

# STRUCTURAL NOTES

(DETAIL C-14, C-15, C-16)

## 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 (CAN), SECTION R404/R611 OF THE 2012 IRC, SECTIONS R404 AND R608 OF THE 2015 IBC, 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 NUDURA 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) = 20.4 kN/m<sup>2</sup> (130 pcf)  
DRAINED EARTH IN ACCORDANCE WITH NBC & IRC (CAN)
  - AREA SURCHARGE (LIVE) = 2.4 kPa (50 psf) (CAN AND USA)
2. FOUNDATIONS TO BEAR DIRECTLY ON MATERIAL SUITABLE FOR 75 kPa (1,566 psf) BEARING PRESSURE, UNLESS NOTED. REFER TO SOIL ENGINEERS REPORT FOR FOUNDATION DEPTHS, BEARING PREPARATION, ETC. AS MAY BE REQUIRED BY THE 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-CONFORMANCE 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 (CAN) & ACI 318 (USA) FOR MATERIALS AND WORKMANSHIP.
2. USE MINIMUM 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 OR IAS ACCREDITED CONCRETE TESTING LABORATORY.
5. USE HIGH FREQUENCY VIBRATION TO PLACE ALL CONCRETE.
6. ALL CONCRETE SHALL BE KEPT MOIST DURING THE FIRST TWO DAYS OF CURING.
7. TAKE ADEQUATE MEASURES TO PROTECT CONCRETE FROM EXPOSURE TO FREEZING TEMPERATURES AT LEAST 7 DAYS AFTER CONCRETE PLACEMENT.
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:
  - MINIMUM 40 TIMES THE BAR DIAMETER (10M = 450mm, 15M = 640mm) (CAN) OR,
  - IN ACCORDANCE WITH TABLE R611.5.4(1) OF IRC 2009/2012 OR TABLE 608.5.4(1) OF IRC 2015 (USA)

## 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 NBC OR PROV. CODES SECTION 9.15.3.9 (CAN) OR APPLICABLE CLAUSES FOR SLOPE CONDITION OF SECTION R403 OF THE 2009, 2012, AND 2015 IRC (USA).
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 OSHA 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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## Typical Details

 Nudura Technical Support: 866-468-6299 International: +1 705-726-9499	Detail: Laterally Unsupported Knee Wall Details for Nudura Form Unit 1 or 2 Story Wood Frame Brick and Non Brick Finish		File Name:	 Construction Products Group
	Drawn by: T. VAN CLIEAF	Scale: NTS	Date: 10/29/2021	
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