



PLAN AT EL. 232.70  
SCALE 1:25

**STRUCTURAL NOTES**

1. DO NOT SCALE DRAWINGS.
2. ALL DIMENSIONS IN MILLIMETERS. ALL ELEVATIONS IN METERS.
3. READ THESE DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS AND WITH ALL OTHER DRAWINGS PERTINENT TO THIS STRUCTURE. NOTIFY THE CONTRACT ADMINISTRATOR OF ANY DISCREPANCIES OR CONFLICTING INFORMATION.
4. VERIFY ALL DIMENSIONS, ELEVATIONS AND SCOPE OF WORK PRIOR TO START OF CONSTRUCTION.
5. ASSUMED LIVE LOAD ON TRASH RACK STRUCTURE = 7.2 kPa (150 psf).
6. CONCRETE CLEAR COVER TO REINFORCEMENT UNLESS NOTED OTHERWISE:
 

EXPOSED TO EARTH	75 mm
ALL OTHER CONCRETE	50 mm
7. CONCRETE MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FOLLOWING CSA STANDARDS:
  - A23.1 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
  - A23.2 METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE
  - A23.3 DESIGN OF CONCRETE STRUCTURES
8. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 35 MPa AND ENTRAINED AIR CONTENT OF BETWEEN 4% AND 6%. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. REINFORCING STEEL SHALL BE GRADE 400 IN ACCORDANCE WITH CSA STANDARD G30.18, BILLET STEEL BARS FOR CONCRETE REINFORCEMENT. REINFORCEMENT SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH CSA STANDARD G164 (HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES) TO A MINIMUM ZINC THICKNESS OF 610 g/m<sup>2</sup>.
10. STAINLESS STEEL SHALL BE GRADE 304 IN ACCORDANCE WITH ASTM STANDARD A240.
11. STRUCTURAL STEEL SHALL BE GRADE 300W IN ACCORDANCE WITH CSA STANDARD G40.20/G40.21 (GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL/ STRUCTURAL QUALITY STEEL).
12. ALL STEEL FABRICATIONS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH CSA STANDARD G164 (HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES) TO A MINIMUM ZINC THICKNESS OF 610 g/m<sup>2</sup>.
13. CHAMFER ALL EXPOSED CONCRETE CORNERS 20 mm.
14. PROVIDE DISCONTINUOUS SHEAR KEYS AT ALL COLD JOINTS. SHEAR KEYS SHALL BE MINIMUM 38 X 89 IN SIZE AND SHALL BE IN SEGMENTS BETWEEN 300 mm AND 400 mm LONG. THE GAP BETWEEN ADJACENT KEYS SHALL ALSO BE BETWEEN 300 mm AND 400 mm IN LENGTH.
15. ACCESS LADDER AND HANDRAIL SHALL BE FIBERGLASS, STRONGWELL SAFRAIL OR APPROVED EQUAL ONLY. CONNECTION SPACING AS RECOMMENDED BY THE SUPPLIER, MAXIMUM 1800 ON CENTER. DESIGN LADDER TO SAFELY SUPPORT A MINIMUM OF 1.5 kN ON ANY PARTICULAR RUNG AND A TOTAL OF 5 kN ON THE LADDER SIMULTANEOUSLY. ASSUME LATERAL FORCE EQUAL TO 25% OF THE SPECIFIED VERTICAL FORCE AND ALIGNED IN ANY DIRECTION. DESIGN HANDRAIL IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA (NBC).
16. ANCHORS SHALL BE HILTI HYVA ADHESIVE SYSTEM OR APPROVED EQUAL ONLY. ANCHOR RODS SHALL BE 12.7 DIAMETER STAINLESS STEEL HILTI HAS OR APPROVED EQUAL IN ACCORDANCE WITH B6.
17. FIBERGLASS STRUCTURAL SECTIONS SHALL BE STRONGWELL EXTREN OR APPROVED EQUAL ONLY. SUPPLIER SHALL VERIFY THE ADEQUACY AND SUITABILITY OF THE SECTIONS SHOWN ON THE DRAWINGS AND NOTIFY THE CONTRACT ADMINISTRATOR OF ANY CONCERNS.
18. PIPE SLEEVES FOR MOUNTING OF THE PUMPS SHALL PREFERABLY BE INSTALLED AS CONSTRUCTION PROCEEDS UPWARDS FROM THE FOUNDATION. IF THE SLEEVES CANNOT BE PROCURED IN TIME TO PERMIT THIS, THE FOLLOWING ADJUSTMENTS SHALL BE MADE:
  - THE 'OPTIONAL CONSTRUCTION JOINT' SHOWN ON SHEETS 8 AND 12 SHALL BE INCLUDED. THIS OPTIONAL CONSTRUCTION JOINT SHALL NOT OTHERWISE BE INCLUDED. ALL REINFORCEMENT SHOWN ON THE DRAWINGS SHALL BE INSTALLED AND CARRIED THROUGH THIS JOINT AS NECESSARY.
  - THE CENTRAL WALL SEPARATING THE TWO PUMP CHAMBERS SHALL BE POURED TO A THICKNESS OF 300 mm TO ELEVATION 222.10. KEYS SHALL BE PROVIDED ON BOTH SIDES OF THIS WALL TO MATCH THE ARRANGEMENT SHOWN FOR THE OTHER SIDES OF THE LOWER PUMP CHAMBERS.
  - WHEN THE SLEEVES ARE AVAILABLE, THEY SHALL BE FIXED IN POSITION AND THE SPACE SURROUNDING THEM FILLED USING A SPECIAL HIGH SLUMP CONCRETE MIX CONTAINING AGGREGATE MAXIMUM 10 mm IN SIZE. TAKE SPECIAL CARE TO ENSURE THAT ALL KEYS ARE FULLY FILLED.
19. WATER TABLE ELEVATIONS SHOWN ARE APPROXIMATE. CONFIRM WATER ELEVATION AND DEWATERING REQUIREMENTS.
20. BACKFILL WITH GRANULAR MATERIAL ONLY WITHIN 2 METERS OF EXTERIOR WALLS COMPACTED TO 95% OF MAXIMUM DENSITY. CAP THE GRANULAR MATERIAL WITH MINIMUM 1 METER THICK CLAY SEAL SLOPING AWAY FROM THE STRUCTURE AT MINIMUM 2% SLOPE.
21. APPLY VAPOUR BARRIER TO THE UNDERSIDE OF THE TOP SLAB AND EXTENDING 1800 DOWN INSIDE FACE OF EXTERIOR WALLS.



LOCATION APPROVED UNDERGROUND STRUCTURES	B.M. ELEV.	DESIGNED BY	KGW
ORIGINAL SIGNED BY DERRICK SAEDEL	25/03/09	DRAWN BY	RCB
SUPV. U/G STRUCTURES COMMITTEE	DATE	CHECKED BY	ORIGINAL SIGNED BY JAMES SKEET
		APPROVED BY	ORIGINAL SIGNED BY NORM ULYATT
		HOR. SCALE	AS SHOWN
		VERTICAL	AS SHOWN
		DATE	01-01-09
		NO. REVISIONS	
		DATE	
		BY	
		DATE	25/03/09

NOTE:	
LOCATION 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.	

RELEASING AUTHORITY	
DATE	25/03/09



<b>THE CITY OF WINNIPEG TRANSIT DEPARTMENT</b>	
SOUTHWEST RAPID TRANSIT CORRIDOR - STAGE 1 LAND DRAINAGE PUMPING STATION & ASSOCIATED WORKS	CITY DRAWING NUMBER <b>LD-5306</b>
STRUCTURAL GENERAL LAYOUT	
SHEET <b>7</b> OF <b>25</b>	
<b>C2-B2100-T</b>	