

GENERAL NOTES:

- THIS STRUCTURE HAS BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF PART 3 OF THE MANITOBA BUILDING CODE-2011, NATIONAL BUILDING CODE OF CANADA-2010.
- ALL SPECIFICATIONS AND CODES SPECIFIED SHALL BE THE LATEST REVISION AVAILABLE.
- SITE VERIFY ALL DIMENSIONS, ELEVATIONS, DETAILS, QUANTITIES AND CONDITIONS PRIOR TO START OF ANY DEMOLITION, CONSTRUCTION OR PREFABRICATION OF ANY STRUCTURAL COMPONENT.
- EXISTING STRUCTURAL SUPPORTS WHICH INTERFERE WITH NEW WORK SHALL BE RELOCATED UPON APPROVAL BY THE DESIGN ENGINEER.
- THE CONTRACTOR SHALL ENSURE THAT ALL BURIED SERVICES ARE LOCATED AND MARKED PRIOR TO EXCAVATION.
- ALL BUILDING SYSTEMS COMPONENTS SHALL BE THE PRODUCTS OF A SINGLE MANUFACTURER UNLESS SPECIFIED OTHERWISE.
- SHIP, STORE, HANDLE, ERECT, INSTALL, ETC. ALL BUILDING MATERIALS, COMPONENTS, FIXTURES, EQUIPMENT, ETC. AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ALL DEMOLITION, FABRICATION, CONSTRUCTION, ETC. SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL PERTINENT BUILDING CODES, AND LOCAL BYLAWS AND ORDINANCES.
- EACH TRADE SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE PROTECTION FOR THE EXISTING FACILITY/PROPERTY TO PREVENT PHYSICAL DAMAGE AND LOSS OF VALUE OR USE OF ANY KIND, AS A RESULT OF DEMOLITION, CONSTRUCTION AND RELATED ACTIVITIES.
- TIME AND DURATION OF ANY NECESSARY DISRUPTION IN THE USE OF SERVICE, EQUIPMENT, ETC. SHALL BE COORDINATED WITH, AND APPROVED BY THE OWNER AT THE START OF THE PROJECT. PROVIDE OWNER WITH MINIMUM ONE WEEK NOTICE (OR AS REQUIRED) PRIOR TO EACH ACTUAL OCCURRENCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE OWNER AND THE DESIGN ENGINEER OF ANY PREVIOUSLY UNNOTICED PRE-EXISTING FLAW OR CONDITION THAT MIGHT INCREASE THE SCOPE OF WORK OR COMPROMISE NEW CONSTRUCTION, PRIOR TO THE START OF DEMOLITION AND CONSTRUCTION, OR AS SOON AS IT IS DISCOVERED.
- DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT TECHNICAL SPECIFICATIONS.

DEMOLITION:

- ALL DEMOLITION WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL PERTINENT BUILDING CODES, THE MANITOBA DEPARTMENT OF LABOUR, AND ANY OTHER PROVINCIAL AND LOCAL BY-LAWS, REGULATIONS AND ORDINANCES.
- DEMOLITION SHALL INCLUDE THE SAFE REMOVAL, HAULING AND DUMPING OF ALL DEBRIS, ETC. TO AN APPROVED SITE. ALL COSTS ASSOCIATED WITH THIS OPERATION, INCLUDING TRANSPORT, LICENSES AND FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- COORDINATE THE MOVING AND STORAGE OF SALVAGED ITEMS, MATERIALS, EQUIPMENT, ETC. WITH THE OWNER.

REINFORCING STEEL:

- REINFORCING STEEL TO BE NEW DEFORMED BILLET STEEL BARS CONFORMING TO CSA G30.18-09 (R2014), GRADE TO BE 400 MPa.
- REINFORCING STEEL SHALL BE CLEAN, FREE OF RUST, DIRT, LOOSE SCALE, OIL, GREASE OR ANY OTHER MATERIAL WHICH WOULD REDUCE BOND WITH THE CONCRETE.
- WELDED STEEL WIRE FABRIC SHALL CONFORM TO A1064/A1064M-14. 400 MPa MINIMUM GRADE IN FLAT SHEETS ONLY UNLESS APPROVED OTHERWISE.
- 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 A23.1-19, CSA A23.3-19 AND ACI SP-66 (2004) UNLESS NOTED. LAP STEEL 36 BAR DIAMETERS (MINIMUM) UNLESS NOTED.
- LAP BEAM AND STRUCTURAL SLAB TOP REINFORCING AT CENTER SPAN, AND BOTTOM STEEL AT SUPPORTS.
- BEND ALL HORIZONTAL REINFORCING 305mm AROUND CORNERS OR PROVIDE ADDITIONAL 610mm X 610mm 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 610mm PAST CORNERS.
- 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.
- PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:

WALLS (EXTERIOR FACE)	50mm
WALLS (INTERIOR FACE)	50mm
BASE SLAB (TOP)	50mm
BASE SLAB (BOTTOM)	75mm
ROOF SLAB (TOP & BOTTOM)	25mm

CONCRETE SURFACE REPAIR:

- REMOVE EXISTING FINISH AS REQUIRED BY SCRAPING, HIGH-PRESSURE WASH OR APPROVED ALTERNATE METHOD.
- SQUARE CUT PERIMETER OF LARGE REPAIR AREAS TO A MINIMUM 25mm DEPTH TO AVOID FEATHER EDGES.
- CHIP UNSOUND DETERIORATED CONCRETE TO A MINIMUM 25mm DEPTH.
- COMPLETELY EXPOSE ANY REINFORCING STEEL IF ENCOUNTERED DURING CONCRETE DEMOLITION TO ENSURE COMPLETE ENCAPSULATION WITH REPAIR MORTAR.
- REMOVE CORROSION FROM REINFORCING STEEL USING MECHANICAL ABRASION TECHNIQUES (WIRE BRUSH, BLASTING).
- LAP OR REPLACE EXISTING REINFORCING THAT HAS EXPERIENCED SIGNIFICANT SECTION LOSS.
- CLEAN THE ROUGHENED CONCRETE SURFACE OF DIRT, LOOSE CHIPS, DUST, OIL, ETC. BY PRESSURE WASH AND COMPRESSED AIR (CONTAIN ALL DEBRIS).
- FORM VERTICAL SURFACES AS REQUIRED AND CHAMFER TO MATCH EXISTING.
- DAMPEN SUBSTRATE WITH WATER AND THEN PRIME WITH BRUSH COAT OF STRUCTURAL REPAIR MORTAR.
- CAST REPAIR AREA WITH STRUCTURAL REPAIR MORTAR AS PER MANUFACTURER'S SPECIFICATIONS (SMALL AREAS MAY BE APPLIED BY HAND TROWEL).
- MOIST CURE REPAIR AREAS EXPOSED TO THE AIR FOR 3 DAYS AT A MINIMUM TEMPERATURE OF 10 DEGREES CELSIUS OR UNTIL MINIMUM OF 40% OF THE COMPRESSIVE STRENGTH OF THE CONCRETE IS ATTAINED.

CONCRETE:

- CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CSA A23.1-19. SEE BELOW FOR MIX REQUIREMENTS.
- ADMIXTURES SHALL NOT BE USED UNLESS SPECIFIED HEREIN OR APPROVED BY THE DESIGN ENGINEER. CALCIUM CHLORIDE SHALL NOT BE USED.
- MIX WATER SHALL BE POTABLE.
- DESIGN, FABRICATE AND ERECT FORMWORK/SHORING IN ACCORDANCE WITH CAN/CSA-S269.1-16. ALLOW SUFFICIENT CONCRETE CURING TIME PRIOR TO REMOVAL.
- CONCRETE FINISHING SHALL MEET THE REQUIREMENTS OF CSA A23.1-19.
- FORM RELEASE AGENT SHALL BE BIODEGRADABLE, NON-STAINING AND NON-VOLATILE.
- PROVIDE ADEQUATE COLD/HOT WEATHER PROTECTION AS REQUIRED DURING CURING PERIOD.
- 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.
- 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.
- WATERSTOPS TO BE AS FOLLOWS:
 ACRYLIC-POLYMER BASED SWELLABLE
 ACCEPTABLE PRODUCT: SIKASWELL TYPE 2005 BY SIKA OR APPROVED EQUAL IN ACCORDANCE WITH B6.
- ALL EXPOSED CORNERS TO HAVE 25mm CHAMFER FILLET UNLESS NOTED.
- GROUT REINFORCING DOWELS WITH EPOXY GROUT HILTI HIT-HY 200, OR APPROVED EQUAL IN ACCORDANCE WITH B6. GROUT BASE PLATES WITH NON-SHRINK GROUT SIKA M-BED STANDARD, OR APPROVED EQUAL IN ACCORDANCE WITH B6. PLACE AND CURE ALL GROUT WITHIN TEMPERATURE RANGE RECOMMENDED BY MANUFACTURER.
- BONDING AGENTS SHALL BE USED TO ADHERE NEW CONCRETE TO EXISTING CONCRETE OR STEEL.
 ACCEPTABLE PRODUCT: SIKADUR 32 HI-MOD (EPOXY), OR APPROVED EQUAL IN ACCORDANCE WITH B6.
- THE CONCRETE SUPPLIER SHALL BE CERTIFIED TO MEET THE REQUIREMENTS OF CSA A23.1-19.
- THE CONCRETE SUPPLIER SHALL SUBMIT CONCRETE MIX DATA SUBMISSION FORMS FOR EACH TYPE OF CONCRETE SPECIFIED FOR REVIEW PRIOR TO BATCHING ANY CONCRETE.
- CONCRETE STRENGTH TESTS SHALL BE ARRANGED BY THE CONTRACTOR. PROVIDE ONE SET OF TEST CYLINDERS IN ACCORDANCE WITH CSA A23.1-19 FOR EVERY 50 CUBIC METERS OF CONCRETE PLACED AND A MINIMUM OF ONE SET PER STRUCTURAL COMPONENT.

CONCRETE MIX DESIGNS:

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

BASE SLAB, WALLS AND ROOF SLAB:

EXPOSURE CLASS	S-1
MIN. 28 DAY COMP. STRENGTH	30 MPa
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%

NO.	DRAWING NUMBER	REFERENCE DRAWING TITLE
		REFERENCE DRAWINGS



B.M. ELEV.	
CONSTRUCTION COMPLETION DATE: YYYY MM DD	
DESIGNED BY	J. WALTER
DRAWN BY	F. VALENCIA
SCALE:	AS SHOWN
0 ISSUED FOR TENDER	2023 03 14
NO.	REVISIONS
DATE	BY
DATE	22 06 13

KGS GROUP

DESIGNED BY	J. WALTER	CHECKED BY	
DRAWN BY	F. VALENCIA	APPROVED BY	JMW
SCALE:	AS SHOWN	RELEASED FOR CONSTRUCTION	

ENGINEER'S SEAL
CONSULTANT DRAWING NUMBER
22-0107-021_S01

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENGINEERING DIVISION

Winnipeg

NEWTON FORCEMAIN RIVER CROSSING
 SOUTH CHAMBER EXPANSION

GENERAL NOTES

CITY DRAWING NUMBER **1-0221S-S0003-001**

SHEET **1** OF **1**