

**SOLICITATION E0208-150548/A - AMENDMENT No. 5 APPLYING ADDENDUM No. 3**

Public Works and Government Services Canada	Swift Current, SK AAFC Semiarid Prairie Agricultural Research Centre (SPARC) Rehabilitation	Addendum No. 3 Page 1 of 12
Project No.: R.036324.001		January 22, 2015

**ADDENDUM NO. 03**

The following changes to the tender documents are effective immediately and will form part of the contract documents:

Drawings, Detail Sheets and Specification Sections issued as part of this Addendum:

**Full Size Drawings:**

## Architectural:

A301X1            Building Sections

## Mechanical:

M603X1           Mechanical Schedules  
M604               Mechanical Schedules

## Electrical:

EP100.1           Basement and Main Floor Power Plan - Header House, dated 2015-01-20  
EP107               Maintenance Shop Main Floor Electrical, dated 2015-01-20  
E504.1X1           Schedules – Motors, dated 2015-01-20

**Partial Drawing Revisions:**

## Architectural:

A100R1            Basement Floor Plan, dated 2015-01-15

## Mechanical:

MP101R1           Basement Floor – Phytotron – Plumbing Plan, dated 2015-01-20  
MP103R1           Basement Floor – 75 Wing A – Plumbing Plan, dated 2015-01-20  
MV101R1           Basement Floor – Phytotron – Ventilation Plan, dated 2015-01-20  
MV103R1           Basement Floor – Service – Ventilation Plan, dated 2015-01-20  
MV103R2           Basement Floor – Service – Ventilation Plan, dated 2015-01-20  
MV121R2           Second Floor – Penthouse – Ventilation Plan, dated 2015-01-20  
M503R1            Mechanical Details, dated 2015-01-20  
M503R2            Mechanical Details, dated 2015-01-20  
M504R1            Mechanical Details, dated 2015-01-20  
M704R1            Mechanical Schematics, dated 2015-01-20  
M704R2            Mechanical Schematics, dated 2015-01-20

## Telecom:

TN100R1           Basement Telecommunications Backbone Conduit Plan, dated 2015-01-21  
TN101R1           Basement Telecommunications Plan, dated 2015-01-21  
TI100R1            Basement Access Control and Video Surveillance Plan, dated 2015-01-21  
TY100R1            Basement Public Address System Plan, dated 2015-01-21  
TG601R1            Telecom Single Line Diagram, dated 2015-01-21  
TG601R2            Telecom Single Line Diagram, dated 2015-01-21

**Specifications:**

Section 01 71 00 – Examination and Preparation, 2 pages

Section 22 67 13 – Processed Water Piping for Laboratories, 2 pages

**DRAWINGS**

**1. DRAWING C101 – SURFACE IMPROVEMENT**

- .1 Clarification - The quantities of fill and cut to earth work stated include everything from top of the existing surface to top of finished surface. The stated excavation quantity **does not include** the sub-cut required to accommodate the proposed asphalt structure.

**2. DRAWING AX100 – BASEMENT FLOOR LIFE SAFETY PLAN**

- .1 Change partition fire resistance ratings surrounding Boiler Room 054 from “one hour” to “two hour”.

**3. DRAWINGS A102 – BASEMENT FLOOR PLAN – LAB, AND A103 – BASEMENT FLOOR PLAN - SERVICE**

- .1 Change partition fire resistance rating from “1 hour” to “45 minutes” at Door 064.2.
- .2 Add partition fire resistance ratings “2 HR” to “CMU 200” wall construction tags at Doors ST03.1 and ST03.2.

**4. DRAWINGS A100 – BASEMENT FLOOR PLAN, A110 – MAIN FLOOR PLAN, A120 SECOND FLOOR PLAN, A130 – THIRD FLOOR PLAN, A140 – FOURTH FLOOR PLAN, A150 – ROOF PLAN**

- .1 Change section reference “13A/A100/A302” to “13A/A100/A317” at Link L001.
- .2 Add Section Reference to “2/A100/A301” at Link L001.
- .3 Refer to Revision Sheet A100R1 included in this addendum.

**5. DRAWING A142 – FOURTH FLOOR PLAN – EXISTING MECHANICAL PENTHOUSE**

- .1 Revise notes “150 concrete housekeeping pads” to read “100mm high concrete housekeeping pads – refer to structural drawings”.

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### **6. DRAWING A150 – ROOF PLAN**

- .1 There is one intake hood requiring 4 guy wires and 4 roof anchor points; and two exhaust stacks requiring 8 guy wires and 6 roof anchor points. Refer to revised Roof Plan issued with Addendum No 2.

### **7. DRAWING A301 – BUILDING SECTIONS**

- .1 Refer to additional Section and Details through Link L001 included on this Sheet.

### **8. DRAWING A313 – EXISTING WALL SECTION DETAILS - RENOVATION**

- .1 Detail 7, revise annotation to read "Typical Infill Construction – Refer to Structural Drawings".

### **9. DRAWING A317 – WALL SECTIONS**

- .1 Wall Section 1, change exterior wall type "W1A" to "W2A".

### **10. DRAWING A371 – STAIRS PLANS AND SECTIONS**

- .1 Section 5, add note: "Mount upper horizontal rail to lower balustrade using brackets formed from 6mm steel plate cut into an L-shape, and weld together".

### **11. DRAWING AQ402 – BASEMENT FLOOR EQUIPMENT & BENCHING PLAN - LAB**

- .1 Rooms 070 and 074, add tag "SU1-SK1" to sink units.

### **12. DRAWING AQ411 – MAIN FLOOR EQUIPMENT & BENCHING PLAN - LAB**

- .1 Room 133, delete tag TF01 from table in southeast corner of room.
- .2 Room 156, add tag "SU1-SK1" to sink unit.

### **13. DRAWING SG101 – TYPICAL DETAILS**

- .1 Detail 23; delete unidentified angle located above floor level.

### **14. DRAWING S301 - SECTIONS**

- .1 Provide 12mm pressure treated plywood sideboards at all locations where void form is shown.

### **15. DRAWING S302 - SECTIONS**

- .1 Detail 11; add grating bar size: "38mm x 3.2mm".

- .2 Provide 12mm pressure treated plywood sideboards at all locations where void form is shown.

**16. DRAWING S303 - SECTIONS**

- .1 Detail 13; revise detail identification marker to read "13/S303/S303".

**17. DRAWING MS101 – SITE PLAN MECHANICAL**

- .1 Add general note "General Contractor is responsible for contracting with Sask Energy to provide natural gas service upgrades and changes to the site as indicated on the drawings. Cost of services provided by Sask Energy to be included in bid price."

**18. DRAWING MP101 – BASEMENT FLOOR – PHYTOTRON – PLUMBING PLAN**

- .1 Revise keynote flag from 2 to 5 where indicated on attached revision sheet MP101R1.

**19. DRAWING MP103 – BASEMENT FLOOR – 75 WING A – PLUMBING PLAN**

- .1 Add general note "All floor drains are to be FD-1 unless otherwise indicated."
- .2 Add keynote flag 18 where indicated on attached revision sheet MP103R1.

**20. DRAWING MH101 – BASEMENT FLOOR – PHYTOTRON – HYDRONIC PLAN**

- .1 Revise the tag for the unit heater located at the west end of the headerhouse work area from UH-13 to UH-15.

**21. DRAWING MH102 – BASEMENT FLOOR – LAB – HYDRONIC PLAN**

- .1 Add general note "All piping runouts to VAV boxes are 20mm unless otherwise indicated."

**22. DRAWING MH103 – BASEMENT FLOOR – SERVICE – HYDRONIC PLAN**

- .1 Revise the tag for the unit heater located in the northeast corner of the boiler room from UH-15 to UH-17.

**23. DRAWING MH111 – MAIN FLOOR – LAB – HYDRONIC PLAN**

- .1 Add general note "All piping runouts to VAV boxes are 20mm unless otherwise indicated."

**24. DRAWING MH112 – MAIN FLOOR – OFFICE – HYDRONIC PLAN**

- .1 Heater in Men's Washroom, 107A, to be cabinet unit heater, CUH-5. Refer to schedule on drawing M604 and specification section 23 82 39 Unit Heaters.

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- .2 Heater in Woman's Washroom, 103B, to be cabinet unit heater, CUH-6. Refer to schedule on drawing M604 and specification section 23 82 39 Unit Heaters.

### **25. DRAWING MH122 – SECOND FLOOR – OFFICE – HYDRONIC PLAN**

- .1 Heater in Men's Washroom, 207A, to be cabinet unit heater, CUH-7. Refer to schedule on drawing M604 and specification section 23 82 39 Unit Heaters.
- .2 Heater in Woman's Washroom, 203B, to be cabinet unit heater, CUH-8. Refer to schedule on drawing M604 and specification section 23 82 39 Unit Heaters.

### **26. DRAWING MV101 – BASEMENT FLOOR – PHYTOTRON – VENTILATION PLAN**

- .1 The exhaust fan located in WC 089A is to be tagged as F-WR-1. Refer to the attached revision sheet MV101R1.

### **27. DRAWING MV102 – BASEMENT FLOOR – LAB – VENTILATION PLAN**

- .1 Add fancoil unit, FC-0-06, to Staff Entrance/Lockers room 064. Refer to drawing MH102 for location.

### **28. DRAWING MV103 – BASEMENT FLOOR – SERVICE – VENTILATION PLAN**

- .1 Add 2 fancoil units, FC 0-8 and FC 0-9 to mechanical equipment room 051 as indicated on the attached revision sheet MV103R1.
- .2 The fancoil identified as FC 0-11 should be tagged FC 0-02. Revise fancoil tag as indicated on the attached revision sheet MV103R2.
- .3 The fancoil identified as FC 0-12 should be tagged FC 0-01. Revise fancoil tag as indicated on the attached revision sheet MV103R2.
- .4 Add fancoil unit, FC-0-07, to Engineer Office. Refer to drawing MH103 for location.

### **29. DRAWING MV121 – SECOND FLOOR – PENTHOUSE – VENTILATION PLAN**

- .1 The fancoil located in BMS Office 238 is to be tagged as FC-2-33. Refer to the attached revision sheet MV121R1.

### **30. DRAWING M503 – MECHANICAL DETAIL**

- .1 Add detail 9 – Exhaust Fans – LAB-1 & LAB-2 as per attached drawing M503R1.
- .2 Add detail 10 – Glycol Reclaim Coil Module – ERS-1 as per attached drawing M503R2.

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**31. DRAWING M504 – MECHANICAL DETAIL**

- .1 Revise detail 7 – ERV Control Schematic as per attached revision sheet M504R1. A heating and a cooling coil have been removed from the schematic diagram.

**32. DRAWING M601 – MECHANICAL SCHEDULES**

- .1 Refer to fan schedule. In the column titled “TAG” remove the tag “EF-LAB-1/2/3” and replace with tag “EF-LAB-1,2”.
- .2 Refer to fan schedule. Revise note 2 to read “Laboratory exhaust fan assembly is a duplex arrangement with each fan sized for 50%/50% duty.”
- .3 Refer to Air Handling Unit Schedule. Revise note 11 to read “Refer to specification for unit configuration and additional requirements.”

**33. DRAWING M603X1 – MECHANICAL SCHEDULES**

- .1 Revise Fan Coil Schedule as per the attached revised drawing M603X1.

**34. DRAWING M604 – MECHANICAL SCHEDULES**

- .1 Add new mechanical schedules sheet. See drawing M604 attached.
- .2 Refer to new drawing M604 for Pump Schedule.
- .3 Refer to new drawing M604 for Expansion Tank Schedule.
- .4 Refer to new drawing M604 for Unit Heater Schedule.

**35. DRAWING M704 – MECHANICAL SCHEMATICS**

- .1 Add new natural gas schematic diagram showing existing, interim and final natural gas routing as shown on revision sheets M704R1 and M704R2.

**36. ES100 – ELECTRICAL SITE KEYPLANS AND DRAWING LIST**

- .1 Electrical drawing list:
  - .1 With reference to EP100.1 delete reference to “not submitted”.
  - .2 Add EP107 – Maintenance Shop Main Floor Electrical, issued as part of this addendum.

**37. ED100 – BASEMENT DEMOLITION PLAN**

- .1 Revise note #10 to read as follows; “10. Existing Panel #51 service feed to existing bus duct to be disconnected and removed. Re-wire and re-connect
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existing panel #51 back to new CDP "SD-B2NA" with 4#3/0 RW90 Cu. Wire in 63mm conduit and provide 200A-3P circuit breaker to suit."

### **38. ED101 – MAIN FLOOR DEMOLITION PLAN**

- .1 Disconnect and remove all associated power for all relocated growth chambers and freezers in existing header house 204. Refer to architectural demolition drawing AD110 for existing equipment to be demolished.
- .2 Existing demolished transformers associated with growth chambers 20 to 23 are to be salvaged and turned over to the Departmental Representative. Confirm location with Departmental Representative on site.

### **39. EP100.1 – BASEMENT AND MAIN FLOOR POWER PLAN – HEADER HOUSE**

- .1 Refer to new drawing EP100.1 included in this addendum for existing header house electrical requirements.

### **40. EP103 – PENTHOUSE POWER PLAN – LAB WING**

- .1 Locate lighting relay panel "RPPA" in Electrical Room 234 adjacent to panel "NP2EA" east-side.

### **41. EP106 – PENTHOUSE FLOOR POWER PLAN – OFFICE WING**

- .1 Locate panel "LP2EA", "NP2NB" and relay panel "RPPB" in Penthouse 401 adjacent to panel "MP2EB" south-side.

### **42. EP107 – MAINTENANCE SHOP POWER PLAN**

- .1 Refer to new drawing EP107 included in this addendum for Maintenance shop electrical requirements.

### **43. E501 – SCHEDULES – LIGHTING CONTROL**

- .1 Add the following relays to panel RPBB as follows;
  - .1 Relay 44, Corridor C0001, circuit LM2NA-1, extended range PIR ceiling mounted occupancy sensor, timer and control function 4.
  - .2 Relay 45, Corridor C0001, circuit SD-B2EA-2, extended range PIR ceiling mounted occupancy sensor, timer and control function 4.
  - .3 Relay 46, Switch Room 050, circuit SD-B2EA-2, local wall switch occupancy sensor and control function 2.
  - .4 Relay 47, Transformer Room, circuit SD-B2EA-2, local wall switch occupancy sensor and control function 2.

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**44. E504 – SCHEDULES - MOTORS**

- .1 Air Handling Units “AH-LAB-A”, “AH-LAB-B”, “AH-PH-1”, “AH-M1”, “AH-M2” and “AH-M3” are to be complete with fire alarm shutdown complete with HOA at fire alarm panel and smoke duct detector.
- .2 “SP-1” Elevator Sump Pump revise to read as follows; “SP-3, Elevator Sump Pump, Phytotron W.R., 1/3 HP, 7.2A, 120V/1Ø, Packaged unit, emergency power, circuit NB2EC-24, 15A-1P circuit breaker, 2#12+grd. and 21mm conduit”.

**45. E504.1 – SCHEDULES – MOTORS**

- .1 Refer to revised drawing E504.1X1 included in this addendum for maintenance shop mechanical equipment and various revisions and additions to Building 75.

**46. E601 – DISTRIBUTION SINGLE LINE DIAGRAM – MODIFIED AND NEW NORMAL (UTILITY) POWER**

- .1 Secondary feeders from new transformer “TR-BNC” for Existing South Greenhouse “D”, to be replaced with the following note: “Existing 600A, 120/208V/3Ø/4W main panel feeder and conduit from Greenhouse “D” to be re-routed, and re-connected back to new transformer “TR-BNC” within existing switchgear room. Refer to detail on drawing EP104 for location of new transformer”.
- .2 Add Penthouse panel “NP2NB” to office wing CDP panel “SD-B2NA” complete with 50A-3P circuit breaker and wire and connect with 4#8 RW90 Cu. wire in 21 mm conduit.
- .3 Add existing panel #51 to office wing CDP panel “SD-B2NA” complete with 200A-3P circuit breaker and wire and connect with 4#3/0 RW90 Cu. wire in 63 mm conduit.

**47. E602 - DISTRIBUTION SINGLE LINE DIAGRAM – MODIFIED AND NEW EMERGENCY (DIESEL) POWER**

- .1 Add main feeder for Panel “MP6EB” to read “4#4/0 RW90 Cu. Wire in 63mm conduit”.
- .2 Add breaker for sump pumps controller “SP-1/SP-2” to CDP “SD-B6EA” with 20A-3P breaker and 3#12 RW90 cu. wire in 21 mm conduit.
- .3 Add note to supply feeders for emergency distribution “MD-B6EA” as follows: “Extend, re-route, re-wire and re-connect existing main feeders from generator at existing ATS back to new emergency distribution “MD-B6EA” as required.

**48. E606 – PANEL SCHEDULES – EMERGENCY POWER**

- .1 Panel MP2EB, add circuit 22, BFU-1, 20A-1P CB and #12 awg cu. Wire.
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### **49. TN100 - BASEMENT TELECOMMUNICATIONS BACKBONE CONDUIT PLAN**

- .1 Clarification: 35mm Rigid PVC conduit to be installed in the existing Salinity Green House 75C. Refer to part plan drawing TN100R1.

### **50. TN101 - BASEMENT TELECOMMUNICATIONS PLAN**

- .1 Clarification: Conduit to be installed up to Penthouse. Refer to part plan drawing TN101R1.

### **51. TI100 - BASEMENT ACCESS CONTROL AND VIDEO SURVEILLANCE PLAN**

- .1 Clarification: The SC symbol inside the circle is motion sensor or scanner for the automatic door operator.
- .2 Clarification: The access control pedestal shall be as per specification section 28 13 23. Refer to part plan drawing TI100R1.

### **52. TY100 - BASEMENT PUBLIC ADDRESS SYSTEM PLAN**

- .1 Provide conduit and cabling connection to existing public address speaker system serving existing Building 98. Refer to part plan drawing TY100R1.

### **53. TG601 - TELECOM SINGLE LINE DIAGRAM**

- .1 Delete glass break sensor designated as IB-46 as indicated in part plan drawing TG601R1.
- .2 Clarification: The hexagon symbol indicate in the door details are for access control cable types and conduit types. Refer to part plan drawing TG601R2.

## **SPECIFICATIONS**

### **1. SECTION 00 01 10 – TABLE OF CONTENTS**

- .2 Section 01 71 00 – Examination and Preparation, change number of pages from 3 to 2.
- .3 List of Drawings, delete the following Architectural Drawings:
  - A340 Miscellaneous Section Details
  - A353 Phytotron Plan Details
  - A354 Phytotron Plan Details
  - A362 Office Plan Details
- .4 List of Drawings, add the following new Electrical Drawings:

EP100.1 Basement and Main Floor Power Plan – Header House  
EP107 Maintenance Shop Main Floor Electrical

**2. SECTION 01 71 00 – EXAMINATION AND PREPARATION**

- .1 Delete Section 01 71 00 – Examination and Preparation, and replace with new Section included in this Addendum.

**3. SECTION 01 78 00 – CLOSEOUT SUBMITTALS**

- .1 Article 1.6 As-Built Documents, add new paragraph 1.6.10 as follows:
  - .10 Update electronic site survey, provided by Departmental Representative, indicating new above-ground improvements, and subsurface utility/service line adjustments and connections.

**4. SECTION 07 52 00 – MODIFIED BITUMINOUS MEMBRANE ROOFING**

- .1 Delete Paragraph 2.6.2 in its entirety, and replace with the following:
  - .2 Primary Insulation: Polyisocyanurate board insulation to ASTM C 1289, Type II, Class 1, Grade 2, glass-fibre mat facer on both major surfaces, RSI 0.97 per 25 mm thickness. Board size: 1220 by 1220 mm
- .2 Delete Paragraph 3.10.7 in its entirety, and replace with the following:
  - .7 Mechanical and Electrical Penetration Flashing:
    - .1 Plumbing Penetrations: Provide prefabricated insulated vent stack flashing, fabricated from minimum 1.6 mm thick mill finish aluminum, diameter to suit roof vents, complete with removable cap, preformed urethane insulation liner, and integral bituminous painted deck flange for use with modified bituminous membrane roofing. Extend minimum 300 mm above roof membrane.
    - .2 Flexible Conduit Penetrations: Liquid-tight flexible conduit flashing in accordance with CSA B272, consisting of gooseneck shaped mill finish aluminum flashing pipe sleeve with integral deck flange, EPDM end cap seal, and EPDM base seal. Diameter to suit conduit size. Gooseneck radius: 190 mm. Bottom edge of gooseneck cap seal: minimum 300 mm above roof membrane.
    - .3 Rigid Conduit Penetrations: Flashing in accordance with CSA B272, consisting of mill finish aluminum flashing sleeve with integral deck flange, removable cap, EPDM base seal, and EPDM grommet seal. Diameter to suit conduit size. Extend minimum 300 mm above roof membrane.

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**5. SECTION 08 06 10 – DOOR AND FRAME SCHEDULE**

- .1 Revise Door and Frame Schedule as follows:
  - .1 Door 064.2, add “45 minute fire rating”.
  - .2 Door 120, change hardware code from “005” to “008”.
  - .3 Door 132, change hardware code from “006” to “007”.
  - .4 Door 160, change hardware code from “007” to “003”.
  - .5 Door ST03.1, revise “45 minute fire rating” to “90 minute fire rating”.

**6. SECTION 08 06 71 – DOOR HARDWARE SCHEDULE**

- .1 Door Hardware Set #039, delete hardware code and replace with the following:

Set #039

6 Hinge	A8112 114 x 101	US26D	HA
1 Set Auto Flush Bolts	Type 27	US32D	CIV
1 Passage Set	F01	26D	CSA
1 Coordinator	Type 21	26D	CSA
2 Electromechanical Closer	C00231 (Note: confirm voltage)	EN	CSA
2 Kick Plate	J102 400 x 735	32D	CSM
2 Dome Stop	L0216	26D	CSM

**7. SECTION 08 41 23 – FIRE RATED GLAZED ENTRANCE SYSTEMS**

- .1 Part 2, Products – The Basis of Design is TGP Products for a 60 minute fire-rated aluminum assembly with fire rated glass. Aluflam also makes fire-rated aluminum systems.

**8. SECTION 09 06 00 – ROOM FINISH SCHEDULE**

- .1 Note “1” and General Note “a” Clarification - Allow for repainting of existing painted walls, ceilings & bulkheads, and doors & frames. Do not include floors unless specifically indicated otherwise in the Room Finish Schedule.

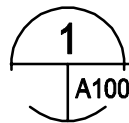
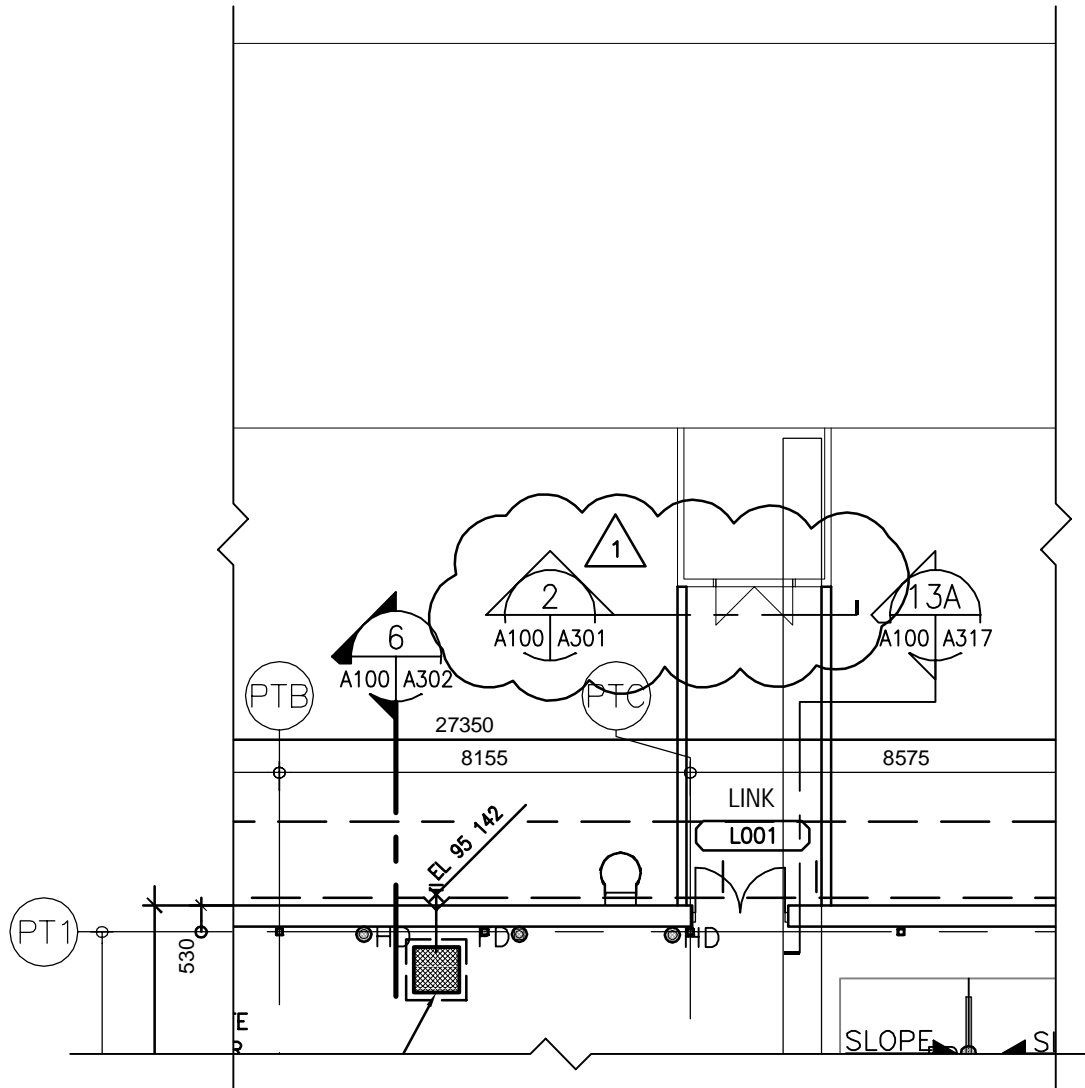
**9. SECTION 22 67 13 – PROCESSED WATER PIPING FOR LABORATORIES**

- .1 Add new specification section 22 67 13 – Processed Water Piping for Laboratories as per the attached.
- .2 This specification applies to all RO water lines.

**10. SECTION 26 05 05 – ELECTRICAL WORK IN EXISTING BUILDINGS**

- .1 Add the following sentence to the end of Paragraph 1.1.1 as follows; “Allow for after-hours work”
- .2 Add the following paragraph to 1.2 as follows; “.7 Where existing conduits, raceway or cabletray which are in use and interfere with new mechanical ducts/equipment, relocate conduits as required. Extend conduit, wiring, etc as required.”

**END OF ADDENDUM**



## BASEMENT FLOOR PLAN

1:150



ADDENDUM No.3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT FLOOR PLAN**

Approved by/Approuvé par

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-15**

Drawn by/Dessiné par

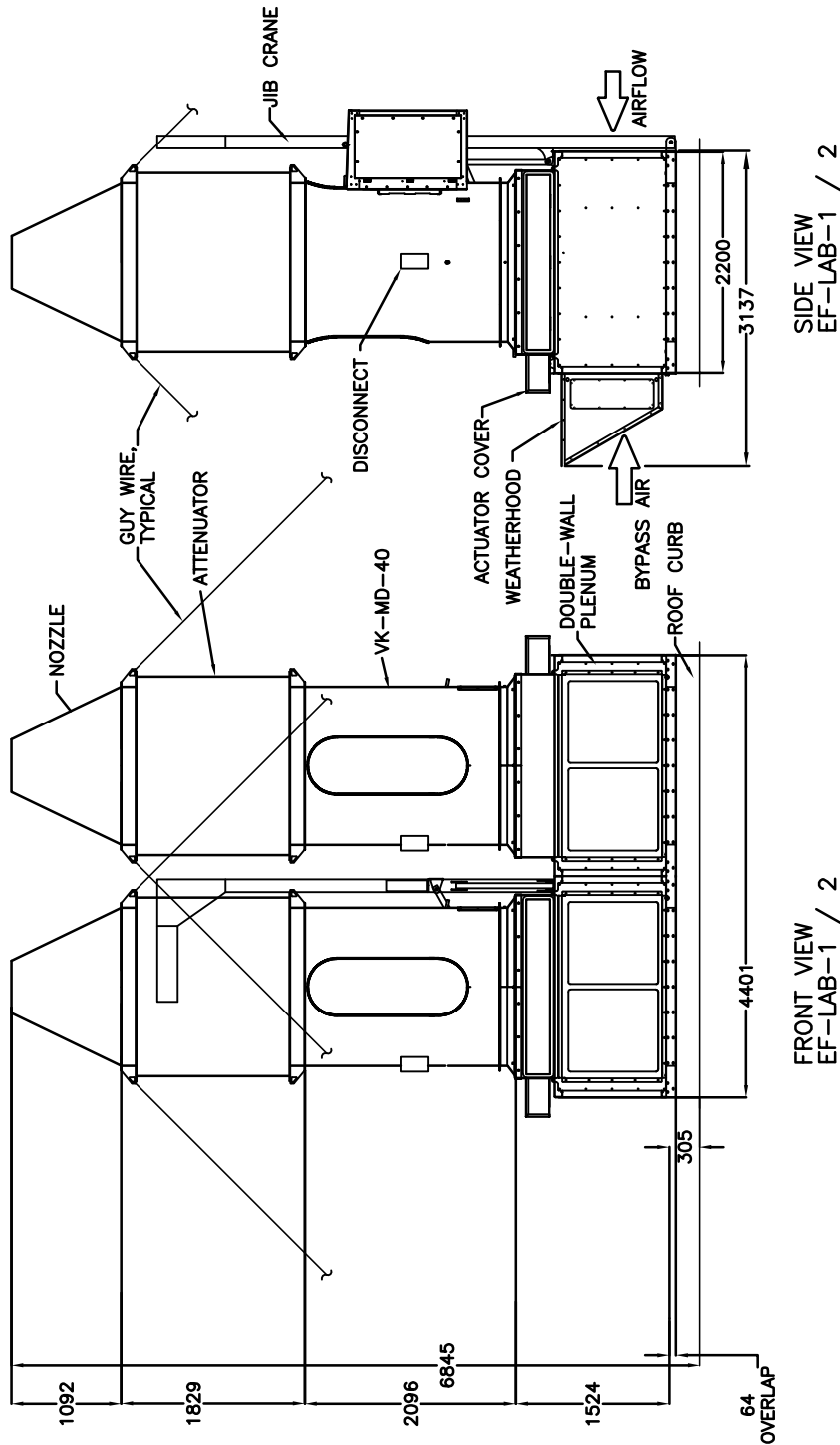
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**A100R1**

Revision/  
Revision





## EXHAUST FANS - LAB-1 & LAB-2

N.T.S.

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Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**MECHANICAL DETAILS**

Approved by/Approuvé par

REM

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

N.T.S.

Designed by/Concept par

REM

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

2015-01-20

Drawn by/Dessiné par

JT

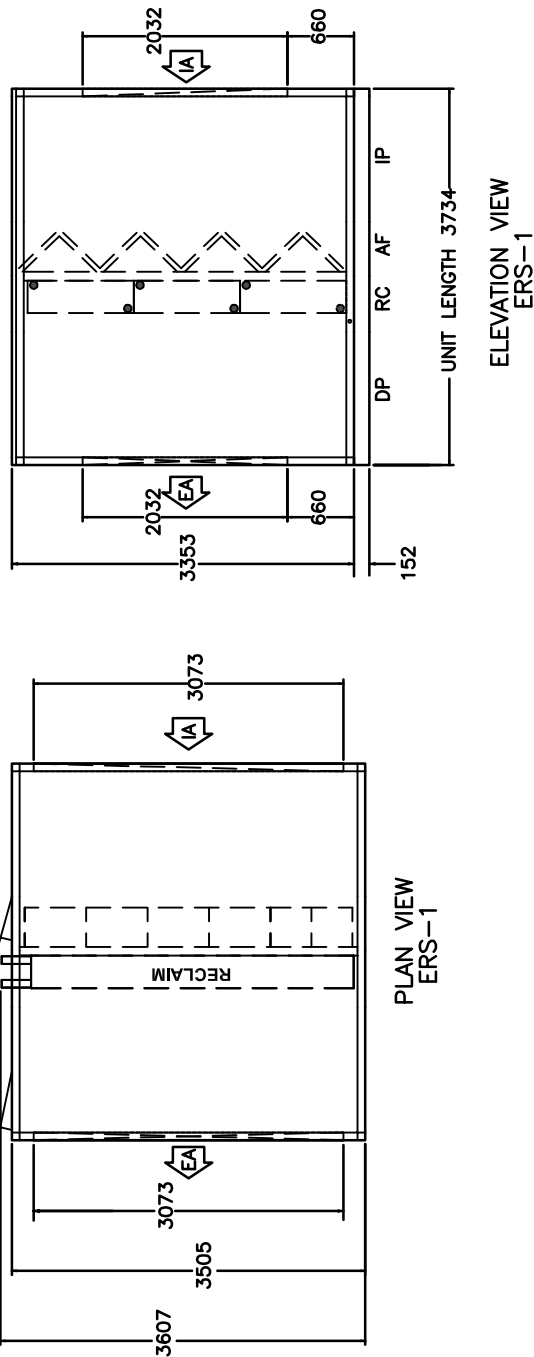
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Sheet/Feuille

**M503-R1**

Revision/  
Revision





10 GLYCOL RECLAIM COIL MODULE - ERS-1

N.T.S.

M503

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**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**MECHANICAL DETAILS**

Approved by/Approuvé par

REM

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

N.T.S.

Designed by/Concept par

REM

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

2015-01-20

Drawn by/Dessiné par

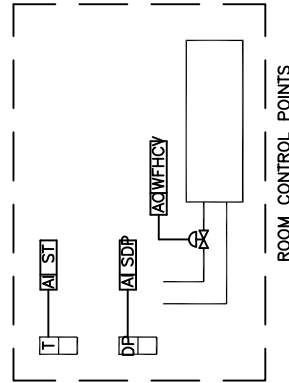
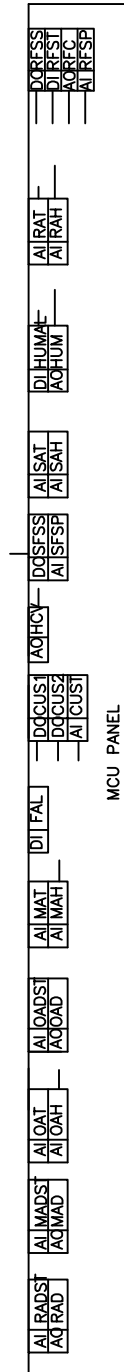
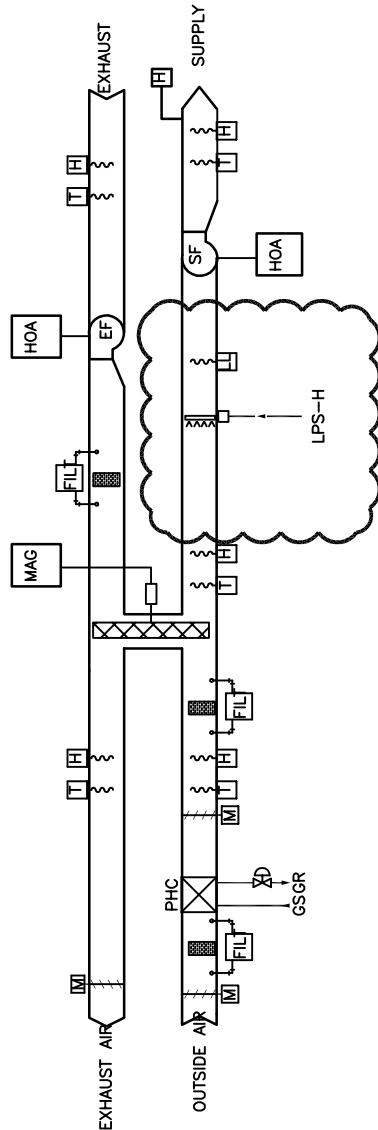
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projet R.036324.001 / 129-12379-0C

Sheet/Feuille

**M503-R2**

Revision/  
Revision



# ERV CONTROL SCHEMATIC

7  
- M504  
N.T.S.

ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**MECHANICAL DETAILS**

Approved by/Approuvé par

REM

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

N.T.S.

Designed by/Concept par

REM

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

2015-01-20

Drawn by/Dessiné par

JT

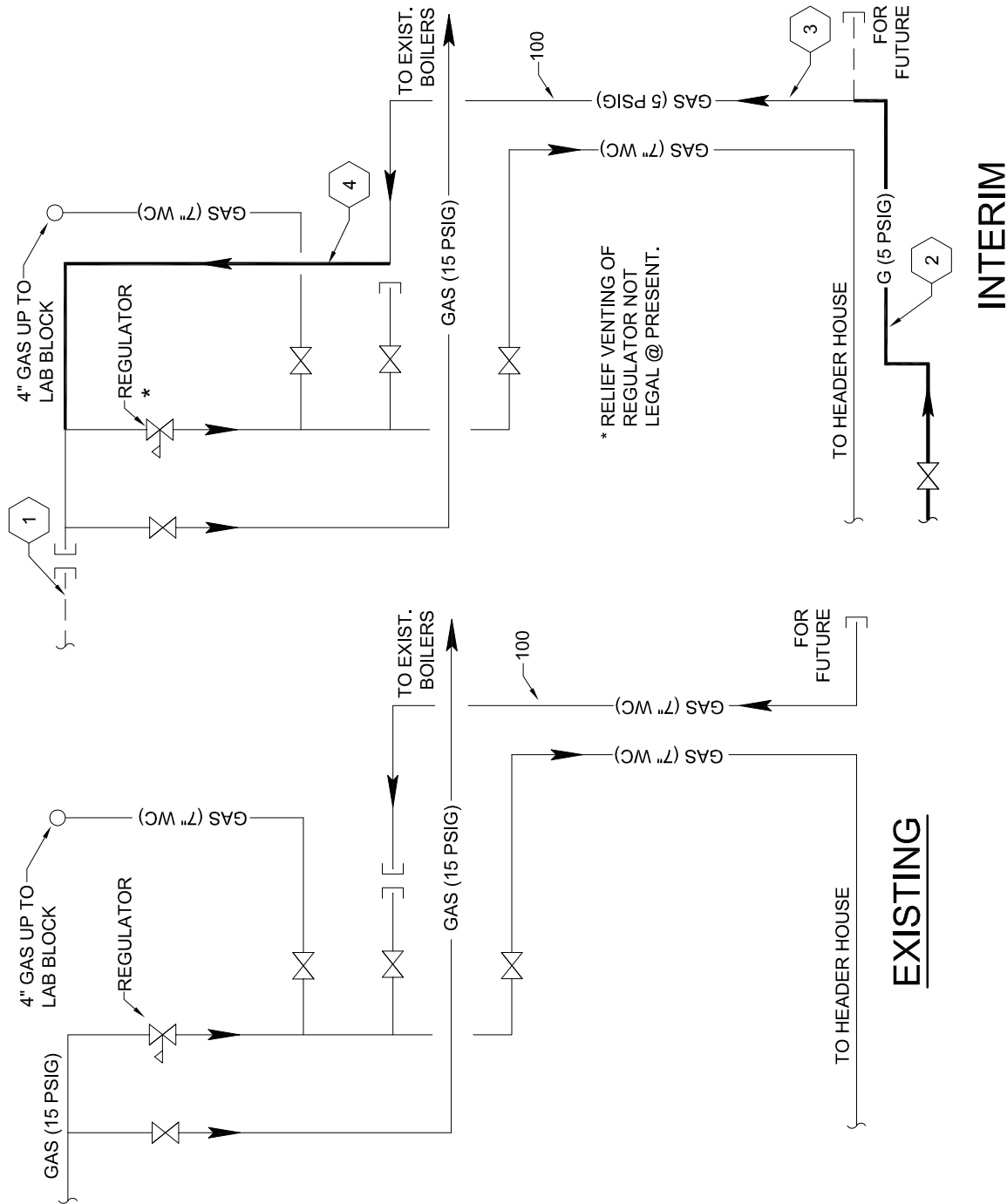
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projet R.036324.001 / 129-12379-0C

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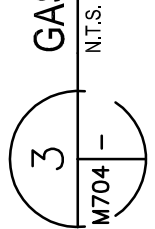
**M504-R1**

Revision/  
Révision





GAS SERVICE SCHEMATIC



ADDENDUM #3

Project title/Titre du projet <b>SEMIARID PRAIRIE AGRICULTURAL RESEARCH CENTRE (SPARC) SWIFT CURRENT, SASKATCHEWAN</b>		Drawing title/Titre du dessin <b>MECHANICAL SCHEMATICS - MV704</b>	
Approved by/Approuvé par	PWGSC Project Manager/Administrateur de Projets TPSGC	Scale/Echelle	N.T.S.
Designed by/Concept par	PWGSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC	Date/Date	2015-01-20
Drawn by/Dessiné par	Project No./No. du projet <b>R.036324.001 / 129-12379-0C</b>	Sheet/Feuille <b>M704-R1</b>	Revision/ Revision

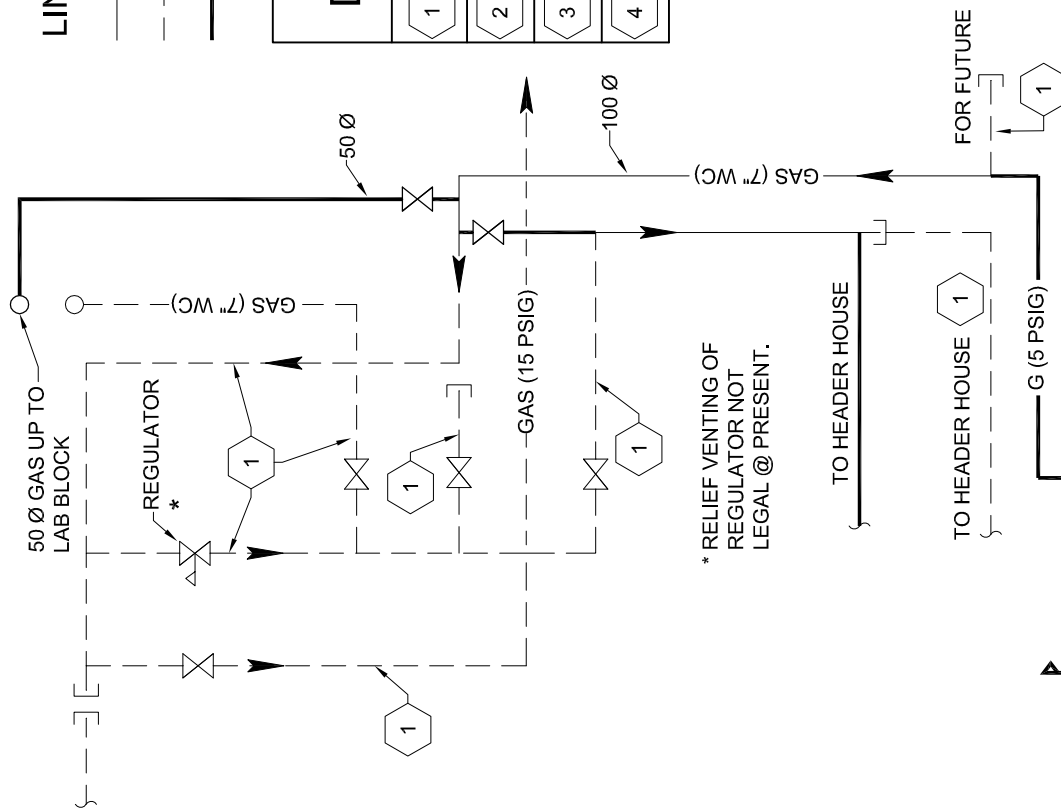


### LINETYPE LEGEND:

—	EXISTING TO REMAIN
- - -	EXISTING TO BE REMOVED/ABANDONED
—	NEW PIPE LINE

### DETAIL NOTES:

1	DISCONNECT AND REMOVE EXISTING NATURAL GAS LINE.
2	INSTALL NEW GAS LINE FROM NEW METER.
3	CONNECT NEW LINE FROM METER TO EXISTING.
4	INSTALL NEW LINE TO EXTEND EXISTING.

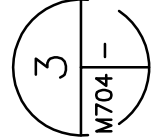


\* RELIEF VENTING OF  
REGULATOR NOT  
LEGAL @ PRESENT.

**FINAL**

**3 GAS SERVICE SCHEMATIC**

N.T.S.



**ADDENDUM #3**

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**MECHANICAL SCHEMATICS - MV704**

Approved by/Approuvé par

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

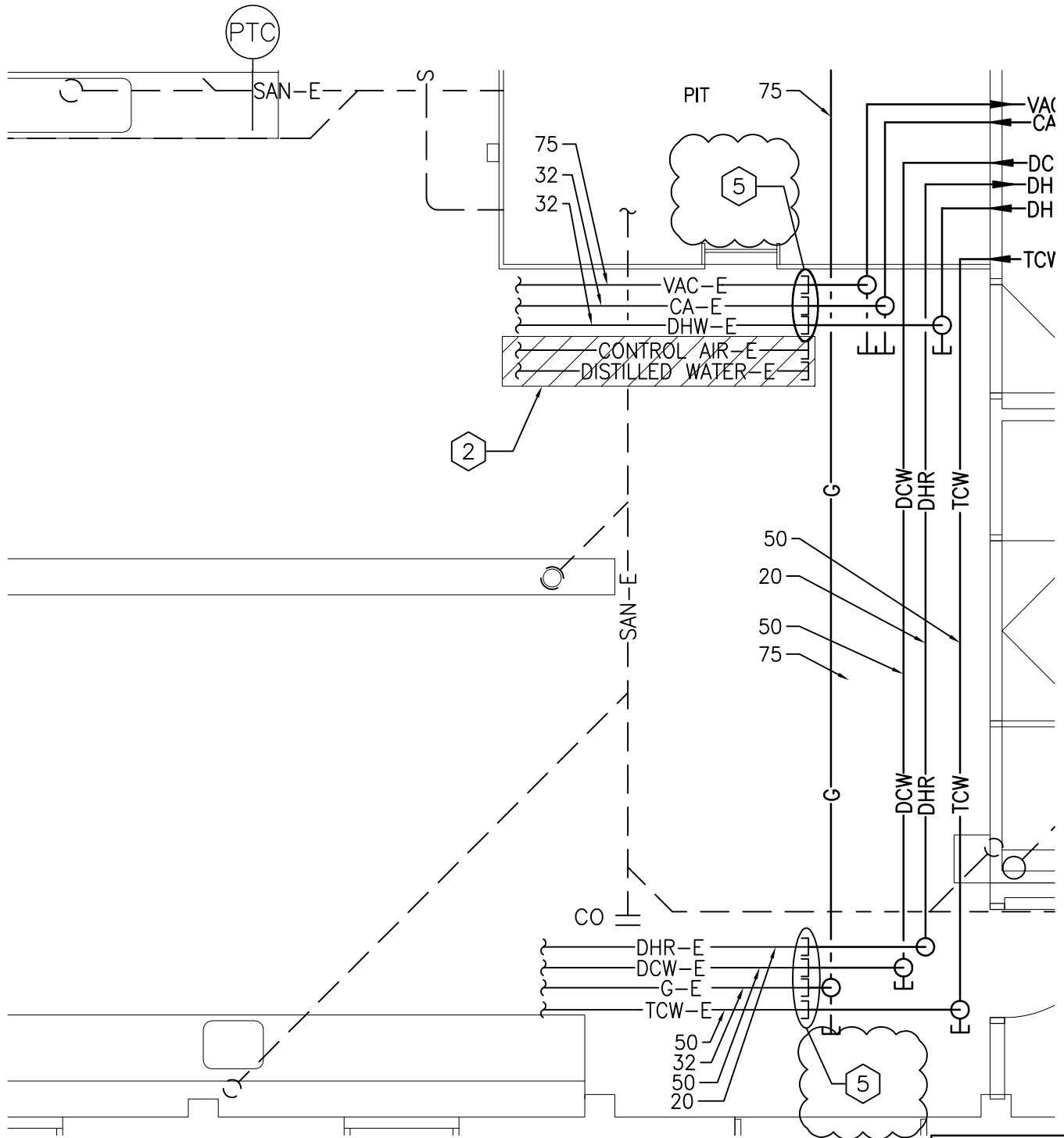
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Sheet/Feuille

**M704-R2**

Revision/  
Revision





ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT FLOOR - PHYTOTRON  
PLUMBING PLAN - MP101**

Approved by/Approuvé par

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

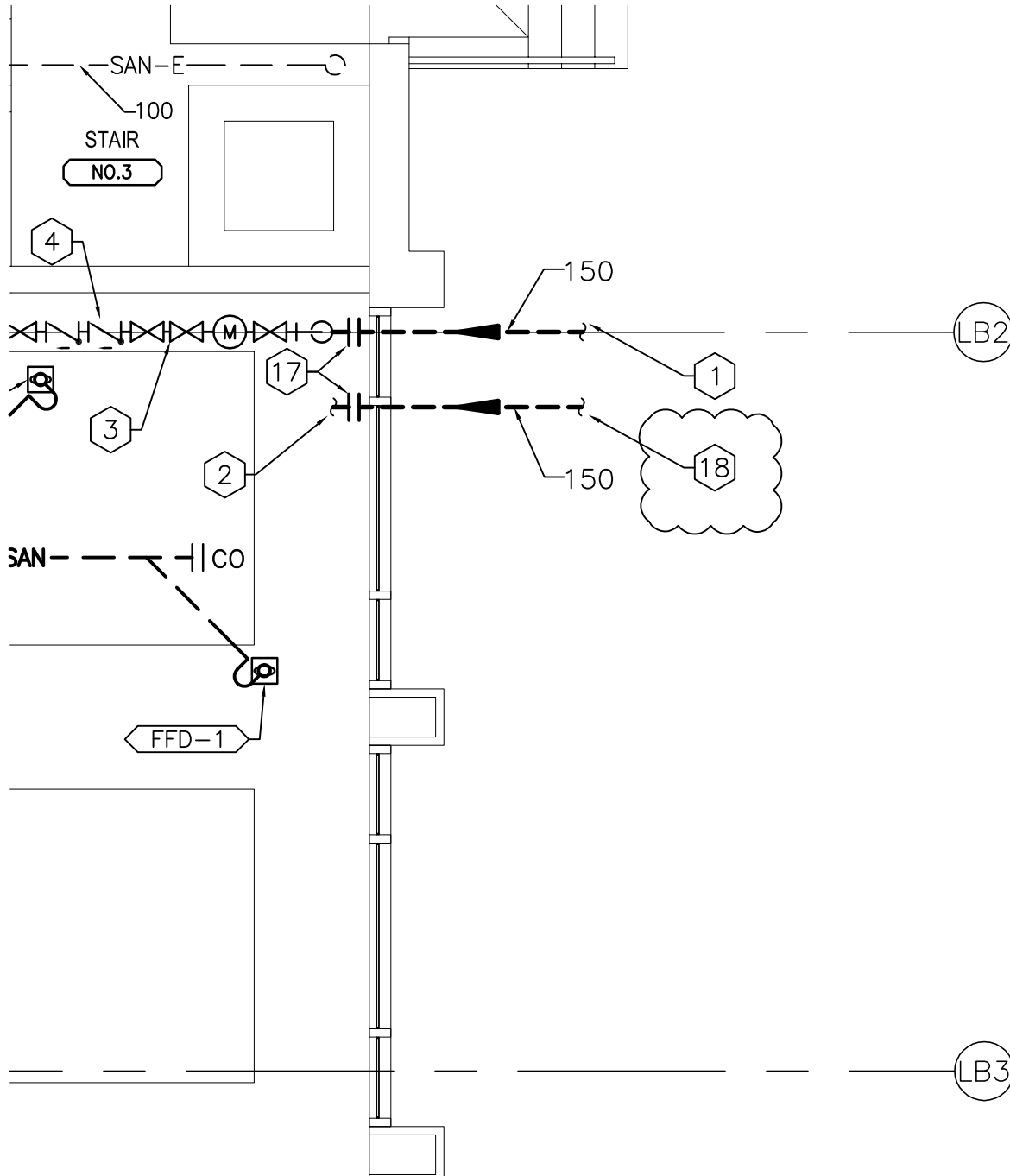
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Sheet/Feuille

**MP101R1**

Revision/  
Revision

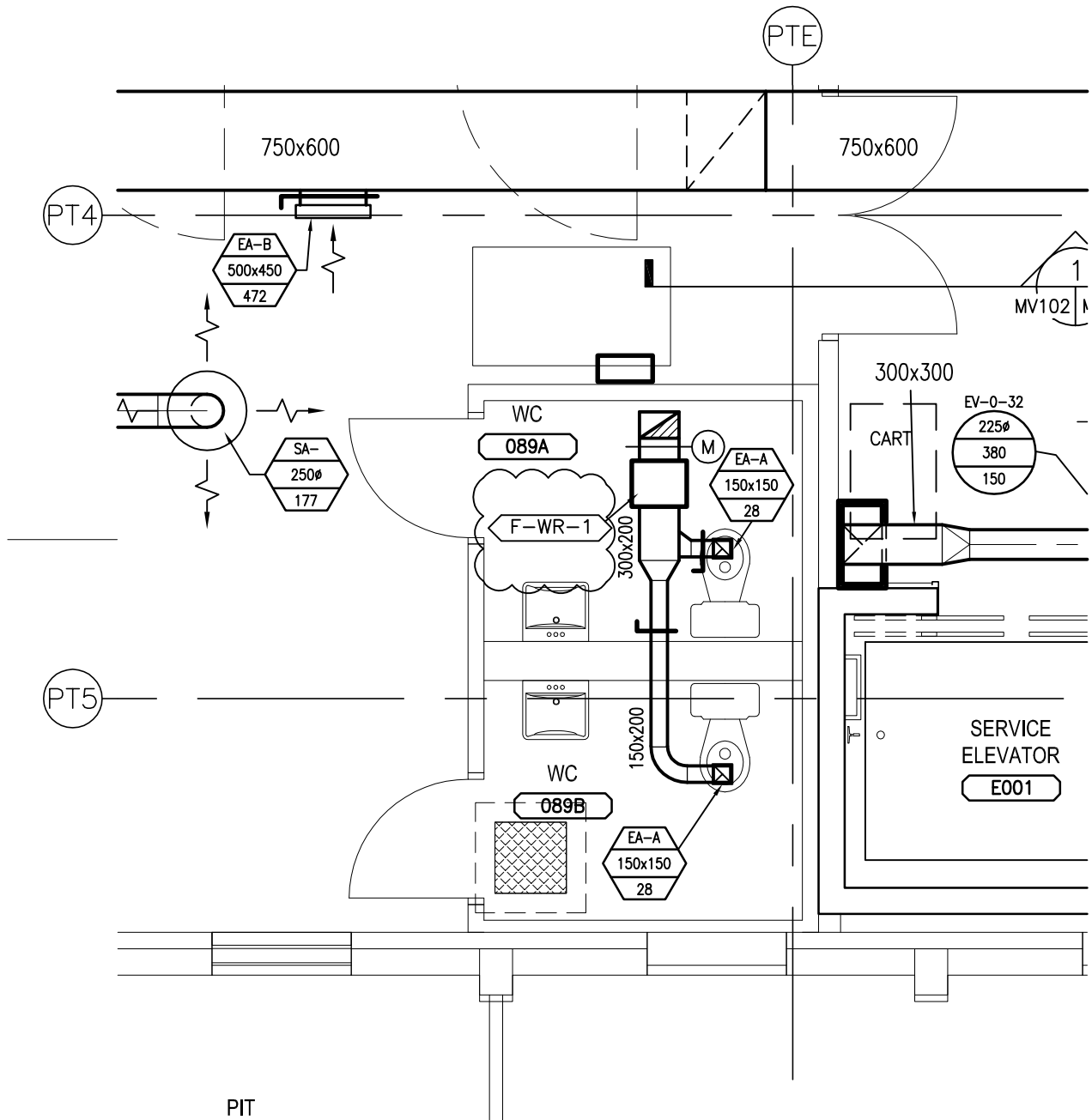




### ADDENDUM #3

Project title/Titre du projet		Drawing title/Titre du dessin	
SEMIARID PRAIRIE AGRICULTURAL RESEARCH CENTRE (SPARC) SWIFT CURRENT, SASKATCHEWAN		BASEMENT FLOOR - 75 WING "A" PLUMBING PLAN - MP103	
Approved by/Approuvé par	PWGSC Project Manager/Administrateur de Projets TPSGC	Scale/Echelle	N.T.S.
Designed by/Concept par	PWGSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC	Date/Date	2015-01-20
Drawn by/Dessiné par	Project No./No. du projet R.036324.001 / 129-12379-0C	Sheet/Feuille MP103R1	Revision/ Revision





ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT FLOOR - PHYTOTRON  
VENTILATION PLAN - MV101**

Approved by/Approuvé par

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

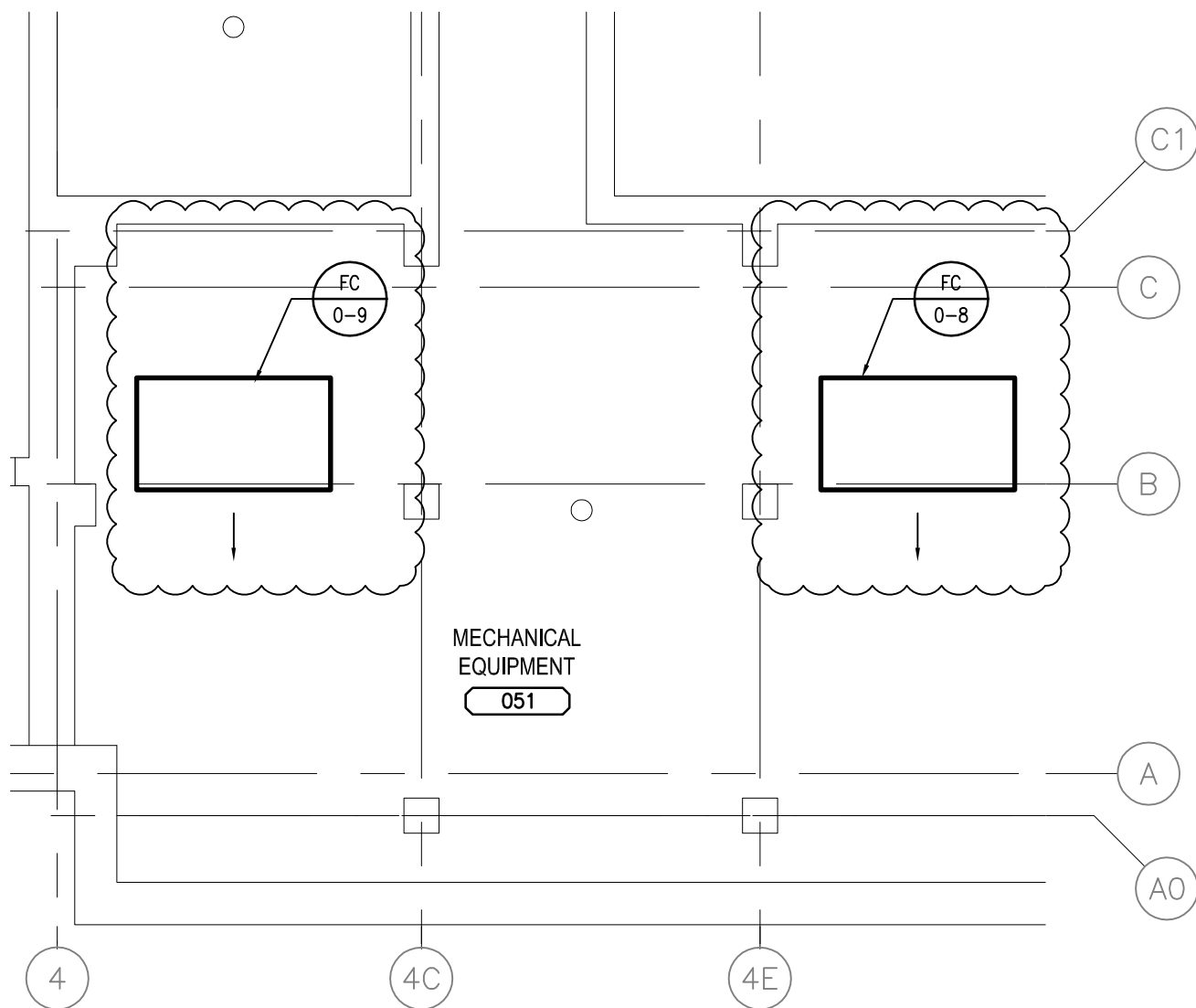
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Sheet/Feuille

**MV101R1**

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Revision





ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT FLOOR - SERVICE  
VENTILATION PLAN - MV103**

Approved by/Approuvé par

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

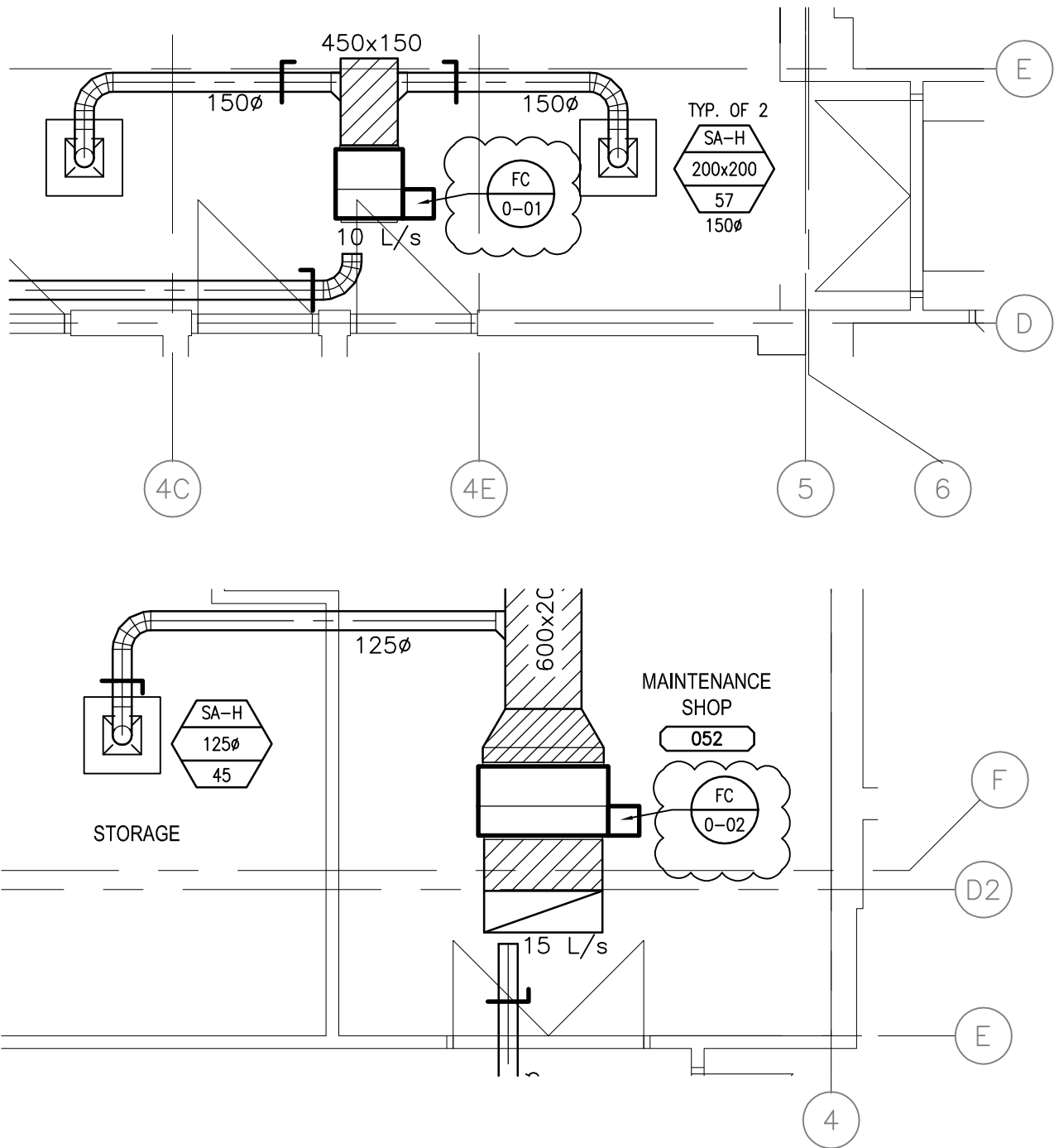
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**MV103R1**

Revision/  
Revision





ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT FLOOR - SERVICE  
VENTILATION PLAN - MV103**

Approved by/Approuvé par

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

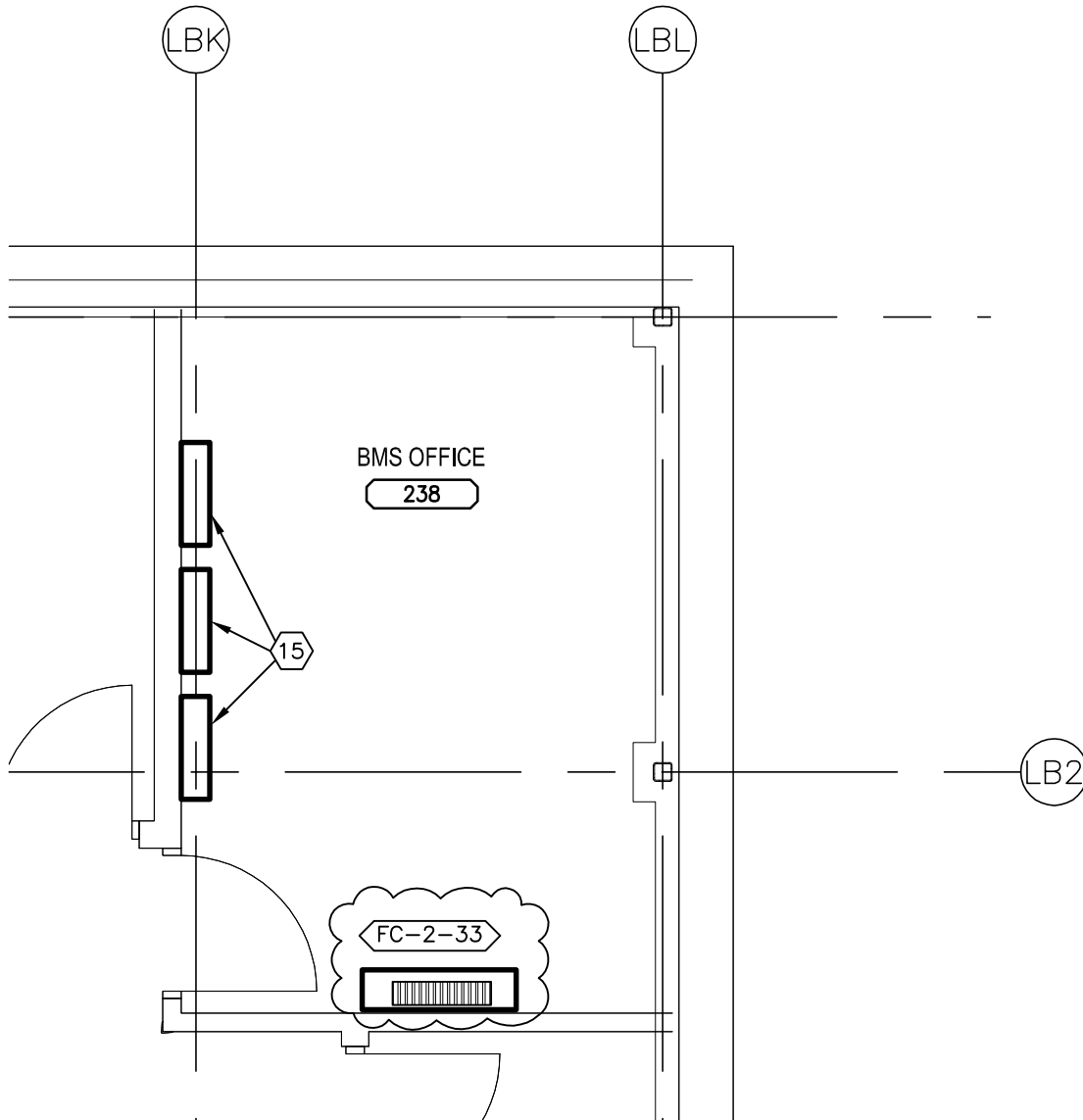
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Sheet/Feuille

**MV103R2**

Revision/  
Revision



ADDENDUM #3

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**SECOND FLOOR - PENTHOUSE  
VENTILATION PLAN - MV121**

Approved by/Approuvé par

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**N.T.S.**

Designed by/Concept par

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

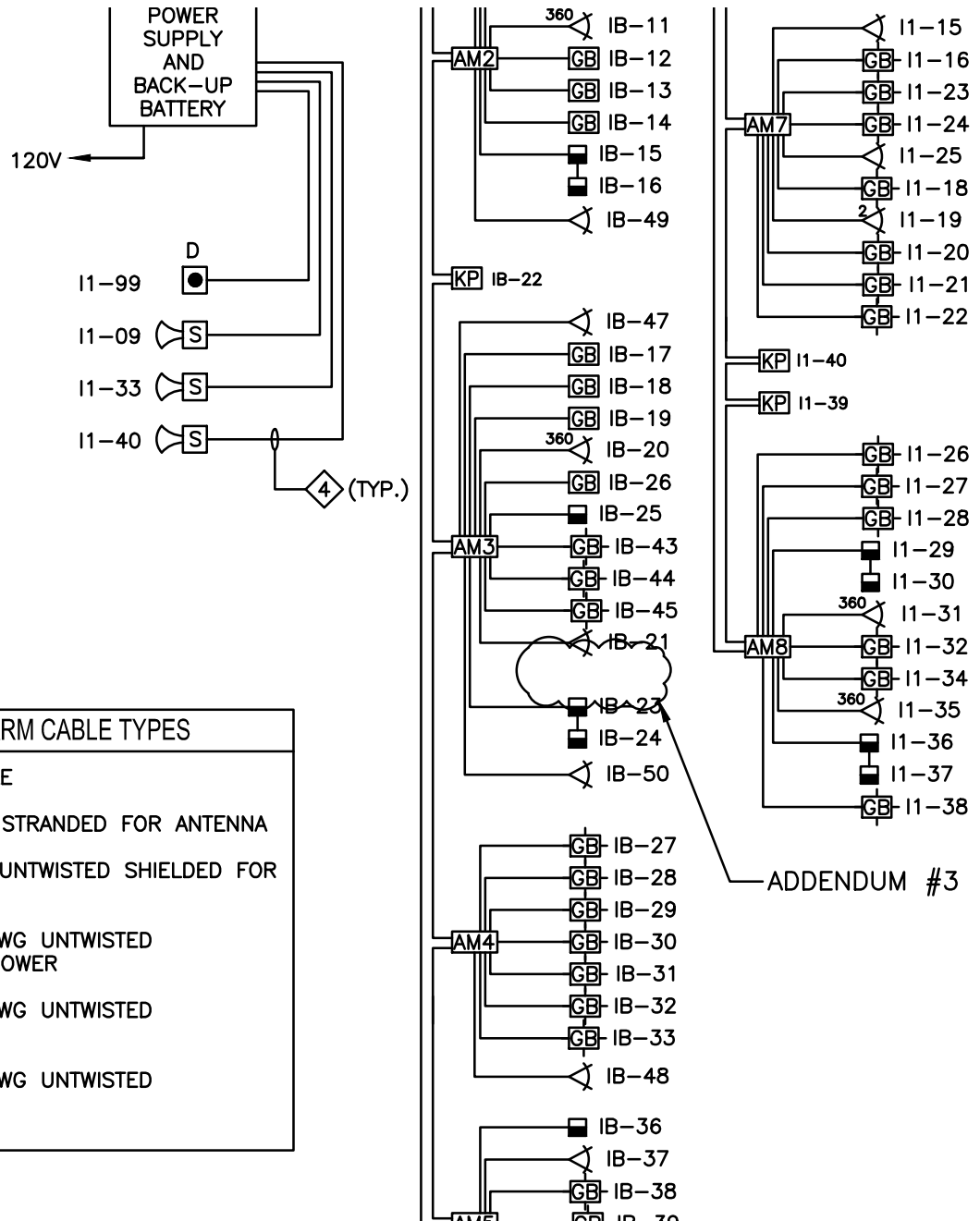
Project No./No. du  
projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**MV121R1**

Revision/  
Revision





INTRUSION ALARM CABLE TYPES
1. CATEGORY 5e CABLE
2. RG-213/U 12AWG STRANDED FOR ANTENNA
3. 4 CONDUCTOR 22 UNTWISTED SHIELDED FOR COMM BUS
4. 2 CONDUCTOR 16AWG UNTWISTED UNSHIELDED FOR POWER
5. 2 CONDUCTOR 22AWG UNTWISTED UNSHIELDED
6. 4 CONDUCTOR 22AWG UNTWISTED UNSHIELDED

### 3 INTRUSION ALARM SINGLE LINE DIAGRAM

TG601 TG601R1 N.T.S.

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**TELECOM SINGLE LINE DIAGRAM**

Approved by/Approuvé par

**HNP**

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

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projet **R.036324.001 / 129-12379-0C**

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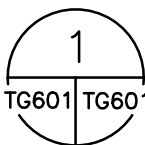
**TG601R1**

Revision/  
Revision



ADDENDUM #3

ACCESS CONTROL CABLE/CONDUIT TYPES	
1.	4C 22AWG UNTWISTED UNSHIELDED STRANDED
2.	2C 18AWG UNTWISTED UNSHIELDED STRANDED
3.	4C 22AWG UNTWISTED UNSHIELDED STRANDED
4.	4C 22AWG UNTWISTED UNSHIELDED STRANDED JEL FILLED
5.	2C 18AWG UNTWISTED UNSHIELDED STRANDED JEL FILLED
6.	CATEGORY 5e CABLE JEL FILLED
7.	16mm EMT CONDUIT
8.	21mm EMT CONDUIT
9.	27mm EMT CONDUIT
10.	35mm EMT CONDUIT
11.	35mm PVC CONDUIT
12.	REFER TO DRAWING FOR CONDUIT SIZE



ACCESS CONTROL DOOR DETAIL KEYNOTES

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**TELECOM SINGLE LINE DIAGRAM**

Approved by/Approuvé par

**HNP**

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

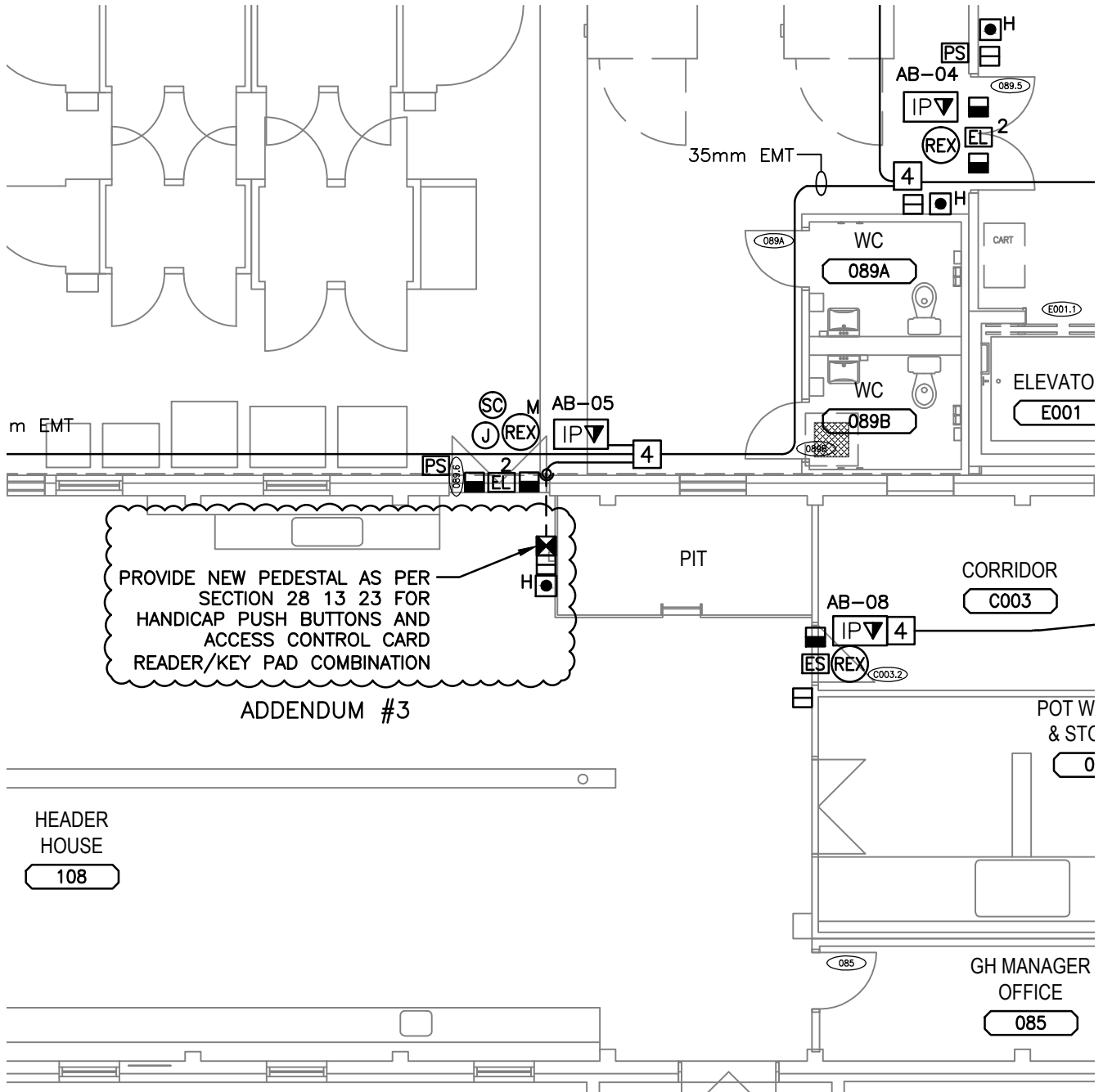
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Project No./No. du  
projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**TG601R2**

Revision/  
Revision



ADDENDUM #3

HEADER  
HOUSE

108

GH MANAGER  
OFFICE

085

1

## BASEMENT FLOOR ACCESS CONTROL AND VIDEO SURVEILLANCE PLAN

TI100R1 1:100

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT ACCESS CONTROL AND VIDEO  
SURVEILLANCE PLAN**

Approved by/Approuvé par

HNP

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

AS NOTED

Designed by/Concept par

JCS

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

2015-01-20

Drawn by/Dessiné par

CD

Project No./No. du  
projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**TI100R1**

Revision/  
Revision





ADDENDUM #3

INSTALL IN EXISTING SALINITY  
GREENHOUSE 75C

LINK

XXX

SLOPE

SLOPE

SLOPE

SLOPE

SLOPE

SLOPE

1

BASEMENT TELECOMMUNICATIONS BACKBONE CONDUIT PLAN

TN100R11:100

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT TELECOM BACKBONE CONDUIT PLAN**

Approved by/Approuvé par

**HNP**

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

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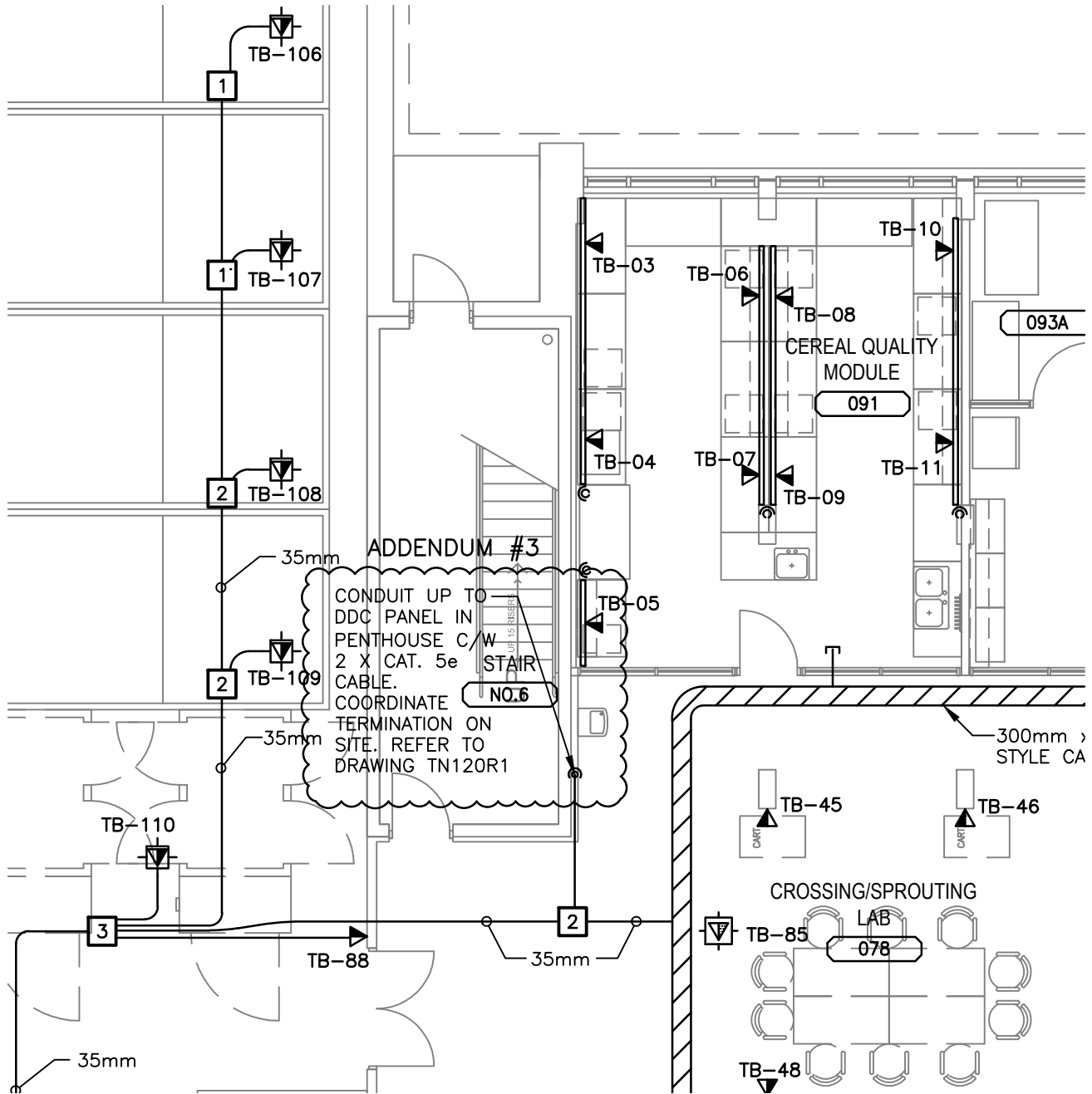
Project No./No. du  
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Sheet/Feuille

**TN100R1**

Revision/  
Revision





1  
TN101 | TN101R11:100

## BASEMENT TELECOMMUNICATIONS PLAN

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT TELECOMMUNICATIONS PLAN**

Approved by/Approuvé par

**HNP**

PWGC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

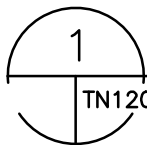
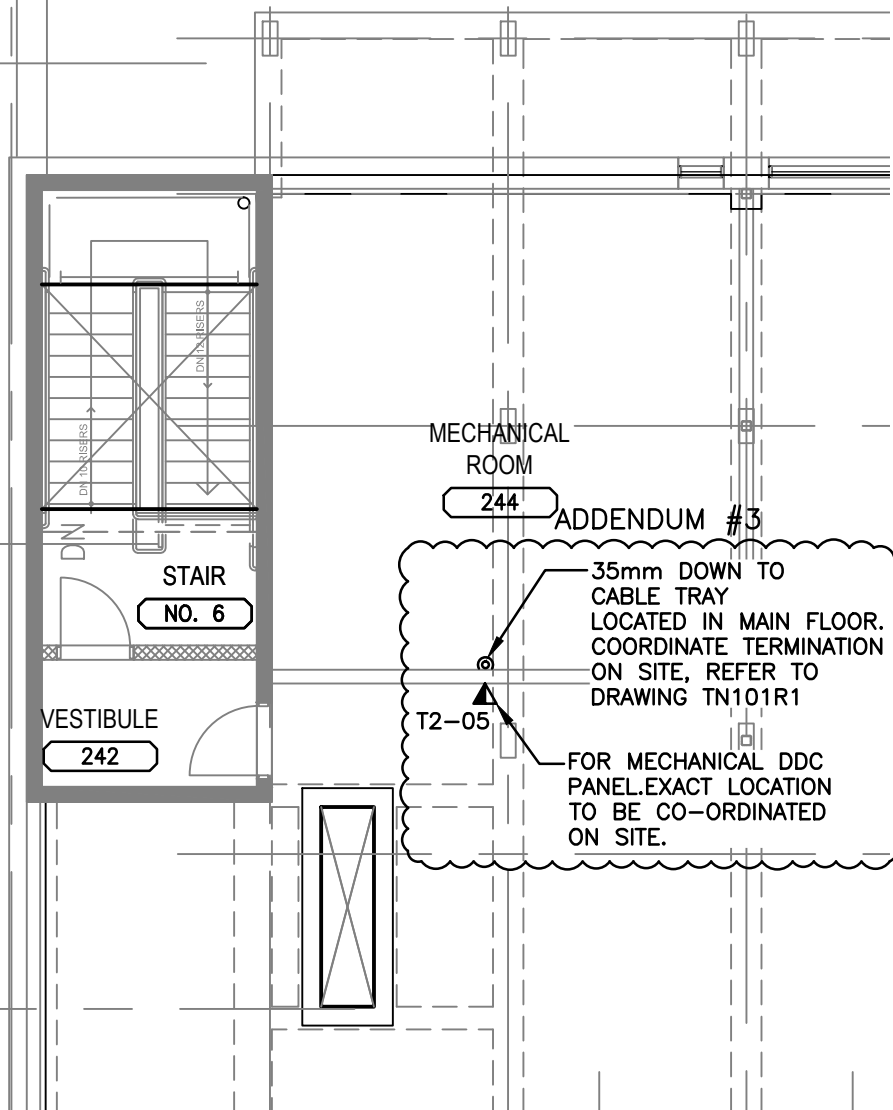
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projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**TN101R1**

Revision/  
Revision



## SECOND FLOOR TELECOMMUNICATIONS PLAN

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**SECOND FLOOR TELECOMMUNICATIONS PLAN**

Approved by/Approuvé par

**HNP**

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

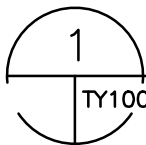
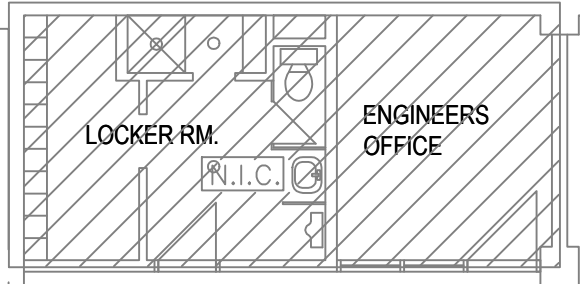
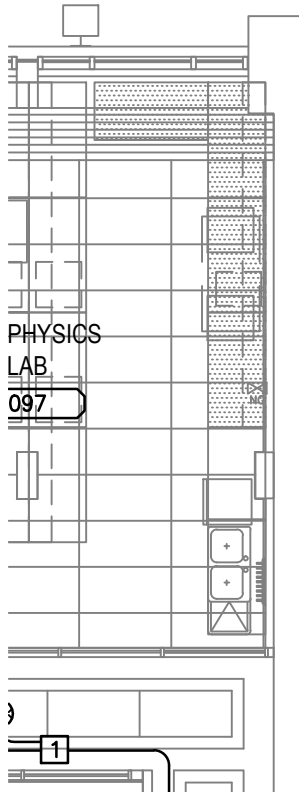
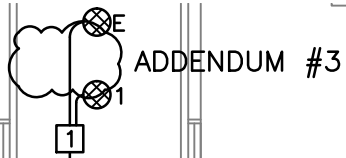
**CD**

Project No./No. du  
projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**TN120R1**

Revision/  
Revision



## BASEMENT PUBLIC ADDRESS SYSTEM PLAN

TY100R1 1:100

Project title/Titre du projet

**SEMIARID PRAIRIE AGRICULTURAL  
RESEARCH CENTRE (SPARC)  
SWIFT CURRENT, SASKATCHEWAN**

Drawing title/Titre du dessin

**BASEMENT PUBLIC ADDRESS SYSTEM PLAN**

Approved by/Approuvé par

**HNP**

PWGSC Project Manager/Administrateur  
de Projets TPSGC

Scale/Echelle

**AS NOTED**

Designed by/Concept par

**JCS**

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Date/Date

**2015-01-20**

Drawn by/Dessiné par

**CD**

Project No./No. du  
projet **R.036324.001 / 129-12379-0C**

Sheet/Feuille

**TY100R1**

Revision/  
Revision

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**Part 1            General**

**1.1                REFERENCES**

- .1        Identification of existing survey control points and property limits.

**1.2                ACTION AND INFORMATIONAL SUBMITTALS**

- .1        Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2        On request of Departmental Representative, submit documentation to verify accuracy of field engineering work.

**1.3                CONSTRUCTION LAYOUT**

- .1        Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Departmental Representative promptly.
  - .2        General: Engage a professional engineer to lay out the Work using accepted surveying practices.
    - .1        Establish benchmarks and control points to set lines and levels of construction and elsewhere as needed to locate each element of Project.
    - .2        Establish limits on use of Project site.
    - .3        Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
    - .4        Inform installers of lines and levels to which they must comply.
    - .5        Check the location, level and plumb, of every major element as the Work progresses.
    - .6        Notify Departmental Representative when deviations from required lines and levels exceed allowable tolerances.
    - .7        Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
  - .3        Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
  - .4        Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations from two or more locations.
  - .5        Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Departmental Representative.
-

**1.4 REFERENCE POINTS**

- .1 Existing base horizontal and vertical reference points are designated on drawings.
- .2 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.
- .3 Make no changes or relocations without prior written notice to Departmental Representative.
- .4 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
- .5 Require surveyor to replace control points in accordance with original survey control.

**1.5 EXISTING SERVICES**

- .1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.
- .2 Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.

**1.6 LOCATION OF EQUIPMENT AND FIXTURES**

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain approval for actual location.
- .4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

**END OF SECTION**

---

**Part 1            General**

**1.1               RELATED REQUIREMENTS**

- .1        Section 22 05 00 - Common Work Results for Plumbing
- .2        Section 23 05 05 - Installation of Pipework

**1.2               REFERENCES**

- .1        American Society for Testing and Materials (ASTM)
  - .1        ASTM D3222, Standard Specification for Unmodified Poly(Vinylidene Fluoride) (PVDF) Molding Extrusion and Coating Materials

**1.3               SUBMITTALS**

- .1        Submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .1        Indicate, for central water equipment:
    - .1        Dimensions, construction details, roughing-in dimensions.
    - .2        Fusion weld methods and equipment.
  - .2        Closeout Submittals:
    - .1        Provide maintenance data including monitoring requirements for incorporation into manuals specified in Section 01 78 00 - Closeout Submittals.
    - .2        Include:
      - .1        Details of operation, servicing, maintenance.
      - .2        List of recommended spare parts including contact information.

**Part 2           Products**

**2.1               LABORATORY WATER PIPING, FITTINGS AND VALVES**

- .1        Application: High purity water systems, such as water treated by reverse osmosis.
  - .2        Piping
    - .1        Material: virgin, unpigmented PVDF (polyvinylidene fluoride) resin to ASTM D3222.
    - .2        Dimensions: Schedule 80, iron pipe dimensions, minimum 3000mm lengths.
    - .3        Pipe to be supplied clean and capped.
  - .3        Fittings:
    - .1        Material: virgin, unpigmented PVDF (polyvinylidene fluoride) resin to ASTM D3222. Suitable for infrared butt welding.
    - .2        Dimensions: minimum wall thickness to Schedule 80 iron pipe dimensions
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- .3 Each fitting to be individually bagged.
- .4 Valves:
  - .1 Material: virgin unpigmented PVDF (polyvinylidene fluoride) fully compatible with piping system. Pressure to tested to 1030 kPa. Suitable for infrared butt welding or mechanical joint.
  - .2 Each valve to be individually bagged.

## **2.2 SPARE PARTS**

- .1 Provide one (1) fusion tool, specific to the piping system installed, to Departmental Representative. Provide training in use of the equipment to the Departmental Representative by factory-authorized representative.

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install in accordance with manufacturer's instructions and contract documents.
- .2 Make connection to existing high purity water system. Provide suitable transition fittings for joining to existing polypropylene piping.
- .3 Install level and with adequate access to allow for servicing, at minimum to manufacturer's directions or as required to properly service and maintain the equipment.
- .4 Fusion weld piping in accordance with manufacturer's directions, using proprietary fusion tool specific to the product. Installer to have received training from factory-authorized representative in the use of tool and installation of product.
- .5 Keep pipe clean and free of dirt and debris. Fittings to remain bagged and stored in manner to prevent contamination until time of installation.
- .6 Piping shall not be installed in moveable (factory assembled) wall partitions. Install piping in adjacent field constructed wall (steel stud wall) or surface mount pipe on moveable partition using approved mounting devices/clips as provided by the moveable wall partition manufacturer.

**END OF SECTION**

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