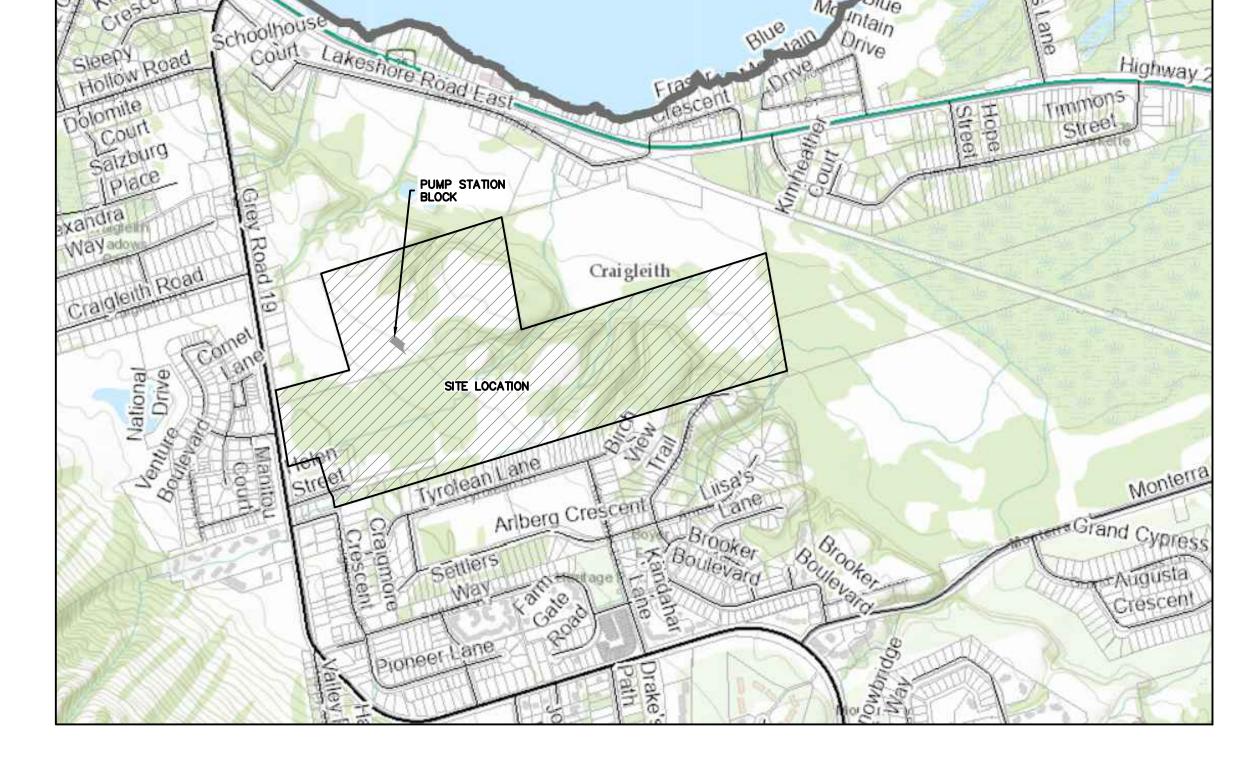
HOME FARM SEWAGE PUMP STATION

TOWN OF THE BLUE MOUNTAINS **COUNTY OF GREY**



GENERAL CONSTRUCTION NOTES (STRUCTURAL, SHEET 1 OF 2) S001 GENERAL CONSTRUCTION NOTES (STRUCTURAL, SHEET 2 OF 2) S002 S200 STRUCTURAL PLANS AND SCHEDULES S201 STRUCTURAL DETAILS GENERAL CONSTRUCTION NOTES (ARCHITECTURAL) ARCHITECTURAL PLAN, WASHROOM ELEVATIONS & SCHEDULES A300 A310 **ELEVATIONS** WALL SECTIONS, CONSTRUCTION SEWAGE PUMPING STATION SITE PLAN (CIVIL) P101 P102 WET WELL CROSS SECTIONS & CONSTRUCTION NOTES P103 VALVE CHAMBER CROSS SECTIONS EMERGENCY STORAGE TANK CROSS SECTIONS P104 P105 GENERAL PROCESS DETAILS M001 MECHANICAL SPECIFICATIONS, LEGEND & SITE PLAN PLUMBING: CONTROL BUILDING FLOOR PLAN M100 HVAC: CONTROL BUILDING FLOOR PLAN & WET WELL SECTION M101 DETAILS (MECHANICAL) M102 SCHEDULES (MECHANICAL) M103 E001 ELECTRICAL LEGEND & CONTROL BUILDING DETAILS E100 SPS SITE PLAN - PHOTOMETRIC SPS SITE LIGHTING DETAILS E101 E110 SPS SITE PLAN - ELECTRICAL E111 WET WELL & VALVE CHAMBER DETAILS E112 SPS SITE ELECTRICAL DETAILS (SHEET 1 OF 2) E113 SPS SITE ELECTRICAL DETAILS (SHEET 2 OF 2) E300 CONTROL BUILDING - POWER & SYSTEMS E400 SPS SINGLE LINE DIAGRAM, DETAILS & SCHEDULES E401 SCHEDULES (ELECTRICAL) E402 ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 1 OF 3) ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 2 OF 3) E403 ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 3 OF 3) E404 SEWAGE PUMPING STATION CONTROL DIAGRAMS

MUNICIPALITY

TOWN OF THE BLUE MOUNTAINS 32 MILL STREET THE BLUE MOUNTAINS, ONTARIO, NOH 2PO

<u>DEVELOPER</u>

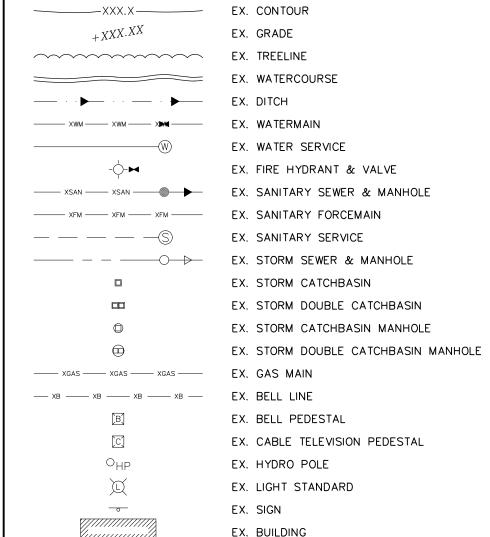
MACPHERSON BUILDERS (BLUE MOUNTAIN) LTD 5525 EGLINTON AVENUE WEST, SUITE 128 TORONTO, ONTARIO, M9C 5K5

DEVELOPER'S ENGINEER



MASTER LEGEND

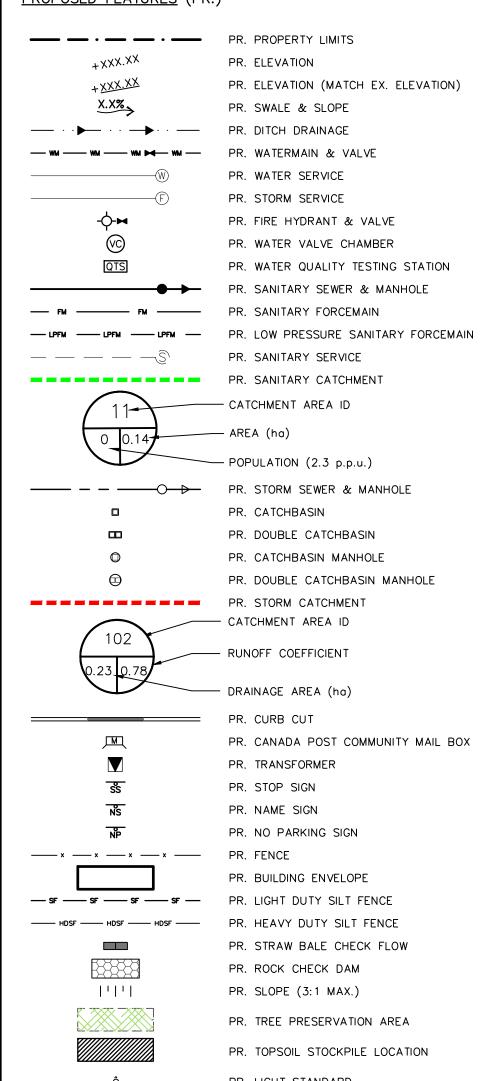
EXISTING FEATURES (EX.)



EX. BENCHMARK NUMBER & LOCATION

EX. BOREHOLE NUMBER & LOCATION

<u>PROPOSED FEATURES</u> (PR.)



PR. LIGHT STANDARD

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PLC-1 I/O SCHEMATICS

E405

E406

DRAWING

TITLE

GENERAL NOTES

- THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND VENDOR DRAWINGS.
- THIS SET OF DRAWINGS SHOWS THE COMPLETED CONSTRUCTED PROJECT, IN TERMS OF STRUCTURAL COMPONENTS. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION INCLUDING PAINTING AND WELDING.
- THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE METHODS, TECHNIQUES AND SEQUENCES OF PROCEDURE TO PERFORM THE WORK. THE SUPERVISION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" IN THE REVISIONS COLUMN, BY THE ENGINEER.
- DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO
- THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR
- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY
- DO NOT SCALE THE DRAWINGS.
- 10. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR
- 1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE NECESSARY SITE REVIEW AND OBTAIN ALL INFORMATION OF ANY POSSIBLE PHYSICAL OBSTRUCTION THAT MAY AFFECT HIS WORK PERFORMANCE BEFORE PROCEEDING WITH ANY TYPE OF WORK.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY UNAUTHORIZED CHANGES AND DEVIATIONS FROM APPROVED DRAWINGS. THE CONSTRUCTION NOTES AND DRAWINGS ARE SUPPLIED TO ILLUSTRATE THE DESIGN AND GENERAL TYPES OF CONSTRUCTION AND ARE INTENDED TO REQUIRE THE HIGHEST STANDARDS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP.
- 14. THE CONTRACTOR SHALL LEAVE THE ENTIRE SITE CLEAN AND FREE OF ALL CONSTRUCTION MATERIALS AND WASTE.
- 15. SECTION MARK SHOWN THUS MEANS SECTION "A" ON DRAWING S301.
- 16. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, NAILERS, INSERTS, ETC., TO BE ENCASED IN CONCRETE.
- 17. SEE ARCHITECTURAL DRAWINGS FOR FLOOR AND ROOF ELEVATIONS, RECESSES, DRAINAGE SLOPES,
- REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR LOCATIONS, CONFIGURATIONS, EXTENT, AND SIZES OF ALL CURBS, UPSTANDS, DOWNTURNS; AND FOR

OPENINGS THROUGH FLOOR AND WALLS FOR DUCTS, CONDUIT AND PIPING "NOT SHOWN ON

- THE GENERAL CONTRACTOR SHALL REVIEW ALL THE DRAWINGS AND CHECK DIMENSIONS BEFORE CONSTRUCTION. REPORT DISCREPANCIES BETWEEN STRUCTURAL AND OTHER DISCIPLINES DRAWINGS, IF APPLICABLE, FOR CLARIFICATION.
- SHALL CONFORM TO CAN/CSA-A23.1, CAN/CSA-A23.2, CAN/CSA-23.3 AND REFERENCED
- DOCUMENTS. STRUCTURAL STEEL WORK
- SHALL CONFORM TO CAN/CSA-S16 AND REFERENCED DOCUMENTS.

STRUCTURAL DRAWINGS", PROVIDE FOR SAME

- SHALL CONFORM TO CSA-S304.1 AND ITS REFERENCED DOCUMENTS.
- SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PRECISE LOCATION OF REQUIRED FIRE RESISTANCE RATINGS.
- 24. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE UNLESS OTHERWISE SPECIFIED
- 25. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION OF C.F. CROZIER & ASSOCIATES, LTD.

STRUCTURAL DESIGN CRITERIA

- THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012 WHICH IS BASED ON THE NATIONAL BUILDING CODE 2015, WIND PRESSURE COEFFICIENTS AND SNOW ACCUMULATION HAVE BEEN DETERMINED IN ACCORDANCE WITH THE NBC 2015 STRUCTURAL COMMENTARY.
- REFER TO ROOF PLANS FOR ADDITIONAL LOADING, ROOF UPLIFT DIAGRAMS, SNOW ACCUMULATION INFORMATION ETC.
- CONTRACTORS CONSTRUCTION LOADS MUST NOT EXCEED THE BELOW DESIGN LOADS. DESIGN LOADS MAY ONLY BE APPLIED AFTER CONCRETE REACHES ITS DESIGN STRENGTH.

SPECIFIED LOADS

DEAD LOAD — ROOF:	1.2kPa	WIND (COLLING	WOOD, ON)
SLAB ON GRADE (4" SOG)	2.35kPa	Q (1/50yr):	0.39kPa
MECHANICAL ALLOWANCE:	0.2kPa	lw, ULS:	1.25
LIVE LOAD		lw, SLS:	0.75
LIVE LOAD — GROUND FLOOR:	1.9kPa	Ct:	1.0 0.9
GROUND FLOOR.	1,5KFU	Ce: h:	0.9 0.93m
		11.	(MID HEIGHT OF ROOF
SNOW (COLLINGWOOD, ON)			(5 1.2.6.11 6. 1.66.
GROUND SNOW LOAD (1/50yr):	2.70kPa		
ls, ULS:	1.25		
ls, SLS:	0.9		
CB:	0.8 1.0		
Cw: Ca:	1.0		
Cs:	1.0		
BASIC SPECIFIED SNOW LOAD:			
ULS: 3.2kPa			
SLS: 2.30kPa			

SEISMIC (COLLINGWOOD, ON)

- SITE CLASS : C (STIFF SOIL) SYSTEM: CONVENTIONAL CONSTRUCTION MASONRY SHEAR WALL
- Sa(1.0): 0.044 Sa(2.0): 0.023 Sa(5.0): 0.058

Sa(10.0): 0.024

0.056 Rd: 1.0

leFaSa(0.2): 0.14

Vdesign: 20kN

- THE ENGINEER PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. REVIEW IS TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS.
- PROVIDE 48 HOURS ADVANCE NOTICE OF EACH REQUIRED FIELD REVIEW. FIELD REVIEWS SHALL BE SCHEDULED TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS.
- DESIGN AND FIELD REVIEW OF EXCAVATION, SHORING, AND BACKFILL IS NOT PERFORMED BY C.F. CROZIER & ASSOCIATES. THIS REVIEW SHALL BE UNDERTAKEN BY A PROFESSIONAL ENGINEER WHO HAS DESIGNED THIS WORK.

INSPECTION & TESTING NOTES

- INSPECTIONS ARE TO BE CARRIED OUT BY AN INDEPENDENT TESTING AND INSPECTION COMPANY FOR THE FOLLOWING WORK:
- A. PRIOR TO PLACING CONCRETE FOR FOUNDATIONS, FOR SOIL AT FOUNDING ELEVATION AND FOR BEARING VALUE B. STRENGTH TESTS FOR CONCRETE FOR FOOTINGS, WALLS, SLABS, ETC. AS REQUIRED BY THE
- ONTARIO BUILDING CODE C. COMPACTION TESTS FOR FILL UNDER FLOOR SLABS AND AT EXCAVATION FOR WALLS,
- FOOTINGS, ETC. STRUCTURAL STEEL, INCLUDING WELDING, BOLT TENSIONS, ALIGNMENT, PLUMB, ETC.
- E. DEEP FOUNDATION LOADING SUCH AS HELICAL PIER TORQUE RESISTANCE
- 2. COPIES OF TESTS RESULTS ARE TO BE SUBMITTED TO THE ENGINEER, MUNICIPALITY AND OWNER.

SHOP DRAWING RESPONSIBILITIES

AS PART OF THEIR FIELD SERVICES, THE ENGINEER MAY REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON THE ENGINEER'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS. REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS. RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

HE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR CO-ORDINATION OF THE WORK OF ALL SUB-TRADES.

- MANUFACTURERS OF ALL STRUCTURAL ELEMENTS SHALL SUBMIT COMPLETE SHOP DRAWINGS. SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO TO THE CONSULTANT FOR REVIEW PRIOR TO THE FABRICATION (3 SETS OR PDF). SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS AND ALLOW A MINIMUM OF TWO(2) WEEKS FOR REVIEW. THE SUBMISSION NOR THE REVIEW SHALL RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR PROVIDING PROPER ENGINEERING DESIGN, METHODS, EQUIPMENT, WORKMANSHIP AND SAFETY PROCEDURES.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR THE FOLLOWING:
- A. CONCRETE MIX DESIGN B. REINFORCING STEEL SHOP DRAWINGS
- PRE-ENGINEERED ROOF TRUSS
- PRE-ENGINEERED ATTIC HATCH BRICK&TIES

F. ASPHALT SHINGLES

- THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN, REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.
- IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT, AND FREE FROM EXCESSIVE DEFLECTION.
- ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS ON THE FLOORS ARE NOT PERMITTED, UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S TEMPORARY WORK DESIGN TO THE SATISFACTION OF THE ARCHITECT.
- COSTS OF ALL TEMPORARY WORKS, ARE DEEMED TO HAVE BEEN INCLUDED IN THE CONTRACT

CONSTRUCTION TOLERANCES

- WHERE ANY DEVIATION OCCURS, AND IT IS ACCEPTABLE TO THE ENGINEER AND ARCHITECT, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF OTHER BUILDING ELEMENTS TO ACCOMMODATE SUCH DEVIATION. COST FOR REMEDIAL WORK FOR DEVIATIONS NOT ACCEPTED SHALL BE BOURNE
- THESE REQUIREMENTS SHALL BE REGARDED AS MINIMUM STANDARDS ONLY. THEY DO NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO MEET MORE RIGOROUS REQUIREMENTS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS OR AS REQUIRED IN SPECIFICATIONS OR SHOP DRAWINGS FOR EQUIPMENT SUCH AS ELEVATORS.

MASONRY

CONSTRUCTION TOLERANCES FOR STRUCTURAL ELEMENTS SUPPORTING MASONRY WALLS SHALL BE CO-ORDINATED WITH THE REQUIREMENTS FOR MASONRY CONSTRUCTION TOLERANCES IN CSA STANDARD A371

CONCRETE

- CONSTRUCTION TOLERANCES SHALL CONFORM TO CSA-A23.1 EXCEPT AS NOTED BELOW.
- VARIATION FROM THE PLUMB:
- A. IN THE LINES AND SURFACES OF COLUMNS, PIERS, WALLS AND IN ARISES:
- 0.25% OF HEIGHT (1 IN 400), MAXIMUM 38mm.
- ONLY ONE CURVATURE PER 3m.
- THE TOLERANCE GIVEN IS THE MAXIMUM VARIATION FROM A PLUMB LINE. ALL MEASUREMENTS SHALL BE TO THE SAME SIDE OF THE PLUMB LINE. B. UNLESS SPECIFIED OTHERWISE, THE TOLERANCES FOR EXPOSED CORNER COLUMNS, CONTROL
- JOINT GROOVES AND OTHER CONSPICUOUS LINES SHALL BE: • 0.125% OF HEIGHT (1 IN 800), MAXIMUM 19mm.
- ONLY ONE CURVATURE PER 6m. MAXIMUM VARIATION IN WINDOW FRAMES SHALL BE 0.2% OF OPENING.

- VARIATION FROM THE LEVEL OR FROM THE GRADES OR CAMBERS INDICATED: A. UNLESS SPECIFIED OTHERWISE, FLOOR FINISHES SHALL BE CLASS B: WITH A TOLERANCE OF ±8mm PER 3m, ±9mm OVERALL ONLY ONE CURVATURE ALLOWED IN 3m.
- TOLERANCES GIVEN ARE MAXIMUM DISTANCES FROM SPECIFIED LEVELS. CLOSER TOLERANCES MAY BE REQUIRED TO SATISFY SPECIFIED FLOOR FINISHES.
- UNLESS SPECIFIED OTHERWISE THE LATERAL POSITION OF SLAB EDGE RELATIVE TO SPECIFIED VERTICAL PLANE SHALL BE 12mm OVERALL WITH A MAXIMUM VARIATION OF 6mm OVER A VERTICAL OR HORIZONTAL DISTANCE OF 3m.
- LOCATION OF COLUMNS AND WALLS SHALL CONFORM TO REQUIREMENTS FOR COLUMNS IN CAN3
- 10. VARIATION IN CROSS-SECTIONAL DIMENSIONS OF COLUMNS AND BEAMS AND IN THE THICKNESS OF SLABS AND WALLS SHALL CONFORM TO CAN3 A23.1. (ONLY ONE CURVATURE ALLOWED IN 3m).

CONSTRUCTION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL PARTS OF THE EXISTING BUILDING IN A SAFE CONDITION DURING THE PROCESS OF CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF EXISTING AND ADJACENT FOOTINGS FROM BEING UNDERMINED AND OVERLOADED BY LIMITING THE SLOPE OF THE LINE BETWEEN ADJACENT FOOTING ELEVATIONS TO 7:10 MAXIMUM AND A MAXIMUM RISE OF 600mm.

- CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.1-04.
- CONCRETE, FOR FLOOR SLAB, SHALL CONFORM TO THE FOLLOWING: CLASS OF EXPOSURE: N

STRENGTH: 32 MPa MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS

STRENGTH: 25 MPa MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS

- CONCRETE, FOR FOOTINGS AND FOUNDATION WALLS, SHALL CONFORM TO THE FOLLOWING: CLASS OF EXPOSURE: F-2, EXPOSED TO FREEZING 5-8% AIR CONTENT AND THAWING
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNER'S SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.1-14.
- THE SUPPLIER SHALL MEET ALL CERTIFICATION AND DOCUMENTATION REQUIREMENTS AS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF A23.1-14.
- THE CONCRETE SUPPLIER SHALL BE CERTIFIED BY CONCRETE ONTARIO.
- PORTLAND CEMENT SHALL BE TYPE GU UNLESS NOTED OTHERWISE.
- CONCRETE SHALL HAVE A UNIT WEIGHT OF 145 ± 35 kPa UNLESS NOTED OTHERWISE.
- SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
-). MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4 AND 20 OF CAN/CSA-A23.1.
- CEMENT TYPE FOR EXPOSURE CLASSES S-1, S-2, AND S-3 SHALL BE AS OUTLINED IN TABLE 3 OF CAN/CSA-A23.1.
- . CHLORIDE ION PENETRABILITY FOR EXPOSURE CLASS C-1 AND C-XL SHALL MEET THE REQUIREMENTS OF TABLE 2 OF CAN/CSA-A23.1.
- . AT THE REQUEST OF THE OWNER, THE SUPPLIER WILL FURNISH TEST DATA RESULTS FOR EACH PROPOSED MIX DESIGN DEMONSTRATING THAT THEY MEET THE STRENGTH, DURABILITY, AND SHRINKAGE REQUIREMENTS SPECIFIED.
- 14. CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CLAUSE 7.4.1.7 AS WELL AS TABLES 2 AND 20 OF CAN/CSA-A23.1.
- 15. ALL BOTTOM EDGES OF EXPOSED SLABS AND BEAMS, AS WELL AS EDGES OF WALLS AND COLUMNS, TO BE CHAMFERED 19mm x 19mm. ALL TOP EDGES OF EXPOSED SLABS, BEAMS, UP-STANDS AND STAIRS TO BE TOOLED UNLESS NOTED OTHERWISE. SEE ALSO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR OTHER FINISH REQUIREMENTS.
- NO CALCIUM CHLORIDE IS PERMITTED, IN ANY FORM, IN ANY CONCRETE MIX WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ENGINEER.
- 7. CURING AND PROTECTION OF CONCRETE FOR HOT, COLD OR DRY WEATHER IS TO BE AS PER CLAUSES 7.4.1.8 AND 7.4.2 OF CAN/CSA-A23.1-14 AS A MINIMUM. SEE ALSO "COLD WEATHER REQUIREMENTS" IN THE STRUCTURAL DRAWINGS

REINFORCING NOTES

- REINFORCING SHALL BE BILLET STEEL CONFORMING TO THE FOLLOWING STANDARDS: A. CSA G30.18 M - GRADE 400 MPa - 10M OR LARGER B. CSA G30.5 - GRADE 400 MPa WELDED WIRE MESH . CSA G30.15 - GRADE 400 MPa DEFORMED WELDED WIRE MESH EPOXY REINFORCING ASTM A775 - GRADE 400 MPa - ALL REINFORCING THAT WILL BE WELDED CSA 630.18W - GRADE 400 MPa - MECHANICAL CONNECTIONS & WELD SPLICES CSA W186 - GRADE 400 MPa
- CONCRETE COVER: UNLESS NOTED OTHERWISE ON THE DRAWINGS, CONCRETE COVER IN INCHES OVER REINFORCEMENT SHALL BE AS LISTED BELOW:
- SURFACE PLACED IN CONTACT WITH GROUND: 75mm FORMED SURFACE EXPOSED TO GROUND OR WEATHER: 50mm
- DESIGNATION OF REINFORCING BARS A. BARS SHOWN THUS ---- IN TOP OF BEAMS AND SLABS OR IN NEAR FACE OF WALL. BARS SHOWN THUS ----- IN BOTTOM OF BEAMS AND SLABS OR IN FAR FACE OF WALL.
- B. STRAIGHT BARS: i.e. (6)-10M 4190 MEANS (6)-10M BARS 4190mm LONG (6)-10M BARS 5080mm LONG (6)-10M 5080 MEANS C. BENT BARS: i.e.
- (13)-A20M 2285 MEANS (13)-20M BARS 2285mm TOTAL LENGTH, HIE 180° (3)-C25M 3000 MEANS (3)-25M BARS 3000mm TOTAL LENGTH, HIE 90° (3)-C25M 4570 MEANS (3)-25M BARS 4570mm TOTAL LENGTH, HIE 90°
- EPOXY COATED REINFORCING BARS: THE FOLLOWING REINFORCING STEEL SHALL BE EPOXY COATED:
- A. TOP REINFORCING BARS AND STIRRUPS IN SLABS AND BEAMS AT ENTRANCE RAMPS AND EXTERIOR GROUND FLOOR SLAB NOT COVERED WITH MEMBRANE. B. SUPPORT BARS AND TIE WIRE FOR EPOXY COATED REINFORCING BARS.
- DO NOT SUBSTITUTE DEFORMED WIRE FOR REINFORCING BARS WITHOUT PRIOR APPROVAL OF THE
- SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES. IN ACCORDANCE WITH CSA A23.1 AND A23.3.
- PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE COVER AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING

COLD WEATHER REQUIREMENTS

CONFORM TO CAN/CSA-A23.1. THE FOLLOWING MINIMUM REQUIREMENTS MUST ALSO BE MET:

- FORECAST AIR TEMPERATURE NOT BELOW 2° C A. IF THE CONCRETE TEMPERATURE DROPS BELOW 5° C AT THE POINT OF POURING, THE MIXING
- WATER SHALL BE HEATED TO MAINTAIN A MINIMUM CONCRETE TEMPERATURE OF 10°C. CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A
- TEMPERATURE LESS THAN 5° C. C. THE CONTRACTOR SHALL BE PREPARED TO COVER THE SLAB IF AN UNEXPECTED DROP IN AIR
- TEMPERATURE SHOULD OCCUR. D. THE CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST 3 DAYS OR UNTIL THE CONCRETE REACHES A STRENGTH OF 7MPa.
- FORECAST AIR TEMPERATURE BELOW 2° C BUT NOT BELOW -4° C: (UNDER THESE CONDITIONS STRUCTURAL CONCRETE TOPPINGS ON METAL DECK SHALL SATISFY THE REQUIREMENTS FOR FORECAST AIR TEMPERATURE BELOW -4° C).
- A. FORMS AND STEEL SHALL BE FREE FROM ICE AND SNOW. B. MIXING WATER SHALL BE HEATED TO MAINTAIN A MINIMUM CONCRETE TEMPERATURE OF 10° C
- AT THE POINT OF POUR CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE OF LESS THAN 5°C.
- D. SLABS SHALL BE COVERED WITH CANVAS OR SIMILAR MATERIAL, KEPT CLEAR OF BUT CLOSE TO THE CONCRETE SURFACE.
- E. IN WINDY WEATHER, THE STOREY BELOW SLAB SHALL BE ENCLOSED, ESPECIALLY WITH
- PROTECTION SHALL BE MAINTAINED FOR AT LEAST 3 DAYS. G. CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10° C FOR AT LEAST 3 DAYS OR UNTIL THE CONCRETE REACHES A STRENGTH OF 7MPa.
- A, B, C, AND D AS FOR TEMPERATURE BELOW 2° C. E. THE STOREY BELOW SHALL BE ENCLOSED AND ARTIFICIAL HEAT PROVIDED. HEATING SHALL BE STARTED AT LEAST ONE HOUR BEFORE POURING, AND SHALL BE MAINTAINED FOR AT LEAST 3
- DAYS AFTER POURING. THE CONCRETE TEMPERATURE AT ALL SURFACES SHALL BE MAINTAINED ABOVE 20°C FOR AT LEAST 3 DAYS, OR ABOVE 10°C FOR AT LEAST 7 DAYS. CONCRETE SHALL BE MAINTAINED ABOVE FREEZING TEMPERATURES UNTIL THE CONCRETE REACHES A STRENGTH OF 20MPa. THE ENCLOSURE SHALL BE CONSTRUCTED IN SUCH A WAY THAT AIR CAN CIRCULATE OUTSIDE THE OUTER EDGES AND MEMBERS.

CONCRETE ANCHORS

- ALL ANCHOR BOLTS SHALL BE CSA G40.21
- ALL ANCHOR BOLTS TO EXISTING CONCRETE SHALL BE HILTI HVA ADHESIVE ANCHORS (OR APPROVED EQUIVALENT) UNLESS NOTED OTHERWISE. STRENGTH OF MATERIAL AND INSTALLATION METHOD SHALL CONFORM TO MANUFACTURER'S SPECIFICATION.
- ALL CHEMICAL ANCHOR BOLTS SHALL BE FABRICATED FROM HILTI HAS-E THREADED ROD OR
- ALL ANCHOR BOLTS SHALL BE COMPLETE WITH HEAVY FINISHED HEXAGON NUTS PLUS PLATE WASHER. ANCHOR PLATES SHALL CONFORM TO CSA G40.21M - 44W.

WELDING TO SECURE ANCHOR PLATE TO ANCHOR BOLT(S) SHALL CONFORM TO CSA W47.1, W48.1

- AND W59 USING LOW HYDROGEN ELECTRODES AND SHALL BE UNDERTAKEN ONLY BY WELDERS HOLDING VALID CERTIFICATION FOR THE PROCESS, POSITION AND CLASS OF ELECTRODES INVOLVED.
- FROM IMPACT AND CORROSION DAMAGE.
- ANCHOR BOLT PLACEMENT TOLERANCES: A. 2mm CENTRE TO CENTRE OF ANY TWO BOLTS WITHIN AN ANCHOR BOLT GROUP (GROUP = A

ANCHOR BOLT PROJECTIONS AND ANCHOR BOLT THREADS SHALL BE SUFFICIENTLY PROTECTED

- SET OF ANCHOR BOLTS TO RECEIVE A SINGLE FABRICATED STEEL SHIPPING PIECE.) 3mm CENTRE TO CENTRE OF ADJACENT GRIDLINES LONGITUDINALLY & TRANSVERSE MAXIMUM ACCUMULATION OF 6mm PER 30m OF BUILDING LENGTH BUT NOT TO EXCEED 9mm MAXIMUM ACCUMULATION IN THE OVERALL BUILDING LENGTH.
- 3mm OUT OF PLUMBNESS FOR THE PROJECTED BOLT LENGTH OF ANY ANCHOR BOLT. E. 3mm FROM CENTRE ON ANY ANCHOR BOLT GROUP TO THE COLUMN GRID LINE.
- EXCEPT WHERE INDICATED ON THE DRAWINGS, ANCHORS SHALL CONSIST OF THE FOLLOWING
- ANCHOR TYPES AS MANUFACTURED BY HILTI (CANADA) LTD:
- 'EPOXY ANCHOR' MEANS A "HILTY HIT-HY200 ADHESIVE ANCHOR". 'SCREENED EPOXY ANCHOR' MEANS A "HILTY HIT-HY70 ADHESIVE ANCHOR".
- 'KWIK BOLT' MEANS A "KWIK BOLT 3 EXPANSION ANCHOR". 'HSL' MEANS AN "HSL HEAVY-DUTY EXPANSION ANCHOR".
- ANCHOR CAPACITY USE IN DESIGN IS BASED ON GUIDELINES PUBLISHED BY HILTI. ALTERNATE FASTENING SYSTEMS PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. ALTERNATE ADHESIVE ANCHORS MUST BE EQUAL CONSIDERING LOAD RESISTANCE, IN SERVICE AND INSTALLATION TEMPERATURE, AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS, CREEP TESTING, SEISMIC TESTING, AND APPROPRIATE ON-SITE TRAINING.
- INSTALL AS PER THE MANUFACTURER'S SPECIFICATION. WEDGE ANCHORS TO HAVE HOLES CLEANED WITH HIGH PRESSURE AIR BLAST. ADHESIVE (EPOXY) ANCHORS TO HAVE HOLES WELL CLEANED WITH HIGH PRESSURE AIR BLAST FOLLOWED BY BRUSHING THEN HIGH PRESSURE AIR BLAST. USE STEEL WIRE BRUSH ON CONCRETE, AND NYLON ON MASONRY.

THE CONTRACTOR'S COST.

ON-SITE TRAINING AND REVIEW BY HILTI:
THE CONTRACTOR SHALL RETAIN A HILTI REPRESENTATIVE TO PROVIDE ON-SITE ANCHOR INSTALLATION TRAINING FOR ALL OF THE HILTI PRODUCTS SPECIFIED. THE CONTRACTORS' PERSONNEL MUST BE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS. LETTERS OF TRAINING FOR INSTALLERS TO BE SUBMITTED TO THE ENGINEER.

A REPRESENTATIVE SAMPLE OF ANCHORS ARE TO BE TESTED FOR EACH TYPE OF ANCHOR

SPECIFIED. ANCHORS WHICH FAIL THE LOAD TEST SHALL BE REPLACED BY THE CONTRACTOR AT

- MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER <u>CASE 2</u> TABLE BELOW.
 - DESIGNATION 30 MPa 5 MPa 40 MPa) MPa 25 MPa 300 EMBEDMENT 325 SPLICE 475 425 400 EMBEDMENT SPLICE 500 MBEDMENT 625 575 525 450 475 SPLICE 1000 875 800 EMBEDMENT 750 SPLICE 1150 1075 1200 MBFDMFNT 1075 1125 900 1250 SPLICE 1375 1250 1125 1050 975 MBEDMENT SPLICE 800 1600 1475 1350 1275

13. <u>TESTING OF EPOXY ANCHORS:</u>
PROVIDE TESTING OF EPOXY ANCHORS BY THE PROJECT MATERIALS

• IF ANY PROOF LOAD TEST FAILS, TEST 100% OF ANCHORS

PROOF LOAD TEST 10% OF EPOXY ANCHORS TO MANUFACTURER'S SPECIFIED

FAILURE. CONTRACTOR TO REPLACE ANCHORS AT CONTRACTOR'S COST.

IF ANY ANCHORS ARE FOUND TO BE INSTALLED WITHOUT COMPLETE EPOXY

CONSULTANT /TESTING AGENCY. THE TESTING AGENCY IS TO PROVIDE A

REGISTERED IN THE PROVINCE OR TERRITORY WHERE THE WORK IS DONE

TESTING AND REPAIR REPORT SEALED BY A PROFESSIONAL ENGINEER

ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS

DO NOT CUT REINFORCING BARS TO INSTALL ANCHORS UNLESS THE STRUCTURAL

DRAWINGS SPECIFICALLY NOTE FOR A PARTICULAR DETAIL THAT THE REINFORCING

EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH

WHEN ANCHORS ARE USED TO ATTACH STRUCTURAL STEEL, THE CONTRACTOR

THEN UPON COMPLETION OF ANCHOR INSTALLATION, THE CONTRACTOR SHALL

SHALL REFER TO THESE TEMPLATES FOR THE FABRICATION OF THE STEEL

EXISTING REINFORCEMENT, ADJUST PROPOSED LOCATIONS OF ANCHORS AS

LAYOUT TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE INSTALLING

WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH

WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A

COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.

WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION

WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS,

WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL

BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION

IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND

CASE 1 CONDITIONS

ENSION EMBEDMENT AND SPLICE LENGTHS ARE TO BE AS PER THE FOLLOWING TABLE

SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.

CONCRETE STRENGTH

WALL HORIZONTAL AND VERTICAL DISTRIBUTED REINFORCING.

IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A

MBEDMENT / DEVELOPMENT LENGTHS and SPLICE LENGTHS

EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.

SPLICE LENGTHS ARE SHOWN IN BRACKETS.

. ALL LENGTHS ARE FOR Fy = 400MPa REBAR.

TENSION EMBEDMENT AND SPLICE LENGTHS

SLAB BAND TOP BARS.

FUNCTION

RFRAR

8. ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 Id).

BEAM AND GIRDER TOP AND BOTTOM BARS.

TWO WAY SLAB TOP AND BOTTOM BARS.

ONE WAY SLAB BOTTOM BARS.

REQUIRED TO AVOID CUTTING REINFORCEMENT. SUBMIT A PROPOSED ANCHOR

PREPARE TEMPLATES OF THE AS-BUILT ANCHOR POSITIONS. THE CONTRACTOR

STRUCTURE. AT LOCATIONS OF INTERFERENCE BETWEEN CONCRETE ANCHORS AND

DO NOT OVERSIZE HOLES IN STEEL MATERIAL TO FIT ANCHOR LOCATIONS EXCEPT

FOR COLUMN BASE PLATE HOLES WHICH ARE FABRICATED SLIGHTLY OVERSIZED AS

SHALL USE A TEMPLATE TO LOCATE THE ANCHOR HOLES. IF THIS IS NOT DONE.

CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL

SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS

DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING

BARS AT THE LOCATIONS OF CONCRETE ANCHORS, BY CHIPPING OR OTHER MEANS,

AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN

OR ARE EMBEDDED LESS THAN 90% OF THE DEPTH SHOWN ON THE

PROVIDE FULL-TIME FIELD REVIEW OF ALL REPAIRS BY MATERIALS

DRAWINGS, THEN PROOF LOAD TEST 100% OF THE ANCHORS.

THE ABOVE TESTING IS PAID FOR BY THE OWNER. THE FOLLOWING TESTING

RANDOMLY SELECT 2% OF EPOXY ANCHORS (3 MINIMUM) FOR TESTING TO

CONSULTANT/TESTING AGENCY AS FOLLOWS:

IS PAID FOR BY THE CONTRACTOR:

BARS IN THE CONCRETE CAN BE CUT.

BEFORE ANY HOLES AR DRILLED.

PER STANDARD PRACTICE.

DIMENSIONS SHALL APPLY.

COMPRESSION EMBEDMENT.

- THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS | ***ADD REFERENCE TO SURVEY/SOURCE ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
- THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS.

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TEMPORARY BENCHMARKS

TBM#3-

No. ISSUE DATE: YYYY/MM/DI ISSUED FOR 90% DETAILED DESIGN 2023/03/21 ISSUED FOR CLIENT REVIEW - IFT 2023/12/15 ISSUED FOR 90% DETAILED DESIGN REV 1 2024/01/02 ISSUED FOR TENDER 2024/01/22 ISSUED FOR ADDENDUM #1 2024/02/09 ISSUED FOR ADDENDUM #2 2024/02/27 ISSUED FOR APPROVAL 2024/03/08

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

GENERAL CONSTRUCTION NOTES



721-3464

TENSION EMBEDMENT AND SPLICE LENGTH CONT.

BOTTOM: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300mm OR MORE OF CONCRETE BELOW THE BAR.

NOTES: EPOXY REINFORCING INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCMENT.

INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCMENT.

CASE 2 CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE. FOR EXAMPLE:

- ONE WAY SLAB TOP BARS (SEE TOP BAR NOTE).
- SLAB BAND BOTTOM BARS. • BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS.

STIRRUPS	IN BEAL	MS AI	ND '	GIRDER	S.				
SEE ALSO	NOTES	ON 1	TOP	BARS	AND	EPOXY	COATED	REINFORCEMENT.	

REBAR	FUNCTION	CONCRETE STRENGTH					
DESIGNATION	FONCTION	20 MPa	25 MPa	30 MPa	35 MPa	40 MPa	
10M	EMBEDMENT	425	375	350	325	300	
TOM	SPLICE	550	500	450	425	400	
15M	EMBEDMENT	625	575	525	475	450	
1 JIVI	SPLICE	825	725	675	625	575	
20M	EMBEDMENT	850	750	700	650	600	
ZOW	SPLICE	1100	975	900	825	775	
25M	EMBEDMENT	1325	1175	1075	1000	925	
23101	SPLICE	1475	1525	1400	1300	1225	
30M	EMBEDMENT	1575	1425	1300	1200	1125	
JOW	SPLICE	2050	1850	1675	1550	1450	
35M	EMBEDMENT	1850	1650	1500	1400	1300	
JJIVI	SPLICE	2400	2125	1975	1825	1700	

BOTTOM: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300mm OR MORE OF CONCRETE BELOW THE BAR.

NOTES: EPOXY REINFORCING

INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCMENT. INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCMENT.

COMF	COMPRESSION EMBEDMENT & SPLICE LENGTHS						
REBAR		CONCRETE STRENGTH					
DESIGNATION	FUNCTION	20 MPa	25 MPa	30 MPa & GREATER			
10M	EMBEDMENT	225	200	200			
TOM	SPLICE	300	300	300			
15M	EMBEDMENT	325	300	275			
TOM	SPLICE	450	450	450			
20M	EMBEDMENT	425	375	350			
20101	SPLICE	575	575	575			
25M	EMBEDMENT	525	475	425			
23141	SPLICE	725	725	725			
30M	EMBEDMENT	625	575	525			
JUNI	SPLICE	850	850	850			
35M	EMBEDMENT	750	650	600			
JJIVI	SPLICE	1000	1000	1000			

EMBEDMENT OF DOWELS

- WHERE EMBEDMENT IS DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
- WHERE THE DRAWINGS INDICATE COMPRESSION EMBEDMENT OR WHERE NO EMBEDMENT TYPE IS CALLED FOR, IT SHALL BE AS NOTED BELOW FOR COMPRESSION EMBEDMENT.
- WHERE DRAWINGS INDICATE TENSION EMBEDMENT, IT SHALL BE AS NOTED BELOW FOR TENSION EMBEDMENT.
- ALL EMBEDMENT LENGTHS ARE FOR GRADE 400 REINFORCING STEEL

COMPRESSION & TENSION EMBEDMENT								
	COMPRE	SSION EMB	EDMENT		TENS	ION EMBED	MENT	
	CONCRETE STRENGTH			CONC	RETE STRE	NGTH		
REBAR DESIGNATION	20 MPa	25 MPa	30 MPa & OVER	20 MPa	25 MPa	30 MPa	35 MPa	40 MPa
10M	250	225	200	300	300	300	300	300
15M	350	300	275	375	375	375	375	375
20M	425	375	350	500	450	450	450	450
25M	525	475	425	825	750	675	625	600
30M	625	550	525	1175	1050	950	875	825
35M	750	675	625	1675	1500	1375	1250	1175

<u>COLUMN SPLICES - WALL ZONE SPLICES</u>

AUTHORIZATION FROM THIS OFFICE

DO NOT SCALE DRAWINGS.

THE CONTRACTOR PRIOR TO CONSTRUCTION.

- WHERE SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
- WHERE THE DRAWINGS INDICATE COMPRESSION SPLICES OR WHERE NO SPLICE TYPE IS CALLED FOR, THEY SHALL BE AS NOTED BELOW FOR COMPRESSION SPLICES.
- WHERE DRAWINGS INDICATE TENSION SPLICES, THEY SHALL BE AS NOTED BELOW FOR TENSION
- ALL SPLICE LENGTHS ARE FOR GRADE 400 REINFORCING STEEL.

REBAR COMPRESSION SPLICE		TENSION SPLICE (CLASS C)					
	COMPRESSION SPLICE		CONC	RETE STRE	NGTH		
		20 MPa	25 MPa	30 MPa	35 MPa	40 MPa	
10M	450	450	450	300	450	450	
15M	475	625	625	625	625	625	
20M	575	850	775	750	825	825	
25M	725	1425	1275	1150	1075	1000	
30M	850	1975	1775	1625	1500	1400	
35M	1025	2950	2550	2325	2150	2000	

CONDUITS, PIPES AND SLEEVES IN CONCRETE
EXCEPT WHEN APPROVED BY THE STRUCTURAL ENGINEER, PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:

- A. CENTRELINE SPACING SHALL BE NOT LESS THAN 3 DIAMETERS
- B. CENTRELINE SPACING BETWEEN PARALLEL CONDUIT AND REINFORCING BARS SHALL BE THREE DIAMETERS ADD REINFORCING AT POINTS OF CONGESTION AS DIRECTED BY THE STRUCTURAL ENGINEER.
- THE DECK FLUTE NOT WITHSTANDING THE SATISFYING OF THESE GUIDELINES, THE CONDUIT, SLEEVES, PIPES, ETC., SHALL NOT IMPAIR THE STRUCTURAL STRENGTH AND SHALL BE MOVED IF SO DIRECTED BY THE STRUCTURAL ENGINEER.

FOR TOPPINGS ON STEEL DECK, THE CONCRETE THICKNESS IS MEASURED FROM THE TOP OF

- 2. FOR CONDUITS IN THE PLANE OF SLABS AND WALLS: A. LOCATE BETWEEN TOP AND BOTTOM REINFORCING OR EACH FACE OF REINFORCING.
- B. MAXIMUM SIZE IN ONE LAYER SHALL BE NOT MORE THAN 1/4 CONCRETE THICKNESS OVERALL DEPTH OF CONDUITS AT CROSS-OVERS SHALL NOT BE MORE THAN 1/2 CONCRETE
- THICKNESS

CONDUIT OR SLEEVES ARE NOT ALLOWED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

EMBEDDED PIPING WILL NOT BE ALLOWED. UNLESS OTHERWISE NOTED, WALLS SHALL BE REINFORCED AS FOLLOWS:

METRIC UNITS 150mm: 15M @ 450mm VERT. 15M @ 300mm HOR.

200mm: 15M @ 300mm VERT

15M @ 500mm HOR.

250mm: 15M @ 500mm VERT. 15M @ 250mm HOR

300mm: 15M @ 450mm VERT, E.F. STAGG. 15M @ 300mm HOR. E.F. STAGG

FOR OTHER THICKNESS, REINFORCEMENT SHALL BE PROPORTIONAL TO ABOVE

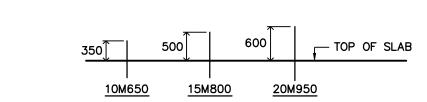
ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS SHALL BE LOCATED ON OUTSIDE FACE OR CENTRE OF WALL

SPLICES SHALL BE AS FOLLOWS:

A LIODIZONIAL CDILICES		10M	15M	
A. HORIZONTAL SPLICES SHALL HAVE LAPS OF B. VERTICAL SPLICES	:	400mm	600mm	
SHALL HAVE LAPS OF UNLESS OTHERWISE NO		350mm INGS.	450mm	
HORIZONTAL SPLICE	HORIZONTAL SPLICE	HORIZONTAL SPLICE		HORIZONTAL SPLICE

DETAIL OF HORIZONTAL REINFORCEMENT AT CORNERS

- AT ENDS OF WALLS, PROVIDE TWO(2)- 15M BARS VERTICAL LAPPED 600mm UNLESS OTHERWISE NOTED ON WALL SCHEDULE.
- 2. AT OPENINGS IN WALLS, PROVIDE TWO(2)- 15M BARS PARALLEL TO ALL EDGES AND AT 45° TO EDGE OF PENNING AND EXTENDING BEYOND CORNERS.
- PROVIDE DOWELS AT BASE OF WALLS TO MATCH VERTICAL STEEL UNLESS NOTED.



- PROVIDE CONCRETE SLABS OVER A 6 MIL POLYETHYLENE VAPOUR BARRIER AND 200mm OF
- GRANULAR 'A' COMPACTED TO 100% SPD DENSITY AS FOLLOWS: 130mm SLAB REINFORCED WITH WWM 152x152-25.8/25.8 AND WITH 32MPa MIX CONCRETE. MAXIMUM SLUMP FOR ALL CONCRETE SLABS SHALL BE 125mm, USING TYPE 2 CEMENT. CONCRETE SHALL BE POWER TROWELED.
- SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEPRESSED SLAB AREAS AND DRAINS. SLOPE SLAB TO DRAINS WHERE SHOWN.
- ALL WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH CSA G30.5 LAP ADJOINING PIECES AT LEAST ONE FULL MESH.
- ALL POROUS FILL MATERIAL SHALL BE A CLEAN GRANULAR MATERIAL WITH 100% PASSING A 38mm SIEVE AND NO MORE THAN 5% PASSING A NO. 4 SIEVE. POROUS FILL SHALL BE COMPACTED TO 98% MAX. DRY DENSITY PER ASTM D-698.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR DIFFERENTIAL SETTLEMENT, SLAB CRACKING OR THEIR FUTURE DEFECTS RESULTING FROM UNREPORTED CONDITIONS MITIGATING THE ABOVE ASSUMED CRITERIA
- SLAB JOINTS SHALL BE FILLED WITH APPROVED MATERIAL. REMOVE ALL DEBRIS FROM THE SLAB JOINTS, THEN FILL IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AS FOLLOWS: B. UP TO 150mm SLABS - FILL WITH EPOXY RESIN
- C. OTHER SLABS FILL WITH FIELD MOLDED OR ELASTOMERIC SEALANT UNLESS OTHERWISE APPROVED, ALL WELDED WIRE FABRIC SHALL BE BLOCKED INTO THE POSITION INDICATED WITH PRECAST CONCRETE BLOCKS HAVING A COMPRESSIVE STRENGTH EQUAL TO THAT
- WALKWAYS AND OTHER EXTERIOR SLABS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS. SEE THE SITE PLAN AND ARCHITECTURAL DRAWINGS FOR LOCATIONS, DIMENSIONS, ELEVATIONS, JOINTING DETAILS AND FINISH DETAILS. PROVIDE 100mm WALKS REINFORCED WITH 150x150 W9.1xW9.1 WWF UNLESS OTHERWISE NOTED.
- SLABS TO BE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR ENTRAINED TO 5-8% WITH AN ADMIXTURE THAT CONFORMS TO CSA A23.3.
- 10. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CSA A23.3 DESIGN OF CONCRETE STRUCTURES. HOT AND COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH CSA A23.1 OR A23.4 AS APPLICABLE.
- IN ORDER TO AVOID CONCRETE SHRINKAGE CRACKING, PLACE CONCRETE SLABS IN AN ALTERNATING LANE (OR CHECKERBOARD) PATTERN. THE MAXIMUM LENGTH OF SLAB CAST IN ANY ONE CONTINUOUS POUR IS RECOMMENDED TO BE LESS THAN 30m. THE MAXIMUM SPACING OF JOINTS SHALL BE 7.6m".

2. THE ALTERNATE WIRES OF THE WELDED WIRE FABRIC MUST BE PRECUT AT THE SLAB CONTRACTION JOINT LOCATIONS TO CREATE A WEAKENED PLANE. WITHOUT CUTTING THE ALTERNATE WIRES, THE STRENGTH OF THE WIRE WILL PREVENT THE SLAB FROM CRACKING (SEPARATING) AT THE JOINT AND THE SLAB MAY BEGIN TO CRACK ELSEWHERE.

- 3. THE USE OF POLYPROPYLENE FIBRES (IN LIEU OF WELDED WIRE FABRIC) IS PROHIBITED WITHOUT THE WRITTEN AUTHORIZATION OF THE ENGINEER.
- 4. SLABS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
- D. SLAB THICKNESS SLAB THICKNESS DESIGN FOR INDUSTRIAL CONCRETE FLOORS ON GRADE, BY ROBERT PACKARD, PORTLAND CEMENT ASSOC. 1976.
- E. REINFORCING DESIGN PROCEDURES FOR INDUSTRIAL SLABS, INTERIM REPORT 1973, THE WIRE REINFORCEMENT INSTITUTE.
- 15. REFER TO SPECIFIED LOADS FOR SLAB LOADING CRITERIA
- 16. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR DIFFERENTIAL SETTLEMENT, SLAB CRACKING OR THER FUTURE DEFECTS RESULTING FROM UNREPORTED CONDITIONS MITIGATING THE ABOVE
- 17. THE FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 301, TYPE A.
- 18. INSTALL SAW-CUTS TO A MINIMUM OF 1/4 THE SLAB DEPTH IN THE FLOOR SLAB WITHIN 24 HOURS OF POUR. THE MAXIMUM CENTER/CENTER SPACING FOR SAW-CUTS SHALL BE 24 TIMES THE DEPTH UNLESS NOTED OTHERWISE.
- 19. FILL SAWCUTS AND CONSTRUCTION JOINTS WITH SEMI-RIGID, FLEXIBLE EPOXY JOINT FILLER, TO THE MANUFACTURER'S SPECIFICATIONS. ACCEPTABLE FILLER IS REZI-WELD FLEX, STERNSON LOADFLEX, W.R. MEADOWS BONDFLEX, OR APPROVED ALTERNATE. USE W.R. MEADOWS GARDOX FOR EXTERIOR SAWCUTS.

<u>LOAD BEARING MASONRY (NON-SEISMIC ZONES)</u>

- LOAD-BEARING MASONRY WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE. FOR ADDITIONAL REQUIREMENTS SEE MASONRY SPECIFICATIONS AND STRUCTURAL
- MASONRY WORK SHALL CONFORM TO CSA S304.1 AND ITS REFERENCED DOCUMENTS, INCLUDING: A. CONCRETE BLOCK TO CAN/CSA-A165.1, TYPE H15/A, UNLESS NOTED OTHERWISE ON SCHEDULE (BASED ON NET AREA).
- B. MORTAR TO CAN/CSA-A179, TYPE 'S' FOR ALL WALLS. GROUT TO CAN/CSA-A179
- D. MASONRY WIRE REINFORCING TO CSA G30.5.
- REINFORCING BARS TO CAN/CSA-G30.18 400 mPa. F. MECHANICAL CONNECTIONS & WELDED SPLICES TO CSA-W186 - 400 mPa.
- G. CONNECTIONS TO CAN/CSA-A370.
- H. PRACTICE TO CAN/CSA-A371.
- FILL BLOCK CORES UNDER ALL CONCENTRATED LOADS WITH 20 MPg CONCRETE GROUT TO A DEPTH OF AT LEAST 600mm MEASURED DOWN FROM THE BEARING.
- PROVIDE HEAVY-DUTY LADDER TYPE OR TRUSS TYPE MASONRY REINFORCING 5mm DIAMETER IN HORIZONTAL JOINTS EVERY SECOND COURSE, WHICH IS 400mm, UNLESS NOTED OTHERWISE IN
- PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK-TO-BACK ANGLES TOGETHER AT 500mm O.C. MAXIMUM. PROVIDE 150mm MINIMUM END BEARING FOR LINTELS, UNLESS NOTED OTHERWISE.
- PROVIDE ONE(1)-15M CONTINUOUS IN TOP COURSE OF WALL UNDER BEAM OR JOIST BEARING AND FILL CELLS SOLID WITH 20 MPa CONCRETE GROUT.
- A. WIRE REINFORCEMENT 200mm B. 10M BARS - 600mm
- C. 15M BARS – 750mm
- UNLESS NOTED OTHERWISE, PROVIDE TWO(2)-15M VERTICAL BARS FULL HEIGHT AT: A. UNSUPPORTED ENDS OF WALLS.
- B. EACH CORNER AND AT INTERSECTIONS C. EACH SIDE OF DOORS AND OTHER OPENINGS.
- 10. PROVIDE ONE(1)-15M IN EACH CELL OF ALL PIERS AND PILASTERS UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING SHALL BE CONTINUED TO WITHIN 50mm OF TOP OF THE WALL.
- 1. PROVIDE CLEANOUTS FOR ALL CELLS TO BE REINFORCED, REPEAT CLEANOUTS ABOVE ABOVE BOND
- 12. FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH 21 MPa CONCRETE 9mm AGGREGATE, 175mm SLUMP. VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY.
- 13. FILL CELLS IN 1.5m LIFTS OR BETWEEN BOND BEAMS, WHICHEVER IS LESS.
- 14. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 9.0m, IF NOT OTHERWISE SHOWN 15. CONTROL JOINTS AND EXPANSION JOINTS SHALL BE CONTINUED THROUGH BOND BEAMS IF NOT
- OTHERWISE SHOWN. 16. OUTSIDE FACE OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER SPECIFICATIONS. PROVIDE
- WEEP HOLES AS PER DETAIL. 7. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURES BELOW 5° CELSIUS, UNLESS
- 18. PROVIDE 15M @ 600mm O.C. FULL HEIGHT FOR ALL LOAD BEARING MASONRY WALLS, UNLESS NOTED OTHERWISE.
- 19. PROVIDE 1200mm STARTER DOWELS TO MATCH ALL VERTICAL REINFORCING, UNLESS NOTED OTHERWISE.

PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK.

- 20. LOAD BEARING MASONRY IS SHOWN THUS ON PLAN.
- 21. SUCCESSIVE MORTAR POURS SHALL BEGIN AND END AT THE MID HEIGHT OF A SINGLE COURSE OF
- 22. ALL GROUT FOR REINFORCED MASONRY SHALL BE PINE OR COURSE GROUT CONFORMING TO CSA-A179 HAVING A MIN. COMPRESSIVE STRENGTH OF 15 MPa @ 28 DAYS AND A SLUMP OF 200mm MINIMUM AND 250mm MAXIMUM.
- 23. ALL MASONRY WALLS SHALL BE FULL MORTAR HEAD AND BED JOINTS HAVING A THICKNESS OF
- 24. ALL MASONRY UNITS ARE TO BE LAID IN A RUNNING BOND PATTERN, UNLESS NOTED OTHERWISE 25. BRICK VENEER OF MASONRY CAVITY WALLS SHALL BE INSTALLED WITH BRICK TIES DESIGNED BY
- OVER ALL OPENINGS IN MASONRY WALLS PROVIDE THE FOLLOWING LINTELS, UNLESS OTHERWISE SHOWN.

SUPPLIER IN ACCORDANCE WITH CAN/CSA A370. SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW.

BLOCK LINTELS

EAR SPAN	DEPTH	REINF FOR EACH 100mm FOR BLOCK WALL THICKNESS FOR PORTION THEREOF
TO 1200	200	ONE(1)- 10M TOP & BOTTOM
00 TO 1800	200	ONE(1)- 15M TOP & BOTTOM
00 TO 2100	400	ONE(1)- 15M TOP & BOTTOM

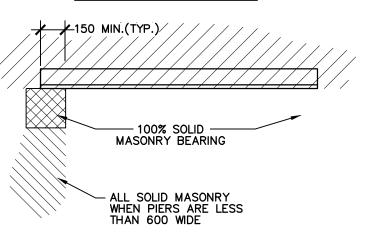
<u>BRICK WYTHES</u> — FOR EACH 100mm WIDTH OF WALL

CLEAR SPAN	SIZE
UP TO 1200	L89x89x6
1200 TO 1800	L125x89x6 (LLV)
1800 TO 2900	L152X89X8 (LLV)

ı				
	CLEAR SPAN	200mm WALL	250mm WALL	300mm WALL
	UP TO 1200	TWO(2)- L89×89×6	TWO(2)- L89×89×6	TWO(2)- L89x89x6 +L127x89x6
I	1200 TO 1800	TWO(2)- L127x89x6	TWO(2)- L140×89×6	TWO(2)- L127x89x6 +L127x125x6
	1800 TO 2100	TWO(2)- L127x89x9	TWO(2)- L140×89×9	TWO(2)- L127x89x6 +L127x127x9

- WELD BACK TO BACK ANGLES TOGETHER TOP AND BOTTOM WITH 5mm FILLET x 50mm LONG AT 450mm MAXIMUM CENTRES.
- MINIMUM BEARING FOR STEEL LINTELS SHALL BE 150mm AND BLOCK LINTELS SHALL BE 200mm.
- FOR LINTELS ABUTTING STEEL COLUMNS, CONCRETE WALL OR COLUMNS, PROVIDE Z89x89x9mm
- FILL VOIDS OF LINTEL BLOCK WITH 20MPa CONCRETE.
- USE MASONRY LINTELS IN ALL FIRE RATED MASONRY WALLS SEE ARCH. DRAWINGS FOR WALL
- ALL STEEL LINTELS AND SHELF ANGLES IN THE EXTERIOR MASONRY SHALL BE HOT DIP GALVANIZED.

LINTELS BEARING ON MASONRY



TIMBER NOTES

- THE FOLLOWING NOTES INDICATE ONLY THE MINIMUM REQUIREMENTS APPLICABLE TO STRUCTURAL WOOD CONSTRUCTION. SEE ALSO THE ARCHITECTURAL DRAWINGS AND THE SPECIFICATIONS (IF APPLICABLE) FOR REQUIREMENTS FOR NON-STRUCTURAL WOOD FRAMING.
- WOOD CONSTRUCTION SHALL CONFORM TO EITHER CAN3-086-M OR CAN3-086.1-M AND TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE.

REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS OF AIR SPACES, INSULATION, ROOFING, FLOOR

AND WALL FINISHES. MISCELLANEOUS FRAMING NOT SPECIFIED ON DRAWINGS, ARE TO CONFORM TO PART 9 OF THE

ONTARIO BUILDING CODE AND IT'S REFERRED DOCUMENTS. **MATERIALS**

- LUMBER: UNLESS OTHERWISE NOTED TO BE RED PINE, JACK PINE SPECIES, GRADE No.2, CONFORMING TO CSA STANDARD 0141 WITH A MAXIMUM MOISTURE CONTENT OF 19% AT THE TIME OF INSTALLATION. LUMBER SHALL BEAR THE GRADING STAMP OF AN AGENCY APPROVED BY THE CANADIAN LUMBER STANDARDS ADMINISTRATION BOARD.
- COMPLY WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE FOR: SUB-FLOORING IN TABLE 9.23.14.A ROOF SHEATHING IN TABLE 9.23.15.A

WALL SHEATHING IN TABLE 9.23.16.A

ONTARIO BUILDING CODE.

NAILS, SPIKES AND STAPLES: TO CSA STANDARD B111; GALVANIZED FOR EXTERIOR WORK OR HIGHLY HUMID AREAS AND FOR TREATED LUMBER; PLAIN ELSEWHERE. NAILING OF FRAMING UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLES 9.23.3 A, B AND 9.23.13 A IN THE

ROUGH HARDWARE: BOLTS, NUTS, WASHERS, LAGS, PINS SCREWS, ALL TO BE HOT-DIP

GALVANIZED. FRAMING ANCHORS, JOIST HANGERS, BEAM HANGERS, POST CAPS, POST ANCHORS, BACK-UP CLIPS AND ANGLES, UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DRAWINGS, ARE ALL TO BE

MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUAL. ALL ARE TO BE INSTALLED IN

STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS UTILIZING "SPECIAL" NAILS WHERE

- 1.1. PROVIDE FULL WIDTH SILL PLATES, MIN. 700mm ANCHORED TO FOUNDATION WITH 12mm DIAMETER BOLTS x 250mm LONG @ 1200mm CENTERS. BOLTS TO BE GROUTED OR
- CONCRETED IN SOLID, UNLESS OTHERWISE STATED. 1.2. STUDS TO BE OF SIZE AND SPACING NOTED ON STRUCTURAL DRAWINGS. 1.3. PROVIDE, UNLESS OTHERWISE NOTED, A MINIMUM OF TWO(2) STUDS AT CORNERS, AND EACH
- SIDE OF THE OPENINGS INTERSECTIONS. 1.4. ALL STUDS TO BE CONTINUOUS FOR FULL STORY HEIGHT WITH NO SPLICE.
- 1.5. PROVIDE MID HEIGHT BLOCK FOR ALL STUD WALLS. 1.6. PROVIDE UNLESS OTHERWISE NOTED, A MINIMUM OF TWO(2) TOP PLATES FOR LOAD BEARING
- WALLS. PLATES TO BE LAPPED OR TIED AT CORNERS AND INTERSECTIONS. 1.7. NON-LOAD BEARING STUD WALL TO CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE.
- FLOOR AND ROOF JOISTS 2.1. PROVIDE JOISTS OF SIZE, SPACING AND SPAN AS NOTED ON THE STRUCTURAL DRAWINGS. UNLESS OTHERWISE NOTED, JOISTS SHALL BE CONTINUOUS IN ANY ONE SPAN WITH NO

2.2. WHERE JOISTS FRAME INTO THE SIDE OF A STEEL BEAM, JOISTS SHALL BE SUPPORTED ON THE BOTTOM FLANGE OF THE BEAM OR NOT LESS THAN 50mm x 75mm LUMBER BOLTED TO

THE WEB WITH MINIMUM 6mm DIAMETER BOLTS AT MAXIMUM 600mm CENTERS.

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

BRIDGING OR BLOCKING 3.1. PROVIDE CROSS-BRIDGING OR SOLID BLOCKING OR APPROVED PROPRIETARY METAL STRAPS IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 3.2. PROVIDE CONTINUOUS WOOD STRAPPING ACROSS THE BOTTOM OF JOISTS

- AS/WHEN REQUIRED BY THE ONTARIO BUILDING CODE.
- 3.3. SPACING OF BRIDGING TO BE AT 2.0m MAXIMUM CENTERS.
- SUB-FLOORING AND ROOF SHEATHING
- 4.1. TO BE TYPE AND THICKNESS SHOWN ON THE STRUCTURAL DRAWINGS,
- INSTALLED WITH END JOINTS STAGGERED. 4.2. AT EDGES OF PANELS, PROVIDE NOT LESS THAN 50mm x 50mm BLOCKING SECURELY NAILED BETWEEN FRAMING MEMBERS, UNLESS OTHERWISE
- 4.3. FOR ROOF SHEATHING PROVIDE AT LEAST A 1.5mm GAP BETWEEN SHEETS. 4.4. EXTERIOR TYPE PLYWOOD USED AS ROOF AND/OR WALL SHEATHING SHALL
- BE LEGIBLY IDENTIFIED THAT THE MATERIAL IS OF EXTERIOR TYPE. 4.5. SUB-FLOORING SHALL BE GLUED AND NAILED TO ALL JOISTS. GLUE TO BE A HIGH SOLIDS, RUBBER CONTACT TYPE SUPPLIED IN CARTRIDGES. USE A
- CONTINUOUS BEAD AND RUN A THIN BEAD INTO GROOVES JUST BEFORE INSERTING GROOVES OF T&G PLYWOOD. 4.6. NAILS TO BE 80mm SPIRAL OR RING THREAD AT 600mm ON CENTERS
- MAXIMUM. 4.7. MAKE BUTT JOINTS ON SOLID MATERIAL.
- WALL SHEATHING SHALL BE INSTALLED SO THAT ALL ENDS ARE SUPPORTED WITH END JOINTS STAGGERED. A GAP OF NOT LESS THAN 1.5mm SHALL BE LEFT BETWEEN SHEETS OF PLYWOOD, WAFER-BOARD OR FIBER-BOARD.
- NOTCHING AND DRILLING IS ONLY ALLOWED WITH THE LIMITATIONS SET OUT IN THE ONTARIO BUILDING CODE.
- 7.1. UNLESS OTHERWISE NOTED, BRICK VENEER IS TO BE TIED TO WOOD STUDS WITH A MINIMUM 22 GAUGE x 22mm GALVANIZED CORRUGATED STRIP TIES SPACED AT MAXIMUM 400mm x 600mm CENTERS, ON EVERY STUD. STRIP
 - TIES TO CONFORM TO CAN3-A370-M. 7.2. IF BRICK VENEER EXCEEDS 10.8m HIGH, CORRUGATED STRIP TIES ARE NOT TO BE USED, OBTAIN DIRECTION BEFORE PROCEEDING.

PRE-ENGINEERED WOOD TRUSS

- WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION OF THE NATIONAL FOREST PRODUCTS ASSOCIATION. THE DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES OF THE TRUSS PLATE INSTITUTE AND CSA 086 STANDARDS.
- WOOD MATERIALS SHALL BE SOUTHERN PINE, DOUGLAS FIR OR LARCH AND SHALL BE KILN DRIED AND USED AT 19% MAXIMUM MOISTURE CONTENT. PROVIDE GRADE NO. 2 OR AS REQUIRED TO SATISFY STRESS REQUIREMENTS.
- CONNECTOR PLATES SHALL BE NOT LESS THAN 0.9mm (20 GAUGE) IN COATED THICKNESS, SHALL MEET OR EXCEED ASTM GRADE A OR HIGHER AND SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A-525 (COATING G60). MINIMUM STEEL YIELD STRESS SHALL BE 227MPa.

TRUSSES SHALL BE FABRICATED IN A PROPERLY EQUIPPED MANUFACTURING FACILITY OF A PERMANENT NATURE. TRUSSES SHALL BE MANUFACTURED BY

- EXPERIENCED WORKMEN USING PRECISION CUTTING, JIGGING AND PRESSING EQUIPMENT UNDER THE REQUIREMENTS IN THE QUALITY CONTROL STANDARDS OF THE TRUSS PLATE INSTITUTE. SECONDARY BENDING STRESSES IN TRUSS TOP AND BOTTOM CHORDS DUE TO
- FACTORS SHALL BE PER THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. WOOD TRUSSES SHALL BE ERECTED IN ACCORDANCE WITH THE TRUSS MANUFACTURER'S REQUIREMENTS. THIS WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED CONTRACTOR. TRUSS ERECTION BY AN INEXPERIENCED OR NONQUALIFIED CONTRACTOR CAN RESULT IN CONSTRUCTION COLLAPSE AND/OR

DEAD, LIVE AND WIND LOADS SHALL BE CONSIDERED IN THE DESIGN. LOAD DURATION FACTORS SHALL BE CONSIDERED IN THE DESIGN. LOAD DURATION

- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY AND PERMANENT BRACING AS REQUIRED FOR SAFE ERECTION AND PERFORMANCE OF THE TRUSSES. THE GUIDELINES SET FORTH BY THE TRUSS PLATE INSTITUTE PUBLICATION AHIB-91, COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING
- METAL PLATE CONNECTED WOOD TRUSSES SHALL BE A MINIMUM REQUIREMENT. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILLED NOR OTHERWISE ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF THE
- SUBMIT COMPLETE SHOP DRAWINGS FOR ALL WOOD TRUSSES SHOWING MEMBER SIZES, SPECIES, GRADE, MOISTURE CONTENT, SPAN, CAMBER, DIMENSIONS, CHORD PITCH, BRACING REQUIREMENTS AND LOADINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND SHALL BEAR THE SEAL OF A PROFESSIONAL

<u>GENERATOR SLAB NOTES:</u>

ENGINEER REGISTERED IN ONTARIO.

SERIOUS INJURY AND DAMAGE.

- FOUNDATIONS SHALL BEAR ON UNDISTURBED NATURAL MATERIAL OR PROPERLY PLACED AND COMPACTED CONTROLLED STRUCTURAL FILL HAVING A MINIMUM SAFE BEARING CAPACITY OF 150 kPa. FOUNDATION DESIGN IN ACCORDANCE TO OBC 4.2.4.1.(3) WHICH REFERENCES OBC APPENDIX 'A' WHICH IN TURN REFERENCES NBC 2015 STRUCTURAL COMMENTARY 'K' SENTENCE 49(B) THAT STATES FOUNDATIONS TO BE DESIGNED USING EMPERICAL METHOD, IN WHICH GEOTECHNICAL RESISTANCES / PRESSURES ESTIMATED EMPIRICALLY IN THE CPEM, ARE COMPARED TO THE SPECIFIED LOADS. IN LIEU OF NO GEOTECHNICAL
- MIN SLS BEARING STRENGTH: MODULUS OF SUBGRADE REACTION:
- 25MPa/m CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.1-04.
- CONCRETE FOR SLAB SHALL CONFORM TO THE FOLLOWING:

REPORT, THE FOLLOWING VALUES WERE USED FOR DESIGN:

C-1, STUCTURALLY REINFORCED CONCRETE EXPOSED CLASS OF EXPOSURE: TO CHLORIDES STRENGTH: 35MPa MINIMUM COMPRESSIVE STRENGTH AT 28

- UNLESS NOTED OTHERWISE, SLAB REINFORCING SHALL NOT BE CUT AT PLUMBING ELEMENTS OR AT OPENINGS. INSTEAD, THE REINFORCING SHOULD BE MOVED TO EACH SIDE OF THE PLUMBING ELEMENTS OR THE OPENING (UNCUT). PROVIDE REINFORCING EQUIVALENT TO THAT INTERRUPTED BY THE OPENING WITHIN THE WIDTH OF THE OPENING, HOOK TOP REINFORCING.
- SUPPORT SLAB BOTTOM REINFORCING ON SUFFICIENT SLAB BOLSTERS OR
- EQUIVALENT TO MAINTAIN CONCRETE PROTECTION, AS SPECIFIED. PRIOR TO CONSTRUCTION, LOCATIONS AND DETAILS OF CONSTRUCTION JOINTS ARE TO BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.
- MAXIMUM GENERATOR DESIGN WEIGHT: 2168 KG (4781 lbs)
- TO BE READ IN CONJUNCTION WITH PROJECT DRAWINGS. REFER TO SEWAGE PUMPING STATION SITE PLAN (DWG P101), PREPARED BY CROZIER, FOR SITING LOCATION OF GENERATOR SLAB.



721-3464 J. A. M

GENERAL CONSTRUCTION NOTES

ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY | TBM#3-THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS | ***ADD REFERENCE TO SURVEY/SOURCE ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH

ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY

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ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF

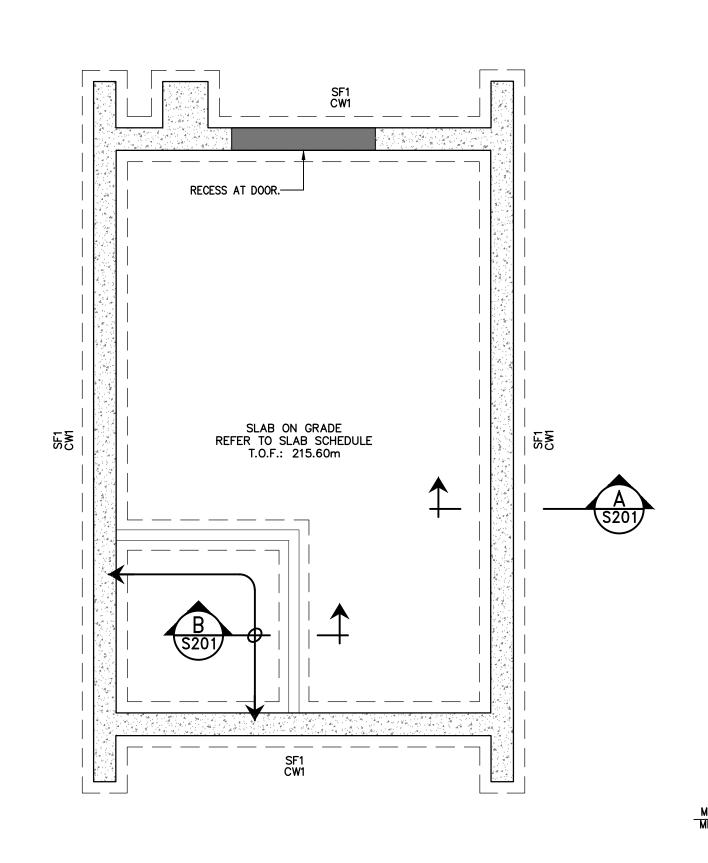
TEMPORARY BENCHMARKS

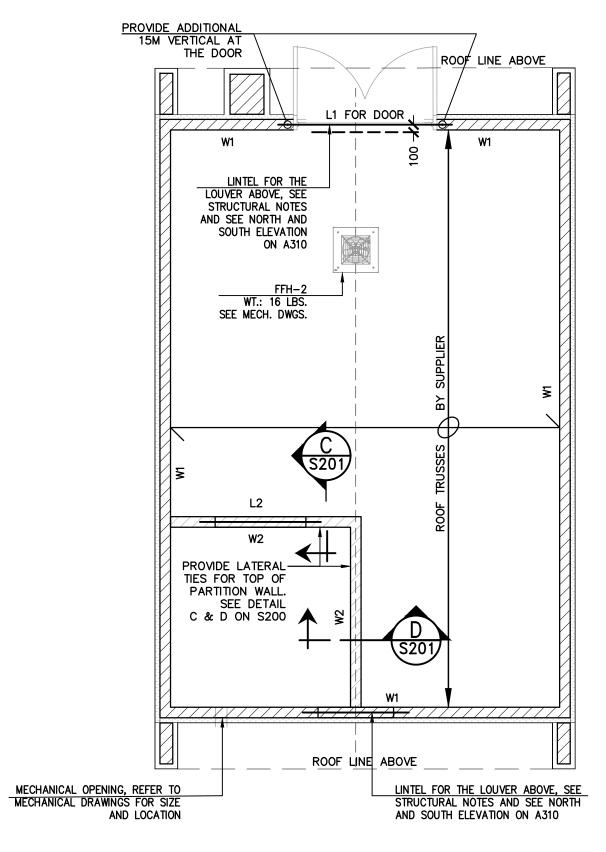
OF THE SLAB.

SSUED FOR 90% DETAILED DESIGN SSUED FOR CLIENT REVIEW - IFT ISSUED FOR 90% DETAILED DESIGN REV 1 ISSUED FOR TENDER SSUED FOR ADDENDUM #1 $_{
m Z}$ ISSUED FOR ADDENDUM #2 SSUED FOR APPROVAL

2023/03/21 2023/12/15 2024/01/02 2024/01/22 2024/02/09 2024/02/27 2024/03/08

DATE: YYYY/MM/DD





FOUNDATION PLAN

1. REFER TO ARCHITECTURAL FOR DIMENSIONS

STRUCTURAL PLAN SCALE: 1:50

ROOF PLAN

SCALE: N.T.S.

	WALL SCHEDULE					
MARK	WALL ASSEMBLY	LOWER WALL ASSEMBLY	COMMENTS			
W1	VINYL SIDING "KAYCAN" PRESTIGE BEIGE FROM SB-7 COLOUR SELECTION STRAPPING 75mm RIGID INSULATION (R15) SOPRASEAL WALL AIR/VAPOUR BARRIER OR APPROVED EQUIV. 13mm T&G OSB 140mm CONC. BLOCK		15M @ 400 VERT O.C. C/W 15M DOWELS SPACING TO MATCH VERT HEAVY DUTY HORIZONTAL JOINT REINFORCEMENT @ 400 C/C PROVIDE 400mm DEEP BOND BEAM ON TOP AND MID HEIGHT OF THE WALL, REINFORCED WITH 2-15M HOR.			
W2	140mm CONC. BLOCK.		15M @ 600 VERT O.C. C/W 15M DOWELS SPACING TO MATCH VERT. HEAVY DUTY HORIZONTAL JOINT REINFORCEMENT @ 400 C/C			

LINTEL/BEAM SCHEDULE					
MARK	TYPE & SIZE	COMMENTS			
L1	2-L152x89x9.5 + 10mm CONT. PLATE. x 250mm WIDE	SOLID CORE AT BEARING LOCATIONS			
L2	2-L127x76x6.4 LLV	SOLID CORE AT BEARING LOCATIONS			

STRIP FOOTING SCHEDULE			
MARK	MARK SIZE COMMENTS		
SF1	600X200	3-15M CONT. REBAR. REFER TO DETAIL A/S200	

	FOUND	ATION SCHEDULE
MARK	MARK WALL ASSEMBLY COMMENTS	
CW1	300mm C.I.P	15M VERT REBAR @ 300 O.C. E.W W/ 2-15M CONT. BARS @ T & B & 15M DOWELS @ 300 O.C. REFER TO DETAIL A/S200

	SLA	B SCHEDULE
MARK THICKNESS COMMENTS		COMMENTS
SOG	130	WELDED WIRE MESH (WWM) 150x150 - 25/25, 50mm ABOVE BOTTOM OF SLAB REFER TO SLAB ON GRADE DETAIL

CONCRETE COMPRESSIVE STRENGTH FOUNDATION WALLS FOOTINGS AND FLOOR SLAB

- ALL EXTERIOR MASONRY WALLS SHALL BE REINFORCED WITH TRUSS TYPE GALVANIZED MASONRY REINFORCEMENT AT
- SOLID UNIT 15 MPa BRICK 31 MPa

1.	SEE CONCRETE NOTES ON S001.
2.	REINFORCING STEEL SHALL CONFORM CSA G30-18M GRADE 400R.

- 406 O/C USE BLOK-LOK BL-31 MINIMUM COMPRESSIVE STRENGTH OF MASONRY UNIT. HOLLOW BLOCK 15 MPa
- MASONRY WALL SHALL BE SET WITH TYPE 'S' MORTAR AND LAID WITH FULL HEAD AND BED JOINTS.

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	ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF
	ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN
	AUTHORIZATION FROM THIS OFFICE.
_	THE DIGITAL FUEC CONTAIN INTELLECTUAL AND DIGITAL DATA DECEMBER.

- AUTHORIZATION FROM THIS OFFICE.

 2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.

 3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.

 4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.

 5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

 6. DO NOT SCALE DRAWINGS.

TEMPORARY BENCHMARKS



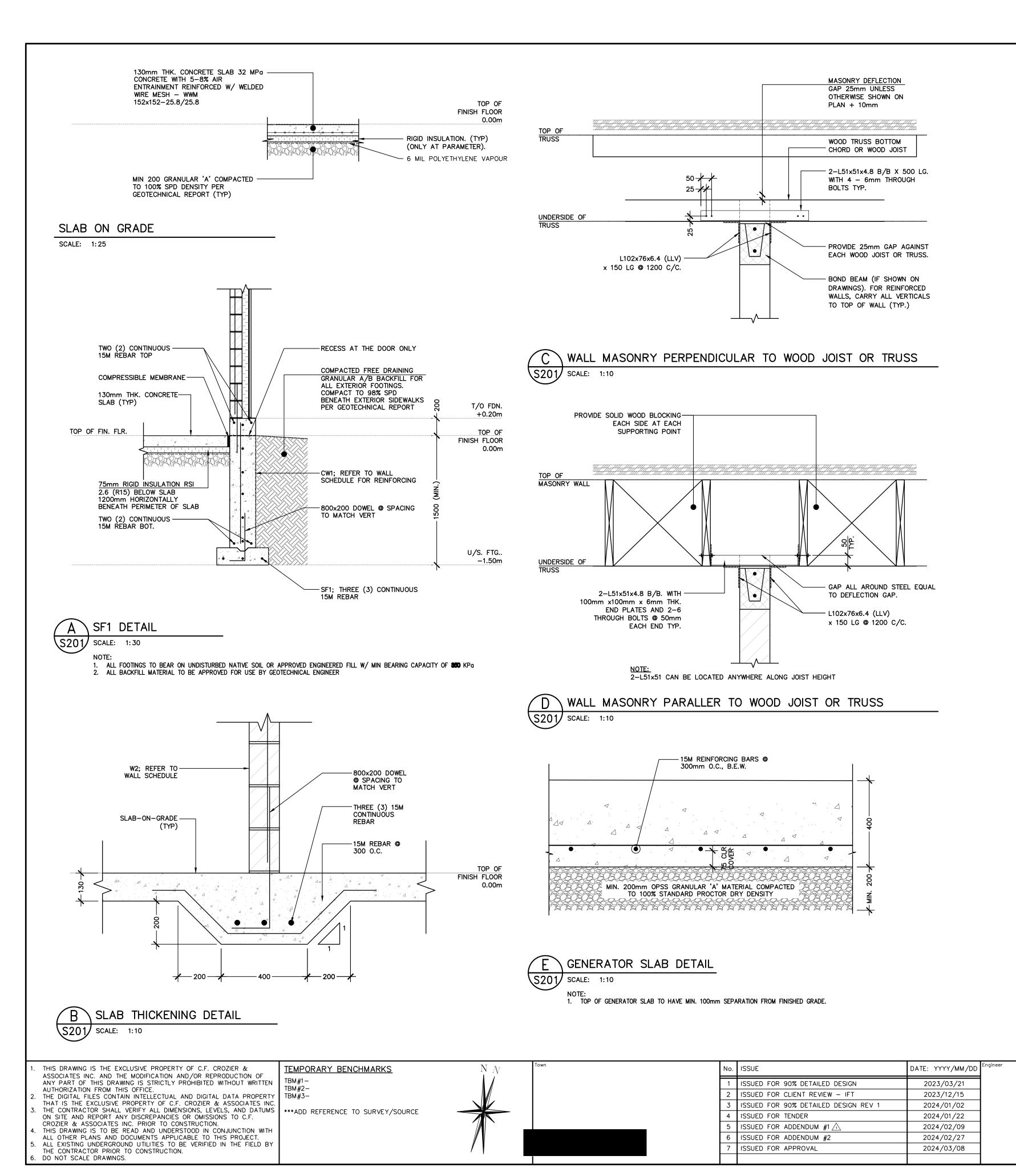
No.	ISSUE	DATE: YYYY/MM/DD	Engineer
1	ISSUED FOR 90% DETAILED DESIGN	2023/03/21	
2	ISSUED FOR CLIENT REVIEW - IFT	2023/12/15	
3	ISSUED FOR 90% DETAILED DESIGN REV 1	2024/01/02	
4	ISSUED FOR TENDER	2024/01/22	
5	ISSUED FOR ADDENDUM #1 🔨	2024/02/09	
6	ISSUED FOR ADDENDUM #2	2024/02/27	
7	ISSUED FOR APPROVAL	2024/03/08	

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

STRUCTURAL PLANS AND SCHEDULES



721-3464 J. A.M.



721-3464

J. A. M

HOME FARM

SEWAGE PUMPING STATION

TOWN OF THE BLUE MOUNTAINS

STRUCTURAL DETAILS

FOUNDATION NOTES

- FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING ALLOWABLE (WORKING STRESS; SLS) BEARING PRESSURES IN ACCORDANCE WITH THE SOILS REPORT NUMBER 1772163, PREPARED BY GOLDER ASSOCIATES AND DATED OCTOBER 23,2017. FOUNDATION DESIGN IN ACCORDANCE TO OBC 4.2.4.1.(3) WHICH REFERENCES OBC APPENDIX 'A' WHICH IN TURN REFERENCES NBC 2010 STRUCTURAL COMMENTARY 'K' SENTENCE 49(B) THAT STATES FOUNDATIONS TO BE DESIGNED USING EMPERICAL METHOD, IN WHICH GEOTECHNICAL RESISTANCES/ PRESSURES ESTIMATED EMPIRICALLY IN THE CFEM, ARE COMPARED TO THE SPECIFIED LOADS.
- A. SPREAD OR STRIP FOOTINGS = 100 kPa
- BEARING SURFACES MUST BE INSPECTED AND APPROVED BY THE SOILS ENGINEER IMMEDIATELY BEFORE CONCRETE IS PLACED.
- REFER TO SOILS REPORT FOR OTHER SPECIFIC DESIGN REQUIREMENTS FOR FOOTINGS, SOIL SLOPES, FROST PROTECTION, MINIMUM COVER, ETC.
- EXCAVATE TO LINES AND GRADES REQUIRED TO PROPERLY INSTALL THE FOUNDATIONS AND/OR CONTROLLED STRUCTURAL FILL ON UNDISTURBED NATURAL MATERIAL. REMOVE ALL TOPSOIL OR UNSUITABLE MATERIAL FROM UNDER ANY NEW CONSTRUCTION, CONTROLLED STRUCTURAL FILL, AND SLABS ON GRADE. ALL EXCAVATIONS SHALL BE DRY BEFORE PLACING ANY CONCRETE.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF SHORING IS REQUIRED FOR EXCAVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE EXCAVATION SHORING SYSTEM. SHORING SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CERTIFIED TO PRACTICE ENGINEERING IN ONTARIO.
- DO NOT UNDERMINE EXISTING FOOTINGS AND FOUNDATIONS.
- EXTERIOR WALL FOOTINGS ARE TO BE PLACED AT A MINIMUM DEPTH OF 1500mm BELOW THE LOWEST ADJACENT GROUND SURFACE EXPOSED TO FREEZING. ANY ADJUSTMENT OF ELEVATIONS OF FOOTINGS DUF TO FIFLD CONDITIONS MUST HAVE THE APPROVAL OF THE ENGINEER. ALL BEARING SURFACES MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOUNDATIONS ARE
- PROVIDE A MINIMUM 200mm THICK BASE LAYER OF WELL COMPACTED GRANULAR 'A'. COMPACT TO 98% STANDARD PROCTOR DENSITY (SPD) IN MAX LIFTS NOT EXCEEDING 150mm.
- NOTIFY CONSULTANT FOR SITE REVIEW OF REINFORCEMENT 48 HOURS PRIOR TO PLACEMENT OF
- 10. UNLESS OTHERWISE SHOWN, CENTRE FOUNDATIONS UNDER COLUMNS.
- DOWELS SHALL BE PLACED BEFORE CONCRETE IS PLACED. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.
- 12. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE SITE PLAN.
- 13. FOUNDATIONS MAY HAVE TO BE LOWERED TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS OF SAME. FOUNDATIONS ARE NOT TO BE UNDERMINED BY EXCAVATIONS FOR SERVICES, PITS, ETC.
- FOUNDATION ELEVATIONS, IF SHOWN, ARE NOT FINAL AND MAY VARY ACCORDING TO SITE CONDITIONS. ALL FOUNDATIONS MUST BE TAKEN TO A BEARING LAYER APPROVED BY THE SOILS
- 15. ALL PITS TO BE CLEARED OF DEBRIS BEFORE ANY BACKFILLING.
- BACKFILLING AGAINST FOUNDATION WALLS SHALL BE DONE ONLY AFTER WALLS ARE BRACED TO PREVENT MOVEMENT, OR TO EQUAL DEPTHS ON BOTH SIDES OF THE WALL. BACKFILL WITH APPROVED GRANULAR MATERIAL PLACED IN 300mm LAYERS AND COMPACTED TO 98% DENSITY AT OPTIMUM MOISTURE CONTENT.
- DO NOT USE EXCAVATED MATERIAL FOR BACKFILLING UNLESS IT HAS BEEN CERTIFIED CLEAN BY AN APPROVED TESTING FACILITY, IT CAN BE COMPACTED TO 98% STANDARD PROCTOR DENSITY IN LIFTS NOT EXCEEDING 150mm, FOUNDATION HAS BEEN CERTIFIED AS GRANULAR 'A' BY A GEOTECHNICAL ENGINEER.
- WHERE NEW FOUNDATIONS ARE BUILT IN THE SAME LOCATION AS REMOVED EXISTING FOUNDATIONS OR UNSUITABLE MATERIAL, NEW FOUNDATIONS SHALL BEAR ON UNDISTURBED MATERIAL AT OR BELOW THE ELEVATION OF THE EXISTING FOUNDATIONS OR UNSUITABLE MATERIAL, OR ON STRUCTURAL FILL AFTER COMPLETE REMOVAL OF ANY EXISTING FOUNDATIONS OR UNSUITABLE MATERIAL.
- PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF EXCAVATION BOTTOMS, UNDERCUTTING OF FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO THE STABILITY OF SUBGRADES AND FOUNDATIONS. PROVIDE AND MAINTAIN PUMPS, WELL POINTS, SUMPS, SUCTION AND DISCHARGE LINES AND OTHER DEWATERING COMPONENTS AND SYSTEMS AS REQUIRED TO CONVEY WATER AWAY FROM EXCAVATIONS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND DIVERSIONS OUTSIDE EXCAVATION LIMITS TO CONVEY WATER FROM EXCAVATIONS.
- 20. RESTORE ALL GRADES AROUND THE BUILDING AFFECTED BY THE CONSTRUCTION WORK TO ORIGINAL GRADES SUITABLE FOR FINAL GRADING AND LANDSCAPING BY OTHERS.

- CLADDING SYSTEM AS IT SEPARATES THE INTERIOR FROM THE EXTERIOR SPACE IT SHALL BE DESIGNED AND CONFORM TO PART 5 OF THE ONTARIO BUILDING CODE "ENVIRONMENTAL
- THE WINDOW AND DOOR SYSTEMS SHALL CONFORM TO OBC; 9.25.2.2: CONTINUITY OF THE AIR BARRIER SYSTEM,
- 9.6.1.2: MATERIAL STANDARDS FOR GLASS,
- STRUCTURAL SUFFICIENCY OF GLASS, AND SECTION 9.7 WINDOWS, DOORS AND SKYLIGHTS
- WINDOW PERFORMANCE TO CONFORM TO AAMA / WDMA / CSA 101 / I.S.2 / A440-8/11 NORTH AMERICAN FENESTRATION STANDARDS (NAFS)
- OPENABLE WINDOWS SHALL BE PROTECTED BY OR DESIGNED TO ACT AS A GUARD IN ACCORDANCE WITH ARTICLES 3.3.1.17 AND 4.1.5.14. THAT ARE LOCATED LOWER THAN 42" ABOVE THE FINISHED FLOOR.
- PROVIDE AND INSTALL WINDOW OPENING SAFETY CONTROL DEVICES TO RESTRICT THE WINDOW FROM OPENING MORE THAN 4" ON THE SECOND LEVEL AND ABOVE. • GLASS TO BE ANNEALED, TEMPERED OR HEAT STRENGTHENED AS PER OBC 9.6.1.3. STRUCTURAL SUFFICIENCY OF GLASS AS REQUIRED.
- DOOR & WINDOW ASSEMBLIES TO BE NON-COMBUSTIBLE AND COMPLY WITH REQUIREMENTS OF THE FOR NONCOMBUSTIBLE MATERIALS. COMBUSTIBLE SYSTEMS TO COMPLY WITH 3.1.5.4. COMBUSTIBLE GLAZING AND SKYLIGHTS REQUIREMENTS.
- WHERE SEALANT HAS BEEN SPECIFIED, CONTRACTOR SHALL ALLOW FOR SUITABLE RAINSCREEN AND INSULATED GLAZING UNIT DRAINAGE. WEEP HOLES SHALL BE SIZED ACCORDINGLY.

MOISTURE & AIR BARRIER

- COORDINATE WORK FOR INSTALLATION OF AIR/VAPOUR BARRIER AND THERMAL INSULATION WITH WINDOW AND DOOR INSTALLATION TO CREATE A CONTINUOUS SEAL FROM THE WINDOW AND DOOR ASSEMBLY TO THE ADJACENT CLADDING SYSTEM THAT IS COMPATIBLE WITH THE SEALANT AND ANY ADJACENT COMPONENTS
- INSTALLATION OF AIR/VAPOUR BARRIER WITH FLEXIBLE MEMBRANE SOPRASEAL STICK 1100 T BY SOPREMA (OR ALTERNATE AS APPROVED) AS PER MANUFACTURER'S INSTRUCTIONS TO ENSURE CONTINUOUS SEAL AND LAP MIN. 100mm AT END AND SIDE LAPS WITH AIR SEAL TAPE/SEALANTS AROUND THE PERIMETER OF THE WINDOWS AND DOORS AND BEHIND INFILL PANELS AND AT ANY PENETRATIONS AS PER MANUFACTURER'S INSTRUCTIONS. REFER TO ATTACHED DETAILS
- APPLY SEAL TAPE AND/OR SEALANTS TO FILL ANY VOIDS IN THE BARRIER AROUND THE PERIMETER OF THE WINDOWS AND DOOR

- SUPPLY AND INSTALL HOLLOW INSULATION METAL DOORS AT ALL LOCATIONS (OR ALTERNATE AS
- REMOVE AND REPLACE UNITS THAT ARE BROKEN, CHIPPED, CRACKED OR DAMAGED DURING CONSTRUCTION
- ADJUST OPERATORS, SCREENS AND HARDWARE TO ENSURE SMOOTH OPERATION AND
- REMOVE PROTECTIVE FILM FROM WINDOWS AND DOORS AND CLEAN AND POLISH GLASS SURFACES.

WEATHERTIGHT SEAL. LUBRICATE MOVING PARTS TO OPERATE SMOOTHLY AND FIT ACCURATELY.

- INFILL PANELS: ALUMINUM EXTRUDED PANELS: FINISH TO MATCH WINDOW AND DOOR SYSTEMS.
- DO NOT INSTALL COVERS THAT ARE OBSERVED TO BE DEFECTIVE INCLUDING WARPED, BOWED, DENTED, SCRATCHED AND DELAMINATING COMPONENTS. INSTALL PANELS AS DIRECTED AND DETAILED; DESIGN AND PROVIDE ANCHORAGE SYSTEM
- REQUIRED TO ACCOMMODATE STRUCTURAL DEFECTION AND TOLERANCES AND ACCOMMODATE WIND LOADING. • FABRICATE WITH METAL COVERED EDGE SEALS AROUND PERIMETER OF PANEL ASSEMBLY,
- ENABLING INSTALLATION AND MINOR MOVEMENT OF PERIMETER SEAL. a. PROVIDE DRAINAGE FROM PANEL TO THE EXTERIOR; THE PANEL SHALL NOT TO DRAIN INTO
- THE SYSTEM BELOW ii. REINFORCE WHERE REQUIRED FROM DEFLECTION CAUSED BY WIND AND SUCTION LOADS.
- REMOVE PROTECTIVE FILM FROM PANELS. CLEAN EXPOSED PANEL SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REPAIR AND TOUCH UP WITH COLOUR MATCHING HIGH GRADE ENAMEL MINOR SURFACE DAMAGE, WHERE APPEARANCE AFTER TOUCH-UP IS APPROVED BY THE OWNER. REPLACE DAMAGED PANELS AND COMPONENTS DAMAGED BY THE WORK.

<u>MATERIALS</u>

COLOUR TO BE SELECTED BY OWNER FROM THE MANUFACTURER'S STANDARD COLOUR RANGE.

<u> UNIVERSAL WASHROOM — GENERAL NOTES</u>

ALL WORKS TO BE IN CONFORMANCE WITH THE ONTARIO BUILDING CODE (2012).

<u>UNIVERSAL WASHROOM</u>

- REFER TO 3.8.3.12 FOR UNIVERSAL WASHROOM REQUIREMENTS.
- MUST BE SERVED BY A BARRIER-FREE PATH OF TRAVEL. BARRIER-FREE PATH OF TRAVEL MEANS WHEN APPLIED TO A BUILDING AND ITS FACILITIES, THAT THE BUILDING AND ITS FACILITIES CAN BE APPROACHED, ENTERED AND USED BY PERSONS WITH PHYSICAL OR SENSORY DISABILITIES.
- HAVE NO INTERNAL DIMENSION BETWEEN WALLS THAT IS LESS THAN 1675mm.
- SHALL HAVE A COAT HOOK THAT IS MOUNTED NOT MORE THAN 1200mm ABOVE THE FINISHED FLOOR ON A SIDE WALL AND PROJECTING NOT MORE THAN 50mm FROM THE WALL, AND A SHELF THAT IS LOCATED NOT MORE THAN 1075mm ABOVE THE FINISHED FLOOR, PROJECTING NOT MORE THAN 100mm FROM THE WALL.
- SHALL BE DESIGNED TO PERMIT A WHEELCHAIR TO TURN IN AN OPEN SPACE NOT LESS THAN 1675mm IN DIAMETER.
- SHALL BE PROVIDED WITH A MIRROR INSTALLED ABOVE THE LAVATORY. REFER TO LAVATORY NOTE 10 FOR MIRROR DETAILS.
- HAVE LIGHTING CONTROLLED BY A MOTION SENSOR CONFORMING TO SENTENCE 12.2.4.1(2). LIGHTING MUST HAVE A MINIMUM ILLUMINATION OF 100 Ix.
- . SHALL HAVE AN EMERGENCY CALL SYSTEM. REFER TO UNIVERSAL WASHROOM EMERGENCY CALL SYSTEM NOTES.
- . SHALL HAVE A CLEAR TRANSFER SPACE THAT IS 875mm x 1500mm.

<u> UNIVERSAL WASHROOM - DOOR</u>

- MUST HAVE A DOOR THAT IS CAPABLE OF BEING LOCKED FROM THE INSIDE AND RELEASED FROM THE OUTSIDE IN THE CASE OF AN EMERGENCY.
- . A LEVER STYLE DOOR HANDLE THAT IS A GRASPABLE LATCH-OPERATING MECHANISM LOCATED NOT LESS THAN 900mm AND NOT MORE THAN 1000mm ABOVE FINISHED FLOOR.

<u>UNIVERSAL WASHROOM — LAVATORY</u> 1. REFER TO 3.8.3.11. FOR LAVATORY REQUIREMENTS.

- . DISTANCE FROM CENTRE LINE OF LAVATORY TO SIDE WALL SHALL BE NOT LESS THAN 450mm.
- . SHALL BE MOUNTED SO THAT THE TOP OF THE LAVATORY IS NOT MORE THAN 825mm ABOVE
- CLEARANCE BENEATH THE LAVATORY SHALL BE NOT LESS THAN;
- 900mm WIDF 725mm HIGH AT THE FRONT EDGE
- 675mm HIGH AT A POINT OF 200mm BACK FROM THE FRONT EDGE iv. 350mm HIGH FROM A POINT OF 300mm BACK FROM THE FRONT EDGE TO THE WALL
- PIPES SHALL BE INSULATED SHOULD THEY PRESENT A BURN HAZARD OR HAVE A WATER SUPPLY TEMPERATURE LIMITED TO A MAXIMUM OF 43°C.
- SHALL BE EQUIPPED WITH FAUCETS THAT HAVE LEVER TYPE HANDLES WITHOUT SPRING LOADING OR OPERATE AUTOMATICALLY. FAUCET TO BE LOCATED SO THAT THE EDGE OF THE BASIN, OR WHERE THE BASIN IS MOUNTED IN A VANITY, TO THE FRONT EDGE OF THE VANITY, NOT MORE THAN
- SHALL HAVE A MINIMUM 1350mm DEEP FLOOR SPACE TO ALLOW FOR A FORWARD APPROACH, OF WHICH A MAXIMUM OF 488mm CAN BE LOCATED UNDER THE LAVATORY.
- HAVE A SOAP DISPENSER THAT IS; iw. LOCATED TO BE ACCESSIBLE TO PERSONS IN WHEELCHAIRS
- ii. LOCATED SO THAT THE DISPENSING HEIGHT IS NOT MROE THAN 1200mm ABOVE THE FINISHED
- iii. LOCATED NOT MORE THAN 600mm, MEASURE HORIZONTALLY, FROM EDGE OF THE LAVATORY iv. OPERABLE WITH ONE HAND
- HAVE A TOWEL DISPENSER OR HAND DRYING EQUIPMENT THAT IS: LOCATED TO BE ACCESSIBLE TO PERSONS IN WHEELCHAIRS
- LOCATED SO THAT THE DISPENSING HEIGHT IS NOT MROE THAN 1200mm ABOVE THE FINISHED
- iii. LOCATED NOT MORE THAN 600mm, MEASURE HORIZONTALLY, FROM EDGE OF THE LAVATORY iv. OPERABLE WITH ONE HAND

- REFER TO 3.8.3.12.(2) FOR EMERGENCY CALL SYSTEM REQUIREMENTS.
- EMERGENCY CALL SYSTEM MUST CONSIST OF AUDIBLE AND VISUAL SIGNAL DEVICES INSIDE AND

10. IF MIRRORS ARE INSTALLED IN THE WASHROOM, AT LEAST ONE MIRROR SHALL BE INSTALLED ABOVE

THE LAVATORY AND MOUNTED SO ITS BOTTOM EDGE IS NOT MORE THAN 1000mm ABOVE THE

2. SHALL BE EQUIPPED WITH A SEAT LOCATED AT NOT LESS THAN 400mm AND NOT MORE THAN

4. SHALL BE EQUIPPED WITH A BACK SUPPORT WHERE THERE IS NO SEAT LID OR TANK.

SHALL BE EQUIPPED WITH HAND-OPERATED FLUSHING CONTROLS THAT ARE EASILY ACCESSIBLE TO

FINISHED FLOOR OR INCLINED TO THE VERTICAL TO BE USABLE BY A PERSON IN A WHEELCHAIR.

WHERE A SHELF IS INSTALLED ABOVE A LAVATORY. IT SHALL BE LOCATED NOT MORE THAN 200mm

ABOVE THE TOP OF THE LAVATORY, NOT MORE THAN 1080mm ABOVE THE FINISHED FLOOR, AND

- AN EMERGENCY SIGN MUST BE POSTED AND MUST CONTAIN THE WORDS "IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE". LETTERS MUST BE AT LEAST 25mm HIGH WITH A 6mm STROKE. SIGN MUST BE POSTED ABOVE THE
- <u>UNIVERSAL WASHROOM TOILET PAPER DISPENSER</u>
- MORE THAN 300mm IN FRONT OF THE SEAT, AND NOT LESS THAN 600mm ABOVE THE FINISHED FLOOR.

<u> ABBREVIATIONS:</u>

H&:∨

HORZ.

HORIZ.

HORIZONTAL

INTERIOR

LONG

ANCHOR BOLT LIVE LOAD L.L.B.B. LONG LEGS BACK TO BACK ALTERNATE ARCH ARCHITECTURAL L.L.H. LONG LEG HORIZONTAL B.C.E. BOTTOM CHORD EXTENSION L.L.V. LONG LEG VERTICAL BOTTOM LOWER LAYER LS.H. LONG SIDE HORIZONTAL B.O.W. CANTIL CONC. CONT. CTRS. E.WAY EXIST. H.2.E.

UNIVERSAL WASHROOM - EMERGENCY CALL SYSTEM

PROJECT NOT MORE THAN 100mm FROM THE WALL.

REFER TO 3.8.3.9. FOR WATER CLOSET REQUIREMENTS.

A WHEELCHAIR USER OR BE AUTOMATICALLY OPERABLE.

<u> JNIVERSAL WASHROOM — WATER CLOSET</u>

5. SEAT SHALL NOT BE SPRING ACTIVATED.

450mm ABOVE THE FLOOR.

- OUTSIDE OF THE WASHROOM THAT ARE ACTIVATED BY A CONTROL DEVICE INSIDE THE WASHROOM.
- EMERGENCY BUTTON.

TOILET PAPER DISPENSER SHALL BE WALL MOUNTED BELOW THE GRAB BAR, IN-LINE WITH OR NOT

DOTTOM LOWER LATER	LOV	LONG SIDE VERTICAL
BOTTOM	LS. V.	LONG SIDE VERTICAL
BOLLOW OF MALL	L.W.	LONG WAY
BOTTOM BOTTOM OF WALL BEAM POCKET BOTTOM UPPER LAYER	MAX.	MAXIMUM
BOTTOM UPPER LATER	MECH.	MECHANICAL
 CANTILEVER	MIN.	MINIMUM
CAST IN PLACE	N.I.C.	NOT IN CONTRACT
CONTROL JOINT	N.S.	NEAR SIDE
CLEAR	N. 1. 5.	MINIMUM NOT IN CONTRACT NEAR SIDE NOT TO SCALE ON CENTRE
CONTINUOUS	0.6.	ON CENTRE
CANTILEVER CAST IN PLACE CONTROL JOINT CLEAR CONCRETE CONTINUOUS COMPLETE PENETRATION CENTES	0/0	ON CENTRE
COMPLETE PENETRATION	OPP.	OPPOSITE
CENTRES	O. W J.	OPEN WED SIEEL JUIST
COMPLETE WITH	P.P.	PARTIAL PENETRATION
	P/T	POST-TENSIONING
DETAIL DEAD LOAD	R.D.	ROOF DRAIN
DEAD LOAD DO OVER (DITTO) DEEP (I.E. DEPTH OF BEAM) DEPTH TO SUIT DRAWING DOWELS	RTN.	RETURN
DEEP (I.E. DEPTH OF BEAM)	R/W	REINFORCED WITH
DEPTH TO SUIT	SL.	SUPERIMPOSED DEAD LOAD
DRAWING	SIM.	SIMILAR
DOWELS	S.I.B.B.	SHORT LEGS BACK TO BACK
EACH END	S.O.C.	SLAB ON GRADE
EACH FACE	SPEC.	SPECIFICATIONS
ELEVATION	STAG.	STAGGER
ELEVATION	STIR.	STIRRUP
ELECTRICAL	S.W.	STIRRUP SHORT WAY SYMMETRICAL THICK
EACH SIDE	SYM.	SYMMETRICAL
EACH WAY	THK.	THICK
EACH WAY	THRU	THROUGH
EXISTING	T.L.L.	TOP LOWER LAYER
EXTERIOR	T.O.	TOP OF
FLOOR DRAIN	1.O.C.	TOP OF CONCRETE TOP OF STEEL
FAR SIDE	1.0.S.	TOP OF STEEL
GALVANIZED	TYP.	TYPICAL TOP AND BOTTOM
GRID LINE	1 & B	TOP AND BOTTOM
HOUK ONE END	I & C	TENSION AND COMPRESSION
DEPTH TO SUIT DRAWING DOWELS EACH END EACH FACE ELEVATION ELEVATION ELECTRICAL EACH SIDE EACH WAY EACH WAY EXISTING EXTERIOR FLOOR DRAIN FAR SIDE GALVANIZED GRID LINE HOOK ONE END HOOK TWO ENDS HORIZONTAL	ı & G	TONGUE AND GROOVE
HURIZUNTAL AND VERTICAL	1.J.	TIE JOIST
HORIZONTAL	1.0.S.	TOP OF SLAB/STEEL TOP UPPER LAYER
HORIZONTAL	1.U.L.	TOP UPPER LAYER

U/S VERT.

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

GENERAL CONSTRUCTION NOTES

721-3464 J.A.N

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THE CONTRACTOR PRIOR TO CONSTRUCTION.

DO NOT SCALE DRAWINGS.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS | ***ADD REFERENCE TO SURVEY/SOURCE

TEMPORARY BENCHMARKS

SUED FOR 90% DETAILED DESIGN 2023/03/21 SSUED FOR CLIENT REVIEW - IFT ISSUED FOR 90% DETAILED DESIGN REV 1 ISSUED FOR TENDER SSUED FOR ADDENDUM #1 ISSUED FOR ADDENDUM #2 SSUED FOR APPROVAL SSUED FOR APPROVAL REV 1/ 2024/05/24

2023/12/15 2024/01/02 2024/01/22 2024/02/09 2024/02/27 2024/03/08

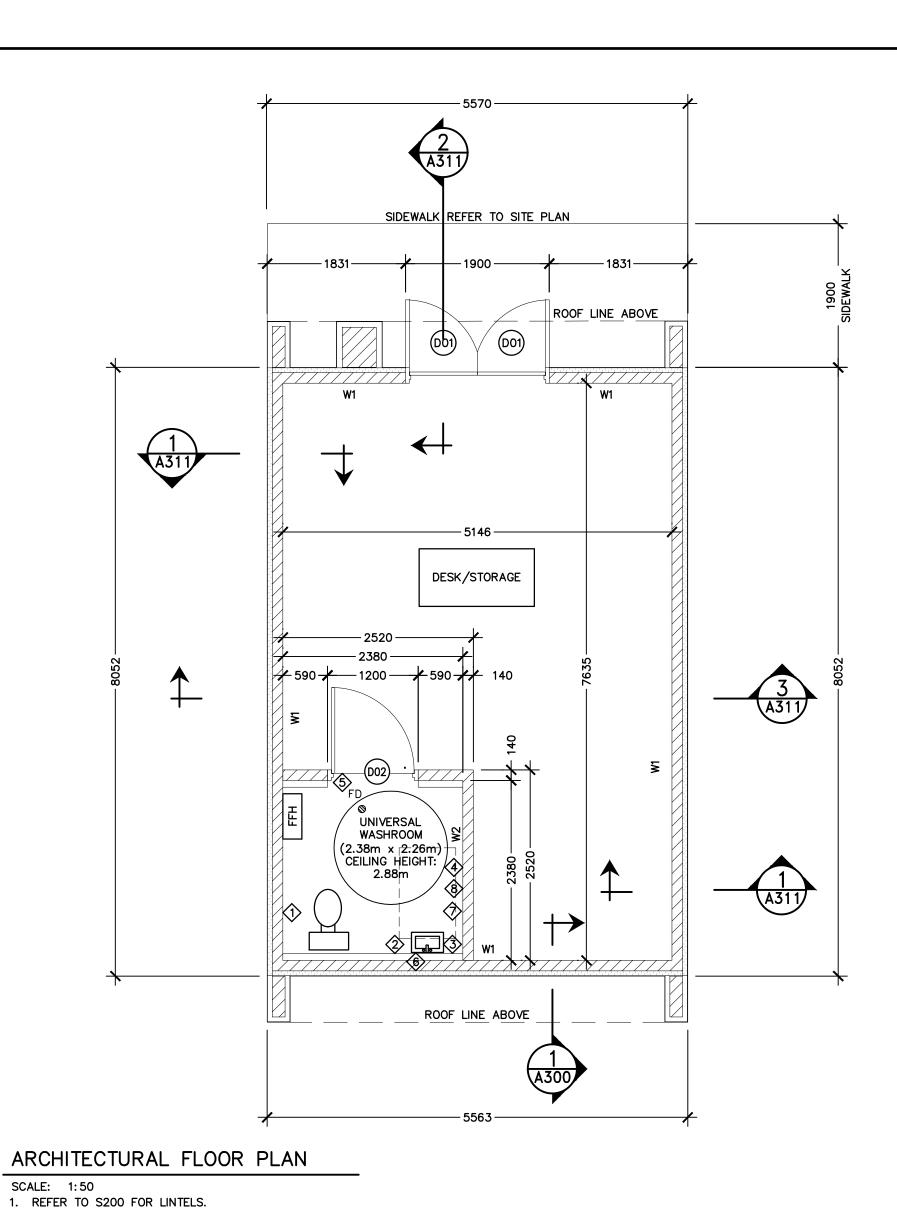
U.N.O. UNLESS NOTED OTHERWISE

UNDERSIDE

WORK POINT

VERTICAL

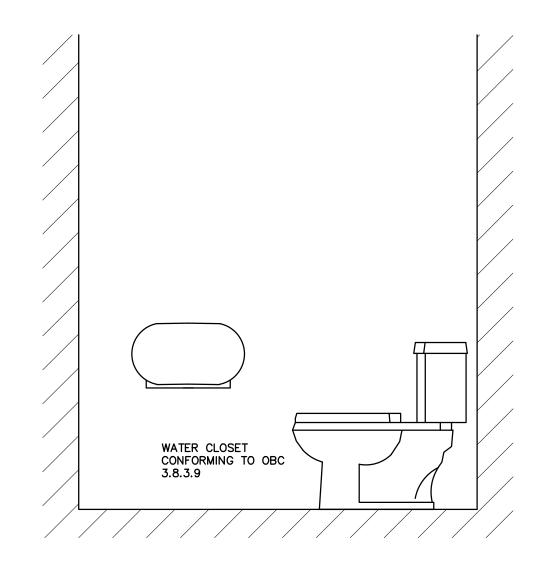
DATE: YYYY/MM/DD



→ 460 MIN. — COAT HOOK & SHELF -CONFORMING TO OBC LAVATORY — CONFORMING TO OBC 3.8.3.11 900 CLEAR TRANSFER SPACE WATER CLOSET CONFORMING TO OBC 3.8.3.9

FRONT BARRIER FREE WASHROOM INTERIOR ELEVATION

SCALE: NTS



SIDE BARRIER FREE WASHROOM INTERIOR ELEVATION

SCALE: NTS

DOOR SCHEDULE TYPE & SIZE HEIGHT & WIDTH COMMENTS PUSH PLATE, DEADBOLT, DOOR PULL, DOOR OPERATORS, BARRIER-FREE THRESHOLD. PROVIDE WEATHER-STRIP W-25 BY KNC OR EQUIVALENT. HOLLOW METAL INSULATED 2149x900 TYPE: METAL | FINISH : PT AUTOMATIC SWITCH INCLUDED; MOUNTING HEIGHT TO CONFORM TO BARRIER FREE REQUIREMENTS HOLLOW METAL INSULATED 2149x1050

1. ALL EXTERIOR DOORS TO INCLUDE WEATHERSTRIPPING
2. ALL WASHROOM DOORS TO INCLUDE LOCKS ON OUTSIDE & INSIDE

	ACCESSORIES SCHEDULE			
MARK	ITEM	MANUFACTURER/MODEL	COMMENTS	
	TOILET PAPER DISPENSER	BRADLEY - MODEL 5425		
\$	NAPKIN DISPOSAL	BRADLEY - MODEL 4722		
3>	FOAM SOAP DISPENSER	BRADLEY - MODEL 6542-73		
4>	COAT HOOK			
\$	DOOR PULL			
6	MIRROR	BRADLEY - MODEL 740-1830		
⟨ 8 ⟩	WASTE RECEPTACLE	BRADLEY - MODEL 355		

		COLOUR SCHEDULE & FINISH PRODUCT SPECIFICATIONS
	М	TYPE
1	PAINT	PT-1: SHERWIN WILLIAMS, WATER-BASED EPOXY PAINT, SEMI-GLOSS FINISH, TRICORN BLACK - SW7258
2	ASPHALT ROOF SHINGLES	BP-DAKOTA-2TONE BLACK
3	ROOF VALLEY FLASHING	METAL BROWN
4	METAL SOFFIT, FASCIA AND FREIZE BOARDS	PRESTIGE BEIGE
5	GUTTERS AND RWL'S	MODERN - PEBBLE CLAY
6	BRICK CLADDING	"BRAMPTON BRICK" — WESTMONT
7	STONESILL/BAND	ARRISCRAFT STONE SILL/BANDING
8	VINYL SIDING	PRESTIGE BEIGE
9	SMART PANEL AND SMART TRIM	MITTEN - TAUPETONE - SW 7633 (PAINTED)
10	DRYWALL CEILING	SEMI-GLOSS FINISH, WHITE.
11	FLOOR	CONCRETE SMOOTH FINISH

CONTROL ROOM (F3)

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5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

6. DO NOT SCALE DRAWINGS.

TEMPORARY BENCHMARKS

N N	Town
/	
	1

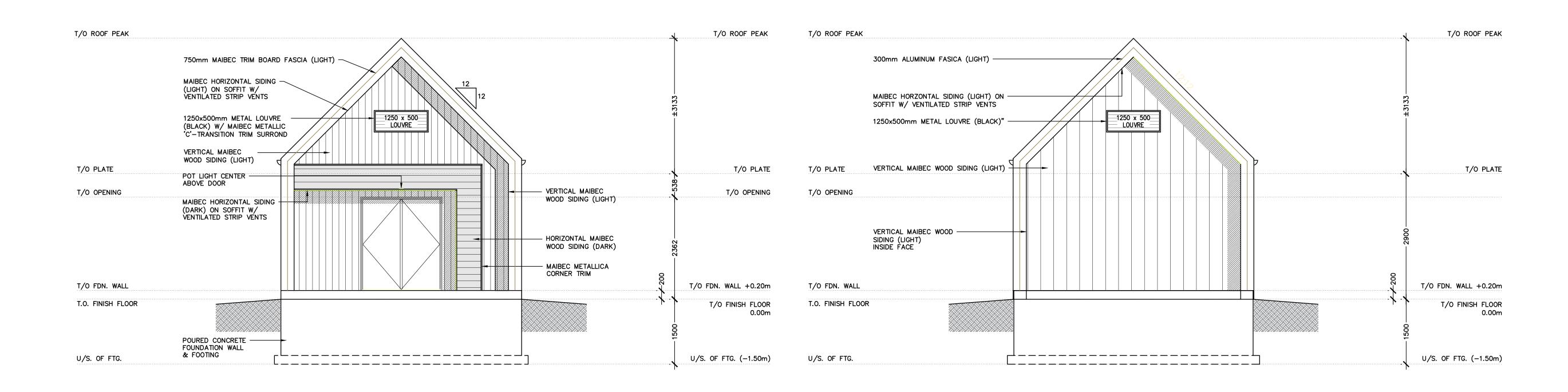
No.	ISSUE	DATE: YYYY/MM/DD	Engineer	Engineer
1	ISSUED FOR 90% DETAILED DESIGN	2023/03/21		
2	ISSUED FOR CLIENT REVIEW - IFT	2023/12/15		
3	ISSUED FOR 90% DETAILED DESIGN REV 1	2024/01/02		
4	ISSUED FOR TENDER	2024/01/22		
5	ISSUED FOR ADDENDUM #1 🛆	2024/02/09		
6	ISSUED FOR ADDENDUM #2	2024/02/27		
7	ISSUED FOR APPROVAL	2024/03/08		
8	ISSUED FOR APPROVAL REV 1 🗘	2024/05/24		

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

ARCHITECTURAL PLAN, WASHROOM ELEVATIONS AND SCHEDULES



721-3464 J.A.M.



NORTH ELEVATION

SCALE: 1:50

NOTE:

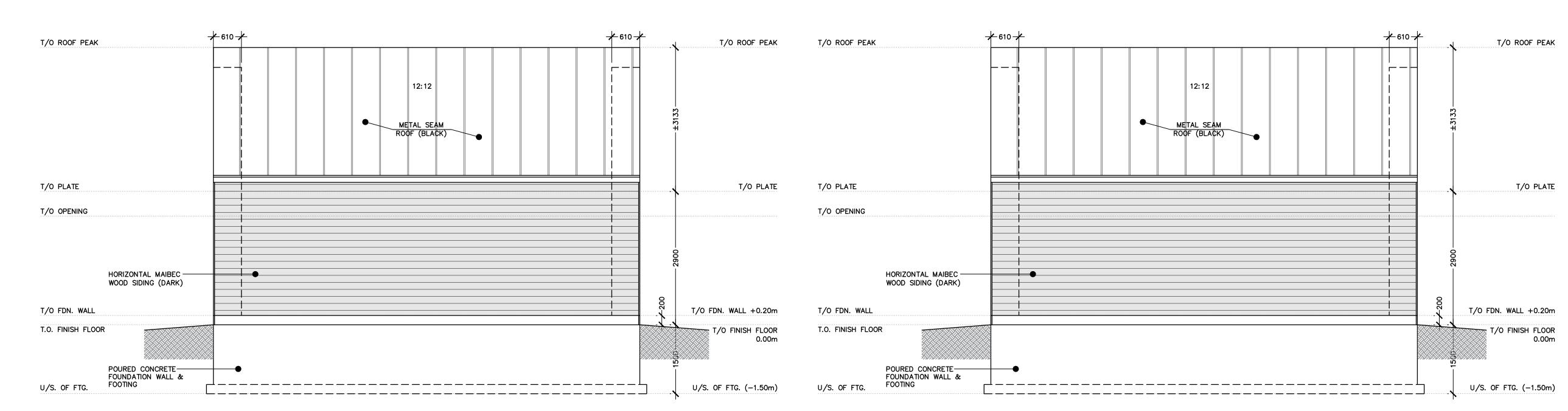
1. UNDERSIDE OF FOOTING TO BE AT UNDISTURBED NATIVE SOIL OR APPROVED ENG FILL W/ MIN BEARING CAPACITY OF 350 KPa

SOUTH ELEVATION

SCALE: 1:50

NOTE:

1. UNDERSIDE OF FOOTING TO BE AT UNDISTURBED NATIVE SOIL OR APPROVED ENG FILL W/ MIN BEARING CAPACITY OF 350 KPa



WEST ELEVATION

SCALE: 1:50

1. UNDERSIDE OF FOOTING TO BE AT UNDISTURBED NATIVE SOIL OR APPROVED ENG FILL W/ MIN BEARING CAPACITY OF 350 KPa

EAST ELEVATION

SCALE: 1:50

NOTE:
1. UNDERSIDE OF FOOTING TO BE AT UNDISTURBED NATIVE SOIL OR APPROVED ENG FILL W/ MIN BEARING CAPACITY OF 350 KPa

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***ADD REFERENCE TO SURVEY/SOURCE ISSUED FOR CLIENT REVIEW - IFT 2023/12/15 TOWN OF THE BLUE MOUNTAINS ISSUED FOR 90% DETAILED DESIGN REV 1 2024/01/02 ISSUED FOR TENDER 2024/01/22 ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION. SSUED FOR ADDENDUM #1/ 2024/02/09 THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. ISSUED FOR ADDENDUM #2 2024/02/27 ELEVATIONS ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ISSUED FOR APPROVAL 2024/03/08 DO NOT SCALE DRAWINGS. ISSUED FOR APPROVAL REV 1 /2 2024/05/24



CROZIER CONSULTING ENGINEERS

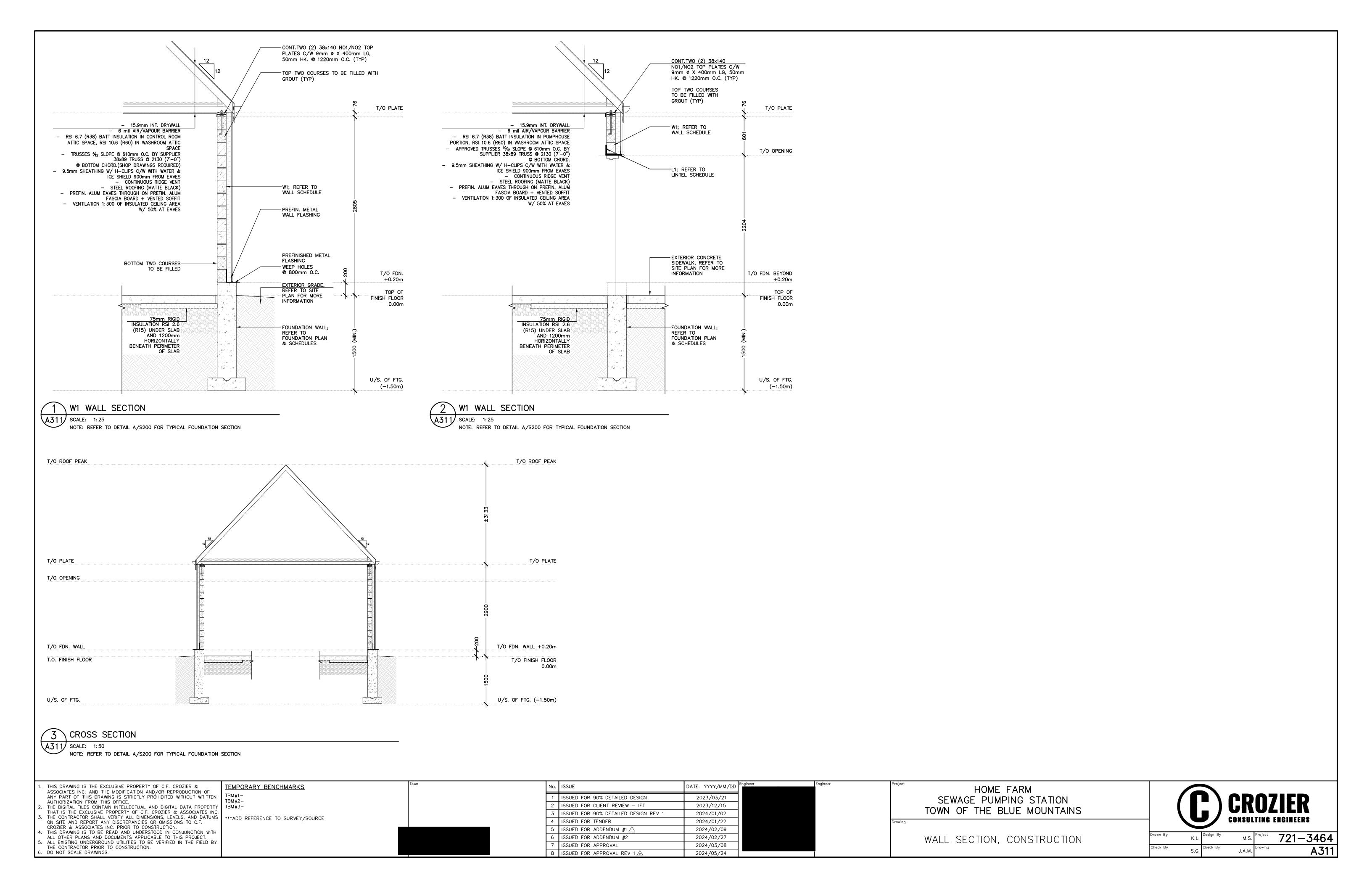
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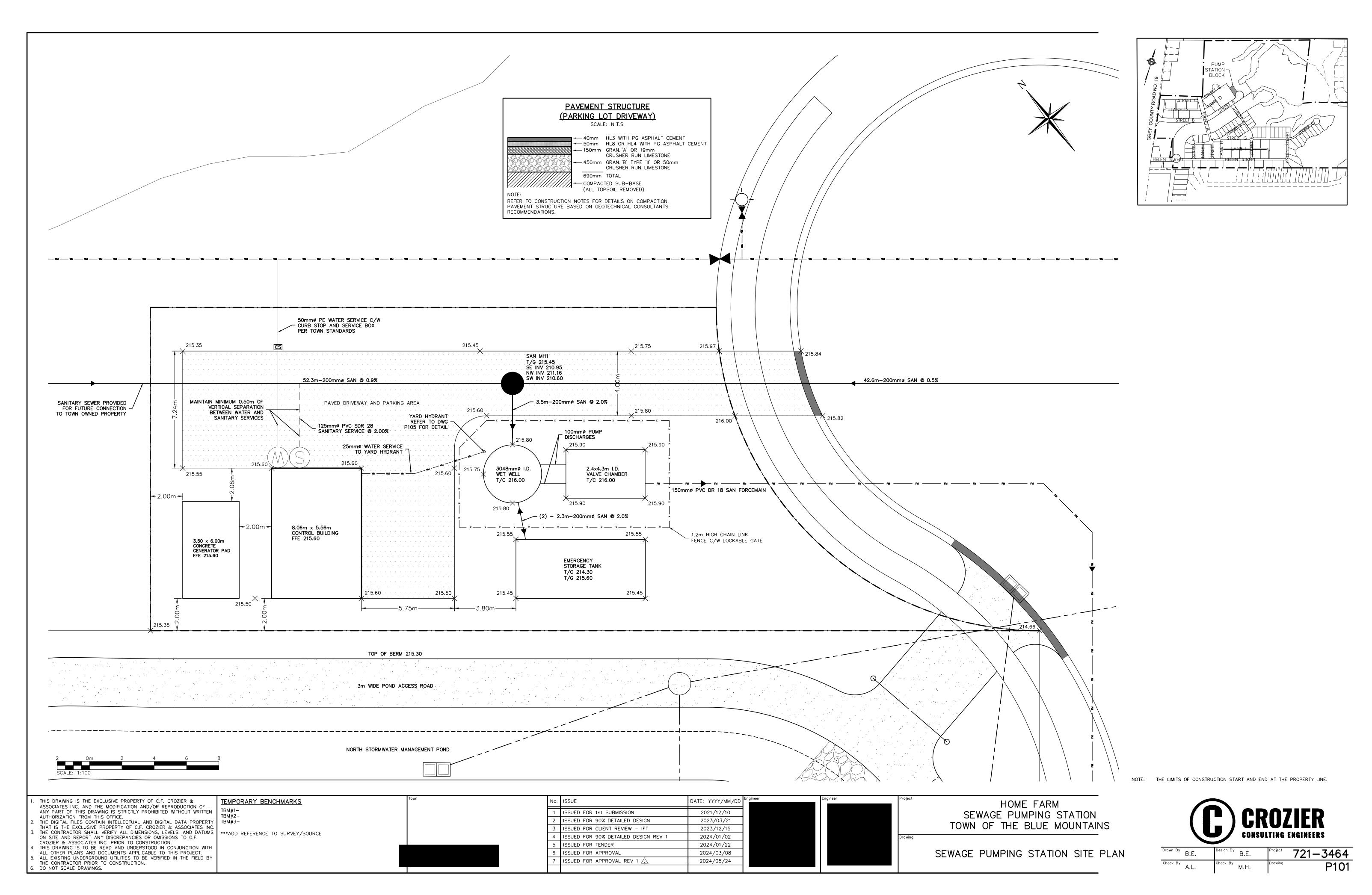
K.L. Design By

M.S. Project

721—3464

A310





STRUCTURAL NOTES:

- 1. FOUNDATION DESIGN TO BE CONFIRMED BASED ON RECOMMENDATION OF GEOTECHICAL ENGINEER.
- 2. SUBGRADE ELEVATIONS TO BE APPROVED BY THE GEOTECHINICAL ENGINEER.
- 3. SUPPORT ALL FOOTINGS AND SLABS ON UNDISTURBED SUB-GRADE WHERE DEEMED SUITABLE BY GEOTECHNICAL ENGINEER, WHERE UNSUITABLE, REPLACE WITH ENGINEERED FILL TO ELEVATIONS RECOMMENDED BY GEOTECHICAL ENGINEER.
- 4. REVIEW GEOTECHNICAL REPORT FOR RECOMMENDATIONS CONCERNING DEWATERING AT ALL STRUCTURES.
- 5. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL STRUCTURAL AND MECHANICAL COMPONENTS.

TANK BUOYANCY AND UPLIFT RESISTANCE

- 1. PROTECT ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION.
- 2. DEWATER EXCAVATION UNTIL CONSTRUCTION IS COMPLETE.

MATERIAL SPECIFICATIONS

- 1. CONCRETE STRENGTH IN ACCORDANCE WITH CSA STANDARD A23.1-14 AND
- 2. STRUCTURAL CONCRETE UNLESS OTHERWISE NOTED: 30 mPa AT 28 DAYS.
- EXPOSURE CLASSIFICATION A-1. 4. MAXIMUM WATER CEMENT RATIO 0.50 U.N.O.
- 5. USE WATER REDUCING AGENT AND SUPERPLASTICIZER.
- 6. NORMAL MAXIMUM AGGREGATE SIZE 20mm.
- 7. ENTRAINED AIR CONTENT RANGE 4% TO 7%. 8. LEAN FILL AND MASS CONCRETE 28-DAYS COMPRESSIVE STRENGTH 15 MPa
- 9. REINFORCING STEEL: CSA STANDARD G30.18-09(2014), GRADE 400, DEFORMED BARS.
- 10. STRUCTURAL STEEL: CSA STANDARD G40.20-13/G40.21-13, GRADE 350 ROLLED SECTIONS, GRADE 300 PLATES.
- 11. ALUMINUM HATCH:
- DESIGNED FOR 14.41KPA (300 PSF) LOAD C/W S.S. HOLD OPEN ARM AND RELEASE ASSEMBLY, S.S. AUTOMATIC LIFTING ASSEMBLY, LUG CONNECTION FOR PADLOCK, NEOPRENE GASKET FOR WEATHER AND ODOUR TIGHTNESS, ALL HARDWARE TO BE STAINLESS STEEL, PADLOCK TO MATCH OWNERS STANDARD, SUBMIT SHOP DWGS. FOR APPROVAL.
- 12. CEMENTITIOUS COATING FOR INTERIOR OF PUMPING STATION: REFER TO SPECIFICATION 07610 CEMENTITIOUS WATERPROOFING FOR COATING

SUBMERSIBLE PUMPS

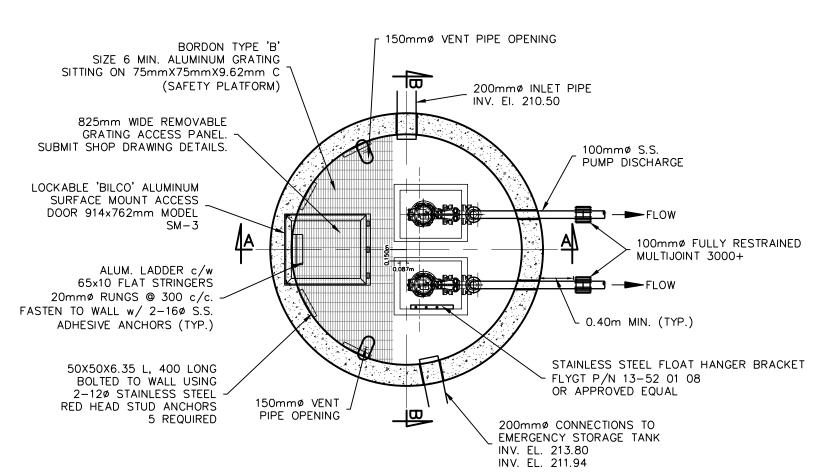
- 1. TWO ELECTRIC SUBMERSIBLE WASTEWATER PUMPS.
- 2. FLYGT MODEL NP 3127 SH3 ADAPTIVE 248 12HP WITH 155mm IMPELLER. 3. PUMP CAPACITY 18.9 L/s @ 28.1m TDH WITH ONE PUMP IN OPERATION.
- 4. CAST IRON CASING AND IMPELLER WITH 80mm SOLIDS PASSING.
- 5. 80mmø (3") DISCHARGE ELBOW, ACCESSORIES AND S.S. GUIDE BARS. 6. 8.0m STAINLESS STEEL LIFTING CHAIN.

SHOP DRAWING RESPONSIBILITIES

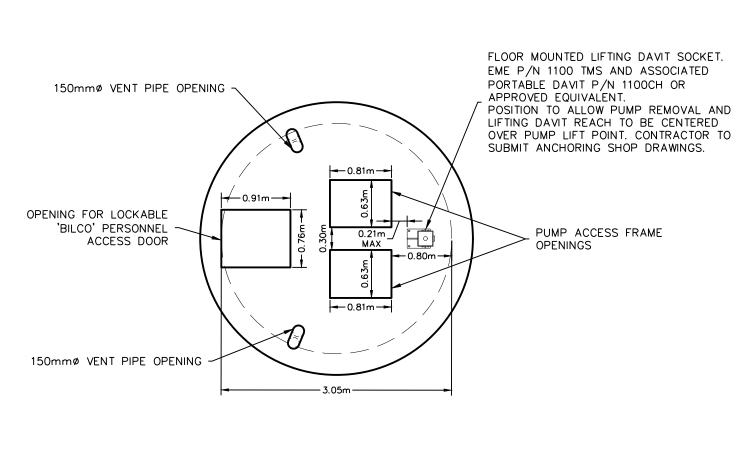
AS PART OF THEIR FIELD SERVICES, THE ENGINEER MAY REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON THE ENGINEER'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS. REVIEW OF SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS. RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT

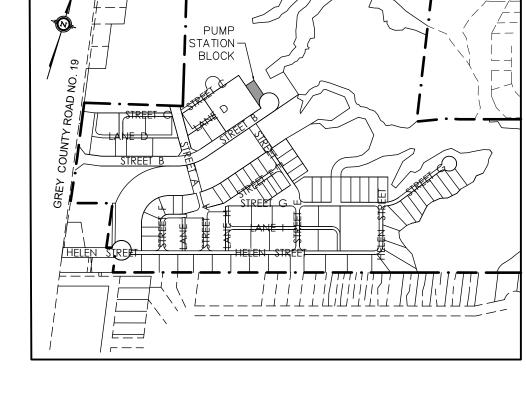
THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR CO-ORDINATION OF THE WORK OF ALL SUB-TRADES.

- MANUFACTURERS OF ALL STRUCTURAL ELEMENTS SHALL SUBMIT COMPLETE SHOP DRAWINGS. SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO TO THE CONSULTANT FOR REVIEW PRIOR TO THE FABRICATION (3 SETS OR PDF). SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS AND ALLOW A MINIMUM OF TWO(2) WEEKS FOR REVIEW. THE SUBMISSION NOR THE REVIEW SHALL RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR PROVIDING PROPER ENGINEERING DESIGN, METHODS, EQUIPMENT, WORKMANSHIP AND SAFETY
- 2. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR THE FOLLOWING:
- PRECAST STRUCTURE (CAP, RISERS, BASE) PLATFORM, GUARD, AND SUPPORT
- LADDER, SUPPORT, AND FALL ARREST SYSTEM FROST STRAPS
- WATERPROOFING MEMBRANE VENT PIPE SUPPORT STEEL ANGLES, PLATES, AND FASTENERS



PUMPING STATION—TOP VIEW





TOP CONCRETE SLAB VIEW

DYMONIC FC

SEALANT (TYP.)

150mm DIA. VENT

50mm Ø PUMP GUIDE RAILS AS

PER PUMP MANUFACTURER'S

200mmø PVC OVERFLOW TO

∠ EMERG. STORAGE TANK

200mmø PVC INLET FROM

C/W SLIP-ON CHECK VALVE

EMERG. STORAGE TANK

'O' RING JOINT (TYP.)

300mm WATERPROOFING

MEMBRANE AT ALL JOINTS c/w

PROTECTION BOARD MELROL AS PER W.R. MEADOWS (TYP.)

NON-SHRINK GROUT (TYP.)

PROTECTIVE COATING

SEE GENERAL NOTES

TWO (2) PUMPS FLYGT

MODEL NP 3127 SH

AT RISER JOINTS, SEAL WITH SIKA SWELL S2

300mm MIN. GRANULAR 'A'

BACKFILL COMPACTED TO

100% S.P.M.D.D

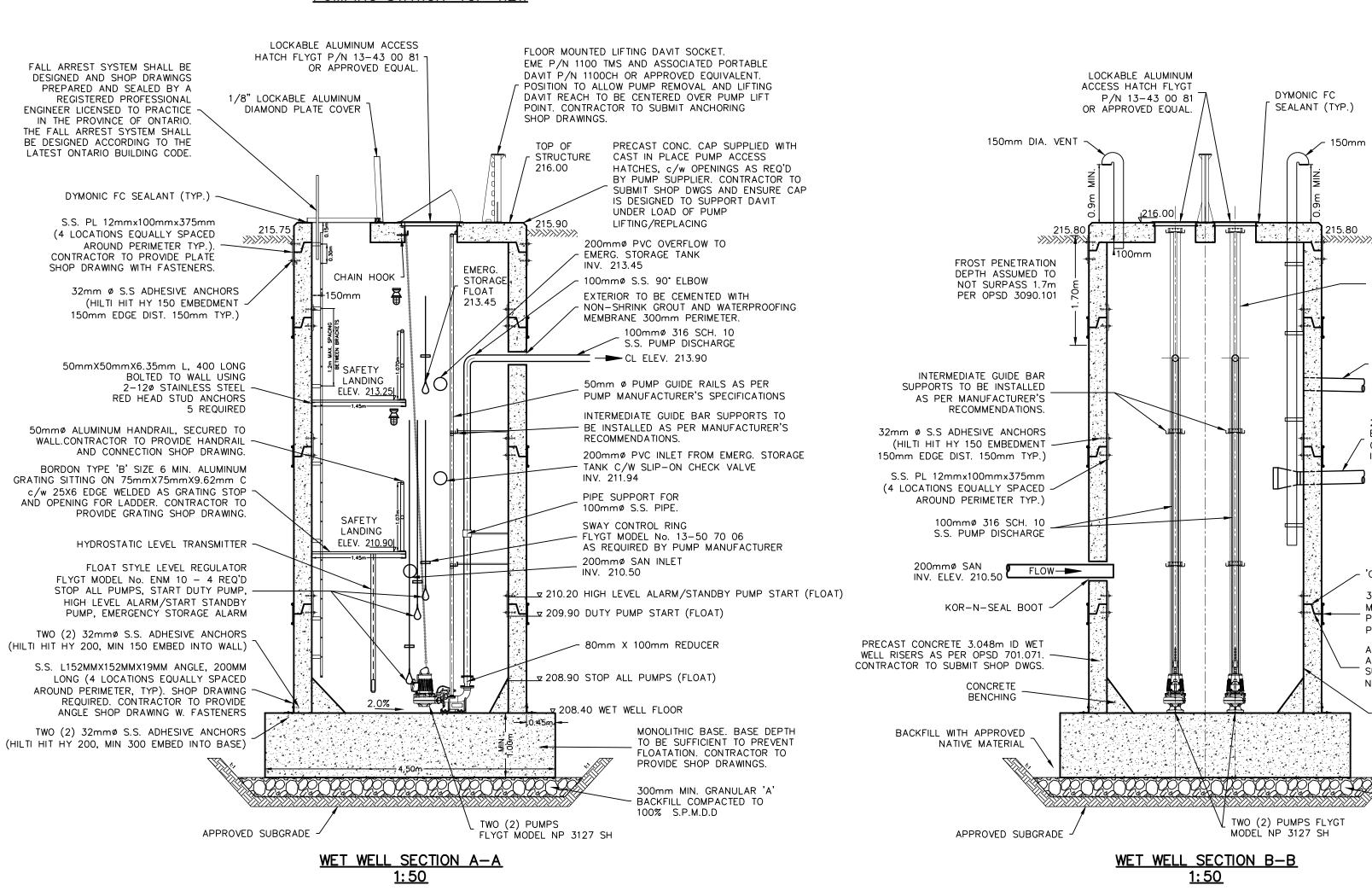
AND FILL ANY GAPS LEVEL TO PRECAST

SURFACE INSIDE AND OUTSIDE WITH

SPECIFICATIONS

_ INV. 213.45

INV. 211.94



PUMP OPERATING ELEVATION	NS (m)
HIGH LEVEL ALARM AND START STANDBY PUMP (FLOAT INTERLOCK)	21
START DUTY PUMP ELEVATION (FLOAT INTERLOCK)	20
START STANDBY PUMP (PLC)	20
START DUTY PUMP (PLC)	20
STOP ALL PUMPS (PLC)	20
STOP ALL PUMPS (FLOAT INTERLOCK)	20
WET WELL FLOOR ELEVATION	20



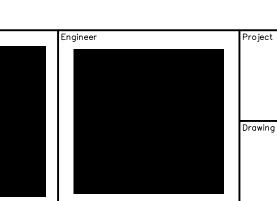
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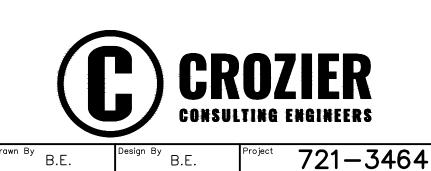


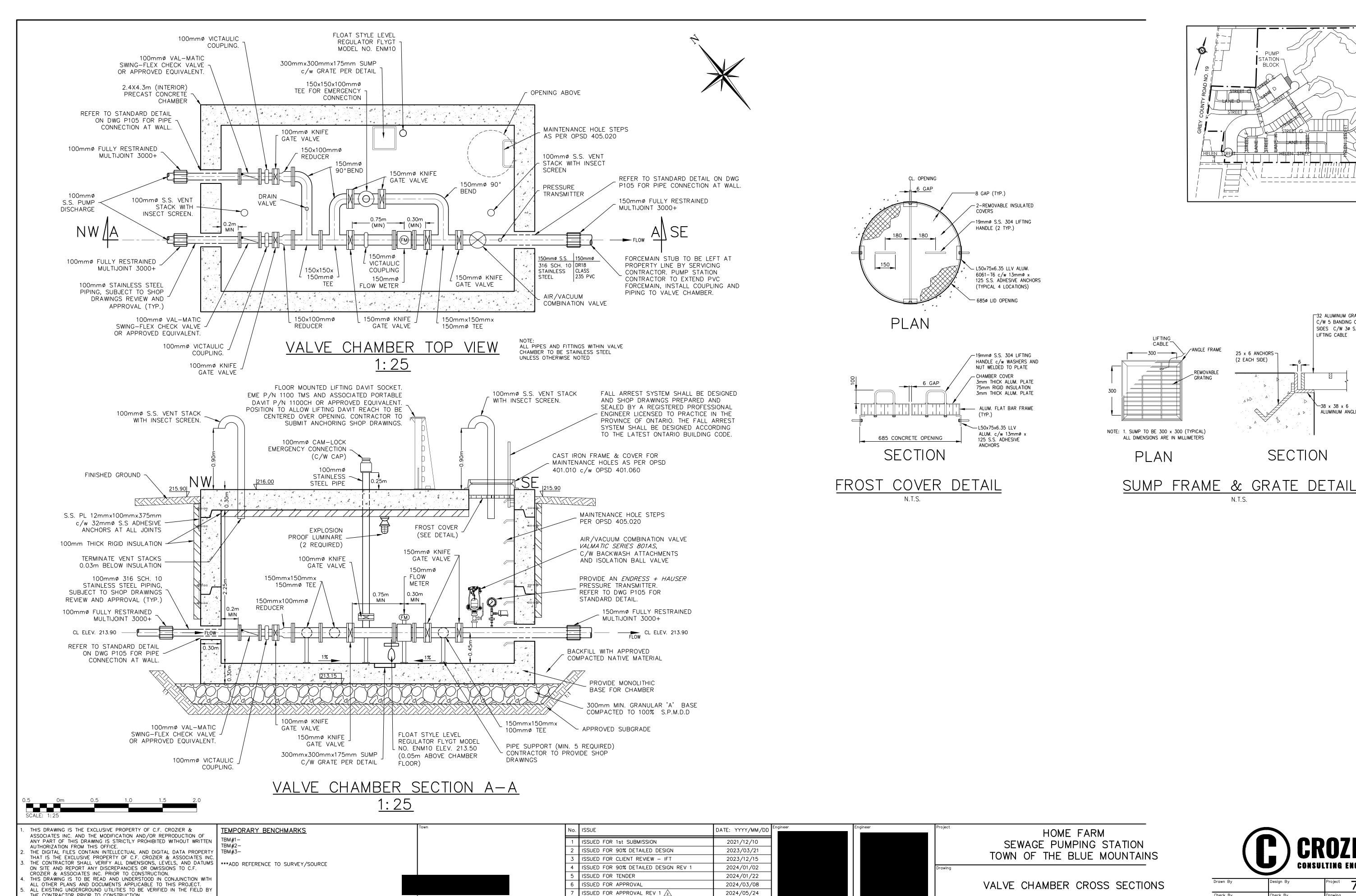
ISSUE	DATE: YYYY/MM/DD	Engineer	Engineer
ISSUED FOR 1st SUBMISSION	2021/12/10		
ISSUED FOR 90% DETAILED DESIGN	2023/03/21		
ISSUED FOR CLIENT REVIEW - IFT	2023/12/15		
ISSUED FOR 90% DETAILED DESIGN REV 1	2024/01/02		
ISSUED FOR TENDER	2024/01/22		
ISSUED FOR APPROVAL	2024/03/08		
ISSUED FOR APPROVAL REV 1 🛕	2024/05/24		



HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

WET WELL CROSS SECTIONS & CONSTRUCTION NOTES





STATION-

25 x 6 ANCHORS ¬

(2 EACH SIDE)

T32 ALUMINUM GRATING

C/W 5 BANDING ON 4

SIDES C/W 30 S.S.

LIFTING CABLE

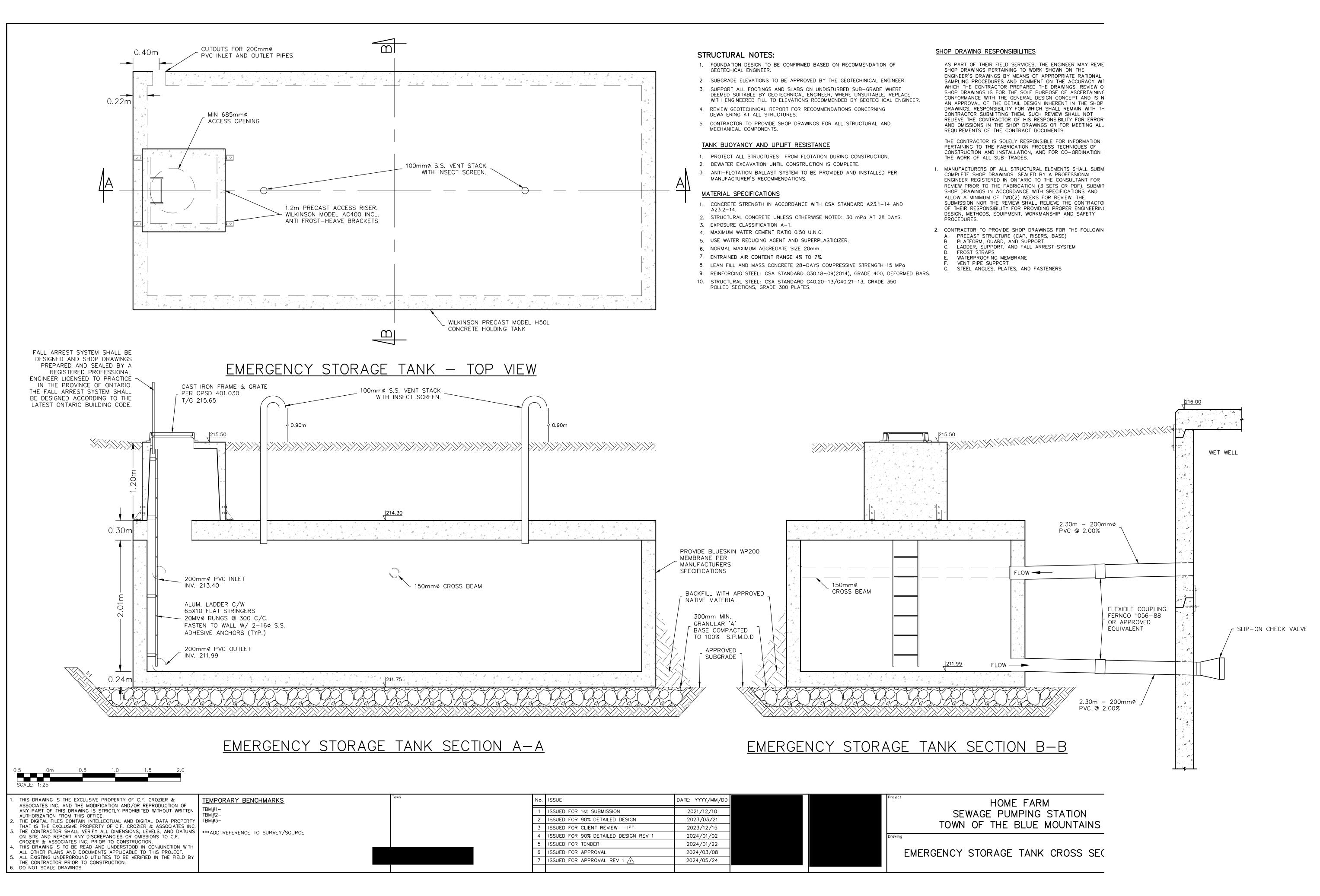
⊆38 × 38 × 6

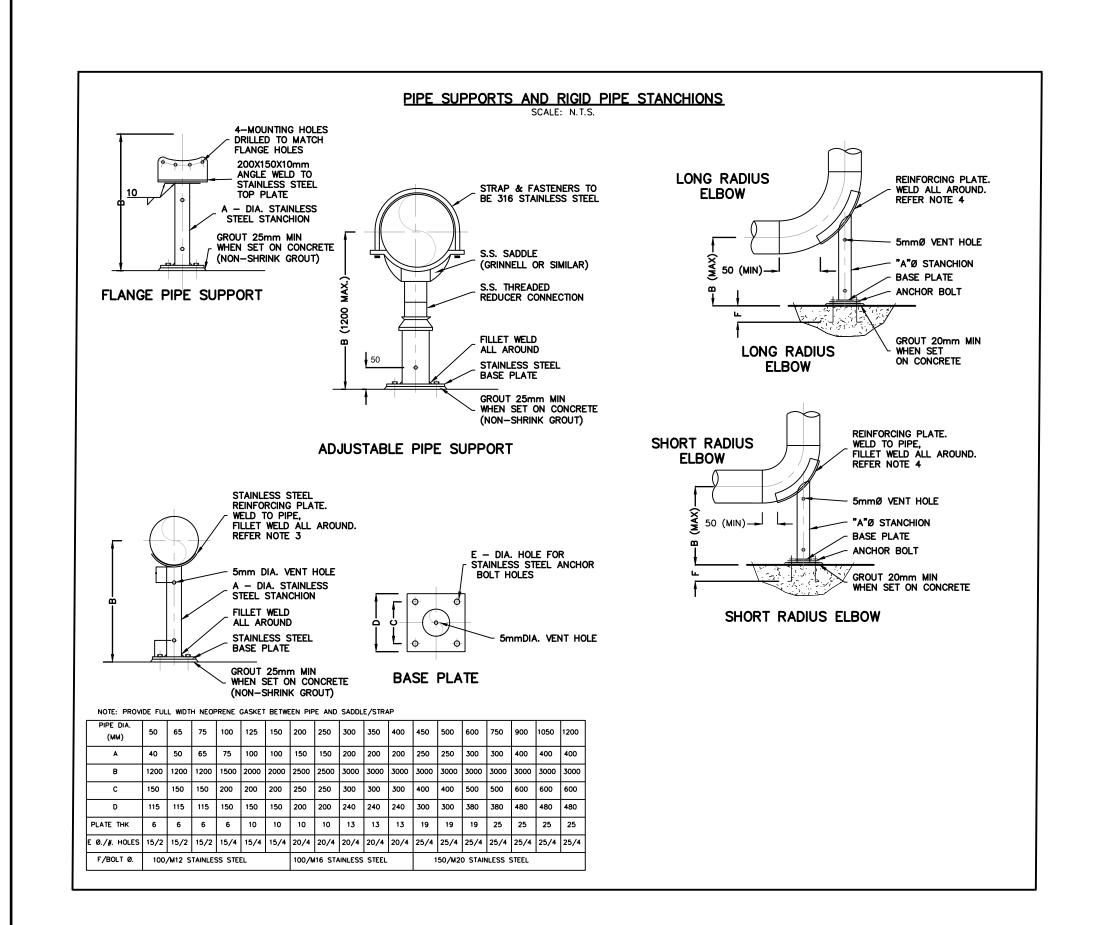
SECTION

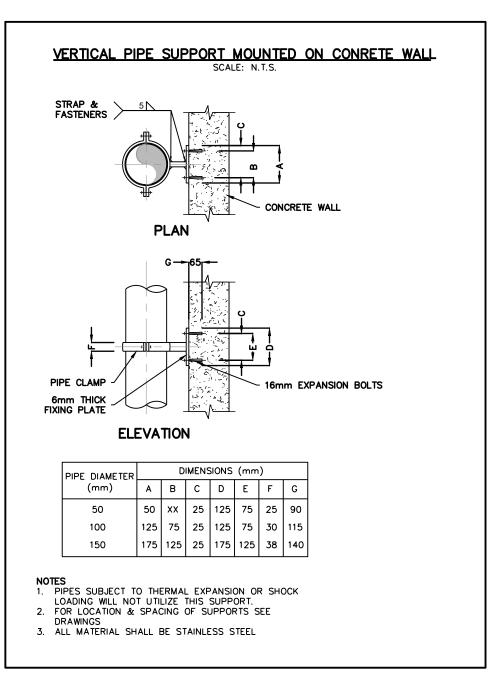
ALUMINUM ANGLE

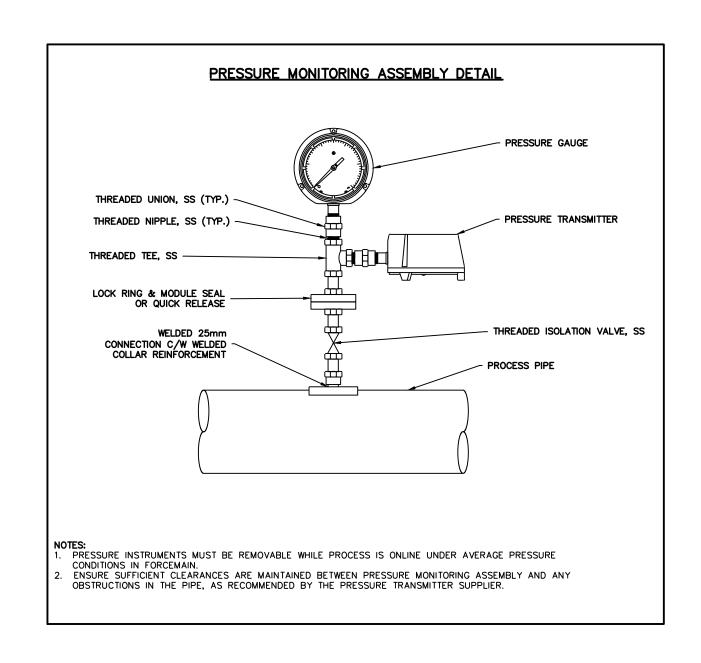
THE CONTRACTOR PRIOR TO CONSTRUCTION.

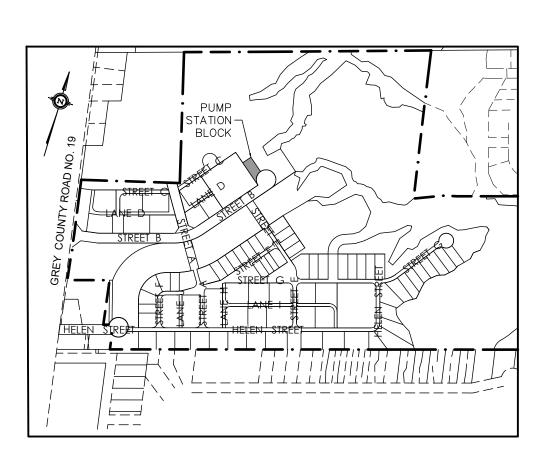
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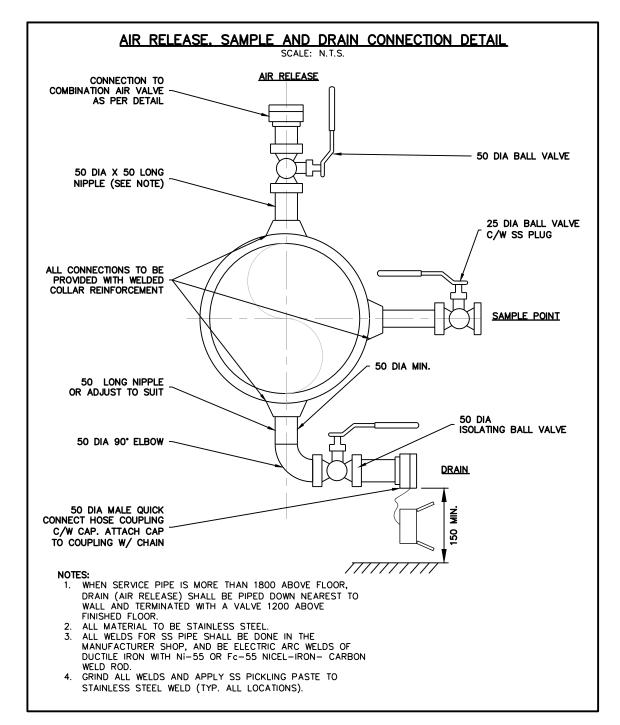


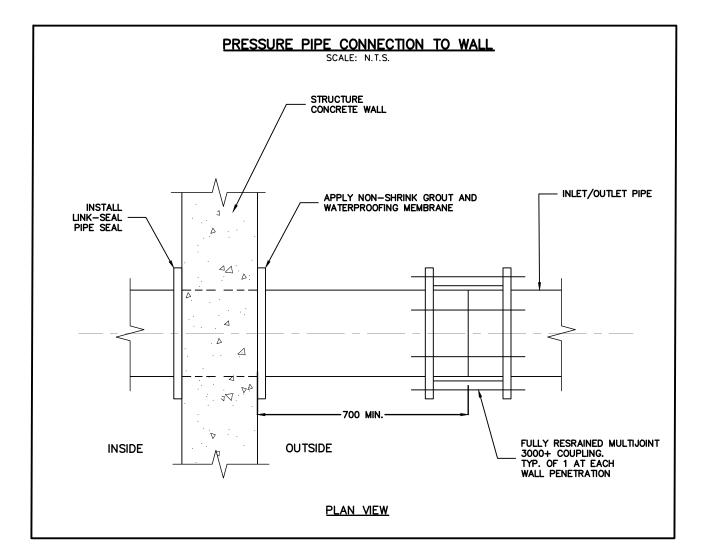


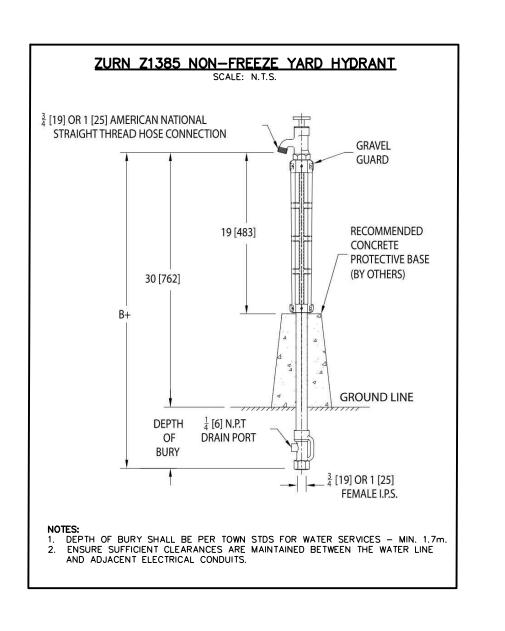












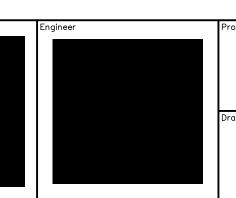
NOTES: PIPING SUPPORT SYSTEM SHALL BE DESIGNED AND SHOP DRAWINGS PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ONTARIO.

THE DIMENSIONS PROVIDED IN THE DETAILS ON THIS SHEET ARE ONLY SUGGESTIONS. IT IS THE RESPONSIBILITY OF THE ENGINEER WHO

SEALED THE SHOP DRAWING(S) TO VERIFY THOSE DIMENSIONS.

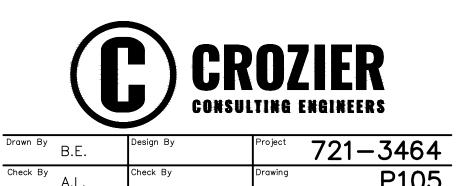
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CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
4. THIS DRAWING IS TO BE READ AND DOCUMENTS APPLICABLE TO THIS PROJECT.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY



HOME FARM
SEWAGE PUMPING STATION
TOWN OF THE BLUE MOUNTAINS

GENERAL PROCESS DETAILS



THE CONTRACTOR PRIOR TO CONSTRUCTION.

DO NOT SCALE DRAWINGS.

GENERAL CONSTRUCTION NOTES

GENERAL

1. THE MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR NECESSARY PERMITS PERTAINING TO THE INSTALLATION OF THEIR WORK.

- MECHANICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. WORK MUST BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING
- CODE, ONTARIO FIRE CODE, OCCUPATIONAL HEALTH AND SAFETY ACT, AND LOCAL CODES, MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE CANADIAN STANDARDS ASSOCIATION, LOCAL CODES AND AUTHORITY HAVING JURISDICTION.
- SUBMIT SHOP DRAWINGS FOR EQUIPMENT LISTED ON THE SCHEDULES FOR REVIEW PRIOR TO ORDFRING
- AT THE COMPLETION OF THE PROJECT THE MECHANICAL CONTRACTOR SHALL TURN OVER THREE (3 COMPLETE SETS OF MARKED UP RECORD DRAWINGS TO THE ENGINEER, AND THREE (3) COMPLETE SETS OF OPERATION AND MAINTENANCE MANUALS
- THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR STORAGE AND SECURITY OF MATERIALS AND EQUIPMENT ON THE JOB SITE.
- THE OWNER'S PROPERTY MUST BE KEPT IN TIDY CONDITION. PROMPTLY REMOVE GARBAGE FROM
- COORDINATE THE INSTALLATION OF WORK WITH OTHER TRADES. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LAYOUT OF EQUIPMENT AND MATERIALS AND ENSURING THERE ARE NO INTERFERENCES WITH OTHER SYSTEMS.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THEIR WORK.). THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION AND BACK FILL REQUIRED FOR THE INSTALLATION OF UNDERGROUND WORK. BACK FILL MATERIAL MUST BE CLEAN AND
- PROPERLY COMPACTED. PIPES AND EQUIPMENT MUST BE INSTALLED SO AS TO MINIMIZE THE TRANSFER OF VIBRATION TO THE BUILDING AND ALSO TO ALLOW FOR EXPANSION AND CONTRACTION AS NECESSARY.
- 2. EQUIPMENT SHALL BE INSTALLED, STARTED, TESTED, AND ADJUSTED AS PER THE MANUFACTURER'S INSTRUCTIONS, AND AS NECESSARY TO ENSURE OPTIMUM PERFORMANCE. EQUIPMENT SHALL BE
- INSTALLED TO ALLOW FOR EASY ACCESS AND MAINTENANCE. . THE MECHANICAL CONTRACTOR SHALL GUARANTEE WORK PERFORMED UNDER THIS CONTRACT FOR A
- PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. 4. SUITABLE ACCESS DOORS MUST BE PROVIDED WHERE NECESSARY FOR ADJUSTING VALVES, ACCESSING OTHER EQUIPMENT OR CLEAN OUTS, OR FOR INSPECTION OF FIRE DAMPERS. 5. PIPE AND DUCT PENETRATIONS THROUGH A FIRE RATED ASSEMBLY MUST BE PROPERLY SEALED
- WITH AN APPROVED FIRE RATED SYSTEM. 6. MATERIALS AND EQUIPMENT SHALL BE NEW AND TOP QUALITY, EXCEPT WHERE NOTED OTHERWISE. . THIS SPECIFICATION SHALL BE CONSIDERED TO BE THE BASE BID SPECIFICATION AND CONTRACTORS MUST CARRY THE BASE BID MANUFACTURER'S IN THEIR QUOTATION. ALTERNATE MANUFACTURER'S OF EQUIPMENT CAN ONLY BE OFFERED AS PROPOSED ALTERNATES WITH THE CORRESPONDING
- PRICE REDUCTIONS CLEARLY SHOWN ON A SEPARATE SHEET IF NECESSARY. 8. EQUIPMENT SHALL BE ASHRAE 90.1 COMPLIANT AND SB-10 COMPLIANT. 9. ELECTRICAL WIRING AND STARTERS TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. LOW VOLTAGE (31V TO 750V) CONTROLS BY THE ELECTRICAL CONTRACTOR.
- EXTRA-LOW VOLTAGE (UP TO AND INCLUDING 30V) CONTROLS BY THE MECHANICAL CONTRACTOR. O. THE MECHANICAL CONTRACTOR SHALL EXAMINE THE SITE AND DRAWINGS AND SPECIFICATIONS BEFORE BIDDING. NO ALLOWANCE WILL BE MADE FOR FAILURE TO TAKE INTO ACCOUNT ASPECTS WHICH MAY GOVERN THE EXECUTION AND COMPLETION OF THEIR WORK.
- THE MECHANICAL CONTRACTOR SHALL INSTALL PIPE WITH SLEEVES IN ORDER TO PREVENT CONTACT WITH CONCRETE, MASONRY OR SIMILAR MATERIALS. 2. THE MECHANICAL CONTRACTOR SHALL NOT WELD TO OR MAKE A HOLE IN A STRUCTURAL MEMBER
- WITHOUT REVIEW FROM THE STRUCTURAL ENGINEER. ATTACHMENTS TO STRUCTURAL MEMBERS SHALL BE MADE WITH SUITABLE CLAMPS OR CLIPS. 23. THE MECHANICAL CONTRACTOR SHALL PROVIDE STEEL LINTELS SUITABLE TO SPAN OPENINGS
- REQUIRED IN WALLS TO COMPLETE THEIR WORK, INSTALLATION OF THE LINTELS SHALL BE PERFORMED BY THE MASONRY CONTRACTOR. 24. ALL MATERIALS IN CEILING SPACE USED FOR RETURN AIR PLENUM MUST BE PLENUM RATED.
- 25. ROOF CURBS AND FLASHING ARE TO BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR/ ROOFER.
- 26. THE MECHANICAL CONTRACTOR'SHALL PROVIDE SEISMIC BRACING AND RESTRAINT SYSTEMS FOR MECHANICAL EQUIPMENT, PIPING, AND SPRINKLER SYSTEM AS REQUIRED BY APPLICABLE LOCAL BUILDING CODES. PROVIDE ENGINEERED. SEALED SHOP DRAWINGS FOR ANY REQUIRED AND INSTALLED SEISMIC BRACING. PROVIDE A SEALED LETTER OF CONFORMANCE UPON COMPLETION. 7. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE AND
- OPERATIONAL SYSTEM TO THE OWNER SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR. 28. ERRORS OR OMISSIONS IN THE DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

HEATING AND VENTILATION THE HVAC CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE GENERAL SPECIFICATIONS

- DUCTS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, ONTARIO FIRE CODE, AND THE ASHRAE AND SMACNA STANDARDS. DUCTS MUST BE SEALED TO PREVENT AIR LEAKAGE.
- FLEXIBLE DUCT CONNECTIONS SHALL BE USED TO CONNECT FANS OR AIR HANDLERS TO RIGID DUCT TO REDUCE THE TRANSFER OF NOISE VIBRATION.
- FINAL CONNECTIONS TO DIFFUSER'S SHALL BE MADE USING FLEXIBLE ALUMINUM DUCTS TO MINIMIZE NOISE VIBRATION WHERE SHOWN. FIRE DAMPERS MUST HAVE A FIRE PROTECTION RATING IN ACCORDANCE WITH THE NFPA AND MUST
- BEAR THE ULC LABEL. USE TYPE 'B' FIRE DAMPERS ONLY. INSTALL MINIMUM R5 INSULATION ON EXTERIOR OF EXHAUST DUCTS, OUTDOOR AIR, AND COMBUSTION AIR DUCTS ADJACENT TO UNHEATED SPACES.
- INSULATE THE FIRST METER OF SUPPLY AND RETURN DUCTS INTERNALLY WITH 1/2" RIGID DUCT LINER.
- INSTALL MINIMUM R5 FOIL BACKED FIBERGLASS BOARD INSULATION WITH JOINTS AND SEAMS SEALED WITH 3" FOIL TAPE ON EXTERIOR OF CONCEALED DUCTS.
- O. DUCT SIZES DO NOT INCLUDE FOR INTERNAL INSULATION. . PROVIDE DUCT SEALER ON ALL DUCT JOINTS

PLUMBING 1. THE PLUMBING CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE GENERAL

- SPECIFICATIONS ABOVE. WORK MUST BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING
- CODE. ONTARIO FIRE CODE, AND LOCAL CODES. DRAIN LINES ARE TO BE SUBJECT TO A WATER TEST AND WATER LINES ARE TO BE TESTED TO THE SATISFACTION OF THE LOCAL PLUMBING INSPECTOR.
- FLOOR DRAINS AND HUB DRAINS ARE TO BE TRAP SEAL PRIMED. ALL CLEANOUTS ARE NOT SHOWN. CLEANOUTS MAY BE SUBJECT TO INPUT. CLEANOUTS ARE TO BE PROVIDED IN ACCORDANCE WITH THE PLUMBING CODE AND REQUIREMENTS INCLUDING AT THE BOTTOM OF STACKS AND ALONG HORIZONTAL RUNS. ENSURE THAT CLEANOUTS ARE INCLUDED AT
- INTERVALS NECESSARY. WATER HAMMER ARRESTORS ARE TO BE INSTALLED WHERE NECESSARY TO PREVENT WATER
- HAMMER IN WATER LINES. ABOVE GROUND DRAINS, VENTS, AND RAIN WATER LEADERS 2" OR SMALLER SHALL BE COPPER DWV PIPE WITH WROUGHT COPPER OR CAST BRASS SOLDER JOINT FITTINGS, OR XFR PVC DWV PIPE AND FITTINGS. USE LEAD FREE SOLDER.
- ABOVE GROUND DRAINS, VENTS, AND RAIN WATER LEADER OVER 2" SHALL BE CAST IRON PIPE AND FITTINGS WITH MECHANICAL JOINTS, OR XFR PVC DWV PIPE AND FITTINGS OR ABS SOCKET WELD PIPE AND FITTINGS.
- BELOW GROUND DRAINS, VENTS, AND RAIN WATER LEADER OVER 2" SHALL BE CAST IRON PIPE AND
- FITTINGS WITH MECHANICAL JOINTS, OR XFR PVC DWV PIPE AND FITTINGS. D. BELOW GROUND DRAINS, VENTS, AND RAIN WATER LEADERS SHALL BE CSA APPROVED PVC GASKET PIPE AND FITTINGS OR ABS SOCKET WELD PIPE AND FITTINGS.
- ABOVE GROUND DOMESTIC WATER LINES SHALL BE HARD DRAWN TYPE 'L' COPPER PIPE WITH SOLDER JOINT PRESSURE FITTINGS, USE LEAD FREE SOLDER. CONNECT WATER LINES AT POINTS OF DISTRIBUTION TO NEARBY EQUIPMENT WITH PEX. SIZE WATER LINES TO EACH PIECE OF EQUIPMENT AS SHOWN BY THE PLUMBING EQUIPMENT SCHEDULE.
- 2. GRADE HORIZONTAL WATER LINES TO ENSURE PROPER DRAINAGE. INSTALL DRAIN VALVES IN
- ACCESSIBLE LOCATIONS AT LOW POINTS. 3. RAIN WATER LEADERS SHALL BE INSULATED WITH 1" THICK PREFORMED FIBERGLASS INSULATION WITH AN ASJ VAPOUR BARRIER, JOINTS AND SEAMS MUST BE SEALED. WHEREVER EXPOSED TO VIEW THIS INSULATION SHALL HAVE A BRUSH COAT OF FIRE RETARDANT MASTIC WITH A LAYER OF
- 6 OUNCE CANVAS WRAP OR PVC JACKET. 1. HANGERS FOR HORIZONTAL PIPING SHALL BE BLACK OR COPPER, AS APPROPRIATE, CLEVIS HANGERS MANUFACTURED BY ANVIL OR MYATT.
- 5. HANGERS FOR VERTICAL PIPING SHALL BE BLACK OR COPPER, AS APPROPRIATE, RISER CLAMPS MANUFACTURED BY ANVIL OR MYATT.
- 6. BALL VALVES SHALL BE FULL PORT AND SOLID BALL. 7. SET FIXTURES LEVEL, SQUARE, AND CENTERED WITH RELATION TO FLOORS, WALLS, AND PARTITIONS.
- 18. SET FIXTURES AT STANDARD HEIGHT FROM FLOOR UNLESS DIRECTED OTHERWISE.

TEMPORARY BENCHMARKS

TBM#3-

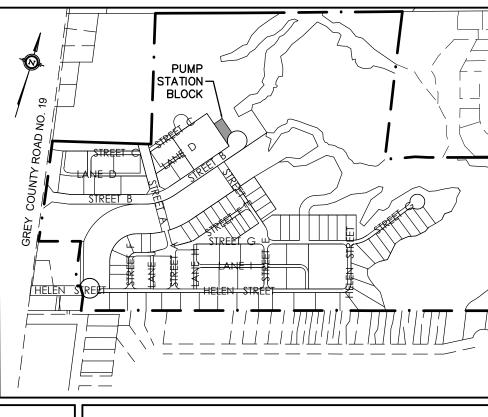
- 9. INSTALL SHUT OFF VALVES ON EACH WATER SUPPLY TO EQUIPMENT. 20. WHERE POSSIBLE ADJUST THE LOCATION / ORIENTATION OF P&D EQUIPMENT TO AVOID CONFLICTS
- WITH OTHER TRADES.
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6. DO NOT SCALE DRAWINGS.

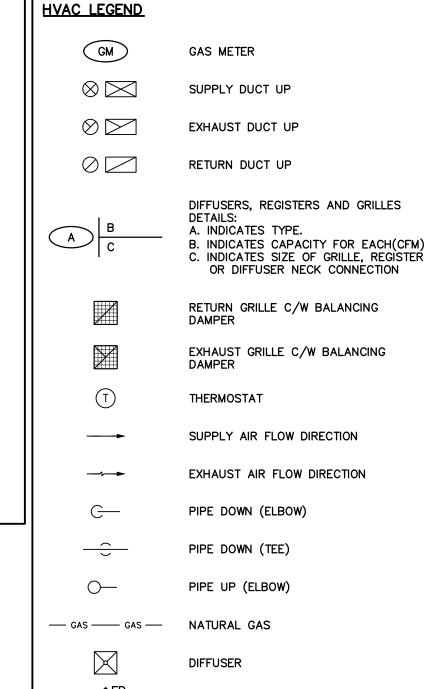
- 21. EQUIPMENT NOTED ON THIS DRAWING IS IDENTIFIED BY TRADE NAME TO INDICATE MINIMUM
- ACCEPTABLE QUALITY. 2. SLOPE NOMINALLY HORIZONTAL DRAIN LINES AT A MINIMUM 1:100.
- 23. PROVIDE A COMPLETE PLUMBING VENTING SYSTEM FOR ALL PLUMBING FIXTURES AND TRAPS AS REQUIRED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE. YOKE VENTS WHERE POSSIBLE TO MINIMIZE VENT STACKS THRU ROOF. MINIMUM VENT SIZE THRU' ROOF = 75ø, (3"ø). 24. INSTALL APPROVED FIRESTOP DEVICE, (SUCH AS 3—M FIRE BARRIER PLASTIC PIPE DEVICE), ON ALL
- PIPING THAT PENETRATES A FIRE SEPARATION. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS & RATINGS OF FIRE SEPARATIONS. 25. PROVIDE CHROME PLATED BRASS ESCUTCHEONS WHERE PIPING PENETRATES WALLS IN FINISHED
- 26. INSULATE ALL EXPOSED PIPING WITH 25MM THICK DUAL TEMPERATURE GLASS FIBRE PIPE INSULATION COMPLETE WITH POLYVINYL COVERING
- THERMOSTAT HEATING ONLY

 1. SUITABLE FOR HARSH ENVIRONMENTS
- MECHANICAL CONTROL
- COMPATIBLE WITH HEAT ONLY SYSTEMS ECONOMY MODEL - SIMPLE, WORRY-FREE OPERATION
- MOUNTING HARDWARE AND WALL PLATE INCLUDED
- BIMETAL TEMPERATURE SENSOR MERCURY FREE
- . ACCEPTABLE EQUIPMENT: HONEYWELL OR APPROVED EQUAL

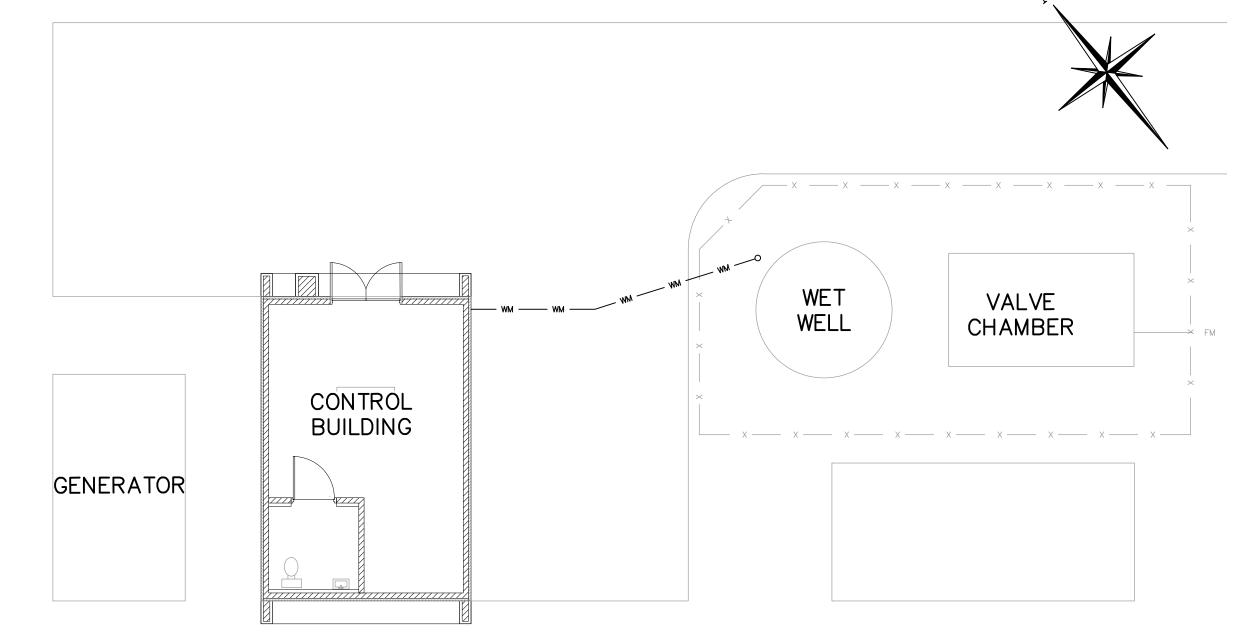
END OF SECTION



ABBREVIATIONS		PLUMBING LEGEND	
A.P.	ACCESS PANEL	WM	WATER METER
c/w	COMPLETE WITH		TRAP
CBV	CIRCUIT BALANCING VALVE		FLOOR DRAIN
ED	EXISTING TO BE DEMOLISHED	igwedge	FUNNEL FLOOR DRAIN
ER	EXISTING TO BE RELOCATED		CLEAN OUT
EX	EXISTING TO REMAIN		DOMESTIC COLD WATER
F/A	FROM ABOVE		DOMESTIC HOT WATER
F/B	FROM BELOW		DOMESTIC HOT WATER RECIRC.
NTS	NOT TO SCALE	— SAN —— SAN ——	SANITARY
PR	PROPOSED TO MATCH EXISTING	STM STM	STORM
REL	EXISTING AT RELOCATED LOCATION	(XX-X)	EQUIPMENT/ FIXTURE DESIGNATION
T/A	TO ABOVE		BACKFLOW PREVENTOR
T/B	TO BELOW	+нв	HOSE BIB
VTR	VENT THRU ROOF		



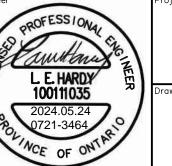
FIRE DAMPER



SITE PLAN SCALE: 1:100

No. ISSUE

DATE: YYYY/MM/DI ISSUED FOR 90% DETAILED DESIGN 2023/03/21 ISSUED FOR CLIENT REVIEW - IFT 2023/12/15 ISSUED FOR 90% DETAILED DESIGN REV 1 2024/01/02 ISSUED FOR TENDER 2024/01/22 ISSUED FOR ADDENDUM #1, 2024/02/09 ISSUED FOR APPROVAL 2024/03/08 ISSUED FOR APPROVAL REV 1/2 2024/05/24

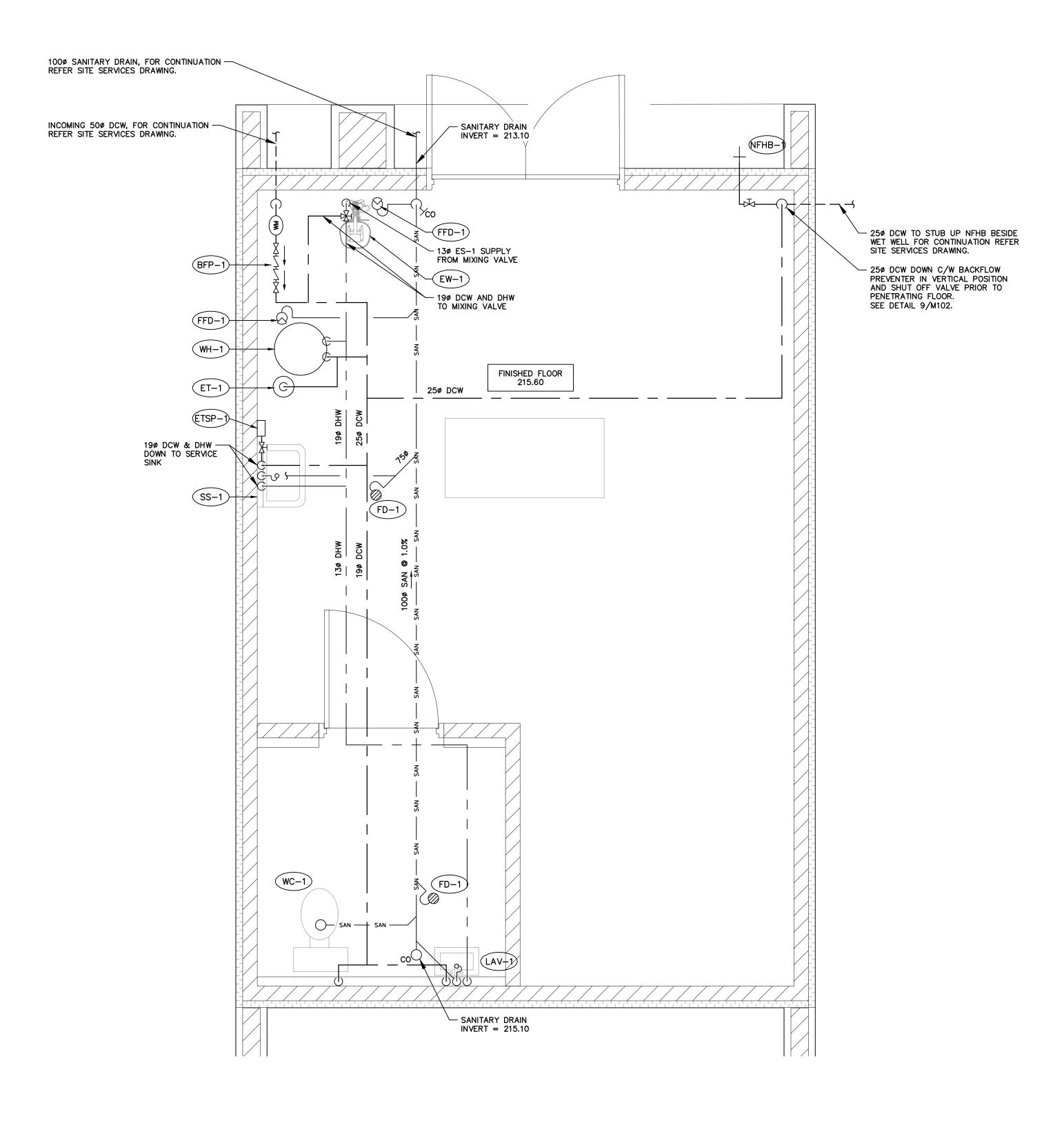


HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

MECHANICAL SPECIFICATIONS, LEGEND & SITE PLAN



721-3464



SPS CONTROL ROOM — PLUMBING

SCALE: 1:25

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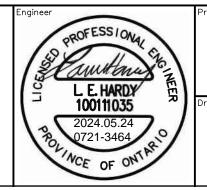
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No.	ISSUE	DATE: YYYY/MM/DD	Enginee
1	ISSUED FOR 90% DETAILED DESIGN	2023/03/21	
2	ISSUED FOR CLIENT REVIEW - IFT	2023/12/15	
3	ISSUED FOR 90% DETAILED DESIGN REV 1	2024/01/02	
4	ISSUED FOR TENDER	2024/01/22	
5	ISSUED FOR ADDENDUM #1 🗘	2024/02/09	
6	ISSUED FOR APPROVAL	2024/03/08	
7	ISSUED FOR APPROVAL REV 1 🟂	2024/05/24	

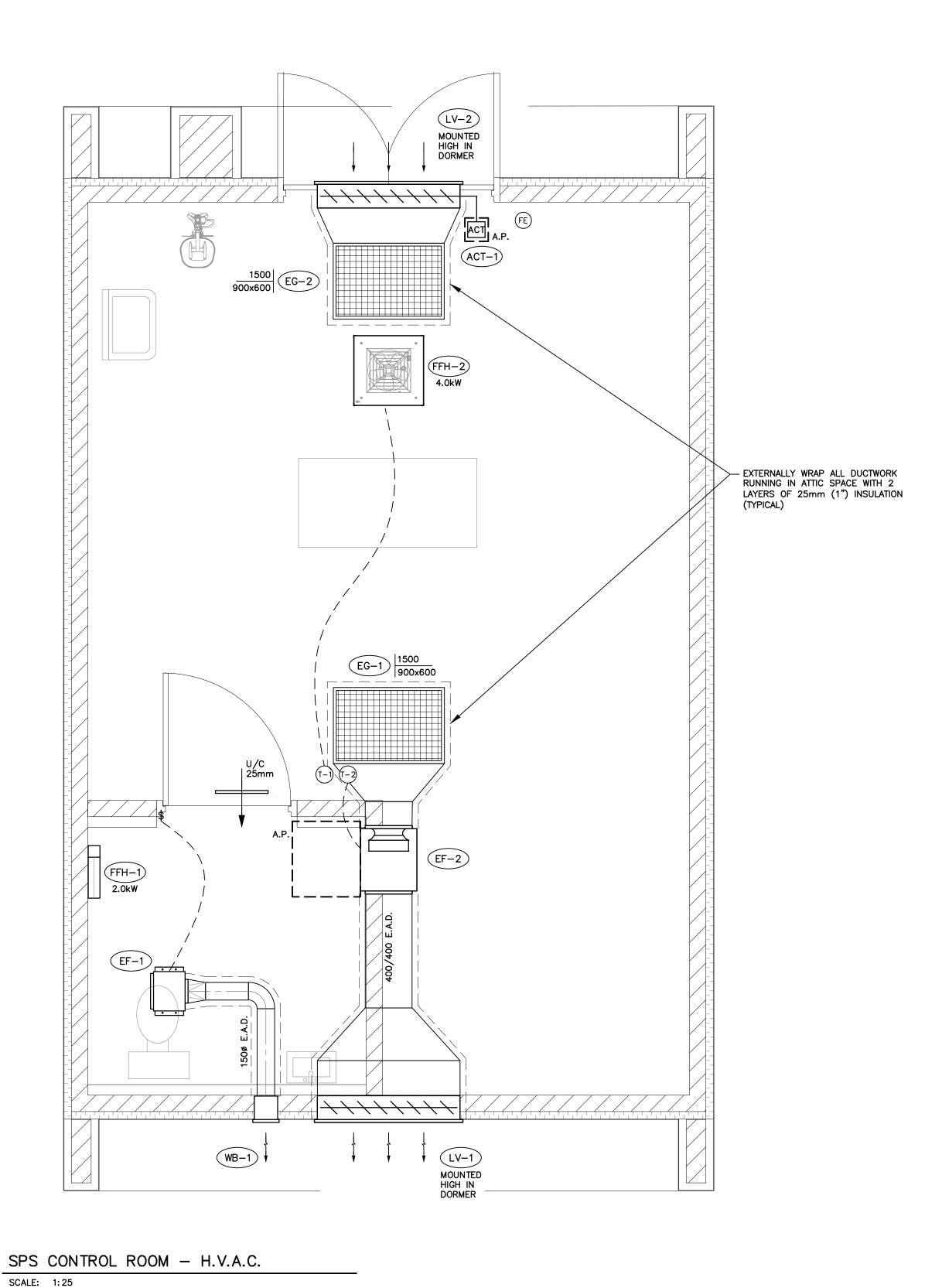


HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

> PLUMBING: CONTROL BUILDING FLOOR PLAN



721-3464 M100



— 304 STAINLESS STEEL VENT C/W 180° RETURN STAINLESS STEEL BIRDSCREEN AND STAINLESS STEEL FASTENERS (TYP.) EMERG. STORAGE FLOAT (213.45) SAFETY LANDING (213.25)
REFER TO CIVIL DWGS 1. WET WELL VENTILATION IS PROVIDED BY
MECHANICAL CONTRACTOR. FOR WET
WELL CONSTRUCTION, PROCESS LAYOUT
AND SPECIFICATIONS, REFER TO CIVIL DRAWINGS. 250x250 AIR/WATER TIGHT STAINLESS STEEL ACCESS CLEANING PORT C/W HEAVY DUTY GASKET - VENT PIPE STAINLESS STEEL SAFETY LANDING (210.90) SUPPORT (TYP.) REFER TO CIVIL DWGS - VENT PIPE TO TERMINATE 0.3m ABOVE CROWN OF INLET SEWER 200mmø SAN INV. ELEV. 210.50 210.20 HIGH LEVEL ALARM (FLOAT) (FLOAT) (FLOAT) ▼ WET WELL FLOOR (208.40)

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***ADD REFERENCE TO SURVEY/SOURCE

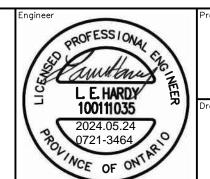
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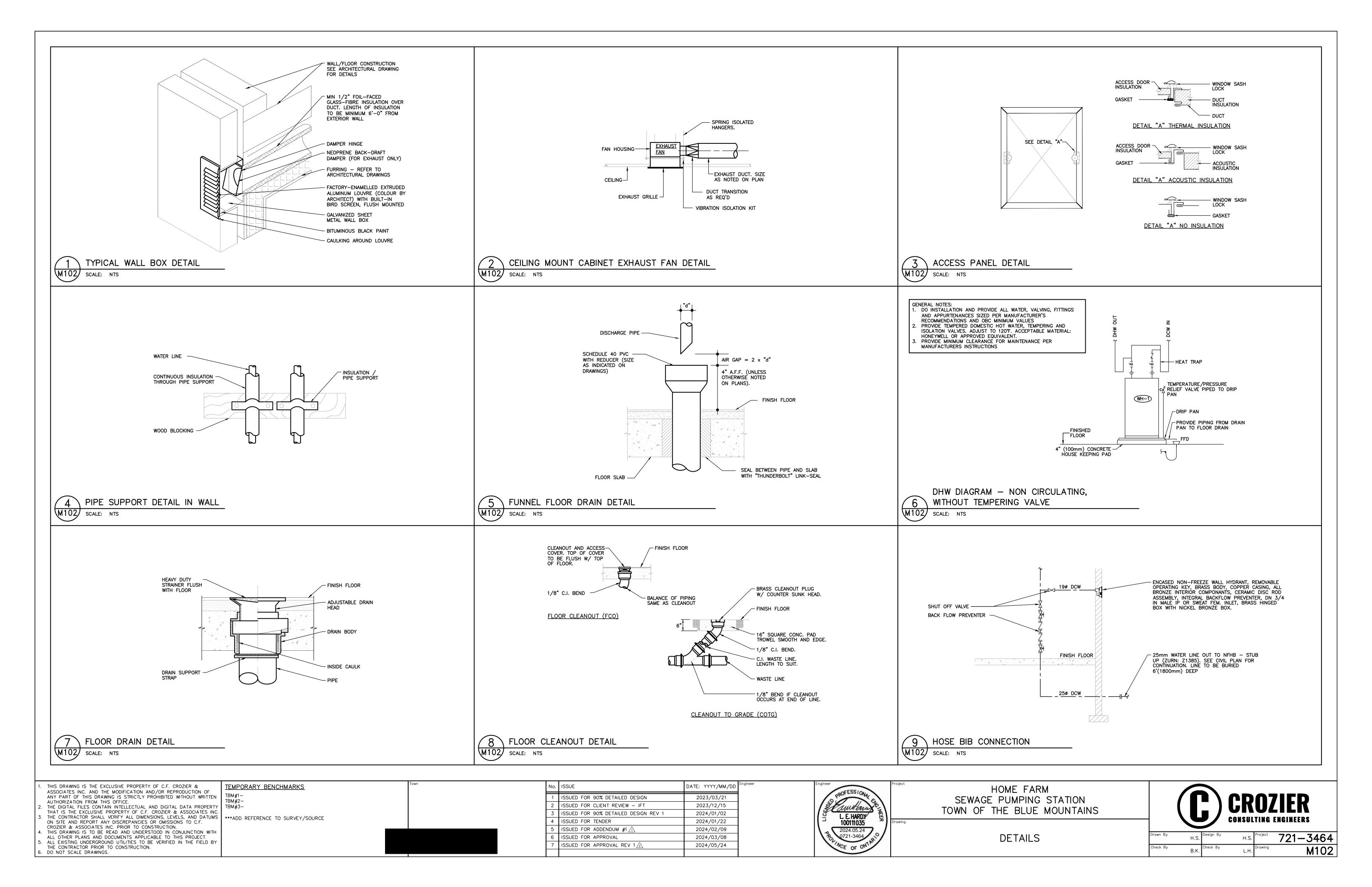
WET WELL SECTION

SCALE: 1:25

HOME FARM SEWAGE PUMPING STATION TOWN OF THE BLUE MOUNTAINS

HVAC: CONTROL BUILDING FLOOR PLAN & WET WELL SECTION

C	CROZIER CONSULTING ENGINEERS
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	FAN SCHEDULE										
TAG	APPLICATION	MANUFACTURER	MODEL	CFM	ESP		ELECTRICAL		STARTER	WEIGHT	NOTES
IAG	AFFLICATION	MANOT ACTORER	MODEL	CI M	(" WC)	VOLTAGE	HP/WATTS	MCA/MOP	STAINTEIN	(lbs)	NOTES
EF-1	WASHROOM	GREENHECK	SP-A110	100	0.12"	115V/1/60	13 WATT	-	TIMER SWITCH	23	CEILING MOUNTED INLINE EXHAUST FAN C/W STANDARD POLYSTYRENE GRILLE, VIBRATION ISOLATOR, MOUNTING HARDWARE AND BACKDRAFT DAMPER. INSTALL AS PER MANUFACTURERS SPECIFICATIONS.
EF-2	CONTROL BUILDING EXHAUST	GREENHECK	SQ-120	1500	0.14"	120V/1/60	1/2HP	12.25/20	REVERSE ACTING T-STAT W/ ON/OFF/AUTO SWITCH	84	CEILING MOUNTED, INLINE FAN, C/W VIBRATION ISOLATOR, MOUNTING HARDWARE, BACKDRAFT DAMPER AND DISCONNECT SWITCH, INTERLOCKED WITH MD-1. INSTALL AS PER MANUFACTURERS SPECIFICATIONS.

	ELECTRIC WATER HEATER SCHEDULE									
TAG	MANUFACTURER	MODEL	STORAGE CAPACITY	RECOVERY © 100°F RISE	WATER CONNECTION	VOLTACE	ELECTRICAL WATTS		SHIPPING WEIGHT	REMARKS
				(GPH)		VOLTAGE	WATIS	AMPS	(lbs)	
WH-1	RHEEM	EGSP20	19.9GAL	12	19ø	208/1/60	3000	14.4	76	C/W DRAIN PAIN, DOMESTIC HOT WATER SUPPLY TEMPERATURE SHALL BE SET AT 120°F.

	ELECTRIC HEATER SCHEDULE								
TAG	MANUFACTURER	MODEL	FLOW (CFM)	HEAT KW	VOLTAGE (V/PH/Hz)	WEIGHT (LBS)	NOTES		
FFH-1	STELPRO	WF2008T	-	2.0	208V/1/60	-	SURFACE WALL MOUNTED FORCE FLOW HEATER c/w SURFACE ADAPTER INTERNAL THERMOSTAT		
FFH-2	STELPRO	DRI0481C24	450	4.0	208V/1/60	16	SURFACE CEILING MOUNTED FORCE FLOW HEATER c/w MOUNTING BRACKETS & REMOTE WALL MOUNTED THERMOSTAT		

						PLUMBING FIXTURE SCHEDULE
TAG	DESCRIPTION	SANITARY	VENT	HOT WATER	COLD WATER	NOTES
EW-1	EYE WASH	1-½" (32mm)	-	½" (12mm)	½" (12mm)	BRADLEY S19214-BA1ABCOO, PEDESTAL MOUNT HALO EYEWASH, 24" DRAIN HEIGHT C/W NAVIGATOR S19-2000 EFX8 EMERGENCY THERMOSTATIC MIXING VALVE
LAV-1	LAVATORY (BARRIER FREE)	1-¼" (32mm)	1-¼" (32mm)	½" (12mm)	½" (12mm)	AMERICAN STANDARD 0356921.020 BASIN - WALL-HUNG LAVATORY, VITREOUS CHINA, WHITE FINISH WITH KNEE CONTACT GUARD. 1340M119.002 FAUCET - MANUAL, SINGLE HANDLE, LAVATORY FAUCET. 2411.015.002 FIXTURE DRAIN - GRID DRAIN, FOR SINKS, BRASS CONSTRUCTION, POLISHED CHROME FINISH, 6-3/8" (162 MM) HEIGHT, WITH OVERFLOW. MCGUIRE LFBV170 SUPPLY - LEAD FREE, 127 MM (5") LENGTH, CONVERTIBLE QUARTER-TURN SUPPLY, CHROME-PLATED FINISH, 13 MM (1/2") COPPER SWEAT X 10 MM (3/8") OUTER Ø BRASS BALL VALVE, 304 MM (12") COPPER FLEXIBLE RISERS, CONVERTIBLE LOOSE KEY HANDLE, LAVATORY, ONE DEEP BELL FLANGE MCGUIRE 8090C P-TRAP - HEAVY CAST BRASS, ADJUSTABLE P-TRAP, GROUND JOINT CAST BRASS ELBOW, WITH CLEANOUT PLUG WATTS CA-461 CARRIER
SS-1	SERVICE SINK	3" (75mm)	1-½" (38mm)	½" (12mm)	½" (12mm)	KOHLER BANNON SERVICE SINK, K-6714, C/W K-6673 3" IRON PIPE CONNECTION WITH CLEANOUT PLUG AND STRAINER, CHICAGO FAUCET 540-LDABCP
WC-1	WATER CLOSET (BARRIER FREE)	3" (75mm)	1-½" (38mm)	-	½" (12mm)	AMERICAN STANDARD 215AA064.020 TOILET — CADET PRO, TANK TYPE TOILET, FLOOR MOUNTED WITH FLOOR OUTLET, LOW CONSUMPTION 6.0 LPF (1.6 GPF), WHITE FINISH VITREOUS CHINA, EVERCLEAN ANTIMICROBIAL SURFACE, ELONGATED BOWL. CENTOCO 1500STSCCSSFE—001 SEAT — FAST—N—LOCK, FOR ELONGATED BOWL, WITH TANK COVER LOCKING DEVICE, OPEN FRONT, POLYPROPYLENE, TOILET SEAT, LESS SEAT COVER, AND SELF—SUSTAINING PLASTIC COMMERCIAL CHECK HINGES, WHITE FINISH.MCGUIRE LFBV172 SUPPLY — LEAD FREE, 127 MM (5") LENGTH, CONVERTIBLE QUARTER—TURN SUPPLY, CHROME—PLATED FINISH, TWO 13 MM (1/2") COPPER SWEAT X 10 MM (3/8") OUTER Ø BRASS BALL VALVE, 304 MM (12") COPPER FLEXIBLE RISERS, CONVERTIBLE LOOSE KEY HANDLE, TOILET, 2 DEEP BELL FLANGE
со	CLEANOUT	-	-	-	-	ZURN ZN1602-VP, EPOXY COATED CAST IRON CLEANOUT WITH NICKEL BRONZE COVER, ANCHOR FLANGE, REVERSIBLE MEMBRANE CLAMP ADJUSTABLE COMBINED ACCESS COVER, PLUG WITH GASKET SEAL, AND VANDAL PROOF.
ET-1	EXPANSION TANK	-	-	-	3/4" (19mm)	ARMTROL ST-5, 2.0 GAL. TANK VOLUME
FD-1	FLOOR DRAIN	3" (75mm)	1-½" (38mm)	-	-	ZURN Z556-ZN-VP, CAST IRON BODY FLOOR DRAIN C/W 150mmø NICKEL BRONZE ROUND STRAINER, TRAP PRIMER CONNECTION, VANDAL PROOF SECURED TOP & SCREWS.
FFD-1	FUNNEL FLOOR DRAIN	3" (75mm)	1-½" (38mm)	-	-	ZURN ZN-211-BF-VP, CAST IRON BODY FLOOR DRAIN C/W 150mmø NICKEL BRONZE ROUND STRAINER, TRAP PRIMER CONNECTION, VANDAL PROOF SECURED TOP & SCREWS.
NFHB-1	NON-FREEZE HOSE BIB	-	-	-	3/4" (19mm)	Z1320XL - ENCASED NON-FREEZE WALL HYDRANT, REMOVABLE OPERATING KEY, BRASS BODY, COPPER CASING, ALL BRONZE INTERIOR COMPONENTS, CERAMIC DISC ROD ASSEMBLY, INTEGRAL BACKFLOW PREVENTER, DN 3/4 IN MALE IP OR SWEAT FEM. INLET, BRASS HINGED BOX WITH NICKEL BRONZE BOX.
HB-1	NON-FREEZE HOSE BIB - STUB UP	-	-	-	1" (25mm)	Z1385 - NON-FREEZE VERTICAL POST HYDRANT, DN 25 MM (1 IN) THREADED INLET BY 1524 MM (5 FT) DEPTH OF BURY, ALL BRONZE INTERNAL COMPONENTS. GALVANIZED STEEL CASING AND CAST ALUMINUM CASING GUARD, NON-TURNING OPERATING ROD WITH FREE-FLOATING COMPRESSION CLOSURE VALVE. LOCATED BY WET WELL. SEE CIVIL DRAWINGS FOR LOCATION.
BFP-1/2	BACK FLOW PREVENTOR	-	-	-	2" (50mm)	WATTS LF909, BACK FLOW PREVENTOR, REDUCED PRESSURE VALVE ASSEMBLY, COMPLETE WITH STRAINER.
ETSP-1	ELECTRONIC TRAP SEAL PRIMER	-	-	-	½" (12mm)	MIFAB MI-100 C/W POWDER COATED CABINET, 20zs OF WATER EVERY 24 HOURS, 24VDC 120V WITH 24 HOUR TIMER WITH RELAY
NOTES:						

	GRILLE SCHEDULE							
TAG	MANUFACTURER	MODEL	SIZE	APPLICATION	MOUNTING	NECK SIZE	NOTES	
EG-1	PRICE	80	AS SHOWN ON PLAN	EXHAUST	DRYWALL	AS SHOWN ON PLAN		
EG-2	PRICE	80	AS SHOWN ON PLAN	SUPPLY	DRYWALL	AS SHOWN ON PLAN		

	CONTROLS SCHEDULE						
TAG	MANUFACTURER	MODEL	NOTES				
T-1	HONEYWELL	T7350	THERMOSTAT, SURFACE MOUNT, 7-DAY PROGRAMMABLE				
T-2	HONEYWELL	T631A-C	REVERSE ACTING THERMOSTAT, SURFACE MOUNT, 120V				
ACT-1	BELIMO	LF-120	120Vac, EXTERNAL, TWO POSITION, SPRING RETURN, CLOSED FAIL POSITION.				

	LOUVER SCHEDULE									
TAG	SYSTEM	MANUFACTURER	MODEL No.	TYPE	SIZE	FREE AREA (FT2)	NOTES			
LV-1	EXHAUST	GREENHECK	ESD-435	4" DEEP LOUVER	48"x18" 1219mmx457mm	2.62	c/w BACKDRAFT DAMPER, DRAINABLE BLADE LOUVRE, COLOUR BY OWNER			
LV-2	FRESH AIR INTAKE	GREENHECK	ESD-435	4" DEEP LOUVER	48"x18" 1219mmx457mm	2.62	- C/W VCD-23 3V BLADE DAMPER, INTERLOCKED WITH EXHAUST FAN #EF-2 - DRAINABLE BLADE LOUVRE c/w 1/2" MESH BIRD SCREEN - COLOUR SELECTION BY OWNER			
WB-1	EXHAUST	REVERSOMATIC	SWBW-8	SINGLE WALL BOX	9"x9" 229mmx229mm	1	c/w BACKDRAFT DAMPER, EXTRUDED ALUMINUM GRILLES, COLOUR BY ARCHITECT			

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ALL WASHROOM MODELS MUST BE COMPATIBLE WITH "SWISH" PRODUCTS.

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CONTRACTOR TO PROVIDE, INSTALL & HOOK-UP EQUIPMENT.
CONTRACTOR TO CONFIRM ALL EQUIPMENT SPECS PRIOR TO CONSTRUCTION.

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CONTRACTOR TO VERIFY ALL OUTLET LOCATIONS WITH OWNER.

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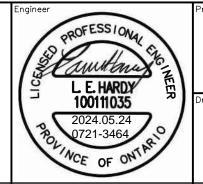
CONTRACTOR TO CONFIRM ALL EQUIPMENT OF THE CONTRACTOR TO CONTRACTOR.

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HOME FARM SEWAGE PUMPING STATION
TOWN OF THE BLUE MOUNTAINS

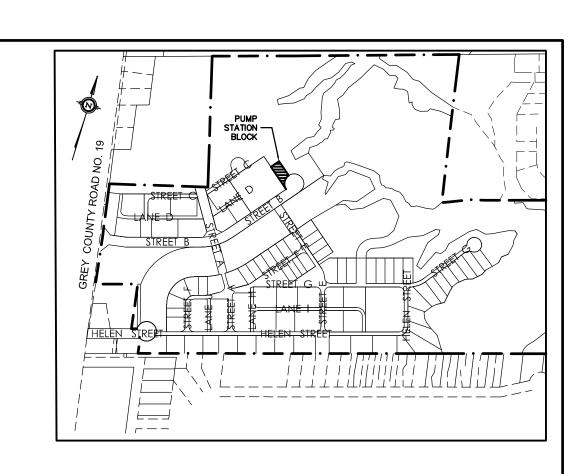
SCHEDULES

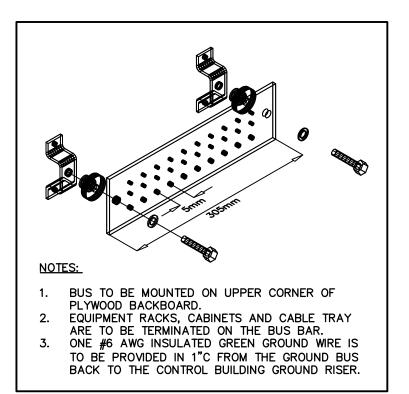


721-3464

	ELECTRICAL LEGEND						
	<u>LIGHTING</u>						
x	1'X4' SURFACE MOUNTED LIGHT FIXTURE $(X = FIXTURE TYPE)$						
<u>⊗</u>	WALL MOUNTED LIGHT FIXTURE (X = FIXTURE TYPE) WALL MOUNTED GREEN RUNNING MAN EXIT SIGN C/W INTEGRAL						
€ ⊗1	EMERGENCY LIGHTING HEADS (ARROW INDICATES DIRECTION OF TRAVEL, HATCHED AREA INDICATES ILLUMINATED FACE[S])						
BU-1	BATTERY PACK WITH REMOTE DOUBLE HEAD						
	WALL MOUNTED EMERGENCY LIGHTING REMOTE SINGLE HEAD						
□○⟩X	POLE MOUNTED LIGHT FIXTURE C/W MAST ARM						
□×	WALL PACK LIGHT FIXTURE						
	LIGHTING CONTROL WALL MOUNTED 120V, 15A DECORA SWITCH						
\$ ^x	(X = TYPE OF SWITCH, REFER TO TYPE SCHEDULE)						
Y	TELECOMMUNICATION TELEPHONE/DATA WALL MOUNTED OUTLET						
$\mathbf{\nabla}^{x}$	(X = NUMBER OF DROP AT OUTLET)						
	<u>POWER SYSTEMS</u>						
<u>#</u>	120V, 20A DUPLEX WALL MOUNTED T-SLOT RECEPTACLE						
	120V, 15A GFI DUPLEX WALL MOUNTED RECEPTACLE 120V, 15A GFI DUPLEX WALL MOUNTED RECEPTACLE,						
•	MOUNTED ABOVE COUNTER TOP						
	CONTROL SURFACE MOUNTED PANEL						
	120/208V SURFACE MOUNTED PANELBOARD						
	SINGLE PHASE DIRECT POWER CONNECTION TO EQUIPMENT						
	TRANSFORMER						
	SAFETY DISCONNECT SWITCH NON-FUSED						
	COPPER GROUND BUS						
<u>M</u>	HYDRO METER						
M	MOTOR						
Ţ)	THERMOSTAT						
	PAD MOUNTED TRANSFORMER WITH BOLLARDS, ARROW INDICATES OPERATING SIDE (DIRECTION OF APPROACH)						
X *	CONCRETE ENCASED DUCT BANK (X DENOTE NUMBER OF DUCTS)						
<u> </u>	MAIN GROUNDING SYSTEM						
G	GENERATOR						
	LINE/LOAD REACTOR						
<u> </u>	GROUND ROD						
	FIRE ALARM						
Θ	CEILING MOUNTED SMOKE DETECTOR						
	<u>SECURITY</u>						
DC	DOOR CONTACT						
	<u>LINETYPES</u>						
	PROPERTY LINE						
	SECONDARY CABLE						
— TEL —— TEL —	PROPOSED TELECOMMUNICATION						
	EMERGENCY CALL SYSTEM						
EP . NO(EMERGENCY PUSH BUTTON						
<u>HS</u>	WALL MOUNTED STROBE LIGHT						
HA	WALL MOUNTED ANNUNCIATOR						
	<u>SECURITY</u>						
•	DOOR PUSH BUTTON						
• L	PUSH TO LOCK						

	ABBREVIATIONS.
AIC	AMPERE INTERRUPT CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPT
C/W	COMPLETE WITH
EXP	EXPLOSION PROOF FOR DESIGNATED HAZARDOUS AREA
FE-1	FLOW - PRIMARY ELEMENT No. 1
FIT-1	FLOW - INDICATOR - TRANSMITTER No. 1
FS-2	FLOAT SWITCH VALVE CHAMBER
FSR	FLOW SWITCH RELAY
GCP	GENERATOR CONTROL PANEL
GFI	GROUND FAULT INTERRUPT
нк	HOUSEKEEPING
НМІ	HUMAN MACHINE INTERFACE
LE-1	HYDROSTATIC LEVEL SENSOR No.1
LIT-1	LEVEL INDICATOR TRANSMITTER No. 1
LSI	LONG SHORT INSTANTANEOUS
LSIG	LONG SHORT INSTANTANEOUS GROUND
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
LSL	LEVEL SWITCH LOW
MCC-1	MOTOR CONTROL CENTRE
мн	MOUNTING HEIGHT
MSB	MAIN SWITCH BOARD
N.T.S.	NOT TO SCALE
OIT	OPERATOR INTERFACE TERMINAL
PE-1	PRESSURE SENSOR
PT-1	PRESSURE TRANSMITTER
RS	REMOTE STATION
RTD-1	RESISTANCE TEMPERATURE DETECTOR No. 1
RTD-2	RESISTANCE TEMPERATURE DETECTOR No. 2
SP-1	SEWAGE PUMP No. 1
SP-2	SEWAGE PUMP No. 2
SPD	SURGE PROTECTION DEVICE
TX	TRANSFORMER
TYP.	TYPICAL
UPS	UNINTERRUPTED POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
WP	WEATHERPROOF





GROUND BAR DETAIL

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DO DOOR OPERATOR

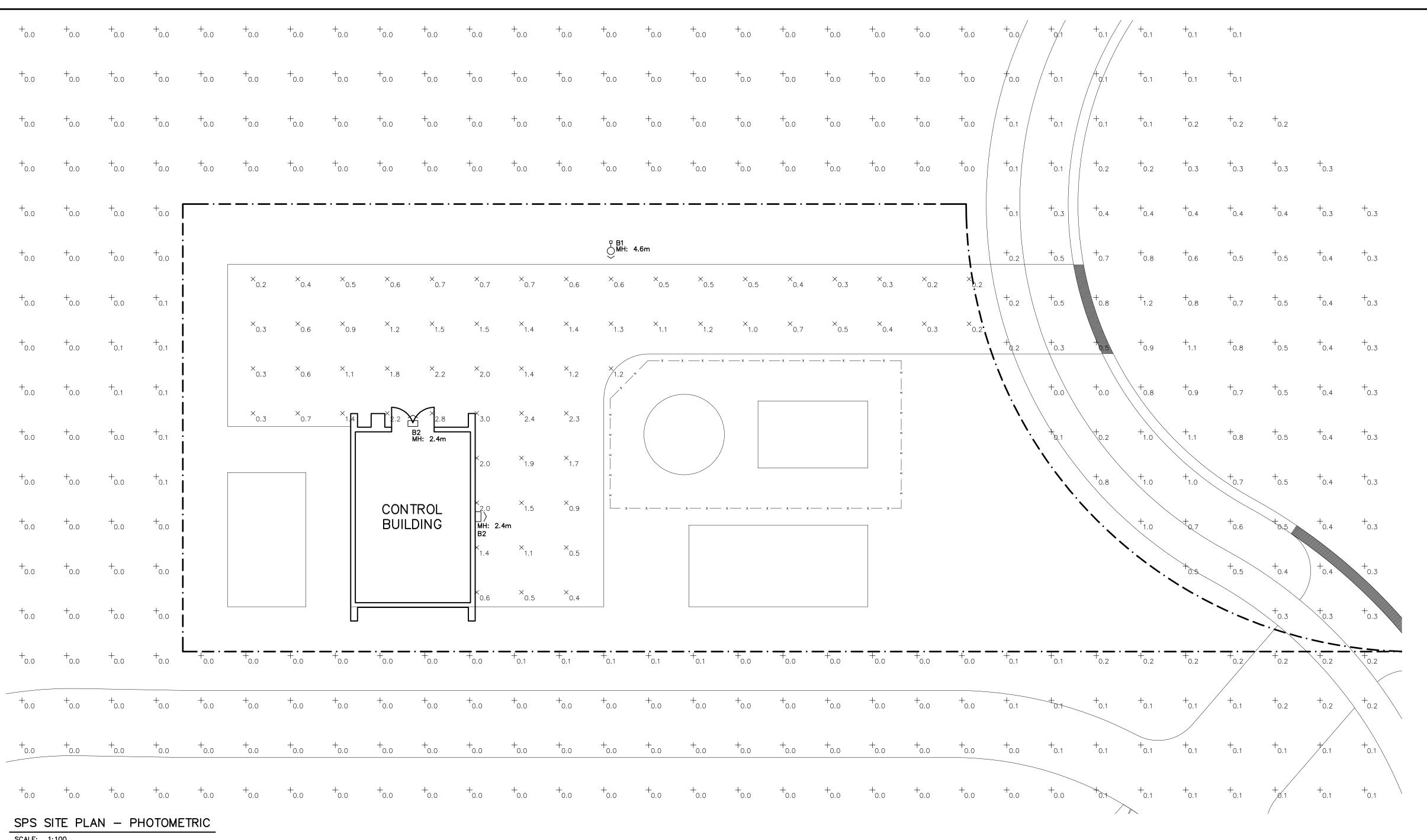
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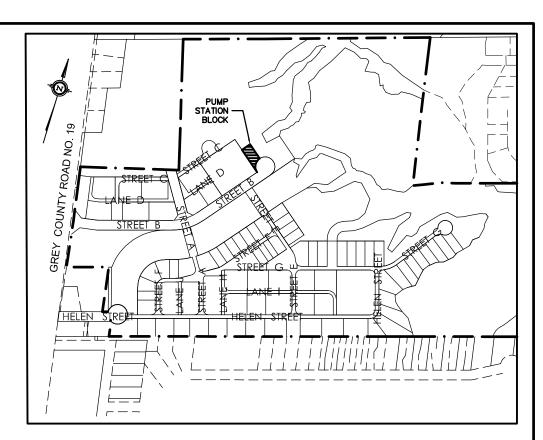
HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

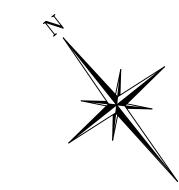
C CROZIER CONSULTING ENGINEERS

ELECTRICAL LEGEND & CONTROL BUILDING DETAILS

wn By	J.R.B.	Design By	J.R.B./I.S.	Project	721-3464
eck By	R.T.	Check By	J.G.L.	Drawing	E00







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LABEL	CALC. TYPE	UNITS	SYMBOL	AVG	MAX	MIN	AVG/MIN
PUMPING STATION	ILLUMINANCE	FC	×	1.0	3.0	0.2	5.2:1

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HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

SEWAGE PUMPING STATION SITE PLAN — PHOTOMETRIC

) CI	ROZIER JETING ENGINEERS
Dv.	Design By	Project — — —

Trawn By

J.R.B.

Design By

J.R.B./I.S.

Project

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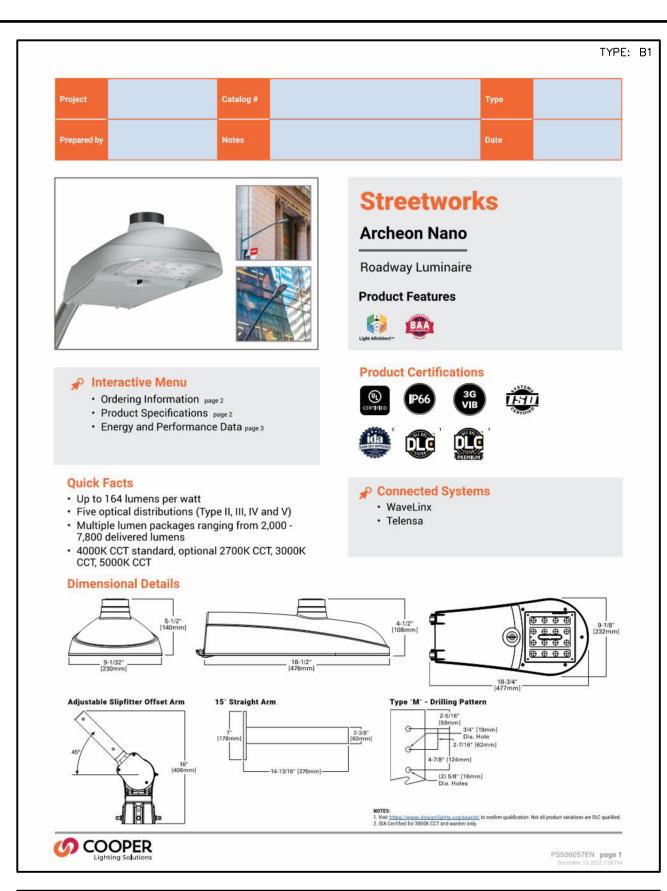
R.T.

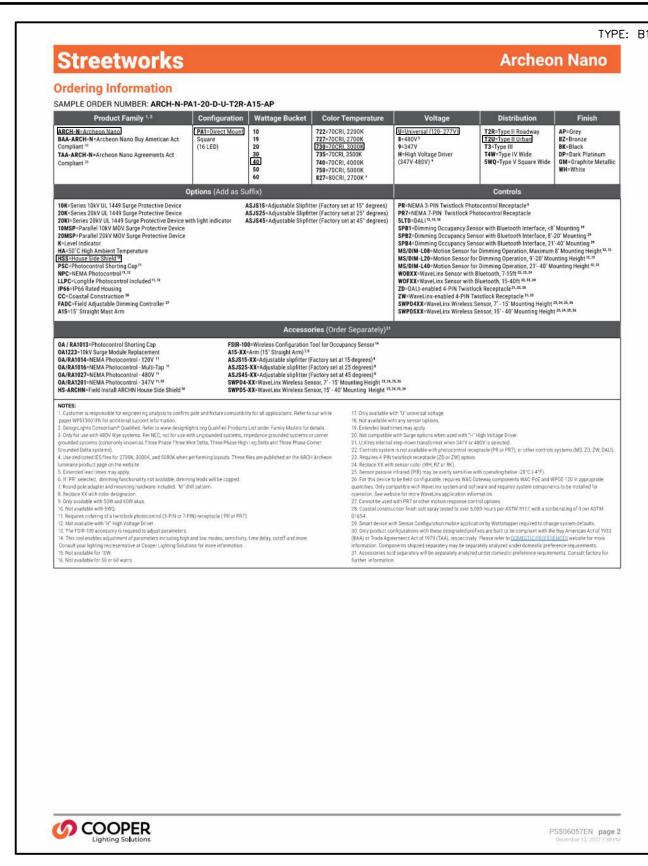
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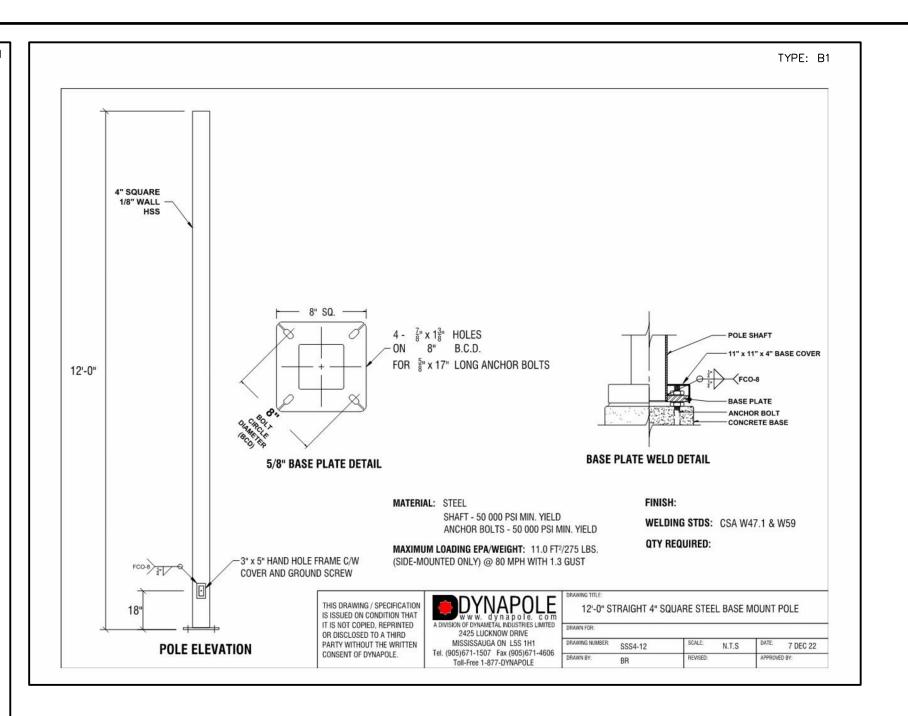
J.G.L.

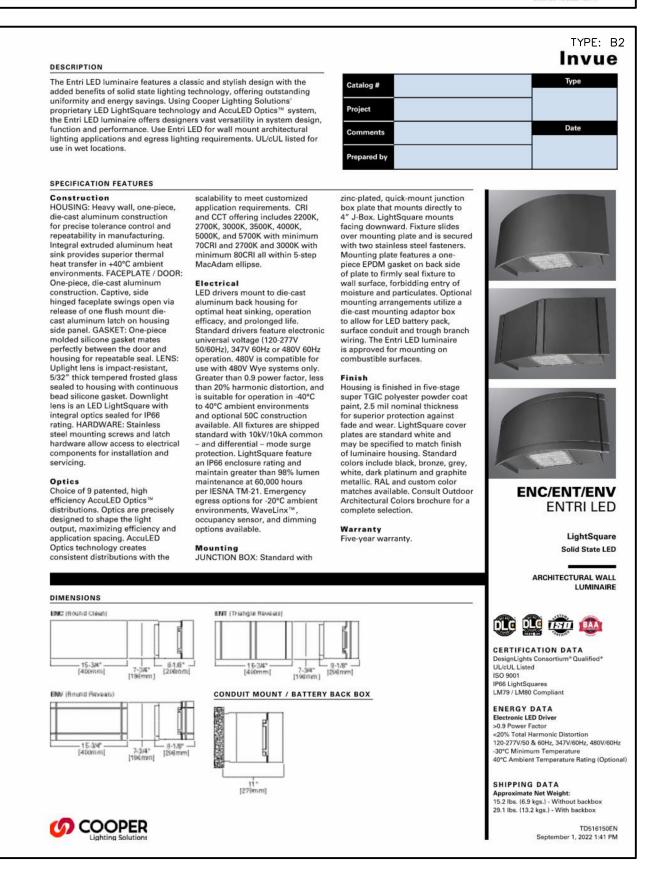
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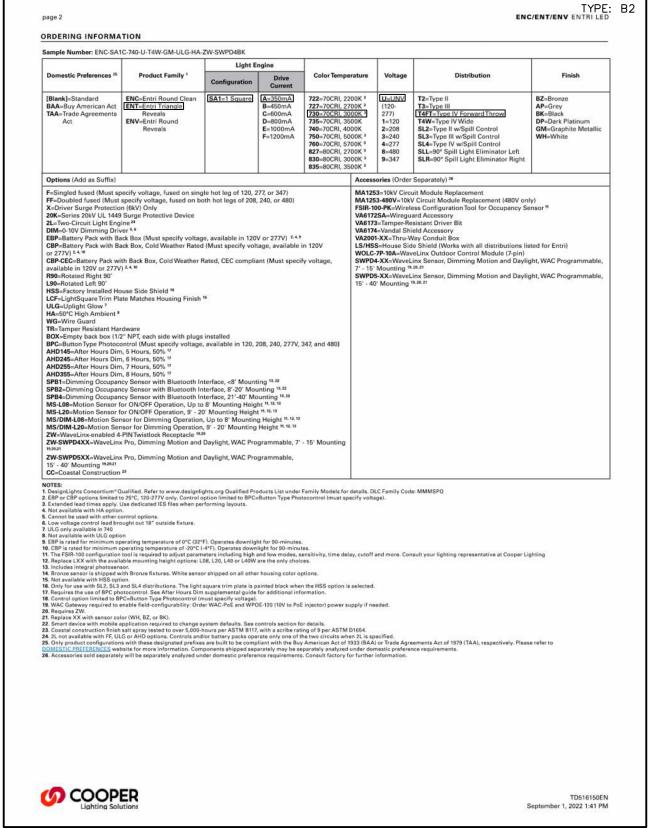
E100











	LUMINAIRE SCHEDULE						
SYMBOL	LABEL	MANUFACTURER	CATALOG NUMBER	LIGHT LOSS FACTOR	MOUNTING HEIGHT	WATTAGE	DESCRIPTION
○ ─○>	B1	COOPER	ARCH-N-PA1-40-730-U-T2U-HSS		MOUNTED ON A 0.9m (3') CONCRETE BASE, 3.7m (12') SSS POLE & 1.0m (3') MAST ARM RISE.		ARCHEON NANO ROADWAY LED STYLE LUMINAIRE, 40W, WITH TYPE II (T2U) DISTRIBUTION, 3000K, C/W LONG LIFE PHOTOCELL AND BACK LIGHT SHEILD. MOUNTED ON A 0.9m (3') CONCRETE BASE & 3.7m (12') SSS POLE.
	B2	COOPER	ENT-SA1-A-730-U-T4FT	0.85	MOUNTED AT 2.4m (8') ABOVE FINISHED GRADE	13 W	ENTRI LED WALL MOUNTED LUMINAIRE, 13W, WITH TYPE T4FT DISTRIBUTION, 3000K, C/W LONG LIFE PHOTOCELL. MOUNTED AT 2.4m (8') ABOVE FINISHED GRADE. INCLUDE VANDALISM SHIELD ACCESSORY, VA6174.

THE FOLLOWING NOTATIONS APPLY TO ALL LUMINAIRES IN SCHEDULE, UNLESS OTHERWISE NOTED:

ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE PHOTOCELLS AS REQUIRED. COORDINATE EXACT LOCATION & REQUIREMENTS WITH LIGHT MANUFACTURER.

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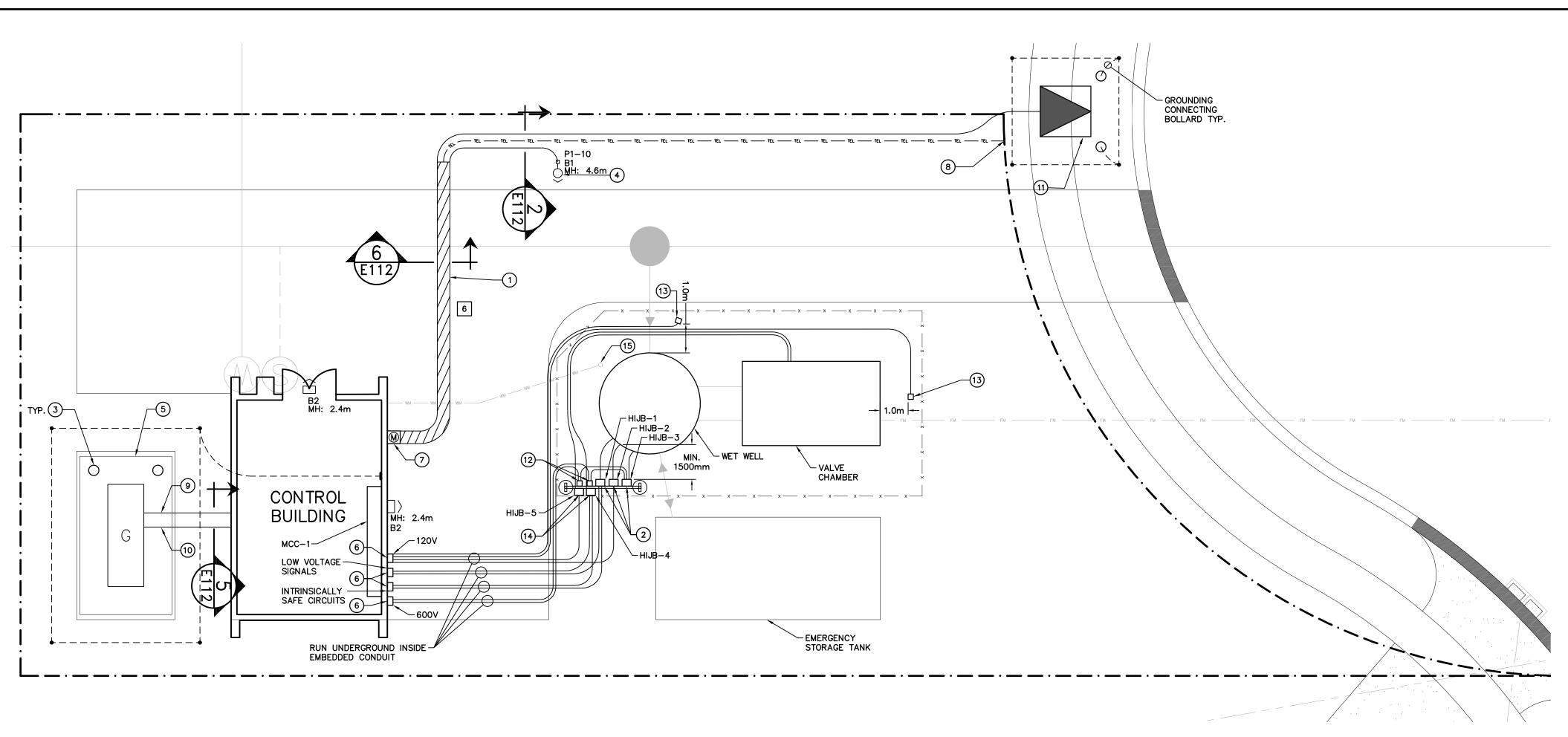
 5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

DO NOT SCALE DRAWINGS.

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7	ISSUED FOR APPROVAL REV 1/2	2024/05/24



C CROZIER CONSULTING ENGINEERS



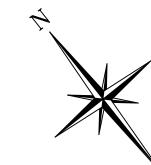
PUMP STATION BLOCK

STREET B

STREET B

HELEN STREET

HELE



SPS SITE PLAN - ELECTRICAL

SCALE: 1:100

GENERAL NOTES:

- 1. REFER TO SINGLE LINE DIAGRAM ON DRAWING E400 FOR CIRCUIT NUMBERS DEDICATED TO PROPOSED LIGHTING FIXTURES AND RECEPTACLES.
- ELECTRICAL CONTRACTOR TO ENSURE ALL STAINLESS STEEL ELEMENTS IN THE WET WELL & VALVE CHAMBER INCLUDING ANY ACCESSORIES AND FIXTURES TO BE 316SS GRADE.
 GENERATOR'S OUTDOOR FUEL TANK SHALL BE EQUIPPED WITH ELECTRONIC FULL—LIMITING THAT MUST BE IN CONFORMANCE
- TO APPLICABLE STANDARDS AND CODES. PROVIDE K—TECH INDUSTRIAL PRODUCTS INC. AL201—1—12VDC WEATHERPROOF ALARM PANEL OR APPLICABLE SIMILAR. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL.
- 4. GENERATOR SHALL BE EQUIPPED WITH ETHERNET COMMUNICATION CARD TO ESTABLISH ETHERNET/IP LINK TO PLC COMPLETE WITH REMOTE MONITORING CAPABILITIES.
 5. CONTRACTOR TO ENSURE THAT THE GENERATOR'S FUEL TANK SHALL BE FULL UPON GENERATOR COMMISSIONING AND PROJECT
- COMPLETION.

 6. THIS PUMPING STATION MUST ACTIVELY RUN FOR 24 HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE SUPPLIER TO PROVIDE A FUEL TANK THAT CAN PROVIDE BACK UP TO THIS FACILITY FOR AT LEAST 24 HOURS WITHOUT ANY
- INTERRUPTIONS.

 7. THIS DRAWING MUST BE READ IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, STRUCTURAL & MECHANICAL DRAWINGS.

DRAWING NOTES:

- 1) PROVIDE #12 AWG + GND IN 50mm DUCT BANK. ELECTRICAL CONTRACTOR TO REFER TO DUCT BANK DETAIL ON DWG. E112.
- PROVIDE LOCAL WET WELL PUMP JUNCTION BOXES, STAINLESS STEEL, NEMA 4X. HIJB-1 JUNCTION BOX FOR INSTRUMENT SIGNAL CABLE, HIJB-2 JUNCTION BOX FOR 120V POWER CABLES, & H1JB-3 JUNCTION BOX FOR 600V POWER CABLES. ALL ELECTRICAL WIRING AND INSTALLATION FOR THE EQUIPMENT MUST RATED FOR CLASS 1 DIV 2. LOCATE WET WELL JUNCTION BOX STAND, MINIMUM 1000mm FROM WET WELL HATCH AND 1500mm FROM WET WELL VENT. REFER TO DWG. E113 FOR MOUNTING CONFIGURATION
- 3 ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL PROTECTIVE BOLLARD. REFER TO TYPICAL DETAIL 8 IN DWG. E112. COORDINATE EXACT REQUIREMENTS WITH GENERATOR SUPPLIER.
- POLE MOUNTED LIGHTING FIXTURE TO BE CONNECTED TO PANEL P1. ELECTRICAL CONTRACTOR TO PROVIDE 8 POLE CONTACTOR C/W TIMER OR PHOTOCELL FOR COMPLETE EXTERIOR LIGHTING CONTROL. PROVIDE ALL ACCESSORIES FOR A COMPLETE FUNCTIONING EXTERIOR LIGHTING CONTROL SYSTEM.
- ELECTRICAL CONTRACTOR TO COORDINATE & VERIFY WITH GENERATOR MANUFACTURER FOR EXACT INSTALLATION REQUIREMENTS. ELECTRICAL CONTRACTOR TO ENSURE CONCRETE PAD IS 1m OFFSET FROM GENSET. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING GENERATOR PAD, GENERATOR, AND ALL ASSOCIATED ACCESSORIES FOR A COMPLETE WORKING STANBY BACKUP EMERGENCY POWER SYSTEM. REFER TO DETAIL 4 IN DWG. E112.
- 6 PROVIDE NEMA 3R RATED ELECTRICAL PULL BOXES.
- 7 ELECTRICAL CONTRACTOR TO PROVIDE NEMA 3R RATED 900x900x250mm LOCKABLE DOOR, REMOVABLE BACK PLATE FOR METER BASE AS PER HYDRO ONE REQUIREMENTS. COORDINATE EXACT REQUIREMENTS WITH HYDRO ONE PRIOR TO INSTALLATION.
- (8) COORDINATE EXACT DEMARCATION POINT WITH TELECOMMUNICATION SERVICE PROVIDER.
- 9 PROVIDE IC-3#3/0 AWG + GND, 600V, XLP/ USE-2 CT RATED, 90C IN 100mm DUCT BANK. ELECTRICAL CONTRACTOR TO REFER TO GENERATOR DUCT BANK DETAIL ON DWG. E112.
- PROVIDE #10 AWG + GND FOR GENERATOR BLOCK HEATER IN 100mm DUCT BANK. ELECTRICAL CONTRACTOR TO REFER TO GENERATOR DUCT BANK DETAIL ON DWG. E112.
- ELECTRICAL CONTRACTOR TO PROVIDE TRANSFORMER VAULT, GROUNDING, BOLLARDS AND ALL OTHER NECESSARY ACCESSORIES FOR A FULLY FUNCTIONING SYSTEM AS PER ESA AND HYDRO ONE REQUIREMENTS. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH HYDRO ONE.
- PROVIDE TWO (2) 600V, EMERGENCY STOP BUTTON FOR EACH PUMP THAT SHALL BE OUTDOOR RATED, TAMPERPROOF & APPROVED FOR ZONE 2 (CLASS 1 DIV. 2) HAZARD LOCATIONS. PROPOSED EMERGENCY STOP BUTTON MUST MEET APPLICABLE CANADIAN & LOCAL CODES & STANDARDS.
- (13) POST MOUNTED TAMPERPROOF RECEPTACLE. SHALL BE LOCATED 1500mm AWAY FROM ANY VENT OR OPENINGS
- PROVIDE LOCAL VALVE CHAMBER JUNCTION BOXES, STAINLESS STEEL NEMA 4X. HIJB-4 JUNCTION BOX FOR INSTRUMENT SIGNAL CABLE & HIJB-5 JUNCTION BOX FOR 120V POWER CABLES. ALL ELECTRICAL WIRING TO AND INSTALLATION FOR THE EQUIPMENT MUST BE RATED FOR CLASS 1 DIV.2 VALVE CHAMBER JUNCTION BOXES TO BE MOUNTED ON SAME UNI-STRUT STAND AS WET WELL PUMP JUNCTION BOXES. REFER TO DWG. E113 FOR MOUNTING CONFIGURATION.
- (15) PROPOSED LOCATION OF YARD HYDRANT. REFER TO CIVIL DRAWINGS FOR EXACT LOCATION.

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	ON SITE AND INCLUDIN ANTI-DISCINEL ANTONES ON CHINSSIONS TO CIT.
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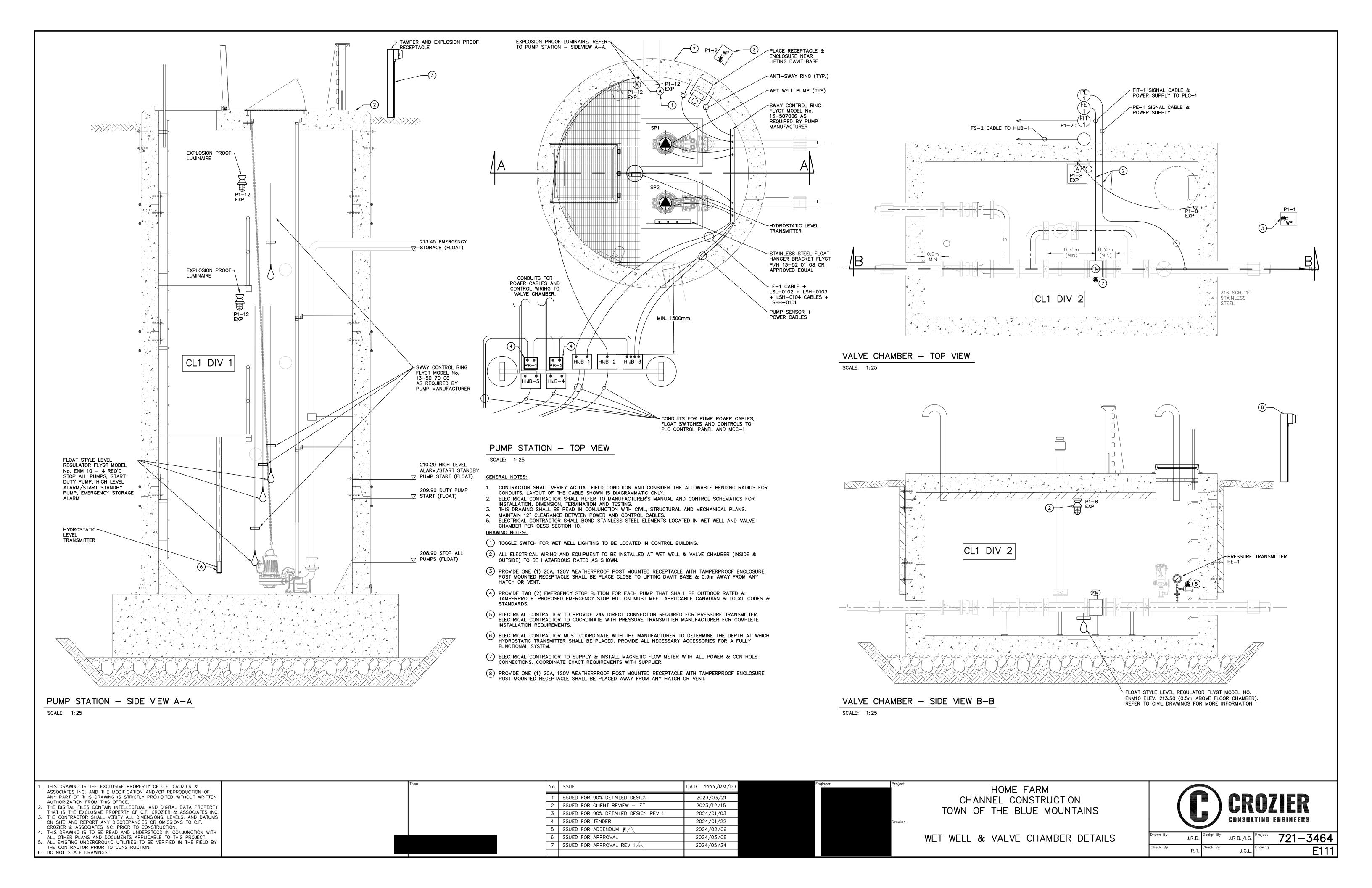
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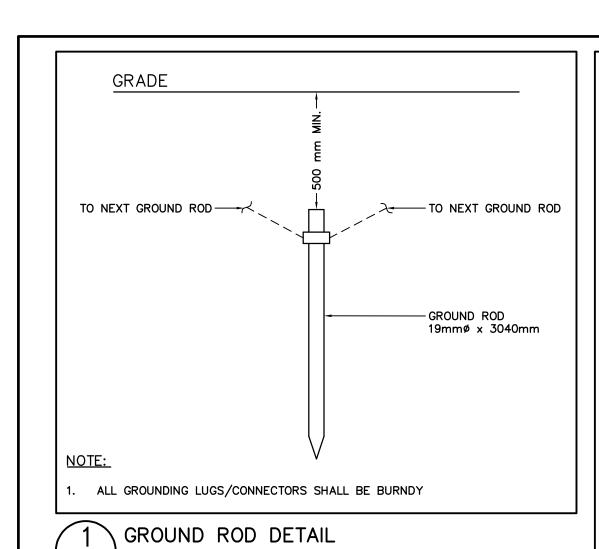
HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

SEWAGE PUMPING STATION SITE PLAN — ELECTRICAL

CROZIER CONSULTING ENGINEERS

own By	J.R.B.	Design By	J.R.B./I.S.	Project	721-3464	
eck By	R.T.	Check By	J.G.L.	Drawing	E110	

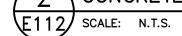


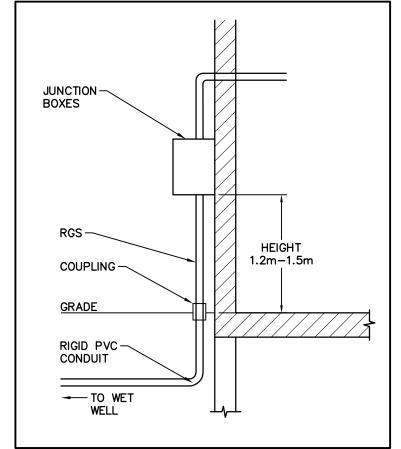


(1) YELLOW CAUTION TAPE BURIED BELOW FINISH GRADE.

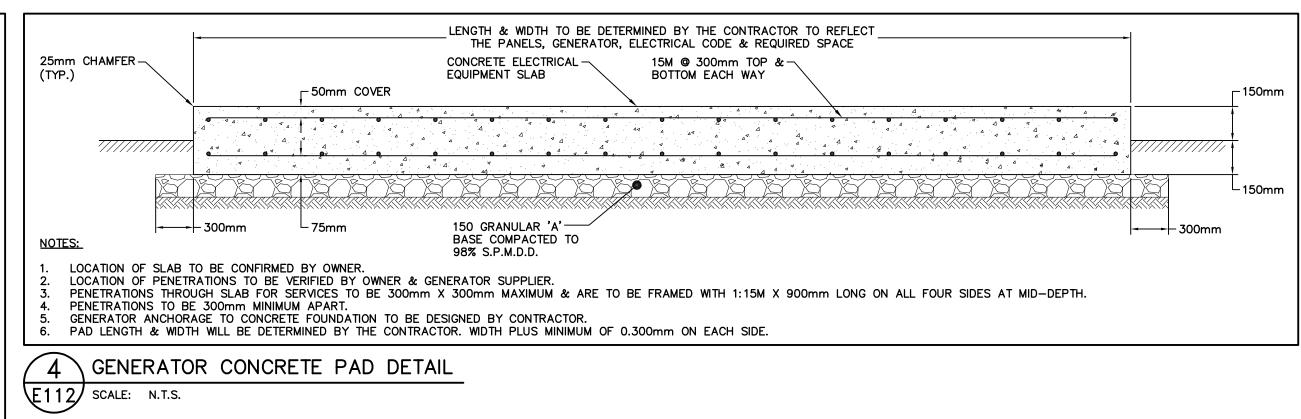
- (2) 100mmø (4") DIAMETER RIGID PVC DUCT FOR TELECOMMUNICATION.
- (3) 50mmø (2") DIAMETER RIGID PVC DUCT FOR LIGHTING CABLE.
- (4) 15M CONTINUOUS REINFORCING BARS.
- (5) SAND.
- (6) 100mmø (4") DIAMETER RIGID PVC DUCTS (DB2).
- (7) NON PRE-STRESSED 15mm (5/8") DEFORMED STEEL REINFORCING BAR.
- 8 MOLDED PLASTIC INTERLOCKING DUCT SPACERS AT 1.5m INTERVAL ALONG ENTIRE LENGTH OF DUCT BANK.
- (9) SPARE CONDUIT.
- (10) COMPACTED FILL TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

GENERAL SECONDARY DUCT BANK CONCRETE ENCASED DETAIL









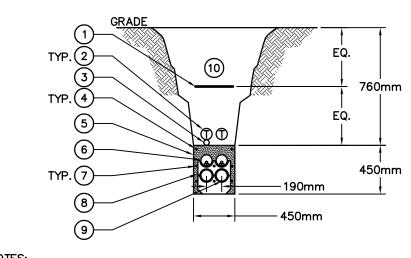
—190mm

E112 SCALE: N.T.S.

- 1) YELLOW CAUTION TAPE BURIED BELOW FINISH GRADE.
- (2) 100mmø (4") DIAMETER RIGID PVC DUCT FOR GENERATOR CONTROL WIRING.
- (3) 100mmø (4") DIAMETER RIGID PVC DUCT FOR GENERATOR AUXILIARY PANEL.
- (5) 100mmø (4") DIAMETER RIGID PVC DUCTS (DB2).
- 6 MOLDED PLASTIC INTERLOCKING DUCT SPACERS AT 1.5m INTERVAL ALONG ENTIRE LENGTH OF DUCT BANK.
- 7) SPARE CONDUIT.
- (8) COMPACTED FILL TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

GENERAL SECONDARY DUCT BANK SAND 5 ENCASED DETAIL - GENERATOR

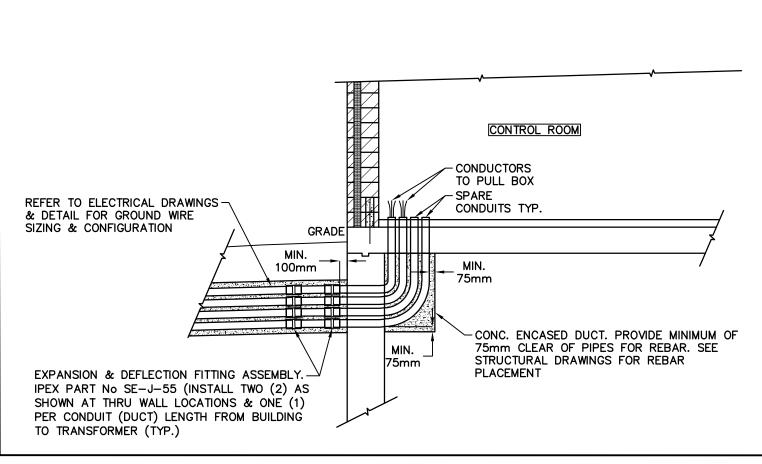
E112 SCALE: N.T.S.



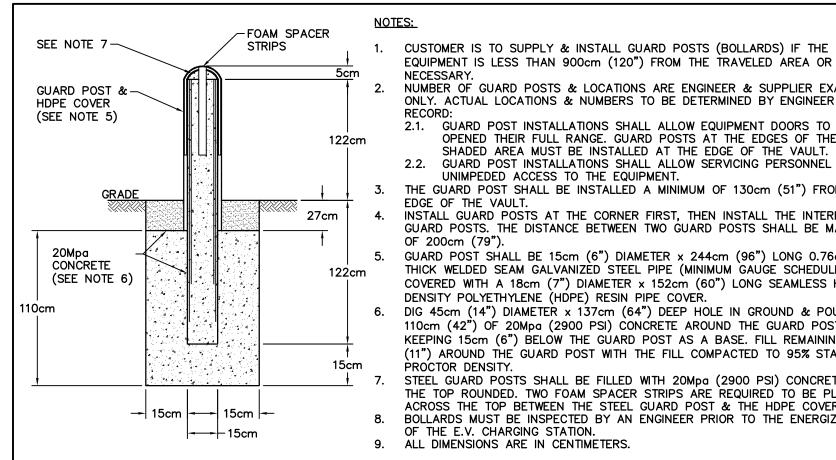
- 1) YELLOW CAUTION TAPE BURIED BELOW FINISH GRADE.
- (2) 100mmø (4") DIAMETER RIGID PVC DUCT FOR TELECOMMUNICATION.
- (3) 50mmø (2") DIAMETER RIGID PVC DUCT FOR LIGHTING CABLE.
- (4) 15M CONTINUOUS REINFORCING BARS.
- 5 SAND.
- (6) 100mmø (4") DIAMETER RIGID PVC DUCTS (DB2).
- (7) NON PRE-STRESSED 15mm (5/8") DEFORMED STEEL REINFORCING BAR.
- 8 MOLDED PLASTIC INTERLOCKING DUCT SPACERS AT 1.5m INTERVAL ALONG ENTIRE LENGTH OF DUCT BANK.
- (9) SPARE CONDUIT.
- (10) COMPACTED FILL TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

GENERAL SECONDARY DUCT BANK 6 CONCRETE ENCASED DETAIL

E112 SCALE: N.T.S.



GENERAL ELECTRICAL DUCTS & BUILDING DETAIL E112 SCALE: N.T.S.



EQUIPMENT IS LESS THAN 900cm (120") FROM THE TRAVELED AREA OR DEEMS NUMBER OF GUARD POSTS & LOCATIONS ARE ENGINEER & SUPPLIER EXAMPLES ONLY. ACTUAL LOCATIONS & NUMBERS TO BE DETERMINED BY ENGINEER ON 2.1. GUARD POST INSTALLATIONS SHALL ALLOW EQUIPMENT DOORS TO BE

OPENED THEIR FULL RANGE. GUARD POSTS AT THE EDGES OF THE SHADED AREA MUST BE INSTALLED AT THE EDGE OF THE VAULT. 2.2. GUARD POST INSTALLATIONS SHALL ALLOW SERVICING PERSONNEL

THE GUARD POST SHALL BE INSTALLED A MINIMUM OF 130cm (51") FROM THE INSTALL GUARD POSTS AT THE CORNER FIRST, THEN INSTALL THE INTERMEDIATE GUARD POSTS. THE DISTANCE BETWEEN TWO GUARD POSTS SHALL BE MAXIMUM

GUARD POST SHALL BE 15cm (6") DIAMETER x 244cm (96") LONG 0.76cm (3") THICK WELDED SEAM GALVANIZED STEEL PIPE (MINIMUM GAUGE SCHEDULE 40) COVERED WITH A 18cm (7") DIAMETER x 152cm (60") LONG SEAMLESS HIGH

DIG 45cm (14") DIAMETER x 137cm (64") DEEP HOLE IN GROUND & POUR 110cm (42") OF 20Mpa (2900 PSI) CONCRETE AROUND THE GUARD POST KEEPING 15cm (6") BELOW THE GUARD POST AS A BASE. FILL REMAINING 27cm (11") AROUND THE GUARD POST WITH THE FILL COMPACTED TO 95% STANDARD

STEEL GUARD POSTS SHALL BE FILLED WITH 20Mpg (2900 PSI) CONCRETE WITH THE TOP ROUNDED. TWO FOAM SPACER STRIPS ARE REQUIRED TO BE PLACED ACROSS THE TOP BETWEEN THE STEEL GUARD POST & THE HDPE COVER. BOLLARDS MUST BE INSPECTED BY AN ENGINEER PRIOR TO THE ENERGIZATION

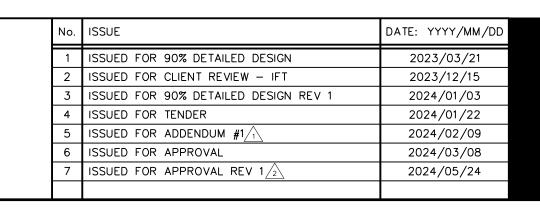
\GUARD POST (BOLLARDS) E112 SCALE: N.T.S.

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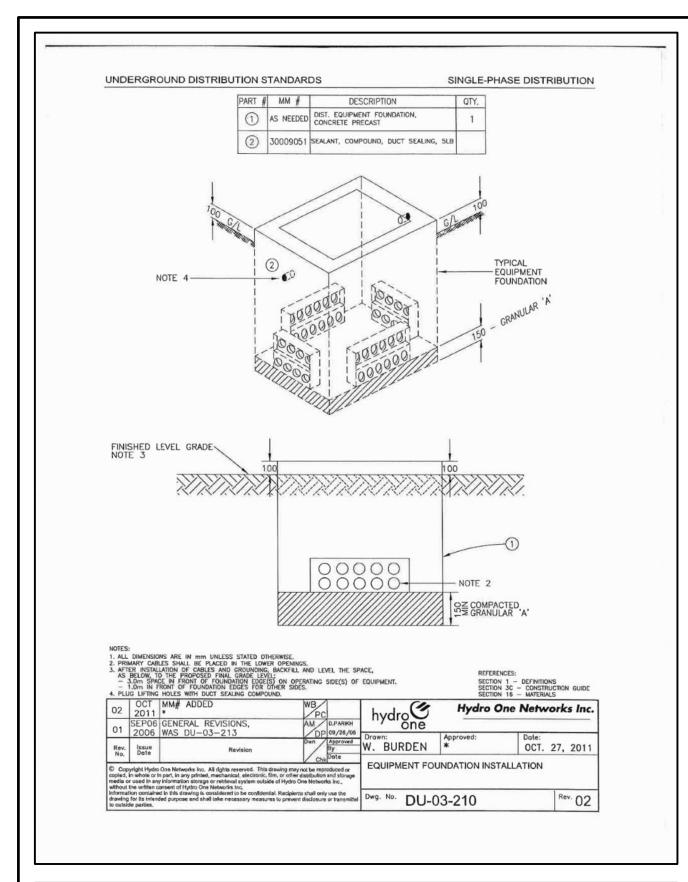


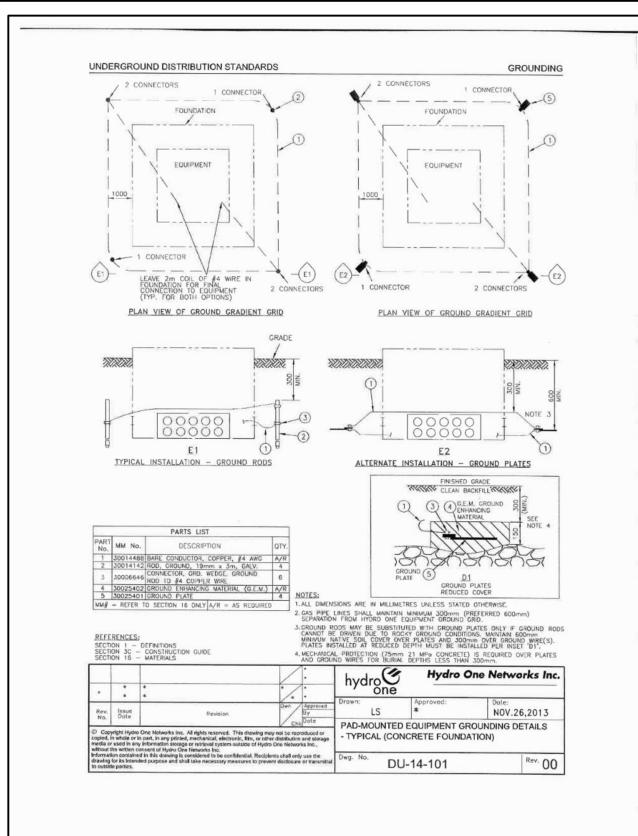


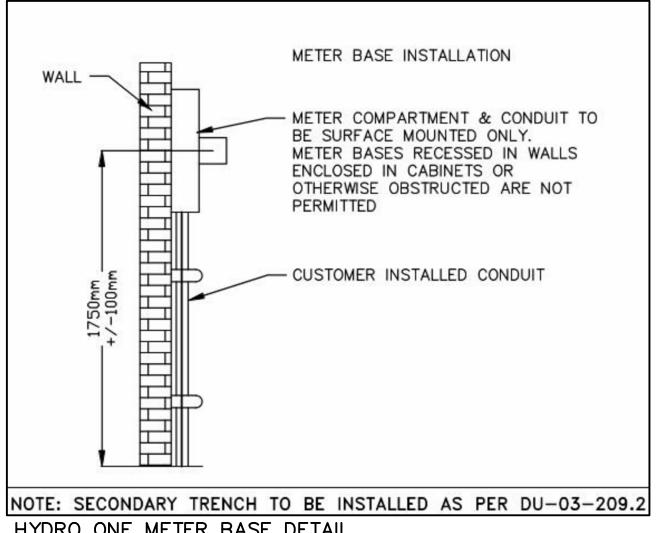
SPS SITE ELECTRICAL DETAILS (SHEET 1 OF 2)



721-3464 J.R.B./I.S.

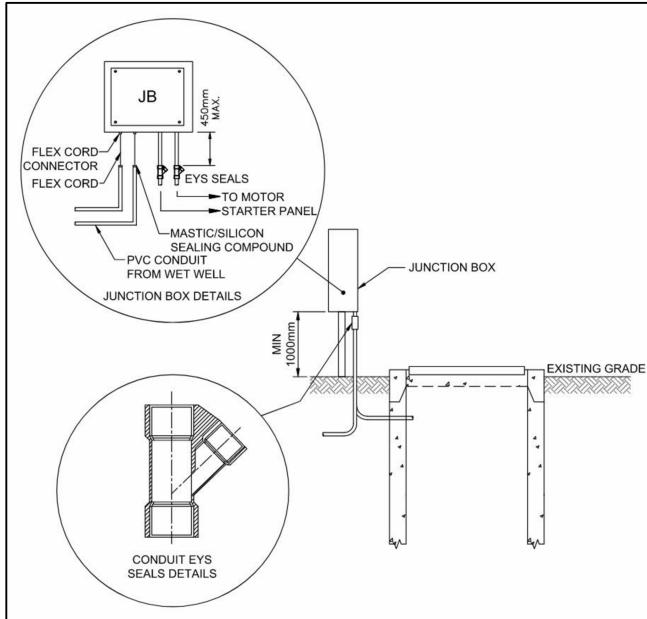






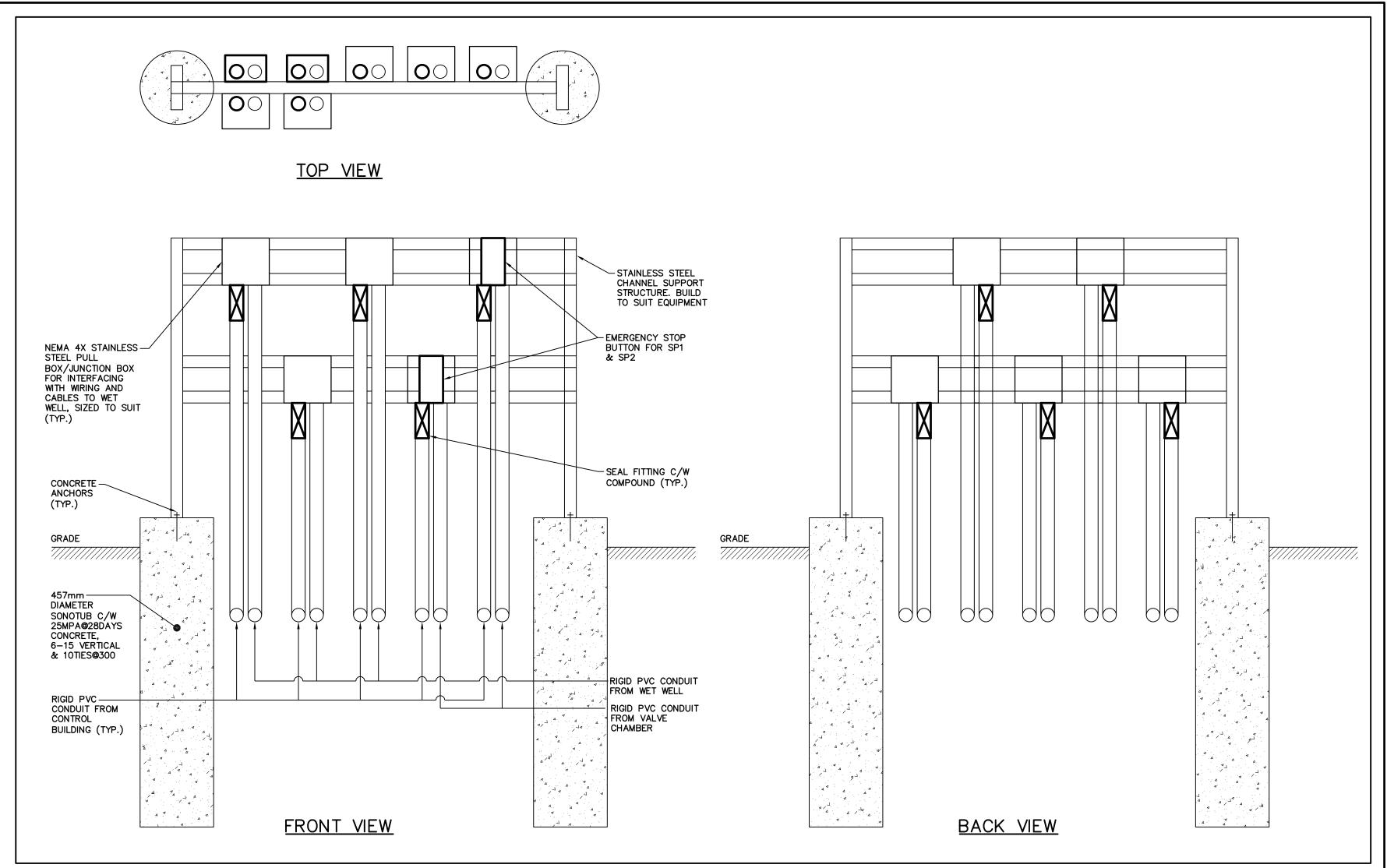
HYDRO ONE METER BASE DETAIL

SCALE: N.T.S.



WET WELL EYS SEAL DETAIL PUMP CABLE JUNCTION BOX

SCALE: N.T.S.



1 WET WELL JUNCTION BOX STAND

E113 SCALE: N.T.S.

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6	ISSUED FOR APPROVAL	2024/03/08
7	ISSUED FOR APPROVAL REV 12	2024/05/24
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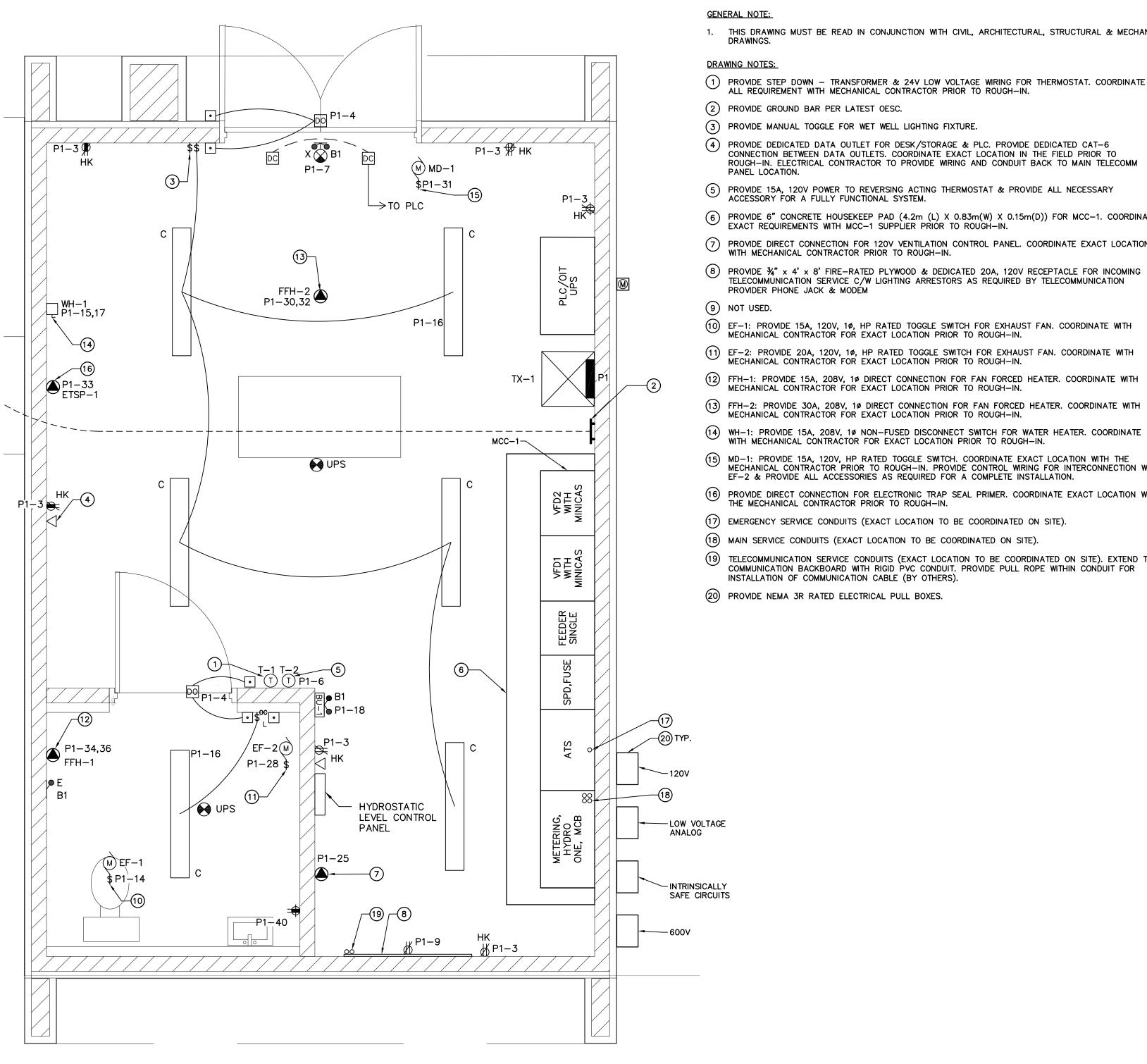


SPS SITE ELECTRICAL DETAILS (SHEET 2 OF 2)



 Drawn By
 J.R.B.
 Design By
 J.R.B. /I.S.
 Project
 721—3464

 Check By
 R.T.
 Check By
 J.G.L.
 Drawing
 E113



1. THIS DRAWING MUST BE READ IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, STRUCTURAL & MECHANICAL

- 1) PROVIDE STEP DOWN TRANSFORMER & 24V LOW VOLTAGE WIRING FOR THERMOSTAT. COORDINATE
- 3) PROVIDE MANUAL TOGGLE FOR WET WELL LIGHTING FIXTURE.
- 4 PROVIDE DEDICATED DATA OUTLET FOR DESK/STORAGE & PLC. PROVIDE DEDICATED CAT-6 CONNECTION BETWEEN DATA OUTLETS, COORDINATE EXACT LOCATION IN THE FIELD PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR TO PROVIDE WIRING AND CONDUIT BACK TO MAIN TELECOMM
- 5 PROVIDE 15A, 120V POWER TO REVERSING ACTING THERMOSTAT & PROVIDE ALL NECESSARY ACCESSORY FOR A FULLY FUNCTIONAL SYSTEM.
- 6 PROVIDE 6" CONCRETE HOUSEKEEP PAD (4.2m (L) X 0.83m(W) X 0.15m(D)) FOR MCC-1. COORDINATE EXACT REQUIREMENTS WITH MCC-1 SUPPLIER PRIOR TO ROUGH-IN.
- 7 PROVIDE DIRECT CONNECTION FOR 120V VENTILATION CONTROL PANEL. COORDINATE EXACT LOCATION
- 8 PROVIDE 34" x 4' x 8' FIRE-RATED PLYWOOD & DEDICATED 20A, 120V RECEPTACLE FOR INCOMING TELECOMMUNICATION SERVICE C/W LIGHTING ARRESTORS AS REQUIRED BY TELECOMMUNICATION
- EF-1: PROVIDE 15A, 120V, 1Ø, HP RATED TOGGLE SWITCH FOR EXHAUST FAN. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION PRIOR TO ROUGH-IN.
- 11) EF-2: PROVIDE 20A, 120V, 10, HP RATED TOGGLE SWITCH FOR EXHAUST FAN. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION PRIOR TO ROUGH-IN.
- 12) FFH-1: PROVIDE 15A, 208V, 10 DIRECT CONNECTION FOR FAN FORCED HEATER. COORDINATE WITH

- WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION PRIOR TO ROUGH-IN.
- MD-1: PROVIDE 15A, 120V, HP RATED TOGGLE SWITCH. COORDINATE EXACT LOCATION WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE CONTROL WRING FOR INTERCONNECTION WITH EF-2 & PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- 16 PROVIDE DIRECT CONNECTION FOR ELECTRONIC TRAP SEAL PRIMER. COORDINATE EXACT LOCATION WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- (17) EMERGENCY SERVICE CONDUITS (EXACT LOCATION TO BE COORDINATED ON SITE).
- (18) MAIN SERVICE CONDUITS (EXACT LOCATION TO BE COORDINATED ON SITE).
- 19 TELECOMMUNICATION SERVICE CONDUITS (EXACT LOCATION TO BE COORDINATED ON SITE). EXTEND TO COMMUNICATION BACKBOARD WITH RIGID PVC CONDUIT. PROVIDE PULL ROPE WITHIN CONDUIT FOR

SPS CONTROL ROOM - POWER & SYSTEMS SCALE: 1:25

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THE CONTRACTOR PRIOR TO CONSTRUCTION.

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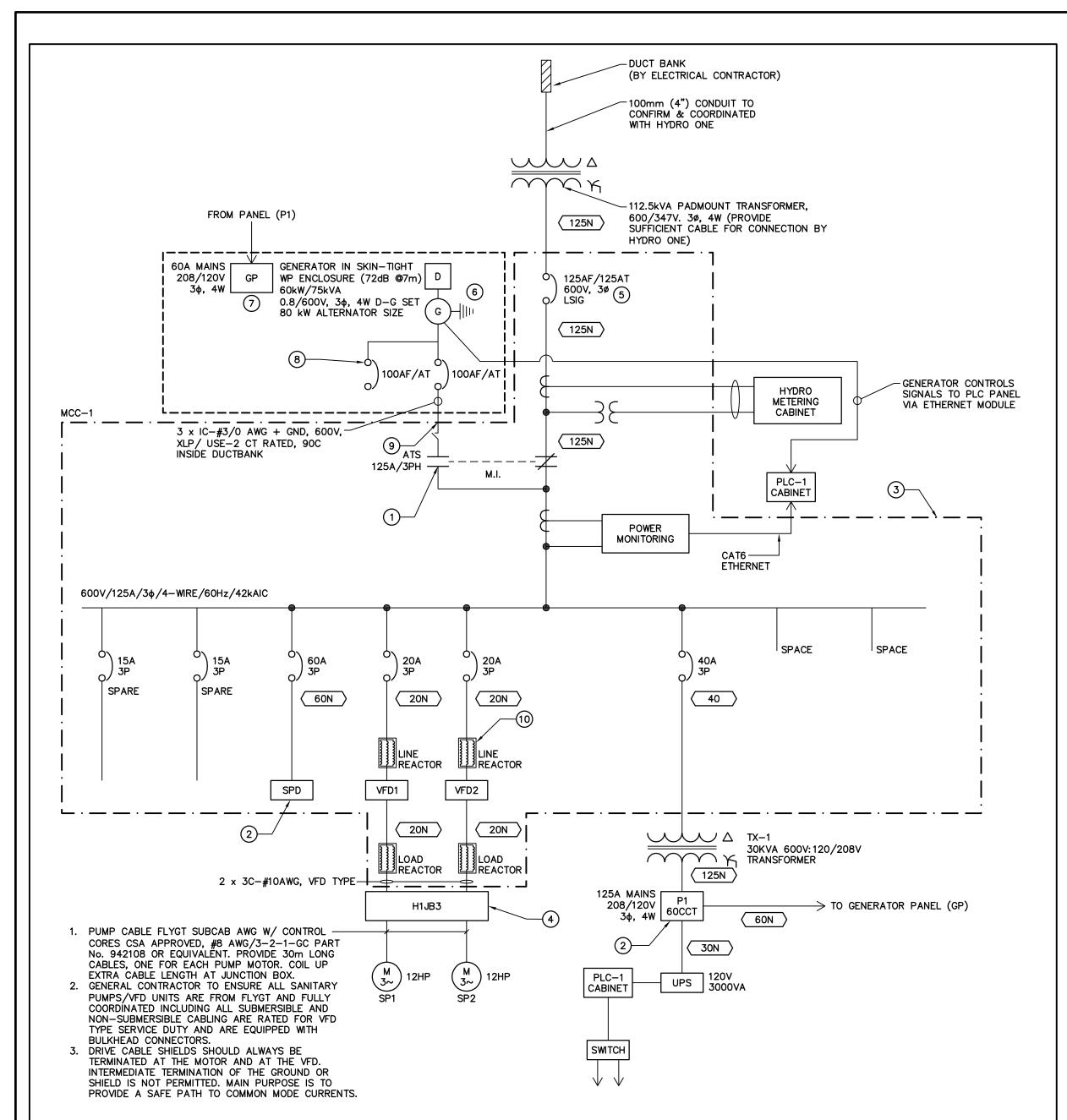
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7	ISSUED FOR APPROVAL REV 12	2024/05/24
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HOME FARM CHANNEL CONSTRUCTION TOWN OF THE BLUE MOUNTAINS

CONSULTING ENGINEERS

CONTROL BUILDING - POWER & SYSTEMS

721-3464 J.R.B./I.S. E300



SINGLE LINE DIAGRAM

SCALE: N.T.S.

	FEEDER SCHEDULE											
FEEDER	AMPACITY	SET(S)	PHASE CONDUCTOR	NEUTRAL	CONDUIT	(INCH)						
(125N)	125	1	3#3/0	1#3/0	100mm	(4")						
(60N)	60	1	3#4	1#4	53mm	(2")						
40N	40	1	3 # 6	1#6	53mm	(2")						
(30N)	30	1	3#10	1#10	25mm	(1")						
(20N)	20	1	3 # 8	1#8	25mm	(1")						

FEEDER SCHEDULE NOTES:

DO NOT SCALE DRAWINGS.

- FEEDER SCHEDULE SYMBOLS OMITTING THE CHARACTER 'N' SHALL NOT INCLUDE THE NEUTRAL CONDUCTOR.
- ALL CONDUCTORS SHALL BE COPPER.

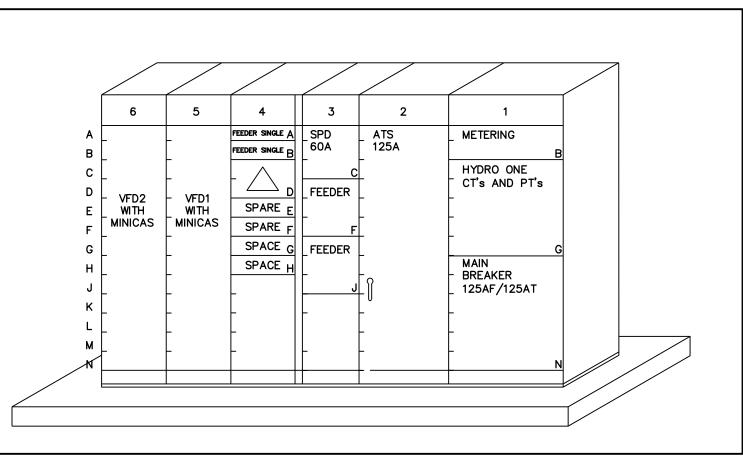
LOAD CALCULATION: 1-STOREY SEWAGE PUMPING STATION CONTROL BUILDING BASIC LOAD (LIGHTING & RECEPTACLE) :1000W HEATING LOAD @100% : 2500W EXTERIOR LIGHTING LOADS @100% : 2608W MECHANICAL LOADS @100% : 45861W SPECIAL LOADS : 5500W FUTURE LOADS :22,000W TOTAL BUILDING LOAD : 79,469W @90% POWER FACTOR :88.29 kVA SERVICE RATING : 85A : 125A BUILDING SERVICE SIZE

GENERAL NOTES:

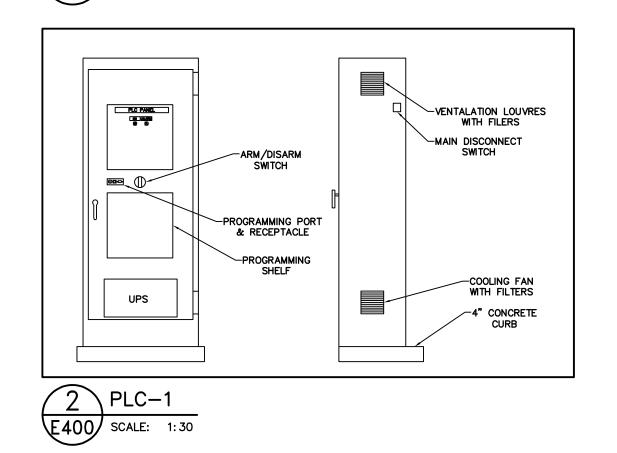
- ELECTRICAL CONTRACTOR TO PERFORM PROTECTION COORDINATION, SHORT CIRCUIT STUDY & HARMONIC STUDY. ELECTRICAL CIRCUIT BREAKER'S TRIP SETTING
- SHALL BE BASED ON THE STUDY'S RESULT. VFD SUPPLIER SHALL REVIEW THE SINGLE LINE DIAGRAM & HARMONIC STUDY TO DETERMINE AND SUPPLY HARMONIC FILTERING REQUIRED THAT SHALL NOT EXCEED A MAXIMUM OF 5% TOTAL HARMONIC VOLTAGE DISTORTION IN ACCORDANCE WITH IEEE 519.

DRAWING NOTES:

- 1) 125A, 60Hz, 4 POLE, 4W, AUTOMATIC TRANSFER SWITCH SHALL COME WITH ETHERNET OPTION IN ORDER TO COMMUNICATE WITH THE PLC.
- DO NOT INSTALL SPD UNIT PROVIDED BY THE MCC-1 MANUFACTURER. PROVIDE EMPTY BUCKET FOR INNOSYS TK-ST160-3Y600 FOR MCC-1. PROVIDE TOTAL PROTECTION SOLUTIONS TK-ST080-3Y208-FL FOR PANEL P1.
- (3) ELECTRICAL CONTRACTOR TO COORDINATE HYDRO METERING REQUIREMENTS WITH UTILITY & SWITCHGEAR SUPPLIER PRIOR TO ORDERING AND INSTALLATION.
- 4 PROVIDE A NEMA4X RIGID PVC JUNCTION BOX TO INTERCONNECT PUMP MOTOR CABLE & FEEDER CABLE. PROVIDE COMPRESSION LUGS & HEATSHRINK TO "MAKE-SAFE" WIRING CONNECTIONS AS REQUIRED BY ONTARIO ELECTRICAL SAFETY CODE.
- (5) SOLIDLY GROUND NEUTRAL BUS TO PROPOSED GROUND BAR. THE SERVICE ENTRANCE FRAME SHALL BE BONDED AND CONNECTED TO THE MAIN GROUND BAR.
- 6 PROVIDE A CONNECTION OF THE GENERATOR NEUTRAL TO THE MAIN SERVICE GROUND SYSTEM AS A 3-WIRE SYSTEM. PROVIDE A BONDING CONDUCTOR FROM THE GENERATOR NEUTRAL TO FRAME AS PER OESC REQUIREMENTS.
- DOAD CENTER PANEL AT GENERATOR TO BE SUPPLY AND INSTALL BY GENERATOR SUPPLIER. ELECTRICAL DIVISION 16 TO PROVIDE POWER AND TERMINATION AS PER SUPPLIER REQUIREMENTS.
- (8) BREAKER FOR LOAD BANK TESTING. LOAD BANK BREAKER TO BE SHUNT TRIP FROM ATS WHEN LOSS OF NORMAL POWER IS DETECTED.
- 9 PROVIDE CONDUIT INSTALLATION AT GENERATOR END TO ALLOW FOR VIBRATIONS IN HORIZONTAL AND VERTICAL DIRECTIONS. PROVIDE FLEXIBLE CONDUIT AT GENERATOR END.
- (10) COORDINATE EXACT REQUIREMENTS FOR FILTERING WITH VFD SUPPLIER PRIOR TO SUPPLY AND INSTALLATION.



\ MCC-1 FRONT ELEVATION E400 SCALE: 1:30



	LUMINAIRE SCHEDULE												
SYMBOL	LABEL	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	WATTAGE	VOLTAGE							
A	А	STANDPRO	SLBXP-24-320-1-1-CD-1R-1L-7WLA	EXPLOSION PROOF, EXTERIOR, WALL MOUNTED LED FIXTURE C/W BATTERY UNIT, SINGLE HEAD	7W	120V							
BU-1	BU-1	LUMACELL	RG24S2002LD14	EMERGENCY BATTERY PACK, COMPLETE WITH 2 HEADS AND AUTO TEST.	12W	24V							
	С	LITHONIA	DMW232	4FT WET LOCATION ENCLOSURE	57W	120V							
<u> </u>	E	LUMACELL	MQM1LD14AT	SINGLE REMOTE HEAD.	6W	24V							
	Х	LUMACELL	LAC1W6272LD1AT	UNIVERSAL EXIT SIGN COMBINED WITH DOUBLE REMOTE HEADS		120V							

	MECHANICAL EQUIPMENT SCHEDULE											
TAG	DESCRIPTION	DESCRIPTION LOCATION		V/ф/Hz	MCA	MOCP	BREAKER	REMARKS				
EF-1	EXHAUST FAN	WASHROOM	13W	120/1/60	-	-	15A-1P	-				
EF-2	EXHAUST FAN	CONTROL ROOM	1/2HP	120/1/60	12.3A	20.0	20A-1P	-				
WH-1	WATER HEATER	CONTROL ROOM	3000W	208/1/60	14.4A	-	20A-2P	-				
FFH-1	FAN FORCED HEATER	CONTROL ROOM	2000W	208/1/60	-	-	20A-2P	-				
FFH-2	FAN FORCED HEATER	CONTROL ROOM	4000W	208/1/60	-	-	20A-2P	-				
ETSP-1	ELECTRONIC TRAP SEAL PRIMER	CONTROL ROOM	-	120/1/60	-	-	15A-1P	-				
MD-1	MOTORIZED DAMPER	CONTROL ROOM	-	120/1/60	-	-	15A-1P	-				
T-1	THERMOSTAT	CONTROL ROOM	-	24/1/60	-	-	15A-1P	1				
T-2	THERMOSTAT	CONTROL ROOM	-	120/1/60	-	-	15A-1P	-				

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HOME FARM CHANNEL CONSTRUCTION TOWN OF THE BLUE MOUNTAINS

SEWAGE PUMPING STATION SINGLE LINE DIAGRAM, DETAILS & SCHEDULES



721-3464 J.R.B./I.S. J.R.B. E400

Panel ID: P1				NΕ\	٧			▾		Vo	ltage:	120/208V, 3PH
Location: Control Room										Se	rvice:	3 PHASE, 4 WIRE
Mounting: SURFACE ▼	В	us Ty	/pe:	Cop	pe	r				M	1ains:	125A BREAKER ▼
Neutral: SOLID											AIC:	14,000
Load Description	KVA	Brk	Р	Ckt #	Р	has	se	Ckt #	Р	Brk	KVA	Load Description
VALVE CHAMBER WP RECEPT.	0.2	20	1	1	Α			2	1	20	0.2	WET WELL RECEPTACL
CONTROL ROOM RECEPTACLES	1.4	20	1	3		В		4	1	15	0.3	DOOR OPERATO
TELEPHONE BLOCK	1.0	15	1	5			С	6	1	15	0.7	REVERSE ACTING THERMOSTA
EMERGENCY EXIT SIGN	0.1	15	1	7	Α	П		8	1	15	0.6	VALVE CHAMBER LIGHTING
TELECOMM RECEPTACLE	0.2	20	1	9		В		10	1	15	0.3	LIGHTING EXTERIO
SPARE		20	1	11			С	12	1	15	1.0	WET WELL LIGHTING
UPS	3.0	30	1	13	Α	Ħ		14	1	15	0.1	EF-
WH-1	3.0	15	2	15		В	П	16	1	15	0.2	LIGHTING INTERIO
	-	-	-	17		\vdash	С	18	1	15	0.1	EMERGENCY BATTERY PAC
DIALER	0.2	15	1	19	Α	H	H	20	1	15	0.2	FIT-
PANEL LIGHT	0.2	15	1	21	<u> </u>	В		22	1	15	0.2	SPAR
PANEL HEATER	0.3	15	1	23		$\vdash \vdash$	С	24	1	15	0.2	LIT-
VENTILATION CONTROL PANEL	0.5	15	1	25	Δ		Ť	26	1	15	0.2	SPAR
SPARE	0.5	20	1	27	_	В		28	1	20	1.5	EF-
SPARE		20	1	29		В	С	30	2	30	4.4	FFH-
MD-1	0.6	15	ا	31	_			32		30	4.4	FFN-
ETSP-1		15	1	33	A	В	-	34	-	15	2.2	
SPD	0.2	60	1	35		\vdash	С	36	2			FFH-
5PD			3		_	\square	_		-	-	-	
	+-	-	-	37	А		Н	38	1	15	0.0	SPAR
 OD 4 DE	-	-	-	39		В		40	1	15	0.2	WASHROOM GFI RECEPTACL
SPARE		20	1	41	_		С	42	3	60	5.0	GENERATOR AUXILARY
SPARE		20	1	43	Α			44	-	-	-	
SPARE		20	1	45		В		46	-	-	-	
SPACE				47	_		С	48	1	15		SPAR
SPACE				49	Α		Ш	50	1	15		SPAR
SPACE				51		В		52	1	15		SPAR
SPACE				53			С	54				SPAC
SPACE				55	Α	Щ	Ш	56				SPAC
SPACE				57		В		58				SPAC
SPACE				59	٦,٠	$\overline{}$	С	60				SPAC
				Loa	u č	un	шт	агу			Λddi	tional Options:
Total Connected	d Load	2	28.0	KVA	4						<u>Auul</u>	Sub-Feed Lugs
	versity			0.0%							Ē	NEMA 3R Enclosure
												Sprinkler proof - Gasketted
Panel Demand	Load:			KVA								Isolated Ground
		ť	ک.∠	AMI								Service Entrance Rated Surge Protection Device
												Drip-Proof
												Lockable Panel

		SPS EQI	JIPMENT SCHEDULE	_	
EQUIPMENT MANUFACTURER CATAL		CATALOG NUMBER	RATING	COMMENTS	ABBREVIATION
PUMPS	FLYGT	REFER TO CIVIL DRAWINGS	12HP, 8.9kW, 600V	N/A	SP-1, SP-2
AUTOMATIC TRANSFER SWITCH	EATON	N/A	125A, 600V, 3PH, 4W	BUILT-IN MCC SECTION	ATS
VARIABLE FREQUENCY DRIVE	SCHNEIDER	ATV320D11S6C	600V	SUITABLE FOR 12 HP PUMP C/W ETHERNET COMMUNICATION	VFD
DIESEL GENERATOR	GENERAC	SD060	60kW, 600V, 3PH, 4W	RUN TIME — 39 HOURS C/W ETHERNET COMMUNICATION, 80kW ALTERNATOR SIZE	N/A
SURGE PROTECTION DEVICE	INNOSYS	TK-ST160-3Y600	347/600VAC, 3PH, 4W	FOR MCC	SPD
SURGE PROTECTION DEVICE	INNOSYS	TK-ST120-3Y208	120/208VAC, 3PH, 4W	FOR PANEL P1	SPD
INTERRUPTED POWER SUPPLY	EATON	9SX3000	3000VA	N/A	UPS
POWER MONITOR	ALLEN BRADLEY	1408-TS3A-ENT	N/A	C/W ETHERNET COMMUNICATION	N/A
FLOW METER	ENDRESS & HAUER	PROLINE PROMAG W 400	N/A	5XDN INLET SUITABLE FOR CLASS 1 DIV 2. SENSOR SHALL BE IP68 RATED. TRANSMITTER SHALL BE LOCATED IN THE CONTROL BUILDING. ELECTRICAL CONTRACTOR SHALL PROVIDE SUFFICIENT SIGNAL CABLES ALL THE WAY UP TO THE CONTROL BUILDING WITHOUT SPLICING.	FM
PRESSURE TRANSMITTER	ENDRESS & HAUER	PMP51B	N/A	PROVIDE 120/24V STEP DOWN TRANSFORMER. COORDINATE WITH SUPPLIER FOR ADDITIONAL INFORMATION. SUITABLE FOR CLASS 1, DIV. 2	PE-1
HYDROSTATIC LEVEL DWYER TRANSMITTER		PBLTX-15-60-PU	10-28 VDC	LE SHALL BE CONNECTED TO LIT THAT SHALL CARRY 24VDC AND 4-20mA SIGNAL. LIT PROVIDED SHALL HAVE LOCAL DISPLAY THAT SHALL C/W 4-20mA OUTPUT SIGNAL TO THE PLC. LIT SHALL BE LOCATED IN THE CONTROL BUILDING. COORDINATE WITH SUPPLIER FOR MORE POWER REQUIREMENTS. SUITABLE FOR CLASS 1, DIV 1.	LE-1

PLC HARDWARE SCHEDULE					
EQUIPMENT	MANUFACTURER	CATALOG NUMBER	DISTRIBUTOR		
COMPACT LOGIX 5370 L3 CONTROLLER	ALLEN BRADLEY	1769-L33ER	WESTBURNE		
POWER SUPPLY	ALLEN BRADLEY	1769-PA4	WESTBURNE		
16 PE 24VDC INPUT MODULE	ALLEN BRADLEY	1769-IQ16	WESTBURNE WESTBURNE		
16 PE RELAY OUTPUT MODULE	ALLEN BRADLEY	1769-OW16			
8CH ANALOG INPUT MODULE	ALLEN BRADLEY 1769-IF8		WESTBURNE		
4CH ANALOG OUTPUT MODULE	ALLEN BRADLEY	1769-OF4	WESTBURNE		
RACK RIGHT END CAP	ALLEN BRADLEY	1769-ECR	WESTBURNE		

HMI HARDWARE SCHEDULE				
EQUIPMENT	MANUFACTURER	CATALOG NUMBER	DISTRIBUTOR	
10" TOUCH SCREEN	ALLEN BRADLEY	2711R-T10T	WESTBURNE	

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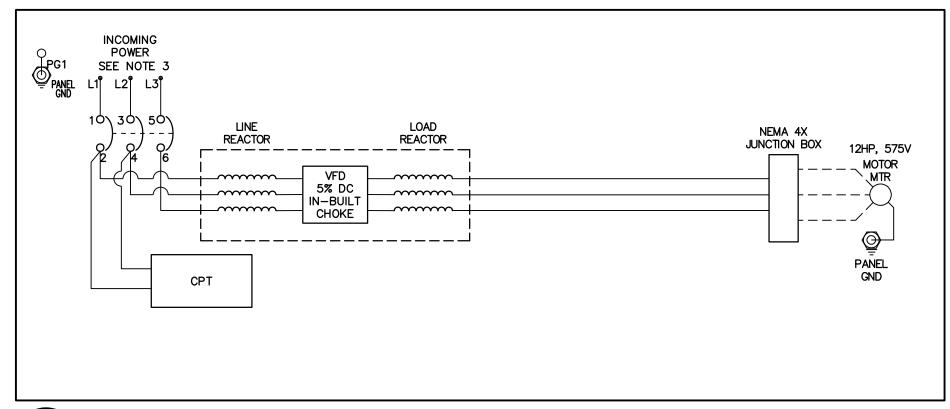
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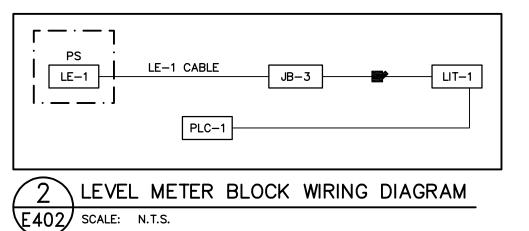
HOME FARM CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

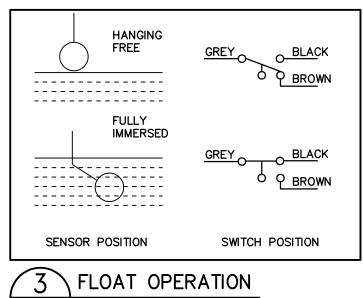
SCHEDULES



721-3464 J.R.B./I.S. E401





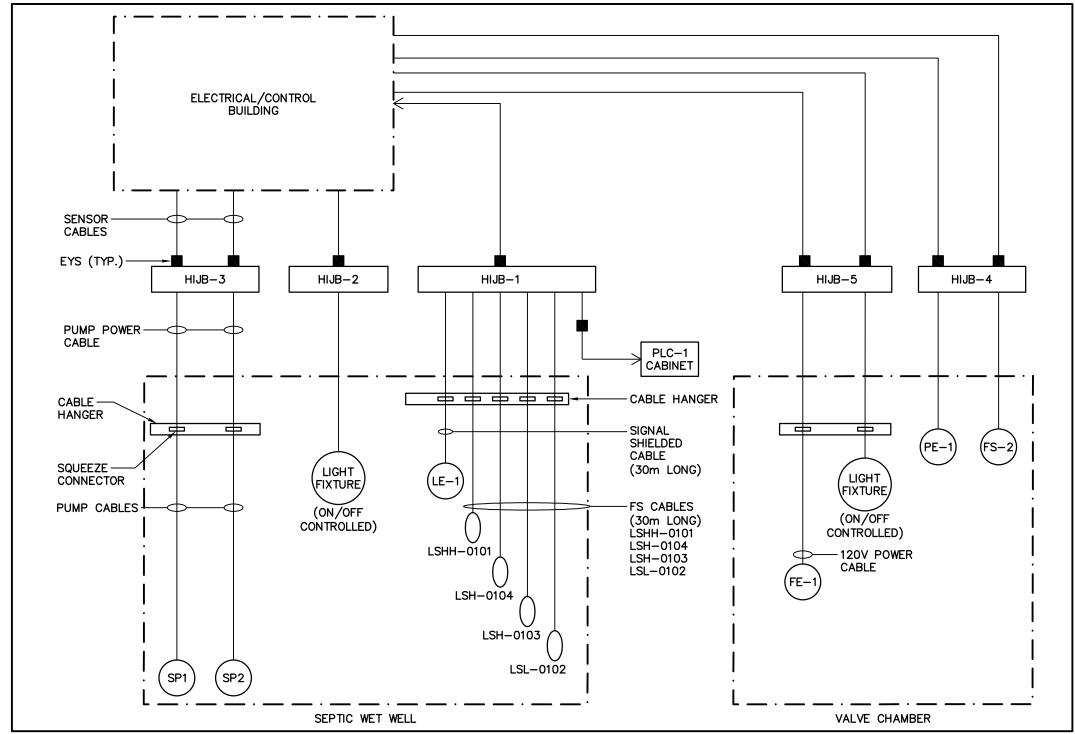


E402 SCALE: N.T.S.

1 PUMP SCHEMATIC WIRING DIAGRAM E402 SCALE: N.T.S.

GENERAL NOTE:

1. PLEASE REFER TO PROCESS CONTROL NARRATIVE FOR ALARM CONDITIONS AND ACTIONS.

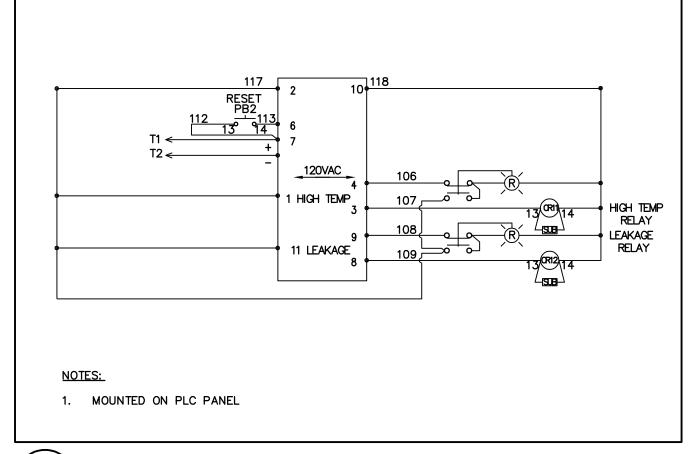


5 SEWAGE PUMP STATION BLOCK WIRING DIAGRAM E402 SCALE: N.T.S.

GENERAL NOTES:

- 1. ELECTRICAL CONTRACTOR TO PERFORM PROTECTION COORDINATION AND SHORT CIRCUIT STUDY.
- ELECTRICAL CIRCUIT BREAKER'S TRIP SETTING SHALL BE BASED ON THE STUDY'S RESULT.

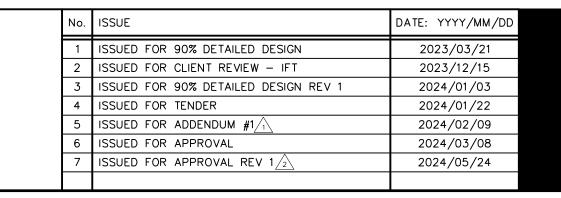
 2. FM DENOTES WET WELL FLOW METER, LIT DENOTES WET WELL LEVEL TRANSMITTER & PE
- DENOTES WET WELL PRESSURE TRANSMITTER.
- 3. ELECTRICAL CONTRACTOR TO PROVIDE HARDWIRED INTERLOCKS AS INDICATED IN PROCESS CONTROL NARRATIVE.



4 PUMP SENSOR SIGNAL SCHEMATIC

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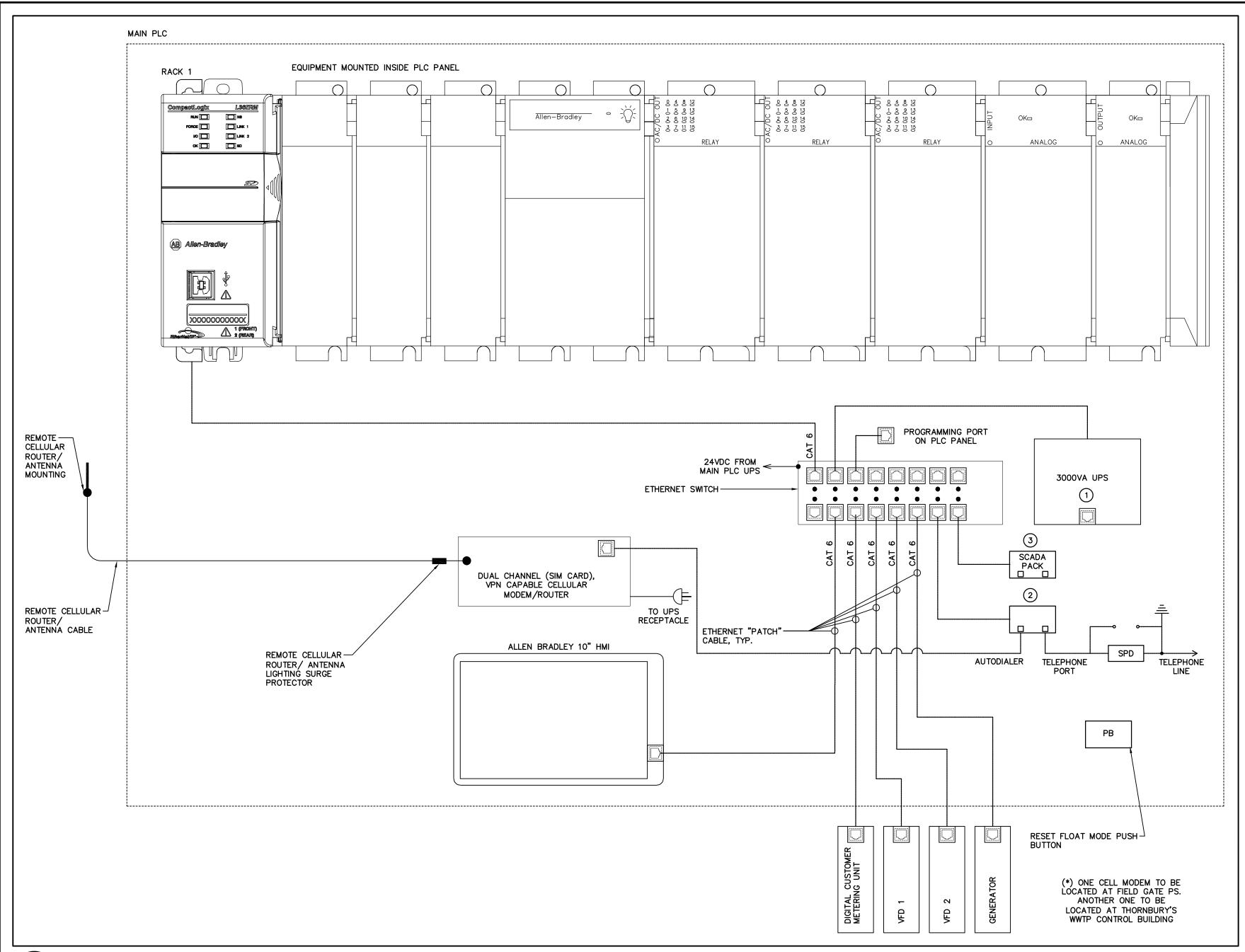


HOME FARM CHANNEL CONSTRUCTION TOWN OF THE BLUE MOUNTAINS

ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 1 OF 3)

CROZIER
CONSULTING ENGINEERS

J.R.B. 721-3464 J.R.B./I.S. E402



PUMP STATION OPERATING ELEVATIONS (m) INTERIM ELEVATION DESCRIPTION HIGH LEVEL ALARM AND START STANDBY PUMP 210.20 (FLOAT INTERLOCK) START DUTY PUMP ELEVATION (FLOAT INTERLOCK) 209.90 START STANDBY PUMP (PLC) 209.80 START DUTY PUMP (PLC) 209.60 STOP ALL PUMP (PLC) 209.20 STOP ALL PUMPS (FLOAT INTERLOCK) 208.90 WET WELL FLOOR ELEVATION 208.40

1 PLC-1 COMMUNICATION ARCHITECTURE CONFIGURATION

E403 SCALE: N.T.S.

GENERAL NOTES:

1. ABOVE PLC-1 COMMUNICATION ARCHITECTURE INDICATES EQUIPMENT MOUNTED INSIDE THE PLC PANEL.
2. ETHERNET SWITCH MUST BE PROVIDED INSIDE THE PLC PANEL.

ELECTRICAL CONTRACTOR TO PROVIDE SHOP DRAWINGS C/W EQUIPMENT LAYOUTS, SPECIFICATIONS & WIRING SCHEMATICS FOR APPROVAL PRIOR TO ORDER OR CONSTRUCTION.

COORDINATE ALL REQUIREMENTS TO THE TOWN OF BLUE MOUNTAIN AND THEIR AUTHORIZED CONTRACTOR FOR ALL PUMP, PLC AND OPERATION REQUIREMENTS.

REFER TO EATON VFD DRAWINGS FOR LATEST SCHEMATICS.

PLC SHALL BE ALLEN BRADLEY COMPACT LOGIX 5370 1769-L33ER.
CELL MODEM BY CRADLEPOINT COR IBR900 SERIES MODEL NO. MAI-0900600-NNA

8. DIALER SHALL BE RACO. IT SHALL INCLUDE PROVISION FOR SERIAL PRINTER PORT CONNECTION RJ45.

9. PUMP MOTOR SPEED CONTROL ENABLED AT PLC CUBICLE VIA TOUCH SCREEN, AND VFD KEYPAD WHEN IN VFD MODE.

DRAWING NOTES:

- 1) UPS TO BE RATED TO PROVIDE MINIMUM 60 MINUTES RUN TIME COORDINATE WITH TOWN OF BLUE MOUNTAIN IF ADDITIONAL AMOUNT OF TIME IS REQUIRED.
- 2 ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL BACK UP AUTODIALER FOR STATION ALARMING, SEE PCN FOR EXACT CONFIGURATION AND REQUIREMENTS.
- 3 AUTHORIZED TOWN'S REPRESENTATIVE SHALL CONNECT TO THIS SEWAGE PUMPING STATION WITH THE TOWN'S MAIN WWTP.

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CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION. 4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH		5	ISSUED FOR ADDENDUM #1/1	2024/02/09
ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.		6	ISSUED FOR APPROVAL	2024/03/08
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.		7	ISSUED FOR APPROVAL REV 1/2	2024/05/24
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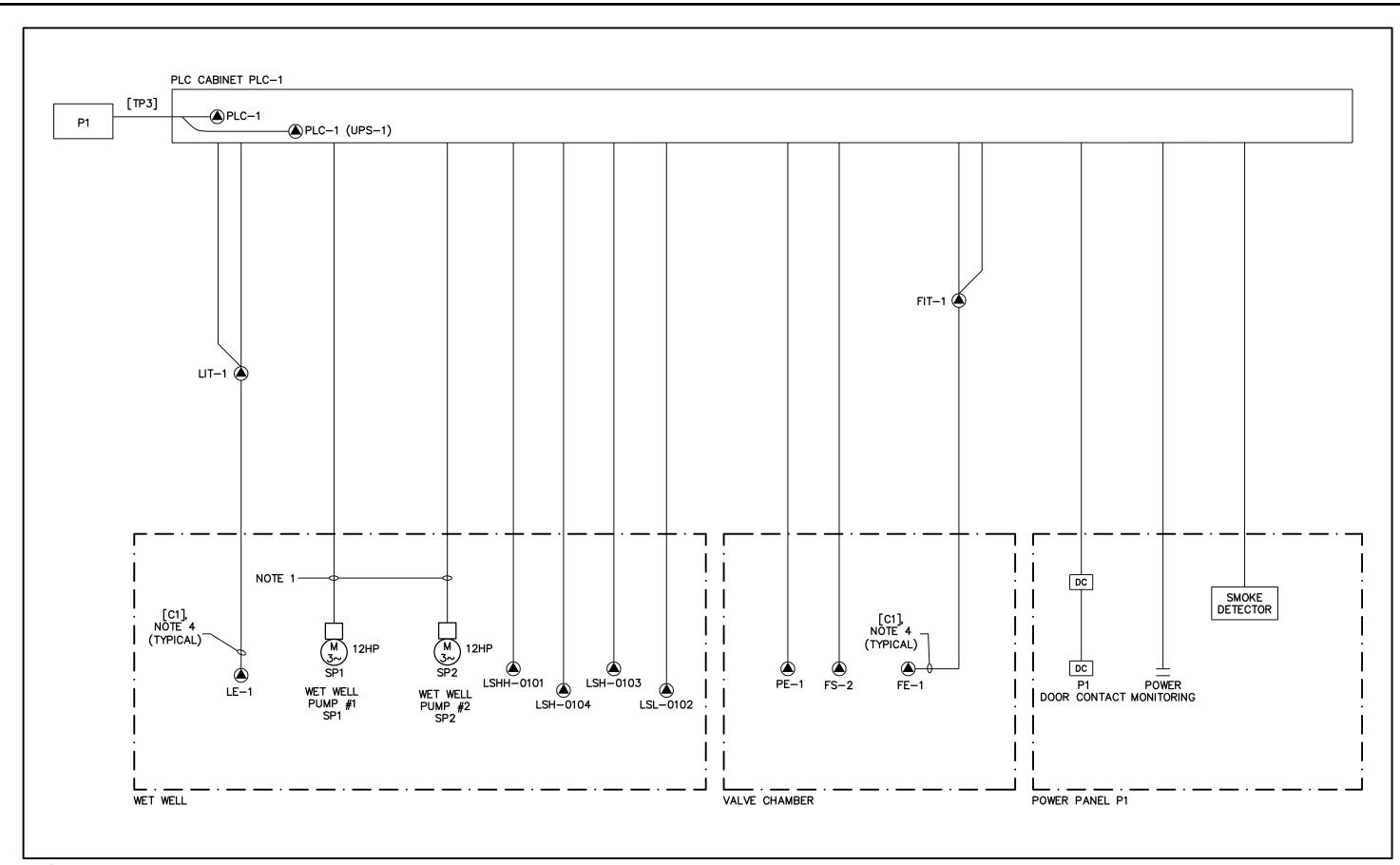
HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 2 OF 3)

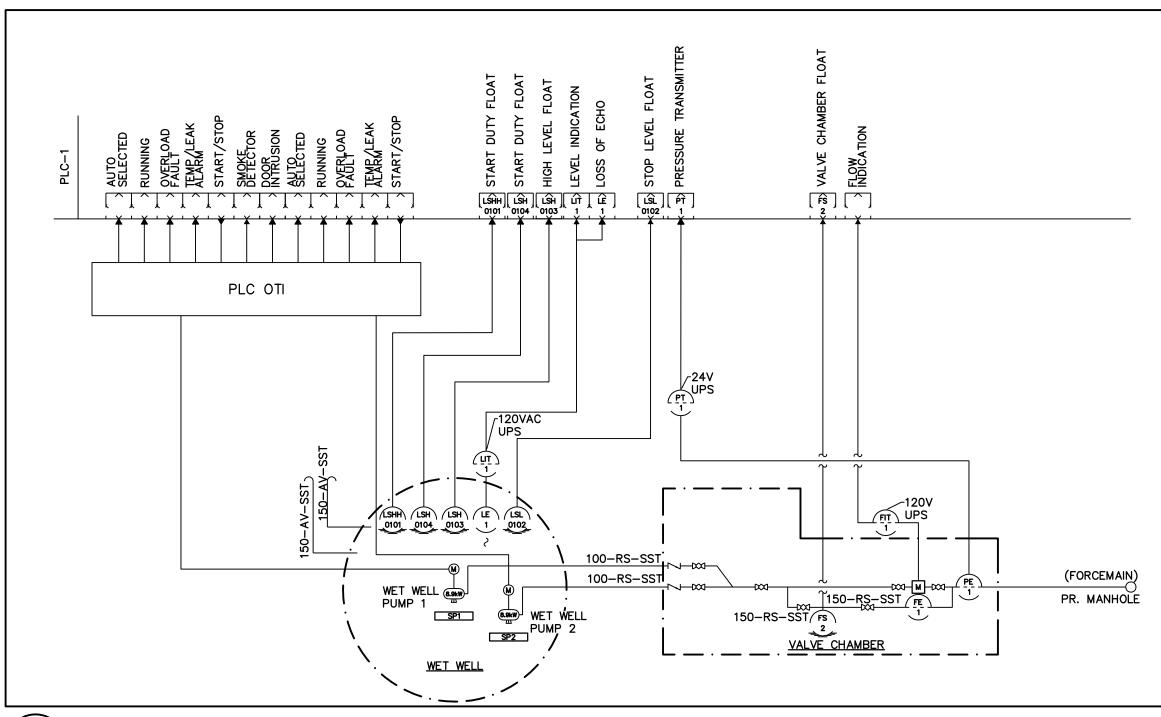


 Drawn By
 J.R.B.
 Design By
 J.R.B./I.S.
 Project
 721—3464

 Check By
 R.T.
 Check By
 J.G.L.
 Drawing
 E403



1 CONTROL CABLE BLOCK DIAGRAM E404 SCALE: N.T.S.



2 CONTROL SCHEMATIC P&ID E404 SCALE: N.T.S.

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No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 90% DETAILED DESIGN	2023/03/21
2	ISSUED FOR CLIENT REVIEW - IFT	2023/12/15
3	ISSUED FOR 90% DETAILED DESIGN REV 1	2024/01/03
4	ISSUED FOR TENDER	2024/01/22
5	ISSUED FOR ADDENDUM #1/1	2024/02/09
6	ISSUED FOR APPROVAL	2024/03/08
7	ISSUED FOR APPROVAL REV 1/2	2024/05/24
		· ·

GENERAL NOTES:

PLEASE REFER TO SEWAGE PUMP ELEMENTARY CONTROL DIAGRAM FOR CONNECTIONS OF SP1 AND SP2. ELECTRICAL CONTRACTOR TO COORDINATE THE LOCATION OF ALL DEVICES ON SITE PRIOR TO INSTALLATION.

4. ALL CONDUITS FROM SENSOR ELEMENTS, INCLUDING 'LE-*' AND 'FE-*' TO THEIR RESPECTIVE TRANSMITTERS

SUITABLE EYS SEAL FOR CONDUITS EXITING CLASSIFIED AREA.

SHALL BE PVC COATED RGS.

5. ALL CONDUITS IN NON—HAZARD RATED AREAS SHALL BE PVC.

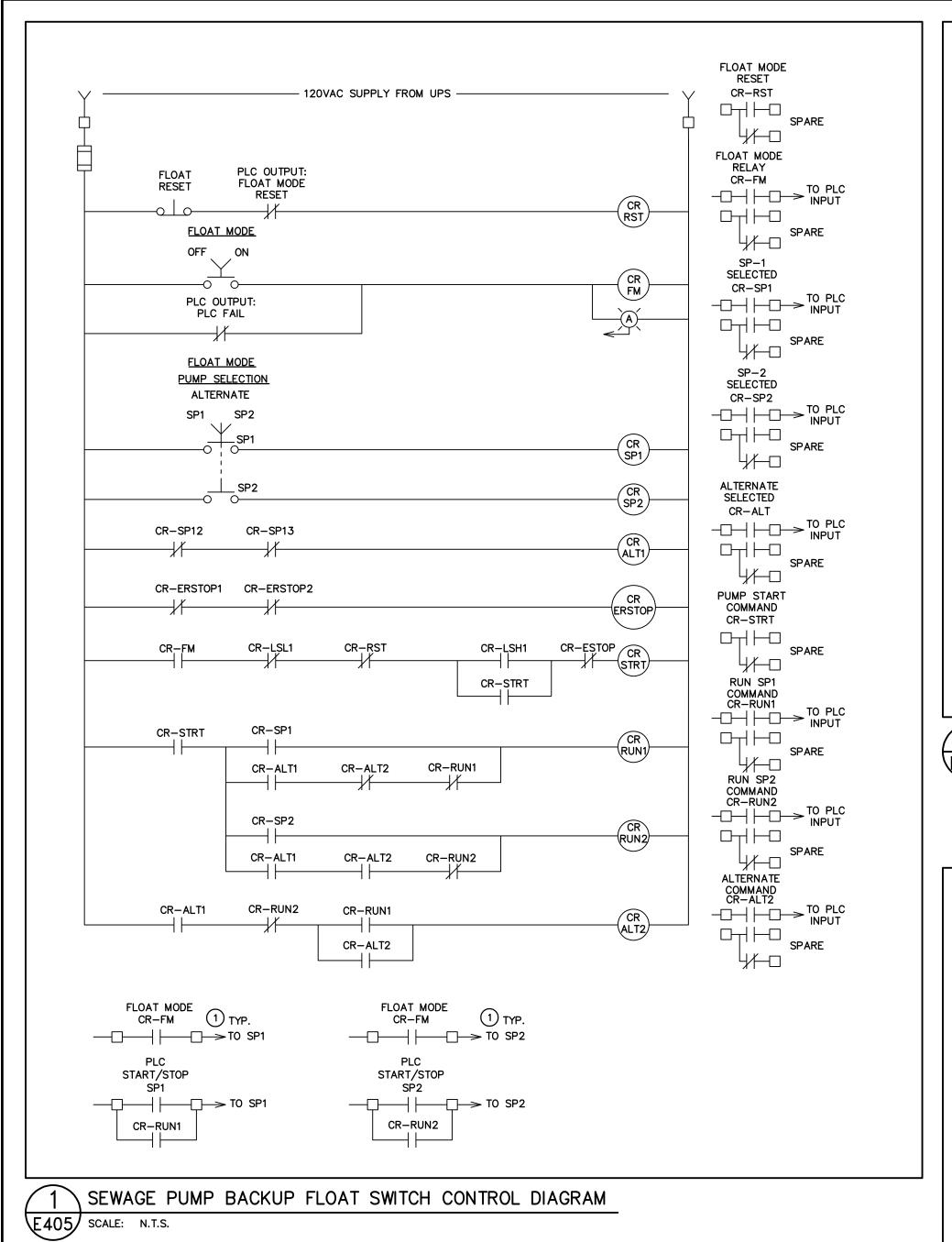
ALL CONDUITS WITHIN ZONE 2 AREA SHALL BE PVC COATED RGSC. ELECTRICAL CONTRACTOR TO PROVIDE

HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

ELECTRICAL SCHEMATICS & BLOCK DIAGRAMS (SHEET 3 OF 3)

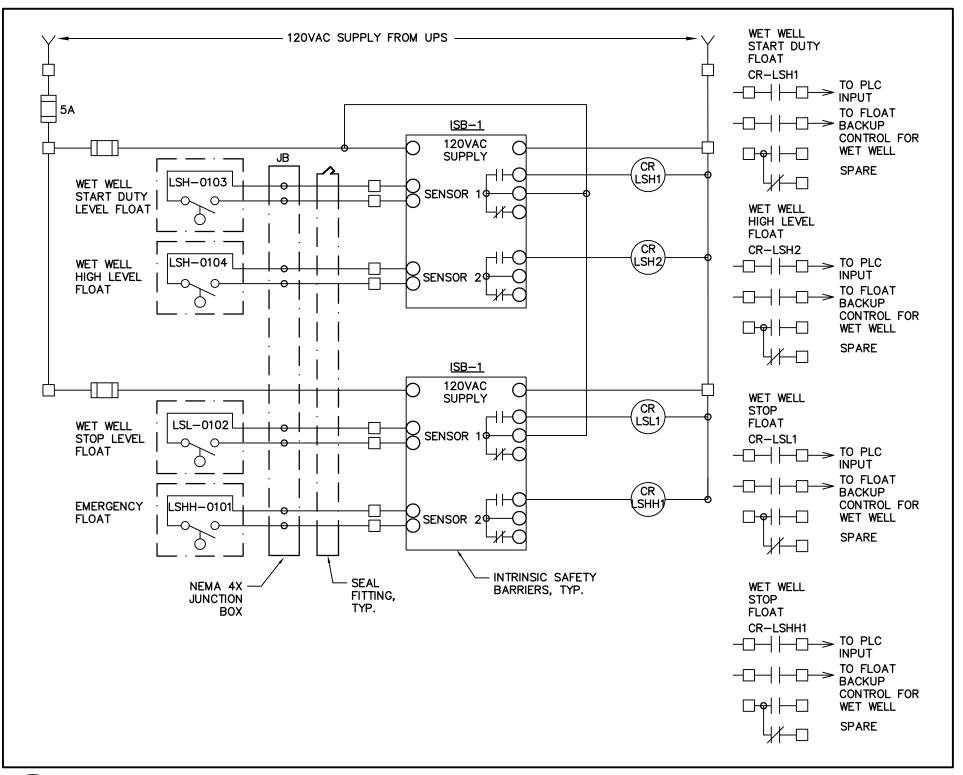


Drawn By	J.R.B.	Design By	J.R.B./I.S.	Project	721-3464
Check By	R.T.	Check By	J.G.L.	Drawing	E404



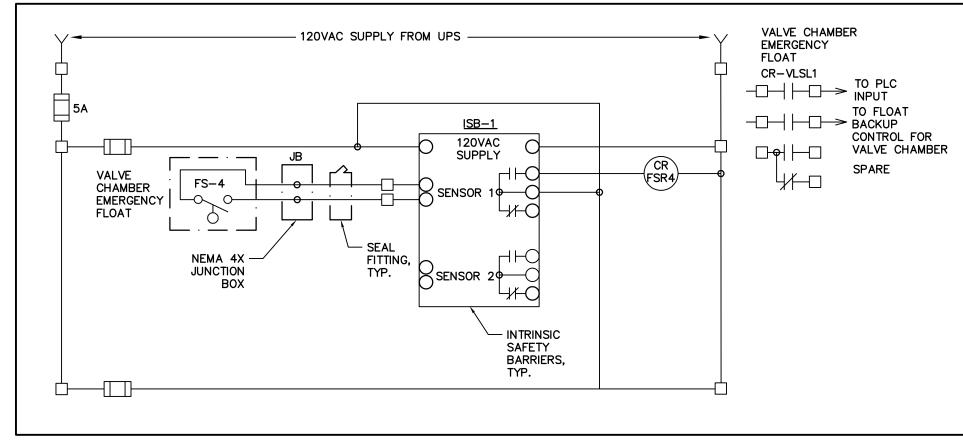
DRAWING NOTE:

1) PLEASE REFER TO SEWAGE PUMP ELEMENTARY CONTROL DIAGRAM FOR CONNECTIONS OF SP1 AND SP2.



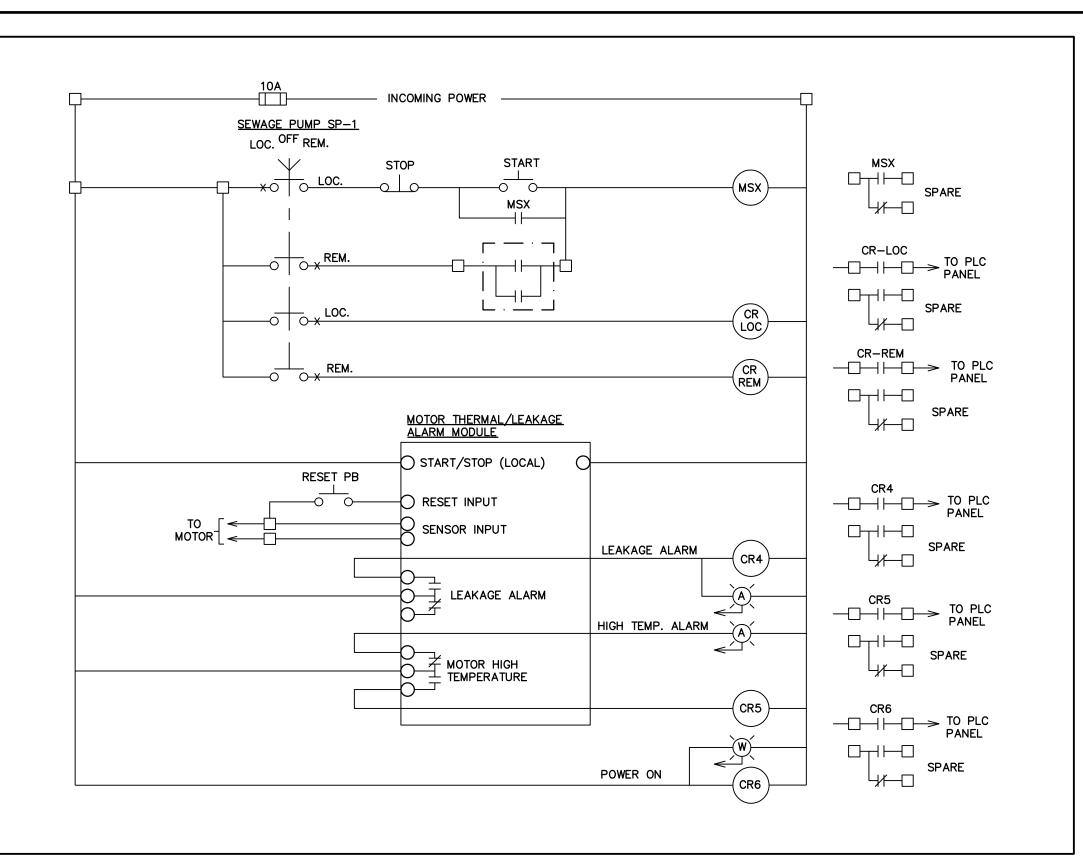
WET WELL FLOAT SWITCH CONTROL DIAGRAM

E405 SCALE: N.T.S.

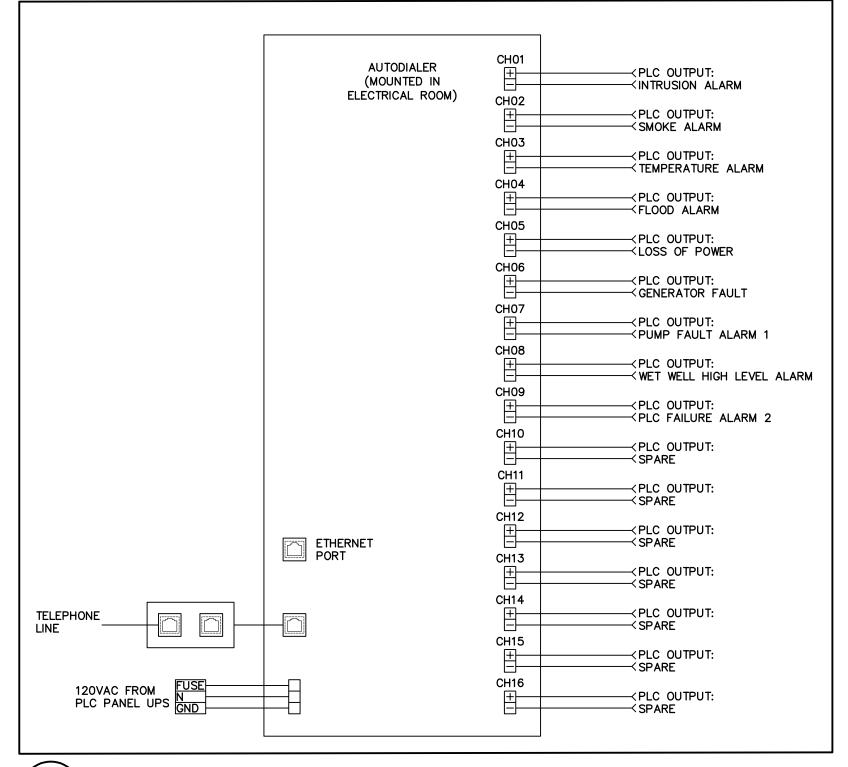


VALVE CHAMBER FLOAT SWITCH CONTROL DIAGRAM

E405 SCALE: N.T.S.



4 SEWAGE PUMP ELEMENTARY CONTROL DIAGRAM E405 SCALE: N.T.S.



5 AUTODIALER DIAGRAM
E405 SCALE: N.T.S.

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HOME FARM
CHANNEL CONSTRUCTION
TOWN OF THE BLUE MOUNTAINS

SEWAGE PUMPING STATION CONTROL DIAGRAMS



J.R.B. Design By J.R.B./I.S. Project 721—3464

heck By R.T. Check By J.G.L. Drawing E405

