# CRAWLSPACE REMEDIATION

# REGINA, SASKATCHEWAN

### LIST OF DRAWINGS

#### ARCHITECTURAL

- AO GENERAL INFORMATION, SCHEDULES, SITE PLAN, SITE DETAILS
- A1 DEMOLITION PLANS
- A2 BUILDING SECTIONS, DETAILS A3 SUMP DETAIL, MECHANICAL SPECIFICATIONS

#### STRUCTURAL

S1 PLAN, DETAILS, & SPECIFICATIONS

**ELECTRICAL** 

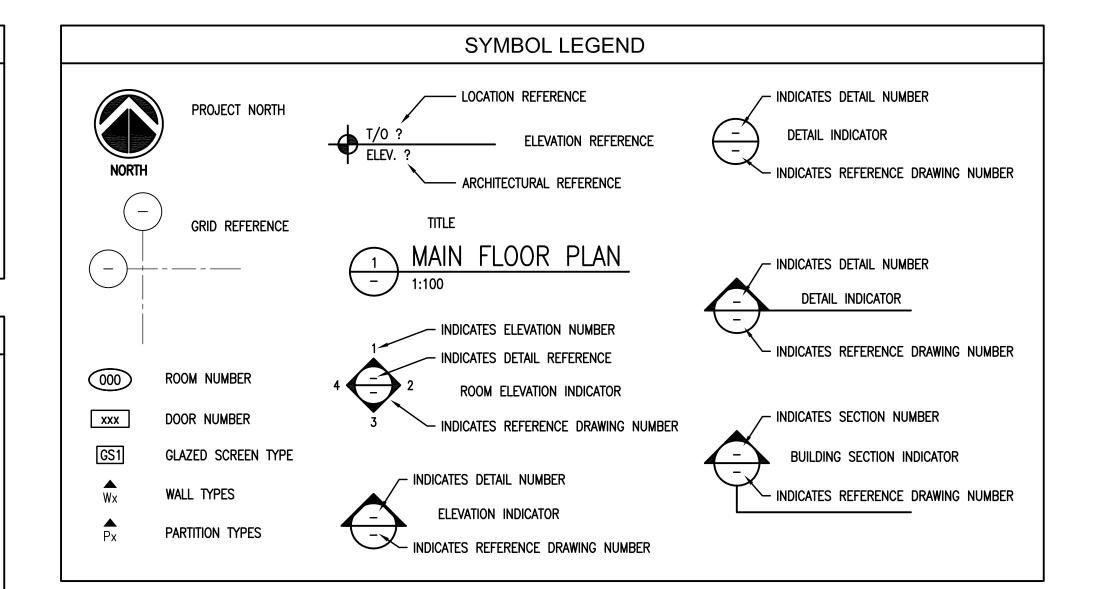
E1 CRAWLSPACE AND MAIN FLOOR PLANS, ELECTRICAL SPECIFICATIONS

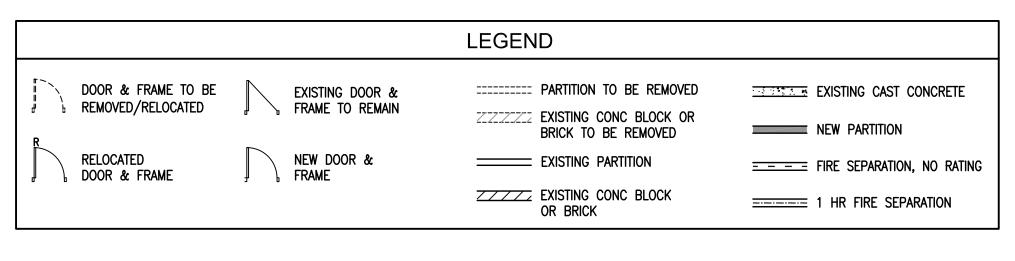
#### **GENERAL NOTES**

- REFER TO STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR COMPLETE SCOPE OF WORK. CONTRACTOR TO CONFIRM ALL DIMENSIONS AND SITE CONDITIONS ON SITE PRIOR TO COMMENCEMENT
- ALL WORK PERFORMED OUTSIDE OF GENERAL SCOPE OF WORK AREA (ie. ELECTRICAL SYSTEM COMPONENTS OR MECHANICAL SYSTEMS) SHOULD BE PERFORMED WITH THE LEAST AMOUNT OF DISTURBANCE TO SURROUNDING AREAS. PATCH, REPAIR AND REFINISH ALL AFFECTED SURROUNDING AREAS WHERE REQUIRED. PROVIDE FIRESTOPPING AS REQUIRED.
- PATCH, REPAIR AND REFINISH ALL FINISHES, TO MATCH EXISTING, WHERE AFFECTED BY REMOVALS OR NEW WORK (ELECTRICAL FIXTURES AND DEVICES, MECHANICAL FIXTURES, DUCTWORK, BUILDING FACADE OWNER WILL HAVE FIRST RIGHT OF REFUSAL FOR ALL ITEMS THAT ARE NOTED FOR REMOVAL OR
- DEMOLITION. REFUSED ITEMS ARE TO BE REMOVED AND DISPOSED. SALVAGED REMOVED ITEMS ARE TO BE DELIVERED TO LOCATION ON PROJECT SITE, AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE. INSTALL FIRESTOPPING MATERIALS AS REQUIRED AT ALL NEW AND EXISTING PENETRATIONS THROUGH FIRE RATED ASSEMBLIES IN ACCORDANCE WITH SECTION 07 84 00 - FIRESTOPPING
- ALL UNDERGROUND SERVICES SHOWN ARE BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE DEPARTMENTAL REPRESENTATIVE AND HAVE NOT BEEN SITE VERIFIED. LOCATE, VERIFY AND PROTECT ALL UNDERGROUND SERVICES, INCLUDING THOSE WITHIN THE CRAWLSPACE AREA, PRIOR TO COMMENCEMENT OF WORK.
- LOCATE, VERIFY, AND PROTECT ALL TREE AND SHRUB LOCATIONS. HOARD AROUND TREES, SHRUBS,
- REINSTATE AFFECTED CONCRETE SLABS AND WALKWAYS. MATCH ORIGINAL DETAILS. PROTECT EXISTING CONCRETE AREAS FROM DAMAGE BY EQUIPMENT. REPAIR DAMAGE CAUSED AS A RESULT OF THIS WORK. REINSTATE WORK TO EXISTING ELEVATIONS.
- REINSTATE ASPHALT AREAS USING 50mm ASPHALT OVER COMPACTED BASE AND SUB-BASE, PROTECT EXISTING ASPHALT FROM DAMAGE BY EQUIPMENT. REPAIR DAMAGE CAUSED AS A RESULT OF WORK. MATCH EXISTING ELEVATIONS, ENSURING DRAINAGE AWAY FROM BUILDING
- REINSTATE AFFECTED LAWN AREAS USING SOD AND TOPSOIL BASE. MATCH EXISTING ELEVATIONS. 12. WHERE REQUIRED, PROVIDE TEMPORARY SHORING OF THE EXISTING FOUNDATION SYSTEM, EXISTING CONCRETE WALKWAYS, AND CONCRETE SLABS. THE DESIGN SHALL BE PROVIDED BY, AND SEALED BY, A STRUCTURAL ENGINEER REGISTERED TO PRACTICE IN THE PROVINCE OF SASKATCHEWAN.
- 13. ENSURE ALL AREAS ADJACENT TO WORK AREA (FLOORS, WALLS, FIXTURES, FOUNDATION, LANDSCAPING, ETC.) ARE PROTECTED FROM DAMAGE FOR COMPLETE DURATION OF WORK.
- 14. THERE ARE EXISTING UNDERGROUND IRRIGATION LINES AND HEADS PRESENT THROUGHOUT THE SITE. EXACT LOCATIONS AND LAYOUT ARE NOT KNOWN. ALL UNDERGROUND IRRIGATION LINES AND HEADS ENCOUNTERED DURING EXCAVATION MAY BE REMOVED AND ABANDONED. REINSTATEMENT OF THE IRRIGATION SYSTEM IS NOT REQUIRED. REMOVE EXISTING SPRINKLER MANIFOLD.
- 15. AREA OF STOCKPILING TO BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE. REINSTATE ALL HARD AND SOFT SURFACES/LANDSCAPING TO ORIGINAL CONDITION. OFF SITE STORAGE OF EXCAVATED MATERIAL MAY BE REQUIRED. CONTRACTOR TO CONFIRM AND PAY FOR ADDITIONAL STORAGE AREAS. 16. EXISTING AIR CONDITIONING UNITS MUST REMAIN FUNCTIONAL AND OPERATIONAL FOR THE COMPLETE
- 17. PROTECT ALL EXISTING DOWNSPOUTS AND EXTENSIONS FOR THE COMPLETE DURATION OF WORK. REPLACE ALL DAMAGED AND REINSTATE ALL REMOVED DOWNSPOUTS AND EXTENSIONS.

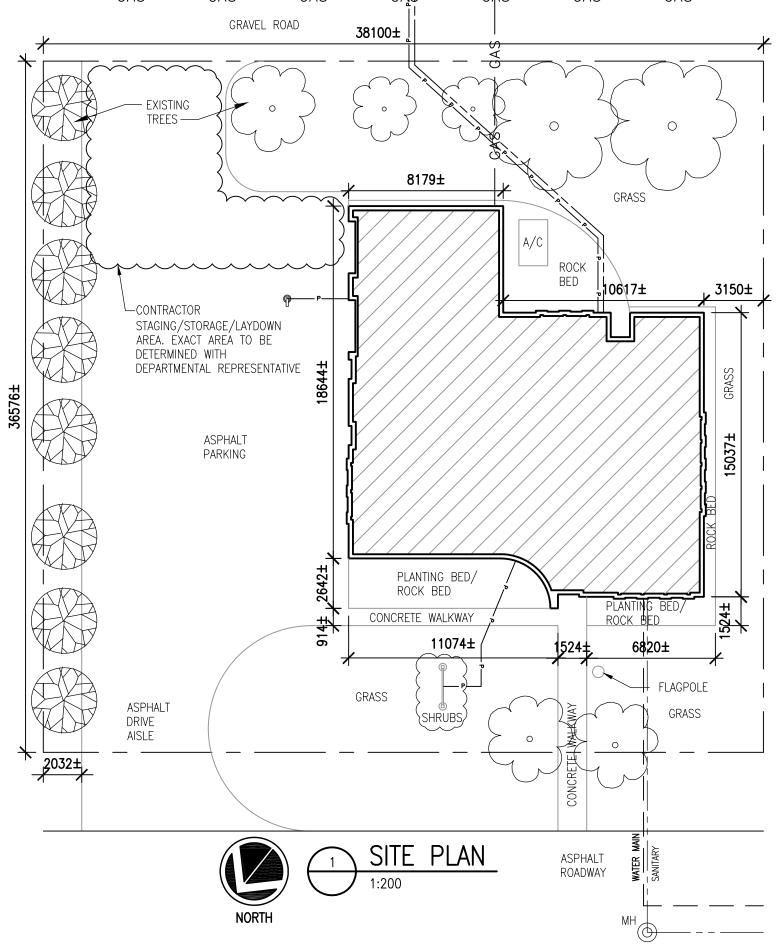
DURATION OF WORK. NO DOWNTIME WILL BE ALLOWED FOR THESE UNITS.

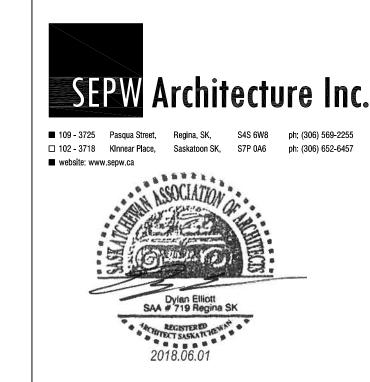
ABBREVIATIONS							
A.F.F. ABOVE FINISHED FLOOR EQ. EQUAL ALUM. ALUMINUM GYP.BD. GYPSUM BOARD BD. BOARD H.S.S. HOLLOW STRUCTURAL STE COL. COLUMN HORIZ. HORIZONTAL CONC. CONCRETE INSUL. INSULATION CORR. CORRIDOR MAX MAXIMUM C/W COMPLETE WITH MECH. MECHANICAL DEMO. DEMOLITION MIN. MINIMUM DEPT. DEPARTMENT M.O. MASONRY OPENING D.F. DRINKING FOUNTAIN N.I.C. NOT IN CONTRACT DTL. DETAIL N.T.S. NOT TO SCALE ELEC. ELECTRICAL O.C. ON CENTER E.W. EACH WAY O.S.B. ORIENTED STRAND BOARD	R.F. RESILIENT FLOORING S.A.P. SOUND ABSORPTIVE PANEL SIM. SIMILAR TB TACKBOARD TYP. TYPICAL VERT. VERTICAL VEST. VESTIBULE WASH. WASHROOM WB WHITE BOARD						

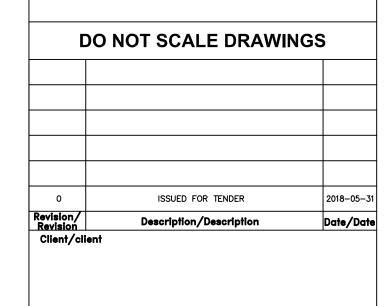


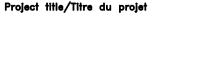


SITE LEGEND							
	WATER MAIN		PROPERTY LINE	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	SODDED AREA		ASPHALT AREA
P P	POWER DISTRIBUTION	GAS GAS	NATURAL GAS LINES	* * *	ANLA		ANLA
	SANITARY SEWER	<b>-</b>	FENCING	4	CONCRETE AREA		CLEAN GRANULAR TOPPING BED
	UNDERGROUND COMMUNIC	CATION					









- 50mm ASPHALT

BASE

- COHESIVE SOIL

· Undisturbed

· 150mm AGGREGATE

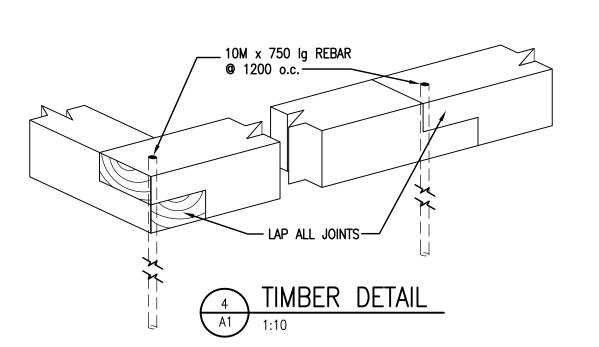
# POLICE BUILDING **CRAWLSPACE REMEDIATION** FILLMORE, SK

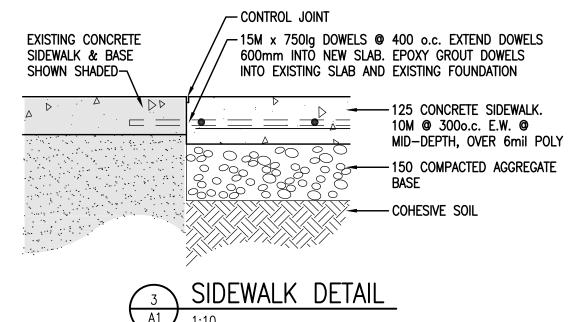
– 250mm GRANULAR SUB–BASE	Approved by/Approuve par
	Designed by/Concept par DE
- NON-WOVEN GEOTEXTILE	Drawn by/Dessine par DE / RHM
- Cohesive Soil	RCMP Project Manager/Administrateur de Projets GRC CS
COLIESIVE SOIL	RCMP, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, GRC
	Client/client

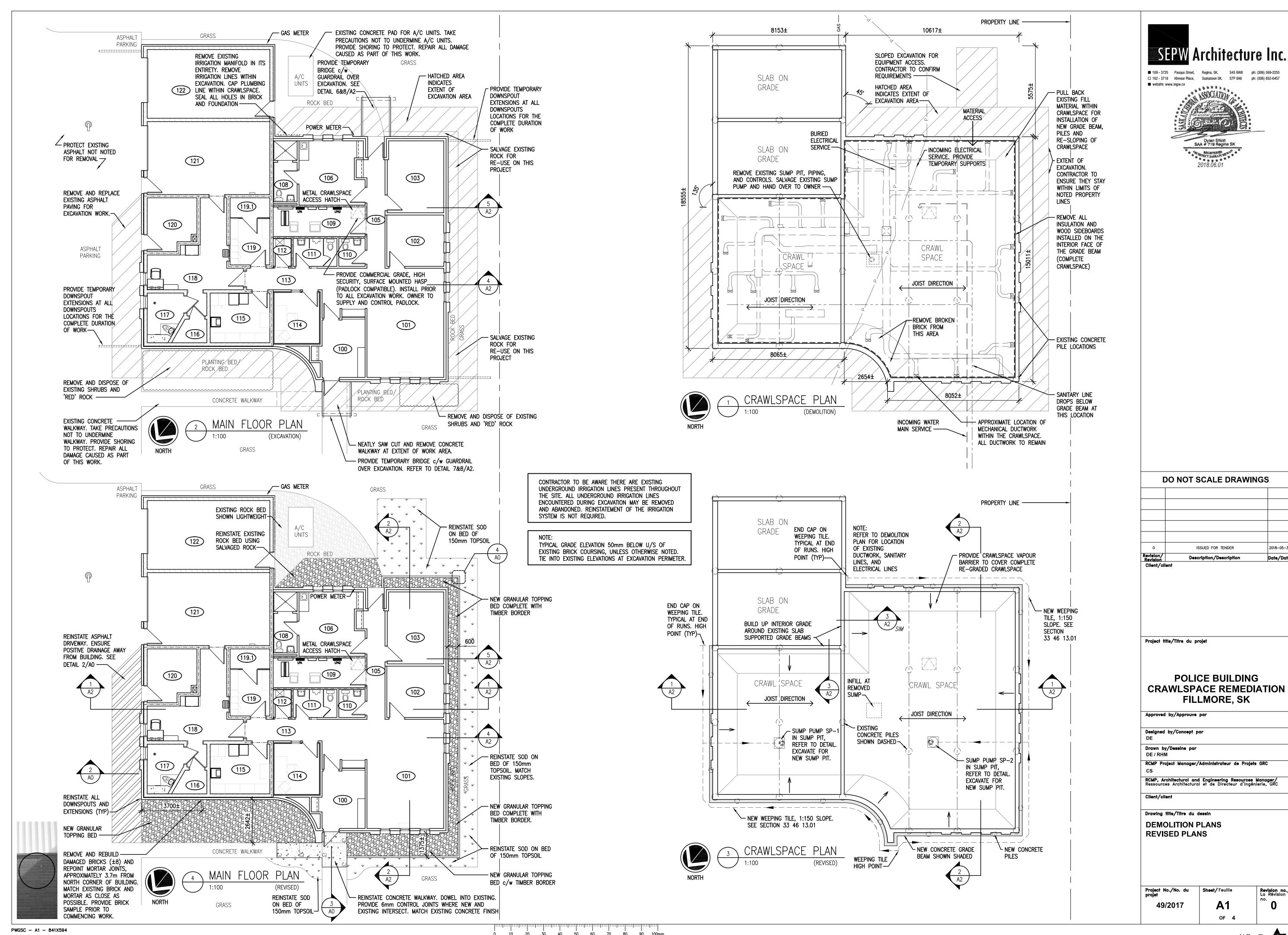
Drawing title/Titre du dessin

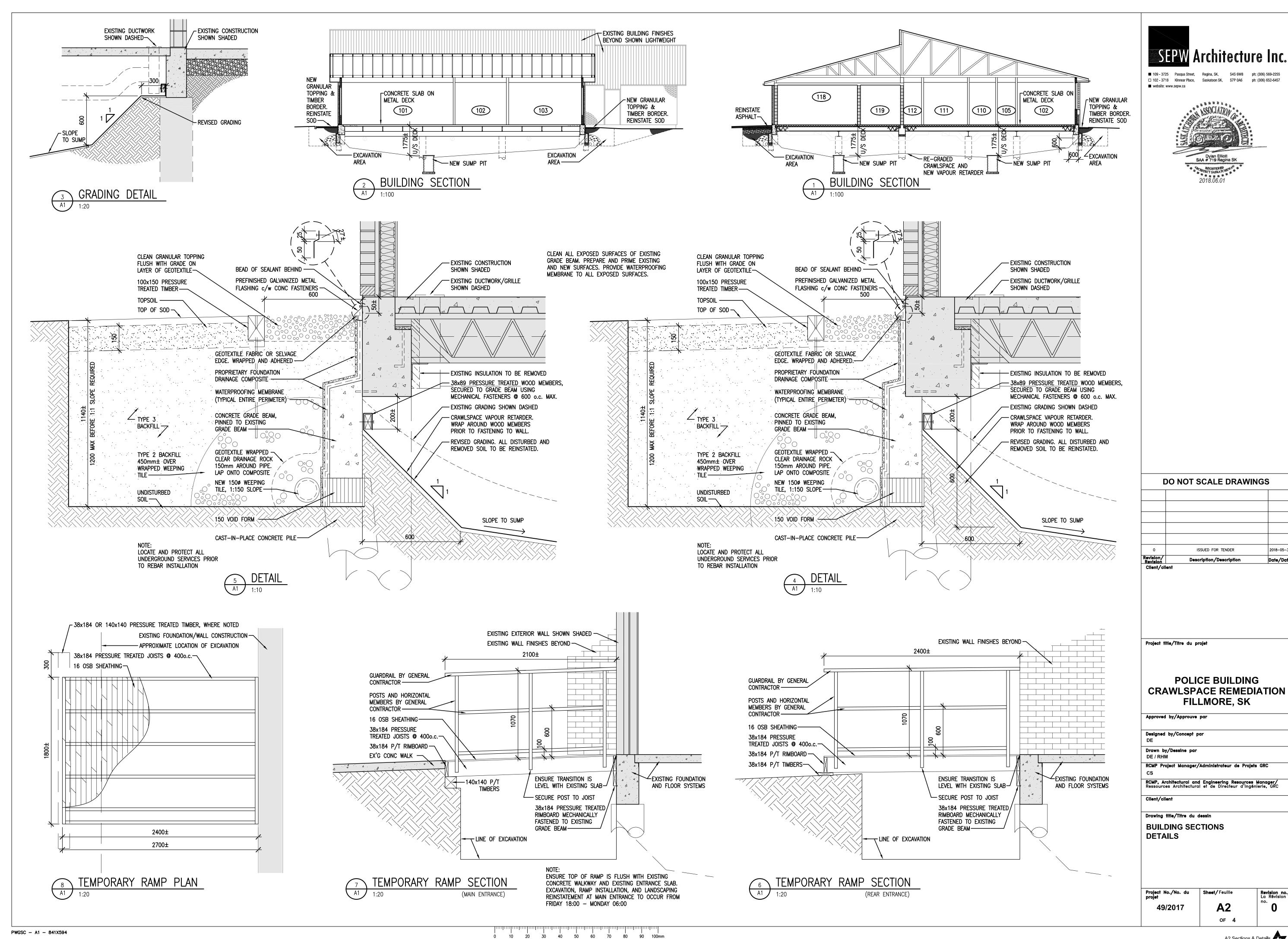
GENERAL INFORMATION **SCHEDULES** SITE PLAN SITE DETAILS

Project No./No. du projet	Sheet/Feuille	<b>Revision</b> La Révis
49/2017	A0	no. <b>0</b>
	OF 4	









#### MECHANICAL SPECIFICATIONS AND EQUIPMENT SCHEDULE

<u>SCOPE OF WORK:</u> The Mechanical Contractor shall include, but not be limited to, the following items as part of this project: supply and installation of new sump pump, piping and controls, and alteration of existing plumbing systems as shown on plans, specification and equipment schedule.

INTENT: Provide a complete and fully operational mechanical system with facilities and services to meet requirements described herein and in complete accord with applicable codes and ordinances. Contract documents of this Division are diagrammatic and approximately to scale unless detailed otherwise. They establish scope, material and installation quality and are not detailed installation instructions. Should any discrepancies occur on drawings or in specifications which leaves doubt as to the intent and meaning of the drawings and specifications, obtain a ruling from the designer before submitting tender. If this is not done, it will be assumed that the most expensive alternate has been allowed for. Follow manufacturer's recommended installation details and procedures for equipment supplemented by details given herein and on plans subject to approval of the Consultant. Install equipment generally in locations and routes shown, close to building structure with minimum interference with other services or free space. Remove and replace improperly installed equipment to satisfaction of the Consultant at no extra cost. All installed equipment must be serviceable in place, provide access doors as required. Provide labour and materials required to install, test and place into operation a complete mechanical system. Provide additional material for modifications required to correct minor job conflicts. Connect to equipment furnished in other Sections and by Owner, including uncrating equipment, moving in place and installing complete, start-up and test.

MATERIALS: Replace materials or workmanship below specified quality and relocate work wrongly placed to satisfaction of the Consultant. Materials and equipment installed shall be new, full weight and of the best quality specified. Use same brand or manufacturer for each specific application. Statically and dynamically balance rotating equipment for minimum vibration and low operating noise level. Each major component of equipment shall have manufacturer's name, address, catalog and serial number in a conspicuous place. Install materials and equipment in a neat and workmanlike manner by competent specialists.

CODES, FEES: All necessary fees, permits, et cetera, shall be provided under this section as necessary for the work hereinafter specified to conform to the laws and regulations of the Province of Saskatchewan. All work shall be in accordance with the requirements of the National Building Code, National Plumbing Code, Canadian Standards Association, Canadian Fire Underwriter's Association, TSASK, NFPA, and the Department of Labour. Changes or alterations required by any authorized inspector shall be done without charge or expense to the Owner.

<u>SUPPORTS, BASES:</u> Provide and install all special structural supports, inserts, anchor bolts, required for all equipment and apparatus under this section. Concrete bases shall be provided by General Contractor. Provide location and size.

<u>PIPING, HANGERS & SUPPORTS:</u> All piping to be routed so as not to interfere with conduit, piping, and apparatus of other trades. Piping arrangement as indicated on the drawings. All lines shall be straight, plumb, forming right angles and parallel to the building structure. Keep as high as possible. Piping shall run parallel in groups. Spacing to allow for insulation and access to service valves. Piping shall be free of scale and dirt, open ends protected. Anchor piping as required, piping system shall be arranged so that entire system may be drained. Provide necessary hangers, rods, supports, inserts to support piping and equipment. No perforated strap allowed. Provide vertical adjustment for pitch of piping. Mechanical systems shall be supported directly from structure, it is not permitted to support from other systems (pipe, ductwork, conduit etc.). Provide structural work and equipment required to control expansion and contraction of piping. Verify that anchors, guides, and expansion joints provided, adequately protect system.

<u>SLEEVES:</u> Provide and set sleeves for pipes and ducts through foundation, walls, floors, and partitions. Sleeves shall be iron pipe where they are located in foundation walls, beams, footings, or waterproof floors. Other locations 20 gauge galvanized sheet metal. Plastic piping penetrating fire rated partitions or floors to be complete with U.L. labelled fire stops.

<u>CUTTING & PATCHING:</u> Locate and provide holes and sleeves, cutting and fitting required for mechanical work. Relocate improperly located holes and sleeves at no extra cost. Drill for expansion bolts, hanger rods, brackets, and supports. All patching of finished construction of building shall be performed under the sections of specifications covering these materials. (Note that the Mechanical contractor shall be responsible for patching and repairing if there is no General Contractor). All patching and repair shall be painted to match existing unless noted otherwise.

TEMPORARY VENTILATION: Provide all temporary ventilation required during construction period to remove all fumes and odours produced by construction materials and activities. Maintain temporary ventilation until all materials cease producing fumes and odours.

<u>PLUMBING:</u> All sanitary piping above grade to be fire rated PVC.

CONTROL WIRING AND DEVICES: The supply of all control devices for mechanical equipment including electric gauges, controllers, actuators, motorized valves, etc., shall be by the Mechanical Contractor. For low voltage controls, wiring and connections of such devices shall be the responsibility of the Mechanical Contractor. For non-low voltage controls, the wiring and connections of such devices shall be the responsibility of the Electrical Contractor. Provide control panels, selectors, indicators and control components as required to facilitate installation. Control wiring routing through exposed areas or subject to physical damage shall be run in conduit. Control wiring routing through concealed spaces shall be plenum rated or run in conduit. Upon completion of the work control devices shall be calibrated and adjusted as required to place the system in complete and satisfactory operating condition. All control wiring shall be shielded and grounded properly.

<u>IDENTIFICATION:</u> Identify piping and equipment throughout with labels and direction of flow arrows. Apply labels at 15 m (50 ft.) intervals, before and after pipes pass through walls, at access door openings or at intervals closer than 15 m (50 ft.) in equipment rooms as required. Labels shall be black, 19 mm (3/4") minimum letters on yellow backgrounds. Provide for valves not in plain sight of apparatus controlled, 19 mm (3/4") diameter brass number tags with number stamped in black, secured to valve wheel with key chain. Provide neat, typewritten directories giving valve number, valve service and the location of valves. Frame one copy under glass for wall mounting. Tag automatic controls, instruments and relays and key to control schematic on which instruments are numbered in sequence. Identify electric starting switches and remote push-button stations with 6 mm (1/4") laminated plastic plates.

EQUIPMENT PROTECTION AND CLEAN-UP: Protect equipment and materials in storage on site, during and after installation until final acceptance. Leave factory covers in place and take special precautions to prevent entry of foreign material into working parts of piping and duct systems. Protect equipment with polyethylene covers and crates. Operate, drain and flush out bearings and refill with new change of oil, before final acceptance. Thoroughly clean piping, ducts and equipment of dirt, cuttings and other foreign substances. Protect bearings and shafts during installation. Grease shafts and sheaves to prevent corrosion. Supply and install necessary extended nipples for lubrication purposes. Ensure that existing equipment is carefully dismantled and not damaged or lost. Do not re-use existing materials and equipment unless specifically indicated.

USE OF EQUIPMENT FOR TEMPORARY HEAT AND/OR VENTILATION: Do not use the permanent system for temporary heating or ventilation purposes, without written permission from the Consultant. Thoroughly clean and overhaul permanent equipment used during the construction period, replacing worn or damaged parts. Exchange equipment or components operating improperly at final inspection with new equipment or components. Use of permanent systems for temporary heat shall not modify the terms of warranty. Where air systems are used during temporary heating, provide filter media or return and exhaust air outlets. Clean duct systems which have become dirty. When permanent systems are used for temporary heat, provide alarm indicating system failure. Connect alarm to independent alarm company system. Replace mechanical seals in pumps used for temporary heating purposes with new mechanical seals, regardless of condition. Provide one year warranty from date of Substantial Completion.

<u>SITE PREPARATION:</u> Contractor to visit site prior to commencing work to confirm the exact site conditions.

<u>SITE CLEAN-UP</u>: Ongoing during construction and upon completion of installation, Contractor shall clean up all dirt, debris, and dust to the satisfaction of the Engineer and Owner. At completion of the project, the site shall be put back into the condition at the start of the project.

MAINTENANCE MANUALS: Provide two (2) hard bound copies and one (1) electronic PDF copy of manufacturer's operation and maintenance instructions. Maintenance manuals shall include, but not be limited to the following: letter of warranty, record of suppliers and sub-contractors, gas and boiler installation permits, start-up reports for air handling units, boilers, and VFD pumps including a record of all initial setpoints and settings, pre-construction and post-construction heating water analysis report, shop drawings for all equipment, operation and maintenance information for all equipment, air and water balance reports, controls and electrical as-built wiring drawings, controls installation / operation data including initial settings recorded for all setpoints, and fire protection as-built drawings. The manuals shall be complete and approved before Owner training takes place.

<u>INSTRUCTION OF OPERATING STAFF:</u> Provide trained personnel to instruct operating staff on maintenance, adjustment and operation of mechanical equipment. Use operation and maintenance data manual for instruction purposes.

GUARANTEE: The warranty period shall begin when substantial completion has been achieved as determined by the Engineer. The mechanical portion of the project shall be deemed substantially complete when <u>ALL</u> mechanical systems are operational as designed. In addition, the air and/or water balance must be completed with the report submitted and approved by the Consultant and the temperature control system must be complete, as designed, operational, with all control components calibrated and the maintenance manuals in final form must be submitted. During the one year warranty or guarantee period all defective material, improper material or workmanship shall be made good without expense to the Owner.

APPROVED EQUAL & ALTERNATE MATERIALS & EQUIPMENT: This contract shall be based on materials and equipment as specified and as approved equal. It is the responsibility of the contractor/supplier to ensure that the equipment they use meets all requirements of the contract and can be installed, operated and serviced as intended. Any and all costs associated with revisions required to adapt the installation to equipment other than that specified shall be borne by the contractor and made without extra cost to the contract.

SHOP DRAWINGS: Contractor shall provide one (1) electronic PDF copy of shop drawings for review by Engineer prior to ordering of equipment. Shop drawings shall be provided for all equipment, including controls and sprinklers. Submit materials and equipment by manufacturer, trade name and model number including applicable catalog material. Clearly mark each sheet to show particular sizes, types, model numbers, ratings, capacities and options actually being proposed. Cross out non-applicable material. Include dimensional data for roughing in and installation, technical data sufficient to check that equipment meets requirements of drawings and specifications, wiring, piping, and service connection data, motor sizes complete with voltage ratings and schedules as applicable.

<u>AS-BUILT DRAWINGS:</u> Contractor shall provide one set of marked-up prints to the Engineer indicating all revisions made during the course of construction and recording the as-built conditions. A set of as-built wiring diagrams / drawings for the controls shall also be included for insertion into the maintenance manuals.

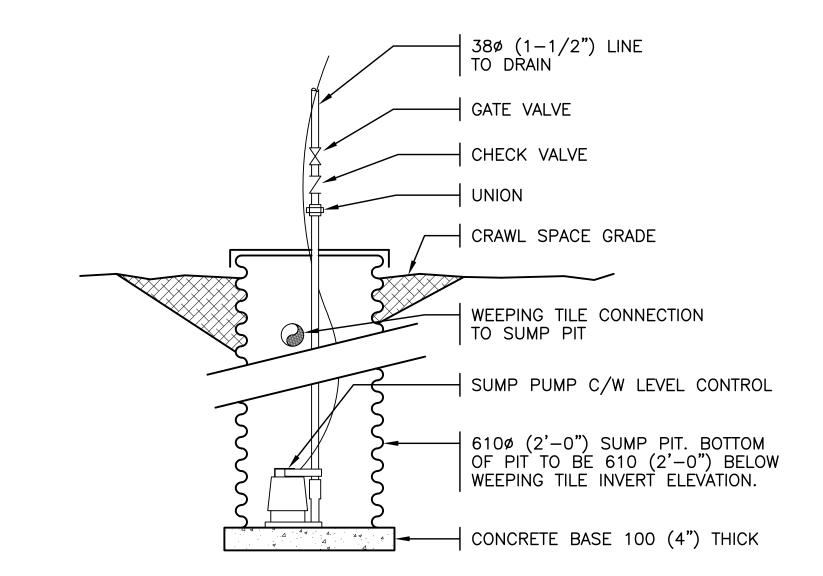
<u>DEMOLITION:</u> Mechanical Contractor shall include in his Base Price the cost to provide the removal of all existing mechanical equipment and material that is not to be reused under this contract. Equipment shall be Owner's salvage unless noted otherwise.

## **SPECIAL NOTES:**

- 1. Remove existing sump pit, associated piping and controls in their entirety. Salvage and hand over existing sump pump to Owner.
- 2. All existing control modules and wiring not being reused shall be removed in their entirety.
- Install new sump pumps in locations shown on drawings.Coordinate all work with other trades and site conditions
- 5. Run sanitary piping as high as possible to provide maximum clearance in all areas.
- Sump pump discharge piping to tie into nearest existing 75mm diameter sanitary piping in crawlspace. Tie into top of existing sanitary piping to avoid sanitary draining back into new piping.

## **EQUIPMENT SCHEDULE**

SUMP PUMP (SP-1 & SP-2): Myers Model SSM331, heavy duty cast iron submersible pump, pump to be oil filled with overload protection, cast iron housing, cast iron seal plate, mechanical seal, cast iron impeller, complete with Simplex electrical control panel Model CE-11SW with on-off-auto switch, high level alarm horn and light and silence button, non-mercury type float switches for on/off functions and high level alarm. Capacity 20 GPM @ 18' head. Motor: 1/3 HP, 115V/60/1 phase complete with 10 foot cord and plug, individual 15amp circuit.



<u>CRAWL SPACE SUMP DETAIL n.t.s.</u>



■ 109 - 3725 Pasqua Street, Regina, SK, S4S 6W8 ph: (306) 569-2255
□ 102 - 3718 KInnear Place, Saskatoon SK, S7P 0A6 ph: (306) 652-6457
■ website: www.sepw.ca





Revision/ Revision	Description/Description	Date/Da
0	ISSUED FOR TENDER	2018-05-
DO	NOT SCALE DRAWI	NGS

Project title/Titre du projet

# POLICE BUILDING CRAWLSPACE REMEDIATION FILLMORE, SK

Designed by/Concept par
DE

Drawn by/Dessine par
DE / RHM

RCMP Project Manager/Administrateur de Projets GRC
CS

RCMP, Architectural and Engineering Resources Manager/
Ressources Architectural et de Directeur d'Ingénierie, GRC

Client/client

Drawing title/Titre du dessin

SUMP DETAIL
MECHANICAL SPECIFICATIONS

Project No./No. du projet

49/2017

A3

A3

OF 4

0 10 20 30 40 50 60 70 80 90 100mm