

GENERAL NOTES

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NATIONAL RESEARCH COUNCIL CANADA

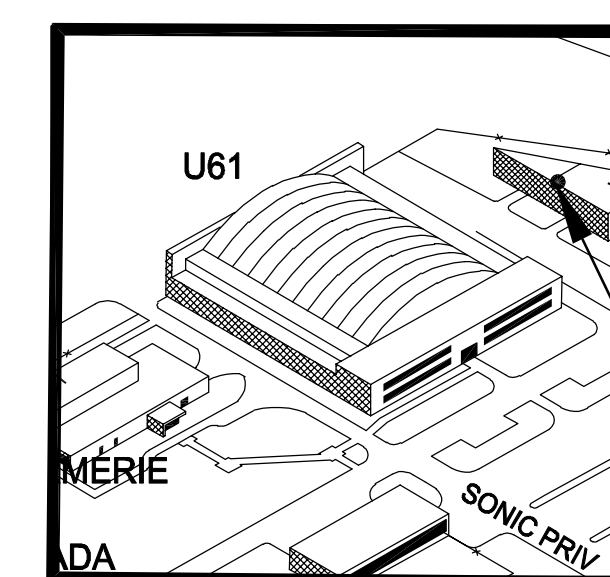
Uplands Campus, Institutes and Laboratories Ottawa, Ontario, Canada

PREPARED BY: RPPM, ENGINEERING CONSTRUCTION,
1200 MONTREAL ROAD, M-19 (RM 340),
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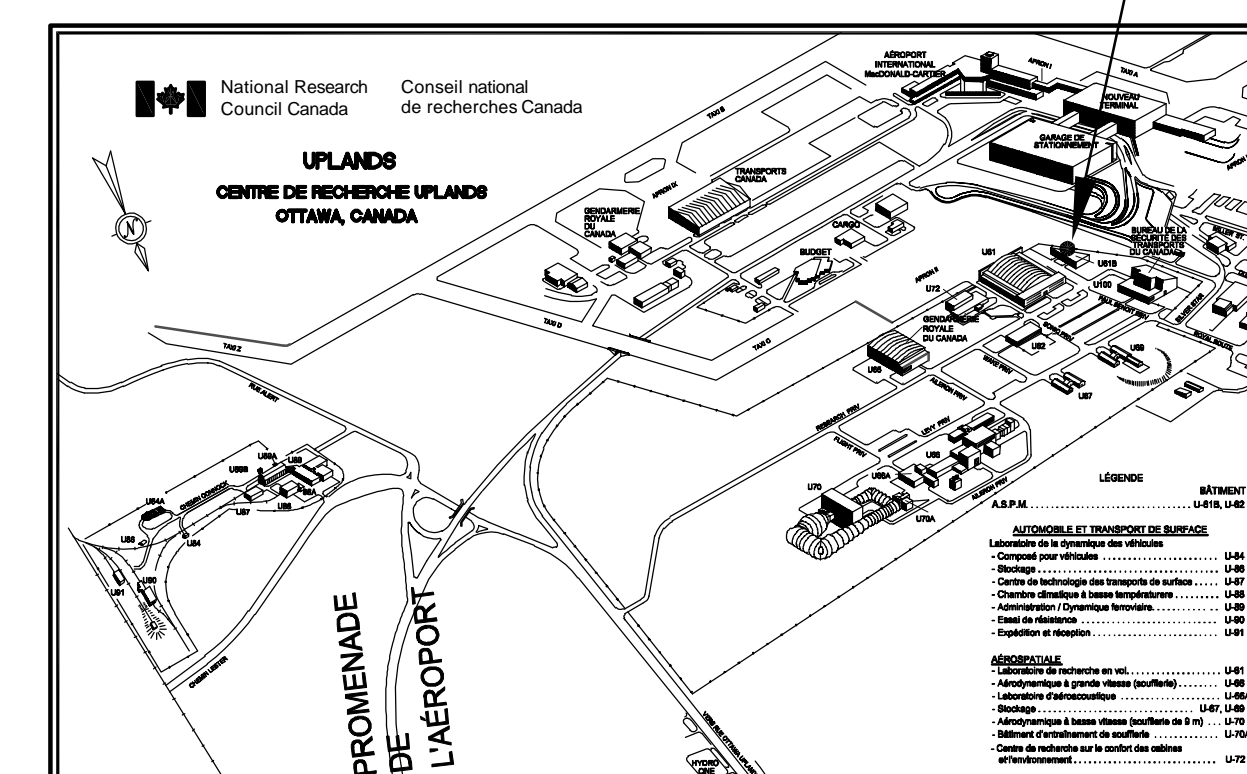
PROJECT: PROJECT NO. = 5886
BUILDING U-61B (UPLANDS CAMPUS)
U61B, CHILLER REPLACEMENT

DRAWING SHEET LIST:

STRUCTURAL	5886-S01 5886-S02	- PART FOUNDATION PLAN AND DETAILS - PART ROOF PLAN AND ELEVATIONS
ARCHITECTURAL	5886-A00 5886-SP01	- COVER SHEET - GENERAL DRAWING LIST - PROJECT INFO - ABBREVIATION LEGEND - SITE PLAN INFO
MECHANICAL	5886-M01 5886-M02 5886-M03 5886-M04 5886-M05 5886-M06 5886-M07 5886-M08 5886-M09	- LEGEND, EQUIPMENT SCHEDULE, AND DRAWING LIST - U61B PIPING DEMOLITION - U61B PIPING SCHEMATIC DEMOLITION - U61B PIPING MODIFIED - U61B PIPING SCHEMATIC MODIFIED - U61 PIPING MODIFIED - U61B CONTROLS MODIFIED - U61B DETAILS
ELECTRICAL	5886-E01 5886-E02	- U61 + SITE ELECTRICAL LAYOUT - U61B ELECTRICAL LAYOUT



BUILDING U-61
UPLANDS CAMPUS

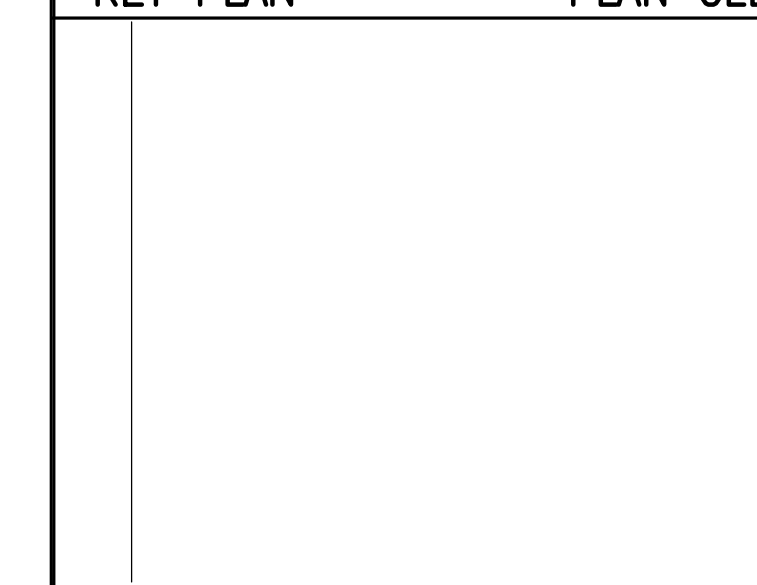


1 KEY PLAN LOCATION UPLANDS CAMPUS
A00 SCALE = NTS

ABBREVIATION LEGEND:

AFF.	ABOVE FINISHED FLOOR	EXIST.	EXISTING	INT.	INTERIOR	SHN	SPRINKLER HEAD
AL.	ALUMINUM	EX.SHWR	EXISTING EMERGENCY SHOWER STATION	MLD	MOTION LIGHT DETECTOR	SHX	NEW SPRINKLER HEAD
A/V	AIR/VAPOUR	E.E.W	EXISTING EYE WASH STATION	MIN	MINIMUM	SPEC	REMOVED SPECIFICATION
APPROX.	APPROXIMATELY	EX.	EXPANSION	N. I. C.	NOT IN CONTRACT	SQ.	SQUARE
CEIL.	CEILING	EXT.	EXTERIOR	NTS	NOT TO SCALE	S. S.	STAINLESS STEEL
CONC.	CONCRETE	E.W.	EYE WASH	O. C.	ON CENTER	STRUCT.	STRUCTURAL
CONT.	CONTINUOUS	FIN.	FINISH	O. D.	OUTSIDE DIAMETER	SUSP.	SUSPENDED
CONST.	CONSTRUCTION	F.EXT	FIRE EXTINGUISHER	O. F.	OUTSIDE FRAME	T. & G.	TONGUE & GROOVE
COMP.	COMPLETELY	F. R.	FIRE RATED	MIN.	MINIMUM	TYP	TYPICAL
C/W	COMPLETE WITH	GALV.	GALVANIZED	POLY.	POLYETHYLENE	T. & B.	TOP & BOTTOM
DIA.	DIAMETER	G.B.	GYPSEUM BOARD	P. T.	PRESSURE TREATED	T. O. F.	TOP OF FRAME
DIAG.	DIAGONAL	G. C.	GENERAL CONTRACTOR	REINF.	REINFORCING	T. O. S.	TOP OF STEEL
DWG	DRAWING	HORIZ.	HORIZONTAL	REQ'D	REQUIRED	U/S	UNDERSIDE
E.A.P.	EXISTING ACCESS PANEL	I. D.	INSIDE DIAMETER	R. O.	ROUGH OPENING	VERT	VERTICAL
E.F.D.	EXISTING FLOOR DRAIN	INCL.	INCLUDING	SIM.	SIMILAR		
E.F.P.	EXISTING FLOOR PLATES	INSUL.	INSULATION	SHE	SHEATHING		

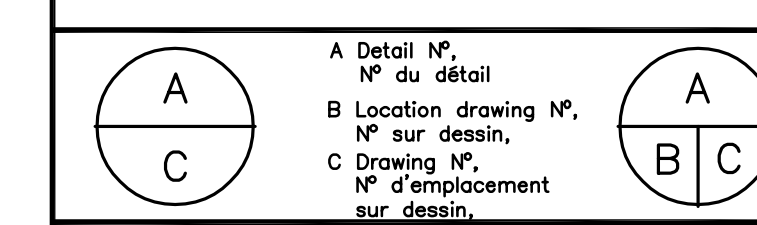
KEY PLAN PLAN CLÉ



No.	Date	Revision	By:
1	28 05 2021	SENT FOR FRENCH TRANSLATION	SWH

Date Printed DD MM YYYY Date imprimée

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project U-61B, CHILLER REPLACEMENT projet

U-61, UPLANDS CAMPUS

- drawing dessin
- COVER PAGE
 - GENERAL DRAWING LIST
 - PROJECT INFO
 - ABBREVIATION LEGEND

designed	conçu	date	date
SWH		JUNE 2021	
drawn	dessiné	scale	échelle
SWH		AS NOTED	
checked	vérifié	sheet	feuille
		of/de	
approved	approuvé	W.O.N.	D.T.N.
MR			

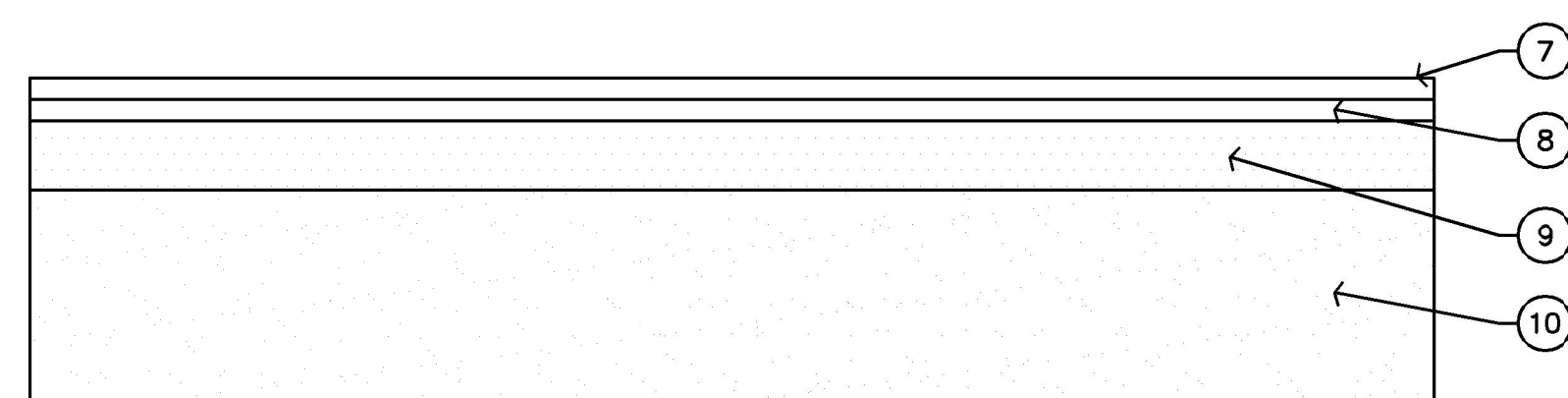
dwg.N° 5886-A00 N° du dessin
 ACD file fichier CDAO:

GENERAL NOTES

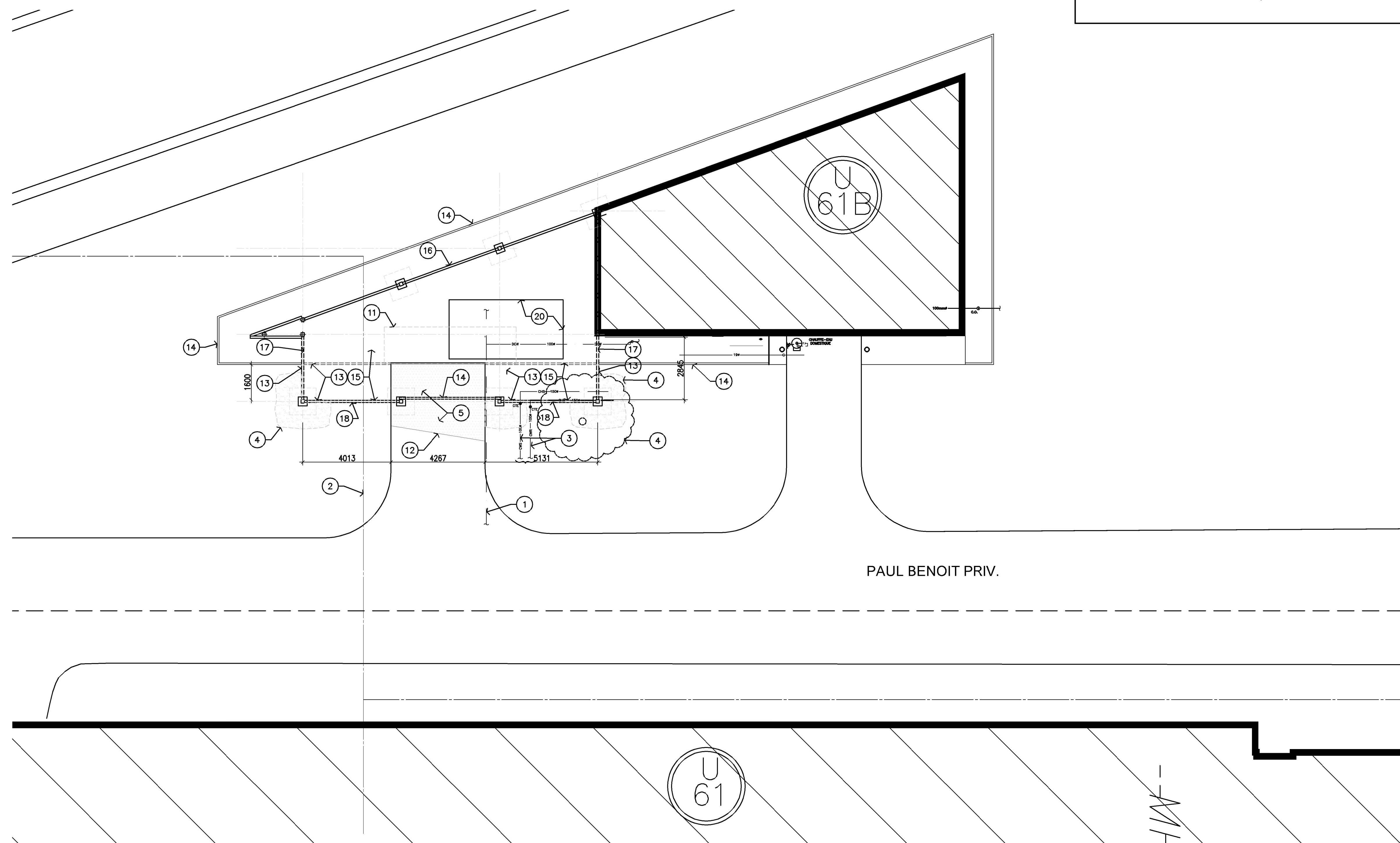
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CONSTRUCTION NOTES
SHEET A0X ONLY

- EXISTING U/G 150mmØ WATER MAIN, REFER TO MECHANICAL.
- EXISTING U/G SERVICES 150mmØ CHILLED WATER & POWER
- EXISTING U/G CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED REFER TO MECHANICAL DRAWING.
- TYPICAL: REINSTATE EFFECT AREA DURING EXCAVATION WITH SOIL AND SOD PER OPSS 803 (TYP). NEW GRADE TO MATCH EXISTING.
- TYPICAL: REPAIR ASPHALT ROADWAY / PARKING LOT EFFECT DURING DEMOLITION AND NEW CONSTRUCTION, REFER TO DETAIL 1/SP01
- REMOVE EXISTING TREE, COORDINATE WITH STRUCTURAL. REFER TO NOTE #4 FOR AREA REINSTATEMENT.
- SUPERPAVE 12.5 SURFACE COURSE 40mm THICKNESS, LEVEL B PG 58-34.
- SUPERPAVE 19.0 BINDER COURSE 50mm THICKNESS, LEVEL B PG 58-34.
- 150mm OPSS GRANULAR A BASE.
- 450mm OPSS GRANULAR B II SUBBASE.
- REMOVE CONCRETE PAD REFER TO STRUCTURAL.
- MATCH EDGE OF EXISTING ASPHALT.
- REMOVE, RETAIN AND REUSE PRECAST INTERLOCK CURB. PROVIDE APPROX. 10 LIN METERS OF NEW TO MATCH EXISTING.
- EXISTING PRECAST INTERLOCK CURB AT PERIMETER OFFSET 1200mm FROM FACE OF BUILDING
- TYPICAL COMPACTED MAINTENANCE GRAVE PAD: REINSTATE EFFECT AREA DURING EXCAVATION AND EXTEND 150mm COMPACTED MAINTENANCE GRAVE PAD TO INSIDE OF RELOCATED METAL FENCE.
- EXISTING METAL SCREEN SIDING, TYP. REFER TO STRUCTURAL.
- NEW METAL SCREEN SIDING, REFER TO STRUCTURAL.
- EXISTING METAL SCREEN (RELOCATED) REFER TO STRUCTURAL.
- EXISTING METAL SCREEN SLIDING DOOR. REFER TO STRUCTURAL.
- NEW 305mm CHILLER CONCRETE PAD, REFER TO STRUCTURAL.



1 TYPICAL ASPHALT DRIVEWAY REPAIR
SP01 SCALE NTS



2 SITE PLAN
SP01 SCALE 1:100

KEY PLAN PLAN CLÉ

1	28 05 2021	ISSUED FOR TRANSLATION	SWH
No.	Date	Revision	By: / Par:

Date Printed DD MM YYYY / Date imprimée

- Verify all dimensions and site conditions and be responsible for same
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A Detail N° / N° du détail
 B Location drawing N° / N° sur dessin
 C Drawing N° / N° d'emplacement sur dessin

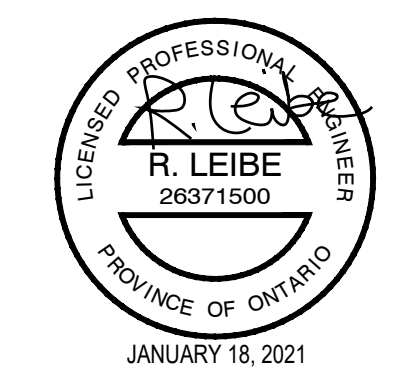
project U61B, CHILLER REPLACEMENT / projet

U-61, UPLANDS CAMPUS

drawing - SITE PLAN INFO / dessin

designed	conçu	date	JUNE 2021	date
drawn	dessiné	scale	AS NOTED	échelle
checked	vérifié	sheet	2 of/de 2	feuille
approved	approuvé	W.O.N°		D.T.N°

dwg.N° 5886-SP01 / N° du dessin
 ACAO file / fichier CDAO:



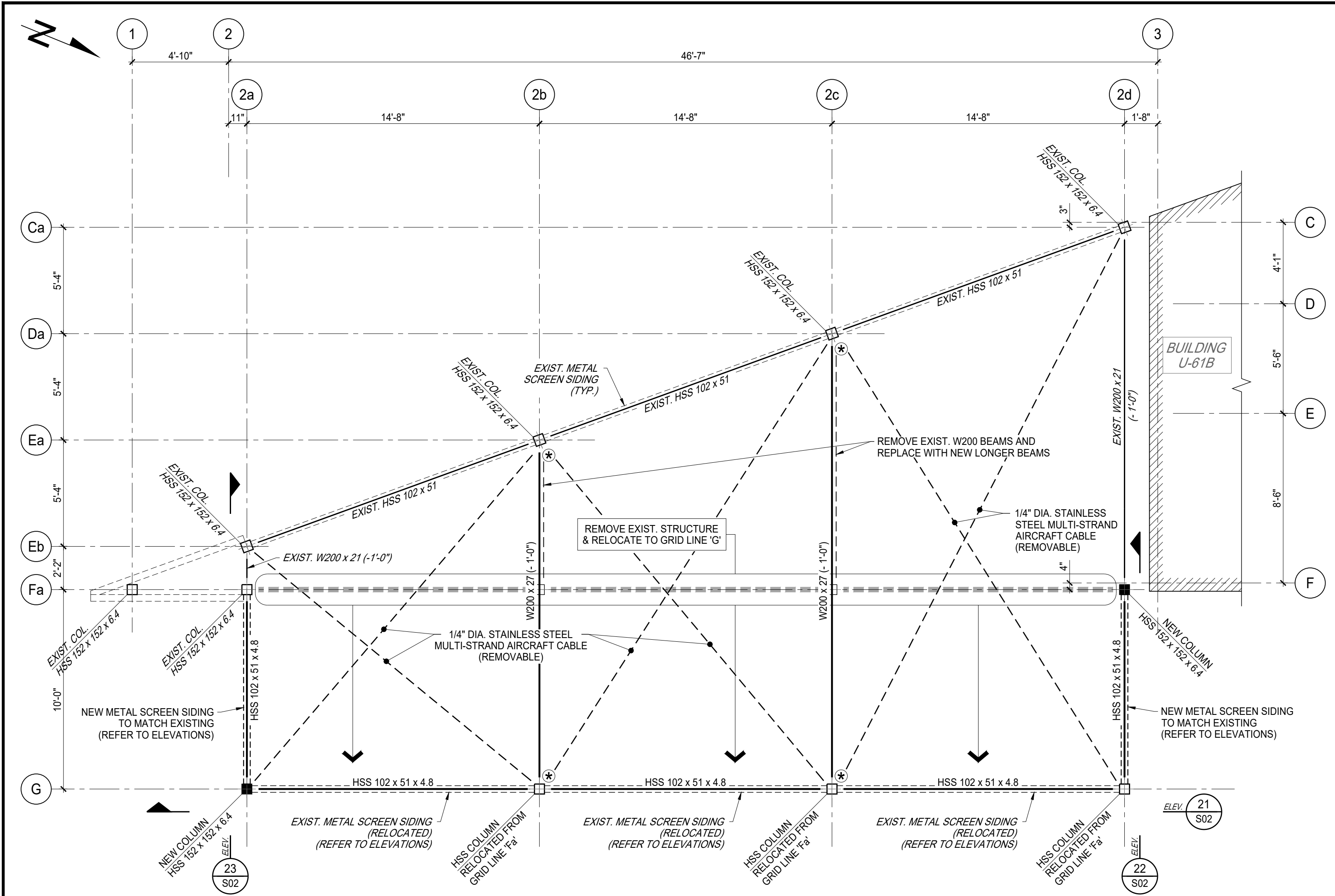
GENERAL NOTES:

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL WORK SHALL CONFORM TO CAN/CSA S16-14.
- ALL STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20-04 AND CSA G40.21-04, GRADE 350W.
- ALL WELDING MATERIALS SHALL CONFORM TO CSA W48.06 (R2011).
- WELDING SHALL CONFORM TO CSA W59-03 (R2008) AND SHALL BE CARRIED OUT BY WELDERS QUALIFIED BY THE CANADIAN WELDING BUREAU.
- ALL STEEL SHALL BE SHOP-PRIMED WITH ZINC-RICH PAINT.
- AFTER ERECTION OF NEW STRUCTURAL STEEL, APPLY TWO COATS OF ALKYD PAINT. TOUCH-UP EXISTING STEEL WHERE REQUIRED.
- ALL BOLTS SHALL BE 3/4" DIA. HIGH-TENSILE BOLTS CONFORMING TO ASTM F3125, GRADE A325.
- THE STRUCTURAL STEEL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW, INCLUDING ERECTION AND SHOP DETAIL DRAWINGS, BEFORE THE START OF FABRICATION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE BEFORE THE START OF FABRICATION.

METAL SIDING:

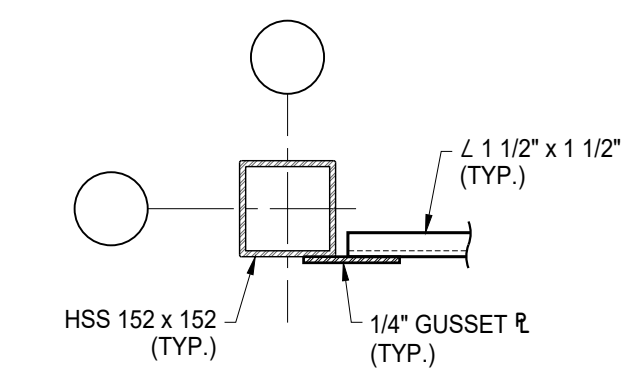
- METAL SIDING SHALL MATCH EXISTING SIDING, INCLUDING FLASHINGS AND ATTACHMENT TO STEEL FRAMES
- METAL SIDING TYPE 'A':
 METAL PANEL SYSTEM BY VICWEST
 CL 7040 (FLAT STOCK 22 GA.)
 COLOUR CAMBRIDGE WHITE, VW 6161
- METAL SIDING TYPE 'B':
 METAL PANEL SYSTEM BY VICWEST
 AD 300 (FLAT STOCK 22 GA.)
 COLOUR CAMBRIDGE WHITE, VW 6161
- THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHOP DRAWINGS OF THE METAL SIDING.



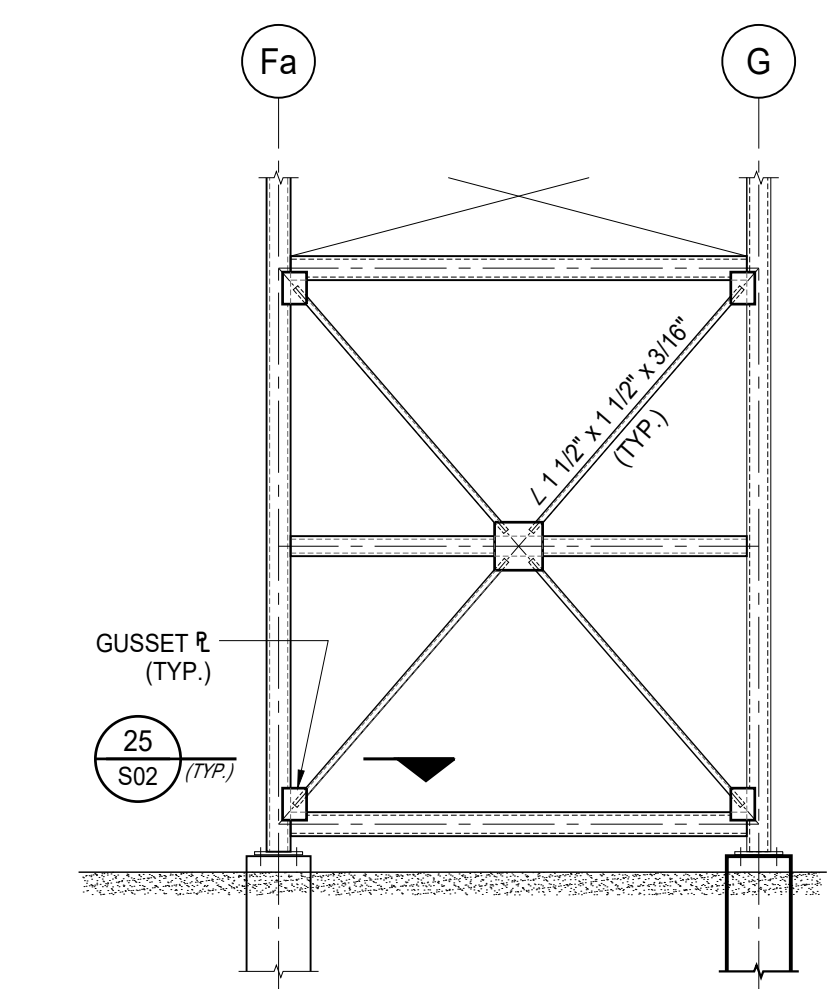
PART ROOF PLAN

SCALE: 1/4" = 1'-0"
 • TOP OF STEEL (T.O.S.) ELEVATION = 119'-0" (U.N.O.)

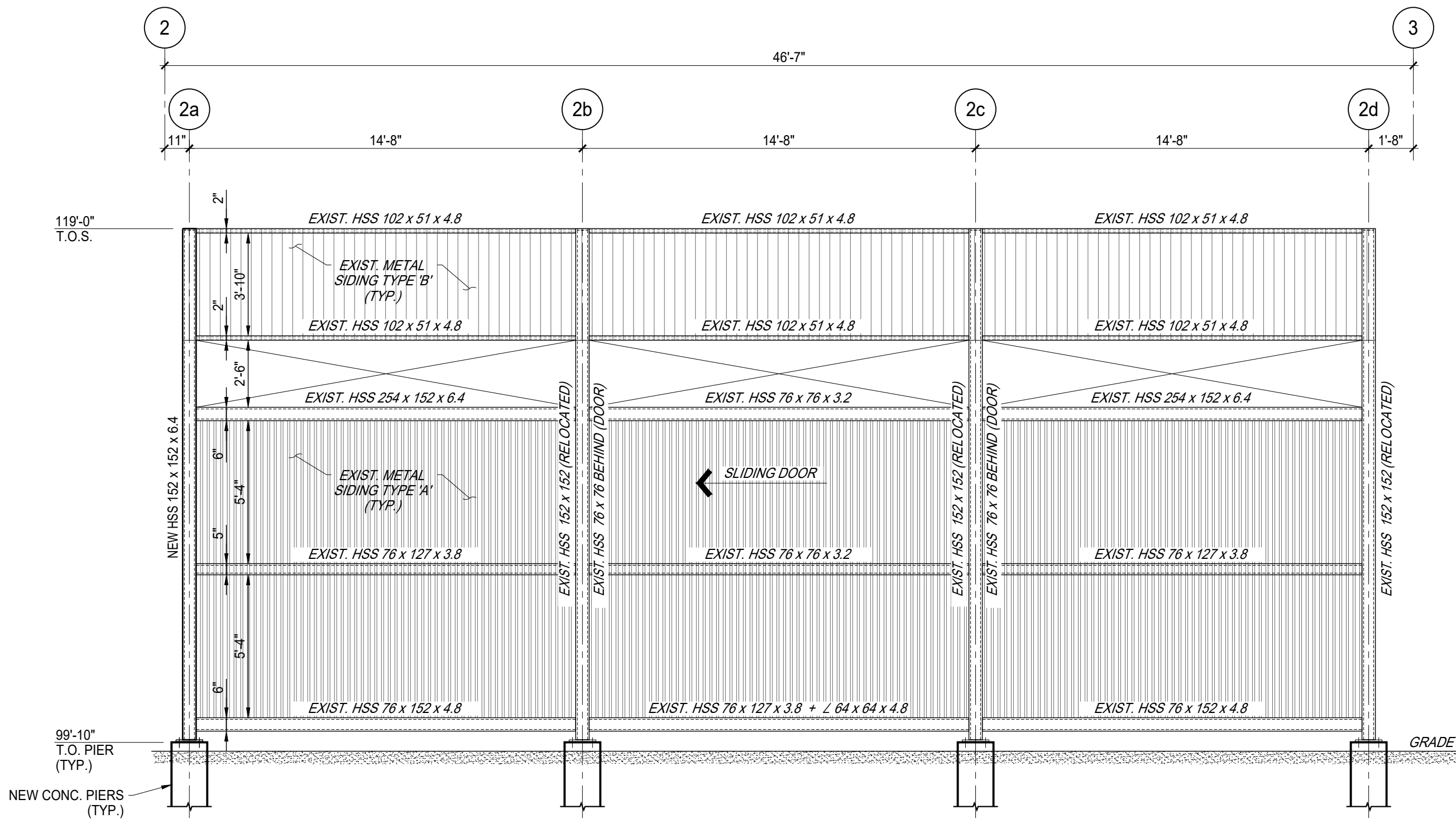
⊗ BEAM CONNECTIONS TO BE DESIGNED TO RESIST A FACTORED DESIGN MOMENT OF 15 kN-m



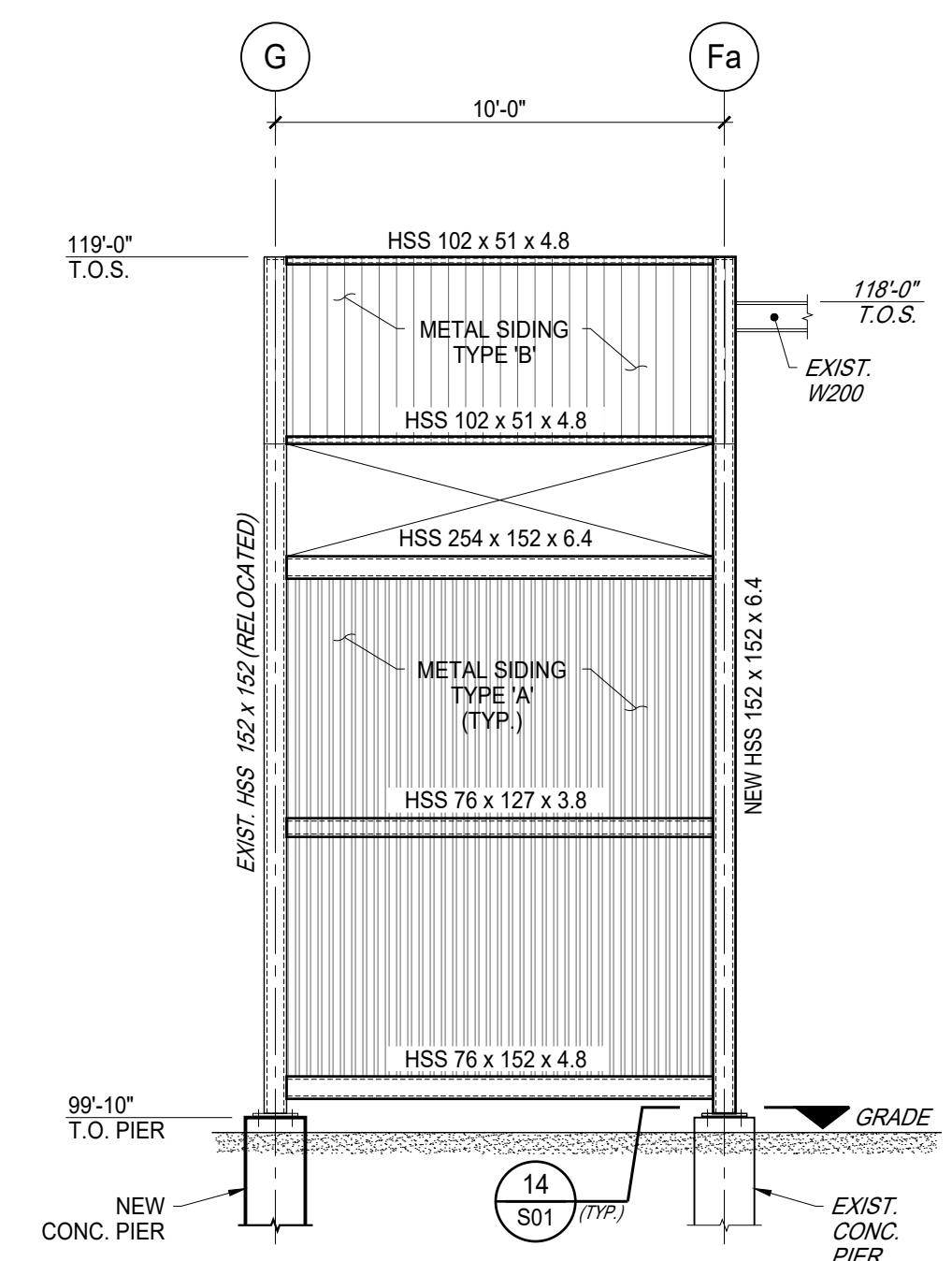
25 SECTION (TYPICAL)
 SCALE: 1" = 1'-0"



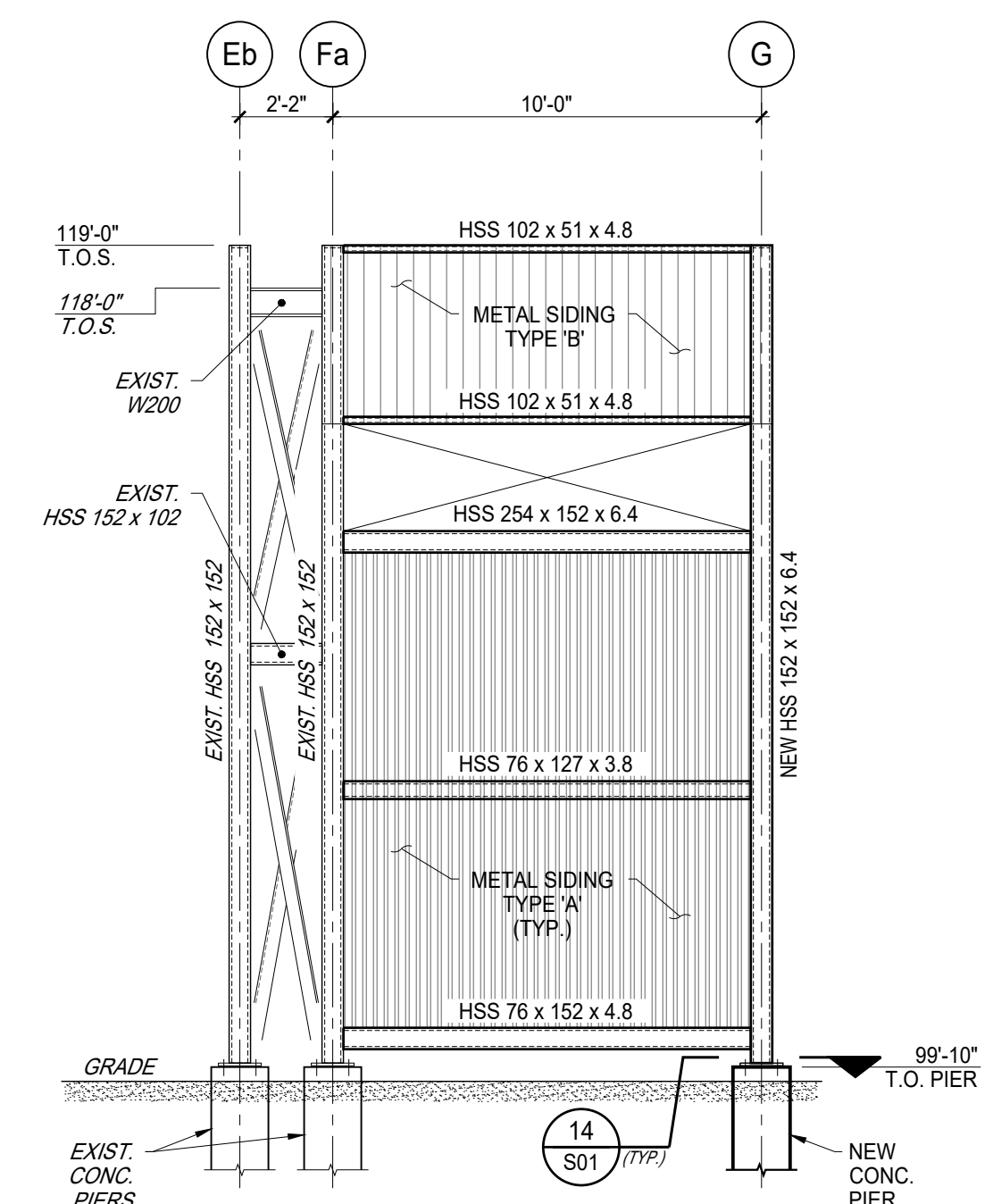
24 ELEVATION (VERTICAL CROSS-BRACING)
 SCALE: 1/4" = 1'-0" (TYPICAL 3 LOCATIONS)



21 ELEVATION - GRID LINE 'G' (RELOCATED FROM GRID LINE 'Fa')
 SCALE: 1/4" = 1'-0"



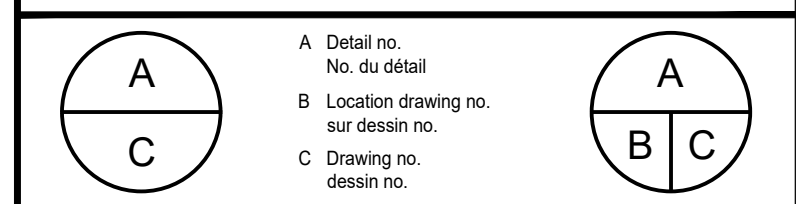
22 ELEVATION - GRID LINE '2d'
 SCALE: 1/4" = 1'-0"



23 ELEVATION - GRID LINE '2a'
 SCALE: 1/4" = 1'-0"

No.	Date	Revision	By:
2	JAN 18/2021	ISSUED FOR TENDER	RL
1	DEC 22/2020	ISSUED FOR COORDINATION	RL
0	DEC 16/2020	ISSUED FOR REVIEW	RL

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**BUILDING U-61B
 CHILLER REPLACEMENT**

UPLANDS CAMPUS

**STRUCTURAL:
 PART ROOF PLAN AND ELEVATIONS**

designed	compu	date	date
R.L.		OCTOBER, 2020	
drawn	dessiné	scale	échelle
D.M.D.		AS SHOWN	
checked	vérifié	sheet	feuille
R.L.		S02	ofide S02
approved	approuvé	W.O.no.	D.T.no.

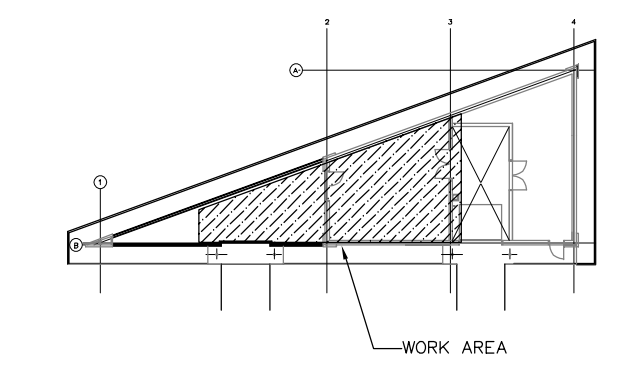
dwg no. **5886-S02** dessin no.



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KEY PLAN / PLAN CLÉ



EXISTING BALANCING VALVES - TO BE RE-BALANCED TO FLOWS INDICATED ON THIS TABLE

LOCATION - ROOM #	TYPE OF EQUIPMENT	TAG	FLOW (L/S)
122	FAN COIL UNIT	61FCU0122	0.28
212	FAN COIL UNIT	61FCU0212	0.28
212A	FAN COIL UNIT	61FCU0212A	0.28
213	FAN COIL UNIT	61FCU0213	0.28
214B	FAN COIL UNIT	61FCU0214B	0.28
215	FAN COIL UNIT	61FCU0215	0.28
216A	FAN COIL UNIT	61FCU0216A	0.28
216B	AIR HANDLING UNIT	61AHU03	0.76
124	FAN COIL UNIT	61FCU0124	0.28
217	FAN COIL UNIT	61FCU0217	0.28
218	FAN COIL UNIT	61FCU0128	0.28
127A	FAN COIL UNIT	61FCU0127/127A	0.28
129A	FAN COIL UNIT	61FCU0129A	0.23
129B	FAN COIL UNIT	61FCU0129B	0.38
133	FAN COIL UNIT	61FCU0133	0.23
133A	FAN COIL UNIT	61FCU0133A	0.23
138	FAN COIL UNIT	61FCU0138	0.23
140	FAN COIL UNIT	61FCU0140	0.23
142	FAN COIL UNIT	61FCU0142	0.23
152	FAN COIL UNIT	61FCU0152	0.28
152A	FAN COIL UNIT	61FCU0152A	0.28
152B	FAN COIL UNIT	61FCU0152B	0.28
152C	FAN COIL UNIT	61FCU0152C	0.28
152D	FAN COIL UNIT	61FCU0152D	0.07
152E	FAN COIL UNIT	61FCU0152E	0.07
152F	FAN COIL UNIT	61FCU0152F	0.07
221	FAN COIL UNIT	61FCU0221	0.28
247	FAN COIL UNIT	61FCU0247	0.38
222	FAN COIL UNIT	61FCU0222	0.23
245	AIR HANDLING UNIT	61AHU06	0.76
224	FAN COIL UNIT	61FCU0224	0.28
241	FAN COIL UNIT	61FCU0241	0.23
226	FAN COIL UNIT	61FCU0226	0.23
227	FAN COIL UNIT	61FCU0227	0.28
238B	FAN COIL UNIT	61FCU0238B	0.28
229	FAN COIL UNIT	61FCU0229	0.28
238A	FAN COIL UNIT	61FCU0238A	0.28
230A	FAN COIL UNIT	61FCU0230A	0.23
232	FAN COIL UNIT	61FCU0232	0.28
232B	FAN COIL UNIT	61FCU0232B	0.20
233	FAN COIL UNIT	61FCU0233	0.28
233A	FAN COIL UNIT	61FCU0233A	0.20
234	FAN COIL UNIT	61FCU0234	0.32
100	FAN COIL UNIT	61FCU0100	0.23
101	FAN COIL UNIT	61FCU0101	0.28
202	FAN COIL UNIT	61FCU0202	0.32
102	FAN COIL UNIT	61FCU0102	0.28
102A	FAN COIL UNIT	61FCU0102A	0.28
203	FAN COIL UNIT	61FCU0203	0.32
206	FAN COIL UNIT	61FCU0206	0.32
207A/B	FAN COIL UNIT	61FCU0207A/B	0.30
106A	AIR HANDLING UNIT	61AHU04	0.61
111A	FAN COIL UNIT	61FCU0111A	0.38
111	FAN COIL UNIT	61FCU0111	0.23
208	FAN COIL UNIT	61FCU0208	0.28
113	FAN COIL UNIT	61FCU0113	0.28
113A	FAN COIL UNIT	61FCU0113A	0.38
209A	FAN COIL UNIT	61FCU0209A	0.28
210A	FAN COIL UNIT	61FCU0210A	0.28
117	FAN COIL UNIT	61FCU0117	0.23
117A	FAN COIL UNIT	61FCU0117A	0.24
99	AIR HANDLING UNIT	61FCU099	0.98
157	AIR HANDLING UNIT	61AHU05	0.61

PUMPS

TAG	MANUFACTURER	MODEL	LOOP	FLUID	FLOW (L/S)	HEAD PRESSURE (kPa)	MOTOR			NOTES
							HP	RPM	V/Phz	
61CWP01	ARMSTRONG	4380	CHILLED WATER	WATER	20.1	427	30	1757	575/3/60	1,2,3,4
61CWP02	ARMSTRONG	4380	CHILLED WATER	WATER	20.1	427	30	1757	575/3/60	1,2,3,4

NOTE(S):
 1. CONNECTIONS INLET/OUTLET (mm): 80/80.
 2. ODP MOTOR, INVERTER DUTY, CLASS F INSULATION, MEETS OR EXCEEDS MINIMUM EFFICIENCY REQUIRED BY ASHRAE 90.1-2013.
 3. PROVIDE WITH SUCTION VALVE AND TRIPLE DUTY VALVE (SIZED AT 100mm INLET/OUTLET).
 4. BALANCE PUMP TO A TOTAL FLOW OF 19.1L/S. THE REMAINDER OF FLOW IS RESERVED FOR FUTURE EQUIPMENT.

CONTROL VALVES

TAG	LOCATION	TYPE	EQUIPMENT	DIAMETER (mm)	FLUID		PRESSURE LOSS (kPa)	Cv	NOTES
					FLOW (L/S)	SPECIFIC GRAVITY			
61CV216B	216B	2-WAY	61AHU03	20	0.76	1.00	9.9	10	1,2,3,4
61CV245	245	2-WAY	61AHU06	20	0.76	1.00	9.9	10	1,2,3,4
61CV106A	106A	2-WAY	61AHU04	20	0.61	1.00	11.6	7.4	1,2,3,4
61CV99	99	2-WAY	61FCU099	20	0.98	1.00	16.5	10	1,2,3,4
61CV157	157	2-WAY	61AHU05	20	0.61	1.00	11.6	7.4	1,2,3,4
61CV001	MECHANICAL ROOM	2-WAY	N/A	50	8.7	1.00	79.3	40	1,2,4

NOTE(S):
 1. PROVIDED BY DIVISION 25 AND INSTALLED BY DIVISION 23.
 2. PROVIDE REDUCER FROM PIPE SIZE TO CONTROL VALVE INLET AND OUTLET SIZE.
 3. REMOVE EXISTING 3-WAY VALVE AND REPLACE WITH NEW 2-WAY VALVE. RE-INSULATE WITH NEW INSULATION AND MAKE NECESSARY PIPING MODIFICATION TO INSTALL NEW 2-WAY VALVE.
 4. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.

MECHANICAL DRAWING SYMBOLS LEGEND

---	TYPICAL EXISTING (DEMOLITION AND MODIFIED PLAN)
---	TYPICAL NEW (MODIFIED PLAN)
----	TYPICAL DEMOLITION / REMOVALS (DEMOLITION PLAN)
CTE	CONNECT TO EXISTING AT THIS POINT
---DCW---	DOMESTIC COLD WATER
---CHS---	CHILLED WATER SUPPLY
---CHR---	CHILLED WATER RETURN
---CTS---	COOLING TOWER SUPPLY
---CTR---	COOLING TOWER RETURN
---RL---	REFRIGERANT LIQUID PIPING
---RS---	REFRIGERANT SUCTION PIPING
---PWS---	PROCESS WATER SUPPLY
---PWR---	PROCESS WATER RETURN
---	HEAT TRACED PIPING
DHW	DOMESTIC HOT WATER
P	PUMP
○	PIPE UP
○	PIPE DOWN
XXØ	PIPING DIAMETER IN MM
∩	PIPE CONTINUATION
∩	UNION
[CAP
∩	REDUCER - CONCENTRIC
∩	DRAIN VALVE
∩	FLEXIBLE CONNECTION
→	FLOW DIRECTION
61XXXXXX	EQUIPMENT IDENTIFICATION - LOCATED IN BUILDING U61
∩	BALL VALVE
∩	2-WAY CONTROL VALVE - 2 POSITION
∩	2-WAY CONTROL VALVE - MODULATING
∩	CIRCUIT BALANCING VALVE
∩	CHECK VALVE

MECHANICAL DRAWING SYMBOLS LEGEND

□	VARIABLE FREQUENCY DRIVE
∩	SUCTION GUIDE
∩	TRIPLE DUTY VALVE
∩	AIR COOLED CHILLER
∩	WALL MOUNTED EXPANSION TANK
∩	CHEMICAL TREATMENT STATION
∩	GLYCOL FILL STATION
∩	FILTRATION BY-PASS
∩	CHEMICAL POT FEEDER
∩	REMOTE EVAPORATOR
∩	SAFETY RELIEF VALVE
∩	BACKFLOW PREVENTER
∩	PRESSURE REDUCING VALVE
∩	THERMOMETER
∩	PRESSURE GAUGE
∩	BUTTERFLY VALVE
∩	STRAINER
∩	FLANGES
∩	REFRIGERANT SENSOR - R410A
∩	FLOW SWITCH
∩	TEMPERATURE SENSOR
∩	FLOW METER
∩	CONTROL WIRING
∩	DIGITAL OUTPUT
∩	DIGITAL INPUT
∩	ANALOG OUTPUT
∩	ANALOG INPUT
∩	ELECTRONIC CURRENT INTENSITY TRANSMITTER
∩	DIFFERENTIAL PRESSURE TRANSMITTER

DRAWING LIST

DWG NO.	DRAWING TITLE
5886-M01	LEGEND, EQUIPMENT SCHEDULE, AND DRAWING LIST
5886-M02	U-61B - PIPING - DEMOLITION
5886-M03	U-61B - PIPING SCHEMATIC - DEMOLITION
5886-M04	U-61B - PIPING - MODIFIED
5886-M05	U-61B - PIPING SCHEMATIC - MODIFIED
5886-M06	U-61 - PIPING SCHEMATIC - MODIFIED
5886-M07	U-61 - PIPING - MODIFIED
5886-M08	U-61B - CONTROLS - MODIFIED
5886-M09	U-61B - DETAILS

EXPANSION TANKS

TAG	MANUFACTURER	MODEL	LOOP	TYPE	PRE-CHARGE PRESSURE (kPa)	TANK VOLUME (L)	ACCEPTANCE VOLUME (L)	DIAMETER (mm)	HEIGHT (mm)	SYSTEM CONNECTION (mm)	NOTES
61EXPxxx	AMTROL	AX-15V	CHILLED WATER	DIAPHRAGM	8.3	30	9	305	508	15	1

NOTE(S):
 1. WALL MOUNTED.

BALANCING VALVES

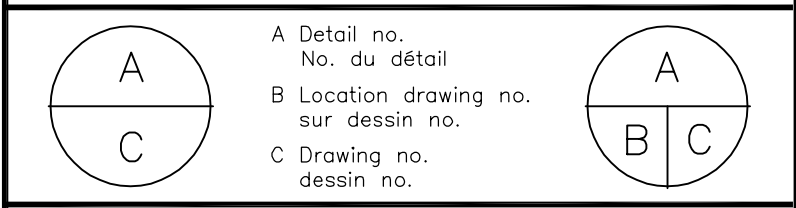
TAG	LOCATION	DIAMETER (mm)	FLOW (L/S)	PRESSURE LOSS (kPa)	Cv	NOTES
61BV001	MECHANICAL ROOM	15	0.126	4.83	2.39	1

NOTE(S):
 1. PROVIDE REDUCER FROM PIPE SIZE TO BALANCING VALVE INLET AND OUTLET SIZE.

AIR COOLED CHILLER

TAG	MANUFACTURER	MODEL	CAPACITY (kW)	EVAPORATOR			EFFICIENCY			AMBIENT TEMP. DESIGN (°C)	ELECTRICAL			DIMENSIONS (mm)			COMPRESSORS		NOTES		
				FLUID	ENTERING TEMPERATURE (°C)	LEAVING TEMPERATURE (°C)	FLOW (L/S)	PRESSURE DROP (kPa)	EER (IP)		PLV (IP)	NPLV (IP)	V/Phz	MCA (A)	MOPA (A)	LENGTH	WIDTH	HEIGHT		QUANTITY	TYPE
61CCH01	JOHNSON CONTROLS	YLA0139HE58	450	WATER	12.8	7.2	20.1	49.32	10.24	15.97	16.10	35.0	575/3/60	217	250	4769	2256	2398	5	SCROLL	1

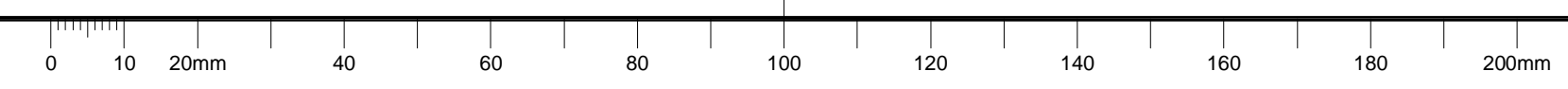
NOTE(S):
 1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.



project: U61B - CHILLER REPLACEMENT

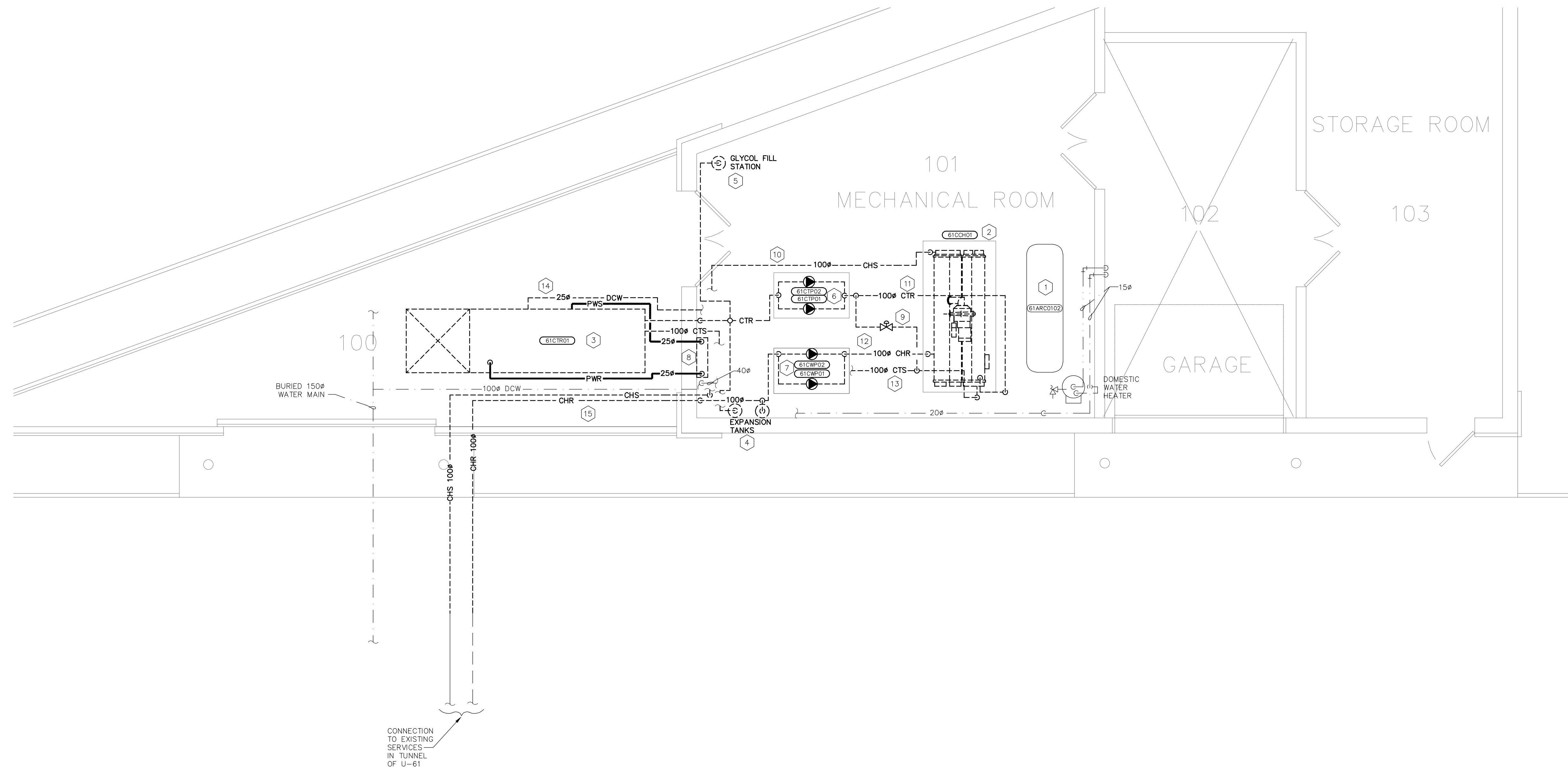
drawing: LEGEND, EQUIPMENT SCHEDULE, AND DRAWING LIST

designed	ZF	conçu	date	SEP / 2021
drawn	ZF	dessiné	scale	AS NOTED
checked	RGC	vérifié	sheet	1 of/de 9
approved	ALS	approuvé	W.O.no.	A1-011227
dwg.no.	5886-M01		D.T.no.	



GENERAL NOTES

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES AND/OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTOR MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
- ALL TRADES TO COORDINATE WORK ON SITE, WITH APPROVAL OF DEPARTMENTAL REPRESENTATIVE TO AVOID ANY CONFLICTS AND/OR INTERFERENCE.
- ANY AND ALL REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

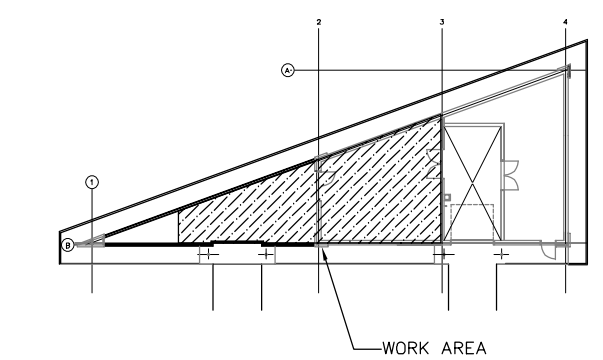


1 PLAN VIEW - DEMOLITION
 SCALE = 1:50

DRAWING NOTES: X

- EXISTING AIR COMPRESSOR TO BE REMAIN ALONG WITH PIPING AND ACCESSORIES.
- EXISTING WATER COOLED CHILLER MODEL TRANE CGW0605CJ0HBC TO BE REMOVED AND DISPOSED FOLLOWING THE LATEST VERSION OF THE FEDERAL HALOCARBON REGULATIONS. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25.
- EXISTING COOLING TOWER MODEL BALTIMORE AIR COIL VFL-333-MMR TO BE REMOVED. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25. EXISTING SUPPORT CONCRETE PIERS TO BE MODIFIED TO HOUSE/SUPPORT NEW AIR COOLED CHILLER. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR DETAILS ON NEW AIR COOLED CHILLER DIMENSIONS. REFER TO STRUCTURAL DRAWINGS FOR SUPPORTS MODIFICATIONS.
- EXISTING EXPANSION TANKS TO BE REMOVED AS INDICATED ON DRAWING, ALONG WITH PIPING AND SUPPORTS.
- EXISTING GLYCOL FILL TANK STATION TO BE REMOVED ALONG WITH PRESSURE GAUGES, PRESSURE REDUCING VALVE (PRV), PIPING, AND SUPPORTS.
- EXISTING CONDENSER WATER PUMPS TO BE REMOVED ALONG WITH ISOLATION VALVES, SUCTION GUIDES, TRIPLE DUTY VALVES, AND FLEX CONNECTIONS.
- EXISTING CHILLED WATER PUMPS TO BE REMOVED ALONG WITH ISOLATION VALVES, SUCTION GUIDES, TRIPLE DUTY VALVES, AND FLEX CONNECTIONS.
- EXISTING CHEMICAL TREATMENT STATION ASSOCIATED WITH COOLING TOWER TO BE REMOVED. EXISTING SUPPLY AND RETURN PROCESS WATER PIPING ASSOCIATED WITH CHEMICAL TREATMENT STATION TO BE REMOVED. EXISTING SUPPLY AND RETURN PROCESS WATER PIPING IS HEAT-TRACED. HEAT-TRACE TO BE REMOVED BY DIVISION 26.
- EXISTING PRESSURE SUSTAINING VALVE TO BE REMOVED AS INDICATED ON DRAWING.
- EXISTING CHILLED WATER SUPPLY PIPING TO BE REMOVED AS INDICATED ON DRAWING, ALONG WITH SUPPORTS AND ACCESSORIES.
- EXISTING CONDENSER WATER RETURN PIPING TO BE REMOVED AS INDICATED ON DRAWING, ALONG WITH SUPPORTS AND ACCESSORIES.
- EXISTING CHILLED WATER RETURN PIPING TO BE REMOVED AS INDICATED ON DRAWING, ALONG WITH SUPPORTS AND ACCESSORIES.
- EXISTING CONDENSER WATER SUPPLY PIPING TO BE REMOVED AS INDICATED ON DRAWING, ALONG WITH SUPPORTS AND ACCESSORIES.
- EXISTING DOMESTIC COLD WATER PIPING ASSOCIATED WITH COOLING TOWER IS TO BE REMOVED, AS INDICATED ON PIPING SCHEMATIC DRAWING. EXISTING METER TO BE RETURNED TO DEPARTMENTAL REPRESENTATIVE.
- EXISTING UNDERGROUND CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED AS INDICATED ON DRAWING. EXISTING PIPING IS BURIED APPROXIMATELY 1.2m.

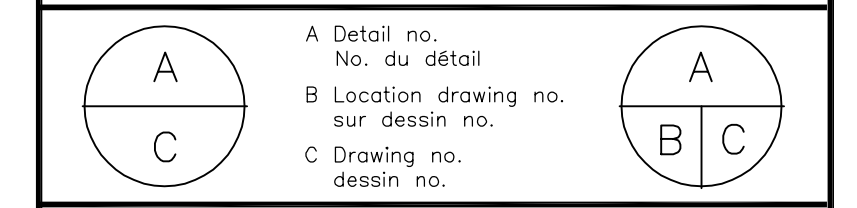
KEY PLAN PLAN CLÉ



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Date Printed DD MM YYYY Date imprimée

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project / projet
U-61B CHILLER REPLACEMENT

UPLANDS DRIVE CAMPUS

drawing / dessin
U-61B - PIPING - DEMOLITION

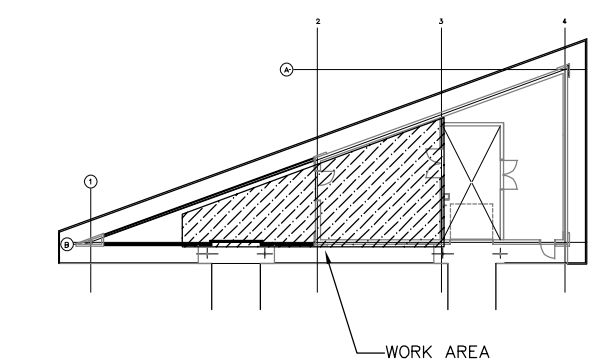
designed / conçu	date
ZF	SEP / 2021
drawn / dessiné	scale / échelle
ZF	1:50
checked / vérifié	sheet / feuille
RGC	2 of/de 9
approved / approuvé	W.O.no. / D.T.no.
ALS	A1-011227
dwg.no. / dessin no.	
5886-M02	

GENERAL NOTES

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES AND/OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTOR MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
- ALL TRADES TO COORDINATE WORK ON SITE, WITH APPROVAL OF DEPARTMENTAL REPRESENTATIVE TO AVOID ANY CONFLICTS AND/OR INTERFERENCE.
- ANY AND ALL REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

KEY PLAN

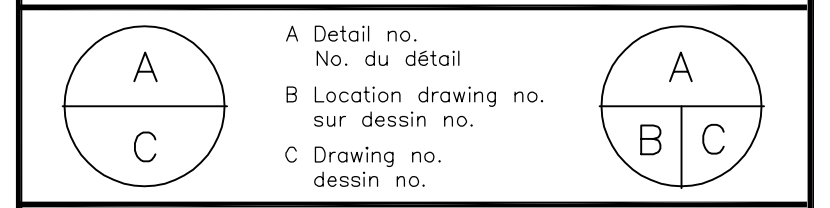
PLAN CLÉ



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Date Printed: DD MM YYYY / Date imprimée: DD MM YYYY

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.

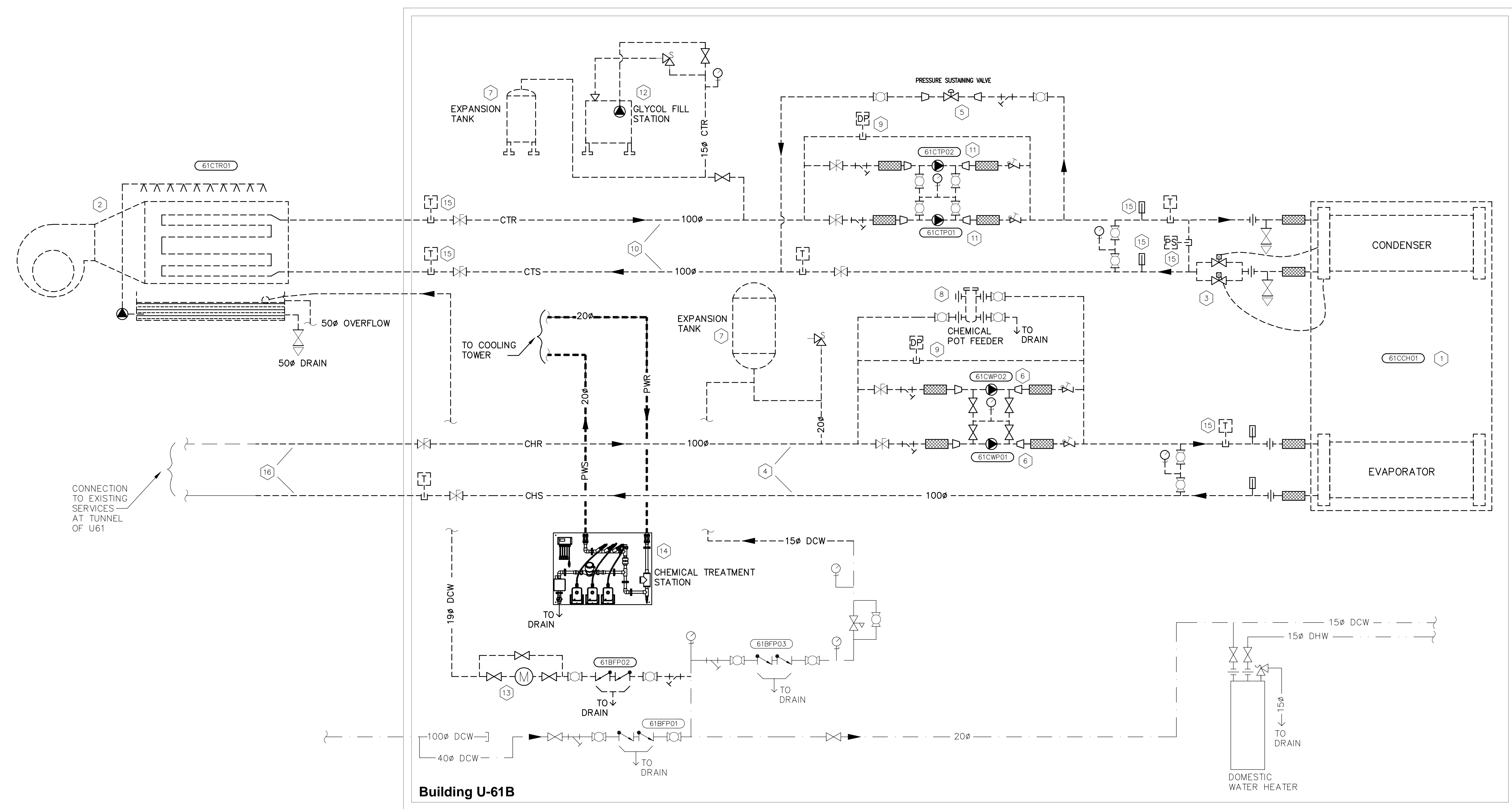


project: **U-61B - CHILLER REPLACEMENT**

drawing: **U-61B - PIPING SCHEMATIC - DEMOLITION**

designed	ZF	conçu	SEP / 2021
drawn	ZF	dessiné	scale: NTS
checked	RGC	vérifié	sheet 3 of/de 9
approved	ALS	approuvé	W.O.no. A1-011227

dwg.no. **5886-M03** / dessin no.



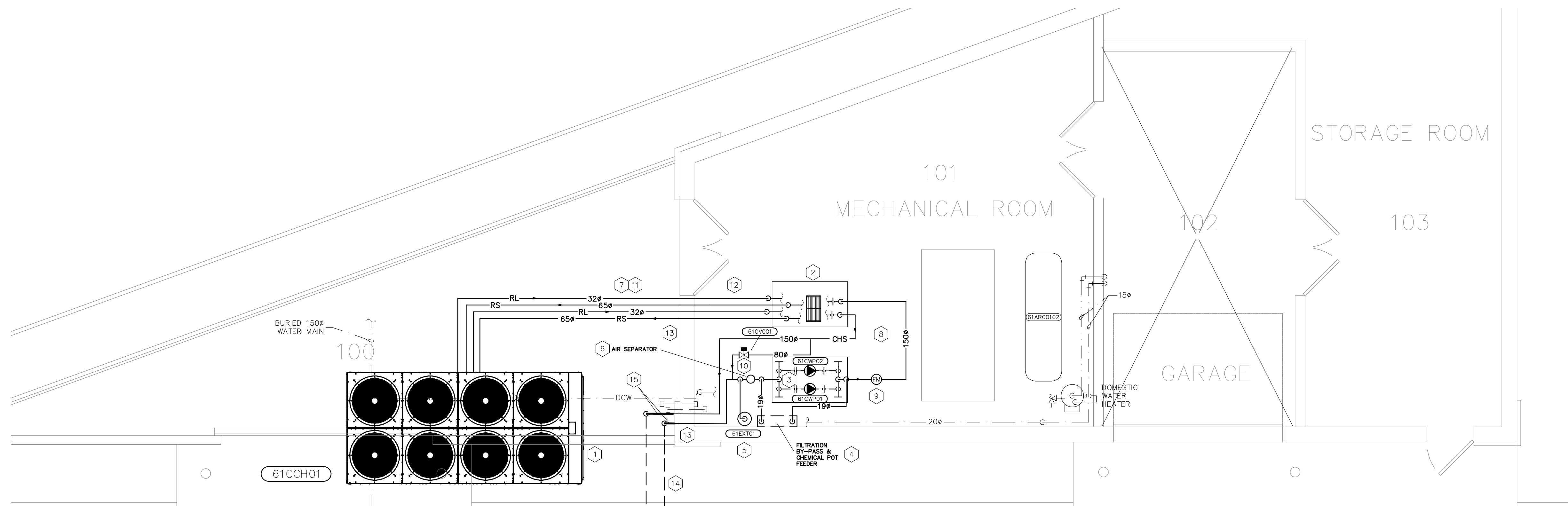
1 PIPING SCHEMATIC - DEMOLITION
 MO3 SCALE = NTS

DRAWING NOTES:

- EXISTING WATER COOLED CHILLER MODEL TRANE CQW0605CJ0HBC TO BE REMOVED AND DISPOSED FOLLOWING THE LATEST VERSION OF THE FEDERAL HALOCARBON REGULATIONS. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25.
- EXISTING COOLING TOWER MODEL BALTIMORE AIR COIL VFL-333-1MMR TO BE REMOVED. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25.
- EXISTING PRESSURE-ACTUATED WATER REGULATING VALVES TO BE REMOVED ALONG WITH CONTROL WIRING AND ASSOCIATED REFRIGERANT PIPING.
- EXISTING CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED AS INDICATED ON THE DRAWING. PIPING ALONG WITH ACCESSORIES AND SUPPORTS TO BE REMOVED.
- EXISTING PRESSURE SUSTAINING VALVE TO BE REMOVED AS INDICATED ON DRAWING.
- EXISTING CHILLED WATER PUMPS TO BE REMOVED ALONG WITH ISOLATION VALVES, SUCTION GUIDES, TRIPLE DUTY VALVES, AND FLEX CONNECTIONS. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25.
- EXISTING EXPANSION TANK TO BE REMOVED ALONG WITH ASSOCIATED PIPING AND SUPPORTS AS INDICATED ON DRAWING.
- EXISTING CHEMICAL POT FEEDER TO BE REMOVED ALONG WITH PIPING AND SUPPORTS AS INDICATED ON DRAWING.
- EXISTING PRESSURE DIFFERENTIAL TRANSMITTER TO BE REMOVED ALONG WITH PIPING AND SUPPORTS AS INDICATED ON DRAWING.
- EXISTING COOLING TOWER SUPPLY AND RETURN PIPING TO BE REMOVED AS INDICATED ON THE DRAWINGS. PIPING ALONG WITH ACCESSORIES AND SUPPORTS TO BE REMOVED.
- EXISTING CONDENSER WATER PUMPS TO BE REMOVED ALONG WITH ISOLATION VALVES, SUCTION GUIDES, TRIPLE DUTY VALVES, AND FLEX CONNECTIONS. ASSOCIATED CONTROLS TO BE DISCONNECTED AND REMOVED BY DIVISION 25.
- GLYCOL FILL TANK STATION TO BE REMOVED ALONG WITH PRESSURE GAUGES, PRESSURE REDUCING VALVE (PRV), PIPING, AND SUPPORTS.
- DOMESTIC COLD WATER PIPING AND ASSOCIATED ACCESSORIES (BACKFLOW PREVENTER, STRAINER, METER) TO BE REMOVED AS INDICATED ON DRAWING. METER TO BE RETURNED TO DEPARTMENTAL REPRESENTATIVE.
- EXISTING CHEMICAL TREATMENT STATION TO BE REMOVED. EXISTING SUPPLY AND RETURN PROCESS WATER PIPING TO BE REMOVED. EXISTING SUPPLY AND RETURN PROCESS WATER PIPING IS HEAT-TRACED. HEAT-TRACE IS TO BE REMOVED BY DIVISION 26.
- EXISTING CONTROLS COMPONENTS (TEMPERATURE SENSOR, DIFFERENTIAL PRESSURE SENSOR) TO BE REMOVED BY DIVISION 25 ALONG WITH CONTROL WIRING.
- EXISTING UNDERGROUND CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED AS INDICATED ON DRAWING.

GENERAL NOTES

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- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

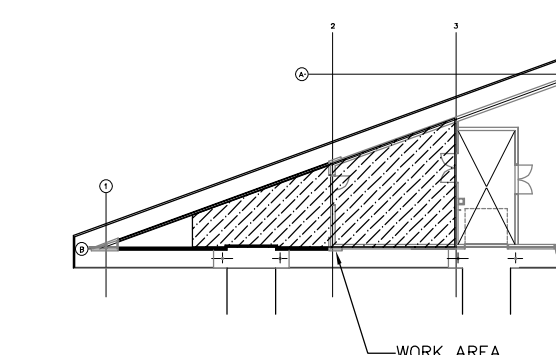


1 PLAN VIEW - NEW LAYOUT
 M04 SCALE = 1:50

DRAWING NOTES: X

- PROVIDE NEW AIR COOLED CHILLER WITH REMOTE EVAPORATOR. CHILLER TO BE INSTALLED ON MODIFIED CONCRETE PAD. REFER TO SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE 25mm SPRING ISOLATORS TO ISOLATE NOISE, SHOCK, AND HIGH FREQUENCY VIBRATION UNDER THE UNIT'S BASE RAILS. REFER TO DRAWING 5886-M05 FOR ADDITIONAL DETAILS ON ACCESSORIES, INSTRUMENTS AND VALVES.
- NEW REMOTE EVAPORATOR TO BE INSTALLED ON EXISTING CONCRETE PAD. REFER TO DRAWING 5886-M05 FOR ADDITIONAL DETAILS ON ACCESSORIES, INSTRUMENTS, AND VALVES. EVAPORATOR TO BE INSULATED. REFER TO SPECIFICATIONS FOR INSULATION DETAILS.
- PROVIDE NEW CHILLED WATER PUMPS. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH SUCTION DIFFUSER, TRIPLE DUTY VALVE, FLEXIBLE CONNECTIONS, AND PRESSURE GAUGES, AS INDICATED ON DETAIL 2/M09.
- PROVIDE NEW FILTRATION BY-PASS AND CHEMICAL POT FEEDER. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH PIPING, VALVES, AND ACCESSORIES AS SHOWN ON DRAWING 5886-M05.
- PROVIDE NEW EXPANSION TANK. REFER TO SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH PIPING, VALVES, AND ACCESSORIES AS SHOWN ON DRAWING 5886-M05.
- PROVIDE NEW AIR SEPARATOR TO BE PROVIDED ON THE CHILLED WATER LOOP. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PROVIDE NEW REFRIGERANT LIQUID AND SUCTION PIPING FOR CIRCUIT #1 AND #2 OF CHILLER 61CCH01. REFER TO SPECIFICATIONS FOR PIPING MATERIAL AND INSULATION REQUIREMENTS. CHILLER MANUFACTURER TO CONFIRM PIPING SIZING AND ACCESSORIES BASED ON CAPACITY AND PIPING LENGTH. LIQUID AND SUCTION PIPING MUST BE SLOPED 10.4mm/m IN THE DIRECTION OF REFRIGERANT FLOW. USE LONG RADIUS ELBOW FOR REDUCED PRESSURE DROP. INSTALLATION MUST MEET PIPING REQUIREMENTS OF CSA-B52 AND MANUFACTURER'S INSTRUCTIONS.
- PROVIDE NEW CHILLED WATER SUPPLY AND RETURN PIPING AS INDICATED ON DRAWING. REFER TO DRAWING 5886-M05 FOR ADDITIONAL DETAILS SUCH AS ACCESSORIES, VALVES, AND INSTRUMENTS. REFER TO SPECIFICATIONS FOR PIPING MATERIAL AND INSULATION REQUIREMENTS.
- NEW WATER FLOW METER TO BE SUPPLIED BY DIVISION 25 AND INSTALLED BY DIVISION 23. MANUFACTURER'S INSTALLATION INSTRUCTIONS TO BE FOLLOWED.
- NEW BYPASS CONTROL VALVE TO BE SUPPLIED BY DIVISION 25 AND INSTALLED BY DIVISION 23.
- PROVIDE A STRUT BASED FRAME FOR SUPPORTING REFRIGERANT PIPING OUTDOORS. THE FRAME MUST BE ABLE TO ACCOMMODATE STANDARD INDUSTRY STANDARD STRUT CHANNELS. EACH FRAME KIT SHALL INCLUDE A PAIR OF FEET WITH STRUT INSERT, ANGLED BRACKETS, TIGHT BOLTS AND CHANNEL NUTS TO MECHANICALLY FIX TO STRUT. STRUT TO BE PROVIDED SEPARATELY BY CONTRACTOR AND MUST BE COMPATIBLE WITH FRAME. DESIGN LOAD TO MEET PIPING WEIGHT. REFER TO SPECIFICATIONS FOR COPPER PIPING SPACING TO DETERMINE NUMBER OF SUPPORTS. MUST BE SUITABLE FOR A GRAVEL SURFACE. FOOT SIZE (305x305mm), DESIGN LOAD PER FRAME 300kg. MAINTAIN PIPING AS ELEVATED AS POSSIBLE WHILE MAINTAINING SLOPE REQUIREMENTS OF SUCTION AND LIQUID REFRIGERANT PIPING. ACCEPTABLE MANUFACTURER: BIG FOOT SYSTEMS.
- SUPPORT INDOOR REFRIGERANT PIPING FROM THE FLOOR. REFER TO DETAIL 7/M09 FOR SUPPORT DETAIL.
- PROVIDE NEW SLEEVES FOR NEW REFRIGERANT AND CHILLED WATER PIPING PENETRATIONS. REFER TO DETAIL 6/M09.
- PROVIDE NEW BURIED CHILLED WATER SUPPLY AND RETURN PIPING AS INDICATED ON DRAWING. REFER TO SPECIFICATIONS FOR PIPING REQUIREMENTS. REFER TO DETAIL 1/M09 FOR TRENCH DETAIL. PROVIDE THRUST BLOCKS FOR BURIED PIPING AT CHANGE OF DIRECTIONS. REFER TO DETAILS 4 AND 5/M09. EXISTING SOIL BEARING CAPACITY IS 144kPa.
- EXPOSED CHILLED WATER PIPING TO BE HEAT TRACED BY DIVISION 26.

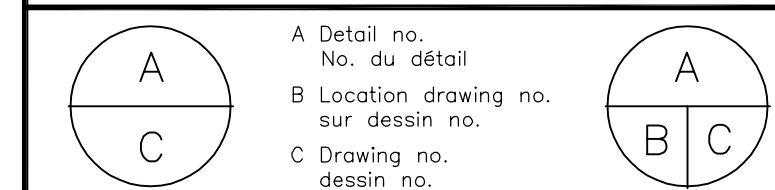
KEY PLAN PLAN CLÉ



No.	Date	Revision	By:

Date Printed: DD MM YYYY Date imprimée: DD MM YYYY

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project: U-618 CHILLER REPLACEMENT

drawing: U-618 - PIPING - MODIFIED

designed	conçu	date	date
ZF		SEP / 2021	
drawn	dessiné	scale	échelle
ZF		1:50	
checked	vérifié	sheet	feuille
RGC		4 of/de 9	
approved	approuvé	W.O.no.	D.T.no.
ALS		A1-011227	

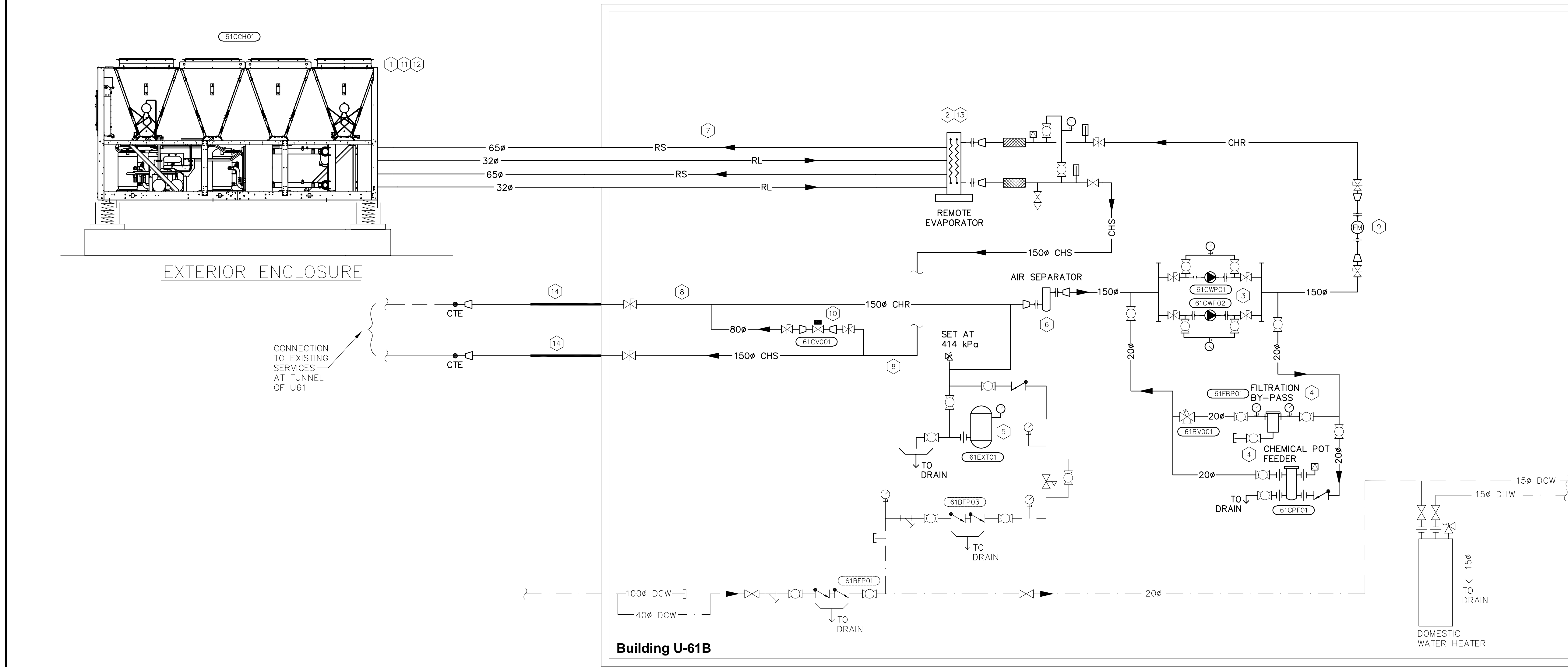
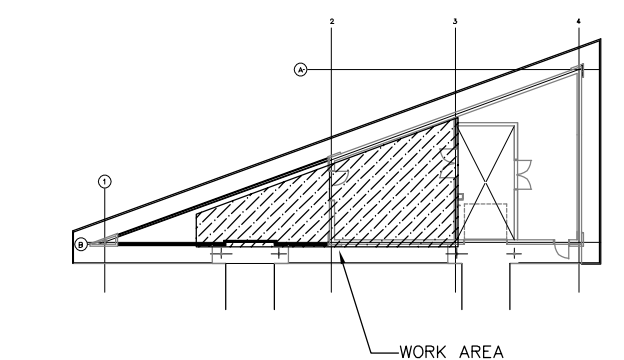
dwg.no.: 5886-M04 dessin no.:

GENERAL NOTES

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND CLEARANCES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES AND/OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTOR MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
- ALL TRADES TO COORDINATE WORK ON SITE, WITH APPROVAL OF DEPARTMENTAL REPRESENTATIVE TO AVOID ANY CONFLICTS AND/OR INTERFERENCE.
- ANY AND ALL REQUIRED SHUTDOWNS SHALL BE COORDINATED WITH DEPARTMENTAL REPRESENTATIVE.
- INSTALLATION OF ALL SYSTEMS SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO BE RESPONSIBLE FOR REINSTATEMENT AND REPAIR OF ANY DAMAGE CAUSED BY WORK.
- CONTRACTOR SHALL PREVENT THE SPREAD OF DUST AND DEBRIS BEYOND AREA OF WORK AND CLEAN ALL SURFACES AT COMPLETION.

KEY PLAN

PLAN CLÉ



1 PIPING SCHEMATIC - NEW LAYOUT
 M05 SCALE = NTS

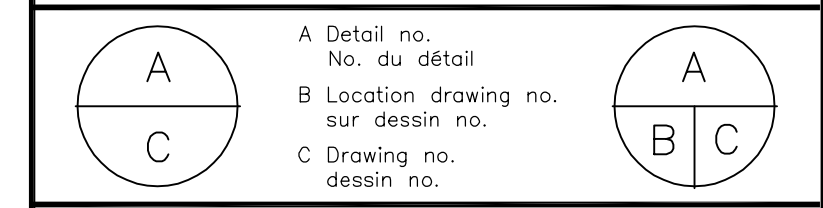
DRAWING NOTES:

- PROVIDE NEW AIR COOLED CHILLER WITH REMOTE EVAPORATOR. CHILLER TO BE INSTALLED ON MODIFIED CONCRETE PAD. REFER TO SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE 25mm SPRING ISOLATORS TO ISOLATE NOISE, SHOCK, AND HIGH FREQUENCY VIBRATION UNDER THE UNIT'S BASE RAILS. REFER TO DRAWING FOR REQUIRED ACCESSORIES, INSTRUMENTS AND VALVES.
- NEW REMOTE EVAPORATOR TO BE INSTALLED ON EXISTING CONCRETE PAD. REFER TO DRAWING FOR REQUIRED ACCESSORIES, INSTRUMENTS, AND VALVES. EVAPORATOR TO BE INSULATED. REFER TO SPECIFICATIONS FOR INSULATION DETAILS. PROVIDE VICTAULIC TO FLANGE ADAPTER (100mm) AT CHILLED WATER INLET/OUTLET CONNECTIONS.
- PROVIDE NEW CHILLED WATER PUMPS. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH SUCTION DIFFUSER, TRIPLE DUTY VALVE, FLEXIBLE CONNECTIONS, AND PRESSURE GAUGES, AS INDICATED ON DETAIL 2/M09.
- PROVIDE NEW FILTRATION BY-PASS AND CHEMICAL POT FEEDER. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH PIPING, VALVES, AND ACCESSORIES AS SHOWN ON DRAWING.
- PROVIDE NEW EXPANSION TANK. REFER TO SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. PROVIDE WITH PIPING, VALVES, AND ACCESSORIES AS SHOWN ON DRAWING.
- PROVIDE NEW AIR SEPARATOR TO BE PROVIDED ON THE CHILLED WATER LOOP. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PROVIDE NEW REFRIGERANT LIQUID AND SUCTION PIPING FOR CIRCUIT #1 AND #2 OF CHILLER 61CCH01. REFER TO SPECIFICATIONS FOR PIPING MATERIAL AND INSULATION REQUIREMENTS. CHILLER MANUFACTURER TO CONFIRM PIPING SIZES AND ACCESSORIES BASED ON CAPACITY AND PIPING LENGTH. LIQUID AND SUCTION PIPING MUST BE SLOPED 10.4mm/m IN DIRECTION OF REFRIGERANT FLOW. REFER TO SPECIFICATIONS FOR COMPONENTS ACCESSORIES REQUIRED FOR EACH REFRIGERANT CIRCUIT. USE LONG RADIUS ELBOWS FOR REDUCED PRESSURE DROP. INSTALLATION MUST MEET PIPING REQUIREMENTS OF CSA B-52 AND MANUFACTURER'S INSTRUCTIONS.
- PROVIDE NEW CHILLED WATER SUPPLY AND RETURN PIPING AS INDICATED ON DRAWING. REFER TO DRAWING FOR ADDITIONAL DETAILS SUCH AS ACCESSORIES, VALVES, AND INSTRUMENTS. REFER TO SPECIFICATIONS FOR PIPING MATERIAL AND INSULATION REQUIREMENTS.
- NEW WATER FLOW METER TO BE SUPPLIED BY DIVISION 25 AND INSTALLED BY DIVISION 23. MANUFACTURER'S INSTALLATION INSTRUCTIONS TO BE FOLLOWED.
- NEW BYPASS CONTROL VALVE TO BE SUPPLIED BY DIVISION 25 AND INSTALLED BY DIVISION 23.
- PROVIDE HIGH SIDE AND LOW SIDE PRESSURE RELIEF VALVES WITH DUAL PRESSURE CHANGE OVER MANIFOLD VALVES. REFER TO DETAIL 3/M09.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE REFRIGERANT CHARGE INCLUDING THE CHARGE REQUIRED FOR THE FIELD INSTALLED INTERCONNECTING PIPING.
- CONTRACTOR IS RESPONSIBLE TO FIELD INSTALL STRAINER PROVIDED BY CHILLER MANUFACTURER TO PROTECT EVAPORATOR.
- EXPOSED CHILLED WATER PIPING TO BE HEAT-TRACED BY DIVISION 26.

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No.	Date	Revision	By: / Par:

Date Printed: DD MM YYYY Date imprimée

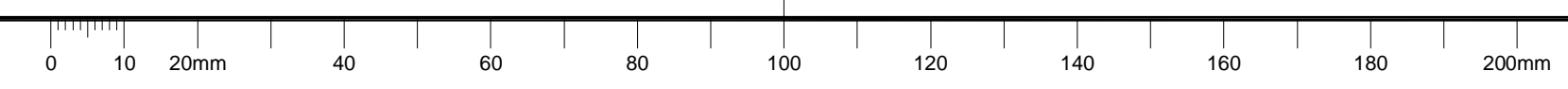
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- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project	U-61B - CHILLER REPLACEMENT		project
drawing	U-61B - PIPING SCHEMATIC - MODIFIED		dessin

designed	ZF	conçu	SEP / 2021	date
drawn	ZF	dessiné	NTS	échelle
checked	RGC	vérifié	5 of/de 9	feuille
approved	ALS	approuvé	A1-011227	D.T.no.

dwg.no. 5886-M05 dessin no.

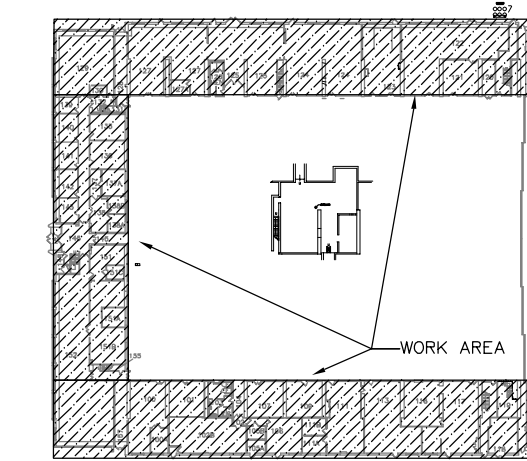


GENERAL NOTES

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KEY PLAN

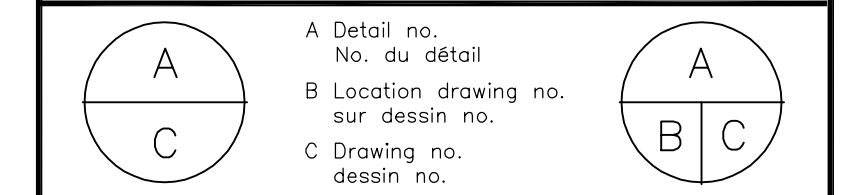
PLAN CLÉ



No.	Date	Revision	By: / Par:

Date Printed: DD MM YYYY / Date imprimée: DD MM YYYY

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project: U-61 - CHILLER REPLACEMENT / projet

UPLANDS DRIVE CAMPUS

drawing: U-61 - PIPING - MODIFIED / dessin

designed: ZF / conçu: ZF / date: SEP / 2021

drawn: ZF / dessiné: ZF / scale: 1:150 / échelle

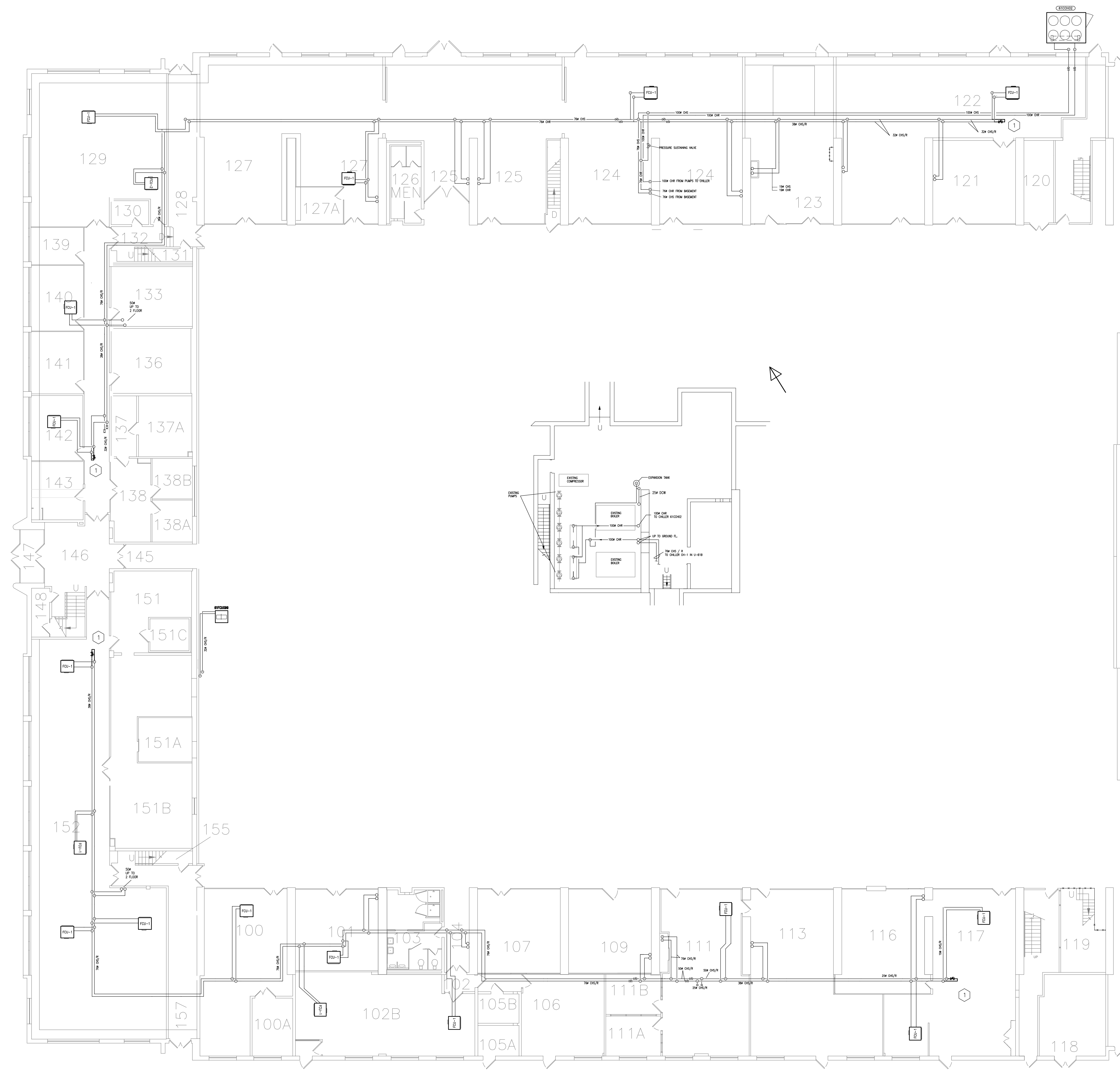
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approved: ALS / approuvé: ALS / W.O.no.: A1-011227 / D.T.no.:

dwg.no.: 5886-M07 / dessin no.:

DRAWING NOTES: X

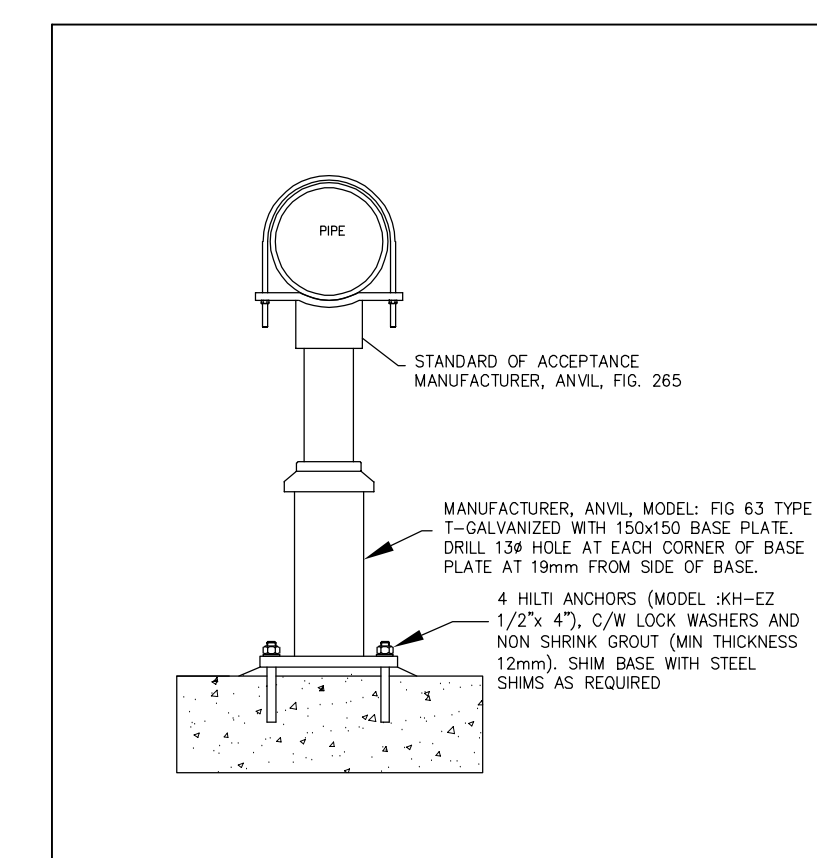
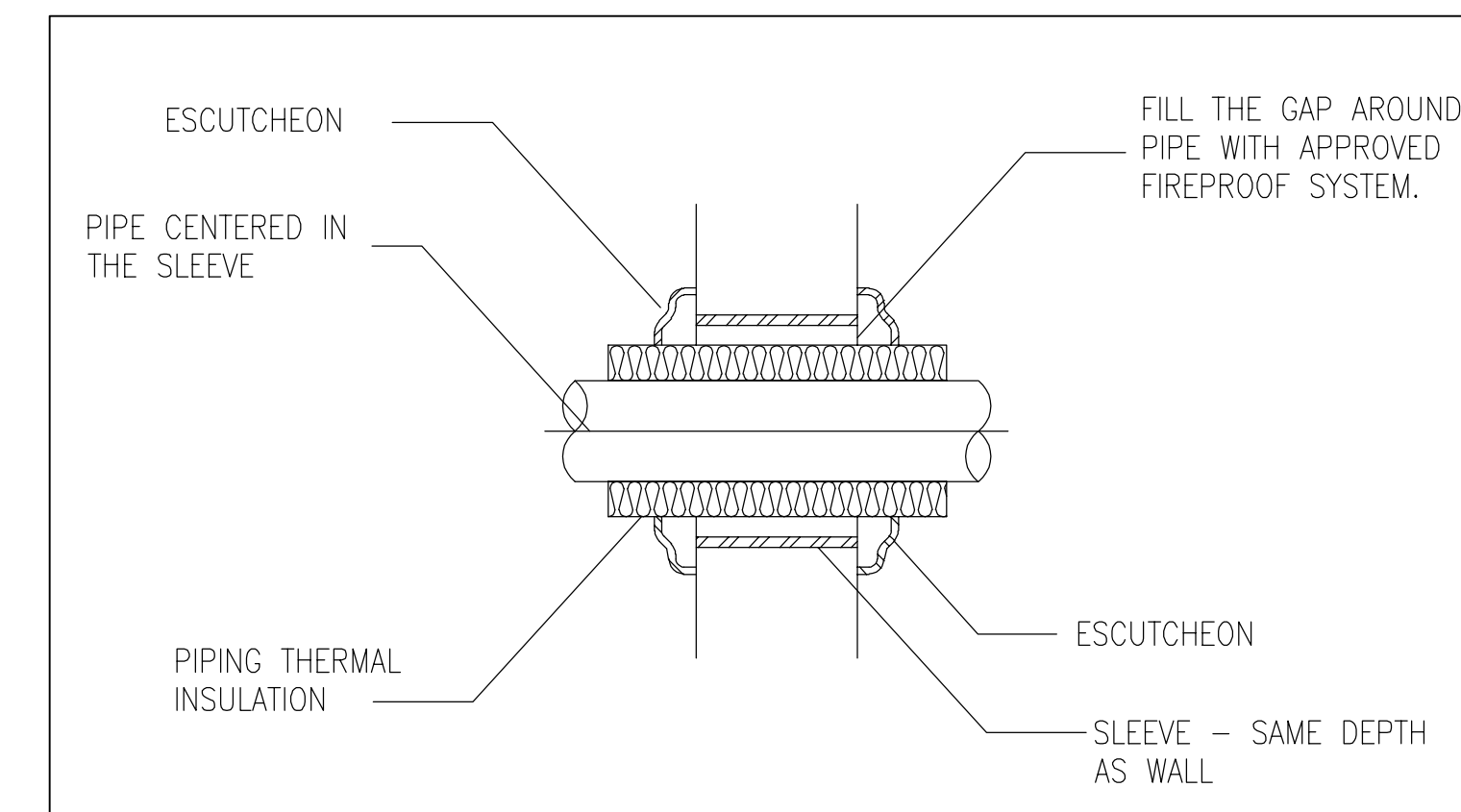
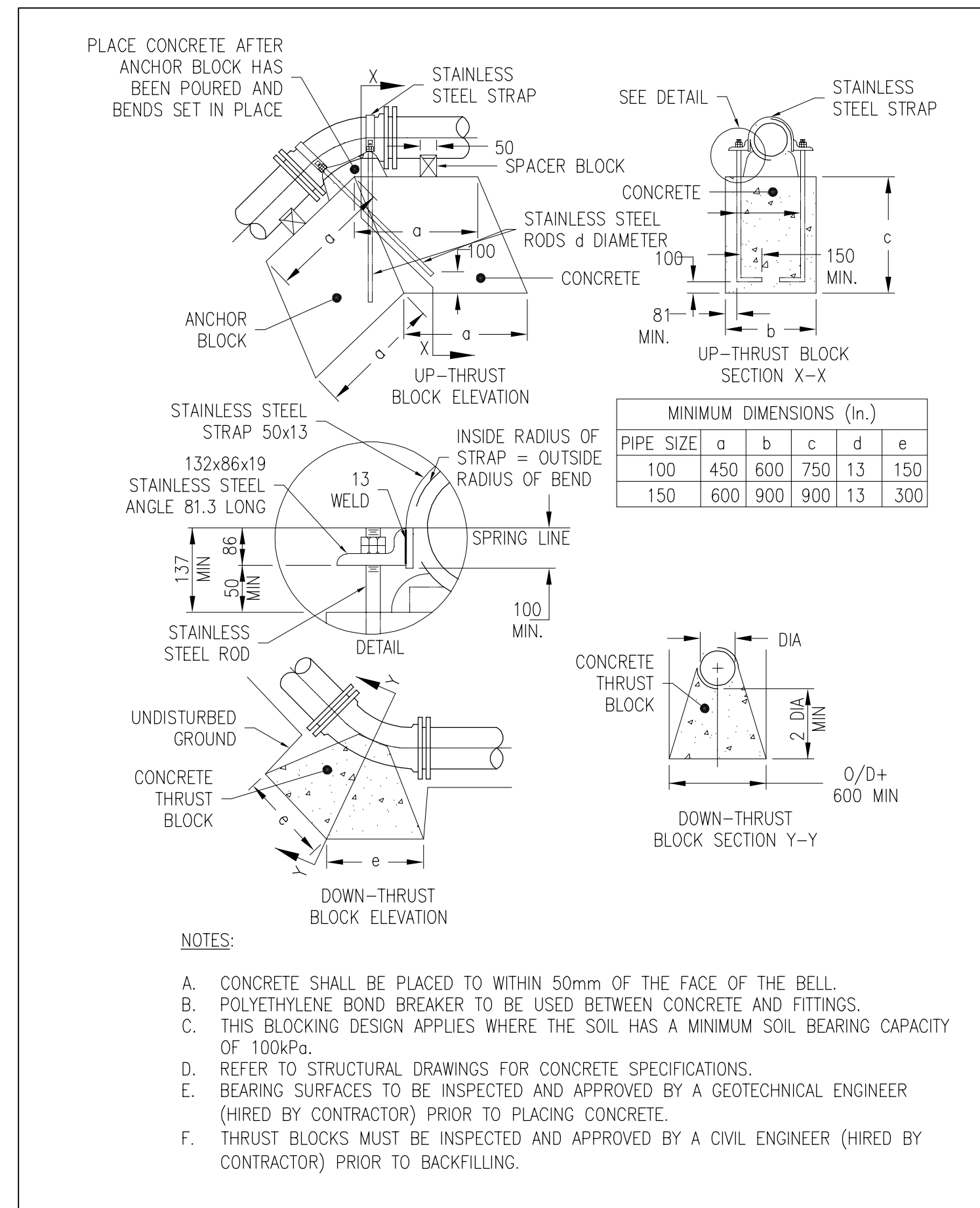
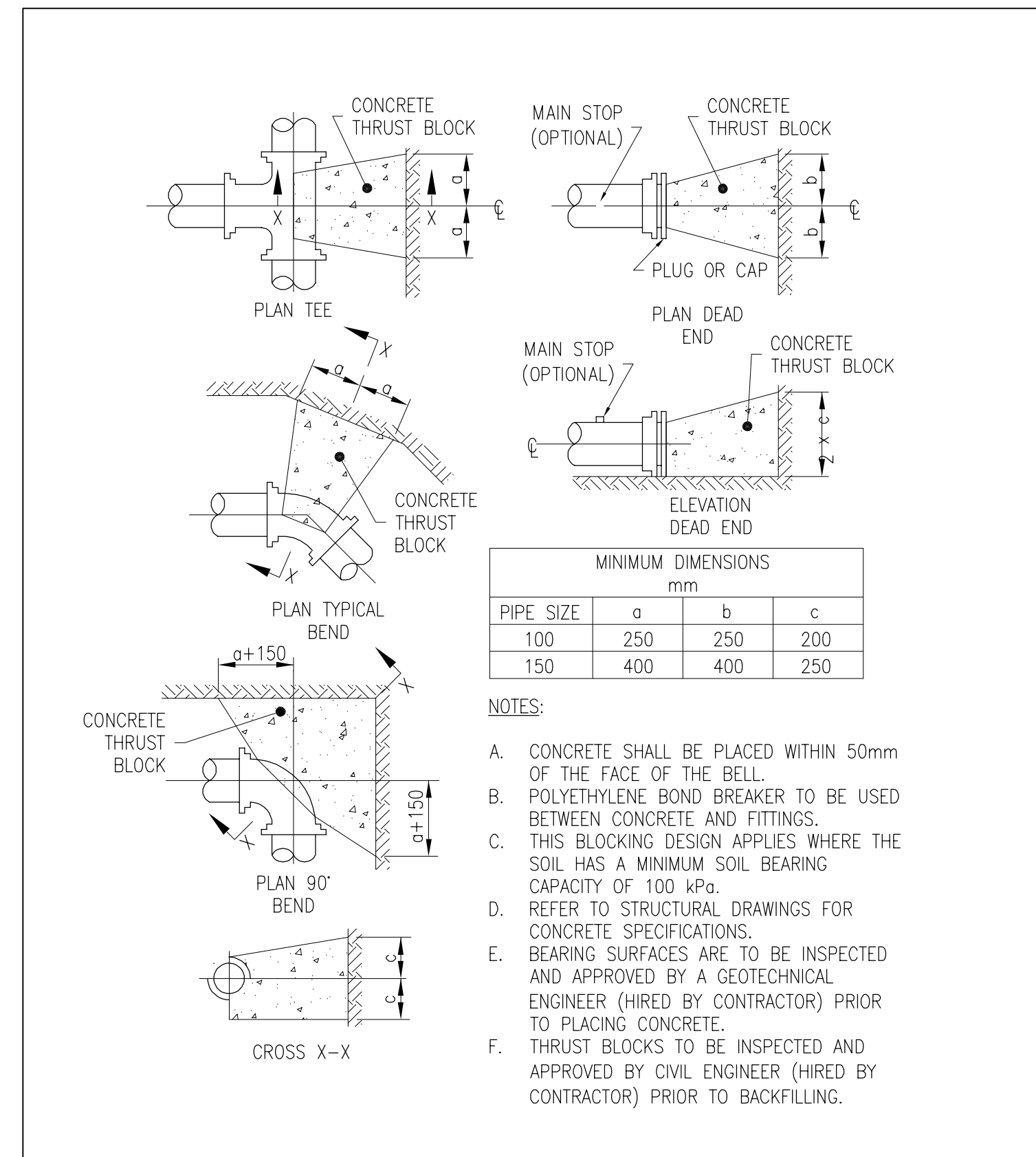
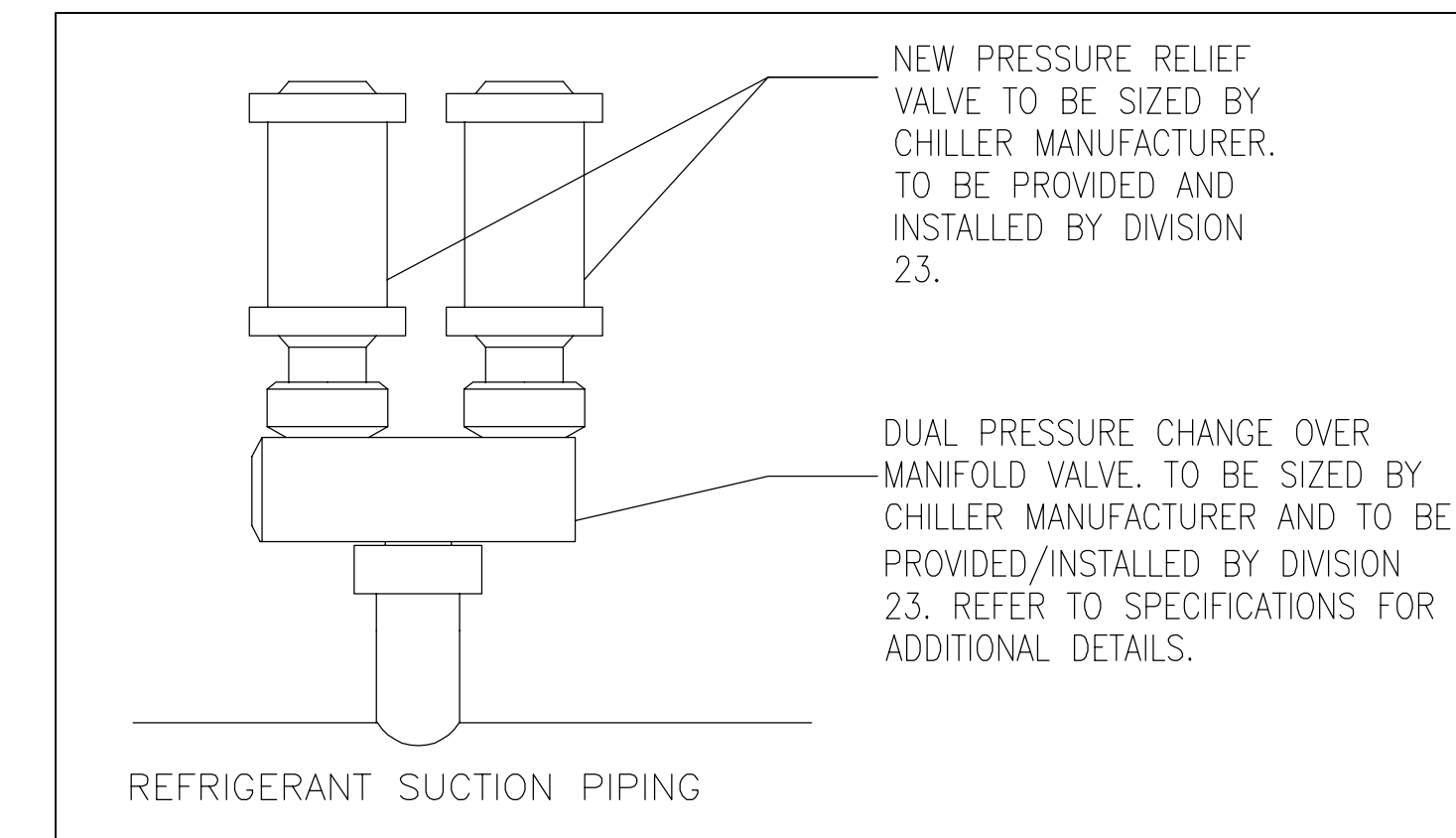
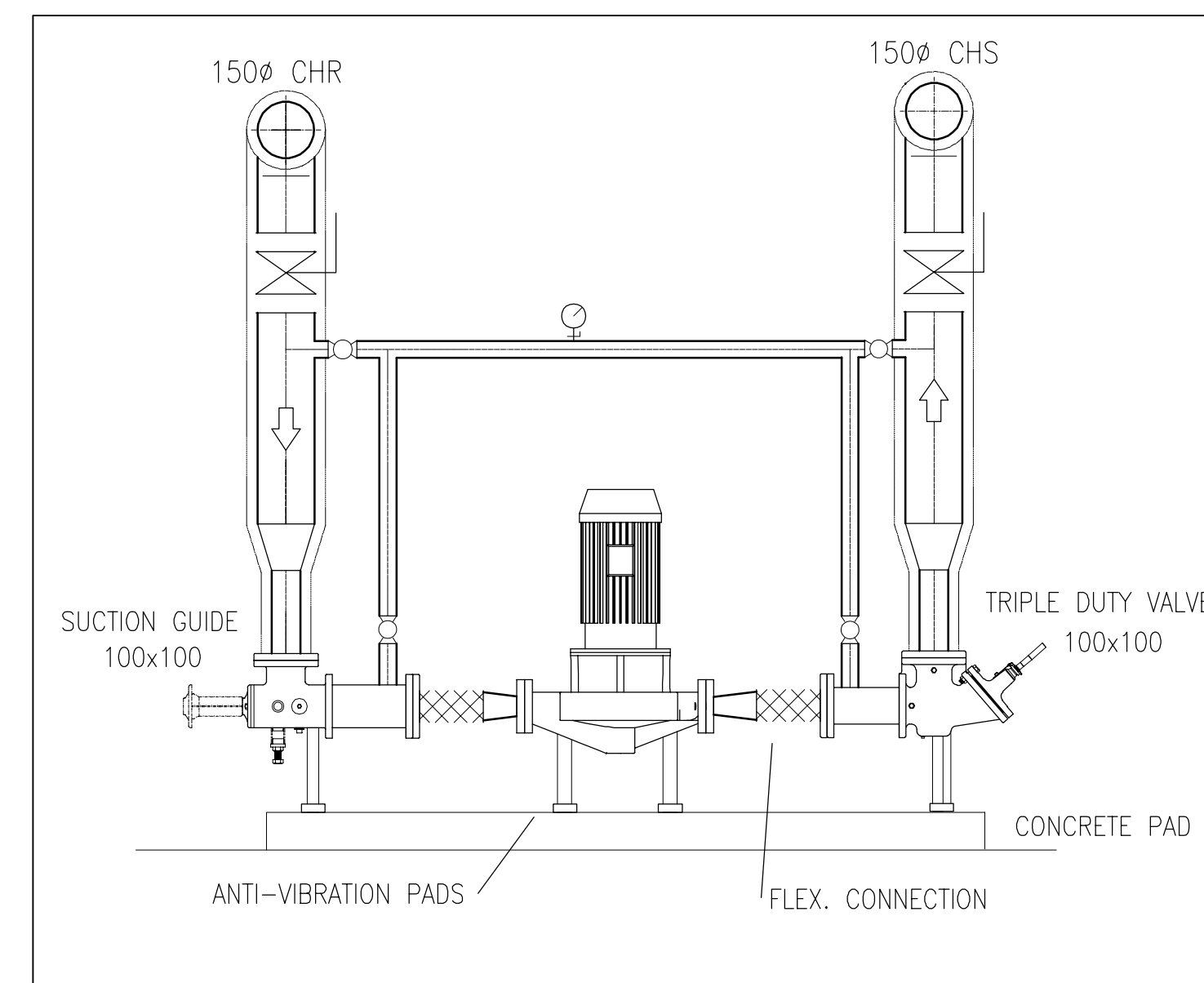
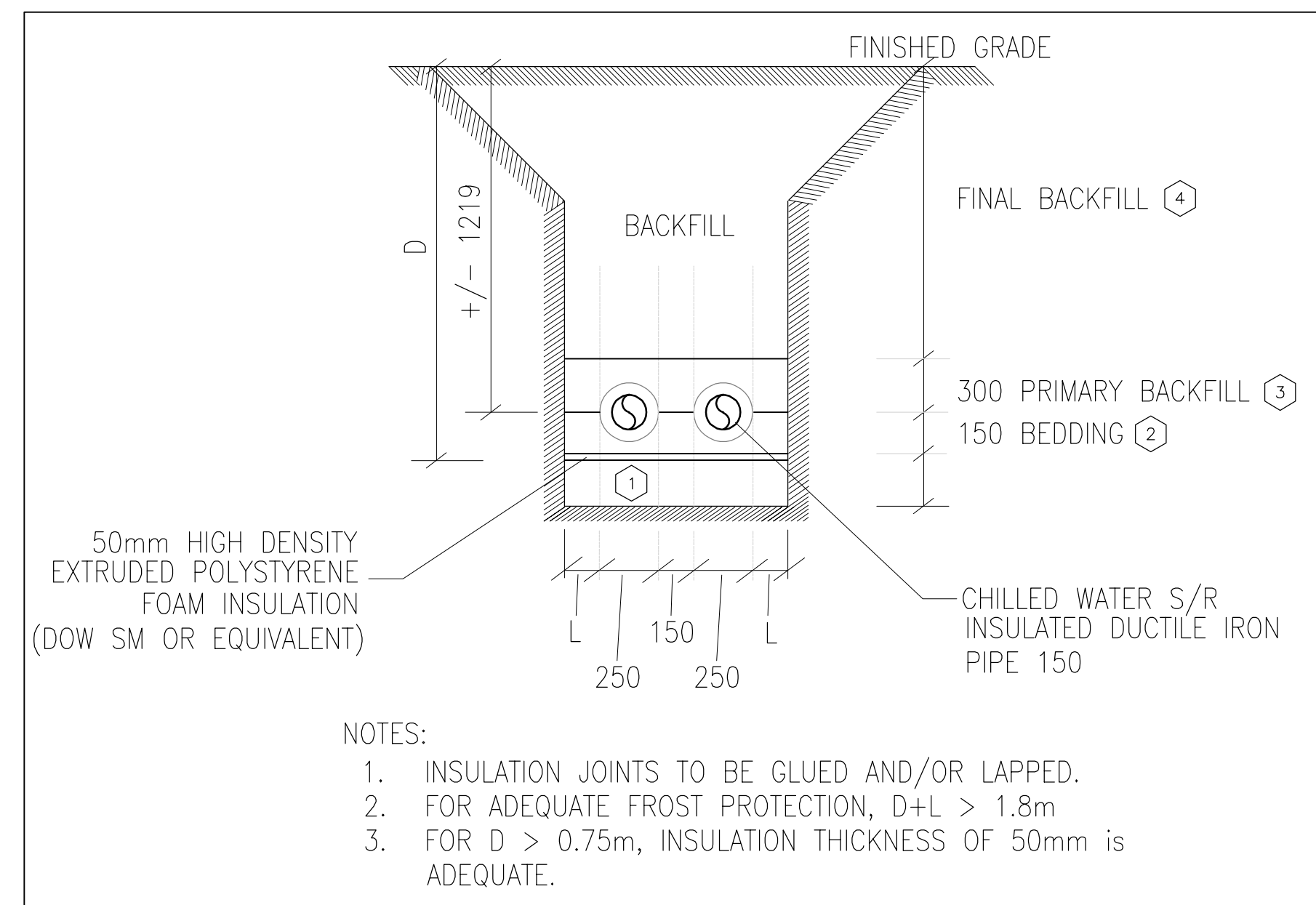
- EXISTING CHILLED WATER SUPPLY/RETURN PIPING TO BE REMOVED ALONG WITH BALANCING VALVE AS INDICATED ON DRAWING. PIPING TO BE CAPPED AND INSULATED.



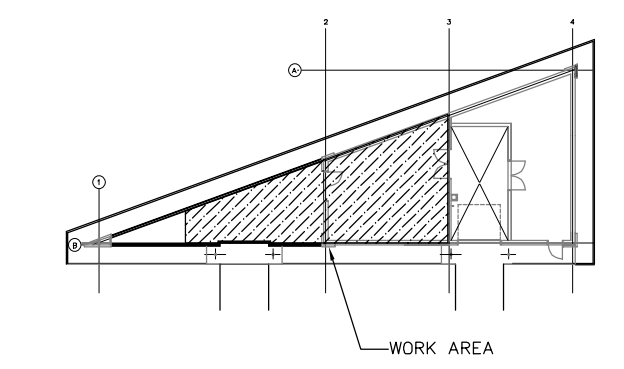
1 PLAN VIEW - NEW LAYOUT
 M07 SCALE = 1:150

GENERAL NOTES

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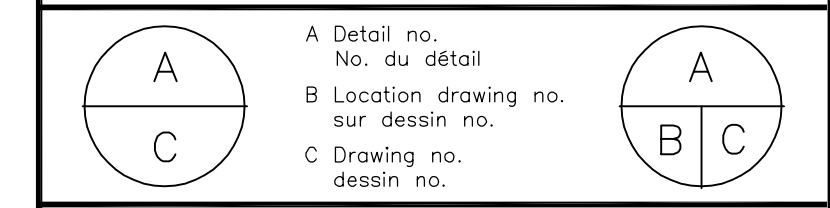


KEY PLAN / PLAN CLÉ



No.	Date	Revision	By:

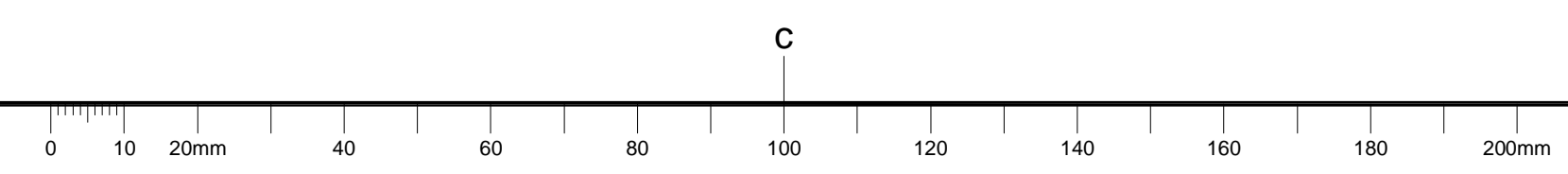
Date Printed: 00 MM YYYY Date imprimée: ???
 o Verify all dimensions and site conditions and be responsible for same
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project: **U-61B CHILLER REPLACEMENT** project

drawing: **U-61B - DETAILS** dessin

designed	conçu	date	date
ZF		SEP / 2021	
drawn	dessiné	scale	échelle
ZF		NTS	
checked	vérifié	sheet	feuille
RGC		9 of/de 9	
approved	approuvé	W.O.no.	D.T.no.
ALS		A1-011227	
dwg.no.			dessin no.
5886-M09			

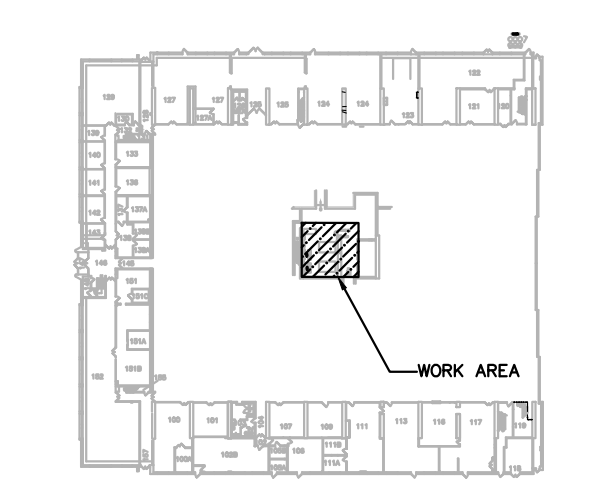




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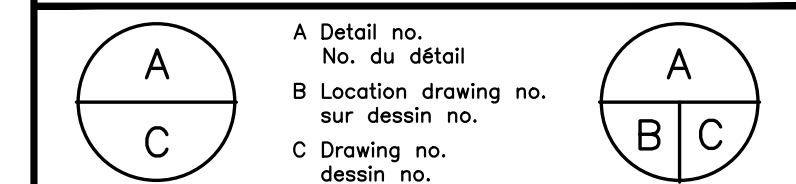
KEY PLAN / PLAN CLÉ



No.	Date	Revision	By: / Par:
0	08 09 2021	ISSUED FOR TENDER	CYC

Date Printed / Date imprimée: 08 09 2021

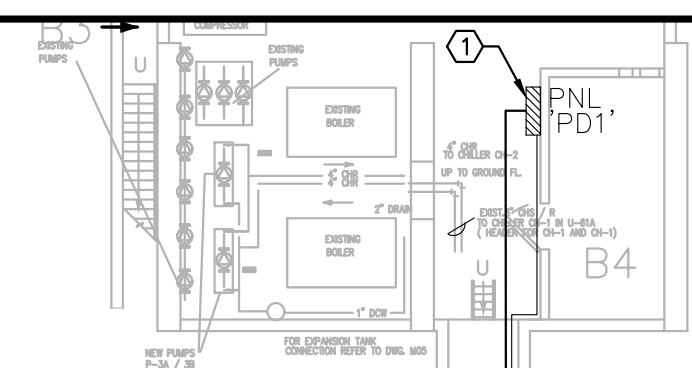
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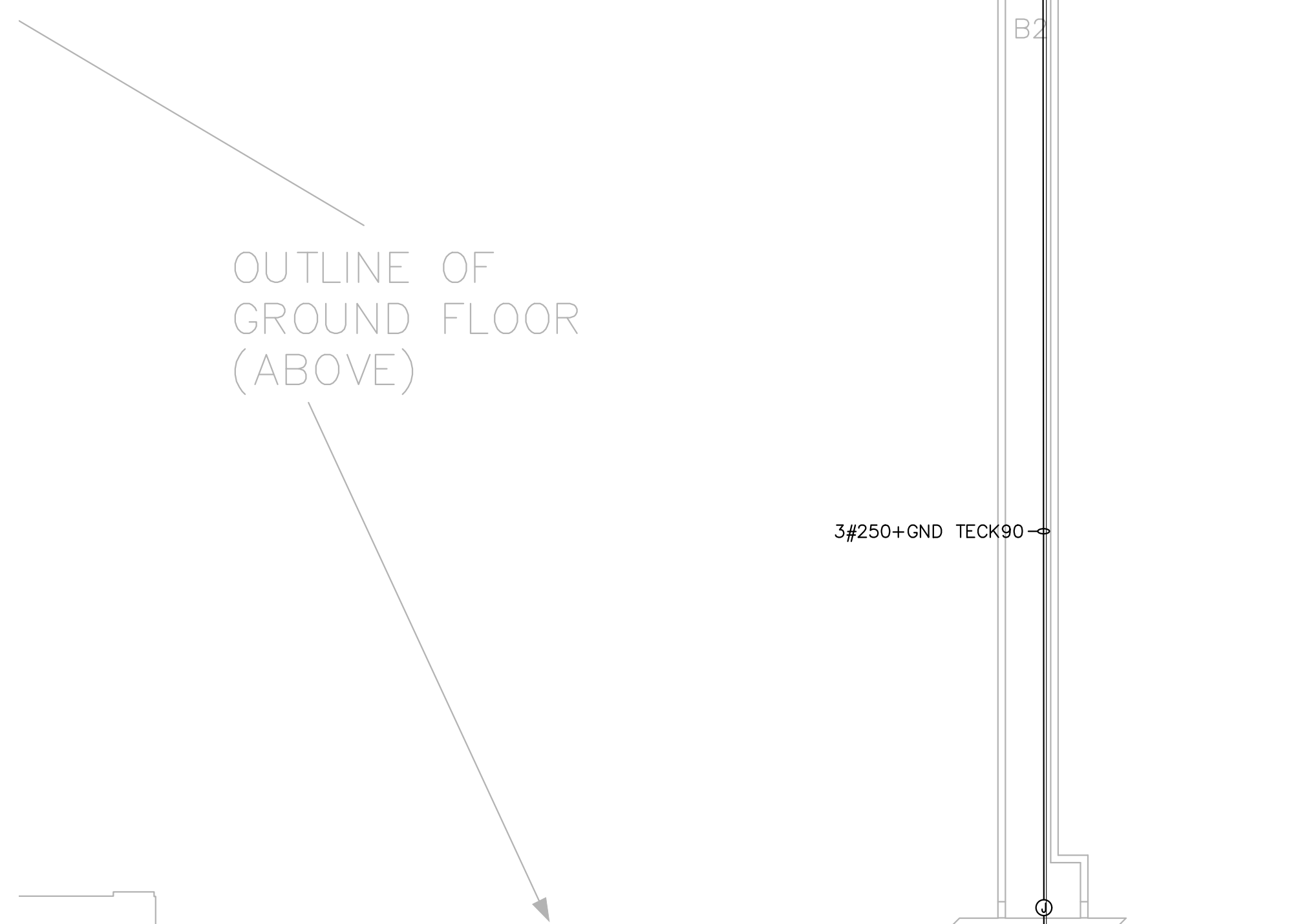
project: **U-61 - CHILLER REPLACEMENT**

UPLANDS ROAD CAMPUS
 drawing: **U61 + SITE - ELECTRICAL LAYOUT**

designed / conçu: CYC	date / date: AUGUST / 2020
drawn / dessiné: CYC	scale / échelle: AS NOTED
checked / vérifié: KXL	sheet / feuille: 1 of / de 2
approved / approuvé: ALS	W.O.no. / D.T.no.
dwg.no. / dessin no.: 5886-E01	



OUTLINE OF GROUND FLOOR (ABOVE)

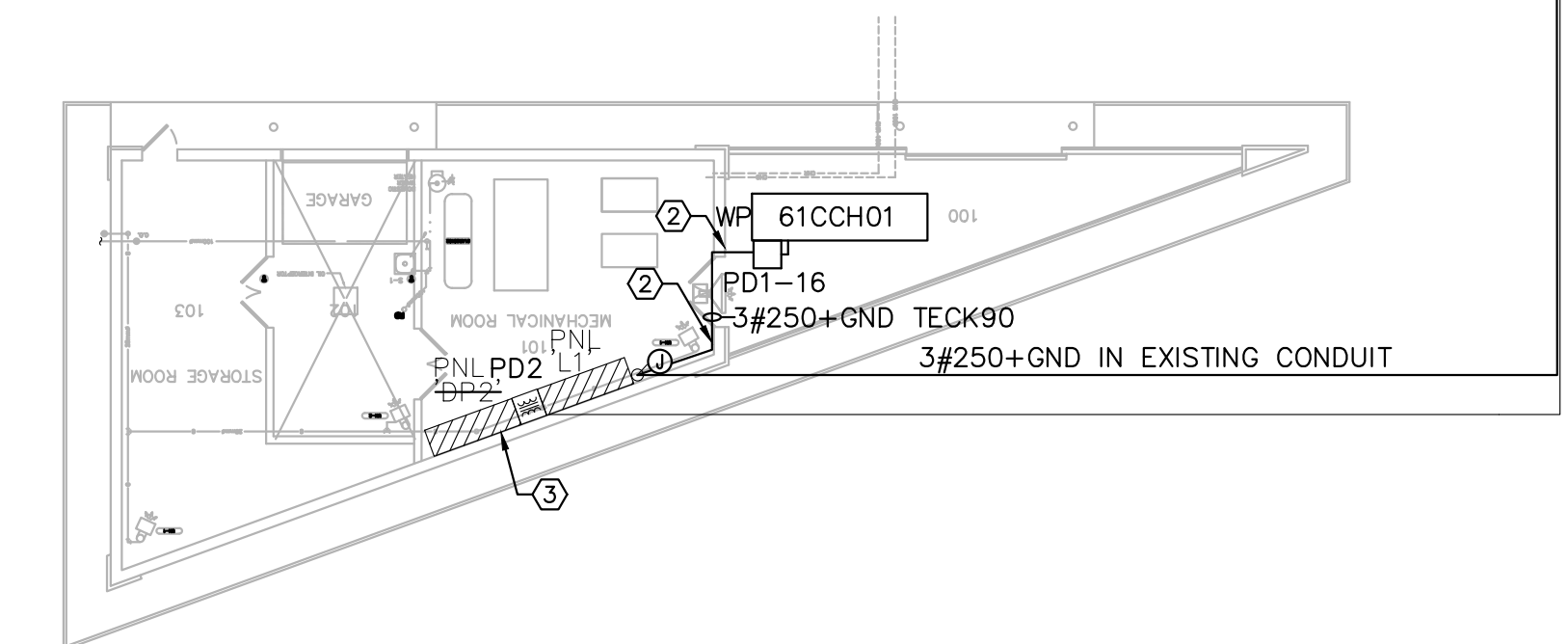


2 PARTIAL SINGLE LINE DIAGRAM
 N.T.S.

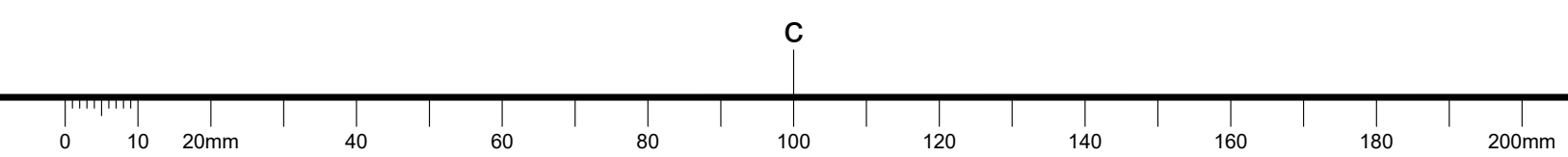
—	TYPICAL EXISTING
—	TYPICAL NEW
- - -	TYPICAL DEMOLITION / REMOVALS
▨	ELECTRICAL PANEL
⊞	TRANSFORMER
□	DISCONNECT SWITCH
∅	CONDUIT UP
+	HARDWIRE CONNECTION
⊙	JUNCTION BOX
Ⓜ	VARIABLE FREQUENCY DRIVE
Ⓜ	MOTOR STARTER
WP	WEATHER PROOF

DRAWING NOTES:

- PROVIDE NEW BREAKER IN EXISTING PANEL, TYPE SQUARE D I-LINE, 25KAIC.
- NEW CHILLER C/W DISCONNECT SWITCH TO BE SUPPLIED AND INSTALLED BY DIV.23. DIV.26 TO PROVIDE WIRING AND CONDUITS OR TECK CABLE AS SHOWN AND MAKE ALL FINAL CONNECTIONS. RUN WIRING THROUGH EXISTING UNDERGROUND CONDUIT BETWEEN U-61 AND U-61B. PROVIDE PROPER SUPPORT WHEN RUNNING CABLE INSIDE THE BUILDINGS.
- REPLACE EXISTING LAMICOID WITH NEW NAME. TRACE EXISTING ALL EXISTING LOADS FED FROM THIS PANEL AND REPLACE THE LABEL TO MATCH.



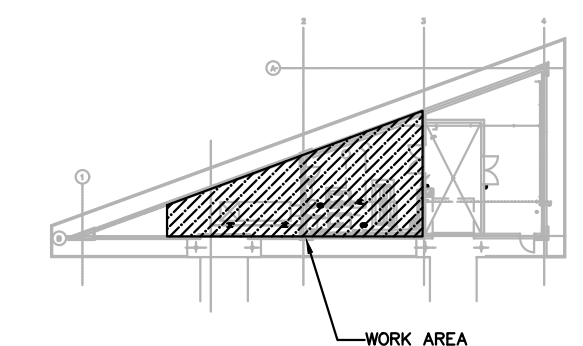
1 ELECTRICAL LAYOUT
 SCALE = 1:200



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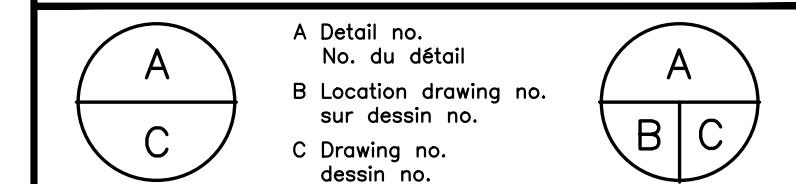
KEY PLAN / PLAN CLÉ



No.	Date	Revision	By:
0	08 09 2021	ISSUED FOR TENDER	CYC

Date Printed: 00 MM YYYY / Date imprimée

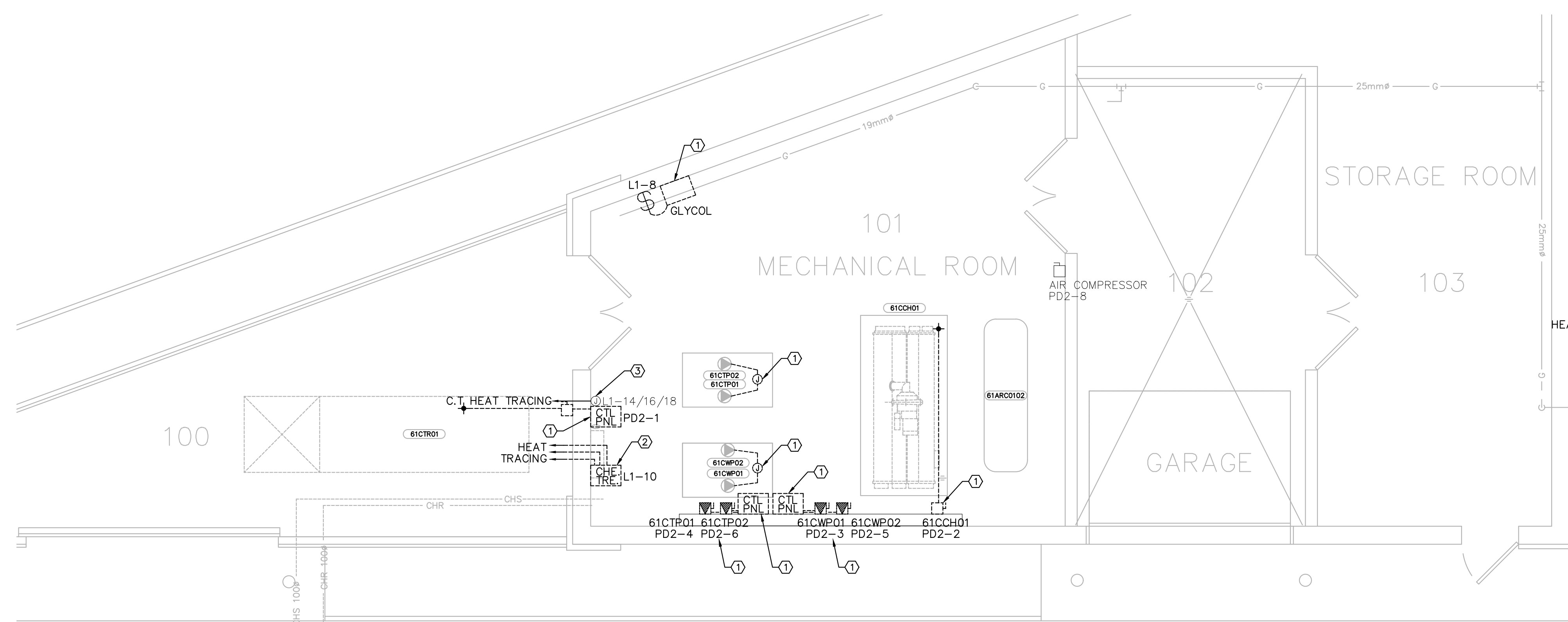
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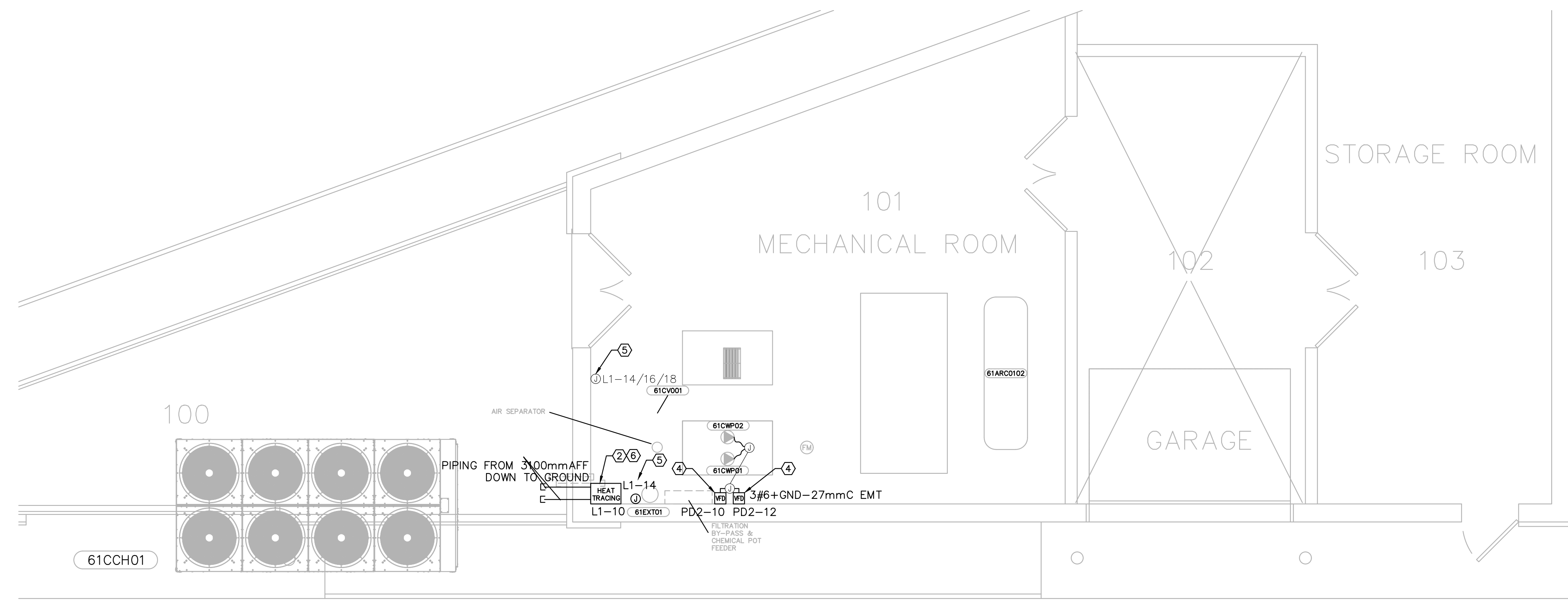
project: **U-61B CHILLER REPLACEMENT**
 UPLANDS ROAD CAMPUS
 drawing: **U-61B - ELECTRICAL LAYOUT**

designed	conçu	date	date
CYC		AUGUST / 2020	
drawn	dessiné	scale	échelle
CYC		AS NOTED	
checked	vérifié	sheet	of/da
KXL		2	of/da 2
approved	approuvé	W.O.no.	D.T.no.
ALS			

dwg.no.: **5886-E02** / dessin no.



1 ELECTRICAL WORK - DEMOLITION
 SCALE = 1:50



2 ELECTRICAL WORK - NEW
 SCALE = 1:50

DRAWING NOTES:

- EXISTING MECHANICAL EQUIPMENT TO BE REMOVED BY DIV.23. DIV.26 TO DISCONNECT POWER AND REMOVE ALL REDUNDANT WIRING AND CONDUITS BACK TO SOURCE AND MAKE SAFE. PROVIDE CAP FOR THE CONDUIT STUB-UP, TURN BREAKER TO 'OFF' POSITION AND MARK 'SPARE'. COORDINATE WORK ON SITE WITH DIV.23. EXACT NUMBER OF REMOVAL POINTS TO BE CONFIRMED ON SITE.
- DISCONNECT AND REMOVE EXISTING HEAT TRACING CONTROL PANEL C/W ALL CABLES. EXTEND CIRCUIT TO NEW HEAT TRACING SYSTEM.
- DISCONNECT AND REMOVE ALL HEAT TRACING CABLES FOR COOLING TOWER. RETAIN CIRCUIT IN EXISTING JUNCTION BOX. MARK CIRCUIT NUMBER ON JUNCTION BOX AND ADD 'SPARE AT JB ON EAST WALL' TO PANEL LEGEND.
- 600V, 30HP PUMP TO BE SUPPLIED AND INSTALLED BY DIV.23. DIV.26 TO PROVIDE VERTICAL E-CLIPSE BYPASS DRIVE WITH NON-FUSED DISCONNECT SWITCH. STANDARD OF ACCEPTANCE: ABB ACH580-VDR-032A-6.
- PROVIDE WIRING AND CONDUIT AND EXTEND EXISTING CIRCUIT L1-14 TO NEW CONTROL TRANSFORMER. CONFIRM EXACT LOCATION ON SITE AND COORDINATE WORK WITH DIV.23.
- PROVIDE HEAT TRACING CABLE FOR TWO CHILLED WATER PIPING, C/W ALL REQUIRED ACCESSORIES SUCH AS POWER CONNECTION KIT, END SEAL KIT, ALUMINUM TAPE, ETC., TO FORM A COMPLETE SYSTEM AND CONNECT TO CIRCUIT AS SHOWN. EXTEND EXISTING CIRCUIT TO NEW LOCATION. HEAT TRACING CABLE STANDARD OF ACCEPTANCE: CHROMALOX SRL10-1CT+DTS-HAZ+UMC+RTES+FT-34PS-10. CONFIRM EXACT LOCATION AND LENGTH ON SITE AND COORDINATE WORK WITH DIV.23.

