

GENERAL NOTES:

- 1. NOTES TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. VERIFY ALL DIMENSIONS, ELEVATIONS AND SCOPE OF WORK PRIOR TO CONSTRUCTION.
4. SUBSTITUTIONS FOR APPROVED EQUALS SHALL BE IN ACCORDANCE WITH CLAUSE B7 OF THE TENDER DOCUMENTS.

DESIGN LOADS:

IMPORTANCE CATEGORY: POST-DISASTER
LIVE LOADS: FLOORS: - 10.0 kPa
ROOF LOADS: SNOW - Ss=1.9 kPa - Sr=0.2 kPa
WIND DESIGN PRESSURE:(1 IN 50)- 0.45 kPa
WIND EXPOSURE FACTOR: OPEN TERRAIN
FOUNDATION SOIL LOADS: SURCHARGE: q = 6.0 kPa
SOIL, UNIT WEIGHT; gamma\_solid = 18 kN/m^3
AT REST LATERAL PRESSURE COEFFICIENT; Ko = 0.70
LATERAL PRESSURE ON WALL, P = K (gamma\_solid x H + q)
WHERE H = HEIGHT OF SOIL

CONCRETE:

- 1. CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CSA A23.1 (LATEST). SEE BELOW FOR MIX REQUIREMENTS.
2. ADMIXTURES SHALL NOT BE USED UNLESS SPECIFIED HEREIN OR APPROVED BY THE CONTRACT ADMINISTRATOR. CALCIUM CHLORIDE SHALL NOT BE USED.
3. MIX WATER SHALL BE POTABLE.
4. DESIGN, FABRICATE AND ERECT FORMWORK/SHORING IN ACCORDANCE WITH CAN/CSA-S269.3 (LATEST), ALLOW SUFFICIENT CONCRETE CURING TIME PRIOR TO REMOVAL.
5. CONCRETE FINISHING SHALL MEET THE REQUIREMENTS OF CSA A23.1 (LATEST).
6. FORM RELEASE AGENT SHALL BE BIODEGRADABLE, NON-STAINING AND NON-VOLATILE.
7. PROVIDE ADEQUATE COLD/HOT WEATHER PROTECTION AS REQUIRED DURING CURING PERIOD.
8. PLACE AND SECURE ALL EMBEDDED ANCHORS, WELD PLATES, SLEEVES, BUCKS, DOWELS, INSERTS, WATERSTOPS, ETC., PRIOR TO PLACING CONCRETE. CO-ORDINATE WITH ALL TRADES FOR EMBEDDING OF ALL OTHER, CONDUIT, SERVICES, BLOCKING, ETC.
9. LOCATE AND FABRICATE ALL CONSTRUCTION JOINTS, CONTROL JOINTS AND EXPANSION JOINTS AS DETAILED ON THE DRAWINGS. JOINTS NOT SHOWN SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO THE PLACEMENT OF CONCRETE.
10. HYDROPHILIC WATERSTOP TO BE HYDROTITE CJ 0325 OR APPROVED EQUAL IN ACCORDANCE WITH B7.
11. ALL EXPOSED CORNERS TO HAVE 25mm CHAMFER FILLET UNLESS NOTED.
12. CAST-IN-PLACE ANCHOR BOLTS SHALL MEET REQUIREMENTS OF ASTM A307 (LATEST).
13. EXPANSION ANCHORS SHALL BE HILTI KWIK-BOLTS OR APPROVED EQUAL IN ACCORDANCE WITH B7, UNLESS NOTED. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.
14. ADHESIVE ANCHORS SHALL BE HILTI HY200 HAS RODS OR APPROVED EQUAL IN ACCORDANCE WITH B7, UNLESS NOTED. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.
15. GROUT REINFORCING DOWELS WITH EPOXY GROUT HILTI HIT-HY200 OR APPROVED EQUAL IN ACCORDANCE WITH B7. GROUT BASE PLATES WITH NON-SHRINK GROUT SIKKA M-BED STANDARD, OR APPROVED EQUAL IN ACCORDANCE WITH B7. PLACE AND CURE ALL GROUT WITHIN TEMPERATURE RANGE RECOMMENDED BY MANUFACTURER.
16. THE CONCRETE SUPPLIER SHALL BE CERTIFIED TO MEET THE REQUIREMENTS OF CSA A23.1.
17. THE CONCRETE SUPPLIER SHALL SUBMIT CONCRETE MIX DATA SUBMISSION FORMS FOR EACH TYPE OF CONCRETE SPECIFIED FOR REVIEW PRIOR TO BATCHING ANY CONCRETE.
18. EXTERIOR LANDING SLABS TO BE REINFORCED WITH A MINIMUM OF 15M BARS IN EACH DIRECTION, TOP BARS ONLY.

CONCRETE MIX DESIGNS:

CONCRETE MIX DESIGN SHALL BE PROPORTIONED TO MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:

FOUNDATION WALLS:

EXPOSURE CLASS S-2
MIN. 56 DAY COMP. STRENGTH 32 MPa
CEMENT TYPE HS
MAX. W/C RATIO 0.45
MAX. AGGREGATE SIZE 20mm
ENTRAINED AIR CONTENT 4%-7%

EXTERIOR SLABS (NON-STRUCTURAL):

EXPOSURE CLASS C-2
MIN. 28 DAY COMP. STRENGTH 32 MPa
MAX. W/C RATIO 0.45
MAX. AGGREGATE SIZE 20mm
ENTRAINED AIR CONTENT 5%-8%

EXTERIOR WALLS & BEAMS

EXPOSURE CLASS: F-2
MIN. 28 DAY COMP. STRENGTH 25 MPa
MAX. W/C RATIO: 0.55
MAX. AGGREGATE SIZE: 20mm
ENTRAINED AIR CONTENT: 4%-7%

LEAN MIX CONCRETE:

EXPOSURE CLASS N
MIN. 28 DAY COMPRESSIVE STRENGTH 15 MPa
MAX. AGGREGATE SIZE 20mm
AIR CONTENT 5%-8%

STRUCTURAL AND MISCELLANEOUS STEEL:

- 1. STRUCTURAL AND MISCELLANEOUS STEEL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH CAN/CSA S16 (LATEST).
2. STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF CAN/CSA G40.20/G40.21 (LATEST).
ROLLED W-SHAPES CSA G40.21-350W
ROLLED SHAPES & PLATES CSA G40.21-300W
HSS SECTIONS CSA G40.21-350W
CLASS C
STANDARD PIPE ASTM A53
COLD FORMED STEEL CSA S136
ANCHOR BOLTS (GALV.) ASTM A307
BOLTS, NUTS, & WASHERS ASTM A325
WELDING ELECTRODES CSA W48
3. WELDING SHALL BE IN ACCORDANCE WITH CSA W59 (LATEST), BY WELDERS CERTIFIED AND QUALIFIED IN ACCORDANCE WITH CSA W47.1-(LATEST). ALL WELDS TO BE 6mm UNLESS NOTED OTHERWISE.
4. FIELD CONNECTIONS SHALL BE BOLTED 19mm DIAMETER A325 BEARING TYPE UNLESS NOTED OTHERWISE. BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH CSA S16 (LATEST).
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.
6. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE FINISHED AS INDICATED BELOW, UNLESS OTHERWISE NOTED, OR APPROVED EQUAL:
GALVANIZED STEEL
- SURFACE PREP. TO SP8 (PICKLING)
- HOT DIPPED GALVANIZED TO CAN/CSA G164
7. FIELD TOUCH-UP WITH GALVANIZING SOLDER TO MATCH GALVANIZED STEEL. ACCEPTABLE PRODUCT: GAL-VIZ OR APPROVED EQUAL IN ACCORDANCE WITH B7.

STEEL STUD FRAMING (NON-LOADBEARING):

GENERAL

- 1. INSTALL ALL FRAMING PLUMB, LEVEL, AND SQUARE.

EXTERIOR WALL FRAMING

- 2. WALL STEEL STUDS, TRACK, FURRING BARS, ETC. TO BE 1.0mm (20 GA.) SECTIONS ROLL FORMED FROM Z-275 HOT DIPPED GALVANIZED SHEET STEEL TO ASTM C645. SEE DRAWINGS FOR SECTION SIZES AND SPACING.
3. PROVIDE LONG-LEGGED DOUBLE TOP TRACKS AT TOP OF ALL FULL HEIGHT WALL FRAMING TO ALLOW 6mm DEFLECTION.
4. FASTEN ALL EXTERIOR WALL FRAMING TO CONCRETE FLOORS WITH APPROVED 6mm DIA. MINIMUM CORROSION-RESISTANT FASTENERS @ 400mm O/C.

ALUMINUM:

- 1. ALUMINUM SHALL BE IN ACCORDANCE WITH CAN/CSA S157 AND THE ALUMINUM ASSOCIATION "SPECIFICATION FOR ALUMINUM STRUCTURES". ALUMINUM FOR PLATES AND EXTRUDED SHAPES SHALL BE TYPE 6061-T651.
2. ALUMINUM WELDING SHALL BE IN ACCORDANCE WITH CSA W59.2-(LATEST) BY WELDERS CERTIFIED AND QUALIFIED IN ACCORDANCE WITH CSA W47.2-(LATEST). ALL WELDS TO BE 6mm UNLESS OTHERWISE NOTED.
3. INSTALL NYLITE ELECTROCHEMICAL ISOLATION GASKETS TO ELECTRICALLY ISOLATE DISSIMILAR METALS (SUPPLIER: SPAENAUR) OR APPROVED EQUAL IN ACCORDANCE WITH B7.
4. ALL ALUMINUM IN CONTACT WITH CONCRETE OR CAST INTO CONCRETE TO HAVE BITUMINOUS ISOLATION COATING.
5. FASTENERS TO BE TYPE 316 STAINLESS STEEL. SIZE AS SHOWN ON THESE DRAWINGS.

REINFORCING STEEL:

- 1. REINFORCING STEEL TO BE NEW DEFORMED BILLET STEEL BARS CONFORMING TO CSA G30.18-(LATEST). GRADE TO BE 400 MPa.
2. REINFORCING STEEL SHALL BE CLEAN, FREE OF RUST, DIRT, LOOSE SCALE, OIL, GREASE OR ANY OTHER MATERIAL WHICH WOULD REDUCE BOND WITH THE CONCRETE.
3. WELDED STEEL WIRE FABRIC SHALL CONFORM TO A185 OR A497 (LATEST). 400 MPa MINIMUM GRADE IN FLAT SHEETS ONLY UNLESS APPROVED OTHERWISE.
4. SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, SPACINGS, LOCATIONS & QUANTITIES OF REINFORCING STEEL. BENDING & CUTTING SCHEDULES, SUPPORTING & SPACING DEVICES, ETC. FOR REVIEW PRIOR TO FABRICATION. DETAIL, FABRICATE AND PLACE REINFORCING IN ACCORDANCE WITH CSA A23.1 (LATEST), CSA A23.3 (LATEST) AND ACI SP-66 (LATEST) UNLESS NOTED. LAP STEEL 36 BAR DIAMETERS (MINIMUM) UNLESS NOTED.
5. LAP BEAM AND STRUCTURAL SLAB TOP REINFORCING AT CENTER SPAN, AND BOTTOM STEEL AT SUPPORTS.
6. BEND ALL HORIZONTAL REINFORCING 305mm AROUND CORNERS OR PROVIDE ADDITIONAL 610mm X 610mm ANGLE BARS.
7. PROVIDE AT EACH FACE, 2-15M EXTRA BARS ALONG ALL SIDES, AND 2-15M DIAGONAL BARS AT ALL RE-ENTRANT CORNERS OF OPENINGS UNLESS NOTED. PROJECT ALL BARS 610mm PAST CORNERS.
8. 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.
9. PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:
FOUNDATION WALLS (EXTERIOR FACE) 60mm
FOUNDATION WALLS (INTERIOR FACE) 40mm
FOUNDATION WALLS (BOTTOM) 60mm
SLAB-ON-GRADE (EXTERIOR TOP) 50mm

LEGEND:

- CONC.
LEAN MIX CONCRETE
STEEL
CONC. BLOCK
ALUMINUM
BATT INSULATION
RIGID INSULATION
UNDISTURBED SOIL
CLAY
GRANULAR BACKFILL
CORK

ABBREVIATIONS:

TYP. - TYPICAL

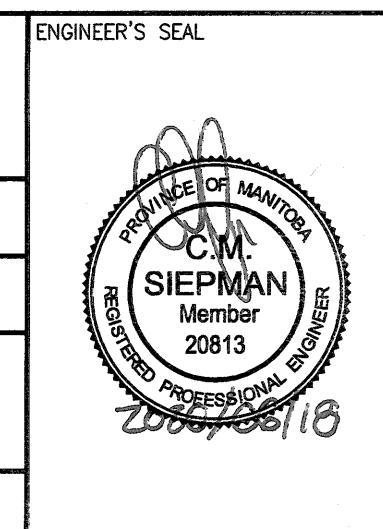
METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



Table with 4 columns: No., REVISIONS, DATE, DESIGN CHECK. Row 0: ISSUED FOR CONSTRUCTION, 2020/06/18, [initials], [initials]

KGS GROUP logo and project details: DESIGNED BY: L. MILIUS-ALPHONSE, CHECKED BY: C. SIEPMAN, DRAWN BY: F. VALENCIA, APPROVED BY: C. SIEPMAN, SCALE: AS NOTED, DATE: 2019/04/30, CONSULTANT NO.: 19-0107-005\_S01



THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT logo and project title: HURST PUMPING STATION STRUCTURAL REPAIRS AND DRAINAGE BUILDING UPGRADES LEGENDS & GENERAL NOTES. CITY DRAWING NUMBER: 1-0650M-S0001, SHEET: 001, REV: 0, SIZE: A1