

GENERAL NOTES

- THE STRUCTURAL DESIGN IS IN COMPLIANCE WITH THE REQUIREMENTS OF NBC 2010. THE ADDITION IS IN ACCORDANCE WITH THE REQUIREMENTS OF A POST-DISASTER BUILDING.
- CITY OF WINNIPEG STANDARDS AND SPECIFICATIONS APPLY TO ALL WORK.
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS MUST BE FIELD VERIFIED AND CONFIRMED ON-SITE BY THE CONTRACTOR.
- REPORT DEVIATIONS IN FIELD CONDITIONS OR DESIGN DRAWINGS TO THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS RESPONSIBLE FOR SURVEYING AND ESTABLISHING ALL WORK ELEVATIONS, LINES AND POINTS.
- THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING ALL UTILITIES AND SERVICES ON THE SITE.
- PROTECT EXISTING SITE STRUCTURES, UTILITIES AND TREES DURING THE WORK.
- PROVIDE SITE CLEAN-UP AT THE END OF THE WORK, TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

SLAB ON GRADE

- PRIOR TO PLACING OF GRANULAR MATERIAL IN 6" LIFTS TO FORM THE UPPER SUBGRADE, CARE SHOULD BE TAKEN TO ENSURE THAT NO FROST IS PRESENT IN THE SOIL AND THAT BLACK ORGANIC SOIL IS REMOVED. AFTER PLACING THE GRANULAR SUBGRADE IT MUST BE COMPACTED WITH VIBRATORY COMPACTORS OR SIMILAR EQUIPMENT AND COMPACTION CARRIED OUT UNTIL THE DENSITY OF MATERIAL IS 98% OF ITS MAXIMUM DRY DENSITY.
- CONTROL JOINTS IN THE SLAB-ON-GRADE SHALL BE SAWCUT WITHIN 24 TO 48 HOURS OF THE COMPLETION OF THE SLAB POUR. THE JOINTS SHALL BE MINIMUM 3/4" DEEP AND FILLED WITH AN APPROVED JOINT SEALANT. PROVIDE JOINTS AT MAXIMUM 12'-0" CENTRES IN EACH DIRECTION.
- CONFORM TO THE FOLLOWING CITY OF WINNIPEG STANDARDS AND SPECIFICATIONS:
EARTHWORK AND GRADING - CW3170
SUB-GRADE, SUB-BASE AND BASE COURSE INSTALLATION - CW3110

FOUNDATIONS (C.I.P. CONCRETE PILES)

- FOUNDATIONS SHALL BE CAST-IN-PLACE CONCRETE FRICTION PILES AS SHOWN ON DRAWINGS.
- CONCRETE PILES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED FOR THIS FACILITY BY KGS GROUP DATED JULY 8TH, 2014 USING A FACTORED ULS SKIN FRICTION VALUE OF 18.0 kPa. FOR DEPTH OF 2.5m TO 6.5m FROM GRADE AND 12.0 kPa FOR A DEPTH OF 6.5m TO 12.5m FROM GRADE.
- INSTALLATION OF ALL CONCRETE PILES SHALL BE INSPECTED AND APPROVED PRIOR TO PLACEMENT OF CONCRETE.
- THE PILING CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND SERVICES IN PILING AREA WHETHER SHOWN OR NOT. EXPOSE ALL SERVICES CLOSE TO PILING AS REQUIRED.
- PILES SHALL NOT BE MORE THAN 2" OUT OF POSITION Laterally AT THE TOP AND NOT MORE THAN 2% OUT OF PLUMB.
- REINFORCE ALL PILES AS DETAILED ON THE DRAWINGS. REFER TO CONCRETE NOTES FOR CONCRETE REQUIREMENTS. INSTALL EACH PILE AS A CONTINUOUS POUR.
- VIBRATE TOP 5.0m OF CONCRETE IN ALL PILES.
- SLEEVING WHERE REQUIRED SHALL BE INCLUDED IN THE PILING CONTRACT.

REINFORCING STEEL

- REINFORCING STEEL TO BE NEW DEFORMED BILLET STEEL BARS CONFORMING TO CANCSA G30.18-M92. GRADES TO BE: 400 MPa FOR 15M BARS AND LARGER; 300 MPa FOR 10M BARS.
- WELDED STEEL WIRE FABRIC SHALL CONFORM TO CANCSA G30.5-M1983. 400 MPa MINIMUM GRADE IN FLAT SHEETS ONLY UNLESS APPROVED OTHERWISE.
- REINFORCING STEEL SHALL BE CLEAN, FREE OF RUST, DIRT, LOOSE SCALE, OIL, GREASE OR ANY OTHER MATERIAL WHICH WOULD REDUCE BOND WITH THE CONCRETE.
- TIE, SUPPORT AND SPACE ALL REINFORCING STEEL WITH PROPER APPROVED DEVICES DESIGNED FOR USE IN REINFORCED CONCRETE, TO PREVENT DISPLACEMENT OF REINFORCING AND ENSURE SPECIFIED CONCRETE COVER.
- SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, SPACING, LOCATIONS & QUANTITIES OF REINFORCING STEEL, BENDING & CUTTING SCHEDULES, SUPPORTING & SPACING DEVICES, ETC. FOR REVIEW PRIOR TO FABRICATION.
- DETAIL, FABRICATE & PLACE REINFORCING IN ACCORDANCE CSA A23.1, CSA A23.3-09.
- LAP STEEL 3/8 BARS DIAMETERS (MINIMUM) UNLESS NOTED OTHERWISE.
- LAP BEAM & STRUCTURAL SLAB TOP REINFORCING AT CENTER SPAN AND BOTTOM STEEL AT SUPPORTS.
- BEND ALL HORIZONTAL REINFORCING 300mm AROUND CORNERS OR PROVIDE ADDITIONAL 600mm x 600mm ANGLE BARS.
- PROVIDE AT EACH FACE, (2)-15M EXTRA BARS ALONG ALL SIDES AND (2)-15M DIAGONAL BARS AT ALL CORNERS OF OPENINGS UNLESS NOTED. PROJECT ALL BARS 600mm PAST CORNERS.
- PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:
C.I.P. PILES 75mm
GRADE BEAMS (SIDES) 40mm
GRADE BEAMS (BOTTOM) 65mm
STRUCTURAL SLAB (TOP & BOTTOM) 40mm

CONCRETE

- CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CANCSA-A23.1-09. SEE BELOW FOR MIX REQUIREMENTS.
- CEMENT TYPE SHALL BE AS NOTED IN INDIVIDUAL MIX DESIGNS TO CANCSA-A23.1-09.
- MIX WATER TO BE POTABLE. CALCIUM CHLORIDE SHALL NOT BE USED
- ADMIXTURES SHALL NOT BE USED UNLESS SPECIFIED HEREIN OR APPROVED BY THE DESIGN ENGINEER. CALCIUM CHLORIDE SHALL NOT BE USED.
- DESIGN, FABRICATE AND ERECT FORMWORK/SHORING IN ACCORDANCE WITH CANCSA-S269.3-M92. ALLOW SUFFICIENT CONCRETE CURING TIME PRIOR TO REMOVAL.
- PLACE AND SECURE ALL EMBEDDED ANCHORS, WELD PLATES, SLEEVES, BUCKS, DOWELS, INSERTS, WATERSTOPS, ETC., PRIOR TO POURING CONCRETE. CO-ORDINATE WITH ALL TRADES.
- LOCATE AND FABRICATE ALL CONSTRUCTION JOINTS, CONTROL JOINTS AND EXPANSION JOINTS AS DETAILED ON THE DRAWINGS. JOINTS NOT SHOWN SHALL BE APPROVED BY THE DESIGN ENGINEER PRIOR TO THE PLACEMENT OF CONCRETE.
- CAST-IN-PLACE ANCHOR BOLTS SHALL MEET REQUIREMENTS OF ASTM A307.
- EXPANSION ANCHORS SHALL BE HILTI OR APPROVED EQUAL IN ACCORDANCE WITH B7 OR AS OTHERWISE NOTED, AND INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
- GROUT REINFORCING DOWELS WITH EPOXY GROUT, STERNSON TALYGROUT 100 OR EQUAL. GROUT BASE PLATES WITH STERNSON M-BED STANDARD OR EQUAL. PLACE AND CURE ALL GROUT WITHIN TEMPERATURE RANGE RECOMMENDED BY MANUFACTURER.
- PROVIDE ADEQUATE COLD/HOT WEATHER PROTECTION AS REQUIRED DURING CURING PERIOD.
- FLOOR SLAB TO RECEIVE SIKA DURAG PREMIUM FLOOR HARDENER APPLIED AS PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL ADVISE CONTRACT ADMINISTRATOR A MINIMUM OF 24 HOURS PRIOR TO ALL CONCRETE POURS. CONTRACTOR TO ACCOMMODATE TESTING AGENCY DOING TESTING.
- EVERY DAY THAT THE CONCRETE IS POURED THE CONTRACT ADMINISTRATOR WILL HIRE AN INDEPENDENT TESTING AGENCY TO PERFORM CONCRETE TESTING IN ACCORDANCE WITH CAN/CSA - A23.1-04 & CAN/CSA-A23.2-04.

CONCRETE MIX DESIGNS

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| C.I.P. PILES | 28 DAY COMP. STRENGTH | 35 MPa |
| | CEMENT | TYPE 50 |
| | W/C RATIO | 0.50 |
| | AGGREGATE SIZE (MAX.) | 20mm |
| | ENTRAINED AIR | 4%-6% |
| | SLUMP (MAX.) | 90mm (±10mm) |
| GRADE BEAMS | 28 DAY COMP. STRENGTH | 30 MPa |
| | CEMENT | TYPE 50 |
| | W/C RATIO | 0.50 |
| | AGGREGATE SIZE (MAX.) | 20mm |
| | ENTRAINED AIR | 4%-6% |
| | SLUMP (MAX.) | 90mm (±10mm) |
| SLABS (INTERIOR) | 28 DAY COMP. STRENGTH | 25 MPa |
| | CEMENT | TYPE 10 |
| | W/C RATIO | 0.45 |
| | AGGREGATE SIZE (MAX.) | 20mm |
| | ENTRAINED AIR | 4%-6% |
| | SLUMP (MAX.) | 90mm (±10mm) |

STRUCTURAL AND MISCELLANEOUS STEEL

- STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH CANCSA-S16.1-09.
- STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF CANCSA-G40.20/G40.21-M92.
ROLLED SHAPES & PLATES CSA G40.21-300W
HSS SECTIONS CSA G40.21-350W
COLD FORMED STEEL CSA S136-94
ANCHOR BOLTS (GALV.) ASTM A307M
BOLTS, NUTS & WASHERS ASTM A325M
WELDING ELECTRODES CSA W48-06
- WELDING SHALL BE IN ACCORDANCE WITH CSA W59-M1989, BY WELDERS CERTIFIED AND QUALIFIED IN ACCORDANCE WITH CSA W47.1-1993. ALL WELDS TO BE 1/4" UNLESS NOTED OTHERWISE.
- FIELD CONNECTIONS SHALL BE BOLTED 20M DIAMETER A325 FRICTION TYPE BOLTS UNLESS NOTED OTHERWISE. BOLTS SHALL BE TORQUED IN ACCORDANCE WITH CANCSA S16.1-09.
- STRUCTURAL AND MISCELLANEOUS STEEL EMBEDDED IN CONCRETE SHALL BE HOT-DIPPED GALVANIZED TO MEET THE REQUIREMENTS OF CANCSA G164-M92.
- NEW ASSEMBLIES SHALL BE SHOP FABRICATED TO THE FULLEST EXTENT POSSIBLE. FIELD WORK SHALL BE LIMITED TO INSTALLATIONS, REPAIRS AND TOUCH UPS UNLESS NOTED OTHERWISE.

MASONRY

- ALL MASONRY SHALL CONFORM TO THE REQUIREMENTS & RECOMMENDATIONS OF CSA S304.1-04.
- HORIZONTAL REINFORCING SHALL BE INCORPORATED IN THE MASONRY JOINTS @ 24" O.C. UNLESS NOTED OTHERWISE. THIS REINFORCING SHALL BE FABRICATED FROM 9 GA. WIRE.
- FILL ONE CELL EACH SIDE DOORS & WINDOWS WITH 20 MPa CONCRETE. PROVIDE (1) 15M BAR IN EACH CELL FILLED THUSLY.
- ALL VOIDS TO BE FILLED SHALL BE CLEAN & FREE OF HARDENED MORTAR & OTHER DEBRIS.
- ALL MORTAR SHALL BE TYPE 'N' CONFORMING TO CANCSA A179-04 & HAVE A MINIMUM COMPRESSION STRENGTH OF 5 MPa @ 28 DAYS.
- ALL CONCRETE BLOCK LINTELS SHALL BE SHORED UNTIL ALL MASONRY IS IN PLACE & HAS GAINED ITS FULL STRENGTH.
- MASONRY SUB-CRACKING SHALL BE RESPONSIBLE FOR TEMPORARY BRACING OF ALL MASONRY COMPONENTS UNTIL ALL RELATED STRUCTURAL FRAMING HAVE BEEN SECURED.

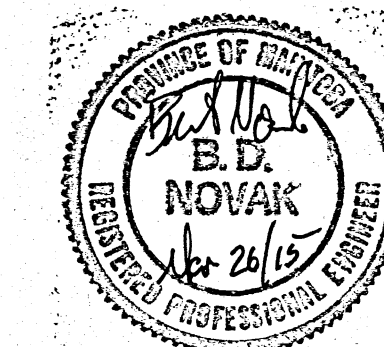
STRUCTURAL WOOD

- FRAMING LUMBER SHALL CONFORM TO THE LATEST EDITION OF CSA 0141 & SHALL BE OF THE FOLLOWING MINIMUM GRADES:
LINTELS, JOISTS & BEAMS: S-P-F NO. 2
STUD WALLS S-P-F NO. 2
- ALL SHEATHING MATERIAL TO BE 13mm STD. SPRUCE PLYWOOD IN ACCORDANCE WITH CSA 0325 UNLESS NOTED OTHERWISE. ALL SHEETS TO BE STAGGERED. FASTEN SHEET WITH 75mm COMMON NAILS @ 300 O.C. ALONG ALL STUDS & AT 150mm O.C. ALONG EDGES OF SHEET UNLESS NOTED OTHERWISE.
- DESIGN ROOF TRUSSES, BRACING, BRIDGING & CONNECTORS TO THE REQUIREMENTS OF CSA 086.1-M89 & OTHER APPLICABLE STANDARDS TO SAFELY CARRY LOADS AS INDICATED ON THE DRAWINGS.
- SUBMIT SHOP DRAWINGS BEARING STAMP OF QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR DESIGN.
A. INDICATE SPECIES, SIZES & STRESS GRADES OF LUMBER USED AS TRUSS MEMBERS. SHOW PITCH, SPAN, CAMBER CONFIGURATION & SPACING OF TRUSSES. INDICATE CONNECTOR TYPES, THICKNESS SIZES, LOCATIONS & DESIGN VALUE. SHOW BEARING DETAILS.
B. SUBMIT DIAGRAM INDICATING DESIGN LOAD OF EACH TRUSS MEMBER, SPECIAL LOADS, ALLOWABLE STRESS INCREASE & DEFLECTION LIMITS.
- TRUSS SUPPLIER SHALL BE RESPONSIBLE FOR FINAL INSPECTION & CERTIFICATION THAT TRUSSES ARE CONSTRUCTED & ERECTED AS PER TRUSS SUPPLIERS DESIGN ASSUMPTIONS.

ISSUED FOR CONSTRUCTION MMK 2015.03.26

No. REVISION/DESCRIPTION BY DATE

SEAL



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THE CITY OF WINNIPEG PLANNING, PROPERTY AND DEVELOPMENT DEPARTMENT MUNICIPAL ACCOMMODATIONS DIVISION 3-65 GARRY STREET, R3C 4K4

PROJECT: WINNIPEG FIRE PARAMEDIC SERVICES ADDITIONAL APPARATUS ROOM BAYS

603 REDWOOD AVENUE SHEET TITLE

STRUCTURAL SPECIFICATIONS

SCALE: AS SHOWN, PROJECT No: 2013-171-02, SHEET No: 55