

GR-1

AS USED IN THESE GENERAL NOTES:  
"DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON.  
"SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.  
"CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS  
"SER" IS DEFINED AS THE STRUCTURAL ENGINEER OF RECORD FOR THE STRUCTURE IN ITS FINAL CONDITION.  
"DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S ARCHITECT AND SER.  
"MEP" INCLUDES, BUT IS NOT LIMITED TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION.  
"CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS, STRUCTURAL STEEL FABRICATOR OR STRUCTURAL STEEL ERECTOR.  
"BASE BUILDING STRUCTURE" IS DEFINED AS THE STRUCTURAL FRAME DESIGNED BY THORNTON TOMASETTI.  
"STRUCTURE IN ITS FINAL CONDITION" MEANS ALL STRUCTURAL ELEMENTS SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS ARE INSTALLED AND COMPLETELY CONNECTED AND INSPECTED WITH NO OUTSTANDING NON-COMPLIANCE ISSUES.  
"DELEGATED DESIGN" MEANS A SCOPE OF WORK THAT MEETS PERFORMANCE CRITERIA ESTABLISHED IN THE CONTRACT DOCUMENTS AND IS TO BE COMPLETED BY THE CONTRACTOR'S LICENSED ENGINEER.  
"SERVICE LEVEL" LOADS ARE DEFINED AS NOMINAL OR UNFACTORED LOADS TO BE COMBINED USING ALLOWABLE STRESS LOAD COMBINATIONS  
"STRENGTH LEVEL" LOADS ARE DEFINED AS FACTORED LOADS TO BE COMBINED USING STRENGTH DESIGN LOAD COMBINATIONS

GR-2

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.

GR-3

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.

GR-4

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN TEMPORARY BRACING AND CONSTRUCTION SUPPORTS.

GR-5

THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS.

GR-6

THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND COORDINATE WITH THE STRUCTURAL DRAWINGS, ARCHITECTURAL DRAWINGS, DRAWINGS FROM OTHER CONSULTANTS, PROJECT SHOP DRAWINGS AND FIELD CONDITIONS.

GR-7

IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.

GR-8

APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

GR-9

ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

GR-10

ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.

GR-11

CENTERLINES OF COLUMNS AND FOUNDATIONS COINCIDE WITH GRID LINE INTERSECTIONS, UON.

GR-12

CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UON.

GR-13

THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE.

GR-14

THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.

GR-15

ELEVATIONS INDICATED ON STRUCTURAL DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE EXISTING DRAWINGS.

DE DEMOLITION

DE-1

THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMOLITION AND THE INTEGRITY AND STABILITY OF THE EXISTING STRUCTURE DURING DEMOLITION UNTIL THE WORK IS COMPLETED. THE CONTRACTOR SHALL PROVIDE SHORING IN REQUIRED LOCATIONS WHERE EXISTING CONSTRUCTION TO REMAIN WILL BE AFFECTED BY DEMOLITION. CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED TO DESIGN SHORING.

DE-2

THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO ANY STRUCTURAL ELEMENTS WHICH ARE TO REMAIN AND THAT HAVE BEEN DAMAGED DURING THE DEMOLITION PROCESS TO THE COMPLETE SATISFACTION OF THE OWNER. THE REPAIRS SHALL BE AT NO EXPENSE TO THE OWNER. ALL REPAIR WORK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED AND SUBMITTED TO THE SER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING REPAIR WORK.

DE-3

ALL EXISTING FRAMING IS INDICATED FOR REFERENCE ONLY AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR. VERIFY THE EXACT EXTENT OF DEMOLITION AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE CONTRACT DOCUMENTS WITH THE EXISTING CONSTRUCTION. IMMEDIATELY NOTIFY THE DESIGN PROFESSIONALS OF ANY INCONSISTENCIES.

DE-4

THE CONTRACTOR SHALL USE THE STRUCTURAL CONTRACT DOCUMENTS IN CONJUNCTION WITH THE ARCHITECTURAL AND MEP DEMOLITION CONTRACT DOCUMENTS. IN THE EVENT OF CONFLICTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN PROFESSIONALS.

DE-5

THE CONTRACTOR SHALL USE QUALIFIED, EXPERIENCED PERSONNEL FOR DEMOLITION AND REMOVAL OPERATIONS. PERFORM DEMOLITION AND REMOVAL OPERATIONS IN A CAREFUL AND ORDERLY MANNER TO PREVENT HAZARDS TO PERSONS, DAMAGE TO PROPERTY, AND THE SPREADING OF DUST AND DEBRIS.

DE-6

DO NOT PERMIT PORTIONS OF THE STRUCTURE TO FALL NOR DEBRIS TO DROP EXCEPT BY METHODS WHICH WILL INSURE INTEGRITY OF THE STRUCTURE.

DE-7

PRIOR TO THE START OF WORK, VERIFY THAT THE SCOPE OF DEMOLITION INDICATED ON THE CONTRACT DOCUMENTS SHALL NOT DAMAGE, CUT OR DISRUPT SERVICE OF ANY MECHANICAL SYSTEM, ELECTRICAL SYSTEM OR UTILITY EMBEDDED IN THE EXISTING STRUCTURE.

DE-8

DO NOT REMOVE MORE OF THE EXISTING STRUCTURE THAN INDICATED ON CONTRACT DOCUMENTS. DO NOT DAMAGE, MAR, CUT OR DEFACE THE REMAINING STRUCTURE OR MATERIALS TO BE REUSED.

DE-9

THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF REMOVING DEMOLISHED MATERIALS FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS.

CD CODES AND DESIGN CRITERIA

CD-1

PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON:  
  
INTERNATIONAL BUILDING CODE, 2018 EDITION  
  
STRUCTURAL STEEL:  
"SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", (AISC 360-16) CONFORMING TO THE PROVISIONS OF LOAD RESISTANCE FACTOR DESIGN, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC-LRFD)

CD-2

LIVE LOADS (SERVICE LEVEL):  
CATWALKS FOR MAINTENANCE  
ROOFS  
MECHANICAL ROOM LIVE

CD-3

SUPERIMPOSED DEAD LOADS (SERVICE LEVEL):  
CATWALKS FOR MAINTENANCE  
ROOFS  
MECHANICAL ROOM DEAD  
CENTER-HUNG SCOREBOARD  
SPEAKER CLUSTERS

CD-4

OCCUPANCY CATEGORY: III

CD-5

SNOW LOADS (SERVICE LEVEL):  
FLAT ROOF SNOW LOAD (Pf):  
GROUND SNOW LOAD (Pg):  
SNOW EXPOSURE FACTOR (Ce):  
SNOW LOAD IMPORTANCE FACTOR (Is):  
THERMAL FACTOR (Ci):  
SNOW DRIFTING PER CODE

CD-6

WIND LOAD DESIGN DATA:  
SEE ORIGINAL DESIGN DRAWINGS GENERAL NOTES

CD-7

SEISMIC LOAD DESIGN DATA (STRENGTH LEVEL):  
SEE ORIGINAL DESIGN DRAWINGS GENERAL NOTES

CD-9

IN CASES WHERE THE CONTRACTOR DETERMINES THAT SUSPENDED OR FLOOR MOUNTED EQUIPMENT LOADS EXIST WHICH EXCEED DESIGN LOADS INDICATED ON CONTRACT DOCUMENTS, CONTRACTOR SHALL SUBMIT LOAD DATA TO DESIGN PROFESSIONALS FOR REVIEW PRIOR TO PROCEEDING WITH WORK.

CD-10

DISTRIBUTE THE MAXIMUM LOAD HUNG FROM ANY STRUCTURAL MEMBER FOR DUCTWORK, PIPING ETC OVER THE MEMBER'S TRIBUTARY AREA IN A WAY THAT THE MEP DESIGN SUPERIMPOSED DEAD LOADS LISTED IN CONTRACT DOCUMENTS ARE NOT EXCEEDED. THE CONTRACTOR SHALL COORDINATE THE LOADS OF ALL TRADES AND PROVIDE ADDITIONAL SUPPORT OR DISTRIBUTION FRAMING AS REQUIRED TO ACHIEVE THE ALLOWABLE LOAD DISTRIBUTION.

CD-11

STRUCTURAL COMPONENTS ARE NOT DESIGNED FOR VIBRATING EQUIPMENT. MOUNT VIBRATING EQUIPMENT ON VIBRATION ISOLATORS.

CD-12

SERVICEABILITY  
  
LIVE LOAD DEFLECTION IS LESS THAN [L/360]  
  
LONG-TERM TOTAL DEFLECTION IS LESS THAN [L/240]  
  
LATERAL DRIFT DUE TO WIND LOADS IS LESS THAN OR EQUAL TO [H/400]

CD-13

CONNECTIONS OF SYSTEMS DESIGNED BY CONTRACTOR'S ENGINEER SUCH AS, BUT NOT LIMITED TO, CLADDING, STAIRS, ELEVATORS, ESCALATORS, PRECAST, AND MEP LOADS ARE ASSUMED TO IMPOSE VERTICAL AND/OR HORIZONTAL LOADS ON THE BASE BUILDING STRUCTURAL MEMBERS WITHOUT GENERATING TORSION IN THE SUPPORTING STRUCTURAL MEMBERS. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL SUPPLEMENTARY BRACING MEMBERS AS REQUIRED TO PREVENT TORSION ON THE BASE BUILDING STRUCTURE.

CD-14

FOR FIRE RATING AND FIREPROOFING ASSEMBLY EVALUATIONS, CONSIDER THE FOLLOWING ASSEMBLIES RESTRAINED: COMPOSITE WIDE-FLANGE STEEL FRAMING, INTERIOR BAYS OF CONTINUOUS CAST-IN-PLACE CONCRETE CONSTRUCTION. CONSIDER ALL OTHER ASSEMBLIES UNRESTRAINED.

CD-15

THERE HAVE BEEN NO LOAD RESISTANCE FACTORS APPLIED TO THE STRUCTURAL DESIGN FOR THE PURPOSES OF SELECTING FIREPROOFING ASSEMBLIES.

SU SUBMITTALS

SU-1

TEN WORKING DAYS PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR SER'S REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SHOP DRAWINGS AND THE DATE THE SHOP DRAWINGS WILL BE RECEIVED BY THE SER. THE SER SHALL HAVE THE OPPORTUNITY TO REVIEW THE PROPOSED SCHEDULE AND SUBMIT COMMENTS TO THE CONTRACTOR. THE FINAL SHOP DRAWING SCHEDULE SHALL BE DEVELOPED AND SUBMITTED TO THE SER. IN ACCORDANCE WITH THE SHOP DRAWING SCHEDULE, THE SER WILL RETURN THE SHOP DRAWING ITEMS WITHIN TEN WORKING DAYS AFTER HAVING RECEIVED THE ELECTRONIC SHOP DRAWING

SU-2

THE CONTRACTOR SHALL PROVIDE THE REQUIRED SUBMITTALS FOR STRUCTURAL REVIEW AS OUTLINED IN THE SPECIFICATIONS. THIS INCLUDES BOTH ITEMS FULLY DESIGNED ON THE CONTRACT DOCUMENTS AND ITEMS LISTED AS DELEGATED DESIGN. ITEMS INCLUDE BUT ARE NOT LIMITED TO:  
  
051200 STRUCTURAL STEEL

SU-3

THE SER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SU-4

THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO DESIGN PROFESSIONALS. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:  
  
1. THE SHOP DRAWING IS REQUESTED  
2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.  
3. THE DESIGN PROFESSIONALS' COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.  
4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.  
5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.  
6. SUBMITTAL IS COMPLETE.  
7. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST  
8. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER.  
  
THE SER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE SER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SS - STRUCTURAL STEEL

SS-1

STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS:  
  
ASTM A6 ROLLED W SHAPES AND CHANNELS:  
  
ANGLES FOR TRUSSES AND BRACES:  
MISCELLANEOUS ANGLES:  
HOLLOW STRUCTURAL SECTIONS:  
  
PLATES:  
  
ASTM A572 OR A992, MINIMUM YIELD STRENGTH 50 KSI  
ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI  
ASTM A36, MINIMUM YIELD STRENGTH 36 KSI  
ASTM A500 GRADE B, MINIMUM YIELD STRENGTH 42 KSI FOR ROUND AND 46 KSI FOR RECTANGULAR HSS  
ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI

SS-2

CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS OR AS NEEDED FOR CONNECTION DESIGN:  
  
ANGLES:  
WTs:  
PLATES:  
BOLTS:  
  
NUTS:  
WASHERS:  
ANCHOR RODS:  
HEADED STUDS:  
  
WELD ELECTRODES:  
  
ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI UON  
ASTM A572 OR A992, MINIMUM YIELD STRENGTH 50 KSI  
ASTM A572 OR A529, MINIMUM YIELD STRENGTH 50 KSI UON  
ASTM F3125 GRADES A325 AND F1852 OR A490 AND F2280 OR AS INDICATED IN DETAILS  
ASTM A563  
ASTM F436  
ASTM F1554 GRADE 55 WITH WELDABILITY SUPPLEMENT S1  
ASTM A108, GRADE 1010 THROUGH 1020 HEADED STUD TYPE, COLD-FINISHED CARBON STEEL, AWS D1.1, TYPE B 3/4" DIAMETER UON  
MINIMUM TENSILE STRENGTH 70 KSI [AT 50 KSI STEEL MATLS]

SS-3

WHERE NO CAMBER IS INDICATED, FABRICATE BEAMS SO THAT ANY NATURAL CAMBER IS UPWARD AFTER ERECTION.

SS-4

SPICES SHALL BE ALLOWED ONLY AT LOCATIONS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS UNLESS APPROVED OTHERWISE BY THE SER IN WRITING.

SS-5

FOR STEEL MEMBERS AND EMBEDMENTS EXPOSED TO WEATHER, PROVIDE HOT-DIPPED GALVANIZED FINISH OR APPROVED ZINC RICH EXTERIOR COATING SYSTEM.

SS-6

PROVIDE HOLES IN ALL STEEL AS REQUIRED TO PREVENT ANY ACCUMULATION OF WATER. ALL PENETRATIONS THROUGH MAIN MEMBERS SHALL NOT EXCEED 1 1/8" DIA. AND SHALL BE GROUND SMOOTH. THESE DRAINS MUST BE KEPT CLEAN AND OPEN.

SS-7

SHOW ALL COPEES, HOLES, OPENINGS AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR ERECTION OR THE WORK OF OTHER TRADES ON THE SHOP DRAWINGS FOR APPROVAL BY THE DESIGN PROFESSIONALS.

SS-8

FIELD MODIFICATION OF STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN PROFESSIONALS.

SC STRUCTURAL STEEL CONNECTIONS

SC-1

ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISC-LOAD AND RESISTANCE FACTOR DESIGN.

SC-2

ALL CONNECTIONS INDICATED ON STRUCTURAL DRAWINGS HAVE BEEN COMPLETELY DESIGNED.

SC-3

DETAILS INDICATED ON DRAWINGS DO NOT SHOW ERECTION AIDS. PROVIDE ERECTION AIDS AS REQUIRED AND REMOVE THEM AFTER WORK IS COMPLETE.

SC-4

ALTERNATE CONNECTIONS TO THOSE SHOWN ON DRAWINGS WILL BE CONSIDERED AS A SUBSTITUTION REQUEST. SEE PROJECT SPECIFICATIONS.

SC-5

FOR CONNECTION DETAILING, SET CONNECTION WORK POINT AT INTERSECTION OF MEMBER CENTERLINES, UON.

SC-6

CONNECTION DESIGN FORCES INDICATED ON THE DRAWINGS ARE FACTORED UON.

SC-7

USE NO MORE THAN TWO BOLT DIAMETERS, ALL BOLTS OF THE SAME DIAMETER SHALL BE OF THE SAME GRADE, SKIP ONE SIZE BETWEEN DIAMETERS. BOLTS FOR THIS PROJECT SHALL BE:  
  
3/4" DIAMETER F3125 GRADE A325 OR F1852 OR 1" DIAMETER F3125 GRADE A490 OR F2280

SC-8

BEAM CONNECTION DESIGN NOTES:  
  
SEE PLANS AND ELEVATIONS FOR BEAM REACTIONS AND MOMENTS. IF NO BEAM REACTION OR MOMENT IS SHOWN, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.  
  
ALL BEAM REACTIONS, AXIAL FORCES AND MOMENTS SHOWN ACT CONCURRENTLY. UON. BEAM REACTIONS ACT IN GRAVITY DIRECTION WHILE AXIAL FORCES AND MOMENTS ARE TO BE CONSIDERED REVERSIBLE.  
  
EXCEPT WHERE "SNUG TIGHT" INSTALLATION IS SPECIFICALLY PERMITTED ON DRAWINGS OR "SLIP CRITICAL" DETAILING IS REQUIRED, ALL HIGH STRENGTH BOLTS SHALL BE INSTALLED AS FULL PRETENSIONED BOLTS.  
  
AT A MINIMUM ALL BOLTED MOMENT AND AXIAL CONNECTIONS SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES. SLIP CRITICAL FAYING SURFACES ARE ONLY REQUIRED WHERE SPECIFIED IN DETAILS.  
  
BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS.  
  
DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE SER.

SC-9

ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, ANSI/AWS D1.1, LATEST EDITION. ALL WELD SIZES SHALL BE THE LARGER OF THE SIZE REQUIRED BY CONNECTION FORCES, THE MINIMUM SIZE PER ANSI/AWS D1.1, OR 3/16 INCH MINIMUM FILLET WELD UON. ANY WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AWS AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.

SC-10

USE RUNOFF TABS AT ALL BEVEL AND COMPLETE JOINT PENETRATION WELDS. REMOVE RUNOFF TABS BY NEAT CUTS AFTER WELD IS COMPLETED. GRIND SMOOTH WHERE REQUIRED BY DETAIL.

SC-11

WHERE REQUIRED BY DETAIL REMOVE WELD BACK UP BARS AND GRIND SMOOTH AFTER WELD IS COMPLETED.

SI SPECIAL INSPECTIONS

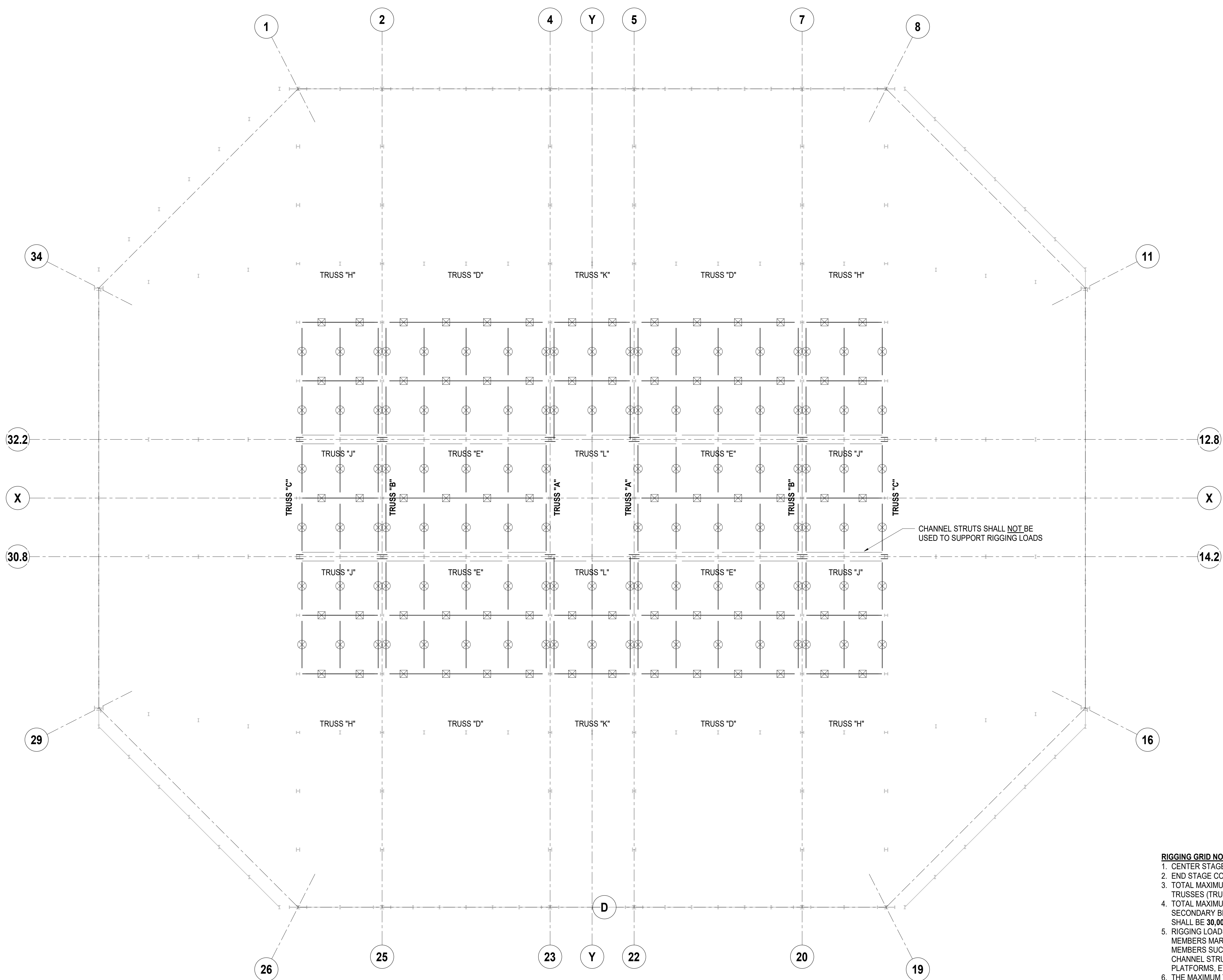
SI-1

THE FOLLOWING STRUCTURAL ITEMS REQUIRE SPECIAL TESTING AND/OR INSPECTIONS:  
  
• MATERIAL VERIFICATION OF STEEL MEMBER, HIGH STRENGTH BOLTS, NUTS, WASHERS AND WELD MATERIAL (PERIODIC)  
• INSPECT SINGLE-PASS FILLET WELDS (PERIODIC)  
• INSPECT HIGH-STRENGTH BOLTING (PERIODIC)  
• INSPECT THAT FRICTION-TYPE CONNECTIONS HAVE NO PAINTED SURFACES (PERIODIC)

Architectural - Interior Design - Landscape Design  
Brand Activation - Wayfinding - Product Design  
Event - Urban Design - Populous Design Build  
2 S Market Street, 4th Floor  
Boston, MA 02109  
857.415.3642  
  
Structural Engineer  
Thornton Tomasetti  
2323 Grand Boulevard, Suite 900  
Kansas City, MO 64108  
816.221.7771  
  
MEP Engineer  
Vanderweil Engineers  
274 Sumner Street  
Boston, MA 02210  
617.423.7423

REVISIONS

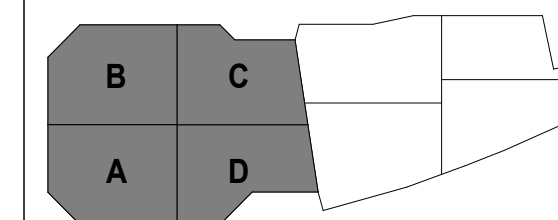
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CHANNEL STRUTS SHALL NOT BE  
USED TO SUPPORT RIGGING LOADS

**RIGGING GRID NOTES:**

2. CENTER STAGE CONFIGURATION - **120,000 LB** TOTAL RIGGING CAPACITY
- END STAGE CONFIGURATION - **120,000 LB** TOTAL RIGGING CAPACITY
3. TOTAL MAXIMUM ALLOWABLE RIGGING LOAD TRIBUTARY TO PRIMARY TRUSSES ("TRUSSES "A", "B" AND "C") SHALL BE **60,000 LBS**.
4. TOTAL MAXIMUM ALLOWABLE RIGGING LOAD TRIBUTARY TO SECONDARY BRACING TRUSSES ("TRUSSES "D", "E", "H", "J", "K" AND "L") SHALL BE **30,000 LBS**.
5. RIGGING LOADS **SHALL** BE APPLIED ONLY TO RIGGING GRID LEVEL MEMBERS MARKED **⊗** OR **⊙** ON THE RIGGING LOAD PLAN. NO OTHER MEMBERS SUCH AS TRUSS BOTTOM CHORDS, TRUSS DIAGONALS, CHANNEL STRUTS, BRACING MEMBERS, ROOF BEAMS, CATWALKS OR PLATFORMS, ETC. SHALL BE USED TO SUSPEND RIGGING LOADS.
6. THE MAXIMUM TOTAL LOAD ON ANY BEAM SPAN SECTION DESIGNATED WITH **⊗** SHALL BE **5,000 LBS**. THE LOAD MAY BE APPLIED AS A SINGLE POINT LOAD OR DISTRIBUTED IN ANY MANNER ALONG THE SPAN. THE MAXIMUM POINT LOAD MAY BE APPLIED AS **160 LBS/FT**.
7. THE MAXIMUM TOTAL LOAD ON ANY BEAM SPAN SECTION DESIGNATED WITH **⊙** SHALL BE **5,000 LBS**. THE LOAD MAY BE APPLIED AS A SINGLE POINT LOAD OR DISTRIBUTED IN ANY MANNER ALONG THE SPAN. THE LOAD MAY BE APPLIED AS A **DEAD HANG ONLY**.

[illegible]

PROJECT NAME

## DCU Center Structural Upgrades - Rigging Grid

ISSUED NAME

ISSUED DATE

05/30/2023 POPULOUS

PROJECT NUMBER	PAPER SIZE
Q22077.00	E1

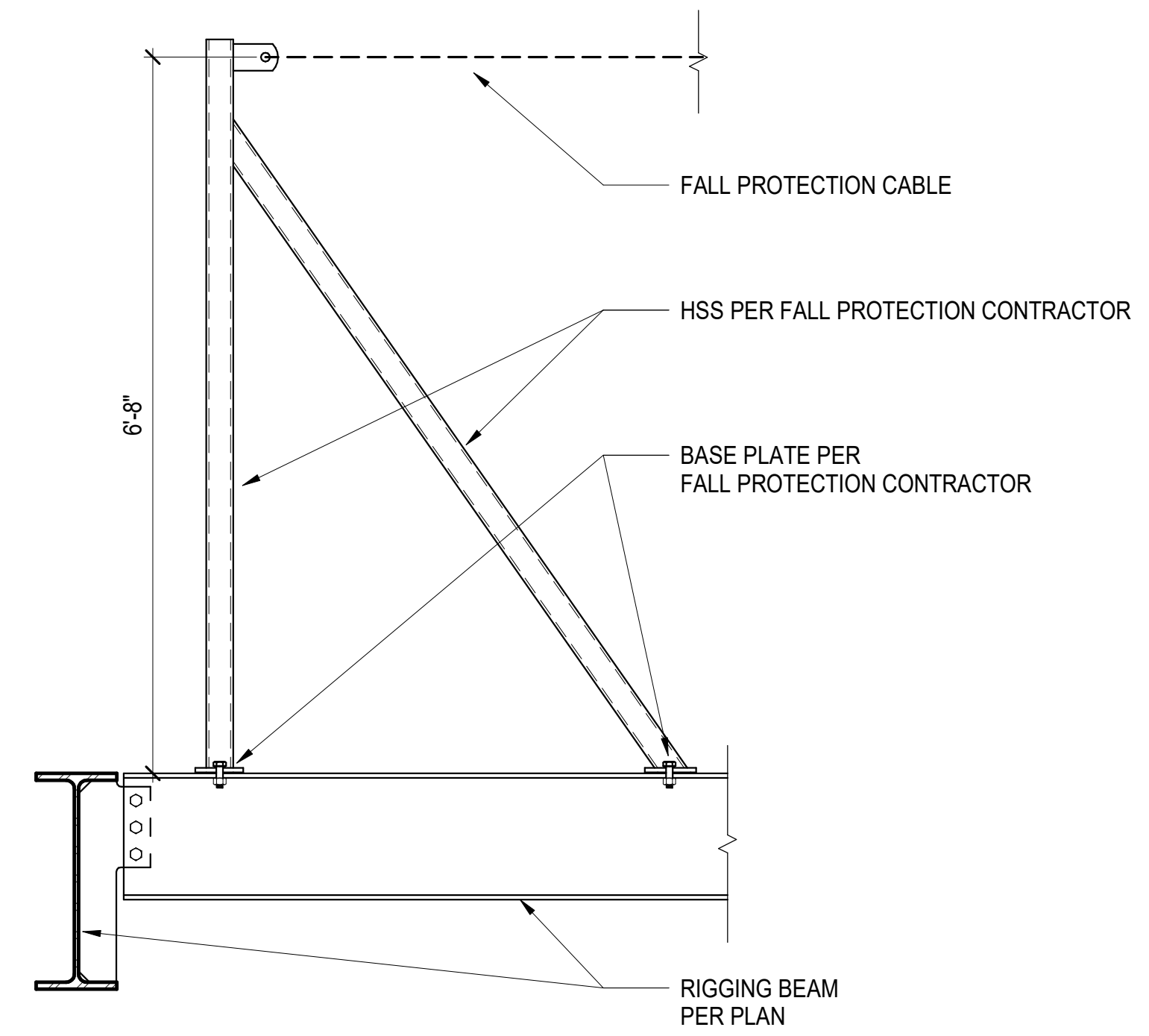
SHEET NAME

## RIGGING GUIDELINE PLAN

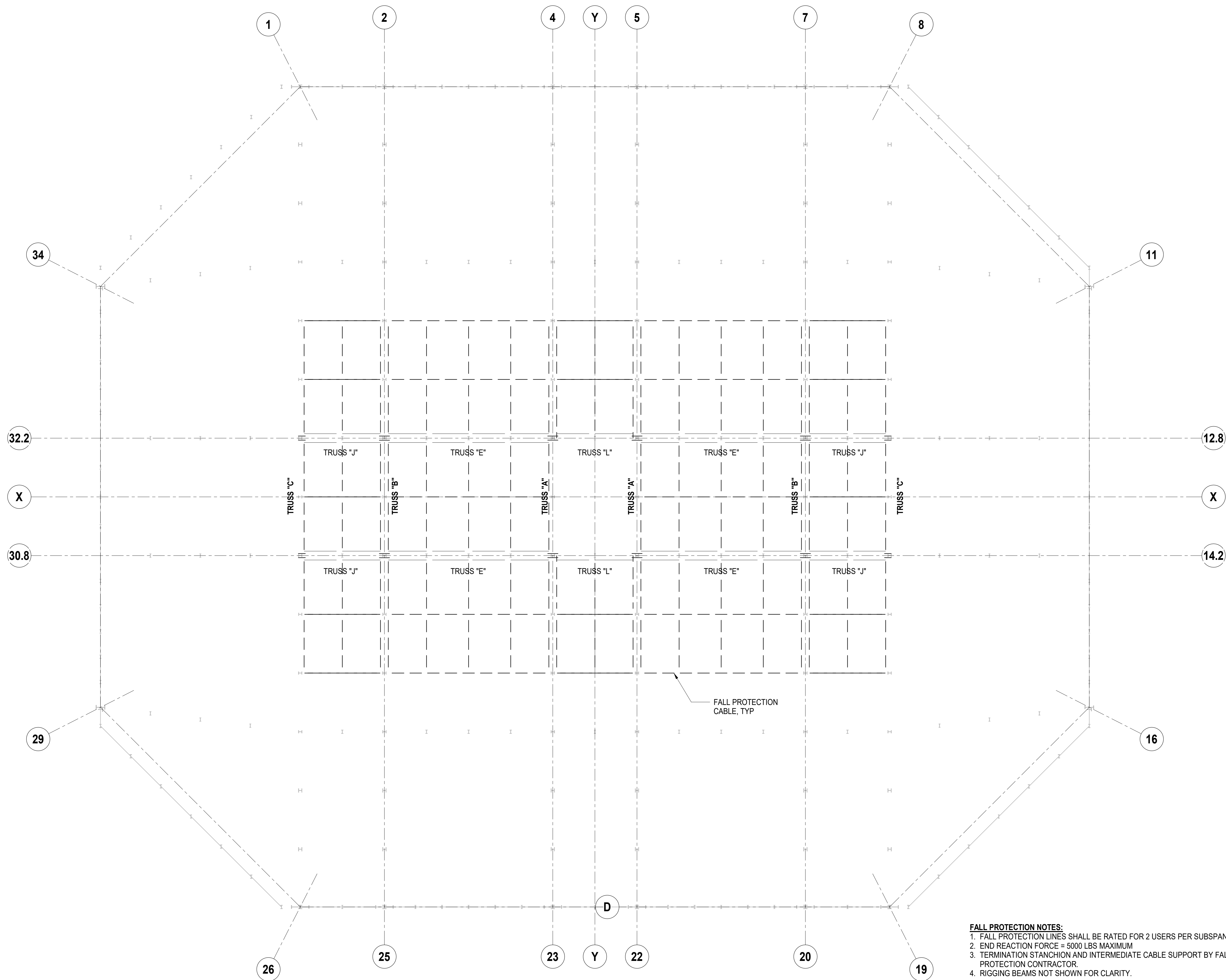
SHEET NUMBER

S0-2

SCALE: 1/16" = 1'-0"

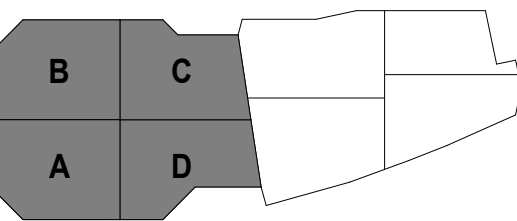


## 2 FALL PROTECTION CABLE TERMINATION STANCHION



# 1 FALL ARREST PLAN

- FALL PROTECTION NOTES:**
1. FALL PROTECTION LINES SHALL BE RATED FOR 2 USERS PER SUBSPAN.
  2. END REACTION FORCE = 5000 LBS MAXIMUM
  3. TERMINATION STANCHION AND INTERMEDIATE CABLE SUPPORT BY FALL PROTECTION CONTRACTOR.
  4. RIGGING BEAMS NOT SHOWN FOR CLARITY.

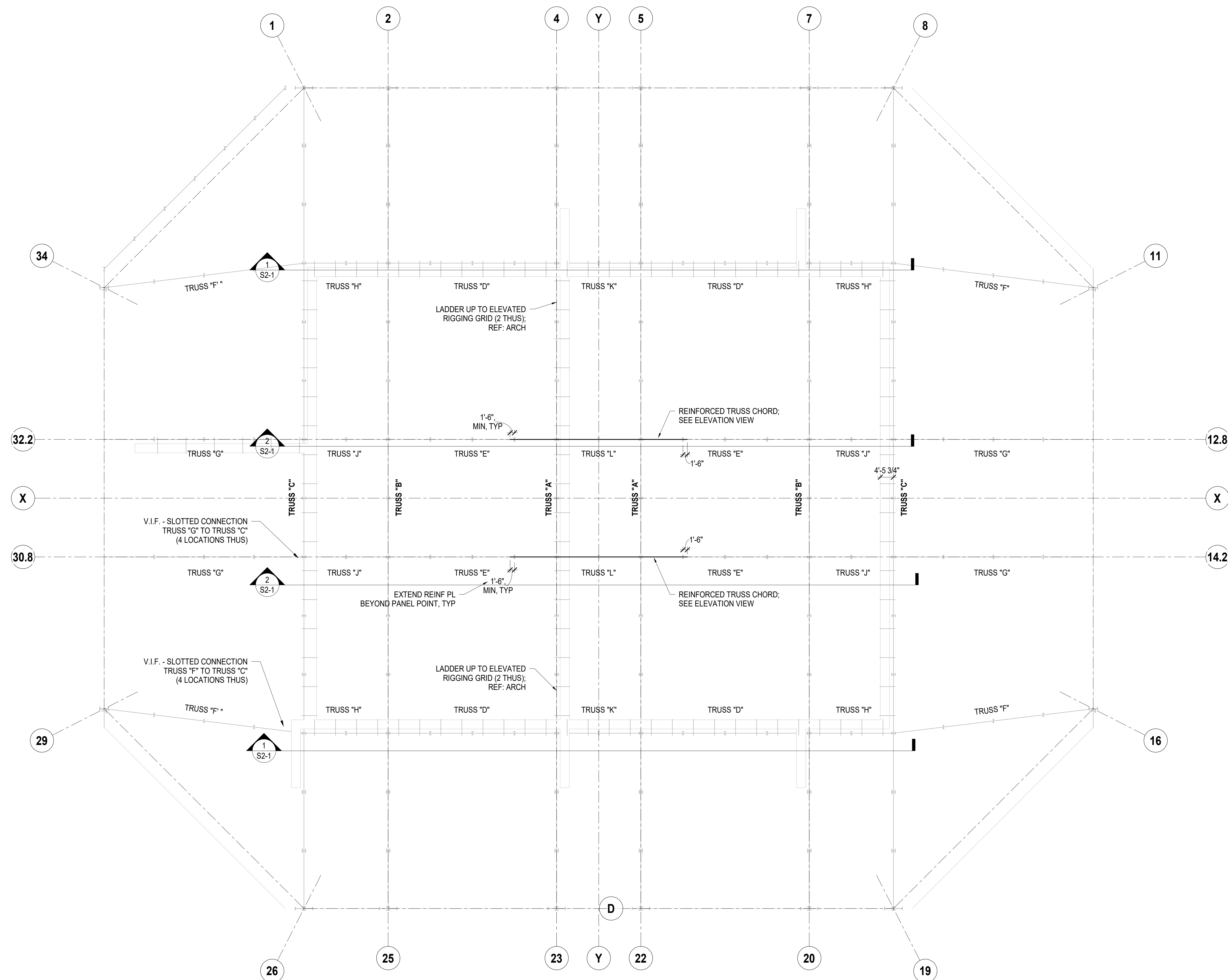
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## DCU Center Structural Upgrades - Rigging Grid

ISSUED NAME	
ISSUED DATE	ISSUED BY
<b>05/30/2023</b>	<b>POPULOUS</b>
PROJECT NUMBER	PAPER SIZE
<b>Q22077.00</b>	<b>E1</b>
SHEET NAME	
<b>FALL ARREST PLAN</b>	

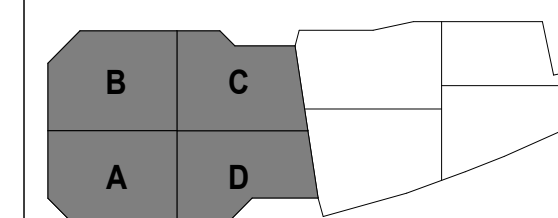
SHEET NUMBER

**S0-3**



**1 BOTTOM CHORD/CATWALK LEVEL**  
SCALE: 1/16" = 1'-0"

SCALE: 1/16" = 1'-0"

[illegible]

# DCU Center Structural Upgrades - Rigging Grid

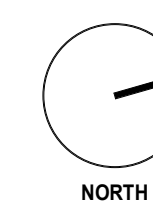
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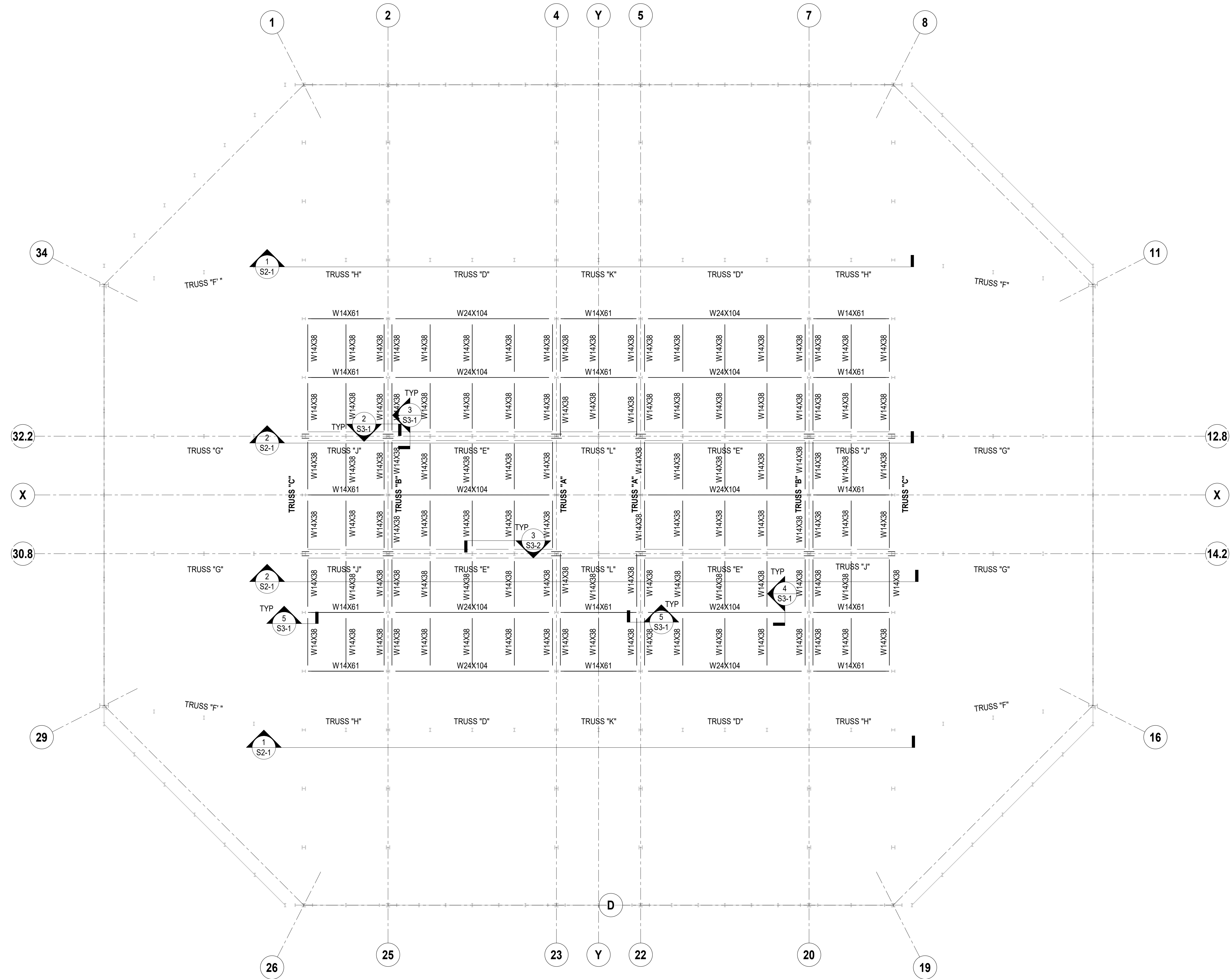
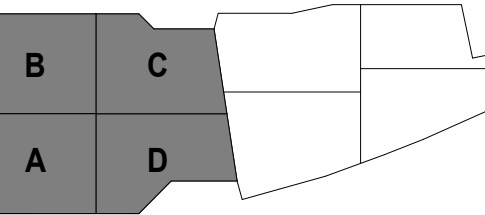
ISSUED DATE	ISSUED BY
<b>05/30/2023</b>	<b>POPULOUS</b>
PROJECT NUMBER	PAPER SIZE
<b>Q22077.00</b>	<b>E1</b>

SHEET NAME

**BOTTOM CHORD  
OVERALL PLAN**

SHEET NUMBER  
**S1-1**



[illegible]

**CU Center Structural  
pgrades - Rigging Grid**

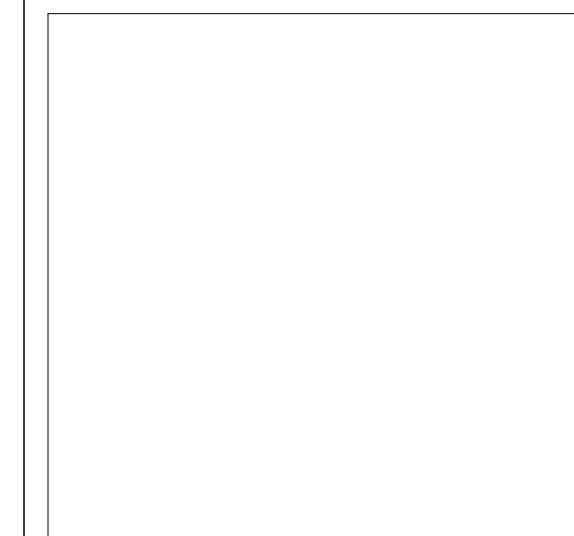
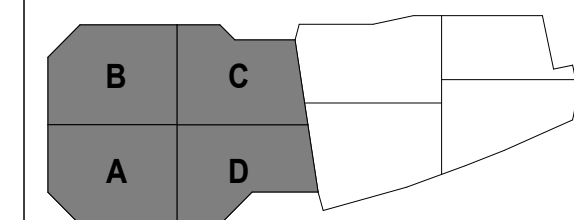
\_\_\_\_\_  
SIGNED NAME

ISSUED DATE	ISSUED BY
5/30/2023	POPULOUS
PROJECT NUMBER	PAPER SIZE
22077.00	E1

**NEW RIGGING GRID  
OVERALL PLAN**

SHEET NUMBER  
**1-2**

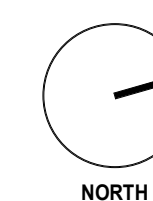


[illegible]

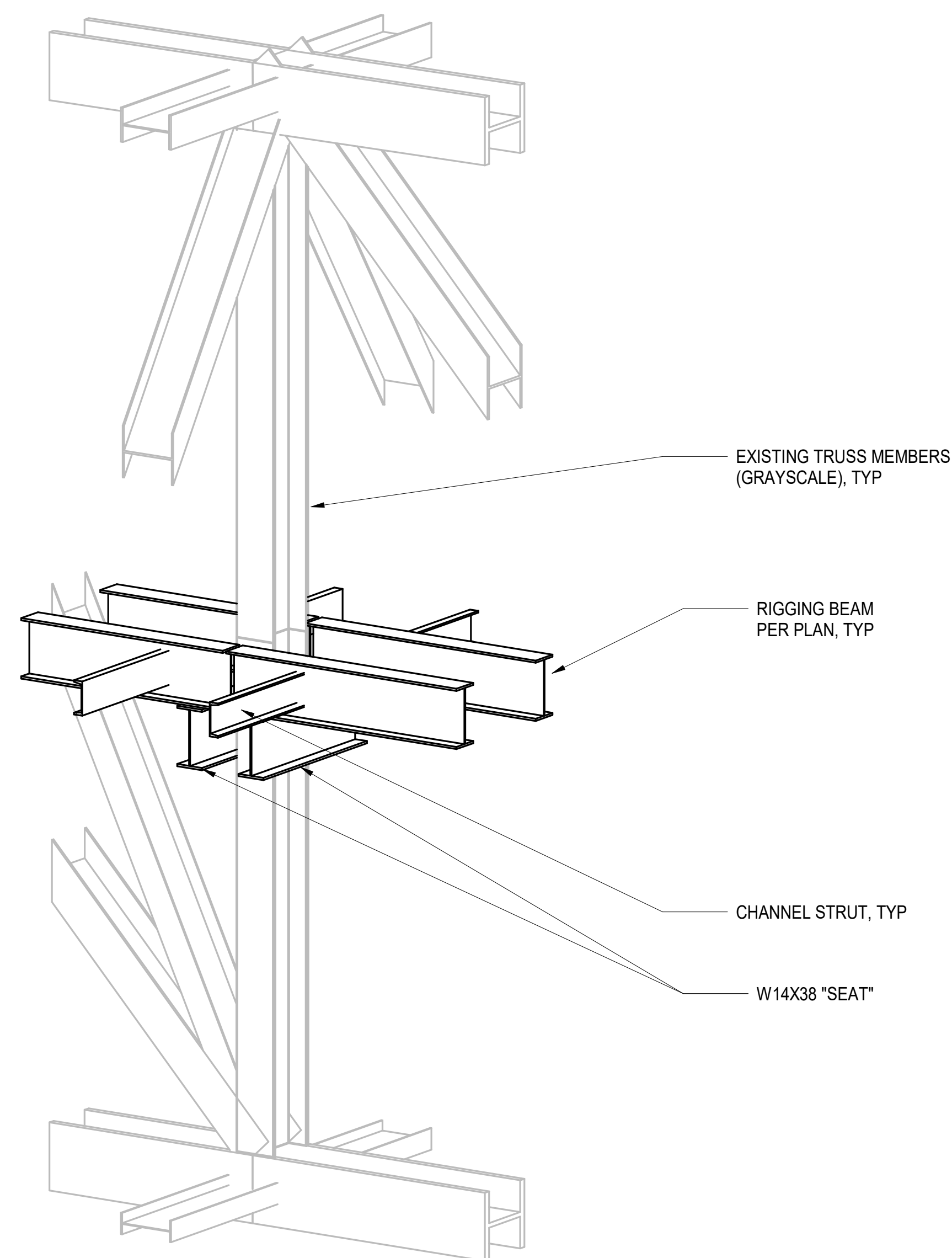
## DCU Center Structural Upgrades - Rigging Grid

SHEET NAME

S1-3





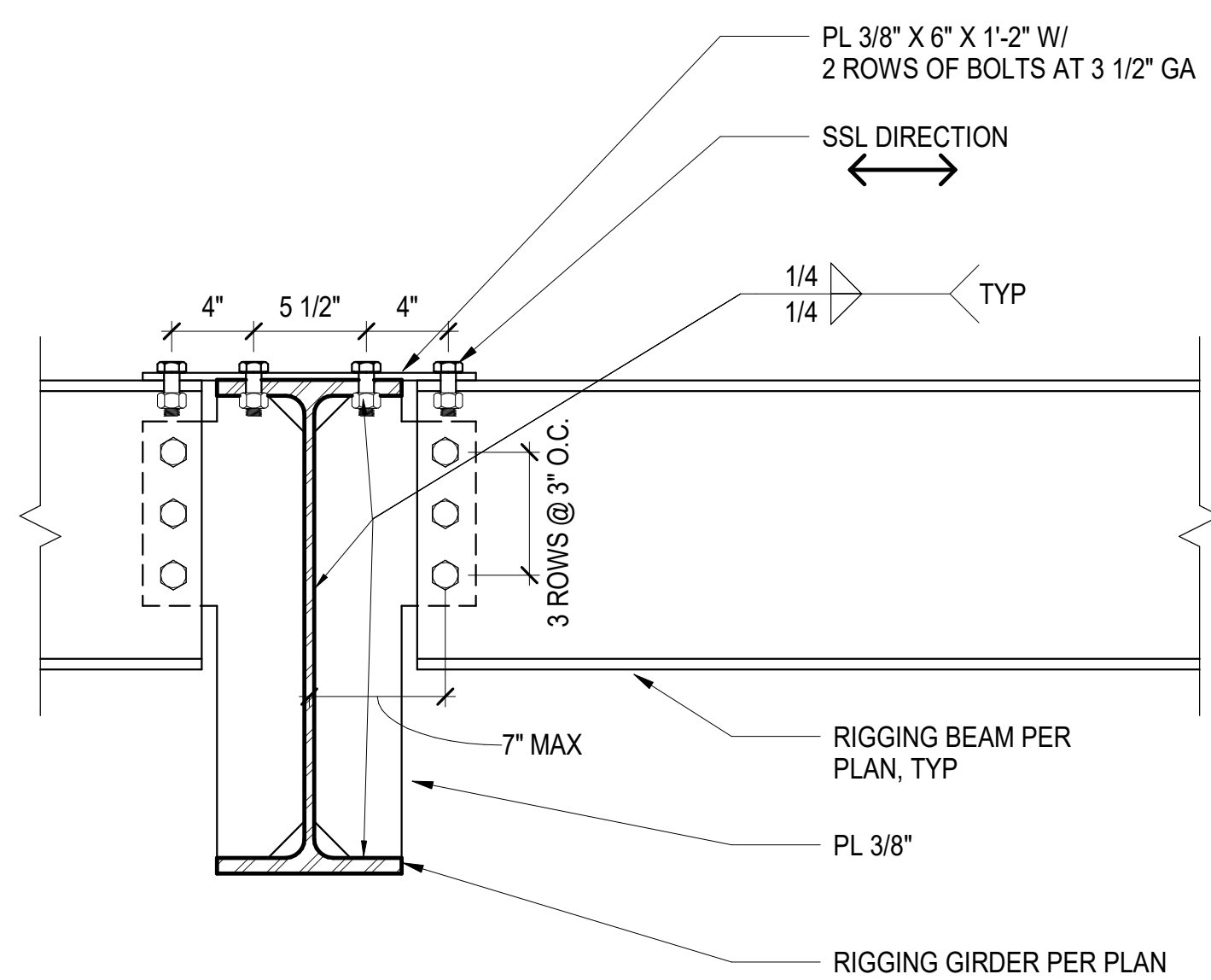


### 1 NEW RIGGING BEAMS TO EXST PRIMARY TRUSS - ISOMETRIC

SCALE:

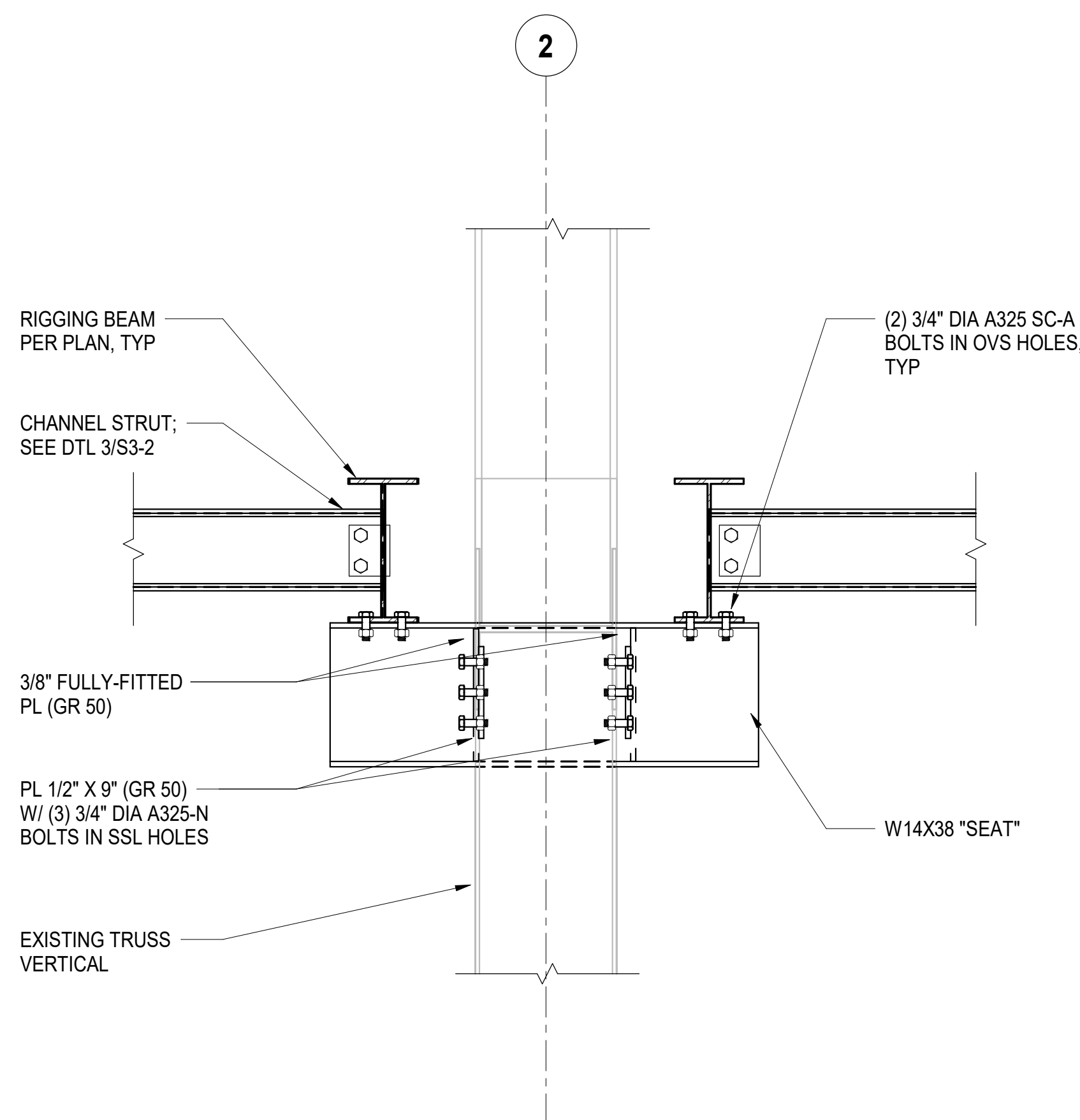
NOTES:

1. 3/4" DIA A325-N BOLTS
2. MIN 1 1/2" EDGE DISTANCE, TYP UON
3. GRADE 50 PL
4. STD HOLES IN BEAM, SSL HOLES IN PLATE
5. SETBACK = 3/4" MAX
6.  $V_u = 10$  KIPS,  $H_u = 5$  KIPS (FACTORED)



#### 4 RIGGING BEAM TO RIGGING GIRDER

SCALE: 1 1/2" = 1'-0"



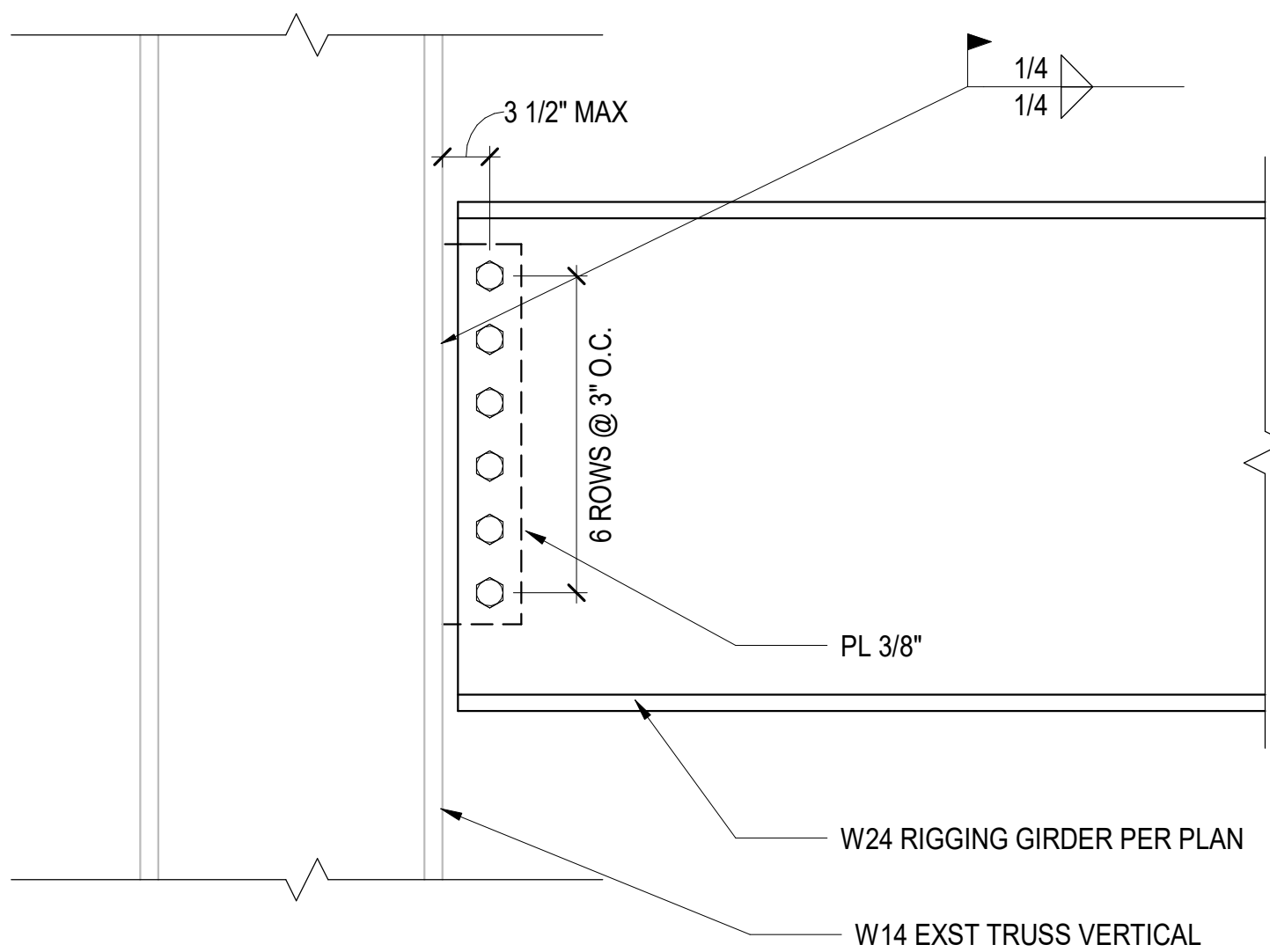
2 NEW RIGGING GIRDERS TO EXST PRIMARY TRUSS - SIDE 1

**2** NEW RIG

SCALE: 1" = 1'-0"

NOTES:

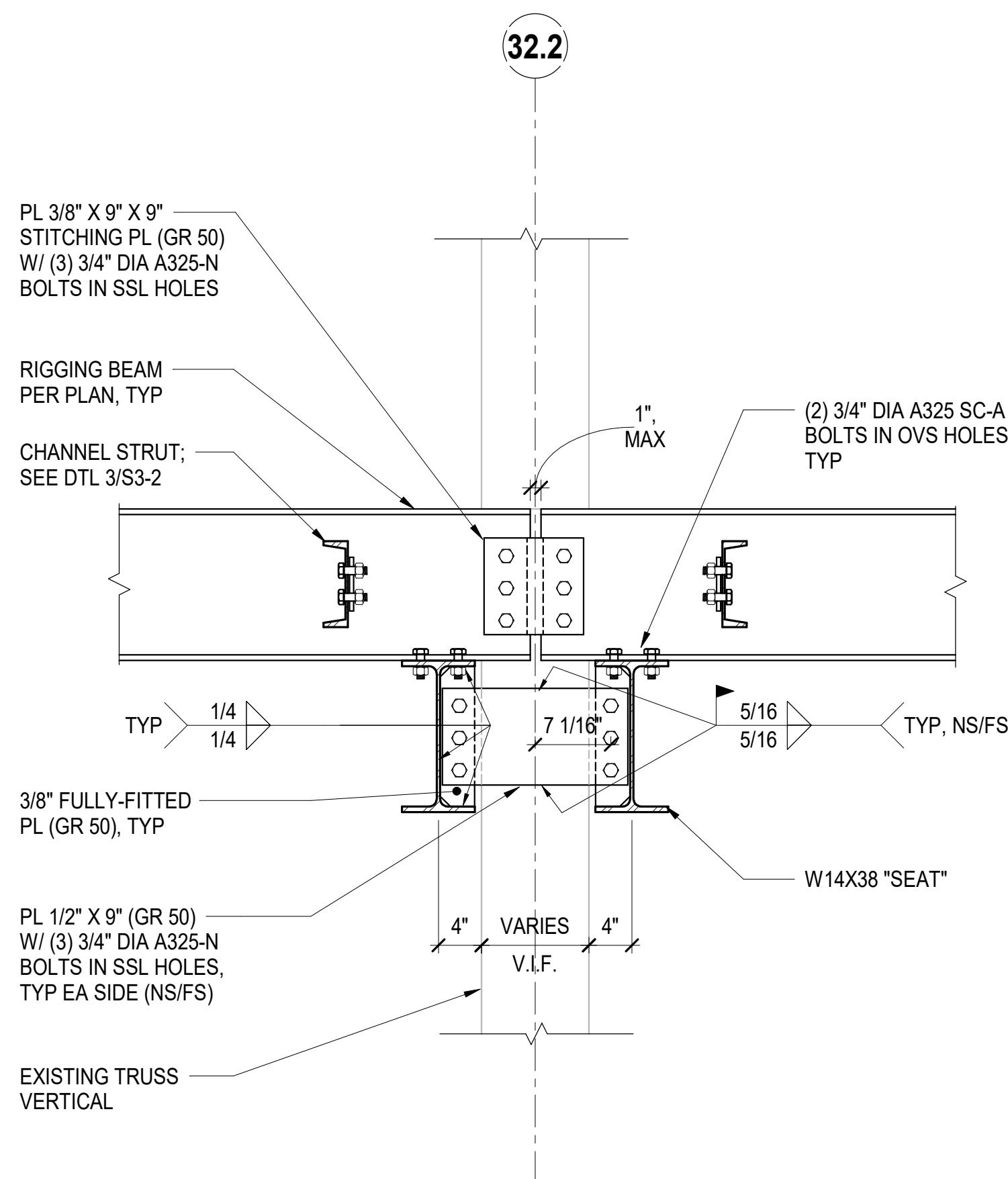
1. 3/4" DIA A325-N BOLTS
2. MIN 1 1/2" EDGE DISTANCE, TYP UON
3. GRADE 50 PL
4. STD HOLES IN BEAM, SSL HOLES IN PLATE
5. SETBACK = 3/4" MAX
6.  $V_u = 60$  KIPS (FACTORED)



NOTE:  
SEE DETAIL 6/S-3-1 FOR W14 RIGGING GIRDER TO EXST TRUSS VERT AT OPP SIDE OF EXST TRUSS VERTICAL

**W24 RIGGING GIRDER TO EXST TRUSS VERTICAL**

SCALE: 1 1/2" = 1'-0"

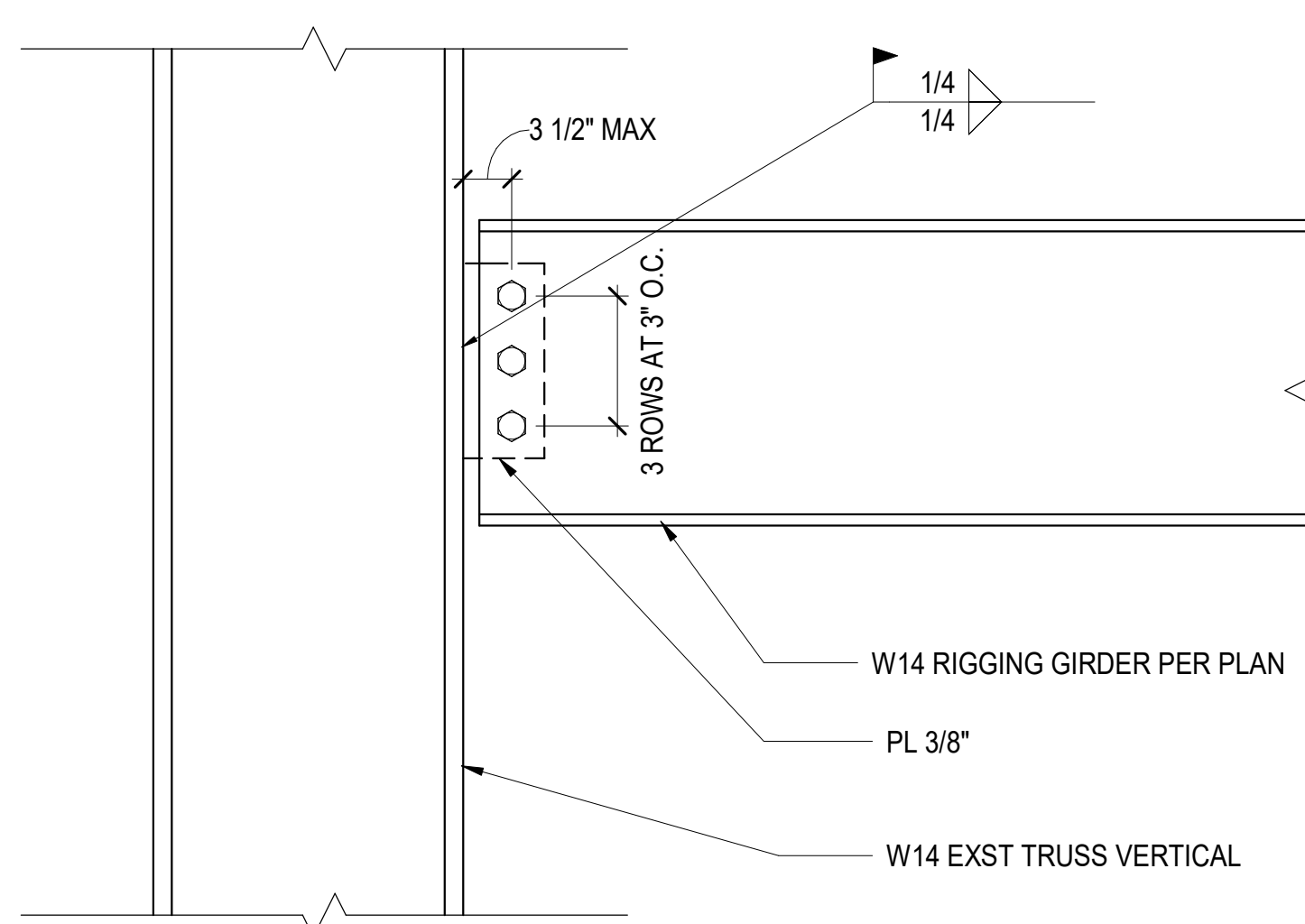


2 NEW RIGGING GIRDER TO EXST PRIMARY TRUSS - SIDE 2

**3** NEW RICH  
SCALE: 1" = 1'-0"

NOTES:

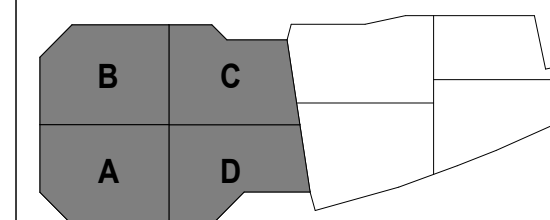
1. 3/4" DIA A325-N BOLTS
2. MIN 1 1/2" EDGE DISTANCE, TYP UON
3. GRADE 50 PL
4. STD HOLES IN BEAM, SSL HOLES IN PLATE
5. SETBACK = 3/4" MAX
6.  $V_u = 25$  KIPS (FACTORED)



NOTE:  
SEE DETAIL 6/S-3-1 FOR W24 RIGGING GIRDER TO EXST TRUSS VERT AT OPP SIDE OF EXST TRUSS VERTICAL

6 W14 RIGGING GIRDER TO EXST TRUSS VERTICAL

SCALE: 1 1/2" = 1'-0"

[illegible]

PROJECT NAME

## DCU Center Structural Upgrades - Rigging Grid

ISSUED NAME

ISSUED DATE	ISSUED BY
<b>05/30/2023</b>	<b>POPULOUS</b>
PROJECT NUMBER	PAPER SIZE
<b>Q22077.00</b>	<b>E1</b>

SHEET NAME

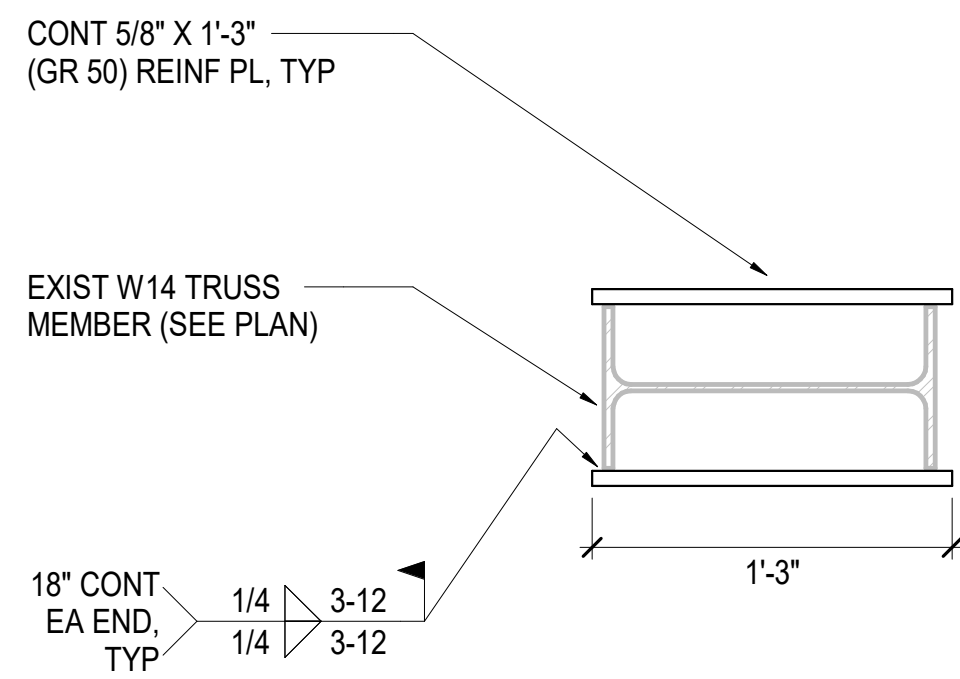
**STEEL DETAILS**

SHEET NUMBER

S3-1



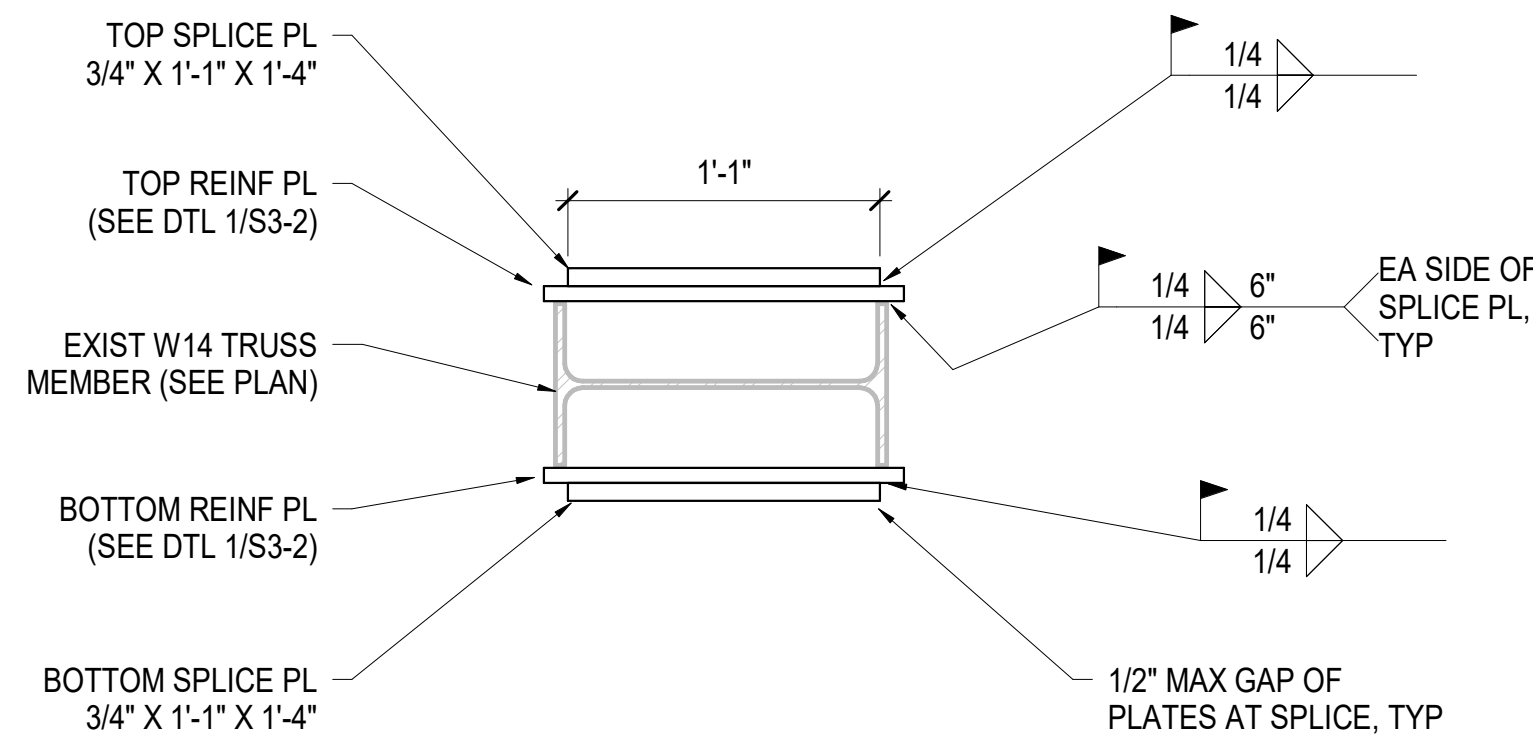
NOTE:  
REINFORCING PLATE MAY BE SPLICED AT ANYWHERE  
ALONG LENGTH OF TRUSS MEMBER (REF: DTL 2/S3-2)



**1 EXISTING TRUSS MEMBER REINFORCING DETAIL**  
SCALE: 1 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

NOTE:  
CENTER SPLICE PLATES AT JOINT OF REINF PLATES



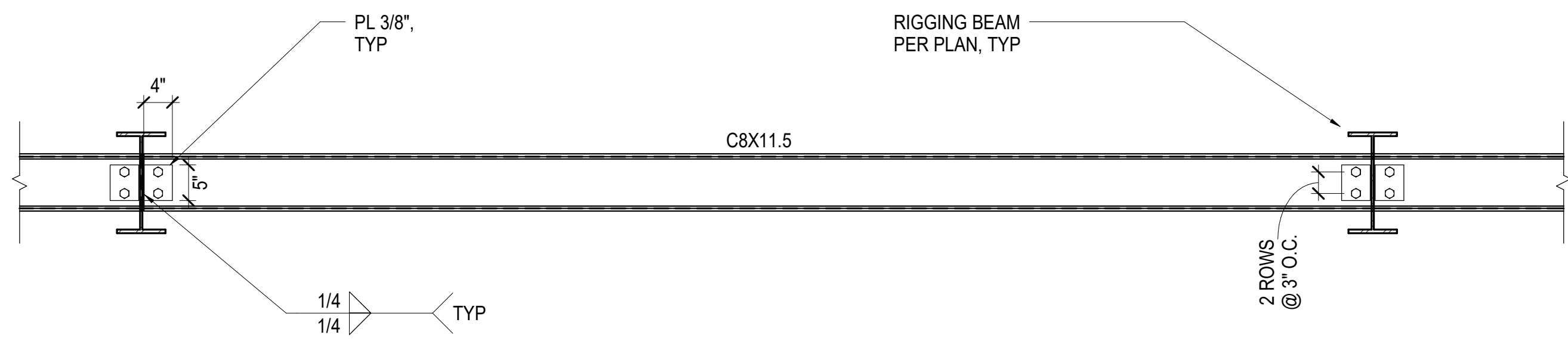
## 2 REINFORCING PLATE SPLICE DETAIL

SCALE: 1 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"

NOTES:

1. 3/4" DIA A325-SC A BOLTS
2. MIN 1 1/2" EDGE DISTANCE, TYP UON
3. GRADE 50 PL
4. STD HOLES IN BEAM, SSL HOLES IN PLATE
5. SETBACK = 3/4" MAX
6.  $P_u = 5$  KIPS (FACTORED AXIAL LOAD)



### 3 CHANNEL STRUT DETAIL

SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

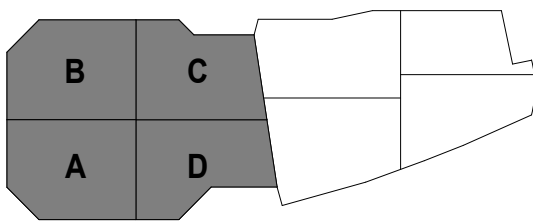
## POPULOUS

Architecture - Interior Design - Landscape Design  
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## DCU Center Structural Upgrades - Rigging Grid

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SHEET NAME

**STEEL DETAILS**

SHEET NUMBER

**S3-2**

