

REINFORCED CONCRETE NOTES

- ALL CONCRETE STRUCTURES SHALL CONFORM TO CSA-A23.3 UNLESS NOTED OTHERWISE.
- ALL CONCRETE, CONCRETE MATERIAL, FORMS, PRACTICE, ETC., SHALL CONFORM TO CSA-A23.1 UNLESS NOTED OTHERWISE.
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 35 MPa.
- ALL CONCRETE TESTING SHALL CONFORM TO CSA-A23.2.
- USE 20mm MAX. AGGREGATE SIZE THROUGHOUT UNLESS NOTED. SLUMP TO BE 75mm (± 25 mm) THROUGHOUT UNLESS NOTED.
- ALL CONCRETE EXPOSED TO WEATHER OR FREEZING CONDITIONS SHALL BE AIR ENTRAINED TO 6.5% (± 1.5 %).
- AT LEAST ONE SLUMP TEST SHALL BE TAKEN WITH EACH COMPRESSIVE STRENGTH TEST.
- AT LEAST ONE AIR ENTRAINMENT TEST SHALL BE TAKEN WITH EACH COMPRESSIVE STRENGTH TEST AS APPLICABLE.
- NO ADMIXTURES SHALL BE USED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION DURING THE PLACEMENT OF CONCRETE TO ENSURE THAT THE REINFORCING STEEL IS MAINTAINED IN ITS CORRECT POSITION.
- AT LEAST SEVEN (7) DAYS SHALL ELAPSE AFTER CASTING CONCRETE WALLS BEFORE FLOOR MEMBERS OR ROOF MEMBERS SUPPORTED THEREON ARE PLACED.
- ALL FORMWORK MUST BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF CONSTRUCTION.
- FORMWORK MUST NOT BE REMOVED UNTIL CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO SUSTAIN ALL LOADING.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 400 MPa AND SHALL CONFORM TO CSA G30.18.
- ALL WELDED WIRE MESH (WWM) SHALL CONFORM TO ASTM A-185.
- ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED IN ACCORDANCE WITH "REINFORCING STEEL MANUAL OF STANDARD PRACTICE" BY THE REINFORCING STEEL INSTITUTE OF CANADA.

CONCRETE COVER OVER REINFORCING

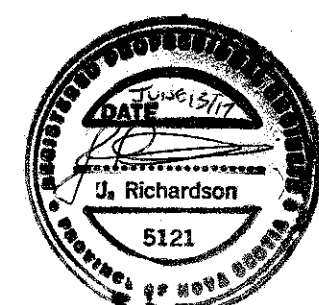
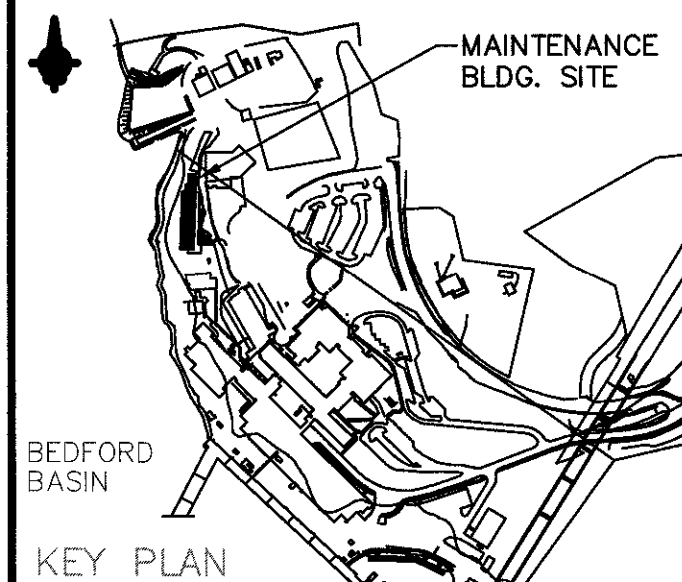
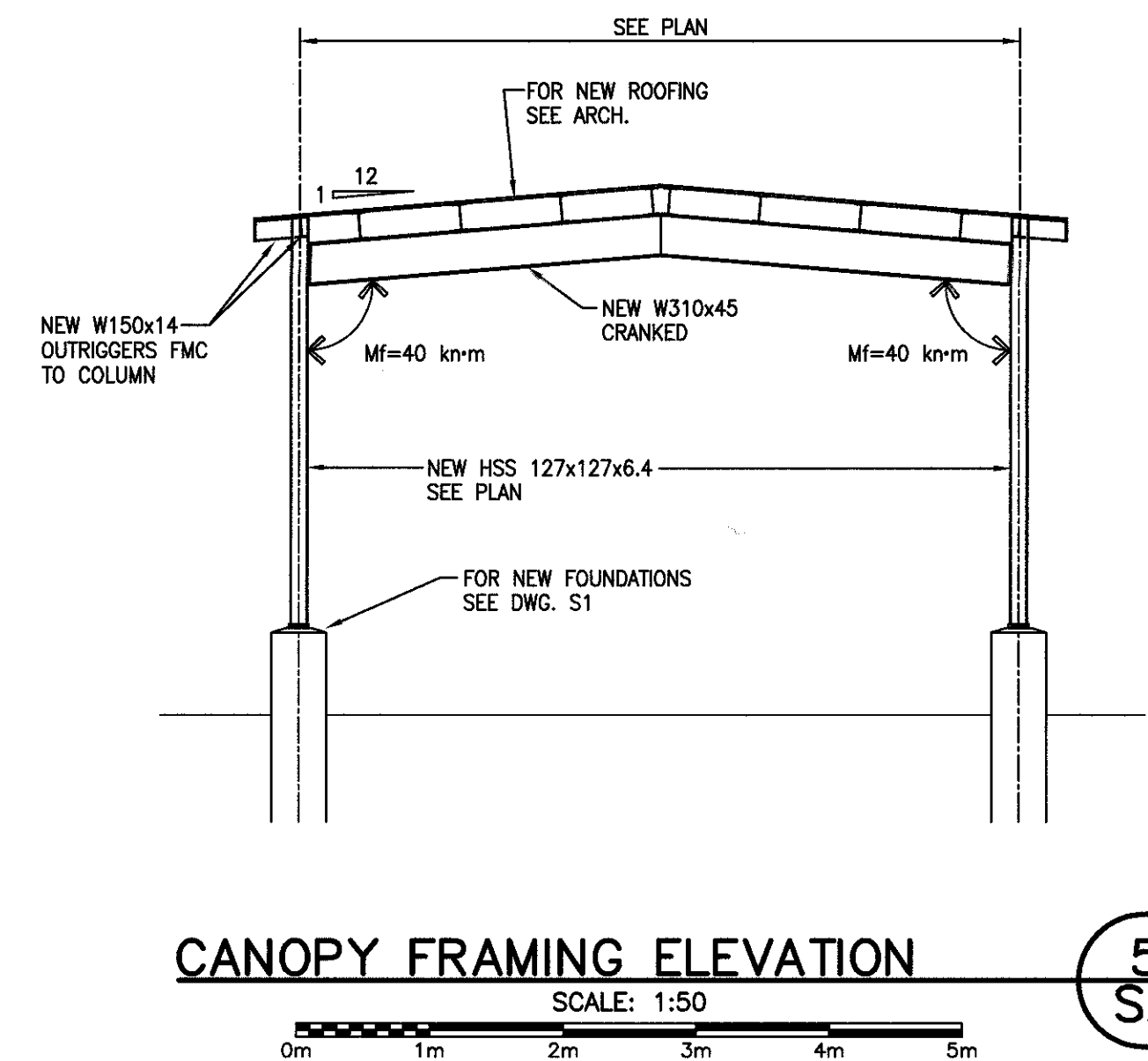
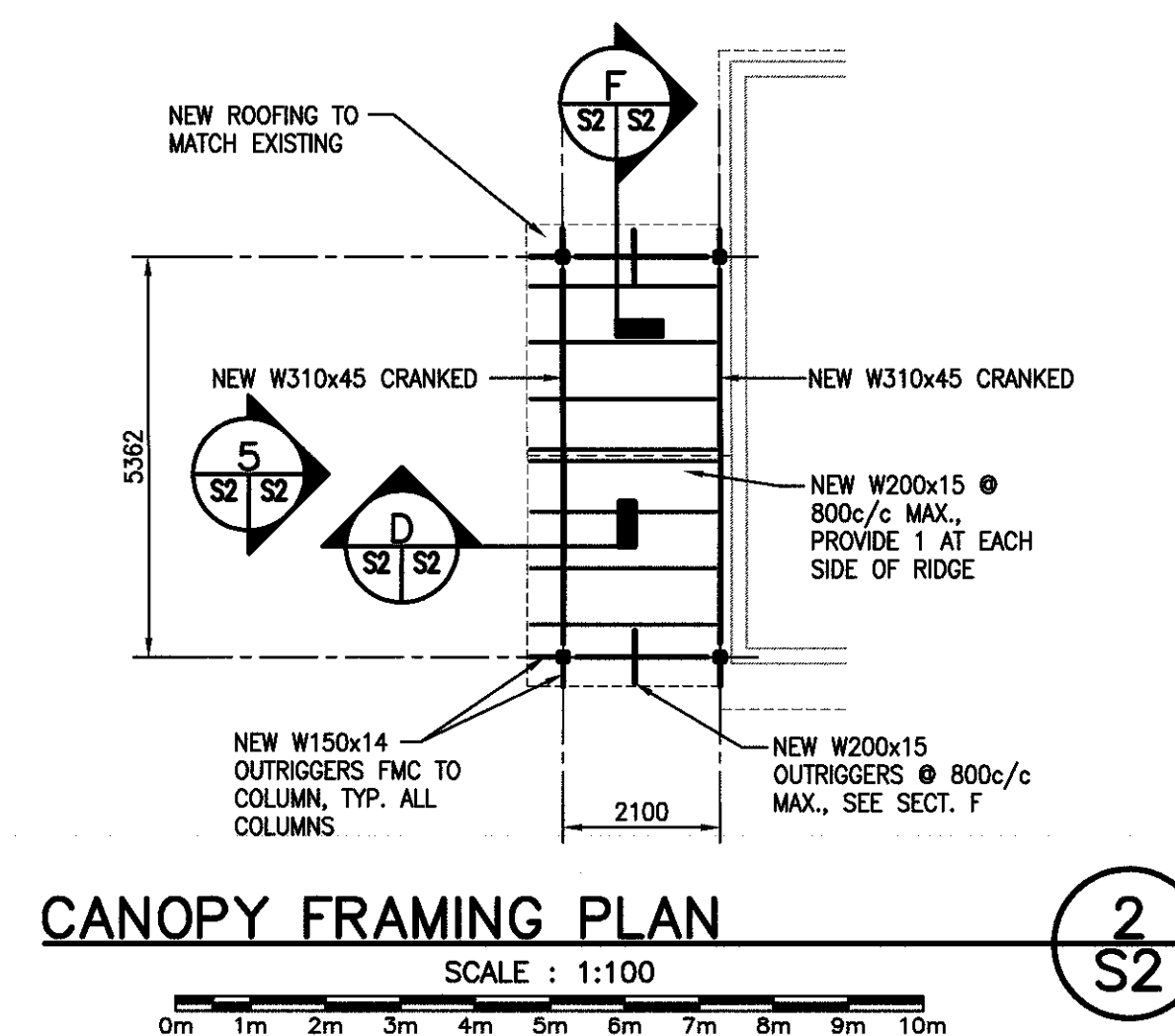
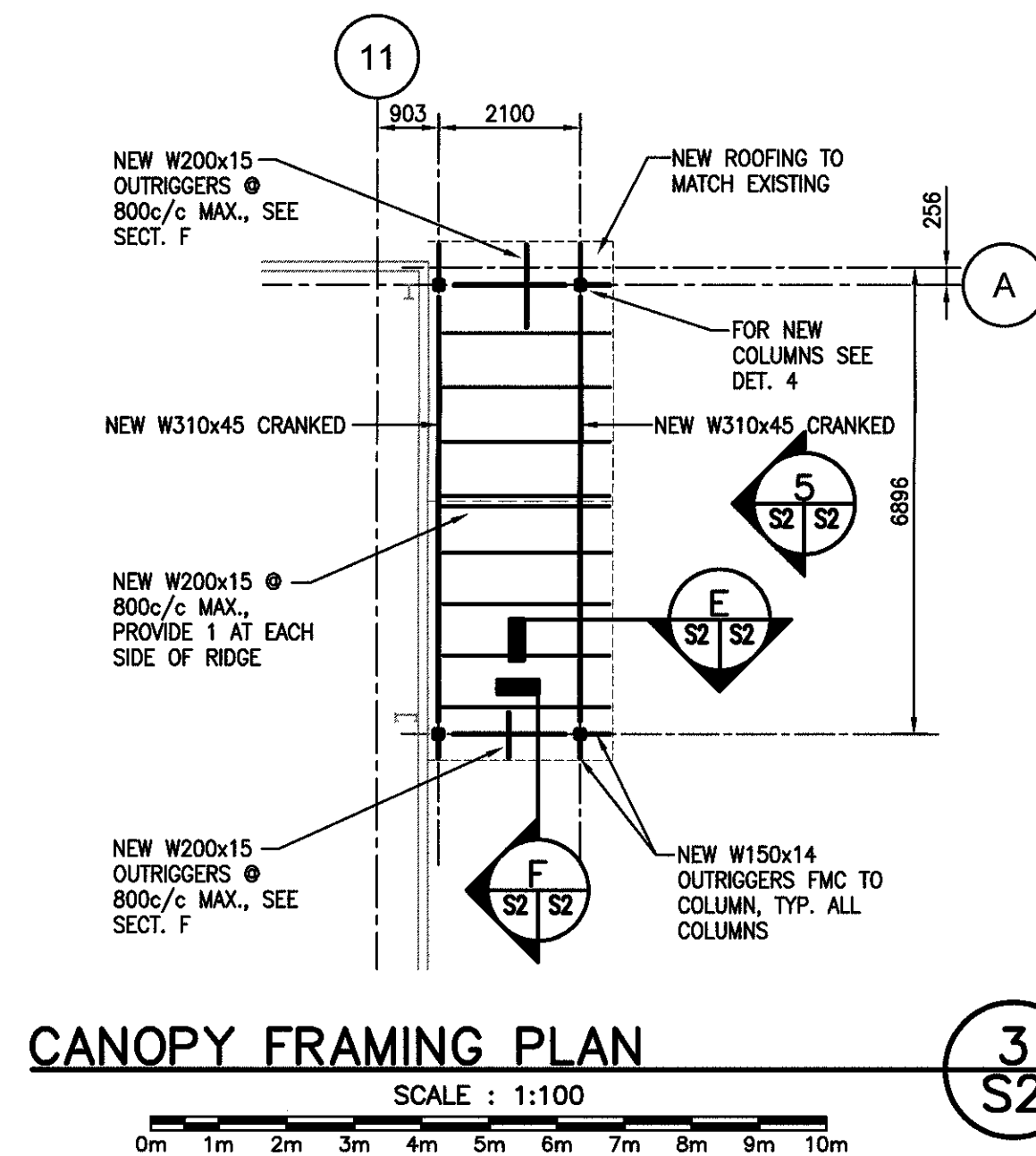
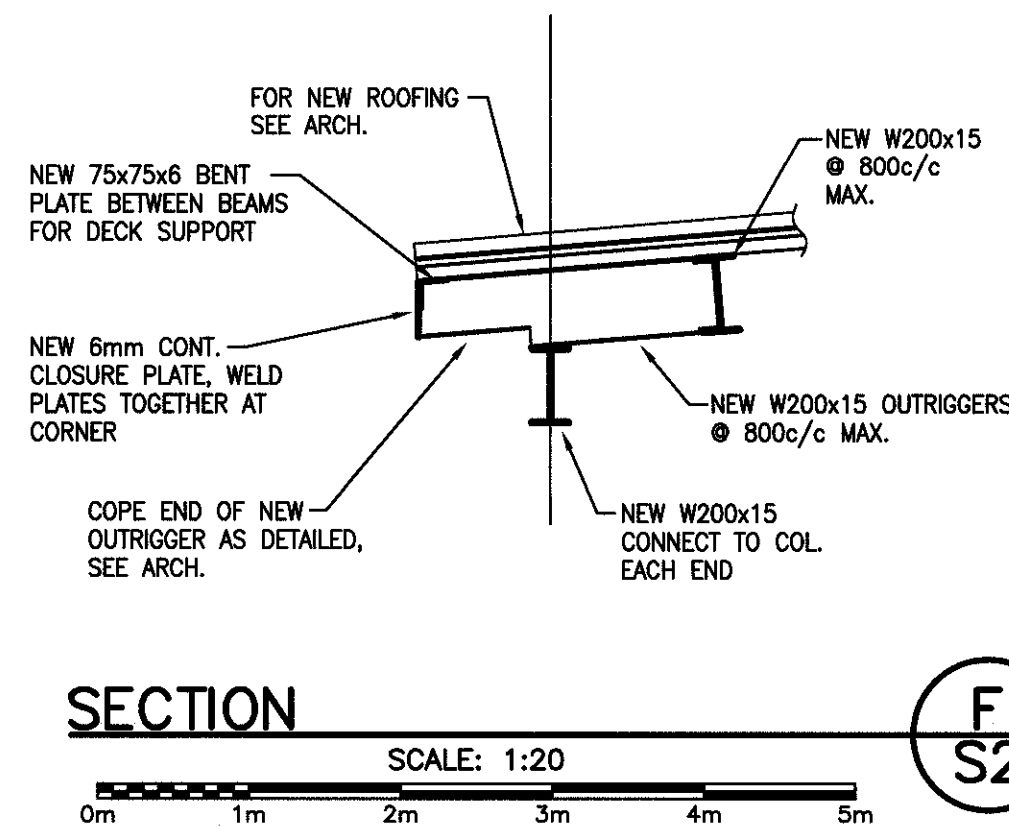
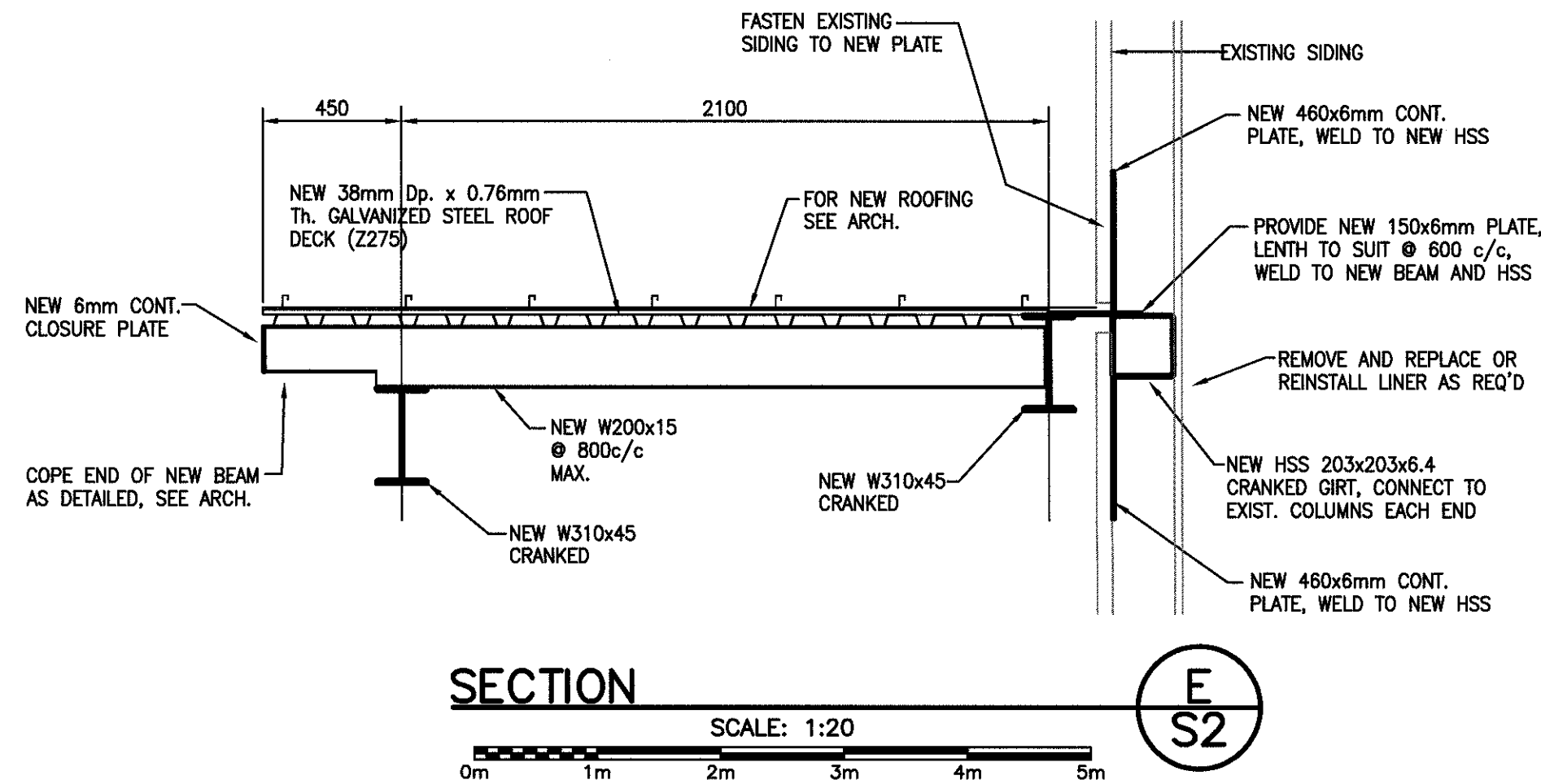
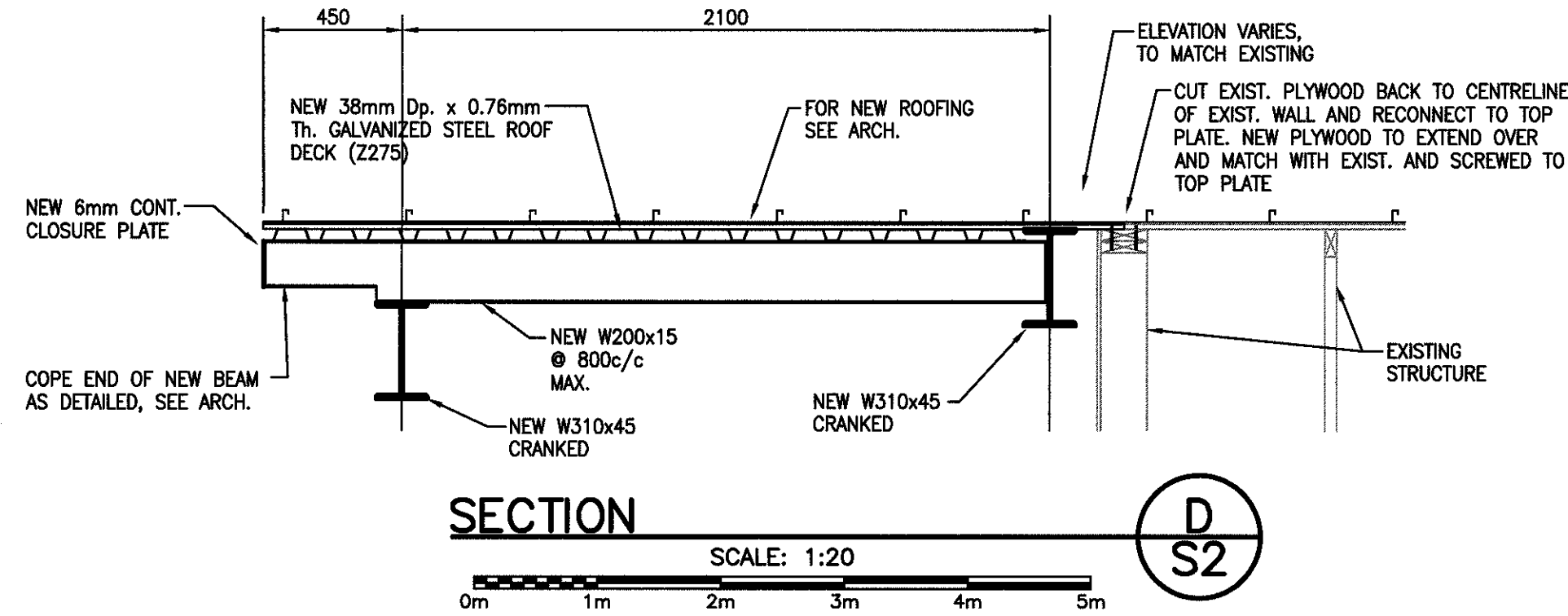
EXPOSURE CONDITION	COVER
EXPOSURE CLASS N CONCRETE THAT IS NOT EXPOSED TO CHLORIDES OR FREEZING & THAWING, OR SULPHATES EXAMPLES: FOOTINGS & INTERIOR SLABS, WALLS AND COLUMNS	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, INCLUDING FOOTINGS AND PILES	3" (75mm)
BEAMS, GIRDERS, AND COLUMNS	1 1/4" (30mm)
SLABS, WALLS, AND JOISTS	1" (25mm)
MIN. RATIO OF COVER TO NOMINAL BAR DIAMETER. INCREASE COVER AS REQUIRED TO MEET THIS REQUIREMENT	1.0
EXPOSURE CLASS F, S, R CONCRETE THAT IS EXPOSED TO FREEZING & THAWING, OR SULPHATES EXAMPLES: EXTERIOR WALLS AND COLUMNS, FOUNDATION WALLS, RESIDENTIAL CONSTRUCTION	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, INCLUDING FOOTINGS AND PILES	3" (75mm)
BEAMS, GIRDERS, AND COLUMNS	1 1/2" (40mm)
SLABS, WALLS, AND JOISTS	1 1/2" (40mm)
MIN. RATIO OF COVER TO NOMINAL BAR DIAMETER. INCREASE COVER AS REQUIRED TO MEET THIS REQUIREMENT	1.5
EXPOSURE CLASS A, C CONCRETE THAT IS EXPOSED TO FREEZING & THAWING OR SEAWATER OR CHLORIDES OR SEWAGE EXAMPLES: EXTERIOR SLABS, SIDEWALKS, CURB & GUTTER, BRIDGE DECKS, PARKING DECKS, SEWAGE TANKS	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, INCLUDING FOOTINGS AND PILES	3" (75mm)
BEAMS, GIRDERS, AND COLUMNS	2 1/4" (60mm)
SLABS, WALLS, AND JOISTS	2 1/4" (60mm)
MIN. RATIO OF COVER TO NOMINAL BAR DIAMETER. INCREASE COVER AS REQUIRED TO MEET THIS REQUIREMENT	2.0

STRUCTURAL STEEL NOTES

- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERRECTED IN ACCORDANCE WITH CSA S16.
- ALL STRUCTURAL STEEL SHALL BE NEW STOCK AND CONFORM TO THE FOLLOWING GRADES AND STANDARDS:
 - CSA-G40.21 TYPE 350W UNLESS NOTED.
 - HOLLOW STRUCTURAL SECTIONS : ASTM A500 GRADE C.
 - COLD FORMED SECTIONS : CSA S136, 350 MPa MIN. YIELD STRENGTH.
 - CHANNELS, ANGLES, PLATE MATERIAL & RODS TYPE 300W.
- ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA W59 AND W55.3 BY A FABRICATOR FULLY APPROVED UNDER CSA W47.1 DIVISION No.1 OR No.2.
- ALL BOLTS, NUTS AND WASHERS FOR STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO ASTM A325.
- ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO CSA-G40.21 TYPE 300W.
- INSPECTION AND TESTING OF STRUCTURAL STEEL FRAME WORK (SUCH AS BOLT TORQUE, SHEAR STUDS, ALIGNMENT, ETC.) SHALL BE IN ACCORDANCE WITH CSA S16 BY A QUALIFIED INSPECTION COMPANY ENGAGED BY THE OWNER. COST OF RETESTING DEFECTIVE WELDS SHALL BE BORNE BY THE STRUCTURAL STEEL FABRICATOR.
- SPLICES IN STEEL MEMBERS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, SHALL NOT BE PERMITTED WITHOUT THE PERMISSION OF THE ENGINEER.
- ALL WELDED JOINTS IN ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL BE GROUND SMOOTH AND SHALL HAVE ALL WELD SPLATTER REMOVED.
- SHOP PAINT TO CISC/CPMA 1-73g EXCEPT AS NOTED IN SPECIFICATIONS. TOUCH UP SCRATCHES, BOLTS AND WELDS AFTER ALL STEEL IS ERRECTED.
- PROVIDE CAMBER FOR DEAD LOAD DEFLECTION OF STEEL BEAMS AS INDICATED ON PLANS.
- ALL FABRICATORS SHALL SUBMIT SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF CONSTRUCTION PRIOR TO COMMENCEMENT OF FABRICATION.
- DESIGN ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS FOR SHEAR CALCULATED FROM BEAM LOADED TO FLEXURAL CAPACITY WITH UDL LOAD BASED ON SPAN OF BEAM U/NOTED. BEAMS WITH SIGNIFICANT CONCENTRATED LOADS SHALL BE DESIGNED FOR ADDITIONAL SHEAR CONNECTIONS AS REQUIRED.
- ALL STEEL EXPOSED TO WEATHER TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123/A123M STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS.

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL CONFORM TO THE 2010 EDITION OF THE NATIONAL BUILDING CODE.
- DO NOT SCALE THE DRAWINGS.
- CHECK DIMENSIONS ON THESE DRAWINGS AGAINST DIMENSIONS ON ARCHITECTURAL DRAWINGS BEFORE USING. REPORT ANY DISCREPANCIES.
- ALL LOADS INDICATED ON DRAWINGS ARE SERVICE (UNFACTORED) LOADS UNLESS NOTED.
- THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND CHECK ALL DIMENSIONS AGAINST SITE CONDITIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
- CONTRACTOR SHALL DESIGN, INSTALL AND MAINTAIN ADEQUATE TEMPORARY BRACING AND SHORING OF ALL STRUCTURAL ELEMENTS FOR STABILITY AND SAFETY WHERE REQUIRED DURING CONSTRUCTION. (THE ABOVE WORK IS BEYOND THE SCOPE OF BMR STRUCTURAL ENGINEERING).
- FOR OPENINGS THROUGH CONCRETE FLOOR SLABS, CONCRETE WALLS, MASONRY WALLS, AND STEEL DECK SEE MECHANICAL & ARCHITECTURAL FOR SIZE AND LOCATION. NO NEW OPENINGS SHALL BE CUT THROUGH EXISTING CONCRETE ETC. WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
- ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL, STRUCTURAL FILL OR SOUND CLEAN BEDROCK HAVING A MINIMUM ALLOWABLE BEARING CAPACITY OF 150 kPa. DO NOT PLACE CONCRETE IN FOOTING FORMS UNTIL BEARING CAPACITIES ARE CHECKED AND APPROVED IN WRITING BY THE GEOTECHNICAL ENGINEER. FOOTINGS MAY HAVE TO BE LOWERED TO ACHIEVE PROPER BEARING. DURING COLD WEATHER, SOILS SHALL BE PROTECTED AGAINST FREEZING TO PREVENT FROST HEAVE, LOSS OF BEARING CAPACITY, OR OTHER DAMAGE TO STRUCTURAL MEMBERS, SLABS ON GRADE, MASONRY, FORMWORK, AND OTHER ITEMS SUPPORTED THEREON.
- ALL FOOTINGS SUBJECT TO FREEZING CONDITIONS SHOULD HAVE A MINIMUM OF 1200mm OF SOIL COVER FOR FROST PROTECTION.
- ANY EXCAVATION IN PROXIMITY OF THE EXISTING FOOTINGS MUST BE APPROVED BY THE SOILS ENGINEER PRIOR TO COMMENCEMENT AND COMPLETED UNDER HIS CONTINUAL SUPERVISION.
- ALL GEOTECHNICAL MATERIALS BENEATH SLABS ON GRADE (INCLUDING REMOVAL OF NON-ACCEPTABLE MATERIALS AND REPLACEMENT WITH APPROVED MATERIALS) SHALL BE PREPARED AS DETAILED IN THE SOILS REPORT UNLESS SPECIFICALLY NOTED OTHERWISE. SUB BASE UNDER SLABS ON GRADE SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY. COMPACTION SHALL BE VERIFIED IN WRITING BY THE SOILS ENGINEER PRIOR TO CASTING OF SLABS.



3	ISSUED FOR TENDER	JUN13 2017
2	ISSUED FOR FINAL REVIEW	APR18 2017
1	ISSUED FOR 99% REVIEW	FEB28 2017
0	50% REVIEW	JAN13 2017
NO.	DESC	DATE YEAR
revisions		date

project
**CLADDING REPAIR
BUOY MAINTENANCE AND
MAINTENANCE BUILDING
BIO DARTMOUTH
NOVA SCOTIA**

drawing
**CANOPY FRAMING PLANS
SECTIONS AND NOTES**

designed J. RICHARDSON
date
drawn R. LANDRY
date JAN. 09/17
approved Vanessa Morrison 06/15/17
date
Tender PWGSC Project Manager
project number R.082151.003
drawing no. S2