

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

CRITERIA

- 1. ALL MATERIALS, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
2. DESIGN LOADING CRITERIA
ROOF SNOW LOAD 25 PSF
FLOOR LIVE LOAD 125 PSF OR 2,000 LBS
STAIR AND EXITS LIVE LOAD 100 PSF
GUARDRAILS/BALCONY RAILS (EXIT FACILITY) 50 PLF OR 200 LBS
GUARDRAILS/BALCONY RAILS (OTHER THAN EXIT FACILITY) 20 PLF OR 200 LBS
MECHANICAL UNITS WEIGHTS FURNISHED BY MANUFACTURER
WIND: ANALYSIS PROCEDURE: ASCE 7-16 CHAPTER 27 'PART I - BUILDINGS OF ALL HEIGHTS' RISK CATEGORY II
EARTHQUAKE: ANALYSIS PROCEDURE: IBC 'EQUIVALENT LATERAL FORCE PROCEDURE'

GEOTECHNICAL

- 17. FOUNDATION NOTES: ALLOWABLE SOIL PRESSURE AND LATERAL EARTH PRESSURE ARE BASED ON PREVIOUSLY PERMITTED BUILDING PLANS DATED DECEMBER 22, 1945 AND THEREFORE MUST BE VERIFIED IN THE FIELD.
FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE.
BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE.
THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING ASSUMED VALUES:
ALLOWABLE SOIL PRESSURE (EXISTING FOOTINGS) 5,000 PSF
ALLOWABLE SOIL PRESSURE (NEW FOOTINGS) 2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED) 55 PCF/35 PCF
RENOVATION
18. DEMOLITION: VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION.

ANCHORAGE

- 25. EXPANSION BOLTS INTO CONCRETE SHALL BE 'Kwik Bolt 3" EXPANSION ANCHORS AS MANUFACTURED BY HILTI CORP.
26. EXPANSION BOLTS INTO GROUT FILLED CMJ SHALL BE 'Kwik Bolt 3" EXPANSION ANCHORS AS MANUFACTURED BY HILTI CORP.
27. EXPANSION BOLTS INTO CONCRETE SHALL BE 'STRONG-BOLT 2 WEDGE ANCHOR', AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS.
28. EXPANSION BOLTS INTO GROUT FILLED CMJ SHALL BE 'STRONG-BOLT 2 WEDGE ANCHOR', AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS.
29. SCREEN ANCHORS INTO CONCRETE SHALL BE 'Kwik HUS-EZ', AS MANUFACTURED BY HILTI, INC.
30. SCREEN ANCHORS INTO GROUT FILLED CMJ SHALL BE 'Kwik HUS-EZ', AS MANUFACTURED BY HILTI, INC.
31. DRIVE PINS, SHOT PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE FASTENERS AS MANUFACTURED BY HILTI CORPORATION.

STEEL

- 35. STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES.
A. AISC - STEEL CONSTRUCTION MANUAL, 15TH EDITION
B. AISC 303-16 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
C. 2014 RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS.
36. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
TYPE OF MEMBER ASTM SPECIFICATION Fy
A. WIDE FLANGE (W AND WT) SHAPES A992 50 KSI
B. ALL OTHER SHAPES A36 36 KSI
C. PLATE A36 OR A572 36 KSI (MIN)
D. PIPE SECTIONS A53 (TYPE E OR S, GRADE B) 35 KSI
E. STRUCTURAL TUBING (SQUARE OR RECTANGULAR) A500 (GRADE C) 50 KSI
F. ANCHOR BOLTS AND THREADED RODS (EMBEDDED IN MASONRY OR CONCRETE) F1554 (GRADE 55, SUPP. S) 55 KSI
G. CONNECTION BOLTS (7/8" ROUND, UNLESS SHOWN OTHERWISE) F3125 GRADE A325-N 42 KSI
H. HEADED SHEAR STUDS A29 44 KSI
I. THREADED RODS A36 36 KSI
J. STAINLESS STEEL A191 316L 30 KSI

CONCRETE

- 19. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301.
CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 111.
CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF Fc = 3,000 PSI.
THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL.
ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260.
20. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1) AND SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 310.
21. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST EARTH 3"
FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER 2" (#6 BARS OR LARGER) 1-1/2" (#5 BARS OR SMALLER)
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS 1-1/2"
SLABS AND WALLS (INTERIOR FACE) GREATER OF (BAR DIAMETER PLUS 1/8") OR 3/4"

MASONRY

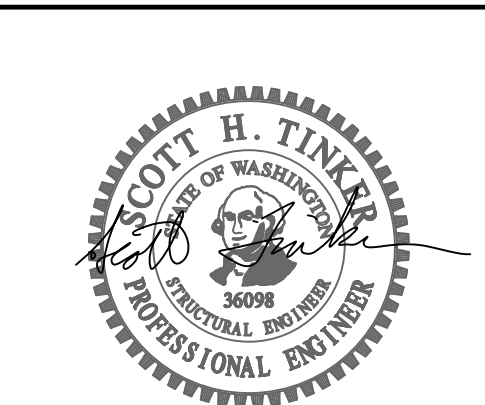
- 34. CONCRETE MASONRY UNIT WALLS SHALL BE CONSTRUCTED OF MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, LAID IN A RUNNING BOND.
PROVIDE (2) #5 (#2/#4 @ 6" AND 4" WALLS) VERT. AT EACH SIDE OF OPENINGS, AT WALL CORNERS AND INTERSECTIONS AND AT FREE ENDS OF WALLS AND (2) #4 HORIZ. AT ELEVATED FLOOR AND ROOF LEVELS AT TOPS OF WALLS AND ABOVE AND BELOW ALL OPENINGS.
ALL CELLS ARE TO BE SOLID GROUTED UNLESS NOTED AS PARTIAL GROUTING. FOR PARTIAL GROUTING FILL ALL CELLS CONTAINING REINFORCEMENT OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE WITH GROUT.
APPROVAL FOR FOUNDATION ONLY. OTHER ITEMS MUST BE APPROVED VIA SEPARATE PERMIT SUBMITTAL.

SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER/ALL STEEL TO BE FIREPROOFED SHALL BE LEFT UNPAINTED. ALL OTHER STEEL SHALL HAVE ONE COAT OF APPROVED SHOP PAINT.
STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. GALVANIZE BOLTS AND SIMILAR THREADED FASTENERS EXPOSED TO WEATHER OR EARTH IN ACCORDANCE WITH ASTM A153. ALL FIELD WELDS EXPOSED TO WEATHER OR EARTH SHALL BE COATED WITH BRUSH APPLIED ZINC RICH PAINT COMPLYING WITH ASTM A780 (Z.R.C. OR EQUIVALENT).
A MINIMUM OF TWO BOLTS ARE REQUIRED FOR ALL CONNECTIONS. ALTERNATE CONNECTIONS TO THOSE SHOWN ON THESE DRAWINGS WILL REQUIRE PRIOR APPROVAL OF THE ENGINEER.
ALL MEMBERS ARE TO BE ERECTED WITH THE NATURAL MILL CAMBER OR INDUCED CAMBER UP, UNLESS OTHERWISE NOTED ON THE DRAWINGS. BEAM CAMBER ON THE DRAWINGS IS THE UPWARD CAMBER REQUIRED IN THE BEAM AS DELIVERED TO THE JOBSITE. CONTRACTOR TO CONSIDER CAMBER LOSS, IF ANY, DUE TO SHIPPING AND HANDLING.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDS, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COFES, SURFACE ROUGHNESS VALUES AND UNEQUAL PARTS.

- 37. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
38. ALL A325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
39. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.M.S. STANDARDS AND SHALL BE PERFORMED BY M.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES.
SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON DRAWINGS ARE MINIMUM SIZES. INCREASE WELD SIZE TO AWS MINIMUM SIZES BASED ON PLATE THICKNESS.
40. WELDING OF LATERAL FORCE RESISTING MEMBERS SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D11 (INCLUDING AWS D10 SEISMIC SUPPLEMENT) AND APPROVED BY THE STRUCTURAL ENGINEER BEFORE WORK BEGINS.
41. METAL FLOOR AND ROOF DECKING - PROVIDE SIZE, TYPE, GAUGE, AND ATTACHMENT TO THE SUPPORTING STRUCTURE AS SHOWN ON THE PLANS.
42. HEADED STUDS FOR COMPOSITE CONNECTION OF STRUCTURAL STEEL TO CAST-IN-PLACE CONCRETE SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A29 AND SHALL BE WELDED IN CONFORMANCE WITH A.M.S. REQUIREMENTS.
43. DEFORMED BAR ANCHORS (DBA) SHALL BE TYPE D2L ANCHORS BY NELSON STUD WELDING DIVISION, TRM ASSEMBLIES AND FASTENERS GROUP (OR EQUIVALENT). ANCHORS SHALL BE MADE FROM COIL ROLLED, DEFORMED STEEL CONFORMING TO ASTM A1064.



1511 THIRD AVENUE SUITE 323 SEATTLE, WA 98101 TEL 206.967.3800 FAX 206.967.3901 www.quantumca.com



PROJECT: CENTERIS DATA CENTERS - TI

1023 39TH AVENUE SOUTH SEATTLE, WASHINGTON

APPROVAL:

City of Puyallup Development & Permitting Services ISSUED PERMIT. Building, Planning, Engineering, Public Works, Fire, Traffic.

Table with 4 columns: NO., DESCRIPTION, DATE, BY. Includes MECHANICAL PADS and ISSUES/REVISIONS.

Table with 4 columns: NO., DESCRIPTION, DATE, BY. Includes P.M., SHT, P.E., TVM, DRAWN BY: SC, SCALE: AS SHOWN, DATE: 1/26/24, JOB NO. 23444.01, SHEET TITLE: GENERAL STRUCTURAL NOTES, SHEET NO.

City of Puyallup Building REVIEWED FOR COMPLIANCE. BSnowden 02/16/2024 8:21:55 AM. CITY OF PUYALLUP STATE OF WASHINGTON

The approved construction plans, documents, and all engineering must be posted on the job at all inspections in a visible and readily accessible location. Full sized legible color plans are required to be provided by the permittee on site for inspection. Approval of submitted plans is not an approval of omissions or oversights by this office or non-compliance with any applicable regulations of local government.

S1.0

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

44. COLD-FORMED STEEL FRAMING NOTES - THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. COLD-FORMED STEEL FRAMING MEMBERS SHALL BE OF THE SHAPE, SIZE, AND GAUGE SHOWN ON THE PLANS. ALL FRAMING MEMBERS SHALL COMPLY WITH I.C.C. REPORT NO. ESR-3064P.

B. MATERIAL: METAL FRAMING SHALL BE GALVANIZED UNLESS OTHERWISE NOTED, CONFORMING AS FOLLOWS:

ASTM A653 S5 GRADE 50, CLASS 1 OR 3 Fy = 50 KSI 118, 97, 68, AND 54 MIL

ASTM A1011 S5 GRADE 50 Fy = 50 KSI 118, 97, 68, AND 54 MIL

C. WELDING OF COLD-FORMED METAL FRAMING SHALL CONFORM TO AWS D13 AND SHALL BE PERFORMED BY WELDERS QUALIFIED TO PRODUCE THE SPECIFIED CLASSES OF WELD.

D. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 400S162-43 @ 16" O.C. AT INTERIOR WALLS AND 600S162-43 AT 16" O.C. AT EXTERIOR WALLS.

ALL STUD WALLS SHALL HAVE THEIR BOTTOM TRACKS ATTACHED TO FRAMING BELOW WITH #10 SCREWS AT 16" O.C. OR ATTACHED TO CONCRETE WITH 5/32" DIAMETER DRIVE-PINS @ 16" O.C.

TRACK SECTIONS SHALL BE UNPUNCHED AND HAVE AT LEAST 1" FLANGES AND MATCH STUD THICKNESS.

WALLS WHICH HAVE SHEATHING CONNECTED ON ONE SIDE ONLY SHALL HAVE UNSHEATHED FLANGES LATERALLY SUPPORTED IN ACCORDANCE WITH THE DETAILS.

45. METAL BUILDING SYSTEM (MBS)

A. BUILDING MANUFACTURER SHALL DESIGN BUILDINGS FOR THE LOADS, SPANS AND CONDITIONS SHOWN ON THESE DRAWINGS.

B. ALL COLUMNS SHALL BE DESIGNED ASSUMING THEY ARE FREE TO ROTATE, DO NOT FIX COLUMN BASES.

C. DESIGN AND PROVIDE SUPPORTS AROUND OVERHEAD DOORS. A MINIMUM COLLATERAL LOADING OF 10 PSF SHALL BE INCLUDED IN THE DESIGN OF THE ROOF TO ACCOUNT FOR MISCELLANEOUS DEAD LOAD.

D. COORDINATE ALL DETAILS WHICH ARE SHOWN ON THESE DRAWINGS WITH THE PREFABRICATED BUILDING DESIGN.

E. COORDINATE THE FINAL FOUNDATION LOADING AND BASE PLATE CONFIGURATION WITH THE STRUCTURAL ENGINEER. FOUNDATION DESIGN SHOWN IN THESE PLANS MAY NEED TO BE REVISED BASED UPON THE FINAL DESIGN AND/OR COLUMN LOCATIONS.

F. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER.

STRUCTURAL OBSERVATION

AS NOTED IN IBC SECTION 1704.6 STRUCTURAL OBSERVATION IS REQUIRED FOR THIS PROJECT. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE ELEMENTS AND CONNECTIONS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS.

IN OUR STRUCTURAL OBSERVATION, WE WILL SELECT PORTIONS OF WORK TO REVIEW CLOSELY AS WELL AS OBSERVE THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. SUCH REVIEW PROCEDURES WILL BE CONDUCTED IN ACCORDANCE WITH COMMONLY ACCEPTED STANDARDS OF PRACTICE.

THE BUILDING OFFICIAL ALSO RECOGNIZES THAT STRUCTURAL REVIEW IS A TECHNIQUE EMPLOYED TO MINIMIZE THE RISK OF PROBLEMS ARISING DURING CONSTRUCTION. STRUCTURAL OBSERVATION BY THE DESIGN PROFESSIONAL DOES NOT CONSTITUTE WARRANTY OR GUARANTEE OF ANY TYPE. IN ALL CASES, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR THE QUALITY OF WORK AND FOR ADHERENCE TO THE APPROVED PLANS AND SPECIFICATIONS.

ABBREVIATIONS

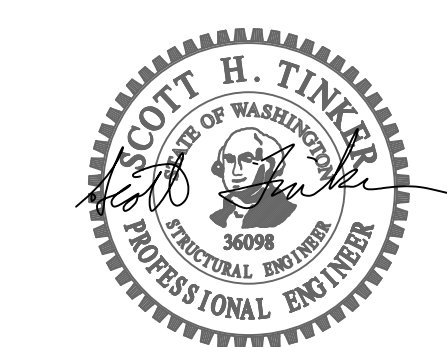
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Centers for Information Systems



PROJECT: CENTERIS DATA CENTERS - TI

1023 39TH AVENUE SOUTHEAST PUYALLUP, WASHINGTON

APPROVAL:

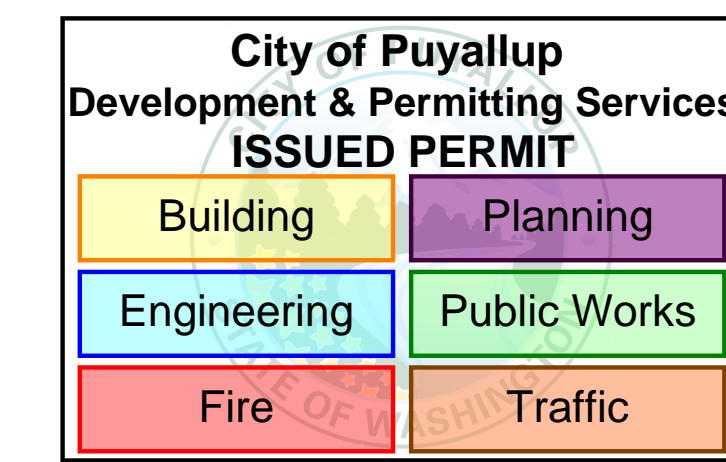


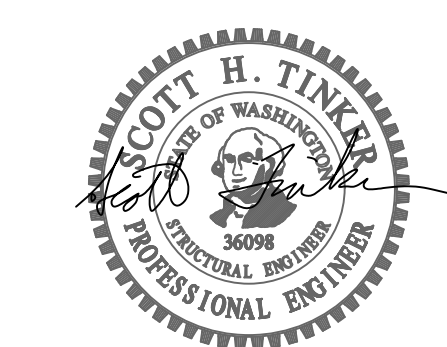
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MECHANICAL PADS 1/26/24 NO. DESCRIPTION DATE BY ISSUES: 0 REVISIONS: 1

GENERAL STRUCTURAL NOTES SHEET NO.

S1.1

SEAL:



PROJECT:

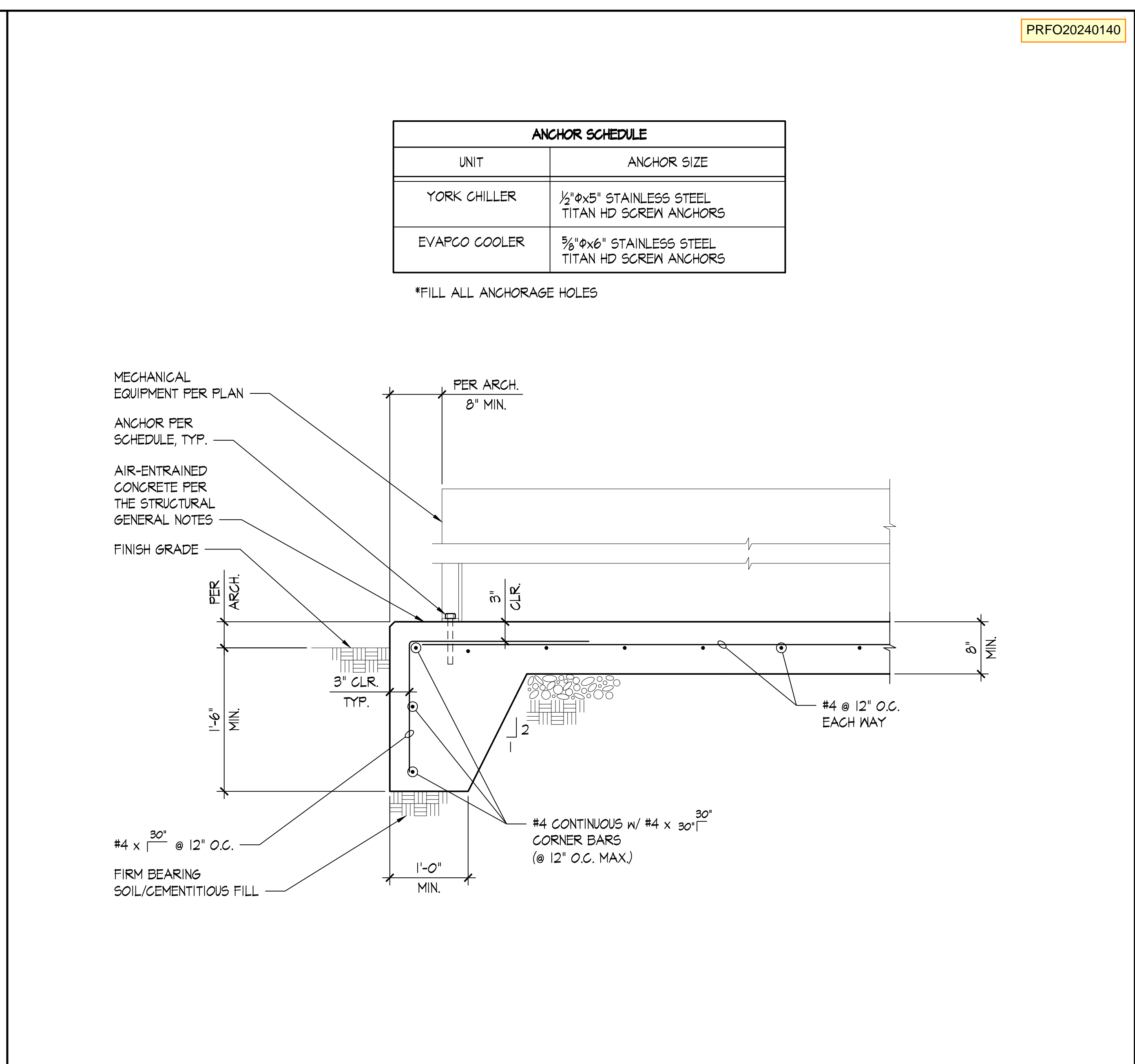
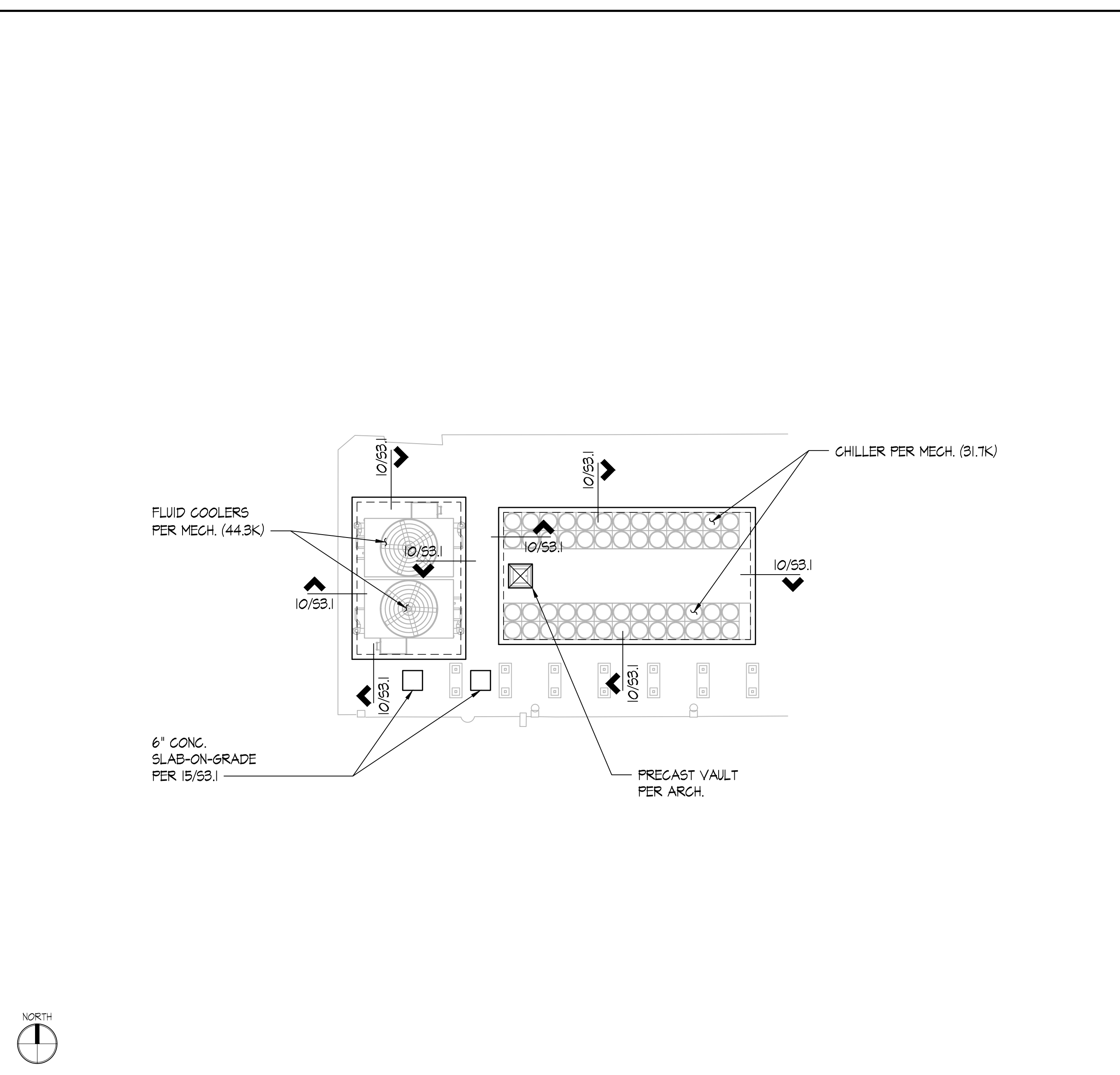
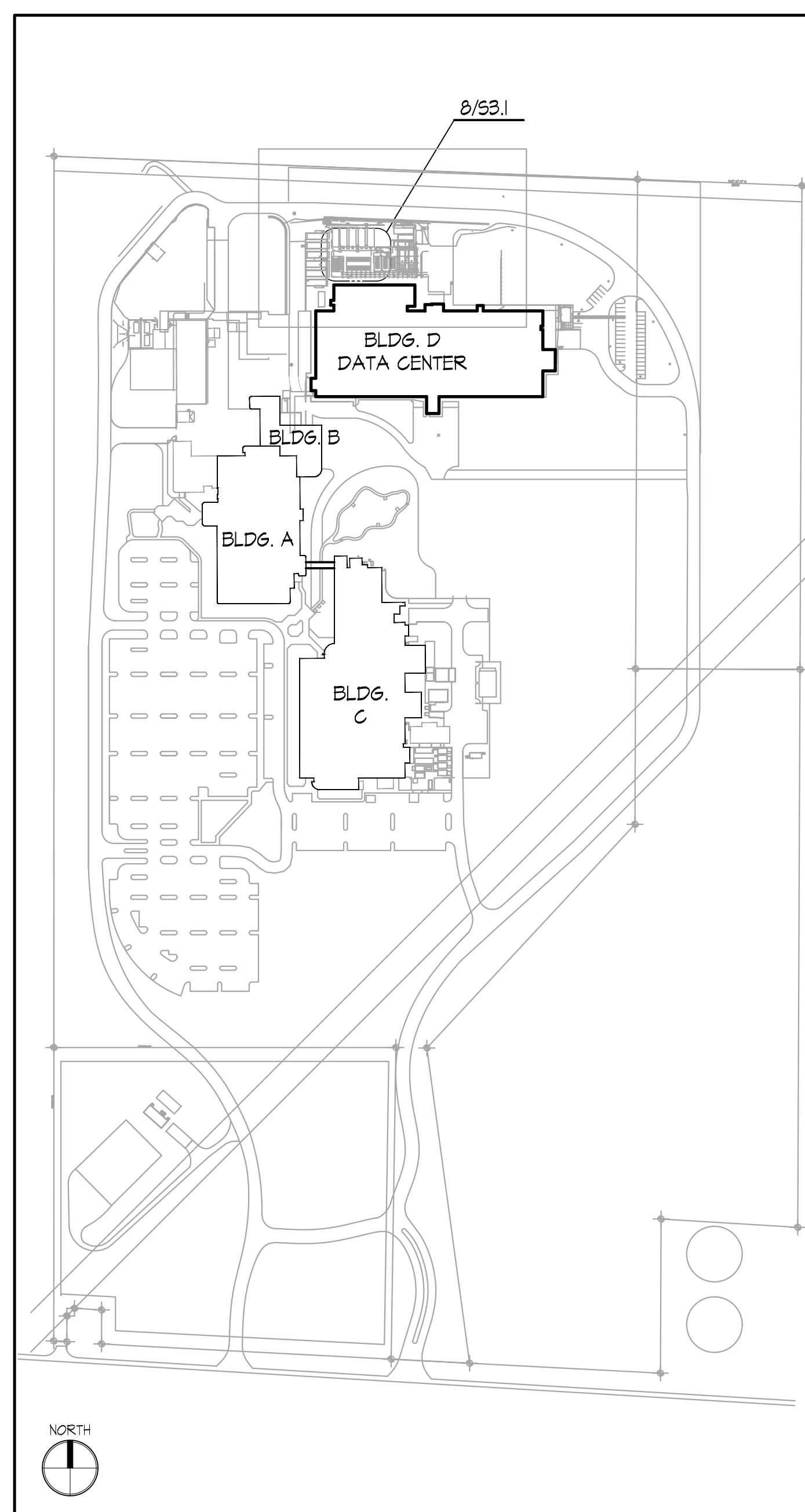
**CENTERIS DATA
CENTERS - TI**

**1023 39TH AVENUE
SOUTHEAST
PUYALLUP, WASHINGTON**

APPROVAL:

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

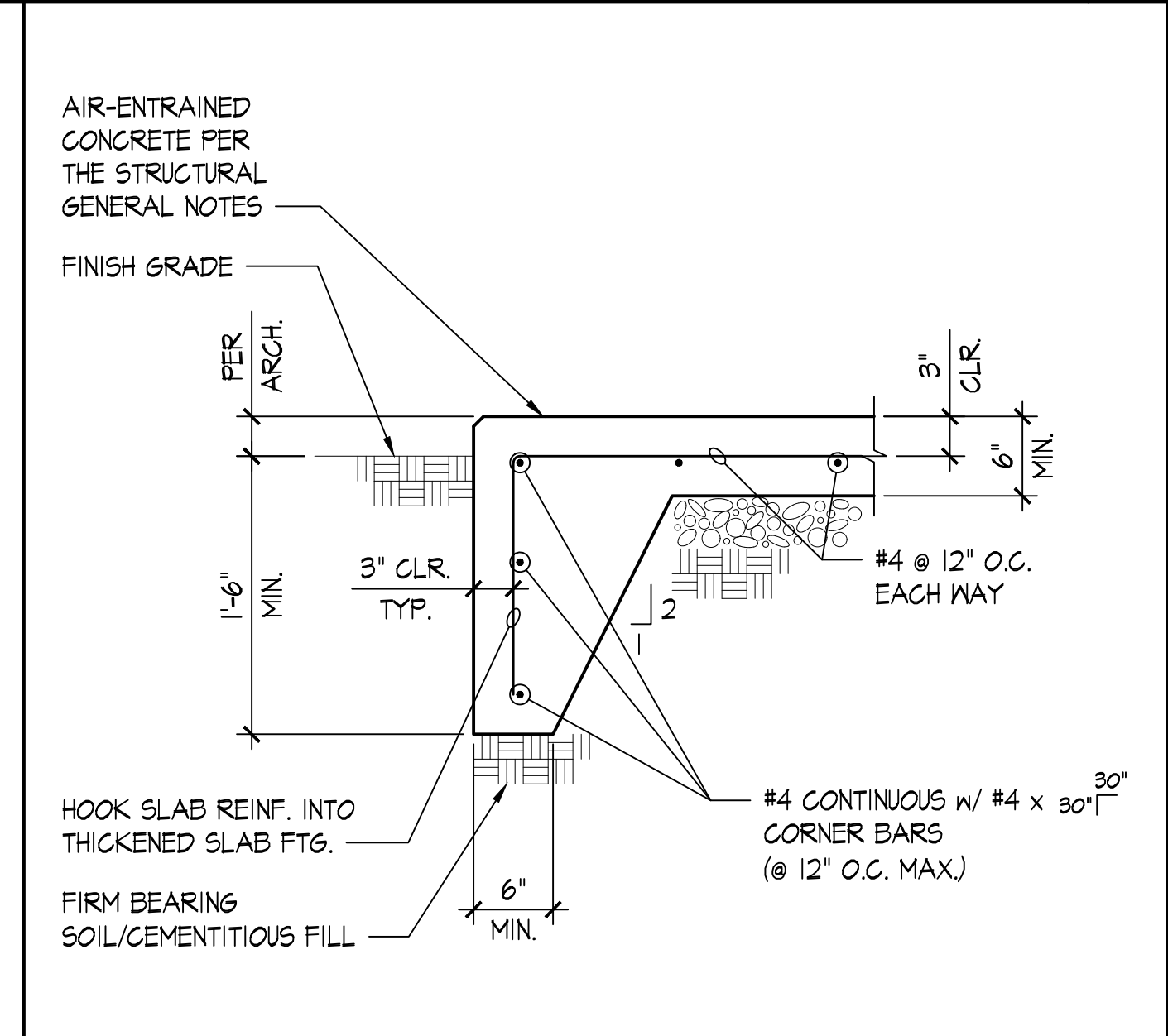
Building	Planning
Engineering	Public Works
Fire	Traffic



SITE REFERENCE PLAN SCALE: NONE **6**

EQUIPMENT PLAN SCALE: NONE **8**

TYPICAL EQUIPMENT PAD SCALE: NONE **10**



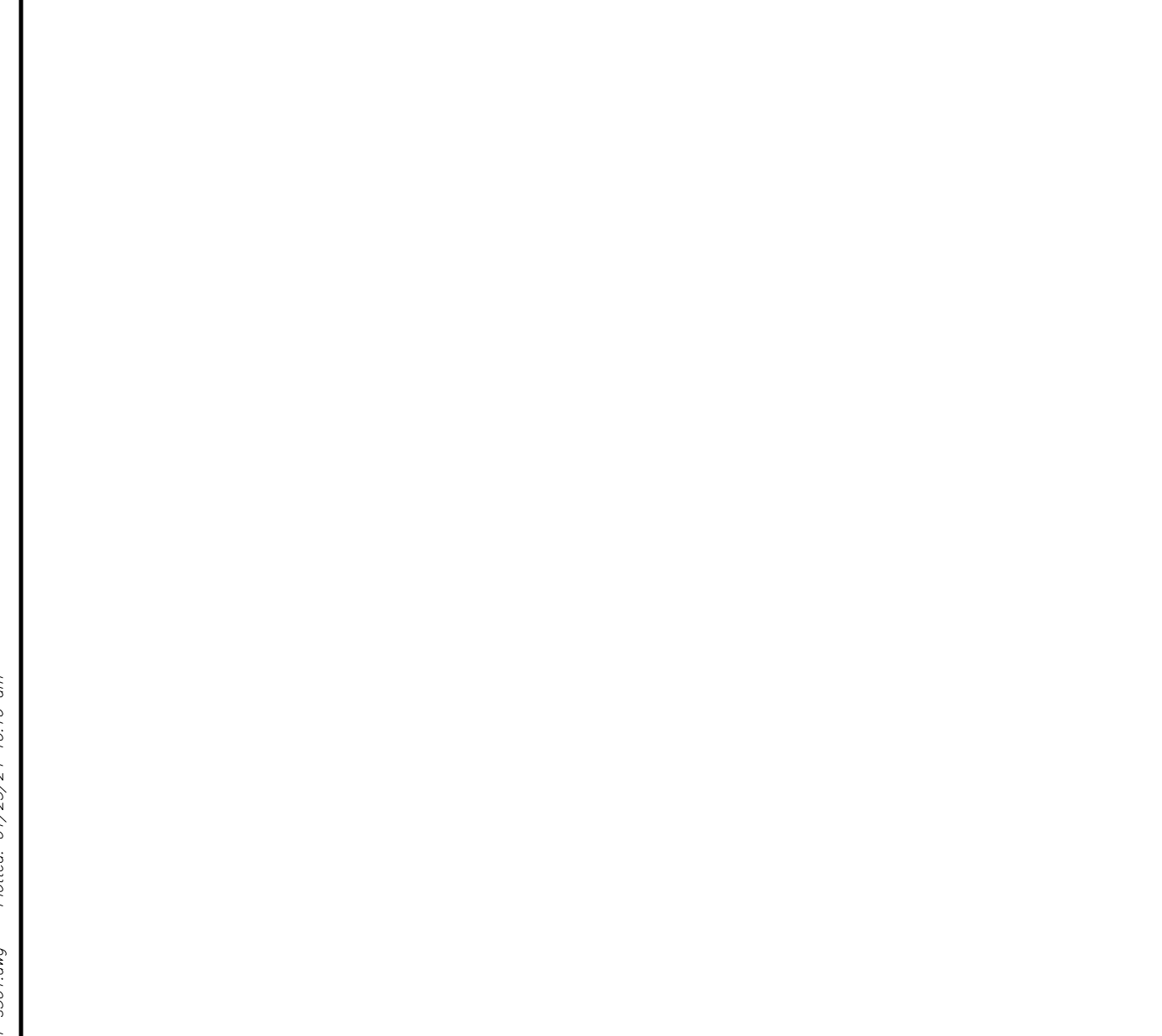
DETAIL SCALE: NONE **11**

DETAIL SCALE: 1"=1'-0" **12**

DETAIL SCALE: 1"=1'-0" **13**

DETAIL SCALE: 1"=1'-0" **14**

THICKENED SLAB EDGE SCALE: 1"=1'-0" **15**



DETAIL SCALE: NONE **16**

DETAIL SCALE: 1"=1'-0" **17**

DETAIL SCALE: 1"=1'-0" **18**

DETAIL SCALE: 1"=1'-0" **19**

DETAIL SCALE: 1"=1'-0" **20**

NO.	MECHANICAL PADS	1/26/24
NO.	DESCRIPTION	DATE BY
ISSUES: 0		REVISIONS: 1
P.M.	SHT	
P.E.	TVM	
DRAWN BY:	SC	
SCALE:	AS SHOWN	
DATE:	1/26/24	
JOB NO.	23444.01	
SHEET TITLE:		

DETAILS

SHEET NO.