

AGRICULTURE & AGRI-FOOD CANADA SASKATOON RDC CRYOBANK DEHUMIDIFIER

107 SCIENCE PLACE
SASKATOON, SASKATCHEWAN

ISSUED FOR TENDER
(2017.02.03)



DRAWING INDEX

STRUCTURAL

S5.1 RTU SUPPORT FRAMING PLAN AND DETAILS
& GENERAL NOTES

MECHANICAL

M6.1 MECHANICAL DEMOLITION PLANS
M6.2 RENOVATED MECHANICAL PLANS
M6.3 MECHANICAL DETAILS

ELECTRICAL

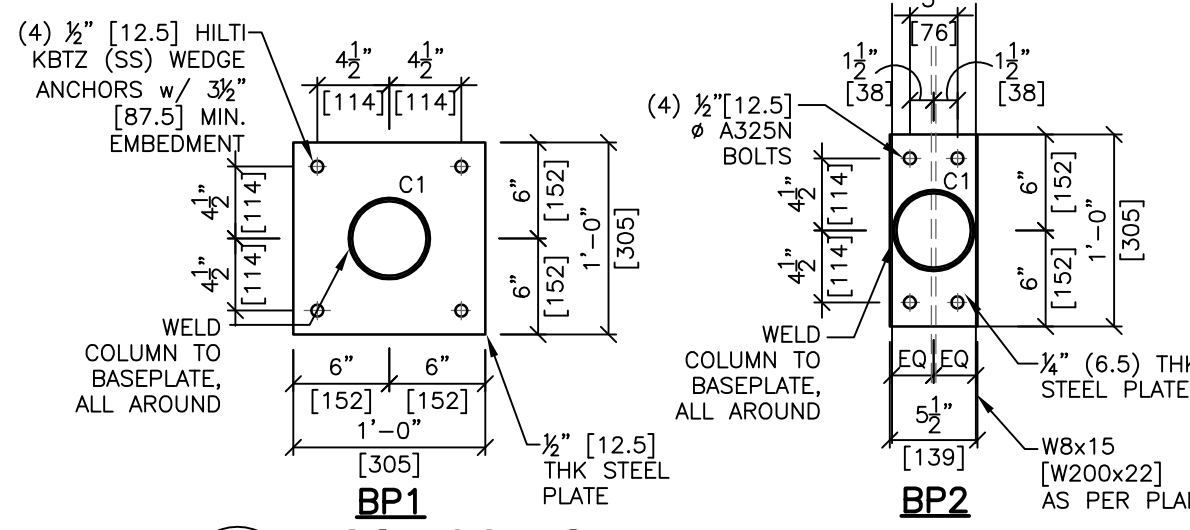
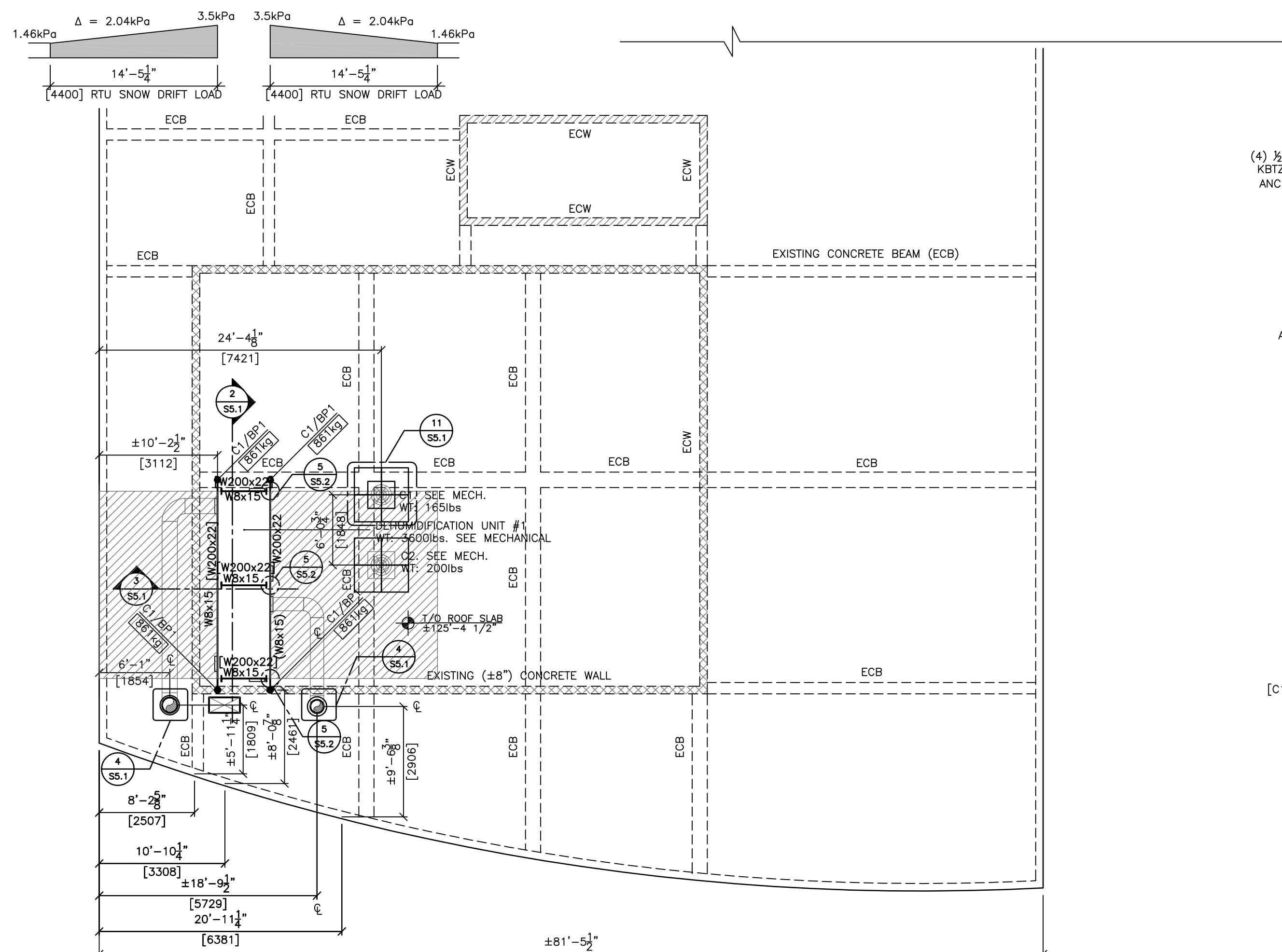
E1.0 ELECTRICAL - POWER AND SYSTEMS



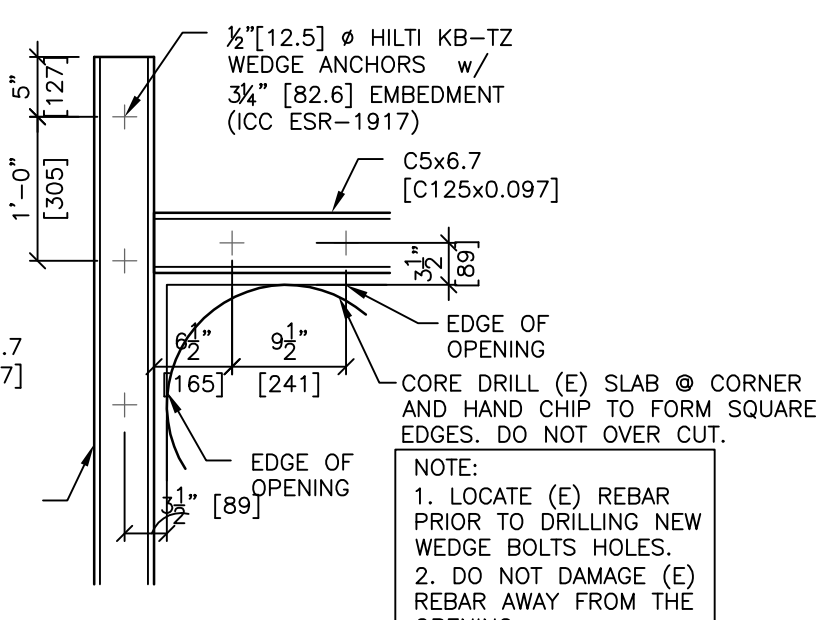
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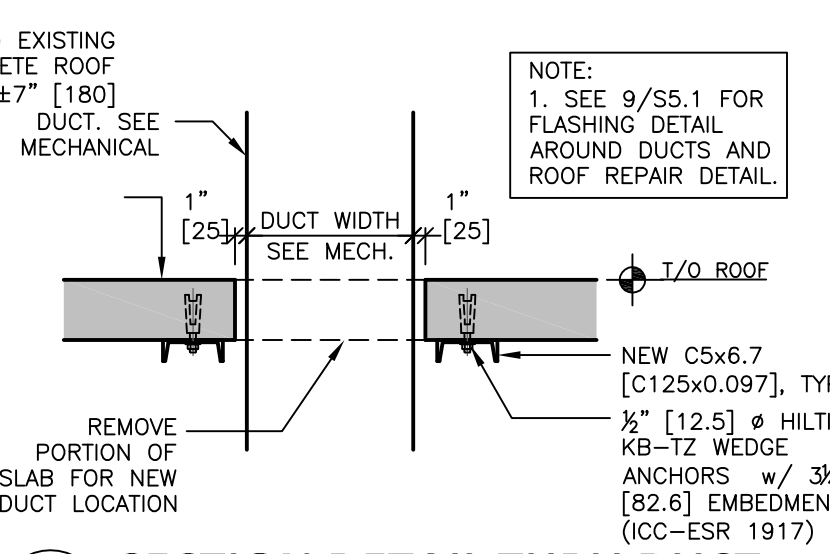
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R3C 1C7



1A BASEPLATES
SCALE 1:12



6 SECTION DETAIL (E) - EXISTING
SCALE 1:16



7 SECTION DETAIL THRU DUCT
SCALE 1:16

- GENERAL NOTES**
- CONTRACTOR IS TO CHECK AND VERIFY ALL SITE CONDITIONS AND DIMENSIONS. REPORT ANY VARIANCES ON OR AGAINST THE DRAWINGS TO THE ENGINEER.
 - CONTRACTOR IS TO CONFIRM ALL BUILDING GRADE ELEVATIONS ON SITE AGAINST THE DRAWINGS.
 - CONTRACTOR IS TO OBTAIN APPROVAL FROM THE GOVERNING JURISDICTION AND OBTAIN A BUILDING PERMIT.
 - CONSTRUCTION IS TO BE IN FULL COMPLIANCE WITH THE NATIONAL BUILDING CODE (2010).
 - ENGINEER IS ENGAGED BY THE OWNER, TO PROVIDE PERIODIC INSPECTIONS AND IS THUS TAKING RESPONSIBILITY FOR DESIGN AND CONSTRUCTION IN PLACE.
 - ANY CHANGES TO THE FRAMING DESIGN OR LAYOUT REQUIRES THE ENGINEER'S REVIEW.
- GENERAL**
- FABRICATE AND ERECT STRUCTURAL STEEL TO CSA S16.1.
 - PROVIDE STRUCTURAL STEEL TO CSA G40.21 WITH THE FOLLOWING GRADES:
 - WIDE FLANGE BEAMS AND COLUMNS 44W
 - CHANNELS AND ANGLES 44W
 - HSS SECTIONS (CLASS C) 44W
 - STRUCTURAL BARS AND PLATES 44W
 - MISCELLANEOUS STEEL 36W OR 44W
 - PIPE COLUMNS ASTM A53 GR.B
 - ERECTOR BOLTS - MIN 3/4" ASTM A325
 - ANCHOR BOLTS ASTM A307
 - GALVANIZING
 - SUBMIT SHOP DRAWINGS TO THE ENGINEER AND RECEIVE APPROVAL PRIOR TO FABRICATION. SHOW ALL DETAILS, INCLUDING FIELD WELDS, AND MATERIAL SPECIFICATIONS AND THE METHOD, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.
 - DESIGN OF CONNECTIONS TO BE BY STEEL FABRICATOR UNLESS DETAILED ON THE DRAWINGS. USE MIN. 2 BOLTS PER CONNECTION AND DESIGN FOR BEARING CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. TOUCH UP ALL FIELD WELDS WITH PRIMER AFTER SLAG IS REMOVED. MINIMUM SIZE OF FIELD WELDS, 1/16" LESS THAN THE THICKNESS OF MATERIAL BUT NOT LESS THAN 1/4".
 - WELD TO CSA W59 BY FABRICATORS QUALIFIED TO CSA W47.1.
 - TIGHTEN ALL BOLTS WITH IMPACT WRENCH.
 - PAINT STEEL SURFACES INTENDED FOR HEATED INTERIOR AREAS WITH ONE COAT OF PRIMER TO OSG/CPMA 1-73A.
 - USE ONE COAT OF CS58 1-40 PRIMER FOR ALL STEEL SURFACES EXPOSED DIRECTLY TO WEATHER.
 - STRUCTURAL STEEL SHALL CONFORM TO CSA STANDARD G40.21-M87 GRADE 350W - HSS 350W, CLASS C.
 - STEEL FABRICATOR TO BE CERTIFIED IN DIVISION 1 OR 2 BY THE CANADIAN WELDING BUREAU IN ACCORDANCE WITH CSA W47.1.
 - FIELD WELDING BY COMPANIES CERTIFIED BY THE CWS AS PER W47.1 DIVISIONS 1.2 & 3.
 - STRUCTURAL STEEL BOLTS CONFORMING TO ASTM STANDARD A325 ANCHOR BOLTS UP TO 3/4" DIA TO CONFORM TO ASTM STANDARD A307
 - GROUT UNDER BASE PLATES TO BE A NON-SHRINKING, NON-METALLIC, PRE-BLENDED GROUTING COMPOUND CAPABLE OF A MIN. COMPRESSIVE STRENGTH OF 20MPa AT 3 DAYS AND 50 MPa AT 28 DAYS.
 - WELDING ELECTRODES SHALL BE LOW HYDROGEN.
 - REMOVE ALL WELDING SLAG BEFORE PAINTING.
 - ALL AREAS TO RECEIVE WELDING TO BE CLEANED OF GREASE OR PAINT.

- GENERAL STRUCTURAL NOTES**
- (THE FOLLOWING APPLY UNLESS NOTED OTHERWISE ON DRAWINGS)
- CRITERIA**
ALL MATERIALS, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS AND THE NATIONAL BUILDING CODE OF CANADA (NBC), 2010 EDITION.
- GENERAL CONDITIONS**
STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH MECHANICAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS WITH MECHANICAL DRAWINGS AND EXISTING CONDITIONS FOR COMPATIBILITY, AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION.
- IN THE EVENT OF CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND THE PROJECT SPECIFICATIONS, THE STRUCTURAL DRAWINGS SHALL CONTROL.
- SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH WALLS AND FLOORS. USE EXISTING OPENINGS THROUGH WALLS AND FLOORS IF POSSIBLE.
- CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.
- DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECT TO REVIEW AND APPROVAL BY THE MECHANICAL AND THE STRUCTURAL ENGINEERS.
- MATERIAL SUBSTITUTIONS** FOR PRODUCTS SPECIFIED IN THE PLANS AND NOTES MAY BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE MECHANICAL AND STRUCTURAL ENGINEER. SUBSTITUTION SUBMITTALS SHALL IDENTIFY EXACTLY WHAT PRODUCTS ARE TO BE SUBSTITUTED, AND INCLUDE AN ICC EVALUATION SERVICE REPORT (OR EQUIVALENT) DEMONSTRATING EQUIVALENT OR GREATER LOAD CAPACITIES THAN THE SUBSTITUTED PRODUCT.
- CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE MECHANICAL AND STRUCTURAL ENGINEERS FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS WILL NOT SATISFY THIS REQUIREMENT.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS. SHORING AND RESHORING SHALL BE DESIGNED BY A QUALIFIED DESIGNER AND THE ERECTED SHORING SHALL BE INSPECTED BY A REGISTERED STRUCTURAL ENGINEER EXPERIENCED IN THE DESIGN OF SHORING SYSTEMS, WHO SHALL SUBMIT AN INSPECTION REPORT TO THE STRUCTURAL ENGINEER.
- QUALITY CONTROL**
SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW TWO WEEKS PRIOR TO FABRICATION.

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CERTIFICATE OF AUTHORIZATION
W.T. McGINN & ASSOCIATES
No. 124
Permission to Consult held by:

DISCIPLINE: SASK. REG. NO. SIGNATURE:
CIVIL 2085 [Signature]

Professional Seal:
[Professional Engineer Seal]

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AGRICULTURE & AGRI-FOOD CANADA SASKATOON RDC CRYOBANK DEHUMIDIFIER

107 SCIENCE PLACE
SASKATOON, SASKATCHEWAN

Issue Record:
YY.MM.DD/Issued For/Issued To/Issued By

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Designed By: SS Scale: AS INDICATED
Drawn By: JS Date: 2016.12
Checked By: PTM/SS Date: 2016.12.23
Project No.: 4874

S5.1

Revision No: R# Date: YYYY.MM.DD
Issued For: FOR TENDER
Date Issued: 02/03/2017
Date Plotted: 26/01/2017

1 ROOF FRAMING PLAN
SCALE 1/8" = 1'-0"

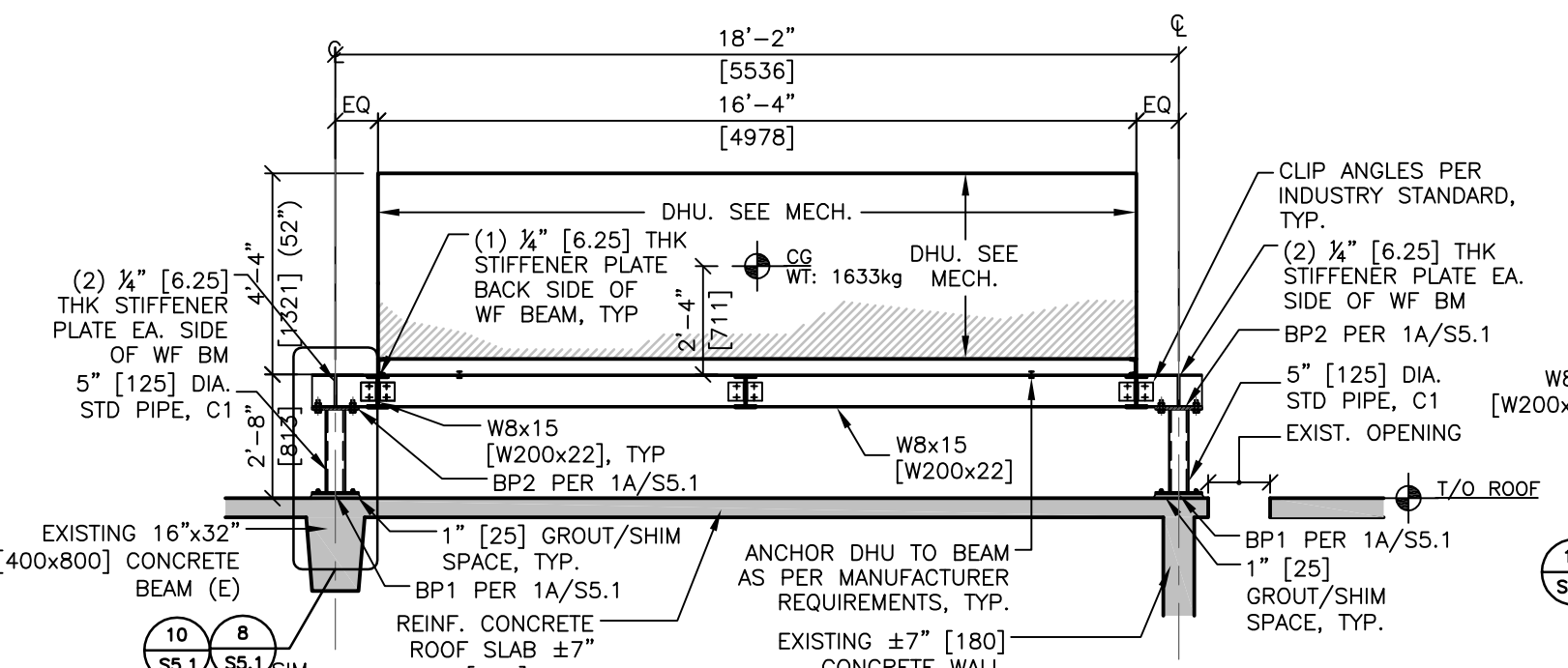
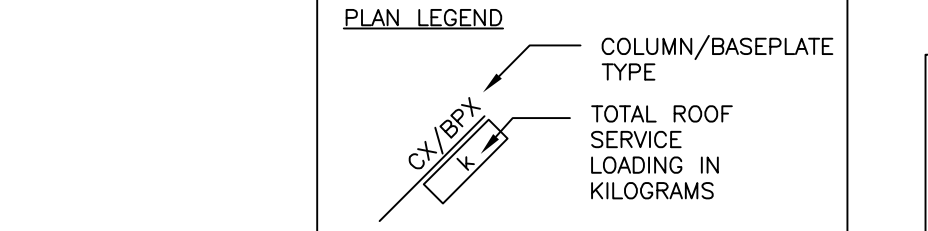
COLUMN SCHEDULE

TYPE	DESCRIPTION
C1	5" [125] DIA. STD. PIPE

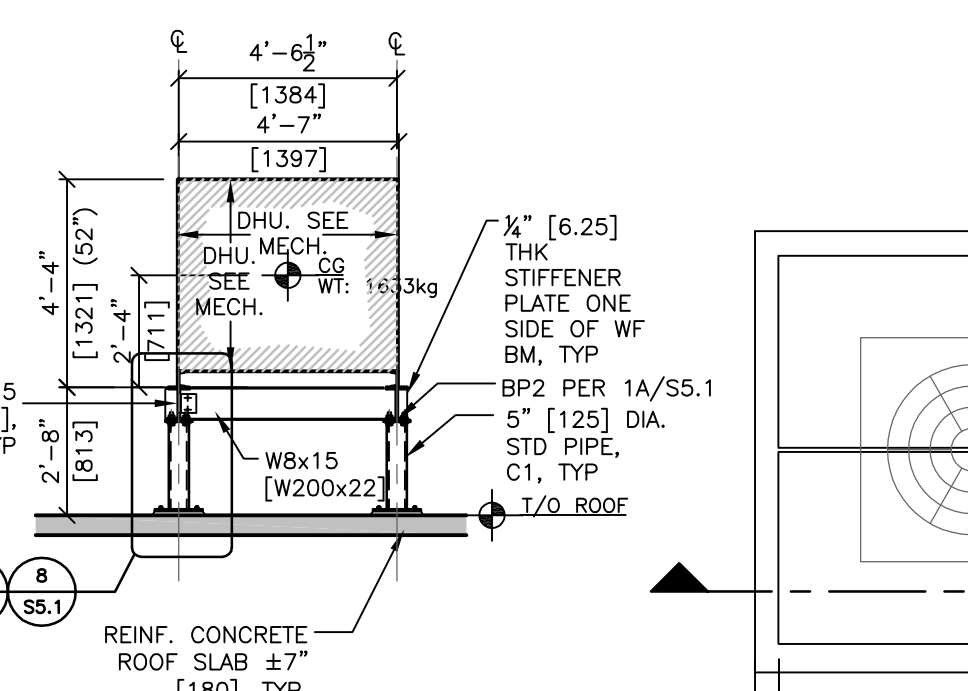
NOTE: SEE DETAILS 4/S5.1 AND 12/S5.1 FOR DUCT AND CONDUIT SLAB PENETRATION DETAILS.

ROOF LOADING

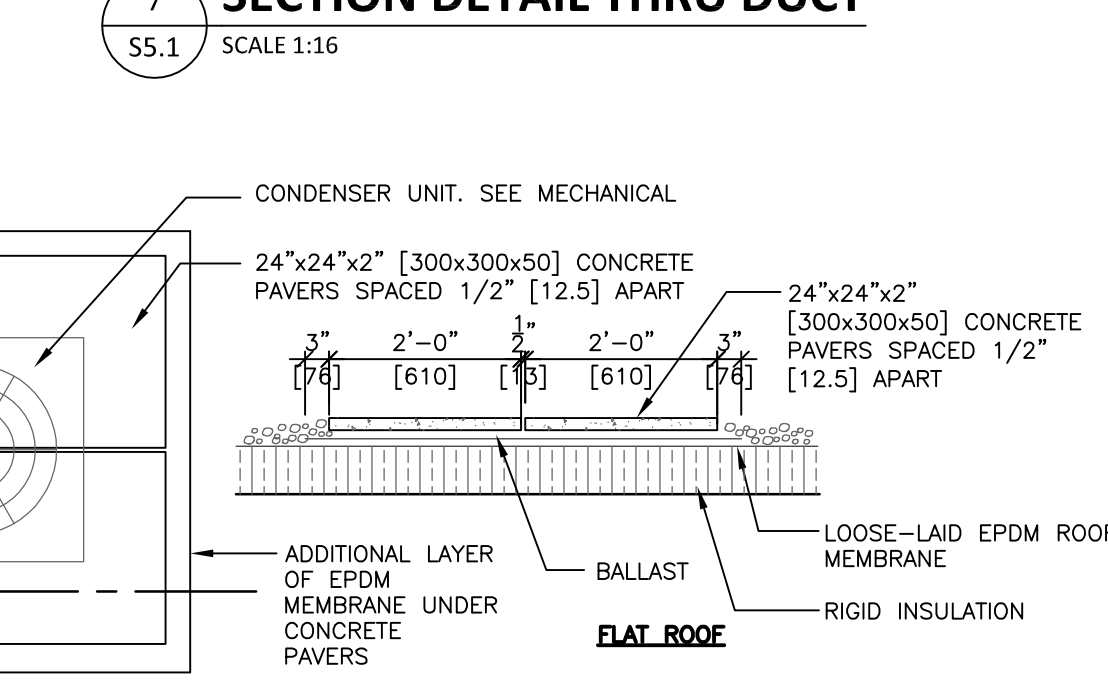
EO LOAD : DL = 2.4kPa.
ROOF DL : 6.0 kPa.
SNOW LOAD : 1.5kPa
TOTAL LOAD = 10.0kPa



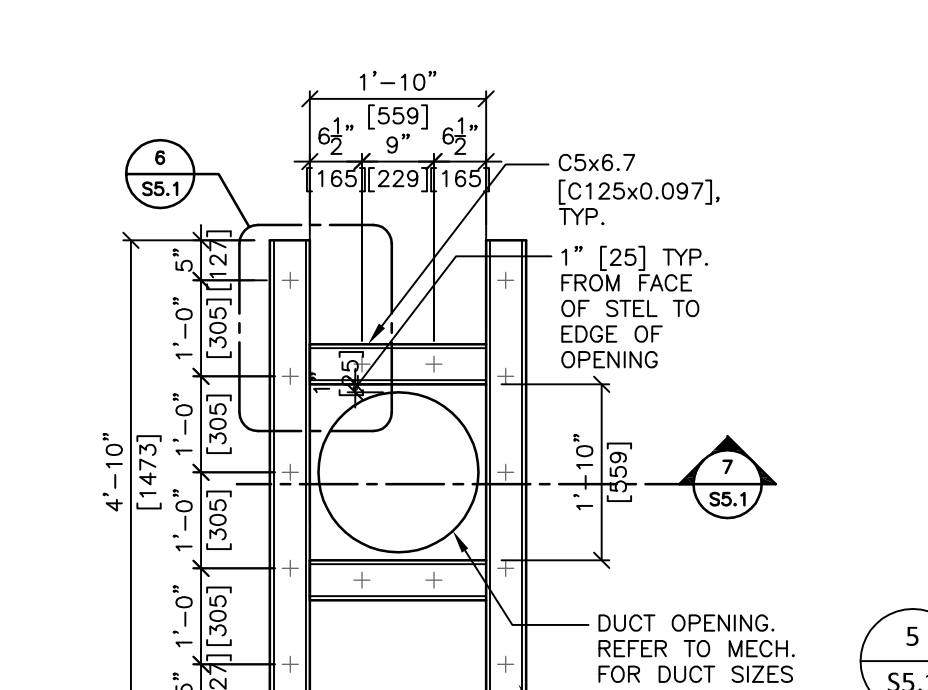
2 ROOF SECTION DETAIL
SCALE 1:48



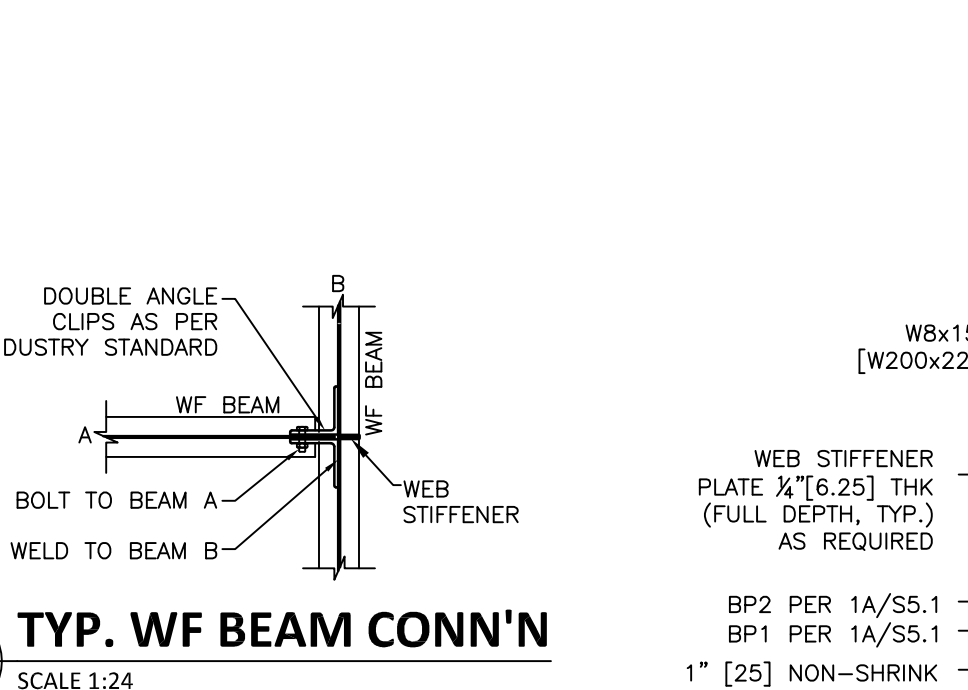
3 ROOF SECTION DETAIL
SCALE 1:48



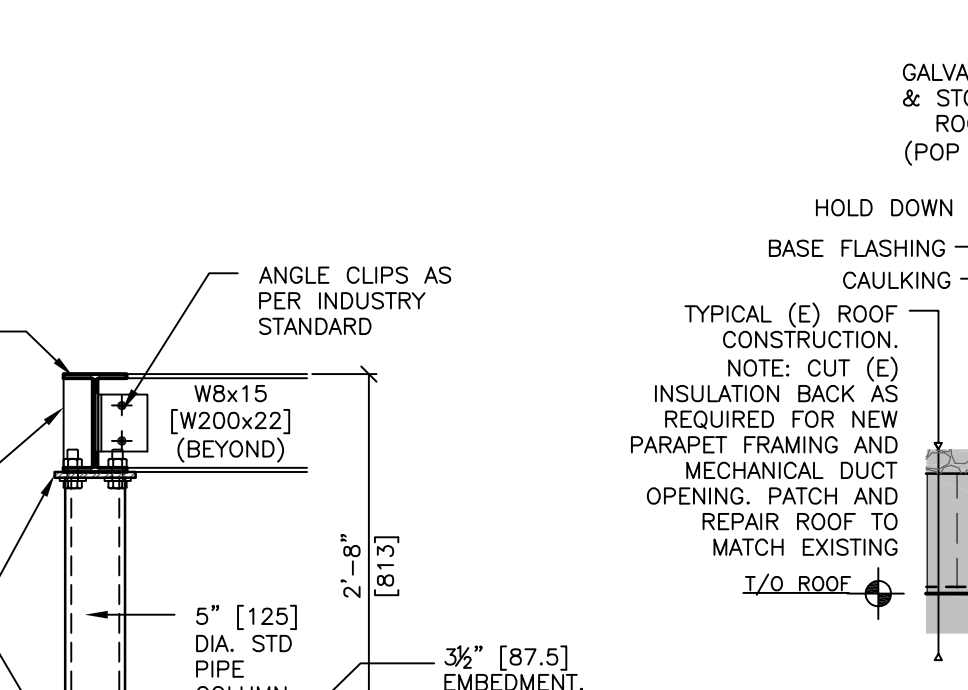
11 CONCRETE PAVER DETAIL
SCALE 1:24



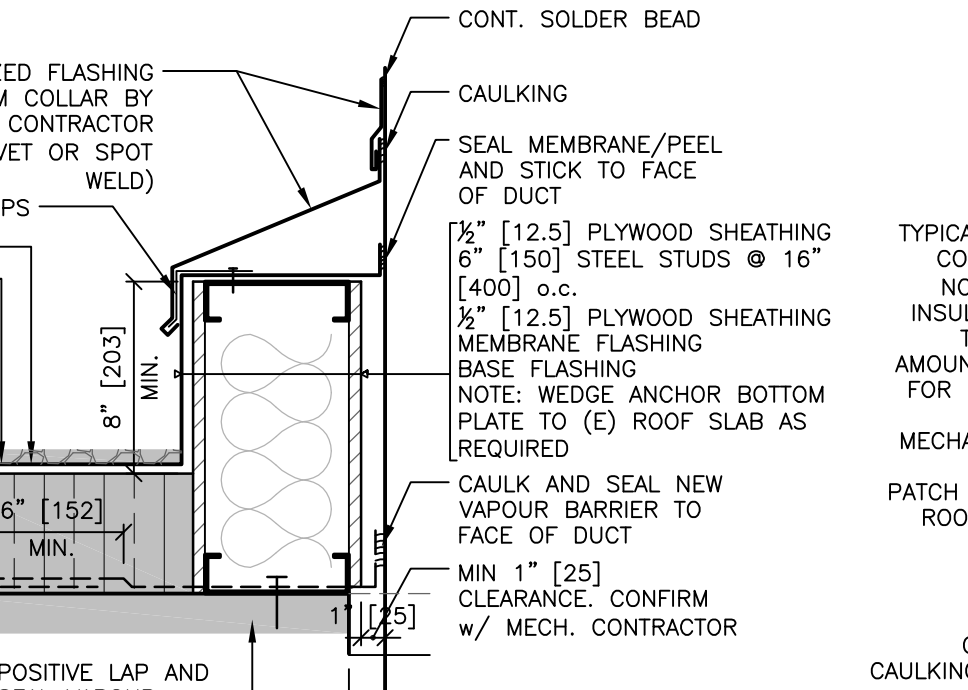
4 TYP. DUCT OPENING
SCALE 1:24



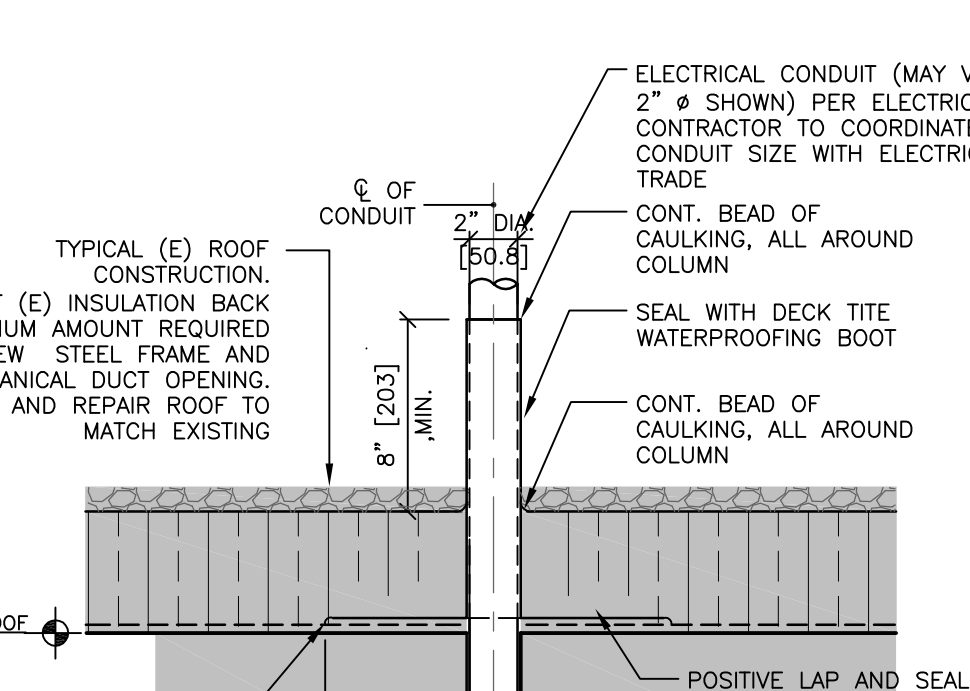
5 TYP. WF BEAM CONN'N
SCALE 1:24



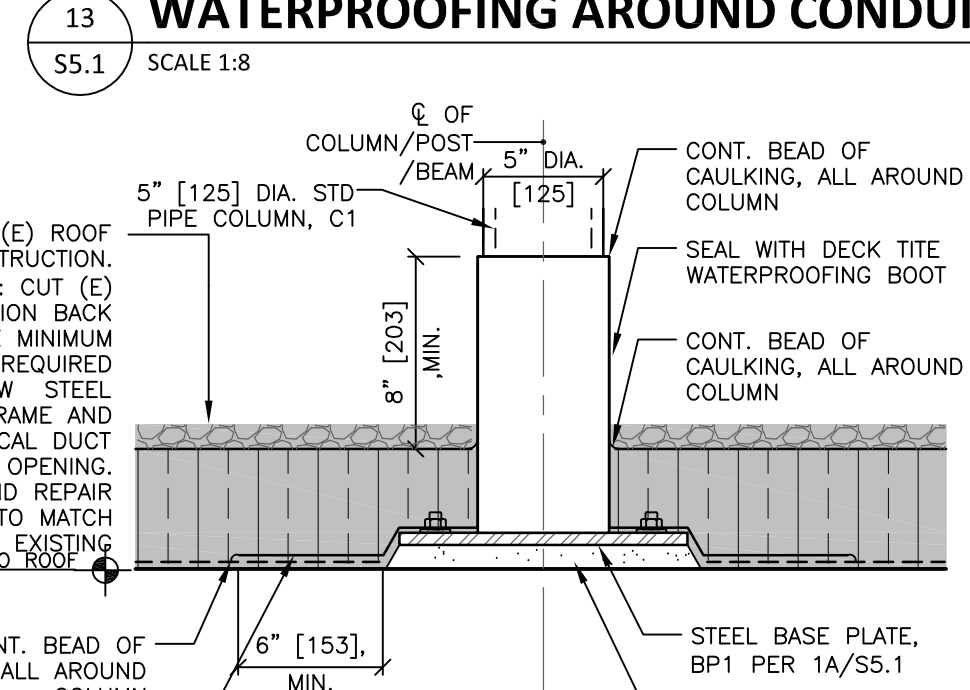
8 TYP. COLUMN/PIPE CONN.
SCALE 1:16



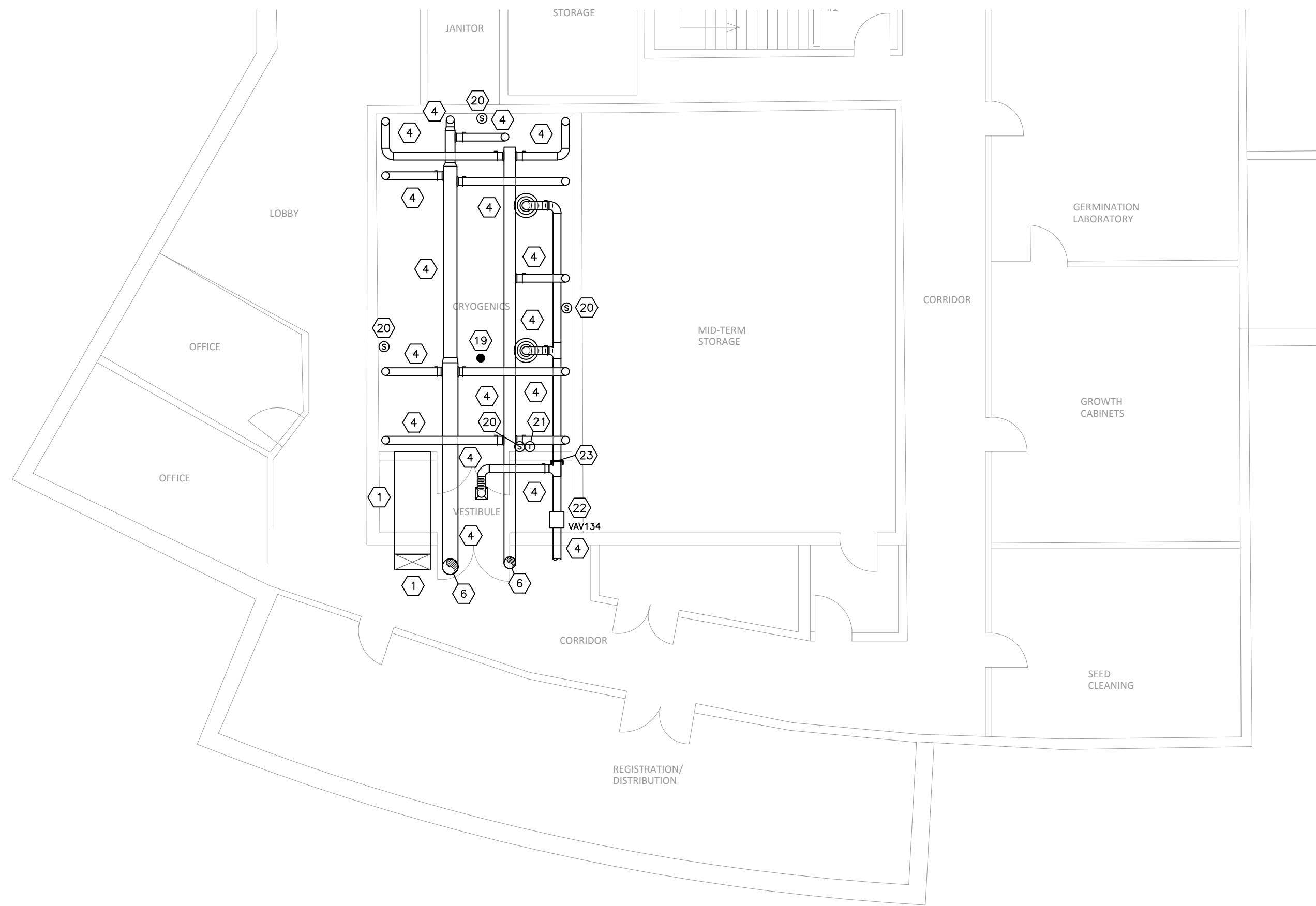
9 DUCT ROOF PENETRATION
SCALE 1:8



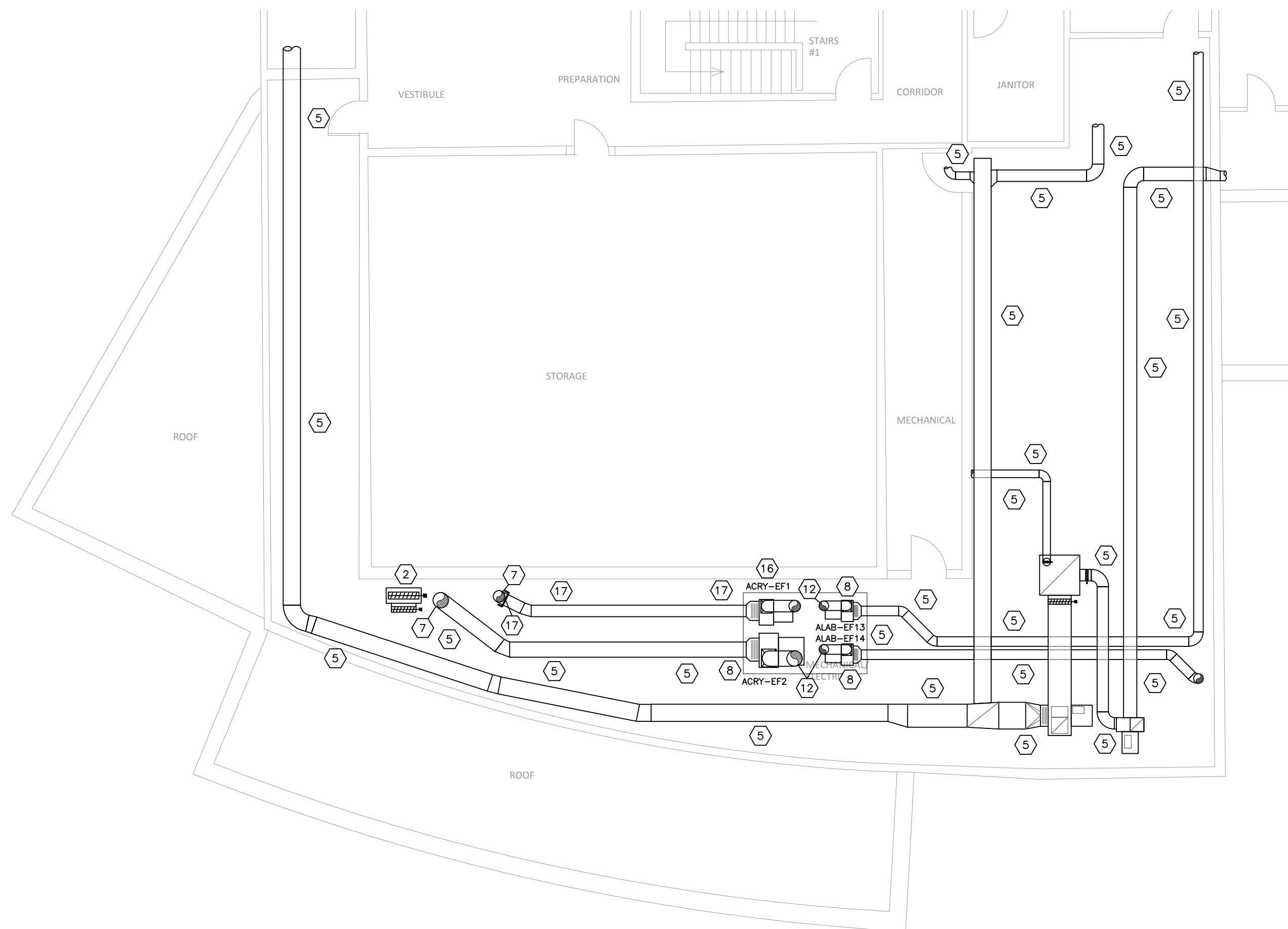
13 WATERPROOFING AROUND CONDUIT
SCALE 1:8



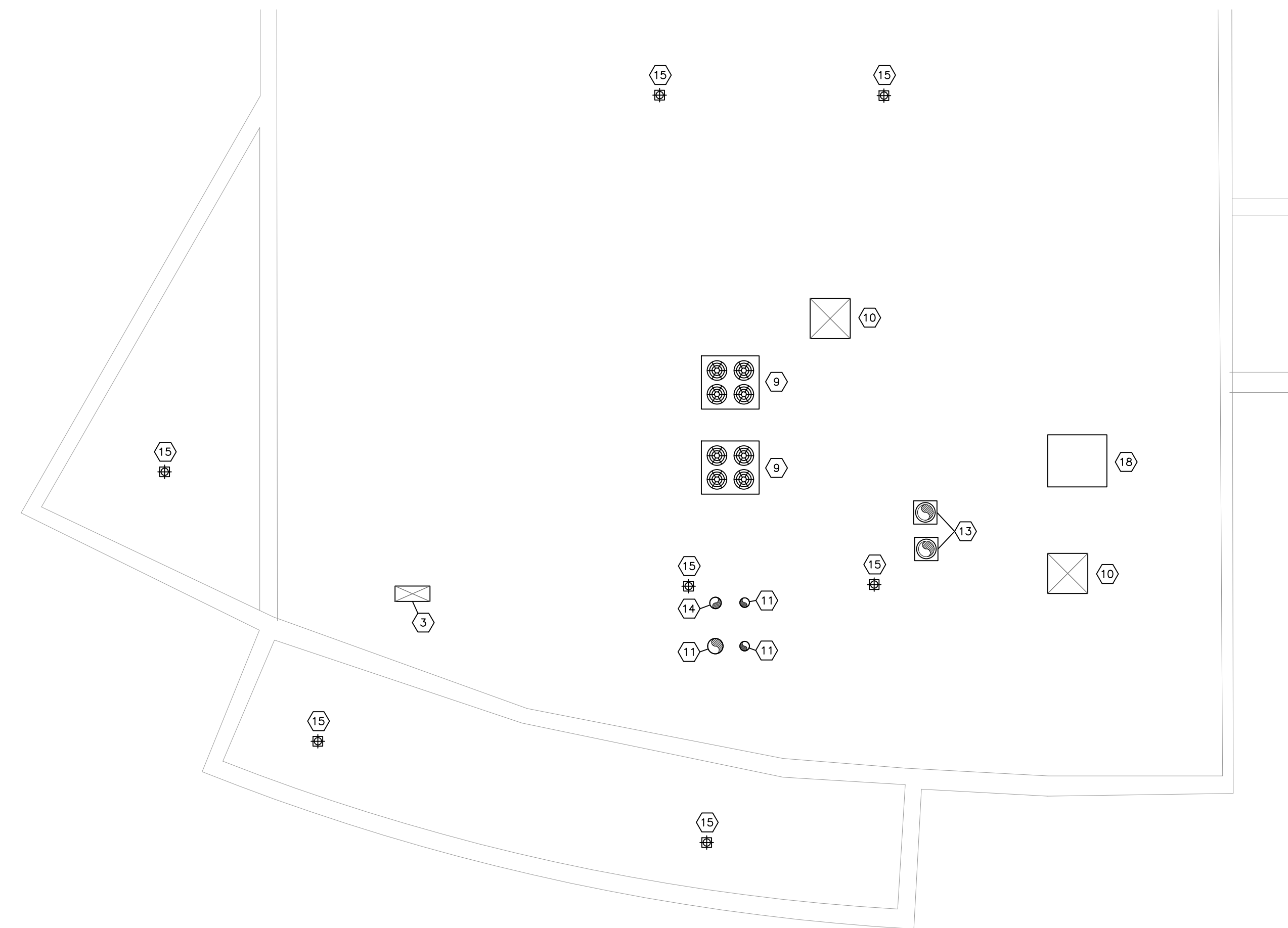
10 WATERPROOFING AROUND HSS COLUMNS
SCALE 1:8



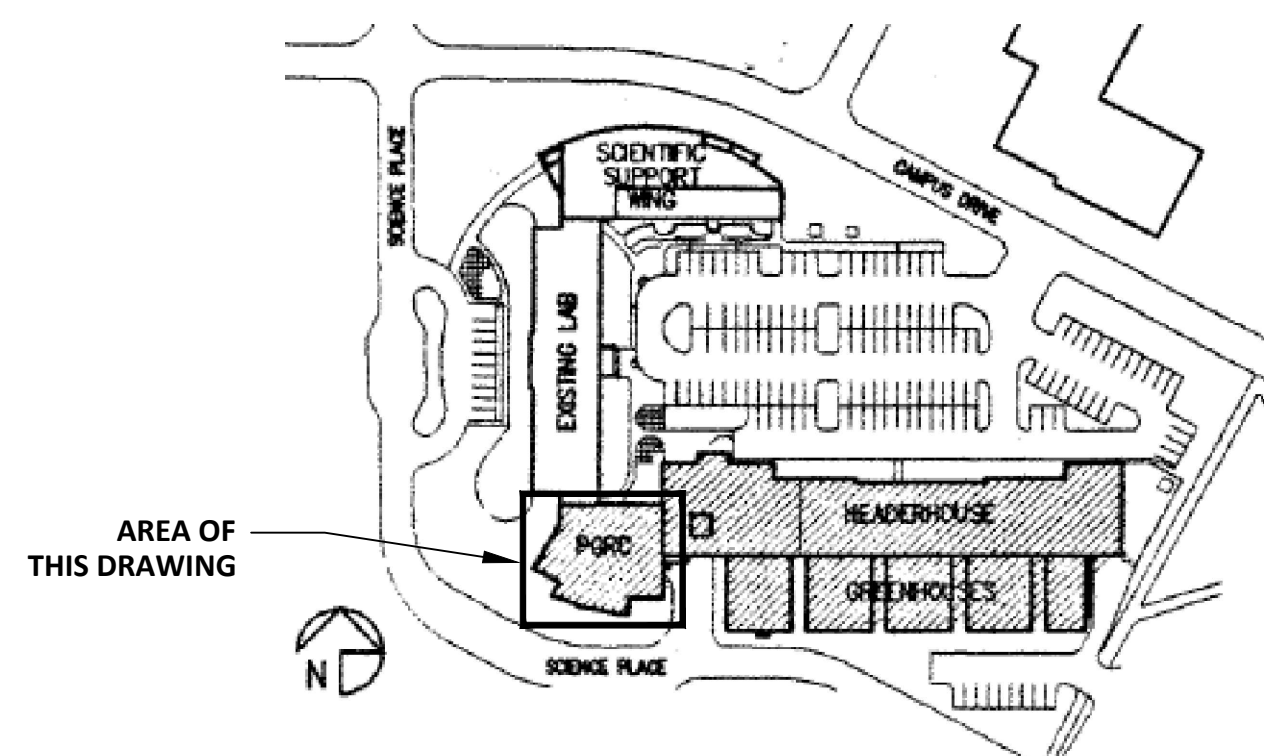
1 MAIN FLOOR DEMOLITION PLAN
SCALE: 1:100



2 SECOND FLOOR DEMOLITION PLAN
SCALE: 1:100



3 ROOF DEMOLITION PLAN
SCALE: 1:100



4 KEY PLAN
SCALE: N.T.S.

MECHANICAL DEMOLITION GENERAL NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING MECHANICAL EQUIPMENT INCLUDING DUCTWORK, GRILLES, DIFFUSERS, PIPING, FITTINGS, INSULATION, VENTING, ETC. AS NOTED.
- COORDINATE WITH GENERAL CONTRACTOR TO PATCH ALL SURFACES DISTURBED AS A RESULT OF DEMOLITION INCLUDING CEILINGS, ROOF, FLOORS, WALLS, ETC. AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR FINAL CLEANING OF THE AFFECTED AREAS.
- COORDINATE ALL WORK WITH THE OWNER AND GENERAL CONTRACTOR'S PHASING PLAN TO MINIMIZE INTERRUPTION DURING BUSINESS HOURS.
- THE CONTRACTOR SHALL PROTECT ALL OCCUPIED AREAS WITH BOARDING, DUST BARRIERS, ETC. AND CLEAN UP WORK SPACES ON A DAILY BASIS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION OF THE REMOVAL, REINSTALLATION, AND/OR REPLACEMENT OF EXISTING LIGHTING, SPRINKLER HEADS, ETC., DISTURBED AS A RESULT OF THE DEMOLITION AND INSTALLATION OF NEW MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR WHERE NECESSARY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN, ORGANIZED WORK AND DISPOSAL STAGING AREA. PROVIDE GARBAGE/REFUSE CONTAINER FOR DEMOLITION MATERIAL AND INCLUDE ALL COSTS FOR REMOVAL AND DISPOSAL. COORDINATE STAGING AREA WITH OWNERS.
- ALL HAZARDOUS WASTE SUCH AS REFRIGERANT, OIL, CHEMICALS, ETC. TO BE DISPOSED OF IN ACCORDANCE WITH THE MINISTRY OF ENVIRONMENT AND THE CITY OF SASKATOON REQUIREMENTS.
- LOCATION AND CONFIGURATION OF EXISTING EQUIPMENT, DUCTWORK, PIPE, ETC. WAS OBTAINED FROM EXISTING DRAWINGS AND SITE VISITS. CONTRACTOR TO DETERMINE AND VERIFY EXACT CONFIGURATION AND LOCATION OF EXISTING MECHANICAL SYSTEMS ON SITE.
- TO OUR KNOWLEDGE AND BASED ON OUR INITIAL SITE INSPECTION, THERE DOES NOT APPEAR TO BE ANY ASBESTOS MATERIAL IN THE DEMOLITION AREA. SHOULD THE CONTRACTOR ENCOUNTER POTENTIAL ASBESTOS MATERIAL, ADVISE CONSULTANT BEFORE PROCEEDING.
- SEE DRAWING M6.2 FOR PROPOSED WORK STAGING PLAN.

DEMOLITION KEYNOTES (K) — DENOTES KEYNOTE ON DRAWING

- EXISTING FRESH AIR INTAKE DUCT TO REMAIN. SEE SECOND FLOOR PLAN 2/M6.2 FOR CONTINUATION.
- EXISTING FRESH AIR INTAKE THROUGH ROOF DOWN TO MAIN FLOOR TO REMAIN C/W DUCT STUBBED INTO 2ND FLOOR MECHANICAL ROOM AND MOTORIZED DAMPERS. SEE ROOF PLAN 3/M6.2 AND MAIN FLOOR PLAN 1/M6.2 FOR CONTINUATION.
- EXISTING FRESH AIR INTAKE TO REMAIN C/W ROOF TOP LOUVERED PENTHOUSE. SEE SECOND FLOOR PLAN 2/M6.2 FOR CONTINUATION.
- EXISTING DUCTWORK TO REMAIN C/W GRILLES/DIFFUSERS.
- EXISTING DUCTWORK TO REMAIN.
- EXISTING EXHAUST AIR DUCT UP TO SECOND FLOOR MECHANICAL ROOM TO REMAIN. SEE SECOND FLOOR PLAN 2/M6.2 FOR CONTINUATION.
- EXISTING EXHAUST AIR DUCT UP FROM MAIN FLOOR TO REMAIN. SEE MAIN FLOOR PLAN 1/M6.2 FOR CONTINUATION.
- EXISTING EXHAUST FAN TO REMAIN. MODIFY CONTROLS TO SUIT REVISED SEQUENCE OF OPERATIONS AS SHOWN ON DRAWING M6.2.
- EXISTING ROOF TOP CONDENSER TO REMAIN.
- EXISTING ROOF TOP INTAKE TO REMAIN C/W LOUVERED PENTHOUSE.
- EXISTING ROOF TOP EXHAUST STACK TO REMAIN. SEE SECOND FLOOR PLAN 2/M6.2 FOR CONTINUATION.
- EXISTING EXHAUST DUCT UP THROUGH ROOF TO REMAIN. SEE ROOF PLAN 3/M6.2 FOR CONTINUATION.
- EXISTING ROOF TOP EXHAUST FAN TO REMAIN.
- REMOVE EXISTING EXHAUST AIR STACK AND BLANK OFF DUCT AT ROOF PENETRATION WEATHER TIGHT WITH AN INSULATED PREFINISHED METAL COVER TO MATCH EXISTING. SEE DETAIL 4/M6.3.
- EXISTING ROOF DRAIN TO REMAIN.
- EXISTING EXHAUST FAN TO BE REMOVED C/W ELECTRICAL, CONTROLS, ETC. PATCH FLOOR AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS. REFER TO WORK STAGING PLAN ON DRAWING M6.2.
- EXISTING EXHAUST AIR DUCT TO BE REMOVED. CAP-OFF DUCT AT APPROXIMATE LOCATION SHOWN. REFER TO WORK STAGING PLAN ON DRAWING M6.2.
- EXISTING ROOF TOP EQUIPMENT TO REMAIN.
- EXISTING OXYGEN LEVEL INDICATOR LIGHT HANGING FROM U/S OF CEILING TO REMAIN.
- EXISTING OXYGEN LEVEL SENSOR TO REMAIN.
- EXISTING VAV BOX 'VAV134' THERMOSTAT TO BE RELOCATED. SEE RENOVATED MAIN FLOOR PLAN 1/M6.2.
- EXISTING VAV BOX 'VAV134' TO REMAIN. AIR FLOW TO BE ADJUSTED. SEE DRAWING M6.2.
- CAP OFF DUCT AT APPROXIMATE LOCATION SHOWN AND DISCONNECT FROM CRYOGENICS ROOM SUPPLY AIR DUCT. SEE DRAWING M6.2.

Professional Seal/s:



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107 SCIENCE PLACE
SASKATOON, SASKATCHEWAN

NOTES:

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MECHANICAL DEMOLITION PLANS

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Drawn By: CGW Date: DEC 2016
Checked By: GAS Date: 2016.12.09
Project No.: 4874

M6.1

Revision No.: - Date: -
Issued For: **FOR TENDER**

Date Issued: 2017.02.03
Date Plotted: 2017.02.03

Professional Seal/s:



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107 SCIENCE PLACE
SASKATOON, SASKATCHEWAN

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Revisions:

**MECHANICAL
DETAILS**

Designed By: DJT Scale: AS INDICATED
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M6.3

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