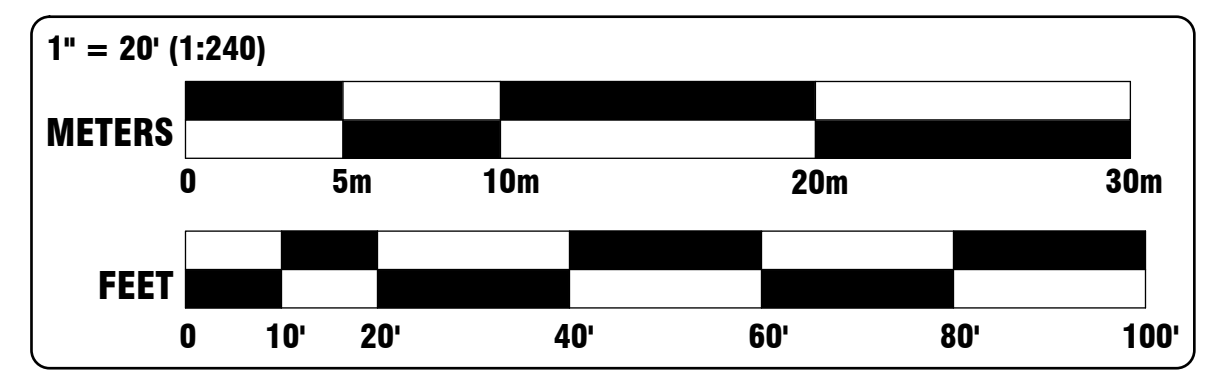
MINIMUM CURRENT REQUIREMENT FOR SC-H: 125 A  
 \* USING ONLY SIEMENS OR SQUARE D LANEK PRODUCTS.

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- ALL UNDERGROUND PIPES MUST HAVE A FISHING ROPE.

**LEGEND**

- LUMINA PATH
- SHOW CONTROL
- SUB-PATCH (SMALL)
- SUB-PATCH (MEDIUM)
- SUB-PATCH (LARGE)
- SAT-PATCH (FIBRE)
- CAMERA RUN
- WIFI ROUTER RUN
- UNDERGROUND PIPES (minimum 2x PIPES: DATA+POWER)
- CAM + WIFI RUN (2x CAT5)
- SUB-PATCH BUNDLE (SMALL) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (MEDIUM) (INCLUDING AC POWER)
- SUB-PATCH BUNDLE (LARGE) (INCLUDING AC POWER)
- SAT-PATCH BUNDLE (FIBRE) (INCLUDING AC POWER)
- FIBRE OPTIC LOOP
- AC MAIN SERVICE RUN
- AC MAIN SERVICE



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PROJECT  
**TTZ19**  
 LUMINA TORONTO ZOO  
 Toronto Zoo

**MOMENT FACTORY**  
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 www.momentfactory.com

TECHNICAL DIRECTOR: Dominic Rivard-Proulx  
 ASST. TECHNICAL DIRECTOR: Alexandre Dion-Proulx  
 SENIOR INTEGRATOR: Paul Chirriery  
 DRAFTER: Joe Drafter

REVISION	DATE	DESCRIPTION
0100	2019-07-22	ADDED SUB-G + SUB-H + REMOVED SAT-A

LAYOUT  
**SHOW CONTROL sc-H**  
 COVERAGE AREA MAP  
 DRAWING NUMBER: MF\_TTZ19\_WireMap\_v0105\_MSC-H

REVISION DATE: 2019-08-15  
 SCALE: 1" = 20' (1:240)  
 PAPER: ARCH D (24" x 36")  
 REVISION: v2r05

**MSC-H**

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