

GENERAL NOTES

- STRUCTURAL DESIGN BASED ON THE MANITOBA BUILDING CODE OF CANADA 2011 EDITION.
 - IMPORTANCE CATEGORY: NORMAL
 - WIND LOAD: $q_{50} = 9.4$ P.S.F.
 - GROUND SNOW LOAD: $S_g = 39.6$ P.S.F.
 - ASSOCIATED RAIN LOAD: $S_r = 4.2$ P.S.F.
- SEISMIC SITE CLASSIFICATION: NOT APPLICABLE
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS ARE TO BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS PROJECT 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.
- PROVIDE TEMPORARY STRUCTURAL WORKING PLATFORM SEPARATE FROM BUT OVER THE EXISTING PLASTER CEILING FOR THE STRUCTURAL STEEL, STEEL JOIST, AND STEEL DECKING INSTALLATION.
- PROVIDE A TEMPORARY HEATED ENCLOSURE OVER THE ENTIRE ROOF DURING WORKING PERIOD.

CAST-IN-PLACE CONCRETE

CONCRETE

- ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CAN/CSA-A23.1-09 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CAN/CSA-A23.2-09 "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 CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
- PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH REQUIREMENTS OF CAN/CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
- CONCRETE STRENGTHS AT 28 DAYS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

MASONRY FILL: 20 MPa MIN. AT 28 DAYS
 CLASS OF EXPOSURE: N
 ENTRAINED AIR/CATEGORY: NONE
 AIR CONTENT: LESS THAN 3%
 AGGREGATE: MAX. 14 mm
 SLUMP: 200 mm \pm 40 mm

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 CONCRETE CURING TO CONFORM TO THE LATEST EDITION OF CAN/CSA-A23.1-09 AS FOLLOWS:
 - TYPE 1 - BASIC: 3 DAYS \geq 10°C AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH.
 - TYPE 2 - ADDITIONAL: 7 DAYS \geq 10°C AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
 - TYPE 3 - EXTENDED: 7 DAYS WET CURING \geq 10°C.

- AIR ENTRAINING ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C260/C260M-10a "STANDARD SPECIFICATION FOR AIR ENTRAINING ADMIXTURES FOR CONCRETE". SUPERPLASTICIZING ADMIXTURES SHALL CONFORM TO ASTM C494/C494M "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR CONCRETE" OR ASTM C1017/C1017M "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR USE IN PRODUCING FLOWING CONCRETE" WHEN FLOWING CONCRETE IS APPLICABLE. AIR ENTRAINING ADMIXTURES TO HAVE A DURABILITY FACTOR GREATER THAN 75, WHEN TESTED TO ASTM STANDARDS C666/C666M PROCEDURE A. SPACING FACTOR FOR ANY AIR ENTRAINING ADMIXTURE MUST BE 0.17mm OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM C457 "STANDARD TEST METHOD FOR MICROSCOPICAL DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE".

REINFORCING STEEL

- ALL REINFORCING STEEL TO BE CAN/CSA-G30.18M GRADE 400W DEFORMED BARS. ALL REINFORCING IS TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL INSTITUTE OF CANADA - MANUAL OF STANDARD PRACTICE, EXCEPT OTHERWISE NOTED.

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 MANITOBA WORKPLACE HEALTH AND SAFETY REGULATIONS.
- STRUCTURAL STEEL TO CONFORM TO CSA-G40.21, "STRUCTURAL QUALITY STEELS" AND CSA-G40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
- ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE G40.21-50W. ALL HOLLOW STRUCTURAL SECTIONS TO BE G40.21-50W CLASS C. ALL ANGLES, CHANNELS AND PLATES SHALL BE G40.21-44W.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA S16-09, "STEEL STRUCTURES FOR BUILDINGS".
- 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 CISC/CPMA 1-73a QUICK DRYING SHOP PRIMER. STEEL IN CRAWLSPACES SHALL RECEIVE 2 COATS. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP2. STEEL RECEIVING FINISH PAINTING TO HAVE ONE COAT OF CISC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP7.
- STRUCTURAL STEEL SUPPLIER TO PROVIDE 1 1/2 IN. X 3/16 IN. MASONRY ANCHORS BY 16 IN. LONG WITH 2 IN. HOOK AT 32 IN. O/C, ON ALL COLUMNS AND BEAMS IN CONTACT WITH MASONRY.
- NO HOLES PERMITTED IN TOP FLANGE OF BEAMS AT COLUMNS WHERE BEAMS ARE CONTINUOUS OVER COLUMNS.

- ALL BEAMS CONTINUOUS OVER COLUMNS ARE TO HAVE WEB STIFFENERS THE SAME SIZE AND ORIENTATION AS THE COLUMN BELOW, UNLESS OTHERWISE NOTED.
- ANCHOR BOLTS TO BE GRADE ASTM A307 PROVIDED BY STEEL SUPPLIER AND SET BY THE GENERAL CONTRACTOR.
- 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 ALL STEEL DECKING IS ERECTED, WELDED IN PLACE AND ALL MASONRY/CONCRETE WALLS CONSTRUCTED.
- UNLESS NOTED OTHERWISE ON DRAWINGS PROVIDE L3 x 3 x 1/4 DIAPHRAGM CHORD ANGLE AROUND ENTIRE PERIMETER OF BUILDING.
- ALL OPENINGS LARGER THAN 18 IN. X 18 IN. THROUGH ROOF DECK TO BE FRAMED WITH L3 x 3 x 1/4 ANGLES ALL AROUND, EXCEPT AS NOTED. SMALLER OPENINGS THROUGH STEEL DECK TO BE STIFFENED BY STEEL DECK SUPPLIER. WHERE STEEL DECK REVERSES ITS FRAMING DIRECTION, USE L 2 1/2 x 2 1/2 x 1/4 ANGLE TO SUPPORT EDGE.
- STRUCTURAL STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA 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.
- STRUCTURAL STEEL WHICH SUPPORTS ARCHITECTURAL FINISHES MUST BE DESIGNED TO BE SUFFICIENTLY ADJUSTABLE TO MEET REQUIRED INSTALLATION TOLERANCES. SEE ARCHITECTURAL FOR REQUIRED FINISH TOLERANCES.

STEEL JOISTS

- JOIST FABRICATOR TO CONSULT THE SUPPLEMENTS TO THE NATIONAL BUILDING CODE OF CANADA ON NON-UNIFORM SNOW LOADS.
- JOISTS ARE TO BE CAMBERED FOR THE GREATER OF: FULL DEAD LOAD DEFLECTION OR FOR NOMINAL CAMBER AS SPECIFIED IN CSA S16-09.
- ALL JOIST BRIDGING TO CONFORM WITH THE LATEST BUILDING CODE REQUIREMENTS, EXCEPT AS NOTED.
- JOISTS BEARING ON BEAMS TO REST ON THE MIDDLE THIRD OF THE FLANGE. JOISTS IN LINE TO BEAR END TO END ON THE SUPPORTING BEAMS WITH A MAXIMUM GAP OF 1/2 IN.
- JOIST SUPPLIER TO REFER TO MECHANICAL DRAWINGS FOR LOCATION AND WEIGHTS OF EQUIPMENT SUPPORTED BY JOISTS. JOISTS TO HAVE INTERNAL MEMBERS IN LINE WHERE REQUIRED BY MECHANICAL DUCTS.
- ALL STEEL JOISTS TO RECEIVE ONE COAT OF SHOP PRIMER CISC/CPMA 1-73a QUICK DRYING. JOISTS IN CRAWLSPACE TO HAVE 2 COATS. JOISTS TO BE CLEANED IN CONFORMANCE WITH SSPC-SP2. JOISTS RECEIVING FINISH PAINTING TO HAVE ONE COAT OF CISC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP7.
- JOIST SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- JOISTS WHICH ARE RESISTANCE WELDED SHALL CONFORM TO CSA W55.2, "RESISTANCE WELDING PRACTICE" AND CSA-W55.3, "RESISTANCE WELDING QUALIFICATION CODE FOR FABRICATORS OF STRUCTURAL MEMBERS USED IN BUILDINGS".
- ALL COLUMNS TO BE STRUTTED BY JOISTS OR BEAMS. WHERE JOISTS DO NOT LINE UP WITH COLUMNS USE L3 x 3 x 1/4 ANGLE FROM COLUMN AT BOTTOM OF BEAM FLANGE TO ADJACENT JOIST TOP CHORD AT PANEL POINTS.
- ALL JOISTS LINING UP WITH COLUMNS ARE TO BE STRUT JOISTS, DESIGNED TO RESIST END MOMENTS AS INDICATED ON THE DRAWINGS.
- LIVE LOAD DEFLECTION CRITERIA SHALL BE L/360 UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL REPORT TO ENGINEER ANY EQUIPMENT LOADS TO BE SUPPORTED BY JOISTS NOT SHOWN ON DRAWINGS.

METAL DECK

- ROOF DECK SHALL BE 1 1/2 IN. DEEP PROFILE, 0.36IN. WITH RIB SPACING OF 6IN.
- DECK SHALL BE MINIMUM GRADE A WITH A MINIMUM GALVANIZED ZINC COATING TO ZF75.
- DECK SHALL BE MECHANICALLY FASTENED TO BEARING SUPPORTS AT 12 IN. O/C.
- SIDE LAPS SHALL BE MECHANICALLY FASTENED AT 24 IN. ON-CENTRE.
- DECK SUPPLIER SHALL REINFORCE OPENINGS OVER 6 IN. TO 12 IN. ACROSS THE FLUTES WITH MINIMUM L2 1/2 x 2 1/2 x 1/4 EACH SIDE OF OPENING PERPENDICULAR TO FLUTES. ANGLE SHALL BE WELDED TO AT LEAST TWO FLUTES ON EACH SIDE OF OPENING.
- DECK SUPPLIER SHALL REINFORCE OPENINGS OVER 12 IN. TO 18 IN. ACROSS THE FLUTES WITH SUITABLE REINFORCEMENT BASED ON A STRUCTURAL ANALYSIS OF THE LOADS INVOLVED.
- TOUCH UP DECK WITH ZINC RICH PAINT WHERE ZINC COATING HAS BEEN BURNED BY WELDING.

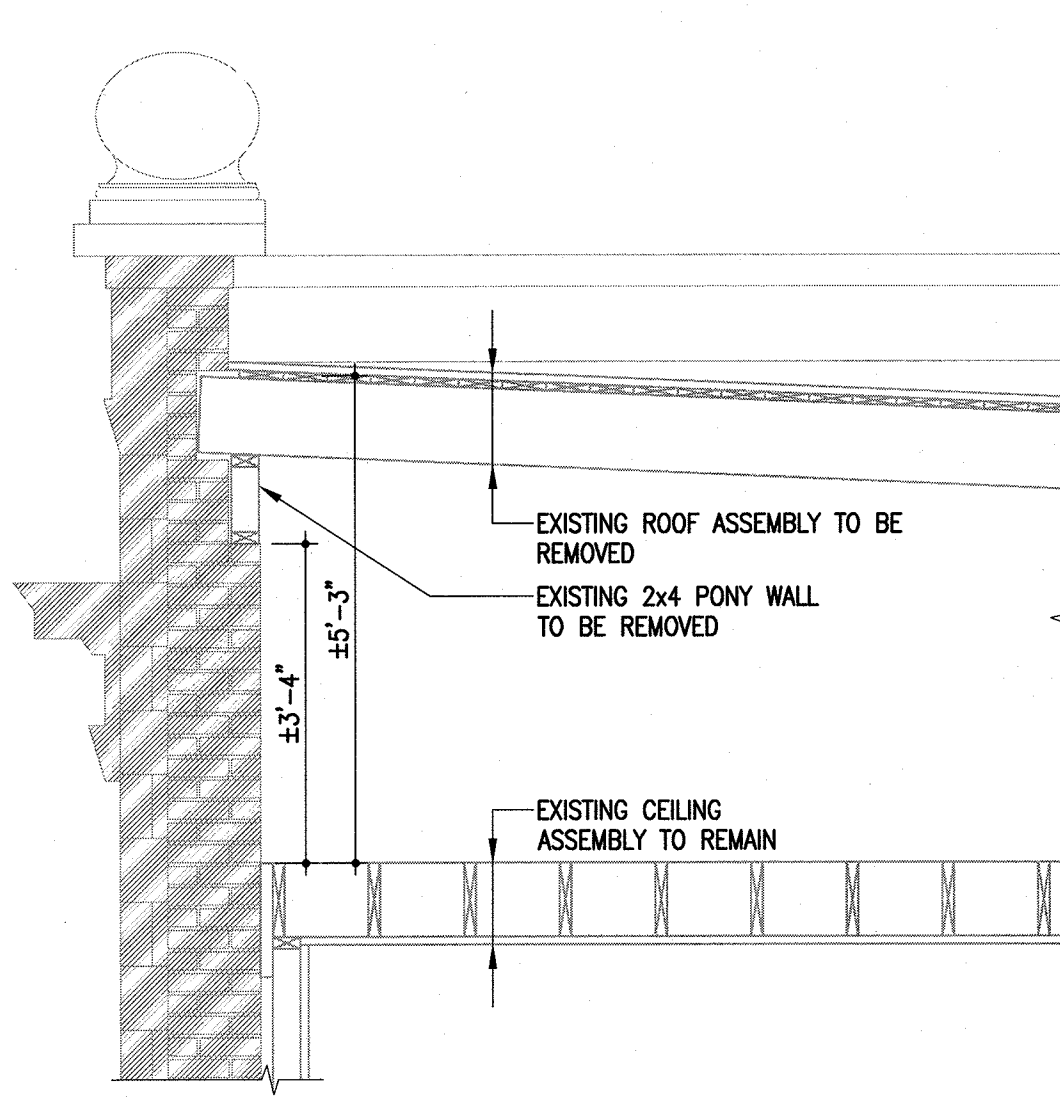
MASONRY

- CONCRETE BLOCKS TO CONFORM TO CAN/CSA-A165-04 SERIES "STANDARDS FOR CONCRETE MASONRY UNITS".
 - STANDARD HOLLOW MASONRY UNITS SHALL BE H/2100/A/M. (COMPRESSIVE STRENGTH IS BASED ON NET AREA).
- MASONRY WALLS ARE TO BE BUILT WITH TYPE "S" MORTAR HAVING A MINIMUM STRENGTH OF 12 MPa AT 28 DAYS. MORTAR SHALL CONFORM TO THE LATEST EDITION OF CSA A179, "MORTAR AND GROUT FOR UNIT MASONRY".
- USE DUB-O-WAL OR EQUAL EVERY SECOND COURSE.
- THE TOP COURSE OF ALL BLOCK WALLS IS TO BE A "U" BLOCK WITH 2-10M CONTINUOUS CENTRED AND FILLED WITH 20 MPa CONCRETE UNLESS NOTED ON PLAN.
- ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS CLOSED IN AND WALL PERMANENTLY SUPPORTED.
- DOOR LINTELS IN BLOCK WALLS SHALL BE AS FOLLOWS UNLESS NOTED ON DRAWINGS:

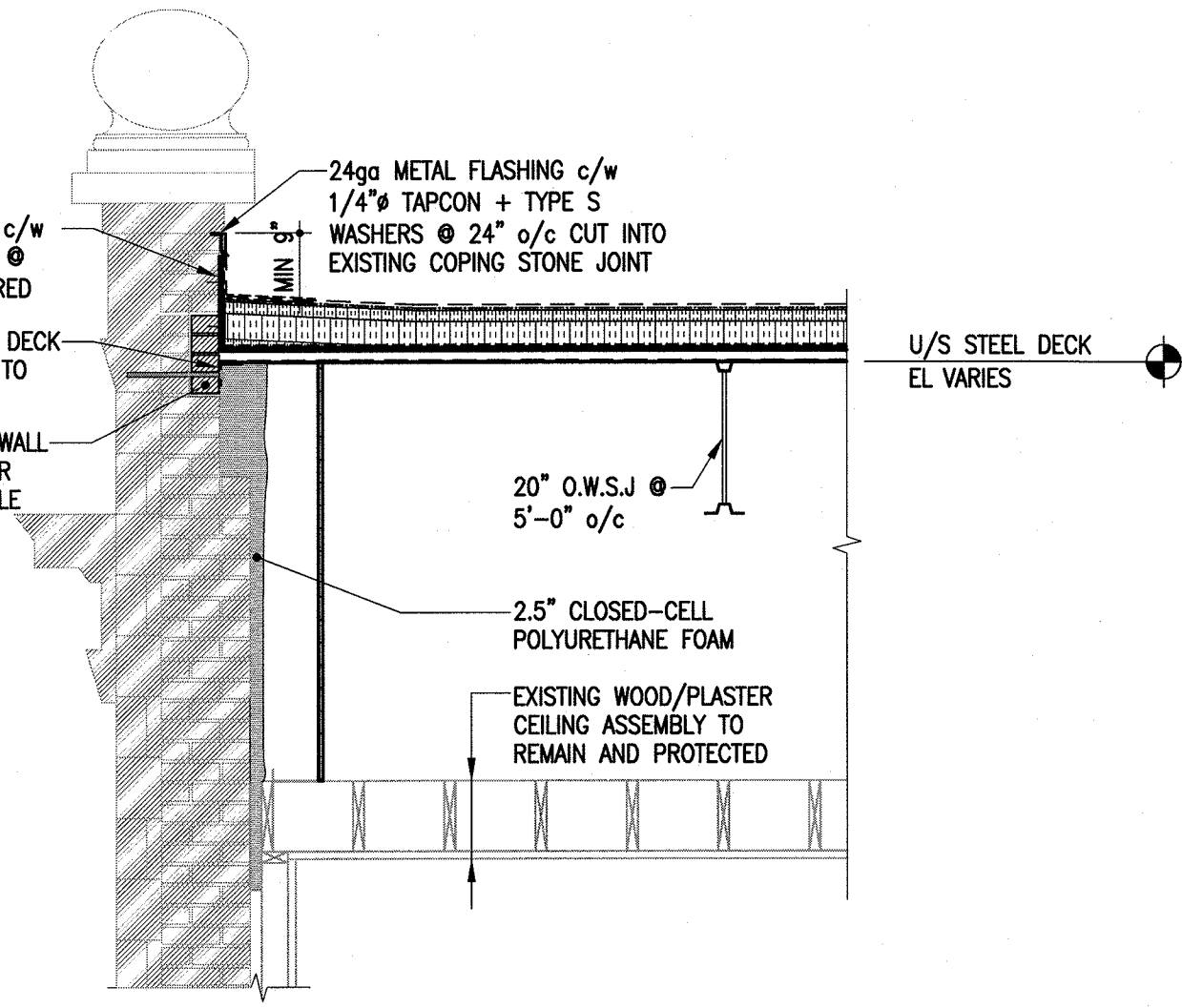
UP TO 4'-0" 8 IN. HIGH "U" BLOCK
 20 MPa CONCRETE FILL
 2-10M BOTTOM

4'-4" TO 8'-0" 16 IN. HIGH "U" BLOCK
 20 MPa CONCRETE FILL
 2-15M BOTTOM

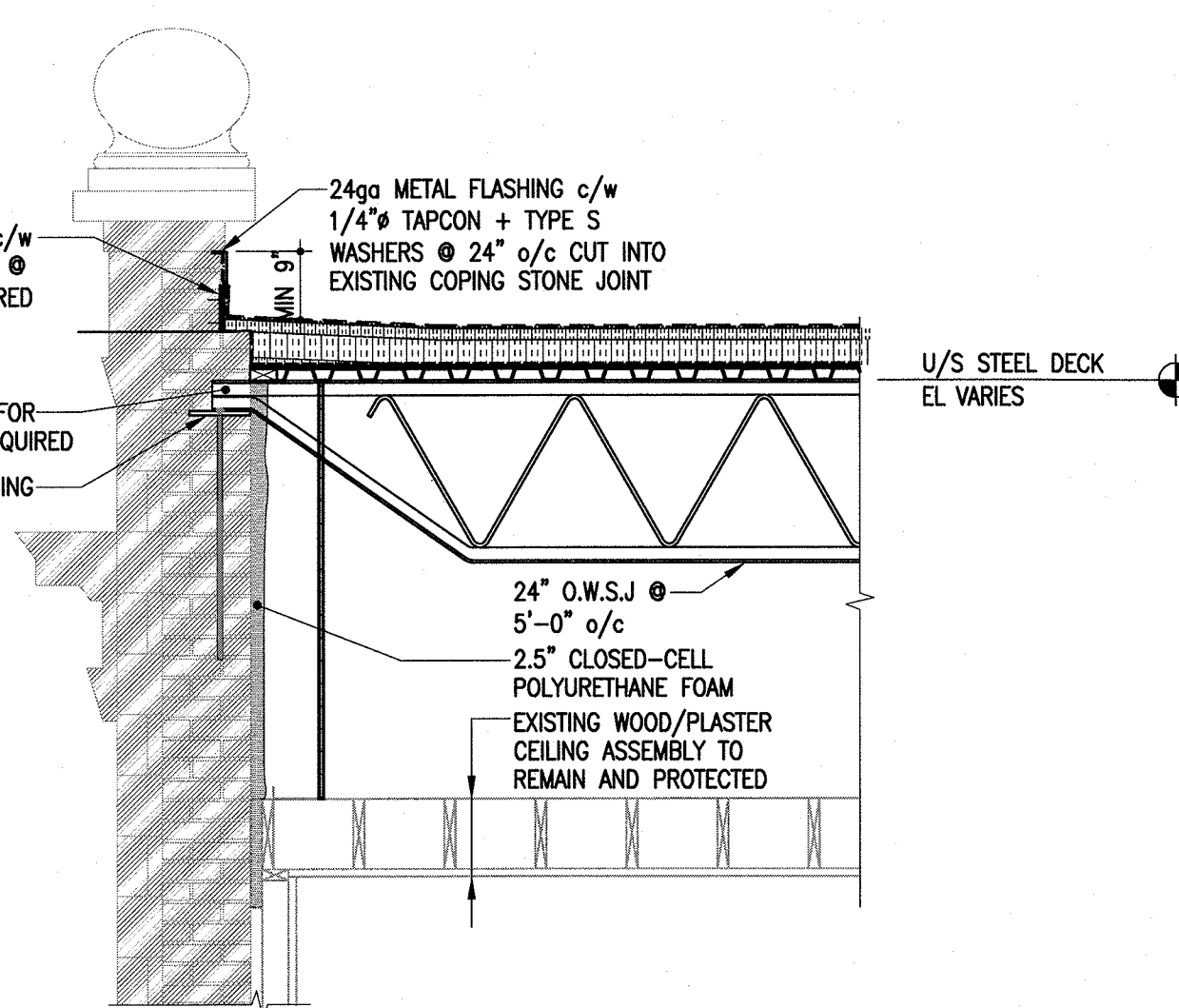
NOTE:
 ALTERNATE MASONRY LINTEL MAY BE 2-L4x4x3/8" WITH 8" MINIMUM BEARING EACH END.



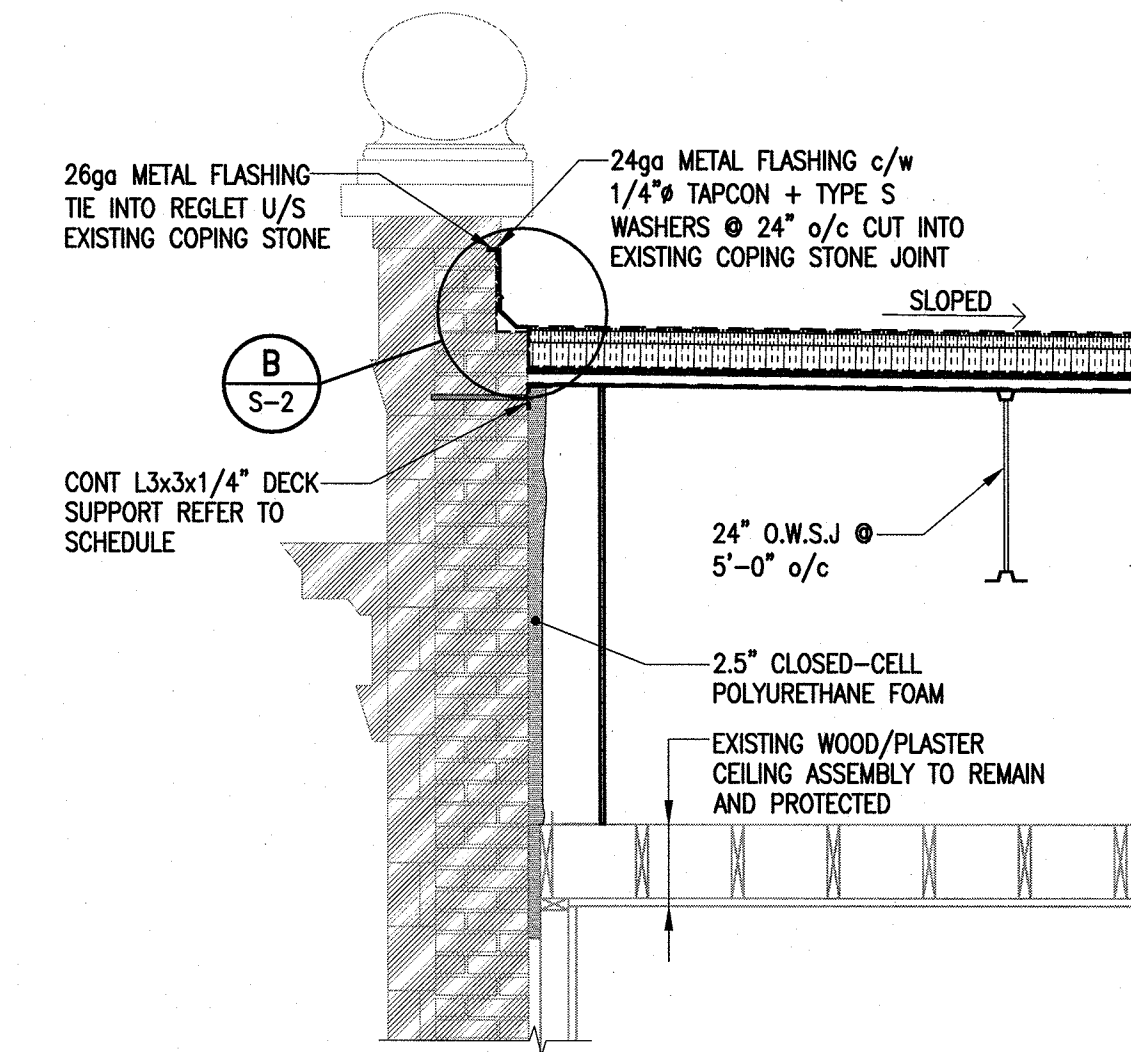
1 EXISTING SECTION
 S-2 1/2" = 1'-0"



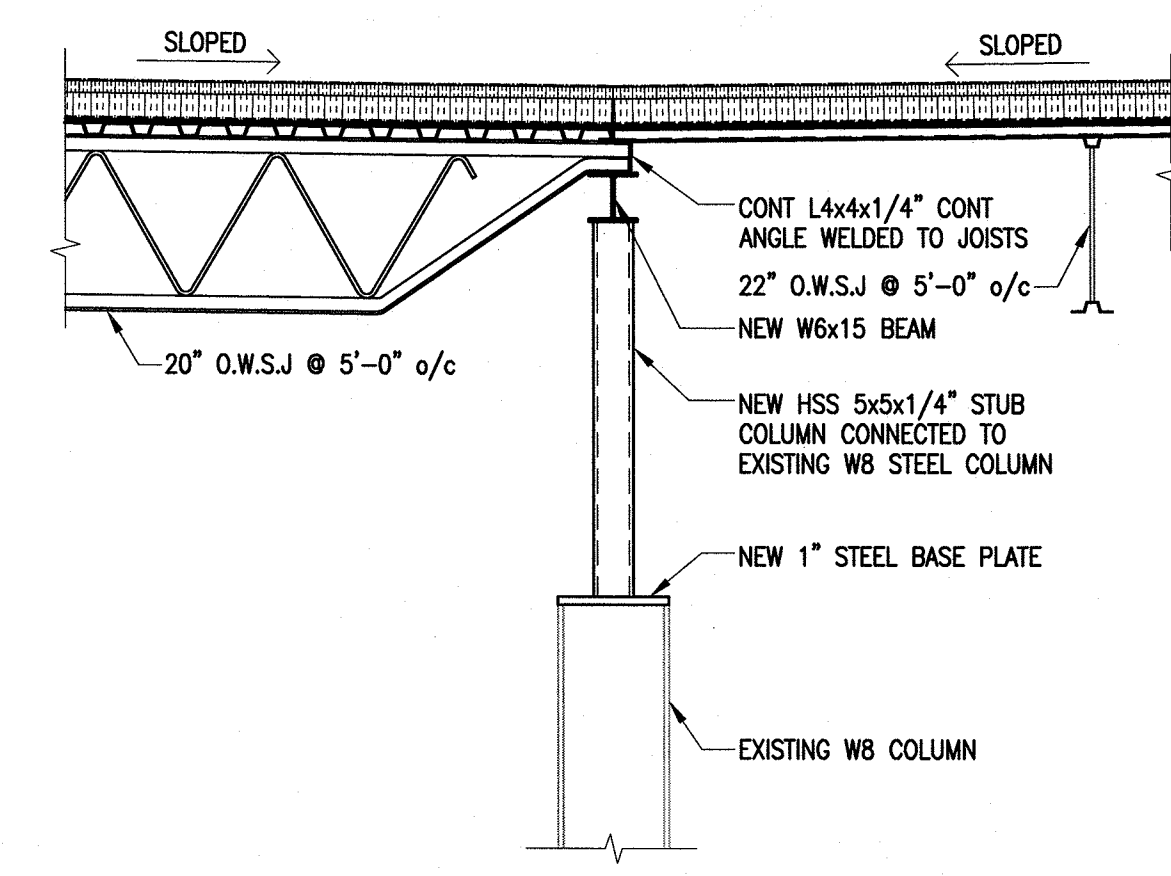
1A NEW SECTION
 S-2 1/2" = 1'-0"



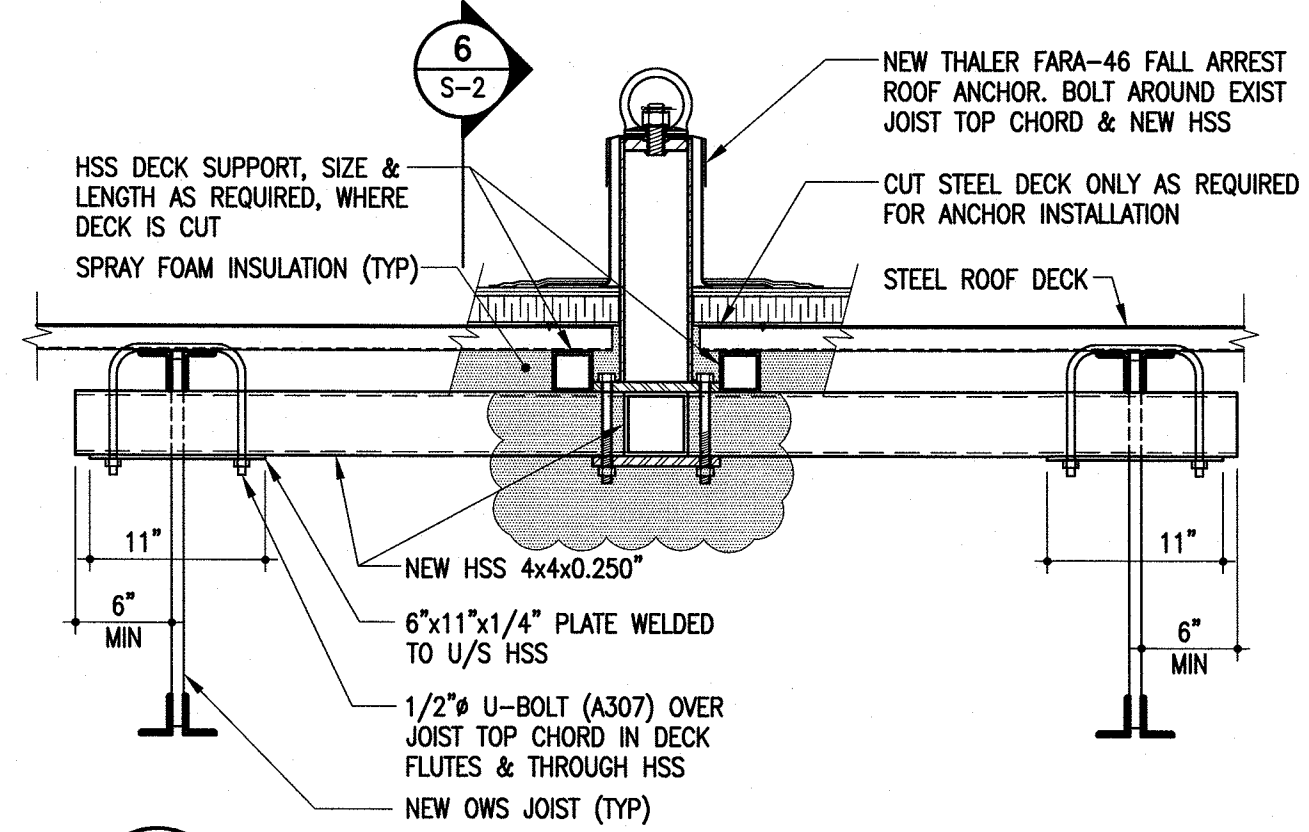
2 SECTION
 S-2 1/2" = 1'-0"



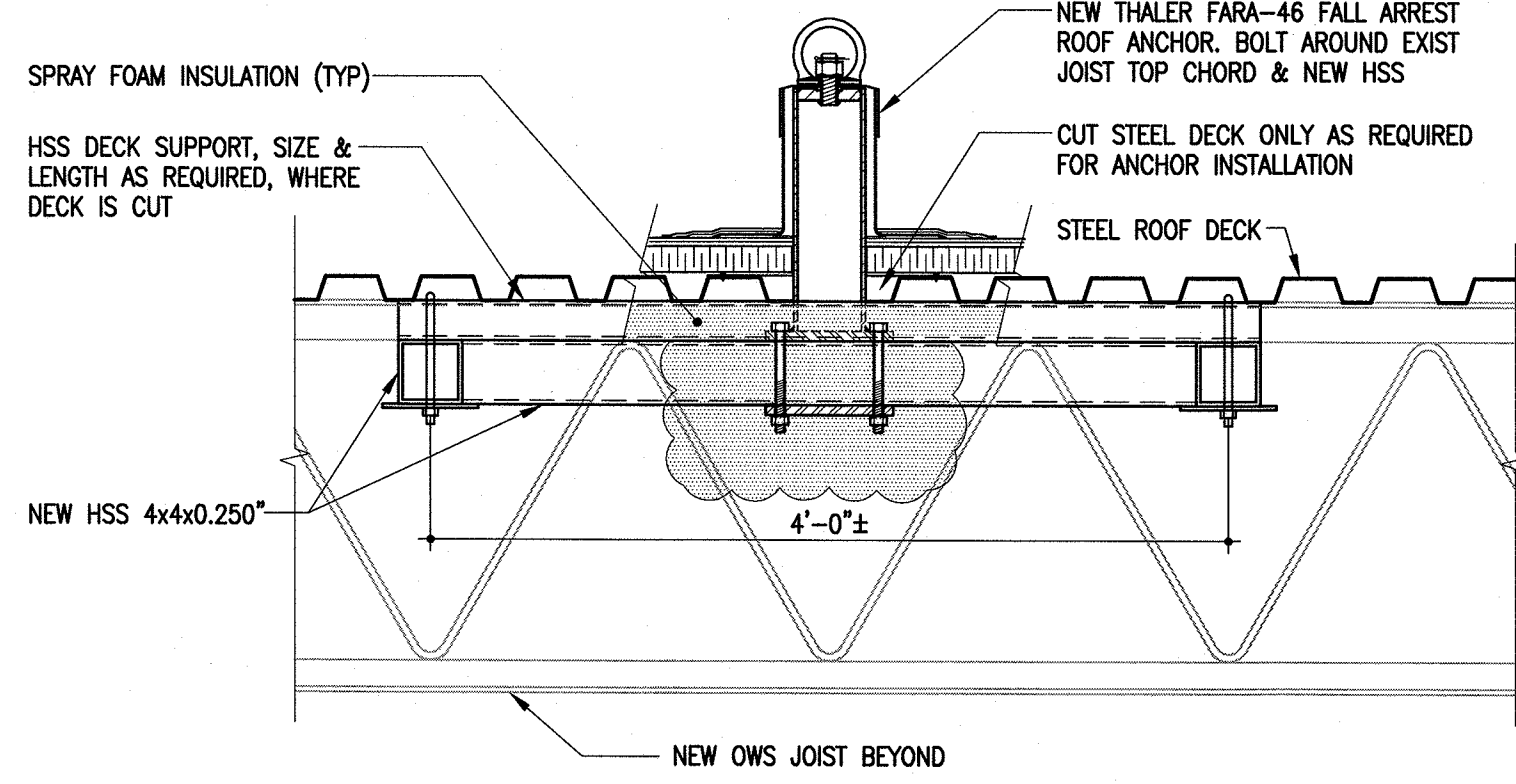
3 SECTION
 S-2 1/2" = 1'-0"



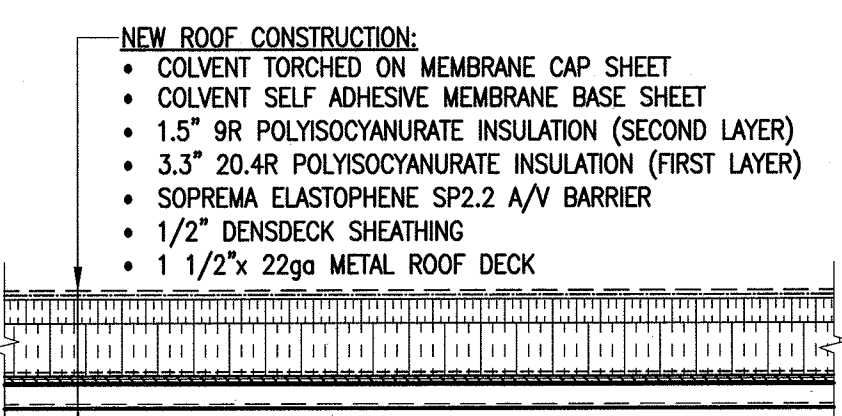
4 SECTION
 S-2 1/2" = 1'-0"



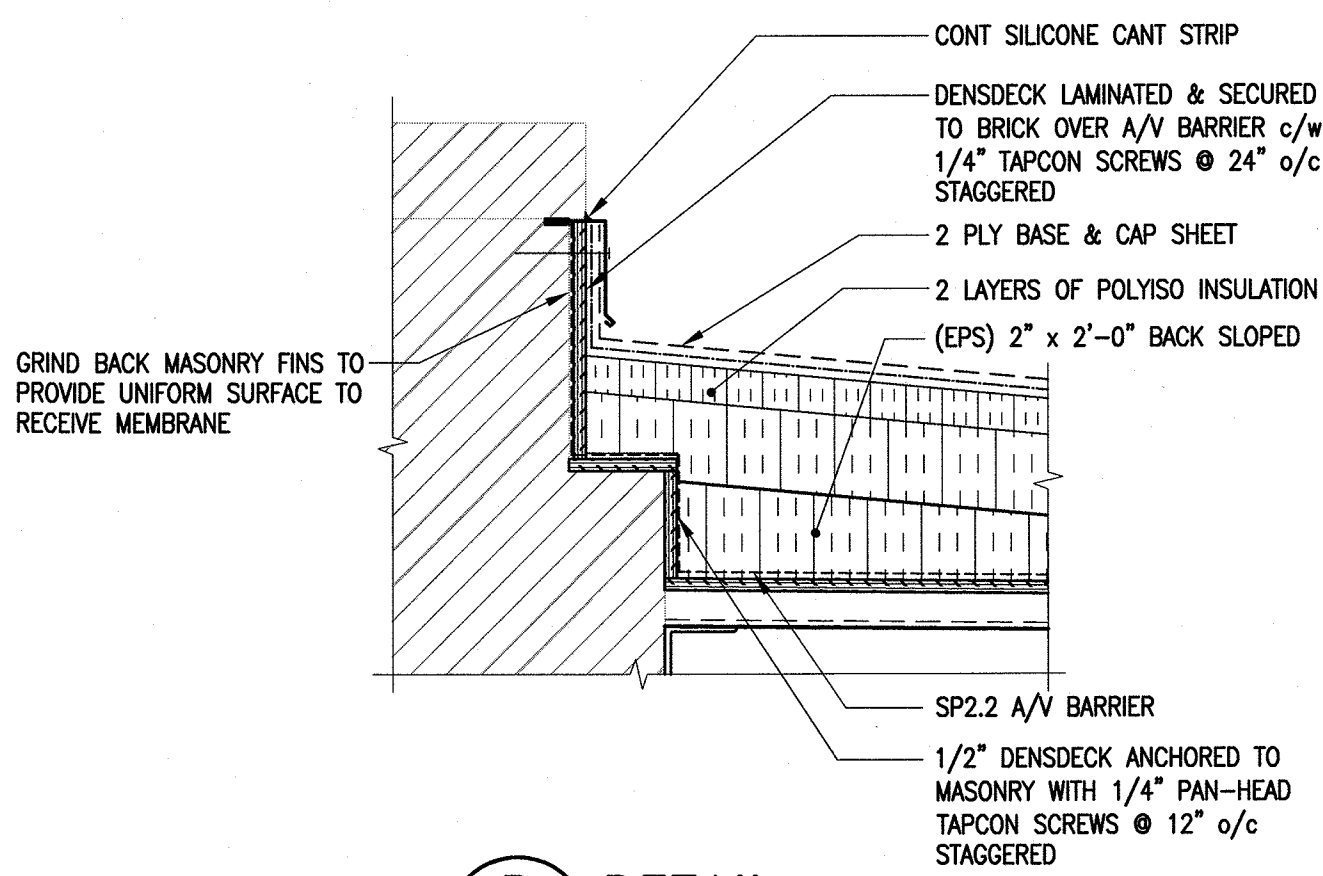
5 TYP FALL ARREST ANCHOR DETAIL
 S-2 1" = 1'-0"



6 TYP FALL ARREST ANCHOR DETAIL
 S-2 1" = 1'-0"



A TYPICAL NEW ROOF SYSTEM
 S-2 1" = 1'-0"



B DETAIL
 S-2 1 1/2" = 1'-0"

NOTES:

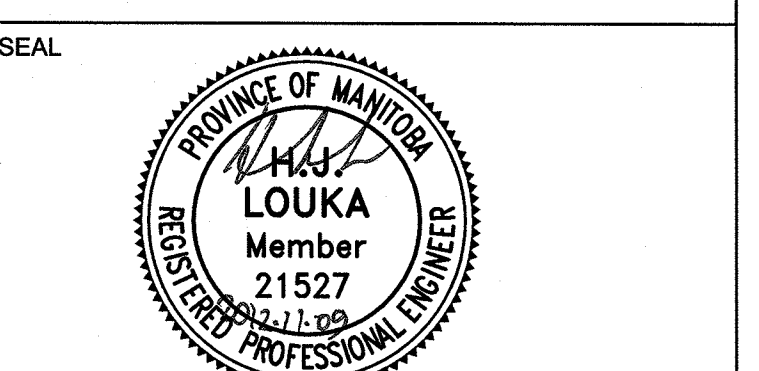


DRAWING LIST	
SHEET No.	SHEET TITLE
S-1	DEMOLITION PLAN, NEW ROOF FRAMING PLAN
S-2	GENERAL NOTES, SECTIONS & DETAILS
S-3	SECTIONS & DETAILS

No.	REVISION/DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	PW	09/11/12

Crosier Kilgour & Partners Ltd.
 CONSULTING STRUCTURAL ENGINEERS

AGER LITTLE ARCHITECTS INC
 202C - 275 Broadway - Winnipeg, MB R3C 4M6 - (204) 414-9191



DRAWN	MS	CHECKED	HLL	DESIGNED	PW	APPROVED	HLL
DATE		USER					

THE CITY OF WINNIPEG
 PLANNING, PROPERTY AND
 DEVELOPMENT DEPARTMENT
 MUNICIPAL ACCOMMODATIONS
 DIVISION

PROJECT
 3-65 GARRY STREET, R3C 4K4
CARNegie LIBRARY
ROOF REPLACEMENT

380 William Ave, Winnipeg, MB

SHEET
 TITLE
GENERAL NOTES
SECTIONS & DETAILS

SCALE	PROJECT No.	SHEET No.
AS SHOWN	1210	S-2

DRAWING SHEET SIZE: ARCH D (914mm x 610mm)