

EXISTING ROOF

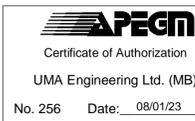
NEW ROOF (N.E. STAIR)

EXISTING ROOF

NEW ROOF (S. STAIR)

OVERALL ROOF PLAN

SCALE 1:50



MP	CGC	SBB	SBB	BLL
DRN	CHK	DES	ENG	IDR
UMA REVIEW				

DRAWING NOTE:

GENERAL

- DO NOT SCALE DRAWINGS.
- VERIFY ALL DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION. LOCATE UNDERGROUND SERVICES AND PROTECT THEM AT ALL TIMES DURING CONSTRUCTION.
- STRUCTURAL DRAWINGS SHOWING THE COMPLETED STRUCTURE DO NOT INDICATE COMPONENTS WHICH MAY BE NECESSARY FOR SAFETY DURING CONSTRUCTION. STAIRS AND LANDING HAVE BEEN DESIGNED FOR THE SERVICE LIVE LOAD OF 4.8 kPa
- NORTHEAST STAIR ROOF HAS BEEN DESIGNED FOR A SERVICE SUPERIMPOSED DEAD LOADING OF 0.65 kPa PLUS A SERVICE LIVE LOADING OF 1.72 kPa
- SOUTH STAIR ROOF HAS BEEN DESIGNED FOR A SERVICE SUPERIMPOSED DEAD LOADING OF 0.65 kPa PLUS A SERVICE LIVE LOADING VARYING FROM 4.15 kPa AT THE NORTH SIDE TO 2.00 kPa AT THE SOUTH SIDE.

SELECTIVE DEMOLITION

- REMOVE ITEMS AND MATERIALS WHERE SHOWN ON DRAWINGS. REMOVE ONLY MATERIALS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
- PROTECT WORK TO REMAIN.
- PROVIDE PROTECTION TO PERSONNEL WORKING IN ADJACENT AREAS, AND TO THE PUBLIC.
- CAP OFF AND MAKE SAFE MECHANICAL AND ELECTRICAL SERVICES AS REQUIRED.
- STORE AND PROTECT MATERIALS AND ITEMS TO BE INSTALLED IN RENOVATED AREAS.
- REMOVE FROM SITE ALL MATERIALS NOT REQUIRED.

EARTHWORK

- EXCAVATE AS REQUIRED AND REMOVE FROM SITE MATERIALS NOT REQUIRED FOR BACKFILL.
- BACKFILLING WILL NOT BE PERMITTED UNTIL THE STAIR WALLS ARE COMPLETE TO LEVEL 400 PLUS ALL STAIRS AND LANDINGS ARE COMPLETED TO LEVEL 400 AND CONCRETE HAS REACHED THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH. BACKFILL WITH MATERIALS INDICATED ON DRAWINGS AND SPECIFICATIONS.
- COMPACTION (STANDARD PROCTOR DRY DENSITY %)

.1 SUBGRADE	95%
.2 WALLS, BEAMS, ETC.	90%
.3 UNDER SLAB-ON-GRADE	100%
- GRADE AND FILL SITE TO ELEVATION SHOWN ALLOWING FOR TOPSOIL, PLANTING OR PAVEMENTS.
- FILL IN 6" (200 mm) LIFTS (LOOSE) AND COMPACT EACH LIFT TO REQUIRED DENSITY. PLACE TOPSOIL TO FOLLOWING DEPTHS:

.1 GRASSED AREAS:	4" (100mm)
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- GRADE AND ROLL TOPSOIL TO ELEVATIONS SHOWN.
- SOD OR SEED SITE. MAINTAIN GRASS UNTIL FIRMLY ESTABLISHED.

FOUNDATIONS

- SOIL LOGS ARE PROVIDED FOR INFORMATION ONLY. EXAMINE THE PREVAILING CONDITIONS ON SITE PRIOR TO SUBMITTING BID. NO EXTRAS SHALL BE GRANTED SHOULD ACTUAL SITE CONDITIONS DIFFER FROM THOSE INDICATED.
- ALL FRICTION PILES ARE DESIGNED ON BASIS OF 15 kPa SKIN FRICTION. EFFECTIVE LENGTH OF FRICTION PILE IS LENGTH SHOWN ON DRAWINGS MINUS 3200 mm.
- NORTH EAST STAIR BASE SLAB IS DESIGNED FOR SERVICE BEARING OF 234 kPa, THIS SHALL BE CAST ON SOUND UNDISTURBED NATIVE SOIL.

CAST IN PLACE CONCRETE

- ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CSA A23.1 AND CSA A23.2.
- CONCRETE STRENGTH AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWINGS.

PILES: 35 MPa AT 56 DAYS; DURABILITY AND CLASS OF EXPOSURE: S1.

WALLS AND GRADE BEAMS: 35MPa AT 56 DAYS; DURABILITY AND CLASS OF EXPOSURE: S1.

STRUCTURAL SLABS AND STAIRS: 30MPa; DURABILITY AND CLASS OF EXPOSURE: N.

SLAB ON GRADE: 35 MPa AT 56 DAYS; DURABILITY AND CLASS OF EXPOSURE: S1.

MASONRY FILL: 20MPa AT 28 DAYS; DURABILITY AND CLASS OF EXPOSURE: N.

- AIR ENTRAINING ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF CSA A266.4.

REINFORCING STEEL

- ALL REINFORCING STEEL TO BE CSA G30.18-M92 400 MPa DEFORMED BARS UNLESS OTHERWISE NOTED. ALL REINFORCING TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF ACI DETAILING MANUAL, UNLESS OTHERWISE NOTED.
- REINFORCING STEEL COVER IS TO CONFORM TO THE LATEST EDITION OF CSA A23.3 AND AS FOLLOWS:

WALLS:	40mm
COLUMNS:	50mm
SLABS:	25mm
GRADE BEAMS: (SIDES AND TOPS)	40mm
GRADE BEAMS: (BOTTOM)	75mm
PILES:	75mm

- IN WALLS; BEND HORIZONTAL STEEL 460mm AROUND CORNERS, OR USE EXTRA CORNER BARS 900mm LONG.
- BOTTOM STEEL IN CONCRETE BEAMS TO BE BUTT SPLICED OVER SUPPORT, TOP STEEL TO BE LAPPED AT CENTRE SPAN UNLESS NOTED OTHERWISE.
- ALL REINFORCING TO BE HELD IN PLACE AND TIED WITH PROPER ACCESSORIES, SUCH AS HI-CHAIRS AND SPACERS. SUPPLY AND DETAIL ALL ACCESSORIES. HI-CHAIRS TO HAVE 4 LEGS AND TO BE STAPLED OR NAILED TO FORMWORK.
- ALL OPENINGS THROUGH CAST-IN-PLACE CONCRETE TO BE TRIMMED WITH 2-15M EXTENDING A MINIMUM OF 600mm PAST OPENING UNLESS NOTED.

FORMWORK

- USE 150mm CARDBOARD VOID FORM WRAPPED IN POLYETHYLENE SHEETS AS BOTTOM FORM FOR STRUCTURAL SLABS AND GRADE BEAM AT GRADE. ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC. SHALL BE SUPPORTED USING PADS OF PLYWOOD OR TEMPERED FIBREBOARD TO PREVENT PUNCTURING FORM.
- PROVIDE 12mm ASPHALT IMPREGNATED FIBREBOARD SLIP JOINT BETWEEN CONCRETE SLABS ON GRADE AND STRUCTURAL MEMBERS.
- ALL CONSTRUCTION JOINTS TO HAVE KEY MINIMUM 40mm DEEP.
- ALL STRUCTURAL SLABS FRAMING INTO WALLS TO HAVE A MINIMUM KEY OF 50mm.
- ALL CONCRETE BEAMS FRAMING INTO WALLS TO HAVE MINIMUM KEY OF 100mm DEEP BY HEIGHT AND WIDTH OF BEAM.
- PLACE A 0.15mm POLYETHYLENE UNDER ALL SLABS ON FILL.
- ALL MISCELLANEOUS PADS AND CURBS TO BE REINFORCED WITH MINIMUM 10M AT 400mm O.C. EACH WAY, TOP UNLESS NOTED OTHERWISE.
- WHEN CONCRETE BEAMS ARE CAST INTO WALL KEY, PROVIDE DOWELS EQUAL IN SIZE AND NUMBER TO THAT OF HORIZONTAL BEAM REINFORCING FROM WALL AND LAP WITH BEAM STELL.

PRECAST

- DESIGN, DETAIL, SUPPLY AND INSTALL ALL STEEL ANGLES, ANCHOR BOLTS AND MISCELLANEOUS METAL HARDWARE NECESSARY TO SUPPORT PRECAST.
- SUBMIT GENERAL LAYOUT DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION THESE DRAWINGS SHALL INCLUDE:
 - LOCATION OF ALL OPENINGS AND OTHER MISCELLANEOUS DETAILS
 - SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA COVERING DESIGN OF PRECAST UNITS AND CONNECTIONS
 - DESIGN LOADS ASSUMED
 - LAYOUT AND PLACEMENT MARKS FOR ALL UNITS.
- ALL PRECAST UNITS SHALL BEAR IDENTIFICATION MARK PLACED LEGIBLY ON UNIT AT TIME OF MANUFACTURE.
- PRE-CAST CONCRETE IS TO BE DESIGNED IN ACCORDANCE WITH DRAWINGS AND CSA-A23.3 AND CSA-A23.4 "PRE-CAST CONCRETE-MATERIALS AND CONSTRUCTION". ALL PRECAST MANUFACTURING PLANTS TO BE CERTIFIED IN ACCORDANCE WITH CAN3-A351-M1982 "QUALIFICATION CODE FOR MANUFACTURERS OF ARCHITECTURAL AND STRUCTURAL PRECAST CONCRETE".

MASONRY

- DO MASONRY WORK TO CSA-A371-94(R1999)
- CONCRETE BLOCKS TO CONFORM TO CAN3-A165-94(R2000) "STANDARDS FOR CONCRETE MASONRY UNITS"
- STANDARD HOLLOW MASONRY UNITS TO BE H20/A1M.
- BRICK: BURNED CLAY BRICK TO CAN/CSA-A82.1 TO MATCH EXISTING.
- MORTAR TO CONFORM TO CSA A179-94(R1999), TYPES BASED ON PROPORTION SPECIFICATIONS.
 - EXTERIOR BEARING WALLS: TYPE S
 - EXTERIOR NON-BEARING WALLS: TYPE S
 - BRICK VENEER: TYPE N COLOUR TO MATCH EXISTING
 - INTERIOR BEARING WALLS: TYPE S
 - INTERIOR NON-BEARING WALLS; TYPE N
 - POINTING: TYPE N.
- USE DUR-O-WAL OR EQUAL EVERY SECOND COURSE. EVERY COURSE FOR STACK BOND.
- TOP COURSE OF ALL BLOCK WALLS TO BE A 'U' BLOCK WITH 2-10M CONTINUOUS REINFORCING STEEL, AND 20 MPa CONCRETE FILL UNLESS NOTED OTHERWISE.
- ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS CLOSED IN.
- BRICK VENNERTO TO BE TIED TO BACK-UP STRUCTURE WITH MINIMUM OF #9 GAUGE (4mm) GALVANIZED WIRE TIES AT 400mm O.C. EACH WAY.
- U-BLOCK LINTELS OVER OPENINGS IN BLOCK WALLS TO BE AS FOLLOWS UNLESS NOTED OTHERWISE:

UP TO 1200mm	200mm DEEP 'U' BLOCK 20 MPa CONCRETE FILL 2-15M BOTTOM BEAR MINIMUM 200mm EACH END
UP TO 2400mm	400mm DEEP 'U' BLOCK 20 MPa CONCRETE FILL 2-15M BOTTOM BEAR MINIMUM 200mm EACH END

UP TO 1200mm 200mm DEEP 'U' BLOCK
20 MPa CONCRETE FILL
2-15M BOTTOM
BEAR MINIMUM 200mm EACH END

UP TO 2400mm 400mm DEEP 'U' BLOCK
20 MPa CONCRETE FILL
2-15M BOTTOM
BEAR MINIMUM 200mm EACH END

STRUCTURAL STEEL

- STRUCTURAL STEEL TO CONFORM TO CSA CAN-G40.21., "STRUCTURAL QUALITY STEELS" AND CSA G40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
- ALL ROLLED OR WELDED STEEL STRUCTURAL SECTIONS AND PLATES SHALL BE G40.21 300W GRADE STEEL
- ALL HOLLOW STRUCTURAL SECTIONS TO BE G40.21-350W CLASS C.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL TO BE PERFORMED IN ACCORDANCE WITH CAN3-S16.1, "STEEL STRUCTURES FOR BUILDINGS"
- ALL WELDINGS TO CONFORM TO CAN3-W59-1999, "WELDED STEEL CONSTRUCTION".
- FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CAN3-W47.1-M83 "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES"
- ALL BOLTED CONNECTIONS TO USE A MINIMUM OF 2-A325 HIGH STRENGTH BOLTS.
- ALL STRUCTURAL STEEL TO RECEIVE ONE COAT OF CIS/CPMA 2-75 SHOP PRIMER.
- OBTAIN ENGINEER'S APPROVAL PRIOR TO MAKING ANY MEMBER SUBSTITUTIONS OR CONNECTION CHANGES.
- PROVIDE HOLES IN STEEL SECTIONS AS REQUIRED. SECTIONS SHALL BE STRENGTHENED AS REQUIRED TO GUARANTEE ORIGINAL STRENGTH OF BEAM. CUTTING OF STEEL AT JOBSITE SHALL BE DONE ONLY AS APPROVED AND DIRECTED BY ENGINEER.
- THE STRUCTURAL STEEL ERECTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND ERECTING ALL TEMPORARY GUYING AND BRACING TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE.
- STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A REGISTERED ENGINEER COVERING THE DESIGN OF CONNECTIONS, TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

METAL FABRICATION

- SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
- MATERIAL: (GALVANIZED) STEEL, ALUMINIUM OR STAINLESS STEEL.
- WELDING: STEEL TO CSA W59-M1989, ALUMINIUM TO CSA W59.2-M1991.
- STEEL SECTIONS AND PLATES: TO CAN3 G40.21-92 GRADE 300W.
- STEEL PIPE: TO ASTM A53
- ALUMINIUM: ALLOY AS NOTED.
- BOLTS AND ANCHOR BOLTS: TO ASTM A307-76B FOR STEEL, STAINLESS STEEL FOR ALUMINIUM, OR STAINLESS STEEL.
- ISOLATION COATING: ASPHALTIC PAINT, TO CAN/CGSB-1.108-M89. COAT ALUMINIUM WHERE IN CONTACT WITH CONCRETE OR MASONRY.

B.M. ELEV.	FIELD BOOK #:	UMA AECOM	
POSTED TO LBIS		DESIGNED BY: GEB	CHECKED BY: -----
		DRAWN BY: Wjd	APPROVED BY: --
		HOR. SCALE AS NOTED	RELEASED FOR CONSTRUCTION
		VERTICAL AS NOTED	
		DATE: 07/09/12	DATE:
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ENGINEER'S SEAL	
ISSUE / REVISION C ISSUED FOR ADDENDUM C WAS SEALED BY BARRY BISWANGER AND DATED 08/01/23	

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
PERIMETER ROAD PUMPING STATION UPGRADES
 Contract B - Building Upgrades
 Structural
OVERALL ROOF PLAN
 CITY DRAWING NUMBER: **1-0111L-S0001** SHEET: **001** REV: **C** SIZE: **D**