

1 PARTIAL 2ND FLOOR AT BOILER RELOCATION
SCALE: 1:50

- EXISTING LIVE LOAD = 7.2 kPa
- EXISTING SUPERIMPOSED DEAD LOAD = 0.43 kPa
- EXISTING STRUCTURE HAS BEEN REVIEWED FOR NEW EQUIPMENT LOADS AS SHOWN ON PLAN
- NEW BOILERS TO BE TRANSPORTED TO THEIR INSTALLED LOCATION ON A PLATFORM WITH A MINIMUM AREA OF 4.5 sq m (50 sq ft) TO LIMIT EXCESSIVE STRESSES ON EXISTING SLAB. APPROXIMATE MINIMUM PLATFORM DIMENSIONS 1.5m x 3.0m (5ft x 10ft)
- TRANSPORT PLATFORM NOT TO EXCEED 150mm IN HEIGHT UNLESS DOOR AND EQUIPMENT HEIGHTS DICTATE OTHERWISE.

GENERAL NOTES

- STRUCTURAL DESIGN BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015 EDITION.
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS ARE TO BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS AND EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. THESE STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE ALL COMPONENTS NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON AND AROUND THE JOBSITE DURING CONSTRUCTION.

CAST-IN-PLACE CONCRETE

1. CONCRETE

- ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CSA-A23.1-14 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CSA-A23.2-14 "METHOD OF TEST FOR CONCRETE".
- PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY, YIELD AND STRENGTH AS SPECIFIED IN CONCRETE MIXES, AND WILL COMPLY WITH CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF SASKATCHEWAN.
- PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH REQUIREMENTS OF CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF SASKATCHEWAN.
- CONCRETE PROPERTIES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INTERIOR HOUSEKEEPING SLAB: 25 MPA MIN. AT 28 DAYS
CLASS OF EXPOSURE: N
ENTRAINED ANY/CATEGORY: NONE (LESS THAN 3%)
AGGREGATE MAX. 20 MM
CURING TYPE: TYPE 2 - ADDITIONAL

UNLESS INDICATED OTHERWISE THE CONTRACTOR SHALL SPECIFY CONCRETE SLUMP APPROPRIATE WITH PLACEMENT METHODS AND SITE CONDITIONS. THE CONTRACTOR SPECIFIED SLUMP MUST BE SHOWN ON THE CERTIFICATION LETTER AND CONCRETE DELIVERY TICKET.

- UNLESS NOTED OTHERWISE CURING TO CONFORM TO THE LATEST EDITION OF CSA-A23.1-14 AS FOLLOWS:
A) TYPE 2 - ADDITIONAL: 7 DAYS \pm 10% AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.

REINFORCING STEEL

- ALL REINFORCING STEEL TO BE CSA-G30.18M-09 GRADE 400R DEFORMED BARS.
- REINFORCING STEEL COVER IS TO CONFORM TO CAN/CSA A23.3-14 "DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS" AND AS FOLLOWS:
INTERIOR HOUSEKEEPING SLAB:
EXPOSURE CLASS: N 20 MM TOP 20 MM BOTTOM
- ALL REINFORCING TO BE HELD IN PLACE, AND TIED BY THE USE OF PROPER ACCESSORIES, SUCH AS H-CHAINS, SPACERS, ETC. TO BE SUPPLIED BY THE REINFORCING STEEL FABRICATOR.

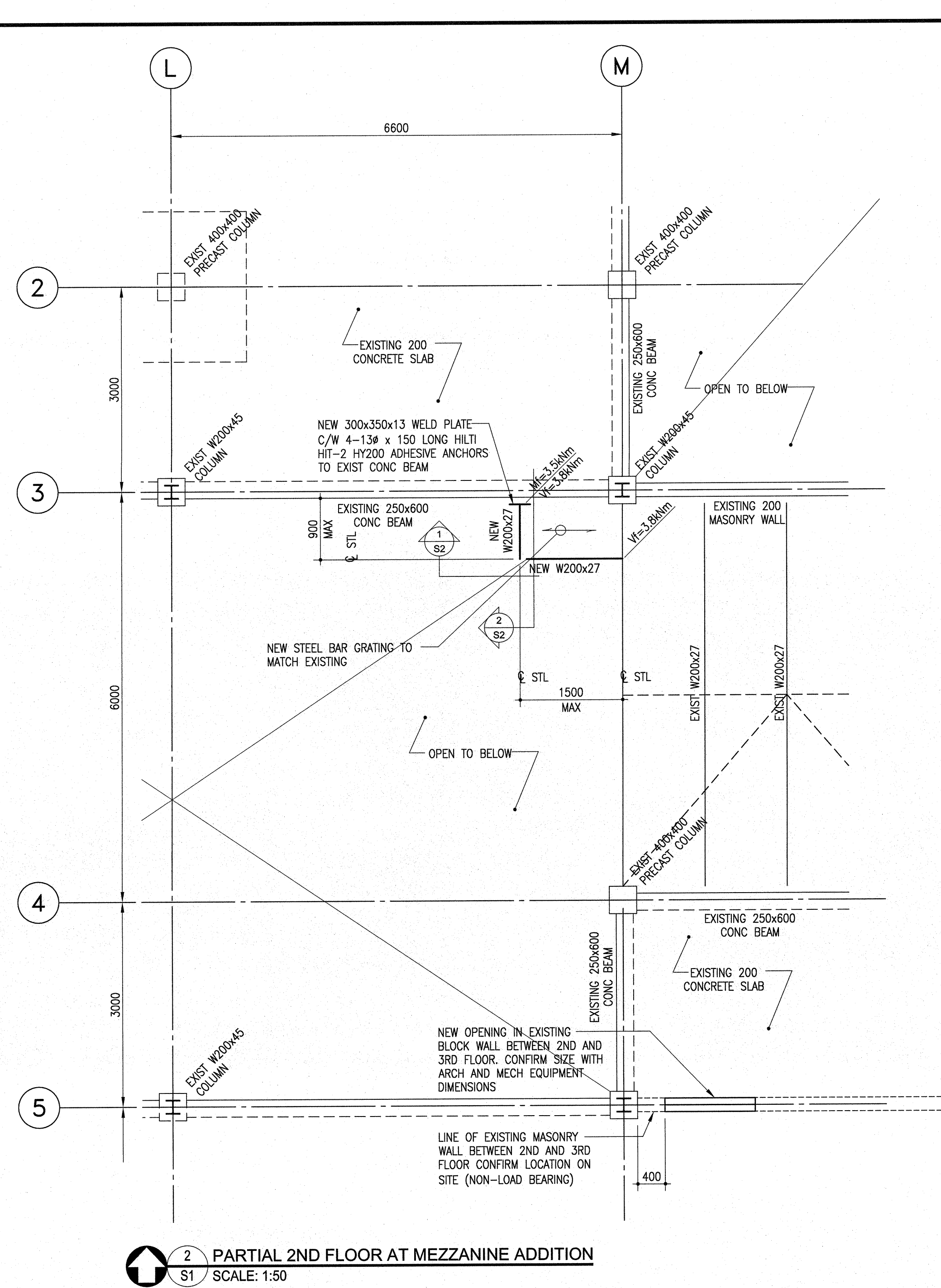
STRUCTURAL STEEL

- THE STRUCTURAL STEEL FABRICATOR'S ENGINEER SHALL BE RESPONSIBLE FOR LOCATING AND DESIGNING PROVISIONS FOR ALL TEMPORARY FALL PROTECTION SYSTEMS REQUIRED DURING CONSTRUCTION TO MEET SASKATCHEWAN WORKPLACE HEALTH AND SAFETY REGULATIONS.
- STRUCTURAL STEEL TO CONFORM TO CSA-C40.21, "STRUCTURAL QUALITY STEELS" AND CSA-C40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
- ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE C40.21-350W.
- ALL ANGLES, CHANNELS AND PLATES SHALL BE C40.21-300W.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CSA S16-14, "DESIGN OF STEEL STRUCTURES".
- ALL WELDING SHALL CONFORM TO THE LATEST EDITION OF CSA W59, "WELDED STEEL CONSTRUCTION". FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CSA W47.1, "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES".
- ALL BOLTED CONNECTIONS TO USE A325 HIGH STRENGTH BOLTS. MINIMUM CONNECTION SHALL CONSIST OF 2 BOLTS.
- ALL STRUCTURAL STEEL IS TO RECEIVE ONE COAT OF QISC/CPMA 1-73A QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP1. STEEL RECEIVING PRIMER PAINTING TO HAVE ONE COAT OF QISC/CPMA 2-75 QUICK DRYING SHOP PRIMER.
- STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP7.
- FABRICATOR TO NOTIFY ENGINEER OF ANY PROPOSED MEMBER SUBSTITUTIONS AND CHANGED CONNECTION DETAILS.
- THE STRUCTURAL STEEL SUPPLIER SHALL PROVIDE AND BE RESPONSIBLE FOR ALL HOLES IN STEEL SECTIONS REQUIRED BY OTHER TRADES. SECTION SHALL BE STRENGTHENED WHERE REQUIRED TO GUARANTEE THE ORIGINAL STRENGTH OF THE BEAM. ANY CUTTING OF STEEL AT THE JOB SITE SHALL BE DONE ONLY AS DIRECTED AND APPROVED BY THE ENGINEER.

- THE STRUCTURAL STEEL ERECTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND ERECTING ALL TEMPORARY GUYING AND BRACING OF THE STEEL FRAMING TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE AND IT IS SAFE TO REMOVE.
- STRUCTURAL STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF SASKATCHEWAN COVERING THE DESIGN OF CONNECTIONS, TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION. CONNECTION DESIGN TO INCLUDE FOR ALL ADJUSTABLE CONNECTIONS REQUIRED TO SUITE FABRICATION AND ERECTION PROCEDURES AND TOLERANCES.

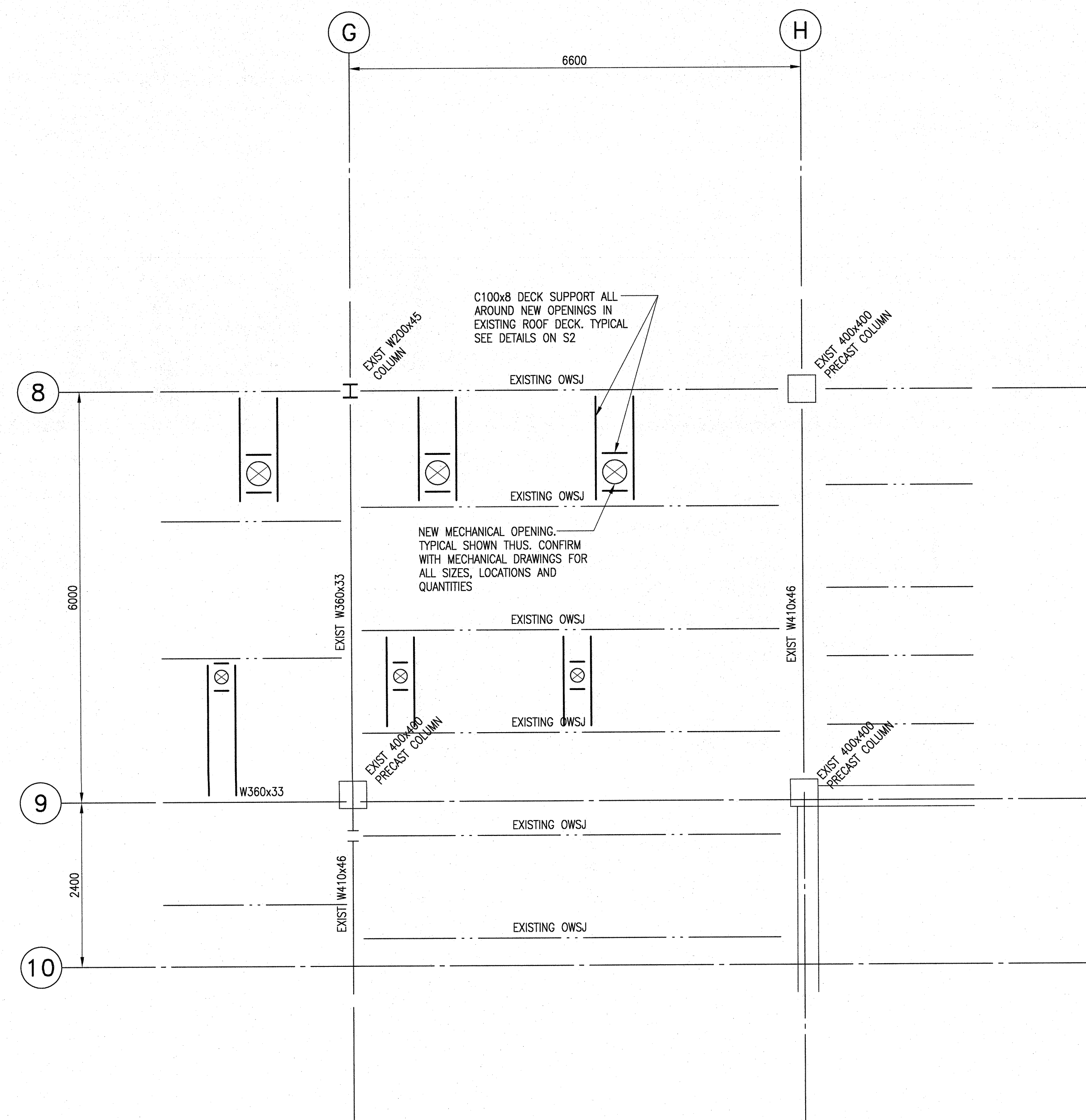
MISCELLANEOUS METAL - GUARDRAILS

- STEEL GUARDRAIL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF SASKATCHEWAN FOR REVIEW BY THE PROJECT ENGINEER, PRIOR TO FABRICATION. ENGINEERING SHOP DRAWINGS SHALL INCLUDE DESIGN LOADS, LAYOUT PLAN, CONNECTION DETAILS, AND ALL OTHER PERTINENT INFORMATION.
- STEEL GUARDRAIL SUPPLIER/DESIGNER SHALL PROVIDE A FINAL INSPECTION AND A LETTER SEALED BY THE ENGINEER RESPONSIBLE FOR THE GUARDRAIL DESIGN, CERTIFYING THAT GUARDRAILS ARE CONSTRUCTED AND INSTALLED AS PER DESIGN ASSUMPTIONS AND INSTALLATION REQUIREMENTS.

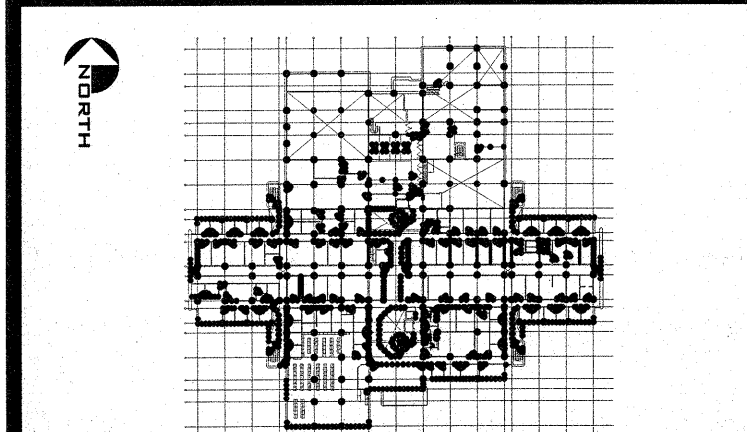


2 PARTIAL 2ND FLOOR AT MEZZANINE ADDITION
SCALE: 1:50

- DESIGN LIVE LOAD = 4.8 kPa
- DESIGN DEAD LOAD = 1.0 kPa
- EXISTING STRUCTURE HAS BEEN REVIEWED FOR THE NEW LOADS
- APPLIED BY THE ADDITION OF MEZZANINE PLATFORM
- SHEAR AND MOMENT LOADS INDICATED AS V1 AND M1 ARE FACTORED, TYPICAL UNLESS NOTED.

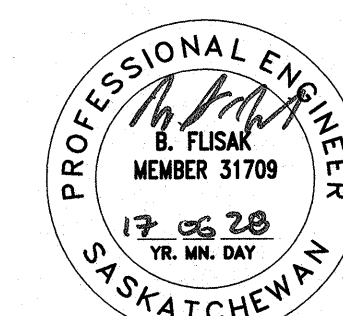
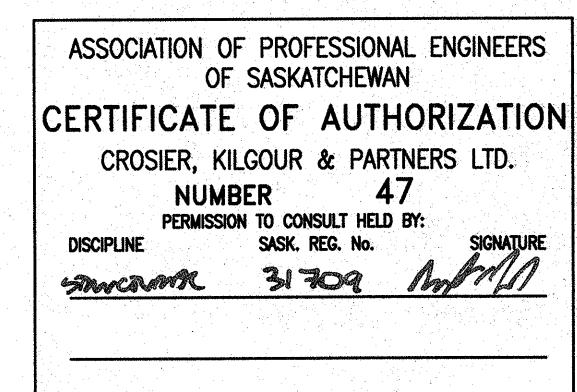


3 PARTIAL ROOF FRAMING PLAN
SCALE: 1:50



BUILDING KEY PLAN

LEGEND



Crosier Kilgour & Partners Ltd.
CONSULTING STRUCTURAL ENGINEERS



revisions	description	date
01	ISSUED FOR CONSTRUCTION	30-JAN-2017
02	ISSUED FOR REVIEW	29-APR-2017

revisions	description	date
A	detail no.	
B	location drawing no.	
C	sur. dessin no.	
	drawing no.	

NHRC
MECHANICAL UPGRADES
BOILERS REPLACEMENT
NATIONAL HYDROLOGY RESEARCH CENTRE
11 INNOVATION BOULEVARD
SASKATOON, SASKATCHEWAN

PARTIAL SECOND FLOOR FRAMING PLAN

Designed By	Conqu par
Date	2017/06/30
Drawn By	JLP
Date	2017/06/30
Reviewed By	Examiné par
Date	2017/06/19
Approved By	Approuvé par
Date	2017/06/30

Tender
Nikolas FEHR
Project Manager
Administrateur de projets

NHRC-010
16131
Drawing no. No. du dessin