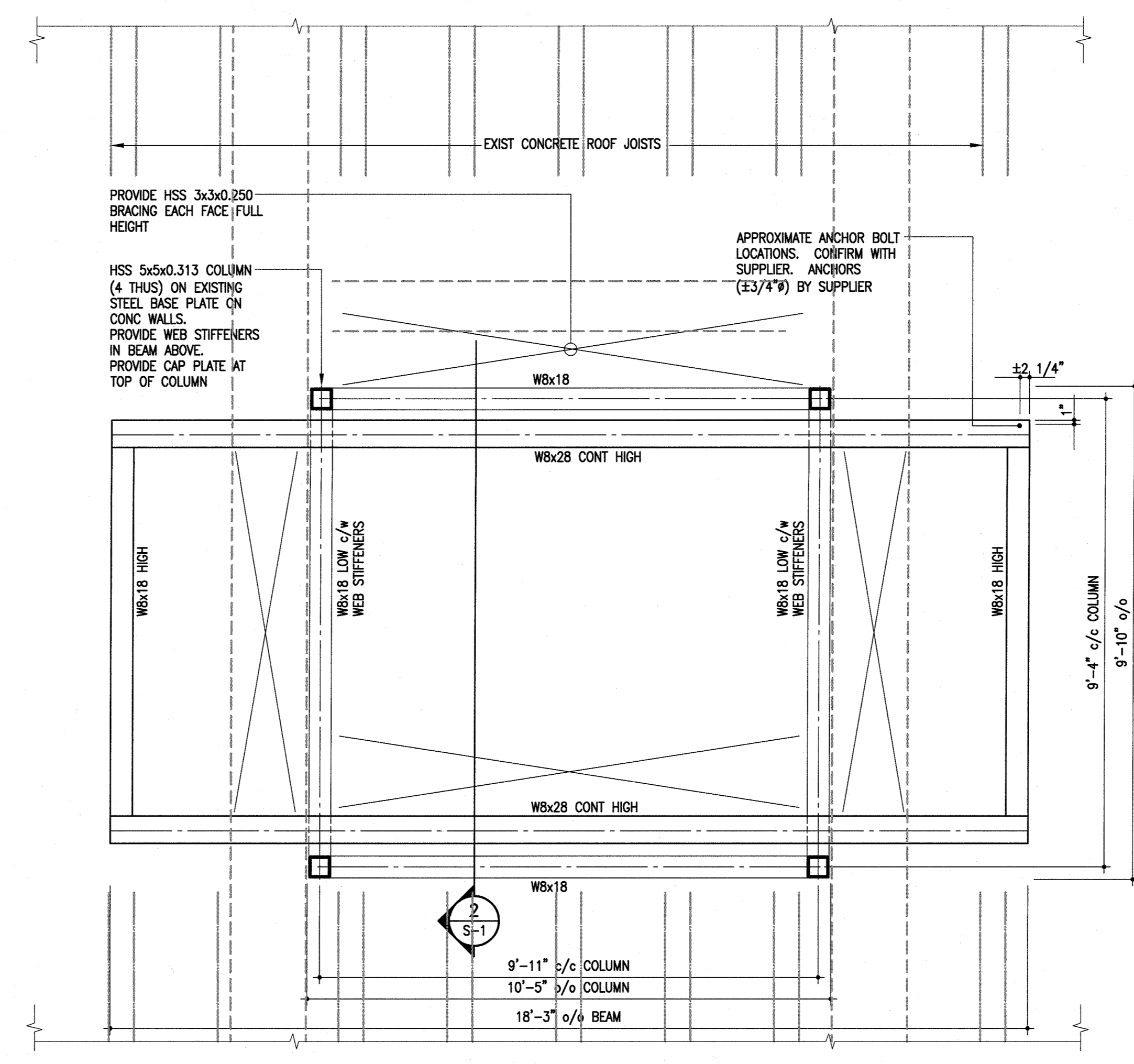


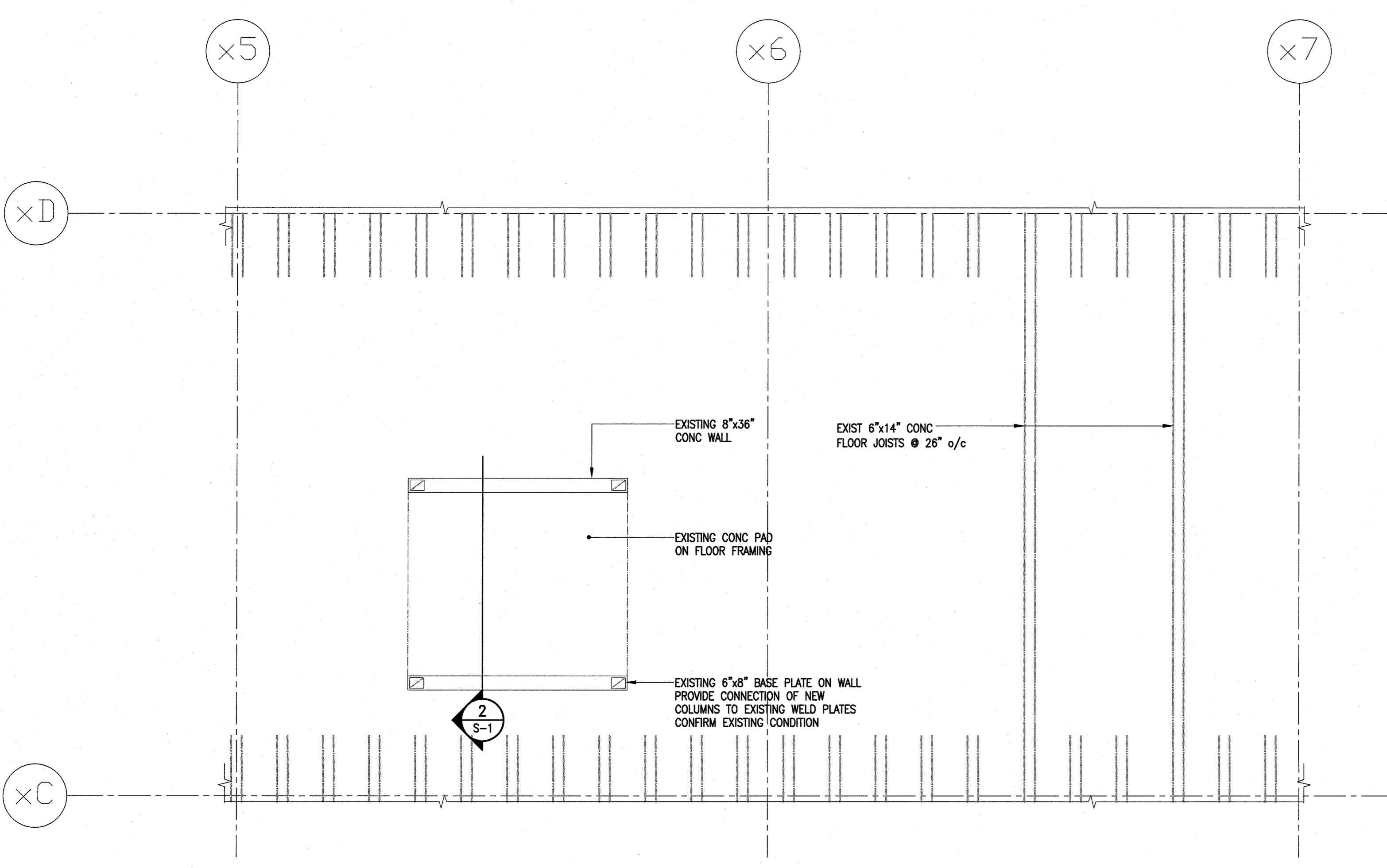
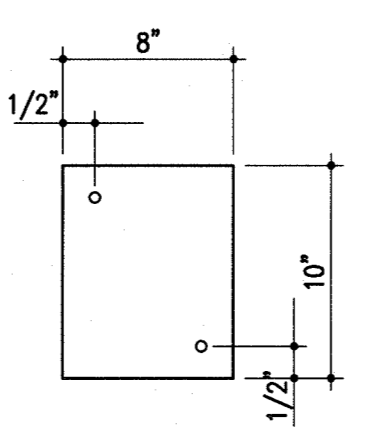
**SIXTH FLOOR PARTIAL ROOF PLAN - NEW CONSTRUCTION**  
1/4" = 1'-0"

- REMOVAL OF EXISTING COOLING TOWER UNIT AND FRAMING BY OTHERS. DO NOT DAMAGE EXISTING CONCRETE FRAMING AROUND OPENING.



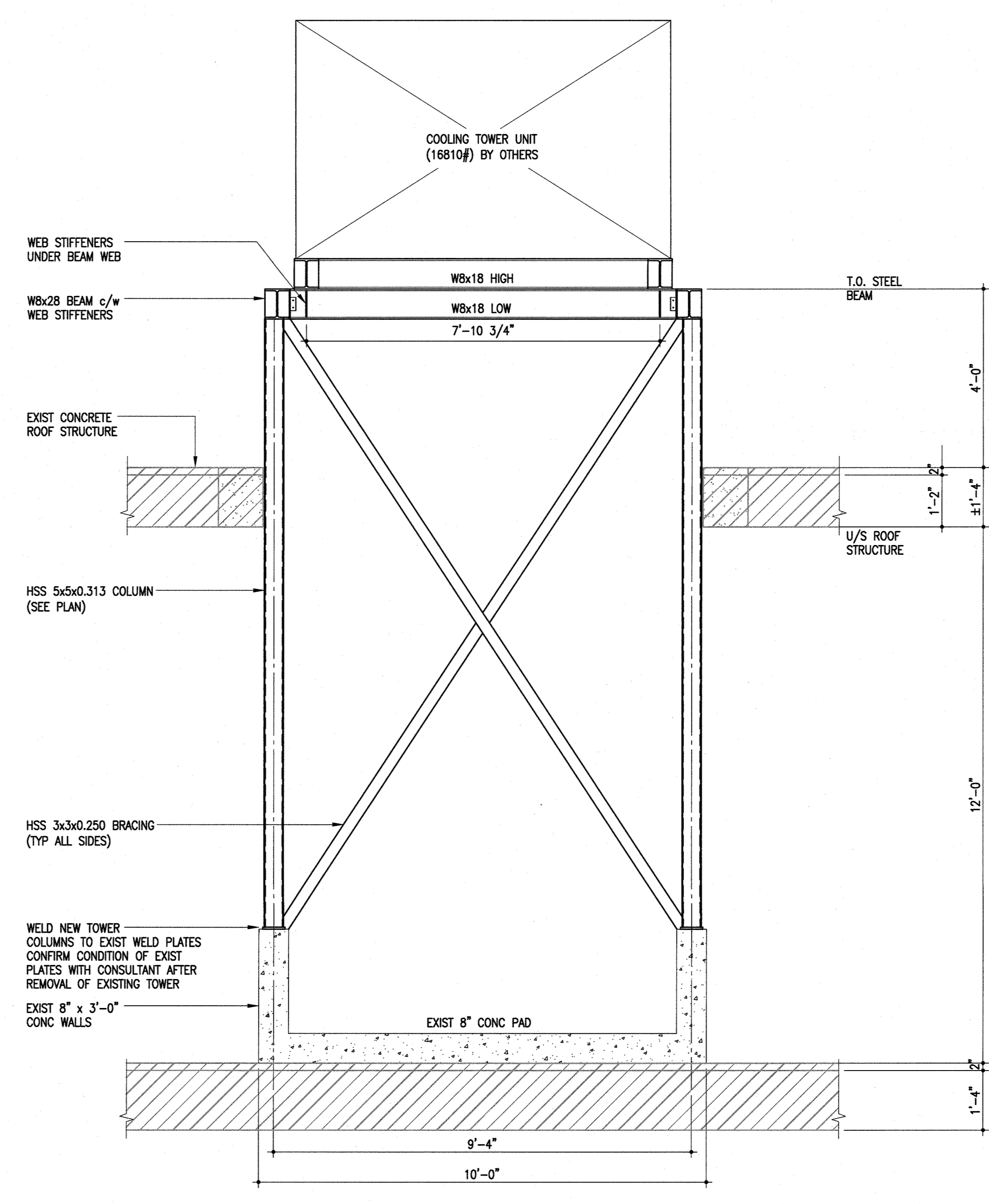
**SECTION 1 S-1**  
1/2" = 1'-0"

- GENERAL CONTRACTOR TO CONFIRM AND COORDINATE EXACT UNIT SIZE AND ANCHOR BOLT LOCATIONS FROM SUPPLIER WITH SUPPORT DIMENSIONS PRIOR TO FABRICATION.
  - COOLING TOWER UNIT NOT SHOWN FOR CLARITY (BY OTHERS).
  - MAX UNIT OPERATING WEIGHT = 16810#
  - MAX VERTICAL REACTION LOAD AT ANCHOR = 4375# (UNFACTORED)
  - MAX HORIZONTAL REACTION LOAD AT ANCHOR = 125# (UNFACTORED)
  - PROVIDE 3/8" DRAIN HOLE AT BASE OF HSS SECTIONS TYP
  - SITE CONFIRM EXIST STRUCTURE & DIMENSIONS
  - PROVIDE WEB STIFFENERS IN ALL BEAMS WHICH CROSS OVER ALL COLUMNS OR BEAMS
  - CONFIRM FINAL STEEL FINISH WITH OWNER
- MARK 'A'**  
REMOVE SLIDING HATCH ACCESS AND INFILL EXISTING OPENING AS FOLLOWS:  
PROVIDE 1 1/2" X 0.03" STEEL DECK ON C20.11.5 AT 4'-0" O.C. AND AT EACH SIDE OF COLUMN C/W 8x10x5/8 WELD PLATE BOLTED TO EXISTING CONCRETE BEAM WITH 2-5/8" HLT1 KB X 4" EMBEDMENT. ELEVATION OF TOP OF CHANNEL 3" BELOW TOP OF EXISTING CONCRETE CURB.  
PROVIDE 4x4x5/8 ANGLE DECK SUPPORT AROUND PERIMETER CONNECTED TO CHANNELS AND BOLTED TO CONCRETE BEAMS ON EACH SIDE OF OPENING WITH 1/2" HLT1 KB11 X 4" EMBEDMENT AT 8" O/C AND CONNECTED AROUND NEW TOWER COLUMN LOCATIONS.  
PROVIDE 1 1/2" ROOF INSULATION OVER STEEL DECK AND PROVIDE ROOFING ABOVE MATERIALS TO MATCH EXISTING SYSTEM WITH FLASHING OVER EXISTING PERIMETER CONCRETE CURB. SEAL ALL OPENINGS REQUIRED FOR MECHANICAL LINE PENETRATIONS AND AT COOLING TOWER SUPPORT COLUMN PENETRATIONS.



**SIXTH FLOOR MACHINE ROOM PLAN - NEW CONSTRUCTION**  
1/4" = 1'-0"

- REMOVAL OF EXISTING COOLING TOWER UNIT AND FRAMING BY OTHERS. DO NOT DAMAGE EXISTING WELD PLATES ON CONCRETE WALL.



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

- GENERAL NOTES**
- STRUCTURAL DESIGN BASED ON THE NATIONAL BUILDING CODE OF CANADA 2005 EDITION.
    - A) IMPORTANCE CATEGORY: NORMAL
    - B) WIND LOAD: CO = 0.9 P.S.F.
    - C) GROUND SNOW LOAD: SS = 39.6 P.S.F.
    - D) ASSOCIATED RAIN LOAD: SR = 4.2 P.S.F.
    - E) SEISMIC SITE CLASSIFICATION: NOT APPLICABLE
  - DO NOT SCALE DRAWINGS
  - ALL DIMENSIONS ARE TO BE VERIFIED WITH THE MECHANICAL 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 GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON AND AROUND THE JOBSITE DURING CONSTRUCTION.
- 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-402.1, "STRUCTURAL QUALITY STEEL" AND CSA-640.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
  - ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE 640.21-S0W, ALL HOLLOW STRUCTURAL SECTIONS TO BE 640.21-S0W CLASS C, ALL ANGLES, CHANNELS AND PLATES SHALL BE 640.21-44W.
  - FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CAN/CSA S16.1-01, "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 1-3M QUICK DRYING SHOP PRIMER. 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.
  - 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 BRACING IS ERECTED, WELDED IN PLACE.
  - 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 SUIT FABRICATION AND ERECTION PROCEDURES AND TOLERANCES.

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NO. Revisions BY DD/MM/YY

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CONSULTING STRUCTURAL ENGINEERS

**APEGM**  
Certificate of Authorization  
Crosier Kilgour & Partners Ltd.  
No. 235 Date: Nov. 09, 2012

**PROVINCE OF MANITOBA**  
R.D.  
MORPHY  
Member  
128902  
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09-307-02

Project Title  
**CITY OF WINNIPEG  
COOLING PLANT REPLACEMENT  
151 PRINCESS STREET  
BID OPPORTUNITY 887-2012**

Drawing Title  
**MACHINE ROOM COOLING PLANT  
PLANS AND SECTIONS**

Drawn By MPN	Checked By RDM	Approved By RDM
Scale AS NOTED	Date NOV. 2012	Project No. 09-307-02
Revision Number 0	Drawing Number S1	Sheet Order 1 OF 1