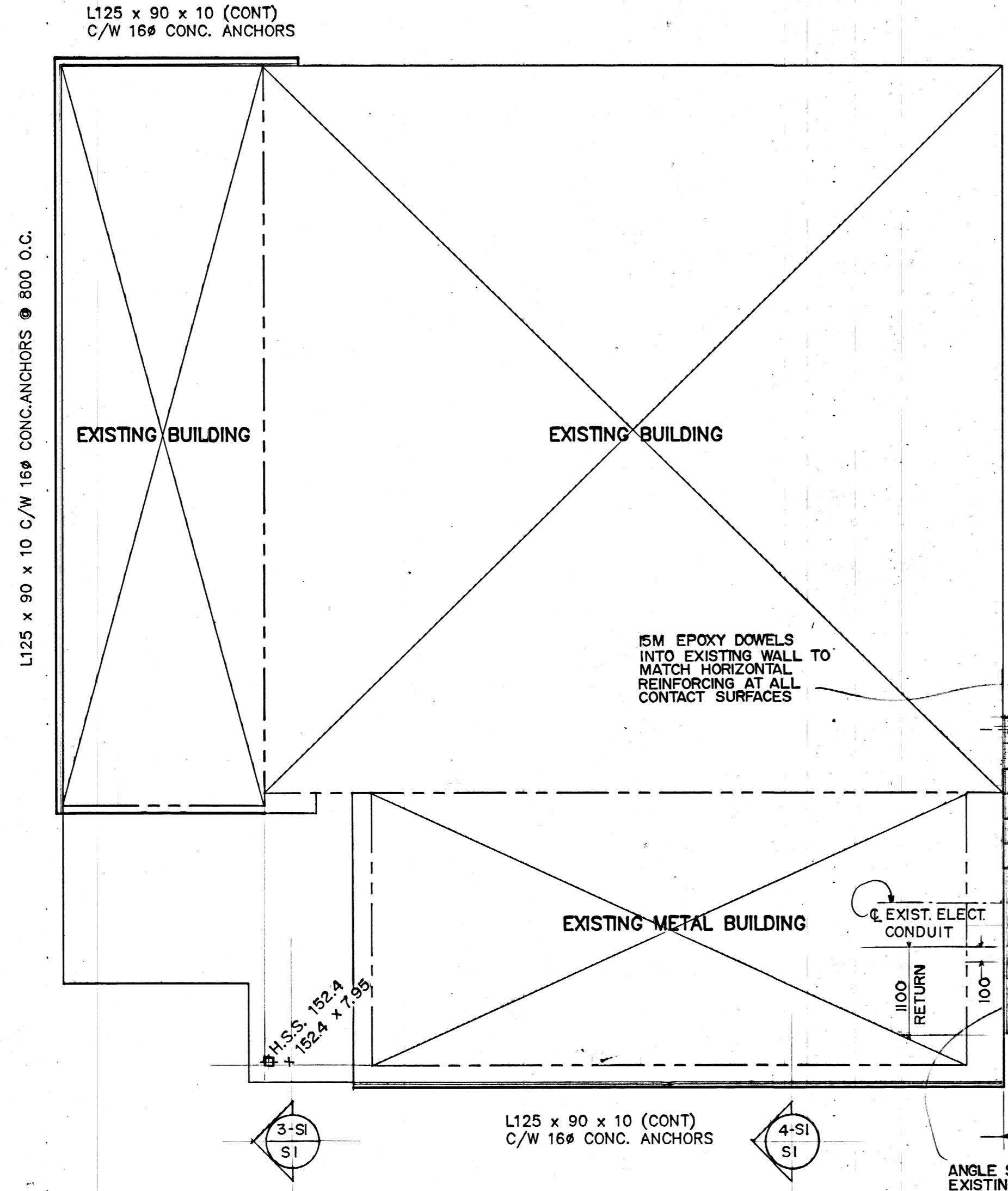
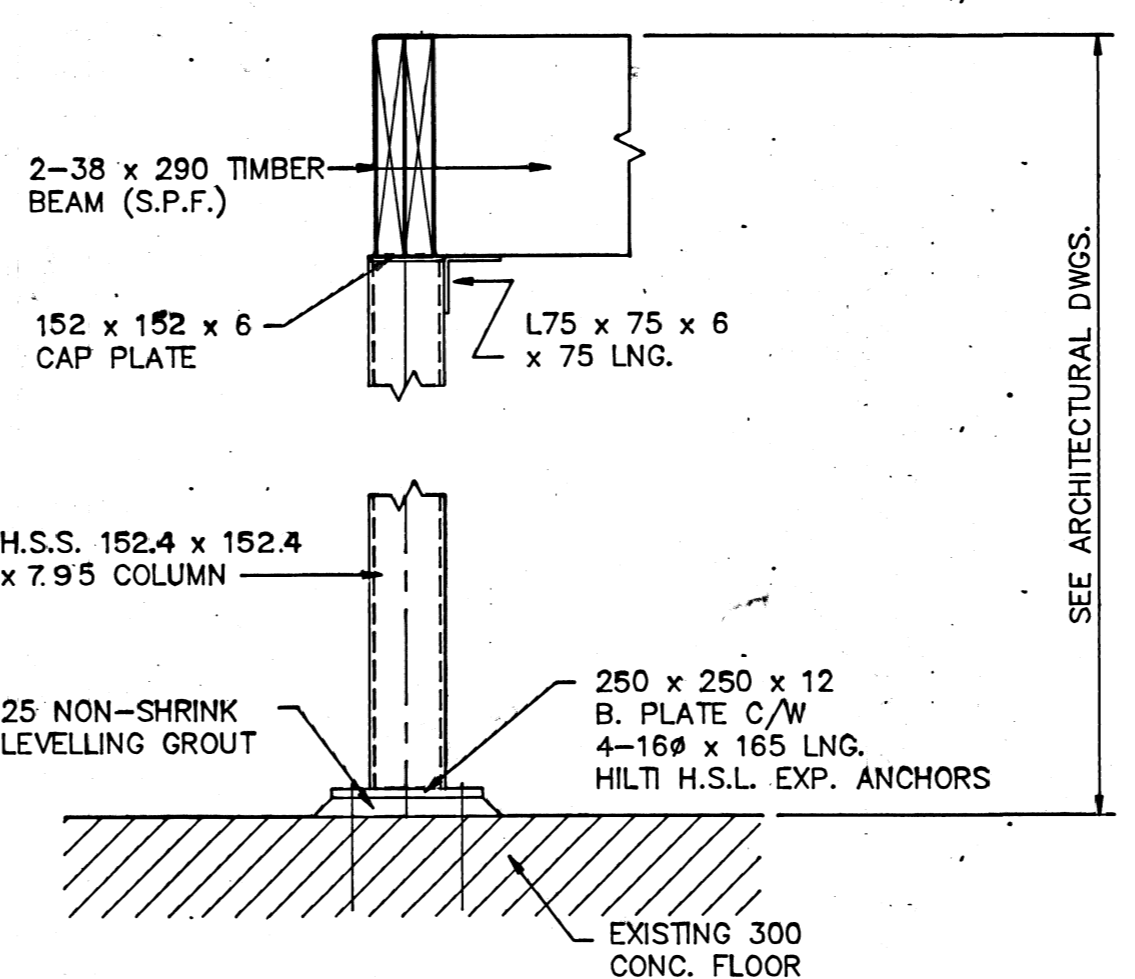


REF. OF DRAWING No. **LD-963**
DETAILS FILE # **LD 10315**



FOUNDATION PLAN



3-SI SECTION

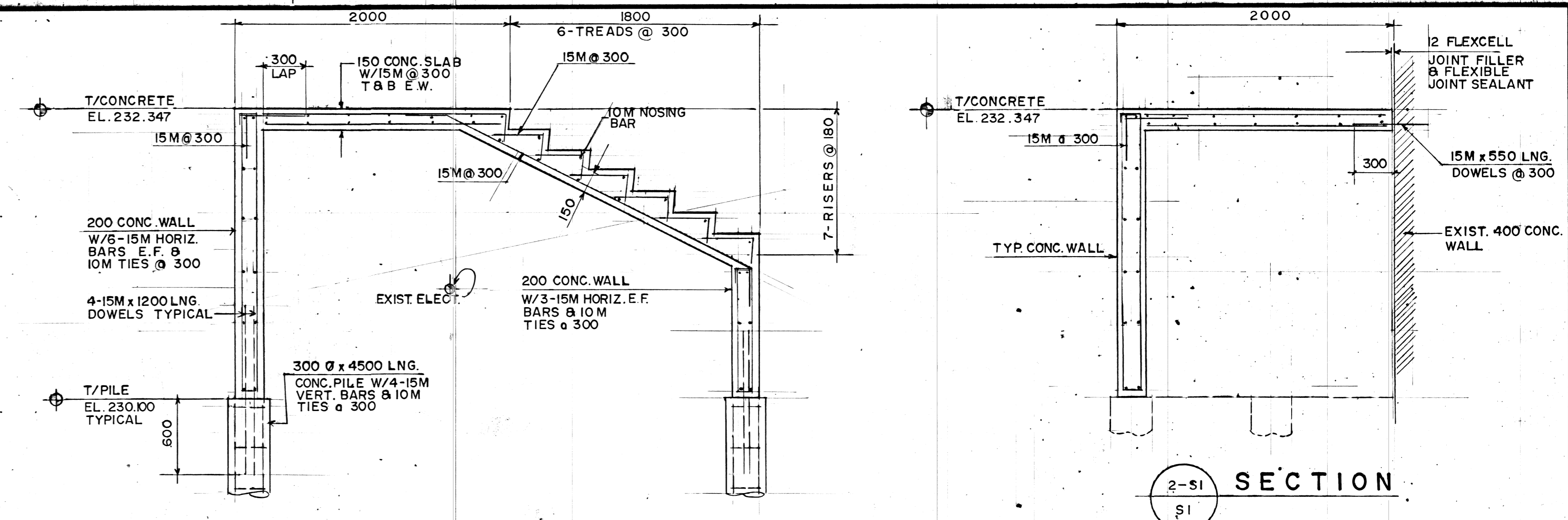
UNDERGROUND STRUCTURES

LOCATIONS OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE, BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

- GENERAL STRUCTURAL NOTES:**
- GENERAL**
 - THESE GENERAL NOTES ARE TO BE READ AS PART OF THE SPECIFICATIONS. THE DRAWINGS AND SPECIFICATIONS AS INSTRUMENTS OF SERVICE ARE THE PROPERTY OF THE ENGINEER. THE COPYRIGHT IN SAME BEING RESERVED TO HIM. NO REPRODUCTION IS PERMITTED WITHOUT HIS WRITTEN PERMISSION AND WHEN MADE SHALL BEAR THE ENGINEER'S NAME.
 - THE MANUFACTURING AND CONSTRUCTION OF THE COMPONENTS AND OF THE BUILDING, AND THE MATERIALS USED, TO BE VERIFIED BY A QUALIFIED PERSON TO MEET SPECIFICATION.
 - TOP OF MAIN FLOOR IS ELEVATION 232.000. THIS ELEVATION IS EQUAL TO GEODETIC 232.347.
 - PRIOR TO CONSTRUCTION, VERIFY DIMENSIONS ON DRAWINGS AND REPORT INCONSISTENCIES. DO NOT SCALE DRAWINGS.
 - DESIGN OF STRUCTURE CONFORMS TO MANITOBA BUILDING CODE.
 - LIVELOAD MAIN FLOOR: 100 psf (4.8 kN/m²).
 - LIVELOAD ROOF: 36 psf (1.7 kN/m²) WITH PROVISIONS AS PER BUILDING CODE FOR SNOW ACCUMULATION.
 - DEADLOAD AS INDICATED BY CONSTRUCTION.
 - REFER TO ARCHITECTURAL DRAWINGS FOR ITEMS TO BE CAST INTO CONCRETE AND CONCRETE FINISHES AND DETAILS.
 - FOUNDATION - PILE FRICITION**
 - REPORT OF SOIL CONDITION IS AVAILABLE FOR STUDY.
 - PILES ARE DESIGNED FOR 325 psf (kPa) FRICTION WITH SURROUNDING SOIL. DESIGN OF PILE FOUNDATION MAY NEED TO BE REVISED TO MEET ACTUAL SOIL CONDITIONS ENCOUNTERED DURING INSTALLATION.
 - ARRANGE TO HAVE FOUNDATION DESIGN CRITERIA CONFIRMED ON SITE BY REGISTERED ENGINEER.
 - INSTALL PILES VERTICAL AND NO MORE THAN 1 INCH (25 mm) FROM CENTERS SHOWN, TO LENGTHS INDICATED. LENGTHS OF PILES MEASURED FROM 2 FEET (600 mm) BELOW EXISTING GRADE OR TOP OF PILES AS SHOWN ON THE DRAWINGS, WHICHEVER IS LOWER.
 - CAST-IN-PLACE CONCRETE**
 - CONCRETE WORK TO BE DONE IN ACCORDANCE WITH CAN 3-A23.1, A23.2, A23.3 - 1977, INCLUDING COLD WEATHER REQUIREMENTS WHEN THE MEAN DAILY TEMPERATURE FALLS BELOW 0°C.
 - CONCRETE MIXES SHALL BE PROPORTIONED IN ACCORDANCE WITH CAN 3-A23.1-1977 TO MEET THE FOLLOWING REQUIREMENTS:

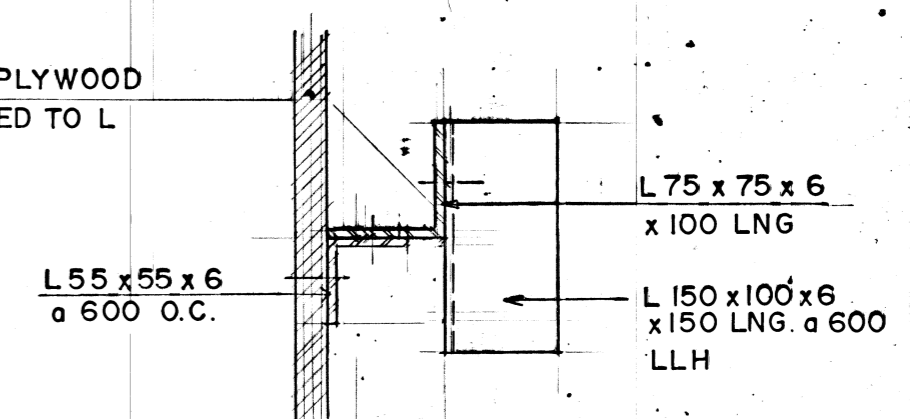
28 DAY STRENGTH	AGGREGATE SIZE	CEMENT TYPE	MAXIMUM SLUMP
PILES 25 MPa	40	50	90 ± 20
GRADE BEAMS 25 MPa	20	10	90 ± 20
MISC. CONCRETE 20 MPa	20	10	90 ± 20
 - MAXIMUM W/C RATIO FOR PILE CAPS TO BE 0.45.
 - MAXIMUM ENTRAINED AIR IN CONCRETE 5% ± 1%.
 - THE USE OF CALCIUM CHLORIDE NOT PERMITTED.
 - CONCRETE CONTRACTOR TO DESIGN ALL FORMWORK FOR LOADS AND LATERAL PRESSURES OUTLINED IN ACI STANDARD 347-88.
 - PLACE AND VIBRATE CONCRETE WITHOUT DISTURBING PLACED REINFORCING STEEL.
 - VOID FORMS TO BE CONSTRUCTED FROM Waxed CORRUGATED CARDBOARD WRAPPED IN 4 MIL (0.1 mm) POLYETHYLENE. USE WAXONITE TO PROVIDE BASE TO SUPPORT REINFORCING STEEL.
 - PROVIDE MINIMUM 6 INCHES (150 mm) VOID AT BOTTOM OF ALL GRADE BEAMS.

- REINFORCING STEEL**
 - USE DEFORMED BARS CSA 530-12-M77, GRADE 400 EXCEPT 10M BARS GRADE 500.
 - ALL REINFORCING STEEL TO BE DETAILED IN ACCORDANCE WITH CSA A23.1-1977, 1983, 1987, AND THE LATEST ACI DETAILING MANUAL.
 - CONCRETE COVER TO MAIN REINFORCING UNLESS NOTED ON DRAWINGS:
 - PILES: 2" (50 mm)
 - BEAMS: 2" (50 mm)
 - DETAIL REINFORCING STEEL WITH CORNER BARS ON EXTERIOR CORNERS; LAPS IN BEAMS, TOP BARS BETWEEN SUPPORTS AND BOTTOM BARS OVER SUPPORTS; ALL LAPS TO BE 24 x BAR DIAMETER. DO NOT WELD REINFORCING STEEL.
 - SUPPORT REINFORCING STEEL AT 30 INCHES (800 mm) EACH WAY MAXIMUM TO OBTAIN INDICATED CONCRETE COVER PRIOR TO PLACING CONCRETE.
 - TOP STEEL IN BEAMS TO BE LAPPED AT CENTER SPAN, BOTTOM STEEL TO BE LAPPED AT SUPPORTS.
 - ALL OPENINGS IN CAST-IN-PLACE CONCRETE TO BE TRIMMED WITH 2" MIN ALL AROUND ON ALL FACES 1/4" PROJECT BARS 2 FEET (600 mm) BEYOND OPENING. ALL REQUIRED OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- CARPENTRY**
 - DO CARPENTRY TO CONFORM TO CSA O86-90.
 - LOWER GRADING TO MEET GRADING RULES.
 - FRAMING LUMBER TO BE DRY DIMENSIONAL LUMBER; STUDS TO BE MINIMAL S.P.F., STUD GRADE; JOISTS, LINTELS AND BEAMS MINIMAL S.P.F., GRADE 2 UNLESS NOTED DOUGLAS FIR, GRADE 2.
 - UNLESS NOTED, SUPPORT BEAM AND LINTEL ENDS ON POSTS HAVING SAME NUMBER OF LAMINATIONS. EXTEND POSTS DOWN TO TOP OF FOUNDATION. PLACE SOLID BLOCKING BELOW POSTS WITHIN FLOOR CONSTRUCTION. IN STUD WALLS, INSTALL SOLID BLOCKING AT MID-HEIGHT AND ALONG EDGE OF PLYWOOD SHEATHING.
 - JOIST HANGERS AND FRAMING ANCHORS CAPABLE TO SUPPORT LOADS INDICATED WITH A MINIMUM CAPACITY OF 750 LB. (3.5 kN) AND TO BE MINIMAL FROM 18 GA. (1.21 mm) GALVANIZED SHEET METAL MATERIAL. NAIL TO MANUFACTURER'S INSTRUCTIONS.
 - USE COATED SPIRAL NAILS TO CSA 111.
 - DO NAILING TO STANDARD PRACTICE AS SUMMARIZED IN PART 9 OF THE MANITOBA BUILDING CODE, SUBSECTION 9-2.3.
 - TREAT ALL LUMBER IN CONTACT WITH SOIL WITH PRESERVATIVE TO CSA 011.
 - TRUSSES TO BE STANDARD ROOF TRUSSES, UNLESS OTHERWISE NOTED. DISORDERED FOR LOADINGS INDICATED. SUBMIT SHOP DRAWINGS, SEALED AND SIGNED BY REGISTERED ENGINEER FOR REVIEW, SHOWING LUMBER SIZES, SPECIES AND GRADES, PLACING OF TRUSSES, JOINT DETAILS AND CONNECTOR CAPACITIES, MEMBER FORCES, REACTIONS AND CORNERS.
 - ROOF SHEATHING TO BE SPRUCE PLYWOOD SHEATHING GRADE TO CSA 011. USE W CLIPS.

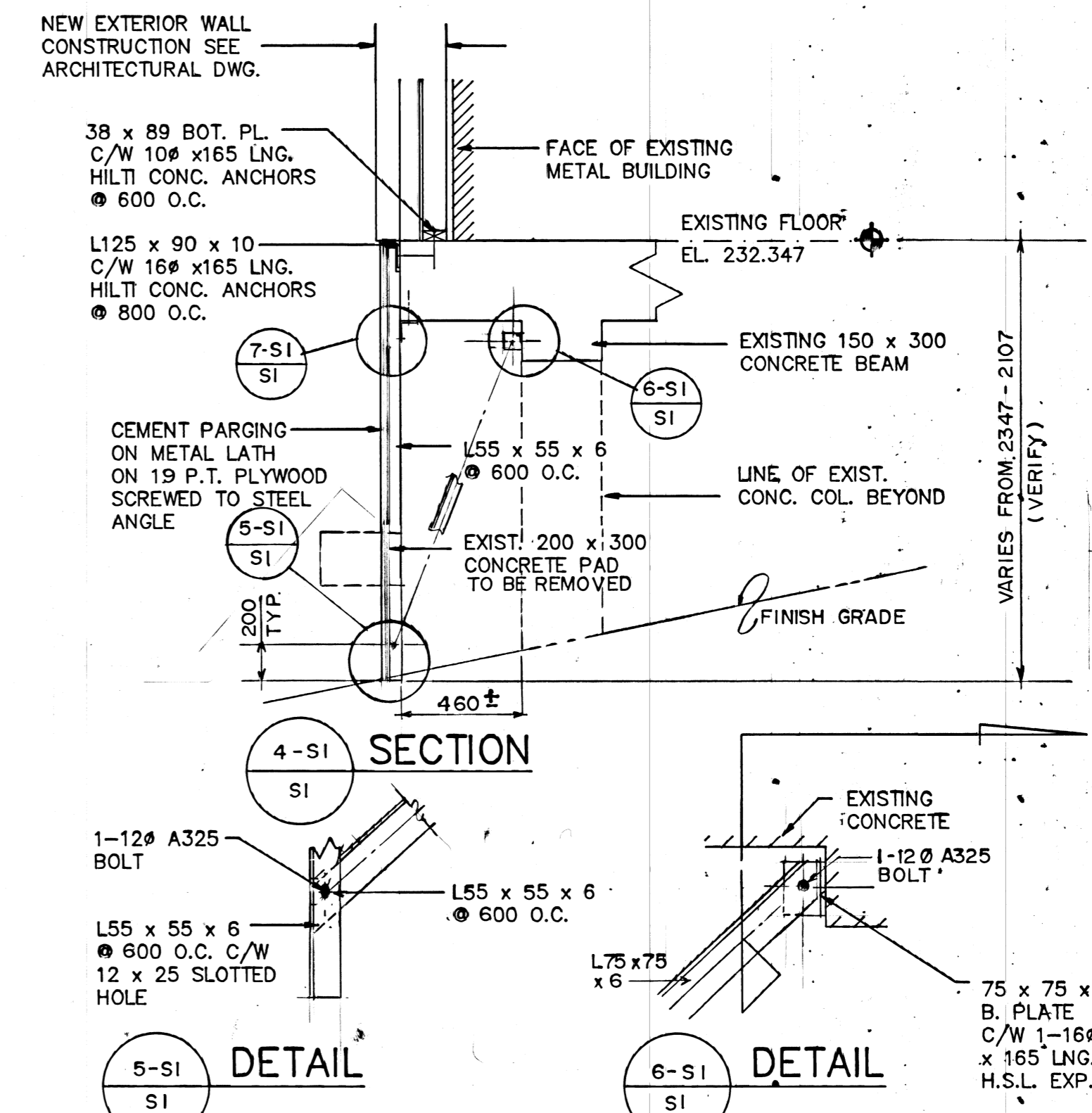


1-SI SECTION

2-SI SECTION

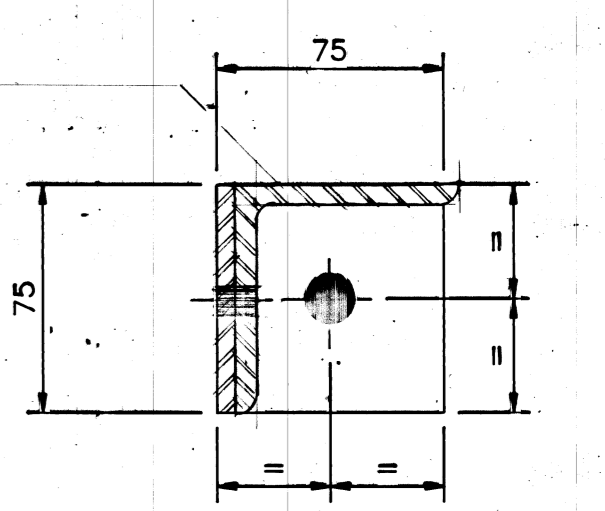


7-SI DETAIL - PLAN



4-SI SECTION

6-SI DETAIL



6-SI DETAIL

B.M.	ELEV.	DATE	BY

Raid Crowther

DESIGNED BY **H.V.P.** CHECKED BY **W.J.M.**

DRAWN BY **R.C.S.** APPROVED BY

HR. SCALE: **N.T.S.** RELEASED FOR CONSTRUCTION

VERTICAL: **N.T.S.** DATE: **89 01 13** DATE: **FEB. 16/89**

ENGINEER

H. PAUL

REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO. **60945 - SI**

THE CITY OF WINNIPEG

WORKS AND OPERATIONS DIVISION

WATERWORKS, WASTE AND DISPOSAL DEPT.

COCKBURN ST. PUMPING STATION

STRUCTURAL DETAILS

CITY DRAWING NUMBER **LD - 963**

SHEET **6** OF **8**

FILE # **LD10315**