

# STRUCTURAL NOTES

## GENERAL NOTES:

1. THE DESIGN AND CONSTRUCTION OF ALL WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST EDITIONS OF PART 9 OF THE NATIONAL BUILDING CODE, THE ONTARIO BUILDING CODE, LOCAL REGULATIONS AND BYLAWS AND THE OCCUPATIONAL HEALTH AND SAFETY ACT. THIS DESIGN APPLIES TO RESIDENTIAL BUILDINGS ONLY.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND MEASUREMENTS AT THE SITE AND REPORT TO THE ENGINEER ANY DISCREPANCIES OR UNSATISFACTORY CONDITIONS WHICH MAY ADVERSELY AFFECT THE PROPER COMPLETION OF THE PROJECT BEFORE PROCEEDING WITH THE WORK.
3. AN AUTHORIZED FOX BLOCKS WALL TRAINED INSTALLER SHALL BE CONTACTED BY THE CONTRACTOR FOR INSPECTIONS OF THE FOUNDATION, REINFORCING STEEL PLACEMENT, ONLY IF REQUIRED BY THE BUILDING OFFICIAL.

## DESIGN PARAMETERS:

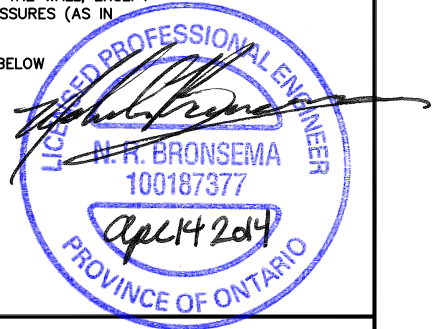
1. DESIGN LOADS ARE UNFACTORED UNLESS NOTED OTHERWISE:
  - SOIL PRESSURE (LIVE) =  $480 \text{ kg/m}^2$  EQUIVALENT FLUID DENSITY
  - DRAINED EARTH IN ACCORDANCE WITH OBC
  - AREA SURCHARGE (LIVE) =  $2.4 \text{ kPa}$  (50 psf)  $K_a = 0.33$
2. FOUNDATIONS TO BEAR DIRECTLY ON MATERIAL SUITABLE FOR  $75 \text{ kPa}$  (1,566 psf) BEARING PRESSURE, UNLESS NOTED. REFER TO SOIL ENGINEERS REPORT FOR FOUNDATION DEPTHS, BEARING PREPARATION, ETC. AS MAY BE REQUIRED BY LOCAL BUILDING OFFICIAL.
3. SOIL BEARING CAPACITY SPECIFIED MAY NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO THE PLACING OF FOUNDATIONS AND SLABS, ANY NON-COMFORMANCE WITH THE SPECIFIED MINIMUM CATEGORIES MUST BE IMMEDIATELY REPORTED TO THE STRUCTURAL ENGINEER.

## CONCRETE AND REINFORCING STEEL:

1. CONCRETE WORK SHALL CONFORM TO THE LATEST EDITIONS OF CSA. A23.1,2&3 FOR MATERIALS AND WORKMANSHIP.
2. USE MIN. GRADE 400(60 ksi) YIELD STRENGTH DEFORMED REBAR PLACED IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE.
3. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE:
  - 20 MPA (2,900 psi) FOR FOOTINGS
  - 20 MPA (2,900 psi) FOR WALLS.
4. ALL CONCRETE SHALL BE TESTED BY A CSA CERTIFIED CONCRETE TESTING LABORATORY.
5. USE HIGH FREQUENCY VIBRATION TO PLACE ALL CONCRETE.
6. ALL CONCRETE SHALL BE KEPT MOIST DURING THE FIRST THREE DAYS OF CURING.
7. TAKE ADEQUATE MEASURES TO PROTECT CONCRETE FROM EXPOSURE TO FREEZING TEMPERATURES AT LEAST 7 DAYS AFTER CONCRETE PLACEMENT. COLD WEATHER PROTECTION IS REQUIRED FOR ALL CONCRETE PLACED WHERE IT IS FORECASTED THAT THE TEMPERATURE WILL DROP BELOW  $5^\circ\text{C}$  WITHIN 24 HOURS OF PLACEMENT. PROTECTION PROVIDED, INCLUDING INSULATED TARPS, POLY COVERED STRAW, SUPPLEMENTAL HEAT AND/OR CHEMICAL ADMIXTURES, IS TO BE SUFFICIENT TO MAINTAIN A MINIMUM CURING TEMPERATURE OF  $10^\circ\text{C}$  FOR 3 DAYS.
8. MAINTAIN THE FOLLOWING CLEAR CONCRETE COVER TO REINFORCEMENT:
  - 75 mm (3 inches) FOR CONCRETE PLACED AGAINST THE EARTH (BOTTOM OF FOOTINGS).
9. MINIMUM BAR LAP LENGTH SHALL BE:
  - 350 mm (14 inches) FOR 10M (No. 4) BARS

## FOUNDATIONS:

1. FOOTINGS TO BEAR DIRECTLY ON UNDISTURBED NATIVE SOILS OR APPROVED ENGINEERED FILL SUITABLE FOR MINIMUM DESIGN BEARING PRESSURES. (REFER TO SOIL ENGINEERS REPORT FOR RECOMMENDATIONS).
2. SOFT AREAS UNCOVERED DURING EXCAVATION SHALL BE SUB-EXCAVATED TO SOUND MATERIAL AND FILLED WITH CLEAN, FREE DRAINING GRANULAR SOIL COMPACTED TO 100% STANDARD PROCTOR DRY DENSITY (SPDD).
3. DO NOT EXCEED A RISE OF 7 IN A RUN OF 10 (35 DEGREES) IN THE LINE OF SLOPE BETWEEN ADJACENT FOOTING EXCAVATIONS OR ALONG STEPPED FOOTINGS. USE STEPS NOT EXCEEDING 600 mm (24 INCHES) IN HEIGHT AND NOT LESS THAN 600 mm (24 INCHES) IN LENGTH, IN ACCORDANCE WITH OBC 9.15.3.9.
4. MAINTAIN UNSUPPORTED SIDES OF EXCAVATION ONLY IF SAFE INCLINATION OF THE SIDES OF THE EXCAVATION IS PROVIDED IN ACCORDANCE WITH THE SOILS ENGINEER'S RECOMMENDATIONS.
5. ERECT, MAINTAIN, AND IF REQUIRED, REMOVE A SUPPORTING SHORING SYSTEM ALONG THE SIDES OF THE EXCAVATION, DESIGNED BY A PROFESSIONAL ENGINEER, IN ACCORDANCE WITH THE SOILS REPORT AND WPHMS OR OHSAS STANDARDS.
6. PROTECT SOIL FROM FREEZING ADJACENT TO AND BELOW ALL FOOTINGS.
7. BACKFILL AGAINST FOUNDATION WALL IN SUCH A MANNER THAT THE LEVEL OF BACKFILL MATERIAL ON ONE SIDE OF THE WALL IS NEVER MORE THAN 450 mm (18 INCHES) DIFFERENT FROM THE LEVEL ON THE LOWER SIDE OF THE WALL, EXCEPT WHERE TEMPORARY SUPPORT FOR THE WALL IS PROVIDED OR WALLS ARE DESIGNED FOR SUCH UNEVEN PRESSURES (AS IN ATTACHED DETAIL).
8. SHOULD UNDERGROUND WATER BE ENCOUNTERED, PROVIDE DE-WATERING FACILITIES TO KEEP WATER LEVEL BELOW FOOTINGS AND POUR AN ADDITIONAL 75 mm (3") LAYER OF LEAN CONCRETE UNDER ALL FOOTINGS.
9. LOCATE ALL FOOTINGS AND PIERS CENTRALLY UNDER COLUMNS AND WALLS UNLESS NOTED OTHERWISE.



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Title:

**KNEE WALL STRUCTURAL NOTES**

Date:

**APR. 2014**

Drawing:

**KW-1**