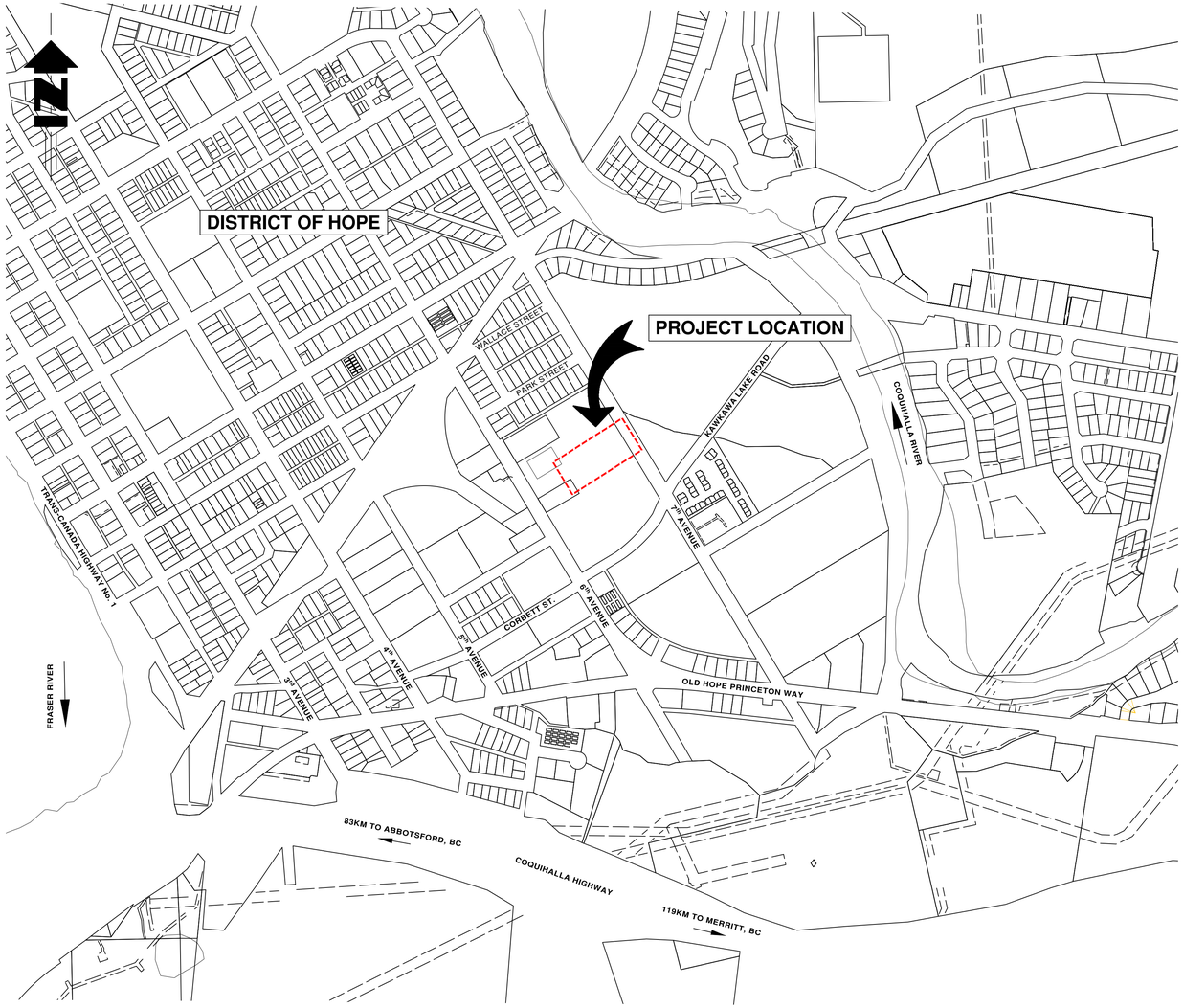
DISTRICT OF HOPE
WATER UTILITY AMALGAMATION
7TH AVENUE EMERGENCY BOOSTER STATION
AND WATERMAIN LOOPING



LOCATION OVERVIEW
NTS



LOCATION PLAN
1:5,000

7TH AVENUE EMERGENCY BOOSTER STATION		
DRAWING NO.	DRAWING TITLE	REVISION
GENERAL		
1239-202-00	TITLE SHEET, LOCATION PLAN & DRAWING LIST	6
1239-202-G1	BASIS OF DESIGN AND PROCESS FLOW DIAGRAM	6
CIVIL		
1239-202-C1	OVERALL SITE PLAN	6
1239-202-C2	SITE SERVICING, GRADING AND DETAIL 1	5
1239-202-C3	PLAN AND PROFILE 0+100 TO 0+177	5
1239-202-C4	BOOSTER STATION SECTIONS	5
1239-202-C5	WATER ISOLATION VALVE LOCATIONS	5
1239-202-C6	STANDARD DRAWINGS	5
MECHANICAL		
1239-202-M1	FLOOR PLAN	6
1239-202-M2	SECTIONS	6
1239-202-M3	SECTIONS	6
1239-202-M4	DETAILS	6
1239-202-M5	DETAILS	6
PLUMBING		
1239-202-P1	PLUMBING DETAILS	3
BUILDING		
1239-202-B1	ELEVATIONS, FLOOR AND ROOF PLANS AND DETAILS	6
ELECTRICAL		
1239-202-E01	ELECTRICAL SINGLE LINE DIAGRAM & SITE PLAN	5
1239-202-E02	ELECTRICAL POWER & LIGHTING LAYOUT	5
1239-202-E03	ELECTRICAL ELEVATION, SCHEDULES & DETAILS	5
1239-202-E04	ELECTRICAL HVAC LAYOUT	4
1239-202-E05	ELECTRICAL SCHEMATIC (1 of 4)	4
1239-202-E06	ELECTRICAL SCHEMATIC (2 of 4)	4
1239-202-E07	ELECTRICAL SCHEMATIC (3 of 4)	4
1239-202-E08	ELECTRICAL SCHEMATIC (4 of 4)	4
1239-202-E09	ELECTRICAL CP-1308 LAYOUT & BILL OF MATERIAL	4
1239-202-E10	ELECTRICAL FAN STARTER, VFD SCHEMATIC & NETWORK DIAGRAM	4
1239-202-E11	ELECTRICAL CABLE SCHEDULE	4
STRUCTURAL		
1239-202-S100	STRUCTURAL GENERAL STRUCTURAL NOTES (G.S.N.)	3
1239-202-S200	STRUCTURAL FOUNDATION PLAN AND SECTION	3
1239-202-S400	STRUCTURAL DETAILS	3

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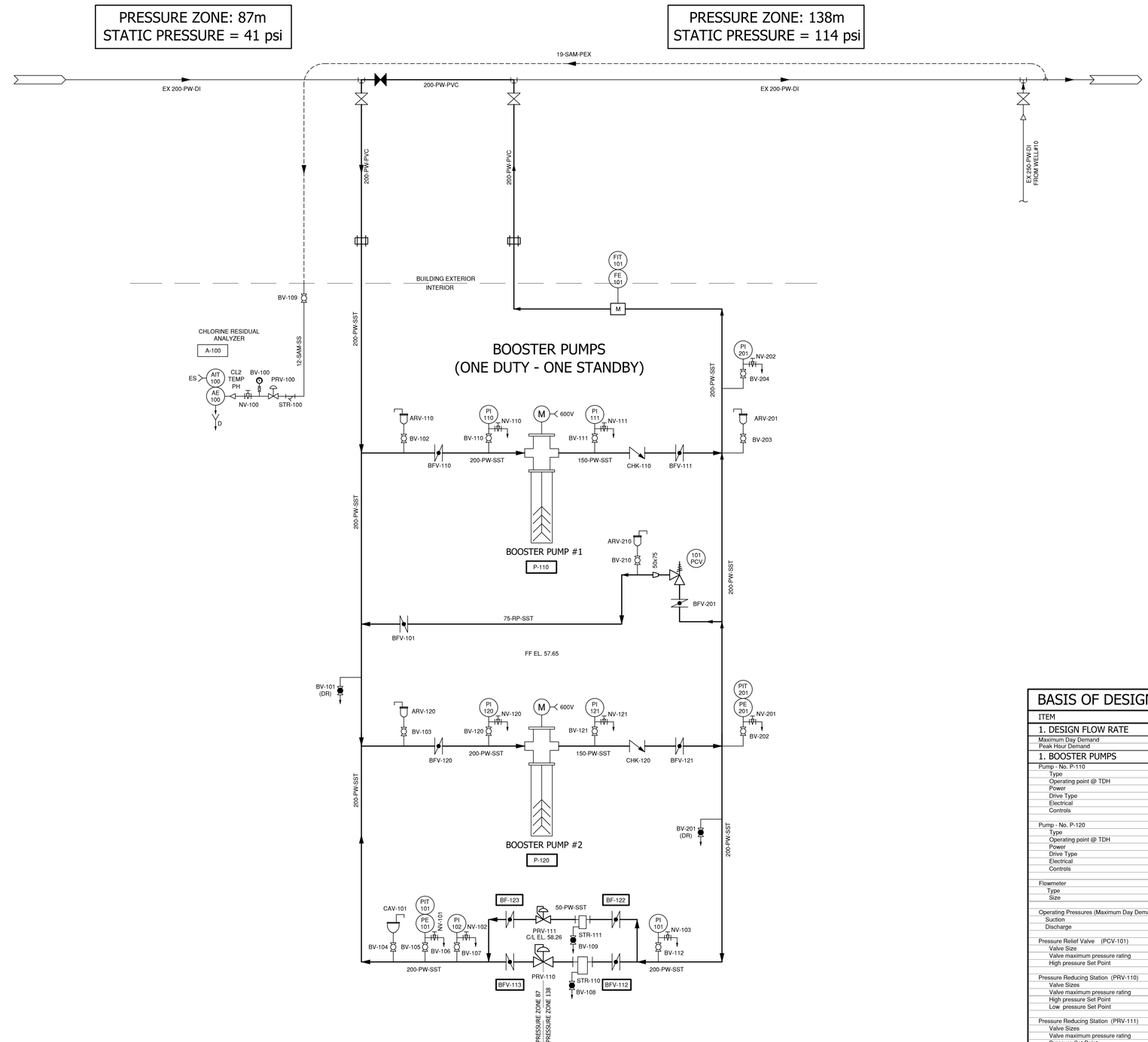
TRUE PROJECT NUMBER: 1239-202
DRAWING NUMBER: 1239-202-00

Permit to Practice No. 1000126
PROFESSIONAL ENGINEER
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45003
BRITISH COLUMBIA
2026-11-05

DISTRICT OF HOPE

ISSUED FOR TENDER
ISSUE DATE: NOVEMBER 04, 2026

FILE PLOTTED: 2026-11-05 07:50:43 | LAST SAVED: 2026-11-05 07:50:43 | SAVED BY: ANIKOLSON | CAD FILE VERSION: C:\1239-202\1239-202-00.dwg



PROCESS FLOW DIAGRAM

SYMBOLS

- PIPE COUPLING
- REDUCER
- DRAIN
- GATE VALVE (NO)
- GATE VALVE (NC)
- BUTTERFLY VALVE
- BALL VALVE (NO)
- BALL BALL (NC)
- NEEDLE VALVE
- NEEDLE VALVE (NC)
- AIR RELEASE VALVE
- COMBINATION AIR VALVE
- PRESSURE RELIEF VALVE
- CHECK VALVE
- MAGNETIC FLOWMETER
- MOTOR
- PRESSURE REDUCING VALVE

ABBREVIATIONS

ARV	AIR RELEASE VALVE
AVV	AIR/VACUUM VALVE
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CAV	COMBINATION AIR VALVE
CHK	CHECK VALVE
DR	DRAIN
ES	ELECTRICAL SERVICE
FWL	FULL WATER LEVEL
GV	GATE VALVE
HB	HOSE BIBB
M	MOTOR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
P	PUMP
PEX	PEX WATER TUBING
PW	POTABLE WATER
RPV	RELIEF PRESSURE VALVE
SAM	SAMPLE WATER
PCV	PRESSURE CONTROL VALVE
SST	STAINLESS STEEL
TYP	TYPICAL

INSTRUMENTATION ABBREVIATIONS

AE	ANALYZER ELEMENT
AIT	ANALYZER INDICATOR TRANSMITTER
FE	FLOW METER ELEMENT
FI	FLOW METER INDICATOR
FIT	FLOW METER INDICATING TRANSMITTER
PE	PRESSURE INDICATOR ELEMENT
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATOR TRANSMITTER

PIPE LINE IDENTIFICATION

AAA-BB-CCC
- LINE MATERIAL
- FLUID ABBREVIATION
- NOMINAL LINE DIAMETER

EQUIPMENT IDENTIFICATION

A-BBB
- EQUIPMENT NUMBER
- EQUIPMENT ABBREVIATION

BASIS OF DESIGN

ITEM	UNITS	VALUES/DESCRIPTION
1. DESIGN FLOW RATE		
Maximum Day Demand	L/s / USgpm	40 / 635
Peak Hour Demand	L/s / USgpm	36 / 570
1. BOOSTER PUMPS		
Pump - No. P-110		
Type	-	Vertical Turbine Pump
Operating point @ TDH	L/s @ m (USgpm @ ft)	40 @ 65 (635 @ 213)
Power	kW / HP	30 / 40
Drive Type	Speed (nom.)	1800
Electrical	V/Ph/Hz	600/3/60
Controls	-	Fully Automated
Pump - No. P-120		
Type	-	Vertical Turbine Pump
Operating point @ TDH	L/s @ m (USgpm @ ft)	40 @ 65 (635 @ 213)
Power	kW / HP	30 / 40
Drive Type	Speed (nom.)	1800
Electrical	V/Ph/Hz	600/3/60
Controls	-	Fully Automated
Flowmeter		
Type	-	Magmeter
Size	mm / in	200 / 8
Operating Pressures (Maximum Day Demand)		
Suction	kPa / psi	186 / 27
Discharge	kPa / psi	813 / 118
Pressure Relief Valve (PCV-101)		
Valve Size	mm / in	2 / 50
Valve maximum pressure rating	kPa / psi	1723 / 250
High pressure Set Point	kPa / psi	930 / 135
Pressure Reducing Station (PRV-110)		
Valve Sizes	mm / in	200 / 8
Valve maximum pressure rating	kPa / psi	1723 / 250
High pressure Set Point	kPa / psi	345 / 50
Low pressure Set Point	kPa / psi	206 / 30
Pressure Reducing Station (PRV-111)		
Valve Sizes	mm / in	75 / 8
Valve maximum pressure rating	kPa / psi	1723 / 250
Pressure Set Point	kPa / psi	241 / 35

BOOSTER STATION VALVE OPERATION

BOOSTER PUMPS IN SERVICE: P-110 & P-120
- MANUALLY BUTTERFLY VALVES CLOSED: BF-112, BF-113, BF-122, BF-123
- PRESSURE REDUCING VALVES NOT IN SERVICE

BOOSTER PUMPS OUT OF SERVICE: P-110 & P-120
- MANUALLY BUTTERFLY VALVES OPEN: BF-112, BF-113, BF-122, BF-123
- PRESSURE REDUCING VALVES IN SERVICE

No.	DATE	DESCRIPTION	BY	APPD
6	NOV 4/26	ISSUED FOR TENDER	DH	AP
5	APR 22/26	REISSUED FOR APPROVALS	DH	AP
4	APR 7/26	REISSUED FOR CLIENT REVIEW	DH	AP
3	MAR 13/24	ISSUED FOR TENDER	DH	AP
2	FEB 29/24	ISSUED FOR APPROVALS	DH	AP
1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

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DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

BASIS OF DESIGN AND PROCESS FLOW DIAGRAM

SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-G1
SHEET	1 OF 1
ISSUE/REV.	6

E:\Clients\2023\1239\1239-202\03 drawings\autoCAD drwgs\1239-202 booster station



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		ASPHALT ROAD
		GRAVEL ROAD
S	S	SANITARY MAIN
FM	FM	SANITARY FORCEMAIN
		SANITARY MANHOLE
		SERVICE & IC
D	D	STORM MAIN
		STORM DITCH
		STORM CULVERT
		SERVICE & IC
		STORM MANHOLE
		CB - STD & SIDE INLET
		DRYWELL
W	W	WATER MAIN
		SERVICE & CURB STOP
		VALVE
		STANDPIPE
		HYDRANT
G	G	GAS
P	P	POWER
T	T	TEL
C	C	CABLE
SL	SL	ST LIGHT CONDUIT
		POLE & ANCHOR
		STREET LIGHT
		CONTROL MONUMENT
		IRON POST
		TRAVERSE HUB

No.	DATE	DESCRIPTION	BY	APP'D
6	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
5	APR 22/26	REISSUED FOR APPROVALS	MBJ	AP
4	APR 07/26	REISSUED FOR CLIENT REVIEW	MBJ	AP
3	MAR 13/24	ISSUED FOR TENDER	MBJ	AP
2	FEB 29/24	ISSUED FOR APPROVALS	MBJ	AP
1	FEB 08/24	ISSUED FOR 50% CLIENT REVIEW	MBJ	AP

ISSUES / REVISIONS

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DISTRICT OF HOPE

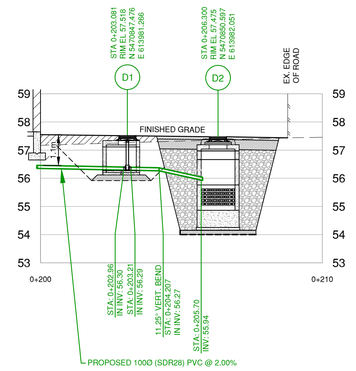
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

OVERALL SITE PLAN

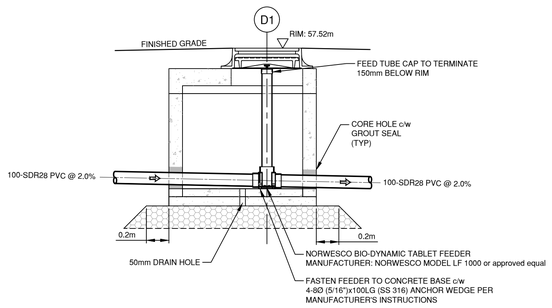
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DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C1
SHEET	1 OF 6
ISSUE/REV.	6

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PROPOSED DRAIN PIPE PROFILE

SCALE H 1:100, V 1:100



1 / - **DETAIL**

SCALE 1:25

GENERAL NOTES :

1. ALL WORKS SHALL CONFORM TO DISTRICT OF HOPE SUBDIVISION BYLAW DESIGN CRITERIA.
2. EXISTING UTILITIES ARE BASED ON FIELD SURVEY, DESIGN AND RECORD DRAWINGS. FIELD VERIFY LOCATIONS, INVERTS, SIZE AND MATERIAL. ELECTRICAL POWER, TELEPHONE, AND NATURAL GAS LINE ARE APPROXIMATELY SHOWN. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
3. COORDINATE REROUTING OF SHALLOW UTILITIES WITH APPLICABLE UTILITY SERVICE PROVIDER PRIOR TO CONSTRUCTION.
4. ALL PIPE RESTRAINTS COMPLETE WITH EPOXY COATED FINISH.
5. ROAD RESTORATION TO INCLUDE:
   UPPER - 35mm ASPHALT SURFACE COURSE, 40mm ASPHALT BASE COURSE,
   LOWER - 100mm of 19mm MINUS GRANULAR BASE, COMPACT TO 95% MODIFIED PROCTOR,
   SUBBASE - 300mm of 75mm MINUS SGSB, 150mm LIFTS, COMPACT TO 95% MODIFIED PROCTOR,
   SUBGRADE - SCARIFY UPPER 150mm, COMPACT TO 95% MODIFIED PROCTOR.
6. CARE SHALL BE TAKEN WHEN SAWCUTTING EXISTING PAVEMENT WITH A NEAT VERTICAL SAWCUT TO INSURE NO DAMAGE TO ANY OF THE EXISTING ASPHALT PAVEMENT TO REMAIN IN PLACE.
7. NO WORK MAY COMMENCE PRIOR TO A SCHEDULED PRE-CONSTRUCTION SITE MEETING.
8. FINAL INSPECTION AND APPROVAL:
   A. ON-SITE INSPECTION DURING CONSTRUCTION WILL BE BY TRUE CONSULTING.
   B. PRIOR TO FINAL APPROVAL OF CONSTRUCTION, RESTORATION OF THE AREA SHALL BE COMPLETED, AND A VISUAL INSPECTION OF THE SITE WILL BE MADE BY THE OWNER AND TRUE CONSULTING.
9. ALL WATERMAINS TO BE C900 DR18 PVC.
10. CONTRACTOR TO PROVIDE TRAFFIC CONTROL PLAN PRIOR TO CONSTRUCTION.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		ASPHALT ROAD
		GRAVEL ROAD
S	S	SANITARY MAIN
FM	FM	SANITARY FORCEMAIN
		SANITARY MANHOLE
		SERVICE & IC
D	D	STORM MAIN
		STORM DITCH
D	D	STORM CULVERT
		SERVICE & IC
		STORM MANHOLE
		CB - STD & SIDE INLET
		DRYWELL
W	W	WATER MAIN
		SERVICE & CURB STOP
		VALVE
		STANDPIPE
		HYDRANT
G	G	GAS
P	P	POWER
T	T	TEL
C	C	CABLE
SL	SL	ST LIGHT CONDUIT
		POLE & ANCHOR
		STREET LIGHT
		CONTROL MONUMENT
		IRON POST
		TRAVERSE HUB

No.	DATE	DESCRIPTION	BY	APPD
5	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
4	APR 22/26	REISSUED FOR APPROVALS	MBJ	AP
3	APR 7/26	REISSUED FOR CLIENT REVIEW	MBJ	AP
2	MAR 13/24	ISSUED FOR TENDER	MBJ	AP
1	FEB 29/24	ISSUED FOR APPROVALS	MBJ	AP

ISSUES / REVISIONS

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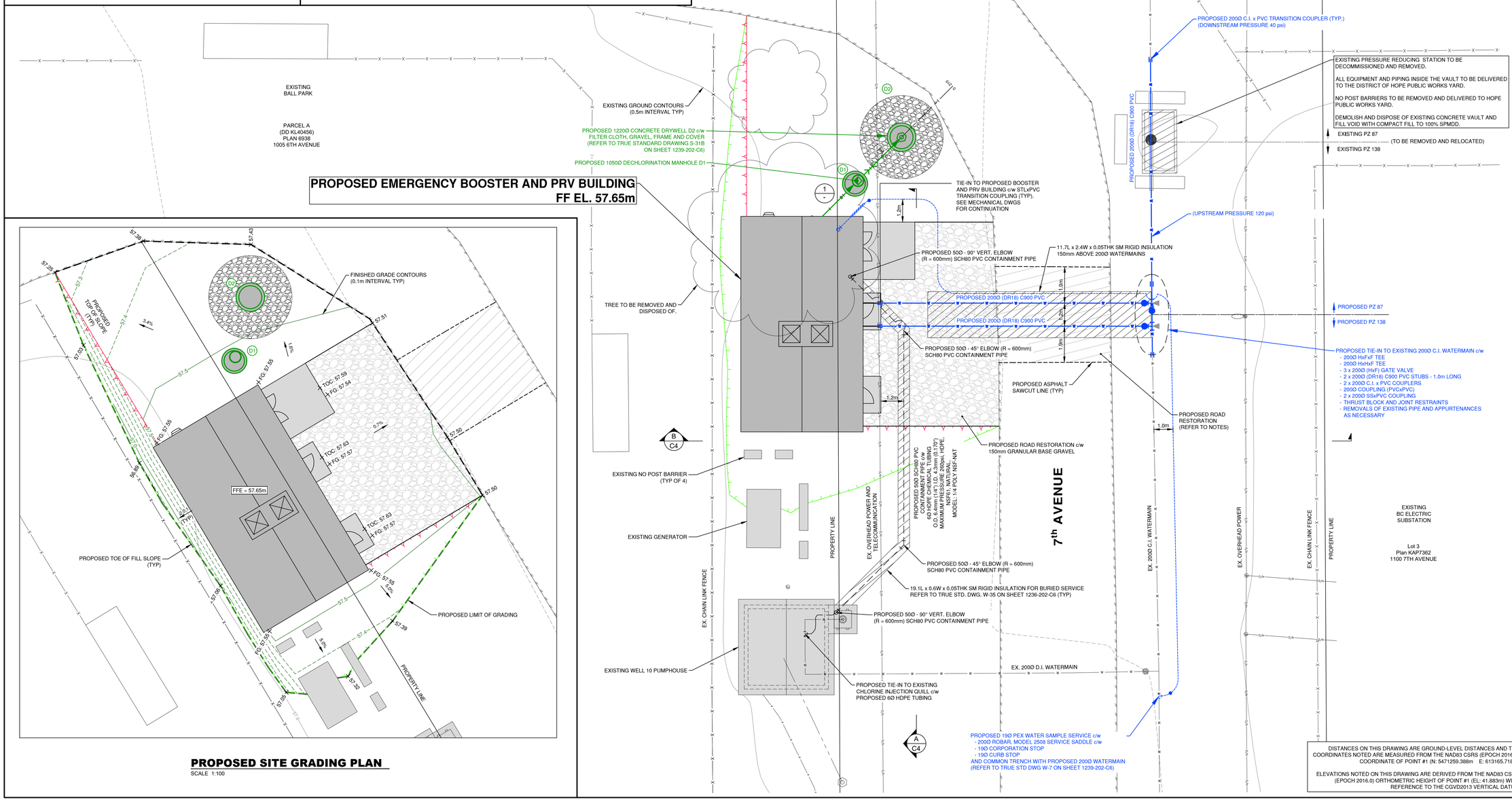
DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

SITE SERVICING, GRADING AND DETAIL 1

SCALE	1:100
DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C2
SHEET	2 OF 6
ISSUE/REV.	5



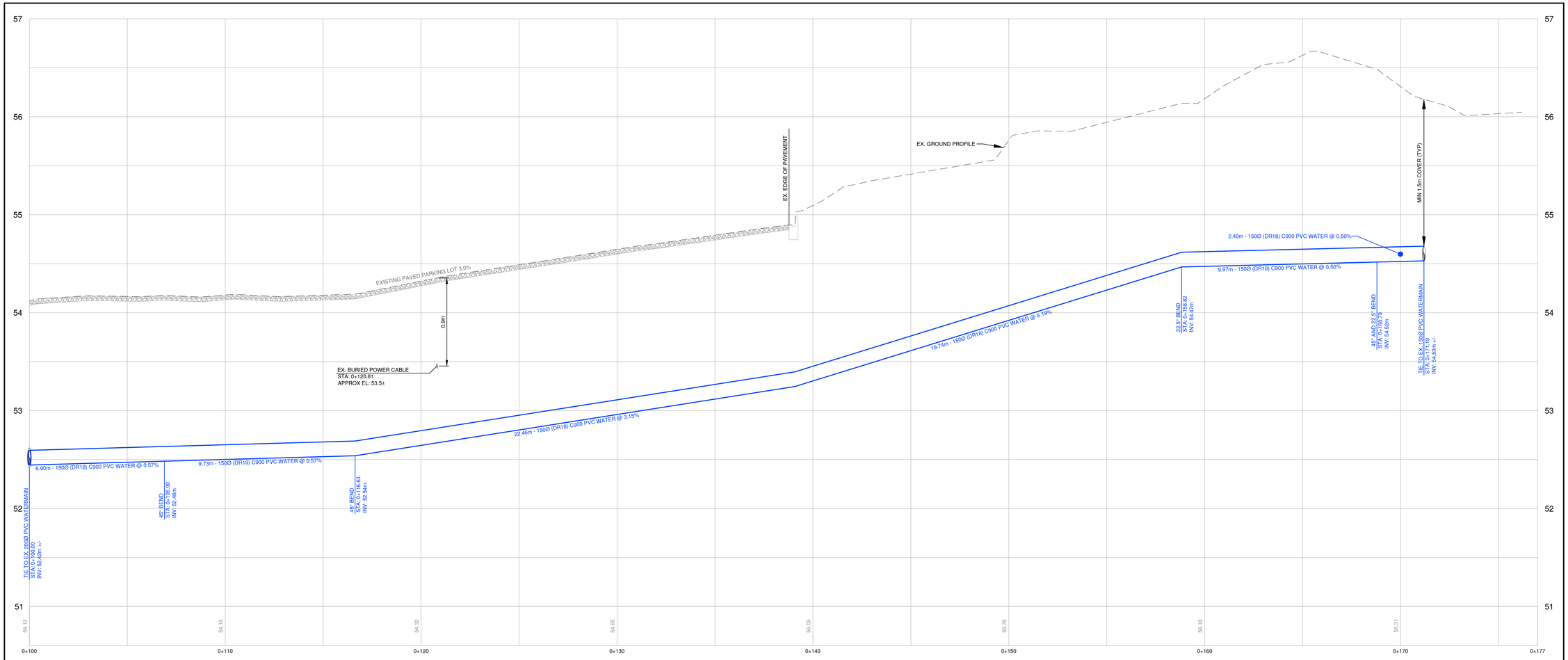
PROPOSED SITE GRADING PLAN

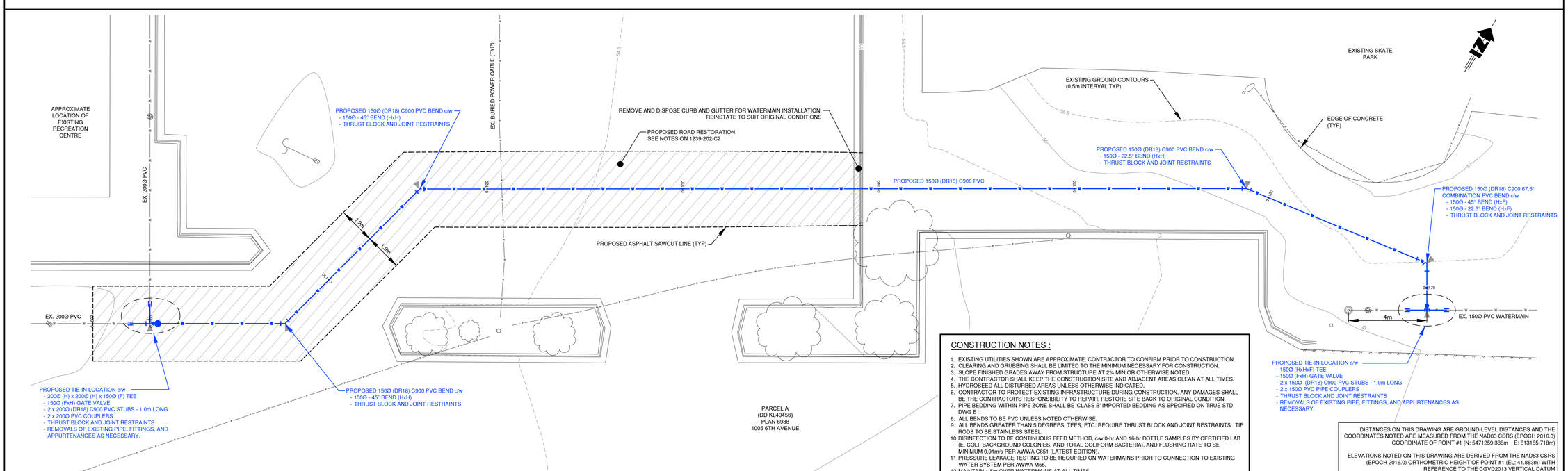
SCALE 1:100

DISTANCES ON THIS DRAWING ARE GROUND-LEVEL DISTANCES AND THE COORDINATES NOTED ARE MEASURED FROM THE NAD83 CSRS (EPOCH 2016.0) COORDINATE OF POINT #1 (N: 5471259.388m E: 613165.718m)

ELEVATIONS NOTED ON THIS DRAWING ARE DERIVED FROM THE NAD83 CSRS (EPOCH 2016.0) ORTHOMETRIC HEIGHT OF POINT #1 (EL: 41.883m) WITH REFERENCE TO THE CGVD2013 VERTICAL DATUM

FILE: P:\active\1000\1239\1239-202\0 drawings\dwg\02 design drawings\dgn\1239-202





CONSTRUCTION NOTES :

1. EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
2. CLEARING AND GRUBBING SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR CONSTRUCTION.
3. SLOPE FINISHED GRADES AWAY FROM STRUCTURE AT 2% MIN OR OTHERWISE NOTED.
4. THE CONTRACTOR SHALL KEEP THE CONSTRUCTION SITE AND ADJACENT AREAS CLEAN AT ALL TIMES.
5. HYDROSEED ALL DISTURBED AREAS UNLESS OTHERWISE INDICATED.
6. CONTRACTOR TO PROTECT EXISTING INFRASTRUCTURE DURING CONSTRUCTION. ANY DAMAGES SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, RESTORE SITE BACK TO ORIGINAL CONDITION.
7. PIPE BEDDING WITHIN PIPE ZONE SHALL BE 'CLASS B' IMPORTED BEDDING AS SPECIFIED ON TRUE STD DWG E1.
8. ALL BENDS TO BE PVC UNLESS NOTED OTHERWISE.
9. ALL BENDS GREATER THAN 5 DEGREES, TEES, ETC. REQUIRE THRUST BLOCK AND JOINT RESTRAINTS. TIE RODS TO BE STAINLESS STEEL.
10. DISINFECTION TO BE CONTINUOUS FEED METHOD, c/w 0-hr AND 16-hr BOTTLE SAMPLES BY CERTIFIED LAB (E. COLI, BACKGROUND COLONIES, AND TOTAL COLIFORM BACTERIA), AND FLUSHING RATE TO BE MINIMUM 0.91m/s PER AWWA C651 (LATEST EDITION).
11. PRESSURE LEAKAGE TESTING TO BE REQUIRED ON WATERMAINS PRIOR TO CONNECTION TO EXISTING WATER SYSTEM PER AWWA M55.
12. MAINTAIN 1.5m OVER WATERMAINS AT ALL TIMES.

DISTANCES ON THIS DRAWING ARE GROUND-LEVEL DISTANCES AND THE COORDINATES NOTED ARE MEASURED FROM THE NAD83 CSRS (EPOCH 2016.0) COORDINATE OF POINT #1 (N: 5471259.388m E: 613165.718m)

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LEGEND

EXISTING	PROPOSED	DESCRIPTION
		ASPHALT ROAD
		GRAVEL ROAD
S	S	SANITARY MAIN
FM	FM	SANITARY FORCEMAIN
		SANITARY MANHOLE
		SERVICE & IC
D	D	STORM MAIN
		STORM DITCH
		STORM CULVERT
		SERVICE & IC
		STORM MANHOLE
		CB - STD & SIDE INLET
		DRYWELL
W	W	WATER MAIN
		SERVICE & CURB STOP
		VALVE
		STANDPIPE
		HYDRANT
G	G	GAS
P	P	POWER
T	T	TEL
C	C	CABLE
SL	SL	ST LIGHT CONDUIT
		POLE & ANCHOR
		STREET LIGHT
		CONTROL MONUMENT
		IRON POST
		TRAVERSE HUB

No.	DATE	DESCRIPTION	BY	APP'D
5	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
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1	FEB 29/24	ISSUED FOR APPROVALS	MBJ	AP

ISSUES / REVISIONS

CONSULTANT SEAL

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2026-11-05

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DISTRICT OF HOPE

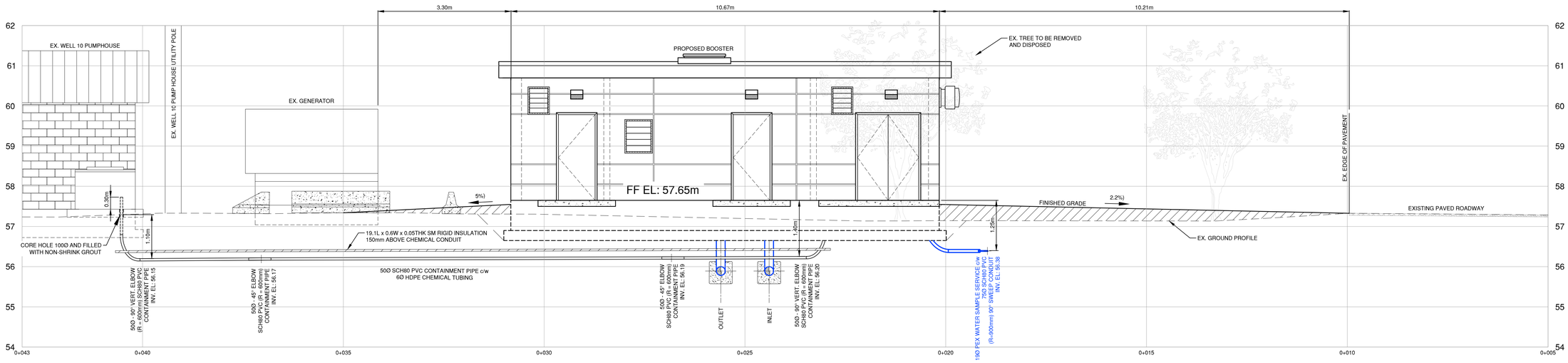
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

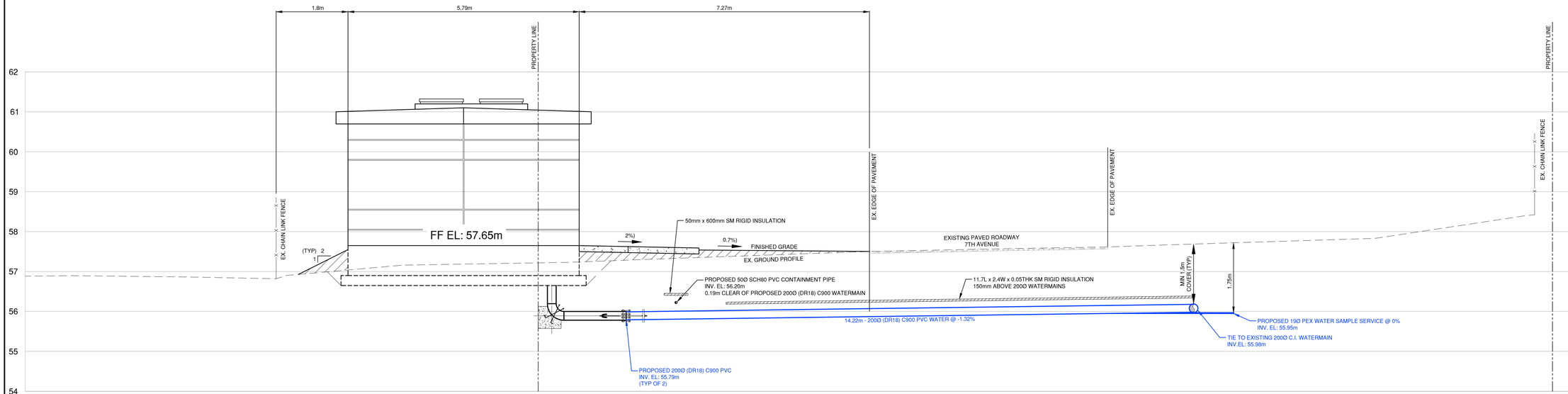
PLAN AND PROFILE 0+100 to 0+177

SCALE	1:100 (H) 1:20 (V)
DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C3
SHEET	3 OF 6
ISSUE/REV.	5

FILE: corwin\1001\1239\1239-202\02 drawings\active design drawings\1239-202



A C2 SECTION
1:50



B C2 SECTION
1:50

DISTANCES ON THIS DRAWING ARE GROUND-LEVEL DISTANCES AND THE COORDINATES NOTED ARE MEASURED FROM THE NAD83 CSRS (EPOCH 2016.0) COORDINATE OF POINT #1 (N: 5471259.388m E: 613165.718m)

ELEVATIONS NOTED ON THIS DRAWING ARE DERIVED FROM THE NAD83 CSRS (EPOCH 2016.0) ORTHOMETRIC HEIGHT OF POINT #1 (EL: 41.911m) WITH REFERENCE TO THE CGVD2013 VERTICAL DATUM

No.	DATE	DESCRIPTION	BY	APPD
5	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
4	APR 22/26	REISSUED FOR APPROVALS	MBJ	AP
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ISSUES / REVISIONS

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DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

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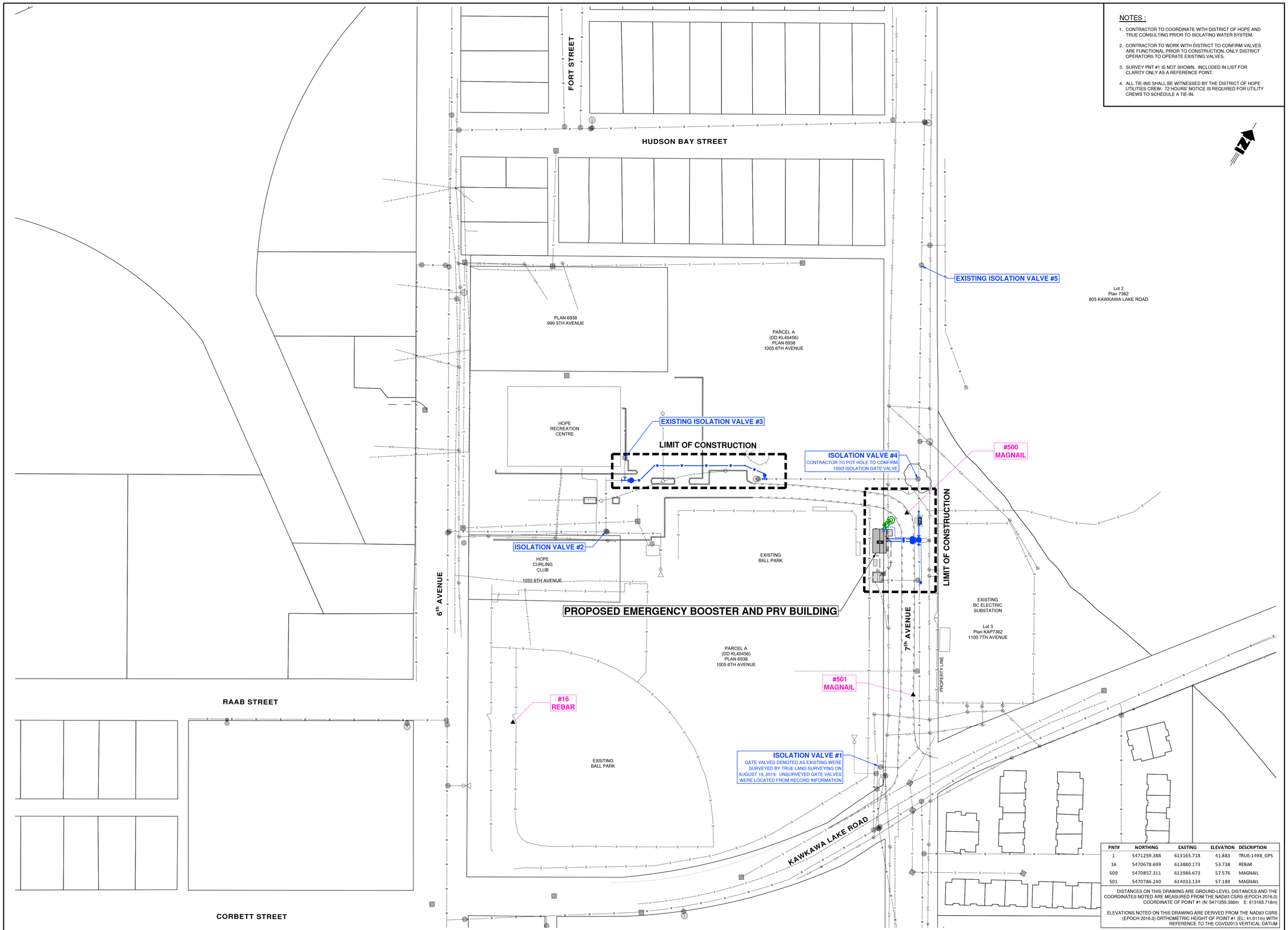
BOOSTER STATION SECTIONS

SCALE	1:50
DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C4
SHEET	4 OF 6
ISSUE/REV.	5

FILE: c:\create\1239\1239-202\1239-202-00 drawings\cad\00 design drawings\1239-202

NOTES :

1. CONTRACTOR TO COORDINATE WITH DISTRICT OF HOPE AND TRUE CONSULTING PRIOR TO ISOLATING WATER SYSTEM.
2. CONTRACTOR TO WORK WITH DISTRICT TO CONFIRM VALVES ARE FUNCTIONAL PRIOR TO CONSTRUCTION. ONLY DISTRICT OPERATORS TO OPERATE EXISTING VALVES.
3. SURVEY PNT #1 IS NOT SHOWN. INCLUDED IN LIST FOR CLARITY ONLY AS A REFERENCE POINT.
4. ALL TIE-INS SHALL BE WITNESSED BY THE DISTRICT OF HOPE UTILITIES CREW. 72 HOURS' NOTICE IS REQUIRED FOR UTILITY CREWS TO SCHEDULE A TIE-IN.



PNT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	5471259.388	613165.718	41.883	TRUE-1498_GPS
16	5470678.699	613880.173	53.738	REBAR
500	5470857.311	613986.673	57.576	MAGNAIL
501	5470786.240	614033.134	57.189	MAGNAIL

DISTANCES ON THIS DRAWING ARE GROUND-LEVEL DISTANCES AND THE COORDINATES NOTED ARE MEASURED FROM THE NAD83 CSRS (EPOCH 2016.0) COORDINATE OF POINT #1 (N: 5471259.388m E: 613165.718m)

ELEVATIONS NOTED ON THIS DRAWING ARE DERIVED FROM THE NAD83 CSRS (EPOCH 2016.0) ORTHOMETRIC HEIGHT OF POINT #1 (EL: 41.911m) WITH REFERENCE TO THE CGVD2013 VERTICAL DATUM

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		ASPHALT ROAD
		GRAVEL ROAD
S	S	SANITARY MAIN
FM	FM	SANITARY FORCEMAIN
		SANITARY MANHOLE
		SERVICE & IC
D	D	STORM MAIN
		STORM DITCH
D	D	STORM CULVERT
		SERVICE & IC
		STORM MANHOLE
		CB - STD & SIDE INLET
		DRYWELL
W	W	WATER MAIN
		SERVICE & CURB STOP
		VALVE
		STANDPIPE
		HYDRANT
G	G	GAS
P	P	POWER
T	T	TEL
C	C	CABLE
SL	SL	ST LIGHT CONDUIT
		POLE & ANCHOR
		STREET LIGHT
		CONTROL MONUMENT
		IRON POST
		TRAVERSE HUB

No.	DATE	DESCRIPTION	BY	APP'D
5	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
4	APR 22/26	REISSUED FOR APPROVALS	MBJ	AP
3	APR 7/26	REISSUED FOR CLIENT REVIEW	MBJ	AP
2	MAR 13/24	ISSUED FOR TENDER	MBJ	AP
1	FEB 29/24	ISSUED FOR APPROVALS	MBJ	AP

ISSUES / REVISIONS

CONSULTANT SEAL

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PROFESSIONAL ENGINEER
A. M. INGLESON
46993
PROVINCE OF BRITISH COLUMBIA
ENGINEER
2026-11-06

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2089 Falcon Road ■ Kamloops BC ■ V2C 4J2
tel 250.828.0881 ■ info@true.ca

DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

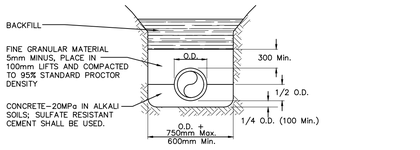
7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

WATER ISOLATION VALVE LOCATIONS

SCALE	1:750
DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C5
SHEET	5 OF 6
ISSUE/REV.	5

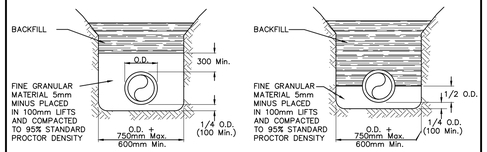
E:\Current\2024\1239\1239-202\05 drawings\dwg\02 design drawings\1239-202-

CLASS "A" BEDDING



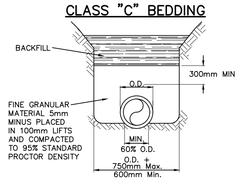
CLASS "B" BEDDING

FOR PVC AND NON REINFORCED CONCRETE PIPE



FOR ALL OTHER PIPE

CLASS "C" BEDDING



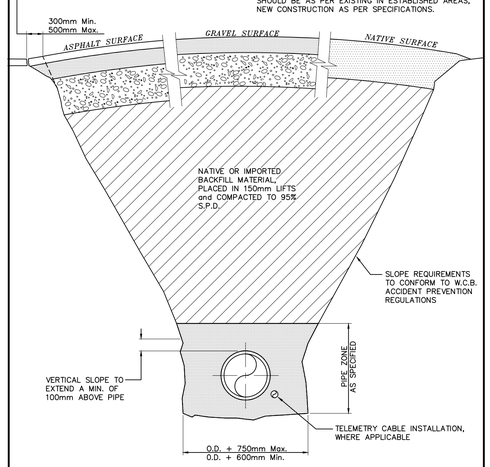
TYPICAL PIPE BEDDING AND BACKFILL WITHIN THE PIPE ZONE

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	E–1
REV.:	
DWN. BY:	DU
DATE:	MAY 1995

ACAD FILENAME: E–1.DWG

ASPHALT TIE
AFTER THE INSTALLATION OF ROAD BASES, SAWCUT EXISTING ASPHALT BACK FROM EXCAVATION EDGE, COMPACT CRUSHED GRAVEL BASE COURSE TO 100% S.P.D. and PAINT CUT EDGE OF ASPHALT WITH AN APPROVED BITUMINOUS BONDING AGENT PRIOR TO ASPHALT PLACEMENT.

SURFACE RESTORATION and SUBSURFACE STRUCTURES SHOULD BE AS PER EXISTING IN ESTABLISHED AREAS, NEW CONSTRUCTION AS PER SPECIFICATIONS.



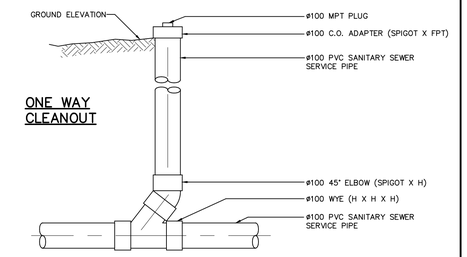
TYPICAL TRENCH SECTION

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	E–2
REV.:	
DWN. BY:	DU
DATE:	MAY 1995

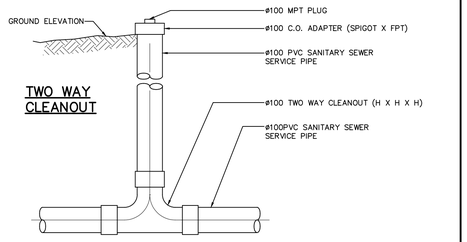
ACAD FILENAME: E–02.DWG

NOTE: ALL FITTINGS SOLVENT WELD

ONE WAY CLEANOUT



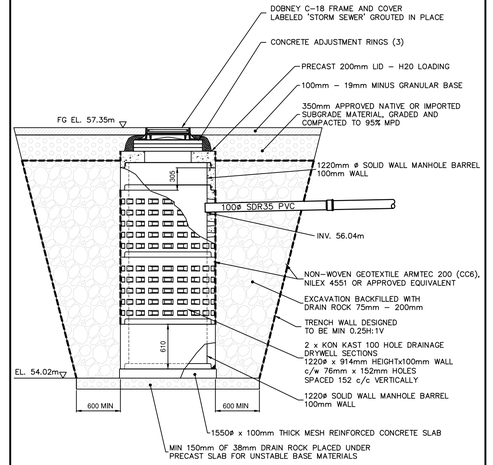
TWO WAY CLEANOUT



SANITARY SEWER SERVICE CLEANOUT ASSEMBLY

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	S–12
REV.:	
DWN. BY:	DU
DATE:	JUNE 1995

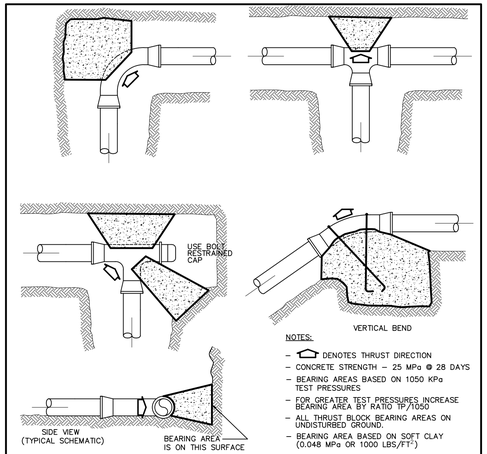
ACAD FILENAME: S–12.DWG



1220ø DRAINAGE DRYWELL

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	S–31B
REV.:	1
DWN. BY:	AZ
DATE:	AUG 25 2020

ACAD FILENAME: S–31.DWG



NOTES:
- DENOTES THRUST DIRECTION
- CONCRETE STRENGTH – 25 MPa @ 28 DAYS
- BEARING AREAS BASED ON 1050 kPa TEST PRESSURES
- FOR GREATER TEST PRESSURES INCREASE BEARING AREA BY RATIO TP/1050
- ALL THRUST BLOCK BEARING AREAS ON UNDISTURBED GROUND.
- BEARING AREA BASED ON SOFT CLAY (0.048 MPa OR 1000 LBS/FT^2)

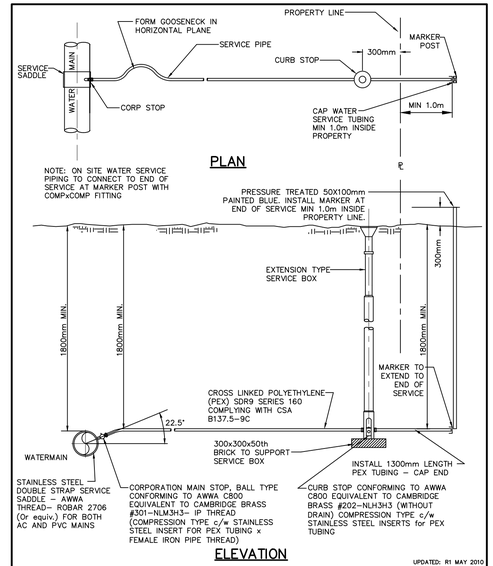
THRUST BLOCK BEARING AREA IN m^2

PIPE SIZE	TEES/ DEAD ENDS	90° BENDS	45° BENDS & VERTICAL BEND	22 1/2° BEND & SMALLER
100	0.2	0.3	0.15	0.1
150	0.4	0.6	0.30	0.15
200	0.7	1.0	0.55	0.30
250	1.2	1.6	0.9	0.45
300	1.6	2.2	1.2	0.60

TYPICAL THRUST BLOCK DETAILS

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	W–3
REV.:	
DWN. BY:	DU
DATE:	MARCH 1995

ACAD FILENAME: W–3.DWG

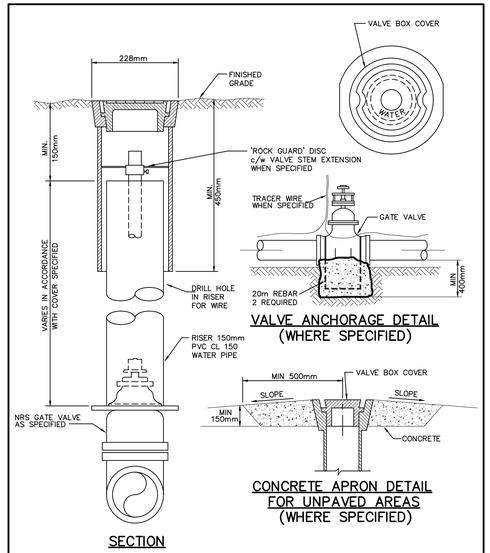


UPDATED: R1 MAY 2010

TYPICAL WATER SERVICE

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	W–7
REV.:	1
DWN. BY:	DU
DATE:	MAY 1995

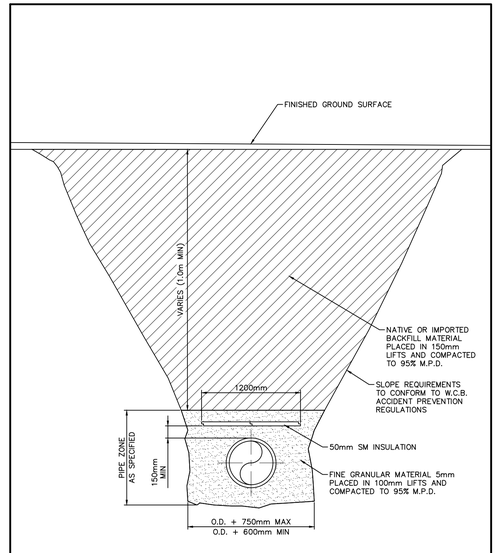
ACAD FILENAME: W–7.DWG



TYPICAL VALVE BOX DETAILS c/w ROCK GUARD

CHK. BY:	
DATE:	
SCALE:	NTS
DWG. NO.:	W–10
REV.:	
DWN. BY:	DU
DATE:	MAY 1995

ACAD FILENAME: W–10.DWG



TYPICAL INSULATED FORCEMAIN INSTALLATION DETAIL FOR FORCEMAINS LESS THAN 600Ø

DSGN. BY:	
SCALE:	NTS
DWG. NO.:	W–35
REV.:	
DWN. BY:	SC
DATE:	AUG 10,2011

FILE: T:\clients\DOH\1200-1299\1239\1239-202\03 drawings\dist\cr design drawings\dn-1239-202.dwg

No.	DATE	DESCRIPTION	BY	APP'D
5	NOV 4/26	ISSUED FOR TENDER	MBJ	AP
4	APR 22/25	REISSUED FOR APPROVALS	MBJ	AP
3	APR 7/26	REISSUED FOR CLIENT REVIEW	MBJ	AP
2	MAR 13/24	ISSUED FOR TENDER	MBJ	AP
1	FEB 29/24	ISSUED FOR APPROVALS	MBJ	AP

ISSUES / REVISIONS

CONSULTANT SEAL

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DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

STANDARD DRAWINGS

SCALE	
DESIGN BY	AP/DH
DRAWN BY	MBJ
DATE	MARCH 13, 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202- C6
SHEET	6 OF 6
ISSUE/REV.	5

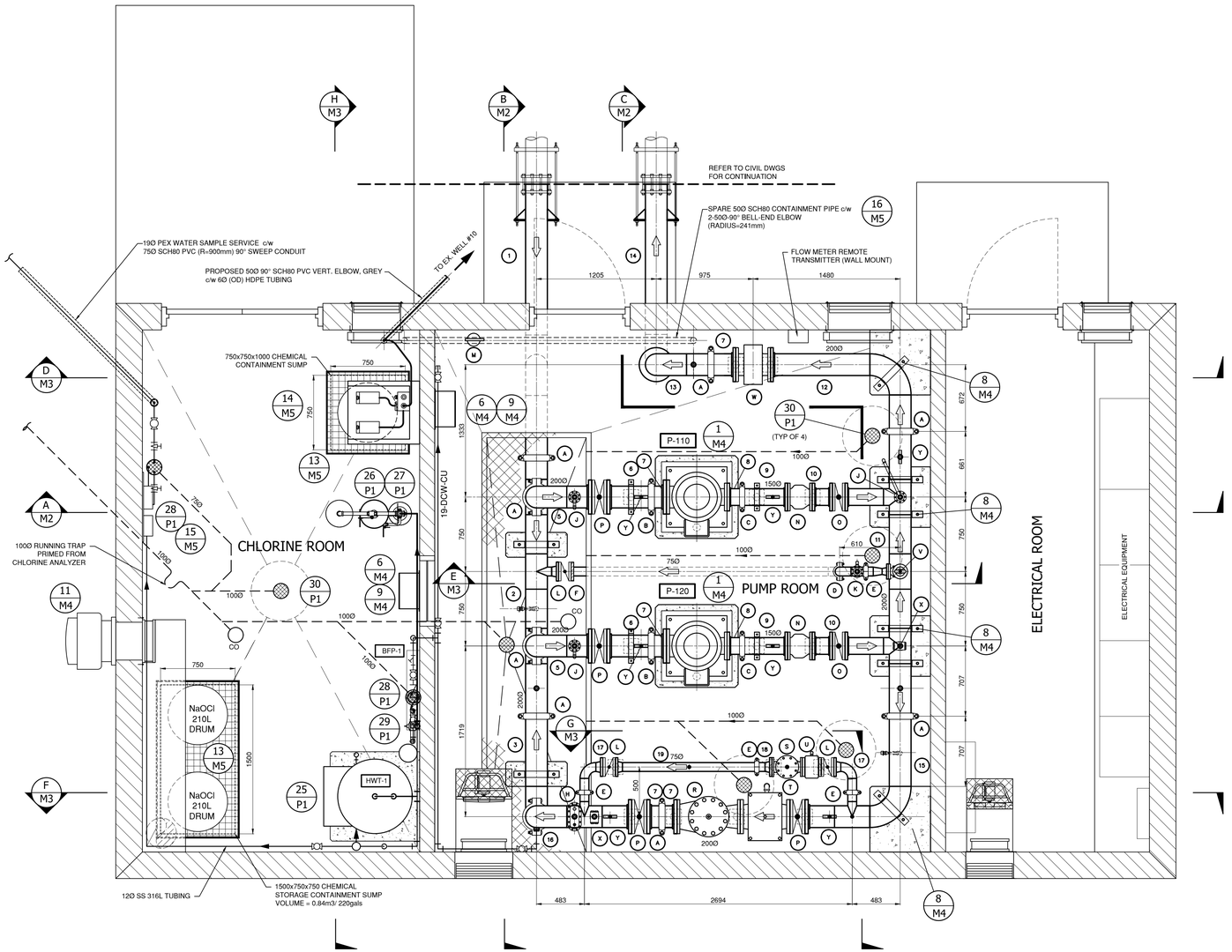
P:\E Condition\DOH\1200-1299\1239\1239-202\03 drawings\dist\cr design drawings\dn-1239-202.dwg

BOOSTER PUMP SCHEDULE

	BOOSTER PUMP	
P-110	VERTICAL TURBINE PUMP c/w SUCTION BARREL - REFER TO SPECIFICATION: SECTION 33 12 23	1
P-120	VERTICAL TURBINE PUMP c/w SUCTION BARREL - REFER TO SPECIFICATION: SECTION 33 12 23	1

EQUIPMENT SCHEDULE

ITEM	EQUIPMENT	QTY
A	200Ø GROOVED RIGID COUPLING - GASKET: GRADE "P" FLUOROELASTOMER (CERTIFIED NSF/ANSI-61) - BOLTS / NUTS: ASTM F594, GROUP 2 (316 SS) - HOUSING: DUCTILE IRON CONFORMING TO ASTM A536, Gr.65-45-12 - HOUSING COATING: HOT DIPPED GALVANIZED - MAXIMUM WORKING PRESSURE: 400 psi MANUFACTURER: VICTAULIC, STYLE 807N or approved equal	9
B	200Ø GROOVED FLEXIBLE COUPLING - GASKET: GRADE "E" EPDM (CERTIFIED: NSF/ANSI-61) - BOLTS / NUTS: ASTM F594, GROUP 2 (316 SS) - HOUSING: TYPE 316SS, ASTM-A351, A743, AND A744 GRADE CF8M - MAXIMUM WORKING PRESSURE: 300 PSI MANUFACTURER: VICTAULIC, STYLE 77S or approved equal	2
C	150Ø GROOVED FLEXIBLE COUPLING - GASKET: GRADE "E" EPDM (CERTIFIED: NSF/ANSI-61) - BOLTS / NUTS: ASTM F594, GROUP 2 (316 SS) - HOUSING: TYPE 316SS, ASTM-A351, A743, AND A744 GRADE CF8M - MAXIMUM WORKING PRESSURE: 300 PSI MANUFACTURER: VICTAULIC, STYLE 77S or approved equal	2
D	75Ø GROOVED FLEXIBLE COUPLING - GASKET: GRADE "E" EPDM (CERTIFIED: NSF/ANSI-61) - BOLTS / NUTS: ASTM F594, GROUP 2 (316 SS) - HOUSING: TYPE 316SS, ASTM-A351, A743, AND A744 GRADE CF8M - MAXIMUM WORKING PRESSURE: 750 PSI MANUFACTURER: VICTAULIC, STYLE 77S or approved equal	1
E	75Ø GROOVED RIGID COUPLING - GASKET: GRADE "P" FLUOROELASTOMER (CERTIFIED NSF/ANSI-61) - BOLTS / NUTS: ASTM F594, GROUP 2 (316 SS) - HOUSING: DUCTILE IRON CONFORMING TO ASTM A536, Gr.65-45-12 - HOUSING COATING: HOT DIPPED GALVINIZED - MAXIMUM WORKING PRESSURE: 300 psi MANUFACTURER: VICTAULIC, STYLE 807N or approved equal	4
F	75Ø GROOVED FLANGE ADAPTER - GASKET: GRADE "E" EPDM (CERTIFIED: NSF/ANSI-61) - HOUSING: TYPE 316 STAINLESS STEEL, CONFORMING TO A351/A351M GRADE CF8M - MAX WORKING PRESSURE: 275 psi MANUFACTURER: VICTAULIC, STYLE 441 or approved equal	1
G	50Ø ADJUSTABLE PIPE SUPPORT (SADDLE AND FLANGE) - 50Ø SCH40 STEEL PIPE - EXTERIOR COATING: HOT DIPPED GALVANIZED - ANCHOR TO FLOOR SLAB WITH GROUT PAD - REFER TO DETAIL 2 / M4 MANUFACTURER: ROBAR INDUSTRIES, STANDON or approved equal	15
H	25Ø COMBINATION AIR VALVE - DUCTILE IRON BODY AND COVER - FUSHION BONDED EPOXY COATED AND LINED - EPDM SEAT - 5 / 64" VENTING ORIFICE - 316 STAINLESS STEEL TRIM - 316 STAINLESS STEEL FLOATS - 316 STAINLESS STEEL FASTENERS - CONNECTION: THREADED INLET AND OUTLET - MAX COLD WORKING PRESSURE: 300 psi - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: VAL-MATIC or approved equal	1
J	25Ø AIR RELEASE VALVE - BODY AND COVER: DUCTILE IRONON - FUSHION BONDED EPOXY COATED AND LINED - 316 STAINLESS STEEL TRIM - EPDM SEAT - 1 / 16" VENTING ORIFICE - CONNECTION: THREADED INLET AND OUTLET - MAX COLD WORKING PRESSURE: 175 psi - CERTIFIED: NSF-61 FOR DRINKING WATER - PROVIDE AIR VENT SS TUBING TO 150mm ABOVE FLOOR MANUFACTURER: VAL-MATIC or approved equal	3
K	19Ø AIR RELEASE VALVE - BODY AND COVER: DUCTILE IRON - FUSION BONDED EPOXY COATED AND LINED - 316 STAINLESS STEEL TRIM - EPDM SEAT - 1 / 16" VENTING ORIFICE - CONNECTION: THREADED INLET AND OUTLET - MAX COLD WORKING PRESSURE: 175 psi - CERTIFIED: NSF-61 FOR DRINKING WATER - PROVIDE AIR VENT SS TUBING TO 150mm ABOVE FLOOR MANUFACTURER: VAL-MATIC or approved equal	1
L	75Ø BUTTERFLY VALVE 250B/CLASS 125#, AWWA C504 & C516 - BODY: DUCTILE IRON - BODY SEAT: BUNA-N - DISC: DUCTILE IRON, 316SS RETAINING RING - RESILIENT SEAT: SEAT ON DISC - SHAFT: STAINLESS STEEL 304SS - SHAFT SEAL: V-TYPE PACKING - MANUAL ACTUATOR WITH HANDWHEEL - FINISH: FUSION BONDED EPOXY INSIDE AND OUT - MAX WORKING PRESSURE: 250 PSI - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: VAL-MATIC or approved equal	4
M	10 lbs FIRE EXTINGUISHER - ULC LABELLED FOR A, B, AND C CLASS PROTECTION - STEEL CYLINDER WITH WALL BRACKET - INSTALL 1.22m ABOVE FLOOR	1
N	150Ø SILENT CHECK VALVE (LEAD FREE) - DUCTILE IRON BODY - FLANGE END CONNECTIONS - EPOXY COATED AND LINED - BUNA-N SEAT - STAINLESS STEEL DISC - STAINLESS STEEL TRIM - STAINLESS STEEL SPRING - MAX COLD WORKING PRESSURE: 250 psi - CERTIFIED: NSF/ANSI 61 FOR DRINKING WATER MANUFACTURER: VAL-MATIC or approved equal	2
O	150Ø BUTTERFLY VALVE 250B/CLASS 125#, AWWA C504 & C516 - BODY: DUCTILE IRON - BODY SEAT: BUNA-N - DISC: DUCTILE IRON, 316SS RETAINING RING - RESILIENT SEAT: SEAT ON DISC - SHAFT: STAINLESS STEEL 304SS - SHAFT SEAL: V-TYPE PACKING - MANUAL ACTUATOR WITH HANDWHEEL - FINISH: FUSION BONDED EPOXY INSIDE AND OUT - MAX WORKING PRESSURE: 250 PSI - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: VAL-MATIC or approved equal	2
P	200Ø BUTTERFLY VALVE 250B/CLASS 125#, AWWA C504 & C516 - BODY: DUCTILE IRON - BODY SEAT: BUNA-N - DISC: DUCTILE IRON, 316SS RETAINING RING - RESILIENT SEAT: SEAT ON DISC - SHAFT: STAINLESS STEEL 304SS - SHAFT SEAL: V-TYPE PACKING - MANUAL ACTUATOR WITH HANDWHEEL - FINISH: FUSION BONDED EPOXY INSIDE AND OUT - MAX WORKING PRESSURE: 250 PSI - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: VAL-MATIC or approved equal	4
Q	STAINLESS STEEL ISOLATION BALL VALVE - SIZE: 6Ø TO 50Ø (AS INDICATED ON DRAWINGS) - FULL PORT, BLOWOUT-PROOF STEM, ADJUSTABLE PACKING GLAND - CF8M STAINLESS STEEL BODY AND BALL - R-PTFE (PTFE) SEAT - STAINLESS STEEL LOCKING LEVER HANDLE WITH VINYL GRIP - NPT ENDS TO ANSI B1.20.1 - MINIMUM PRESSURE RATING: 1000 psi - STAINLESS STEEL ISOLATION BALL VALVES, NIPPLES, BENDS, TEES AND BUSHING AS REQUIRED. - CERTIFIED: NSF61 FOR DRINKING WATER MANUFACTURERS: BRAY, SERIES S85, APOLLO, SERIES 76F-100-A or approved equal	-
R	200Ø PRESSURE REDUCING WITH DOWNSTREAM SURGE CONTROL - GLOBE PATTERN, REDUCED PORT, FLAT DIAGPRAM DESIGN - DUCTILE IRON BODY & COVER - ANSI CLASS 150 FLANGED ENDS - FUSION BONDED EPOXY LINED AND COATED - STAINLESS STEEL SEAT, STEM AND FASTENERS - CLOSING SPEED CONTROL - VALVE STEM POSITION INDICATOR - STAINLESS STEEL BRAIDED HOSE AND FITTINGS - STAINLESS STEEL BALL VALVES AND STRAINER - PRESSURE REDUCE PILOT RANGE 20-200psi, SET @ ____ psi (TBD) - DOWNSTREAM SURGE PILOT RANGE 20-200psi, SET @ ____ psi (TBD) - RIGHT HAND MOUNT PILOT SYSTEM - COMMISSIONING BY MANUFACTURER'S FIELD SERVICE TECHNICIAN - MAX WORKING PRESSURE: 250 PSI - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURERS: CLA-VAL 69-01 or SINGER VALVE	1
S	75Ø PRESSURE REDUCING - GLOBE PATTERN, FULL PORT, FLAT - DUCTILE IRON BODY & COVER - ANSI CLASS 150 FLANGED ENDS - FUSION BONDED EPOXY LINED AND COATED - STAINLESS STEEL SEAT, STEM AND FASTENERS - OPENING SPEED CONTROL - VALVE STEM POSITION INDICATOR - STAINLESS STEEL BRAIDED HOSE AND FITTINGS - STAINLESS STEEL BALL VALVES AND STRAINER - PILOT RANGE 20-200psi, SET @ ____ psi (TBD) - RIGHT HAND MOUNT PILOT SYSTEM - COMMISSIONING BY MANUFACTURER'S FIELD SERVICE TECHNICIAN - MAX WORKING PRESSURE: 250 PSI - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURERS: CLAV-VAL 94-01 or SINGER VALVE	1
T	200Ø INLINE STRAINER - STAINLESS STEEL STRAINER - DUCTILE IRON BODY AND COVER - CLASS 150 FLANGE ENDS - EPDM COVER SEAT - FUSION BONDED EPOXY LINED AND COATED - STAINLESS STEEL FASTENER - 316SS SCREEN w/ 0.16" PERFORATIONS - MAX WORKING PRESSURE: 250 PSI - PROVIDE 12mm STAINLESS STEEL DRAIN VALVE, FITTINGS AND END CAP - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: CLA-VAL X43H OR APPROVED EQUAL	1
U	75Ø INLINE STRAINER - STAINLESS STEEL STRAINER - DUCTILE IRON BODY AND COVER - CLASS 150 FLANGE ENDS - EPDM COVER SEAT - FUSION BONDED EPOXY LINED AND COATED - STAINLESS STEEL FASTENER - 316SS SCREEN w/ 0.16" PERFORATIONS - MAX WORKING PRESSURE: 250 PSI - PROVIDE 12mm STAINLESS STEEL DRAIN VALVE, FITTINGS AND END CAP - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: CLA-VAL XH43 OR APPROVED EQUAL	1
V	50Ø PRESSURE RELIEF VALVE - ANGLE PATTERN, FULL PORT, FLAT DIAPHRAGM - DUCTILE IRON BODY AND COVER - FUSION BONDED EPOXY LINED AND COATED - FLANGED ENDS, CLASS 150 CONNECTIONS - BUNA-N RUBBER - STAINLESS STEEL SEAT, STEM AND FASTENERS - VALVE STEM POSITION INDICATOR - CLOSING SPEED CONTROL - STAINLESS STEEL BRAIDED HOSE AND FITTINGS - STAINLESS STEEL BALL VALVES AND STRAINER - RIGHT HAND MOUNT PILOT SYSTEM - HP PILOT RANGE 20 -200 psi, *SET @ 135 psi* - COMMISSIONING BY MANUFACTURER'S FIELD SERVICE TECHNICIAN MANUFACTURER: CLA-VAL 50-13 OR APPROVED EQUAL	1
W	200Ø ELECTROMAGNETIC FLOW METER - FLOW TUBE: TYPE 304 STAINLESS STEEL - LINING MATERIAL: POLYURETHANE - FLANGE MATERIAL: CARBON STEEL SLIP-ON FLANGE - FLANGE CONNECTION: ASME B16.5 ANSI (RF) CLASS 150 - MEASURING ELECTRODE MATERIAL: 316L SST - TRANSMITTER: REMOTE (WALL MOUNT) - ACCURACY: 0.5% OF AVERAGE VELOCITY FLOW RANGE - OUTPUTS: 4-20mA (HART PROTOCOL) - COMMUNICATION: 4-20mA - POWER SUPPLY: 24VDC - MAX WORKING PRESSURE: 285 psi - RATING: CSA CLASS 1 DIV 2 - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: ENDRESS+HAUSER, MODEL PROMAG W400, ROSEMOUNT, MODEL 8750, YOKOGAWA MODEL AXW or approved equal	1
X	PRESSURE TRANSMITTER - TRANSMITTER TYPE: GAUGE - PRESSURE RANGE: (REFER TO DETAIL 4 / M4) - OUTPUTS: 4-20 mA, HART PROTOCOL - METER: LCD, SCALED 0-___ psi (TBD) - CONSTRUCTION: STAINLESS STEEL - PROCESS CONNECTION: 12mm NPT - POWER SUPPLY: 24VDC - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: ENDRESS+HAUSE, MODEL CERABAR PMC71, ROSEMOUNT, MODEL 2008G, YOKOGAWA MODEL EJA or approved equal	2
Y	100Ø PRESSURE GAUGE - CASE: AISI 304 STAINLESS STEEL, BOTTOM MOUNT - WINDOW: POLYCARBONATE SAFETY GLASS WITH SILICONE GASKET - DIAL: WHITE ALUMINUM WITH BLACK AND RED LETTERING - DUAL SCALE psi/kPa - PRESSURE RANGE: (REFER TO DETAIL 5 / M4) - POINTER: BLACK ALUMINUM ANODIZED - MOVEMENT: 304 STAINLESS STEEL - BOURDON TUBE: AISI 316 STAINLESS STEEL - ACCURACY ±1.5% OF FULL SCALE (ASME B40.100 GRADE 1A) - LIQUID: GLYCERINE FILLED - VENTABLE PLUG. FILL PLUG BUNA N - ENCLOSURE RATING: IP65 - CONNECTION: 6mm NPT - CERTIFIED: NSF-61 FOR DRINKING WATER MANUFACTURER: WIKA, MODEL 213.53DW or approved equal	7



FLOOR PLAN

SCALE 1:25

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. CONTRACTOR TO CONFIRM ALL DIMENSIONS PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO CONFIRM ALL MECHANICAL EQUIPMENT AND PRESSURE PIPE ARE ANSI/NSF-61 APPROVED FOR USE IN POTABLE WATER SYSTEMS PRIOR TO SHOP DRAWING SUBMISSION.
3. PRESSURE CONTROL VALVES SHALL BE INSPECTED, TESTED, AND COMMISSIONED BY THE MANUFACTURER'S FIELD SERVICE TECHNICIAN.
4. CONTRACTOR TO CONFIRM EQUIPMENT SCHEDULE ITEMS AND QUANTITIES, AND TO INCLUDE ALL ITEMS NOT LISTED.
5. DESIGN: MAXIMUM DESIGN WORKING PRESSURE: 250 PSI
6. THREADOLETS SHALL BE 3000 POUND WOG PER ASTM A105 OR ASTM A216 GRADE WCB. THREADS SHALL COMPLY WITH ASME B1.20.1 NPT c/w THREADED STAINLESS STEEL BALL VALVE UNLESS OTHERWISE NOTED.
7. BOLTS SHALL BE IN ACCORDANCE WITH GRADE B8M ASTM A193 AND SHALL HAVE REGULAR, UNFINISHED HEXAGONAL HEAD DIMENSIONS. NUTS SHALL BE IN ACCORDANCE WITH GRADE 8MA (ANNEALED) ASTM A194 AND SHALL HAVE REGULAR, UNFINISHED HEXAGONAL HEAD DIMENSIONS. SAE STAINLESS STEEL WASHERS USED THROUGHOUT ASSEMBLY.
8. ALL GASKETS SHALL BE GARLOCK MULTI-SWELL STYLE 3760U (NSF61 CERTIFIED) FOR POTABLE WATER SERVICE WITH WORKING PRESSURE UP TO 500 psi OR APPROVED EQUAL.
9. PROVIDE FULL FACE GASKETS FOR FLAT FACED FLANGES. PROVIDE RING TYPE GASKETS FOR RAISED FACE FLANGES.
10. ALL FLANGE CONNECTIONS TO BE SUPPLIED WITH BOLT, NUT, WASHER AND GASKET SET.
11. ALL MATING FLANGES TO MATCH. IE. RAISED FACE (RF) WITH RAISED FACE (RF) & FLAT FACE (FF) WITH FLAT FACE (FF).
12. SMALL DIAMETER PIPE AND FITTINGS FROM 12mm TO 50mm SHALL BE:
    - PIPE: SCH40S SMLS THREADED, ASTM A312 STAINLESS STEEL 316
    - FITTINGS: ANSI CLASS 150, THREADED STAINLESS STEEL 316L, ASTM-A-182
    - JOINTS: THREADED ANSI B16.3
    - MAXIMUM PRESSURE RATING: 150 PSI
13. CONTRACTOR SHALL PROVIDE CONCRETE CONSTRUCTION WATERSTOP JOINT FOR ALL PRESSURE PIPE PENETRATIONS.
14. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ALL PIPING SPOOLS AND EQUIPMENT.
15. PRESSURE CONTROL VALVES ARE SHOWN WITH SUGGESTED FACTORY PRESSURE SET POINTS AND ARE SUBJECT TO CHANGE BASED ON ACTUAL FIELD OPERATING CONDITIONS. FACTORY PRESSURE SET POINTS SHALL BE ADJUSTED BY THE MANUFACTURER'S FIELD SERVICE TECHNICIAN.
16. ALL PRESSURE PIPE UNDER FLOOR SLAB SHALL HAVE A VERTICAL THRUST BLOCK AS PER TRUE STANDARD DRAWING No. W-3
17. PLUMBING FLOOR DRAIN TRAPS ARE NOT REQUIRED. THE RUNNING TRAP WILL BE PRIMED FROM THE CHLORINE ANALYZER.
18. PLUMBING REFER TO DRAWING 1239-202-P1.

No.	DATE	DESCRIPTION	BY	APPD
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3	MAR 13/24	ISSUED FOR TENDER	DH	AP
2	FEB 29/24	ISSUED FOR APPROVALS	DH	AP
1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

CONSULTANT SEAL

Permit to Practice/PA - 1000129
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DISTRICT OF HOPE

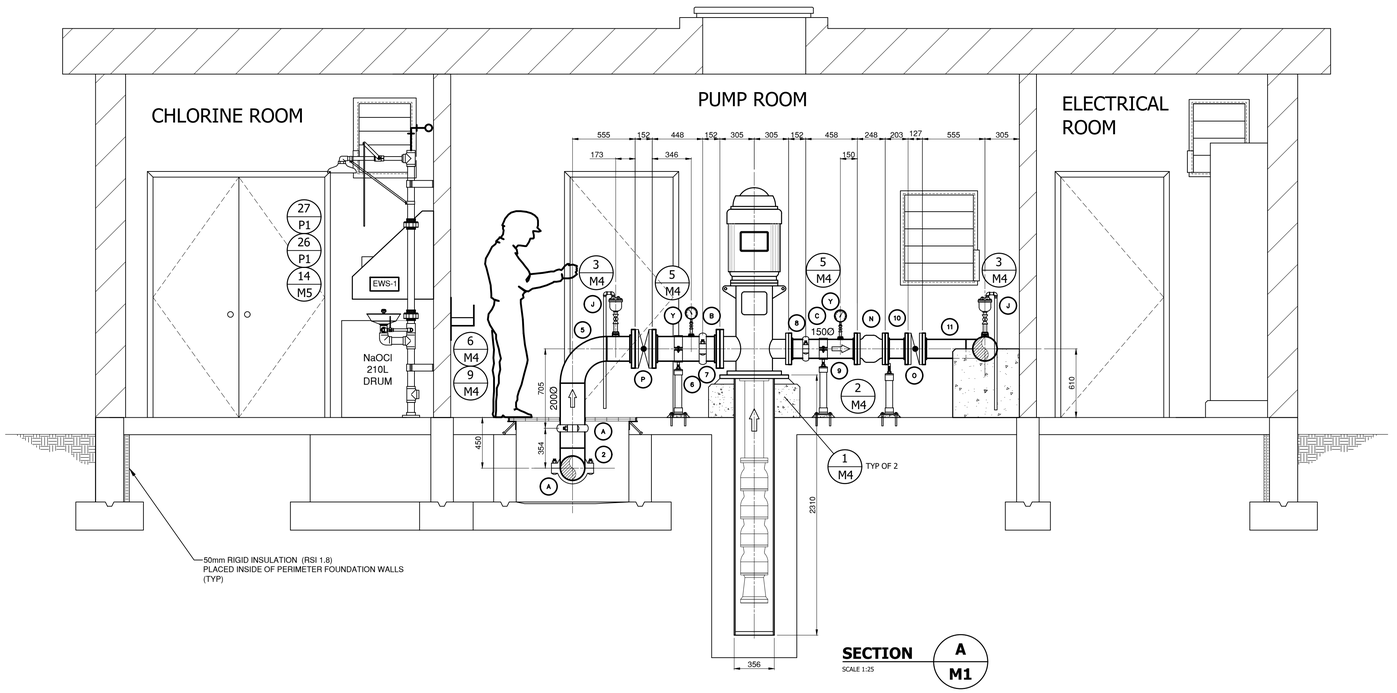
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

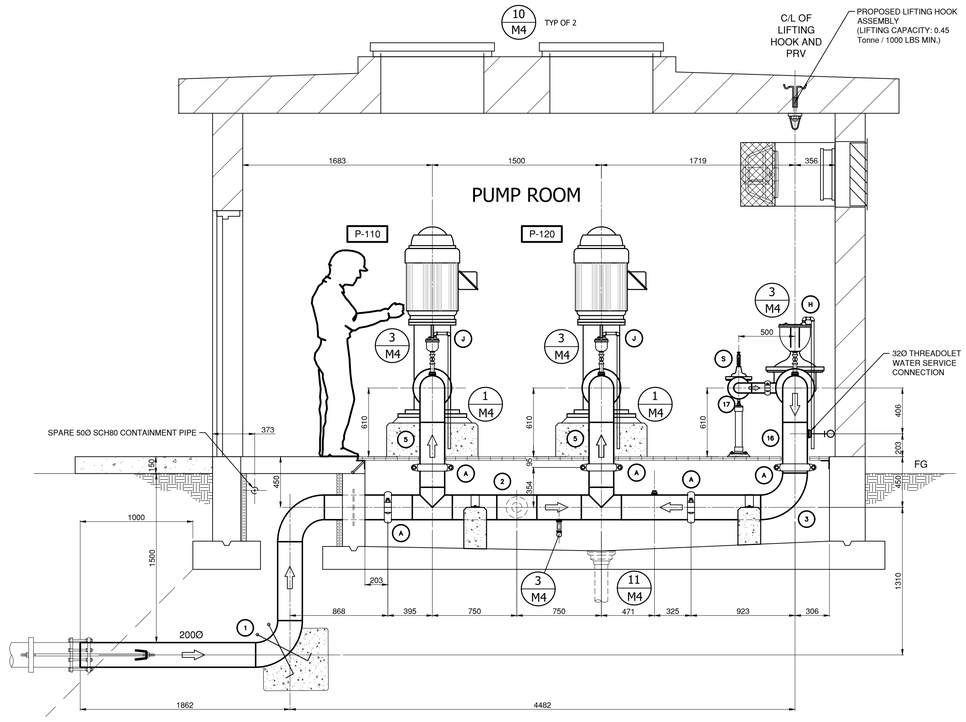
FLOOR PLAN

SCALE	1:25
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-M1
SHEET	1 OF 5
ISSUE/REV.	6

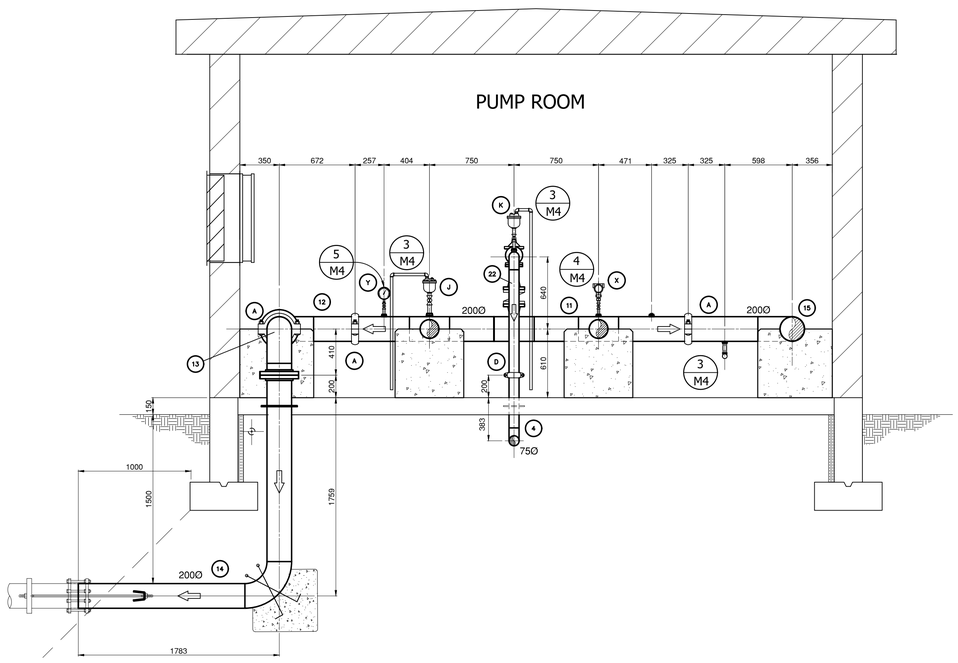
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SECTION A / M1
SCALE 1:25



SECTION B / M1
SCALE 1:25



SECTION C / M1
SCALE 1:25

PIPING AND FITTING SCHEDULE

ITEM	PIPE AND FITTINGS	QTY
1	200Ø STEEL SPOOL (PExGE) - 2-200Ø 90° WELD VERT BEND (LR) - 200Ø THRUST FLANGE - 2 - LUG EARS (19Ø SS TIE-RODS TO SUIT) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
2	200Ø STEEL SPOOL (GExGExFxGExGE) - 2 - 200x200x200 WELD TEE - 200x200x75 WELD REDUCING TEE - 75Ø WELD NECK FLANGE, CLASS 150 - 25Ø THREADOLET (SPARE ON TOP) - 19Ø THREADOLET (DRAIN) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
3	200Ø STEEL SPOOL (GExGE) - 200Ø 90° WELD VERT BEND (LR) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
4	75Ø STEEL SPOOL (GExGE) - 2 - 75Ø THRUST PLATE - 75Ø 90° WELD VERT BEND (LR) - 75Ø SCH40, 304L STAINLESS STEEL PIPE	1
5	200Ø STEEL SPOOL (GExF) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200Ø 90° WELD VERT BEND (LR) - 25Ø THREADOLET (ARV) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	2
6	200Ø STEEL SPOOL (FxGE) - 200Ø SLIP-ON FLANGE, CLASS 150 - 12Ø THREADOLET (PI) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	2
7	200Ø STEEL SPOOL (GExF) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200Ø SCH40, 304L STAINLESS STEEL PIPE	5
8	150Ø STEEL SPOOL (FxGE) - 150Ø SLIP-ON FLANGE, CLASS 150 - 150Ø SCH40, 304L STAINLESS STEEL PIPE	2
9	150Ø STEEL SPOOL (GExF) - 150Ø SLIP-ON FLANGE, CLASS 150 - 12Ø THREADOLET (PI) - 150Ø SCH40, 304L STAINLESS STEEL PIPE	2
10	150Ø STEEL SPOOL (FxF) - 2 - 150Ø SLIP-ON FLANGE, CLASS 150 - 150Ø SCH40, 304L STAINLESS STEEL PIPE	2
11	200Ø STEEL SPOOL (GExGExFxFxF) - 2 - 150Ø SLIP-ON FLANGE, CLASS 150 - 75Ø WELD NECK FLANGE, CLASS 150 - 2- 200x200x150 WELD REDUCING TEE - 200x200x75 WELD REDUCING TEE - 25Ø THREADOLET (ARV) - 25Ø THREADOLET (SPARE) - 19Ø THREADOLET (PT) - 12Ø THEADOLET (PI) - 150Ø SCH40, 304L STAINLESS STEEL PIPE - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
12	200Ø STEEL SPOOL (GExF) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200Ø 90° WELD BEND (LR) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
13	200Ø STEEL SPOOL (GExF) - 2-200Ø SLIP-ON FLANGE, CLASS 150 - 200Ø 90° WELD VERT BEND (LR) - 25Ø THREADOLET (SPARE) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
14	200Ø STEEL SPOOL (FxPE) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200Ø THRUST FLANGE - 200 90° WELD VERT BEND (LR) - 2 - LUG EARS (19Ø SS TIE-RODS TO SUIT) - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
15	200Ø STEEL SPOOL (GExFxGE) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200x200x75 WELD REDUCING TEE - 200Ø 90° WELD BEND (LR) - 2 - 19Ø THREADOLET (SPARE AND DRAIN) - 12Ø THREADOLET (PI) - 75Ø SCH40, 304L STAINLESS STEEL PIPE - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
16	200Ø STEEL SPOOL (FxGExGE) - 200Ø SLIP-ON FLANGE, CLASS 150 - 200x200x75 WELD REDUCING TEE - 200Ø 90° WELD VERT BEND (LR) - 25Ø THREADOLET (CAV) - 19Ø THREADOLET (PT) - 12Ø THREADOLET (PI) - 32Ø THREADOLET (WS) - 75Ø SCH40, 304L STAINLESS STEEL PIPE - 200Ø SCH40, 304L STAINLESS STEEL PIPE	1
17	75Ø STEEL SPOOL (GExF) - 75Ø WELD NECK FLANGE, CLASS 150 - 75Ø 90° WELD BEND (LR) - 75Ø SCH40, 304L STAINLESS STEEL PIPE	2
18	75Ø STEEL SPOOL (FxGE) - 75Ø WELD NECK FLANGE, CLASS 150 - 75Ø SCH40, 304L STAINLESS STEEL PIPE	1
19	75Ø STEEL SPOOL (GExF) - 75Ø WELD NECK FLANGE, CLASS 150 - 12Ø THREADOLET (SPARE) - 75Ø SCH40, 304L STAINLESS STEEL PIPE	1
20	75Ø STEEL SPOOL (FxF) - 75Ø WELD NECK FLANGE, CLASS 150 - 50Ø WELD NECK FLANGE, CLASS 150 - 50x75 WELD CONCENTRIC REDUCER	1
21	75Ø STEEL SPOOL (FxGE) - 50Ø WELD NECK FLANGE, CLASS 150 - 50x75 WELD ECCENTRIC REDUCER - 75Ø SCH40, 304L STAINLESS STEEL PIPE	1
22	75Ø STEEL SPOOL (GExGE) - 75Ø 90° WELD VERT BEND (LR) - 12Ø THREADOLET (ARV) - 75Ø SCH40, 304L STAINLESS STEEL PIPE	1

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2	FEB 29/24	ISSUED FOR APPROVALS	DH	AP
1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

CONSULTANT SEAL

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DISTRICT OF HOPE

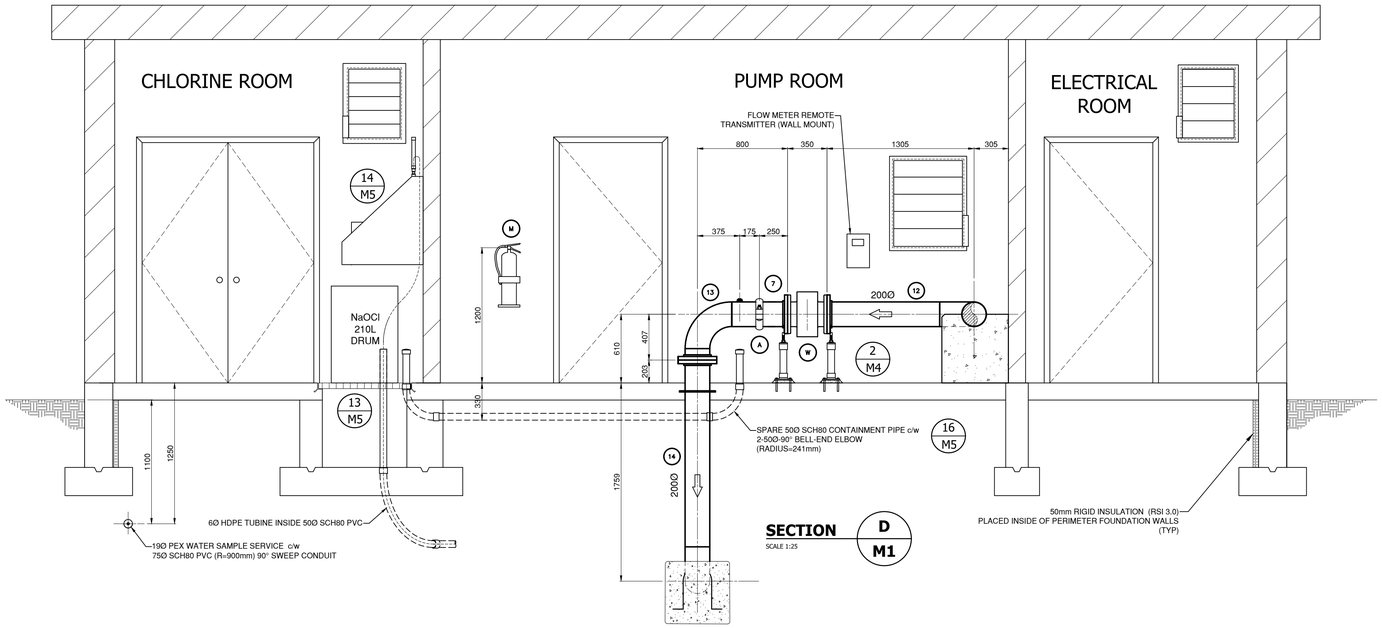
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

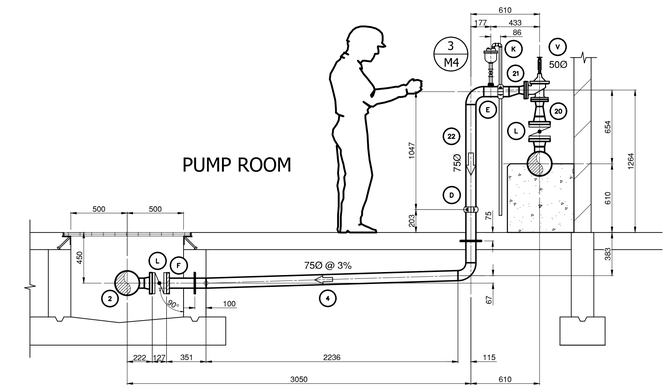
SECTIONS

SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-M2
SHEET	2 OF 5
ISSUE/REV.	6

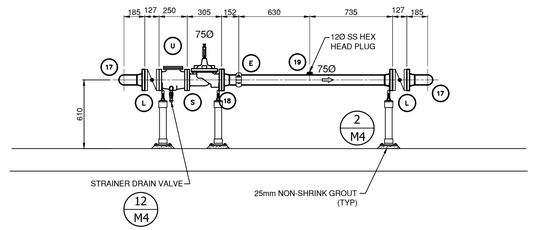
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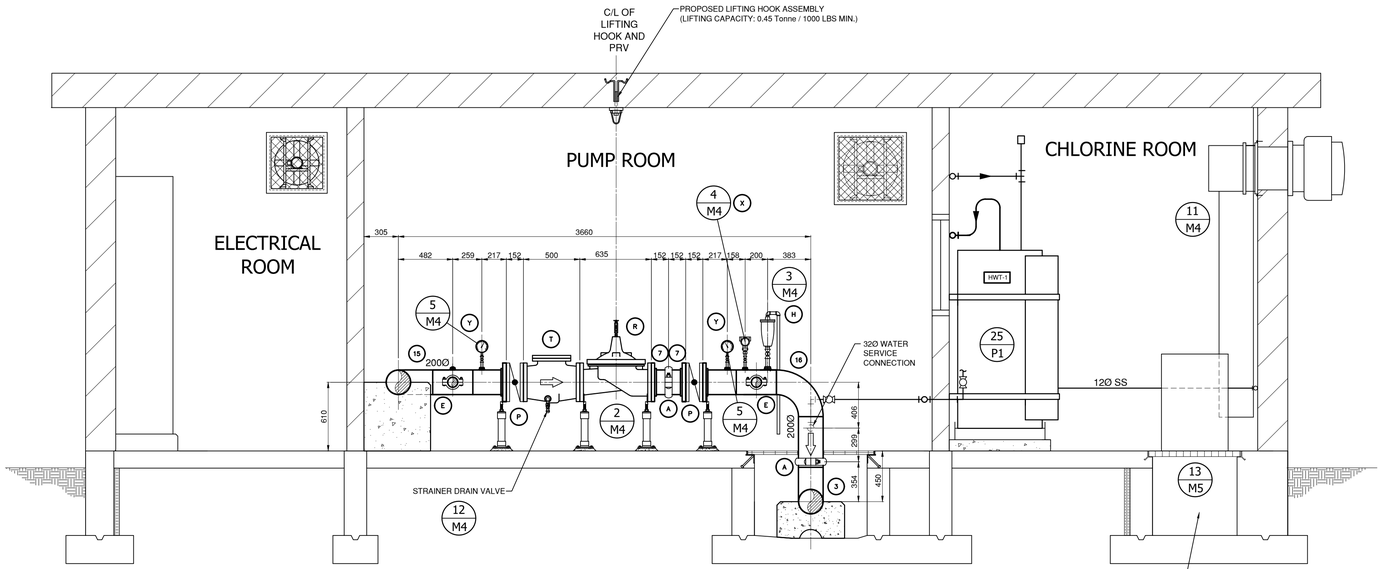
SECTION D / M1
SCALE 1:25



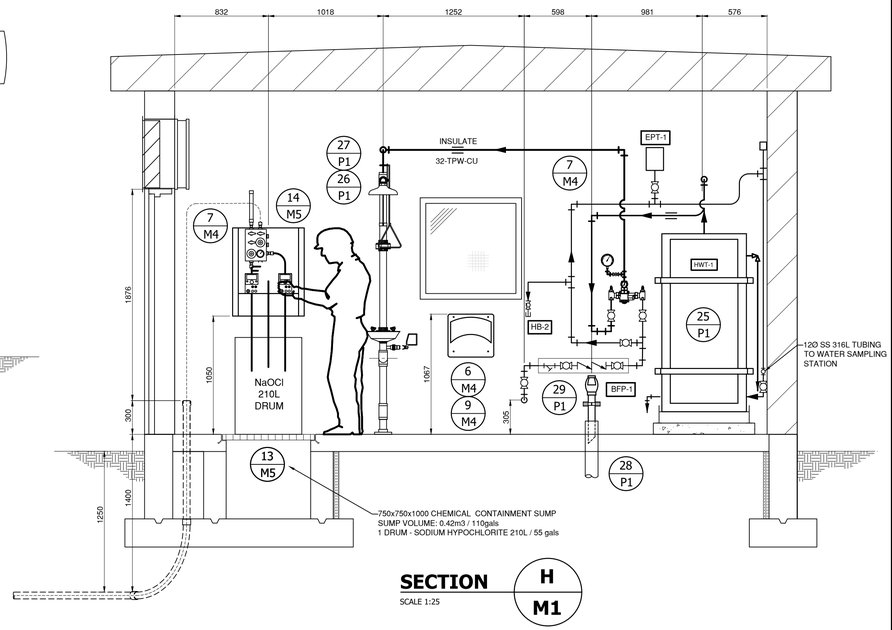
SECTION E / M1
SCALE 1:25



SECTION G / M1
SCALE 1:25



SECTION F / M1
SCALE 1:25



SECTION H / M1
SCALE 1:25

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1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

CONSULTANT SEAL
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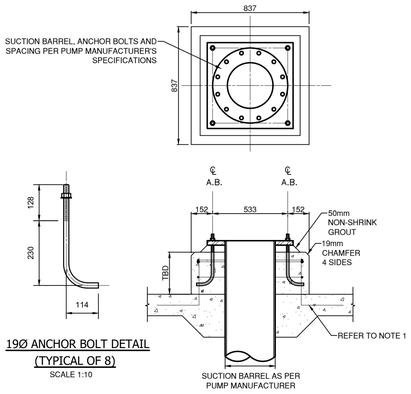
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

SECTIONS

SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-M3
SHEET	3 OF 5
ISSUE/REV.	6

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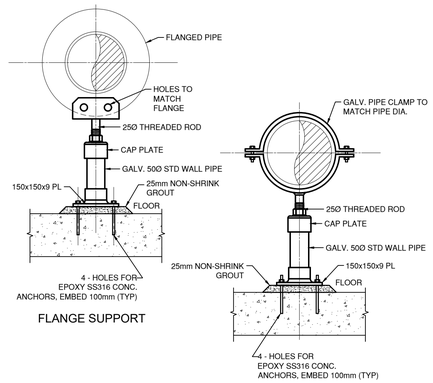


19Ø ANCHOR BOLT DETAIL
(TYPICAL OF 8)
SCALE 1:10

NOTE:
1. SEE STRUCTURAL DRAWING FOR REBAR REINFORCING

PUMP BASE DETAIL — 1 / -

SCALE 1:20
(REQ'D = 2)

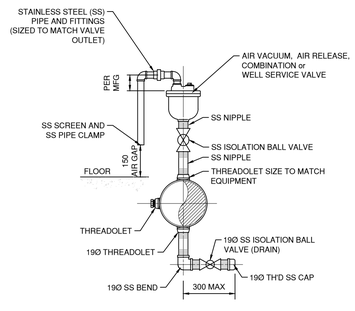


FLANGE SUPPORT

PIPE SADDLE WITH STRAP SUPPORT

PIPE SUPPORT DETAIL — 2 / -

SCALE NTS



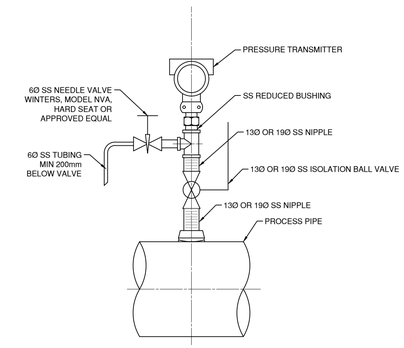
NOTES:
1. PROVIDE SS NIPPLES AND REDUCING BUSHINGS AS REQUIRED
2. PROVIDE BALL VALVE TO GARDEN HOSE FITTING ON PUMP ROOM DRAIN VALVE CONNECTION.

AIR VALVE & DRAIN CONNECTION DETAIL — 3 / -

SCALE 1:10

PRESSURE TRANSMITTER TABLE

LOCATION	QTY	RANGE	COMMENT
SUCTION HEADER	1	-14.7 / 100 psi / kPa	
DISCHARGE HEADER	1	0 / 300 psi / kPa	



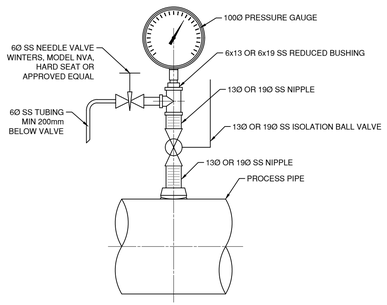
PROVIDE SS NIPPLES AND REDUCING BUSHINGS AS REQUIRED

PRESSURE TRANSMITTER CONNECTION DETAIL — 4 / -

SCALE 1:5

PRESSURE GAUGE TABLE

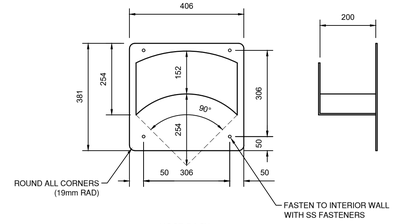
LOCATION	QTY	RANGE	COMMENT
PUMP - SUCTION	2	30" / 0 / 100 psi / kPa	100Ø GAUGE
PUMP - DISCHARGE	2	0 / 300 psi / kPa	100Ø GAUGE
DISCHARGE - HEADER	1	0 / 300 psi / kPa	100Ø GAUGE
PRV - UPSTREAM	1	0 / 300 psi / kPa	100Ø GAUGE, SAMPLE PORT NOT REQUIRED
PRV - DOWNSTREAM	1	30" / 0 / 100 PSI / kPa	100Ø GAUGE, SAMPLE PORT NOT REQUIRED



PRESSURE GAUGE CONNECTION DETAIL — 5 / -

SCALE 1:5

PROVIDE SS NIPPLES AND REDUCING BUSHINGS AS REQUIRED

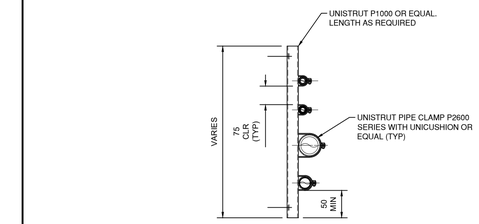


HOSE RACK

NOTES:
1. WALL MOUNTED HOSE RACK FABRICATED FROM 3mm 6061-TA ALUMINUM ALLOY PLATE.
2. ATTACH RACK TO WALL PANELS WITH 9Ø TYPE 316 SS BOLTS, NUTS AND WASHERS
3. 6M-19Ø HOSE C/W SPRAY NOZZLE
4. PROVIDE 19Ø (3/4") NPS VACUUM BREAKER WATTS OR APPROVED EQUAL

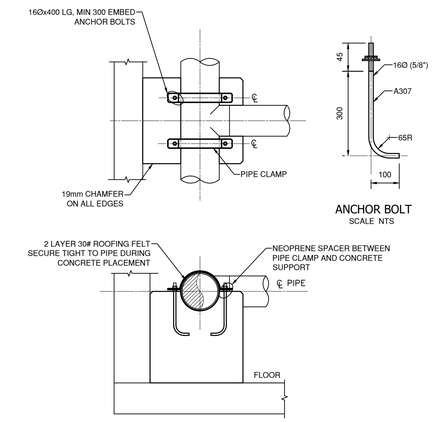
HOSE RACK DETAIL — 6 / -

SCALE 1:10



WALL MOUNT PIPE DETAIL — 7 / -

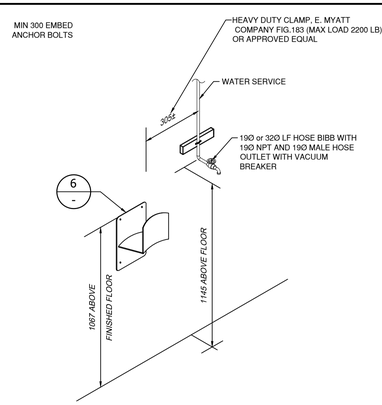
NOT TO SCALE



NOTE: SEE STRUCTURAL DRAWING FOR REBAR REINFORCING

CONCRETE PIPE SUPPORT DETAIL — 8 / -

NTS

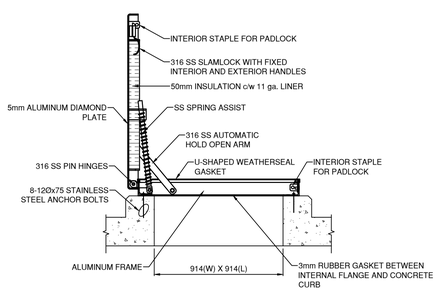


UTILITY STATION DETAIL — 9 / -

SCALE NTS

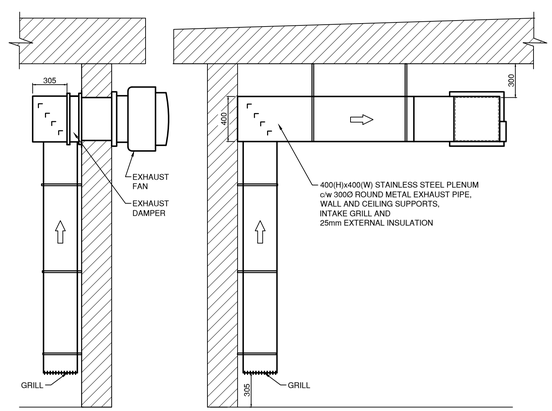
NOTES:

1. MATERIAL: ALUMINUM WITH STAINLESS STEEL NUTS & BOLTS, SLAMLOCK, HINGES AND HOLD OPEN ARM.
2. LOADING: 150 LBS PER SQ FOOT (732 KG PER SQ M).
3. MANUFACTURER: U.S.F. FABRICATION, MODEL SRR-I, SECURITY, RESERVOIR AND ROOF, INTERNAL MOUNTING FLANGE, SINGLE DOOR, 50mm INSULATION AND LINER OR APPROVED EQUAL.
4. CONTRACTOR TO CONFIRM LOCK AND ACCESSING HATCH SHALL BE FROM INSIDE THE BUILDING ONLY. NO ACCESS FROM OUTSIDE THE BUILDING SHALL BE ALLOWED.



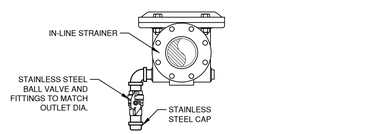
PUMP ACCESS HATCH DETAIL — 10 / -

SCALE 1:20



CHLORINE EXHAUST FAN DETAIL — 11 / -

SCALE 1:25



NOTE:
PROVIDE 316 STAINLESS STEEL NIPPLES, BEND AND CAP AS REQUIRED

STRAINER DRAIN VALVE DETAIL — 12 / -

SCALE NTS

No.	DATE	DESCRIPTION	BY	APP'D
6	NOV 4/26	ISSUED FOR TENDER	DH	AP
5	APR 22/26	REISSUED FOR APPROVALS	DH	AP
4	APR 7/26	REISSUED FOR CLIENT REVIEW	DH	AP
3	MAR 13/24	ISSUED FOR TENDER	DH	AP
2	FEB 29/24	ISSUED FOR APPROVALS	DH	AP
1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

CONSULTANT SEAL

Permit to Practice/APEGBC: 1000129
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. M. NIKOLSON
46693
SCIENCE ENGINEERING
2026-11-05

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DISTRICT OF HOPE

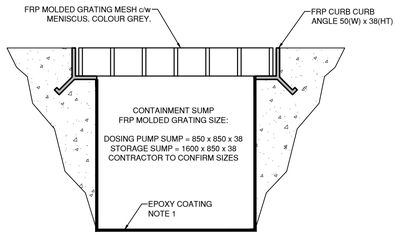
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

DETAILS

SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-M4
SHEET	4 OF 5
ISSUE/REV.	6

FILE: Current\1239\1239-202\02 drawings\cad\02 design drawings\1239-202 booster station



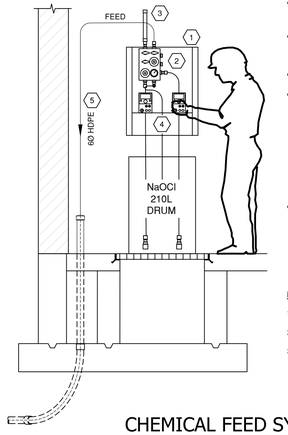
NOTES:

1. COATING SYSTEM FOR CONCRETE CONTAINMENT SUMPS.
   1) PRIMER: NSP 100 PENETRATING SEALER OR APPROVED EQUAL
   2) FIRST COAT: NSP 100 HIGH BUILD EPOXY OR APPROVED EQUAL

CHLORINE ROOM FRP MOLDED GRATING

SCALE 1:5

13 / -



CHLORINATION EQUIPMENT LIST:

1. PEABODY PCS-PLUS 2 BASE, DUAL PUMP SHELF, WITH MOUNTING PLATE, 619W X 705D X 765H, NO DIVIDER, BLUE, P/N 253-33299
2. MEUNIER TECHNOLOGIES, DICE DM DOSING MODULE, SUCTION LIFT, 250PSI MAX PRESSURE, VITON SEALS, GAUGE & SEAL, BACK ORESSURE VALVE, SAFETY RELIEF VALVE, P/N DIS22-MVII-3212344Z
3. GRIFFCO CAL COLUMN, 100mL, P/N CC01100SR
4. 2 - GRUNDFOS DIAPHRAGM PUMP, MODEL: DA-7.5-16-FCM-C-PV-V/C-F-31U7U7BG (93064971)
   - 7.5 L/hr MAX. FLOW, 16 BAR (232 PSI) MAX. PRESSURE
   - IP66 AND NEMA 4X INGRESS PROTECTION
   - (X2) GRUNDFOS INPUT CABLE ASSEMBLY, 4-20mA, PULSE, START/STOP, 5m LONG, P/N 96609016
   - (X2) GRUNDFOS OUTPUT CABLE, RELAY 1+2, TANK LEVEL ERROR, STROKE SIGNAL, 5m LONG, P/N 96609019
   - (X2) FOOT VALVE, PVDF,FKM,CERAMIC, 6mm, 9mm, 12mm TUBE CONNECTIONS, P/N 98070957
   - POWER REQUIRED: 120 VAC 60 HZ
5. HUDSON TUBING, O.D. 6.4MM (1/4"), I.D. 4.3MM (0.170"), MWP 260 PSI, HIGH DENSITY POLYENTHYLENE, NSF-61, NATURAL , MODEL 1/4-POLY-NSF-NAT. LENGTH = 30m (100FT)

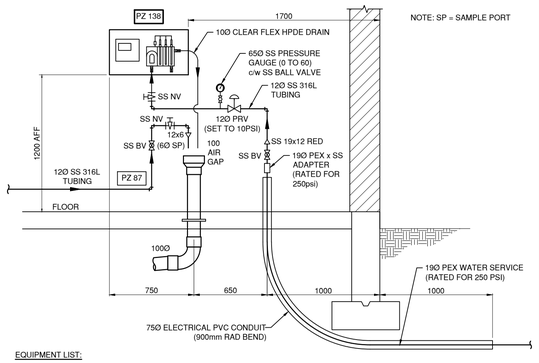
NOTES:

1. ALL PARTS OF THE CHLORINATION SYSTEM ARE SUITABLE FOR 12% SODIUM HYPOCHLORITE SOLUTION
2. CHEMICAL DOSING ASSEMBLY HAS A MAXIMUM WORKING PRESSURE NO LESS THAN = 230 PSI
3. PLUMBING INCLUDES OVERFLOW PIPE FROM TOP OF CALIBRATED COLUMN TO CHLORINE SUPPLY DRUM.

CHEMICAL FEED SYSTEM

NTS

14 / -



NOTE: SP = SAMPLE PORT

EQUIPMENT LIST:

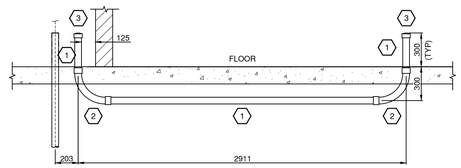
1. KUNTZE KRYPTON MULTI FREE CHLORINE / PH ANALYZER INCLUDES: NEON MULTI 24VDC CONTROLLER, ARGON STABIFLOW, ZIRKON DIS FREE CHLORINE SENSOR WITH ASR AUTOMATIC SENSOR CLEANING, ZIRKON PH SENSOR, ZIRKON FTG SENSOR, 5 X 4-20mA OUTPUTS, PID CONTROLLER, MODBUS RTU ADAPTER, WALL MOUN,T IP 65, 700X400 PVC BOARD ASSEMBLY; MANUFACTURER: KUNTZE, MODEL KRYPMULFREE
2. 12Ø STAINLESS STEEL NEEDLE VALVE (NV), NSF-61
3. 6 TO 12Ø STAINESS STEEL (SS) BALL VALVES, NSF-61
4. 12Ø WATTS PRESSURE REGULATOR VALVE, NSF-61, MWP: 300psi, RANGE 3-50 PSI, SET AT 20 PSI, MODEL LF26A
5. 65Ø WINTERS PRESSURE GAUGE, NSF-61, MODEL PFQ-LF, RANGE: 0-60 PSI, SET AT 20 PSI
6. GENERAL LAYOUT SHOWN. INSTALL ALL INSTRUMENTS PER MANUFACTURE'S INSTRUCTIONS

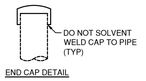
WATER SAMPLING STATION DETAIL

SCALE NTS

15 / -

MATERIAL LIST:		QTY
1	50Ø (2") SCH80 PVC CONTAINMENT PIPING	±3.5m
2	50Ø (2") SCH80 PVC 90Ø BELL-END ELBOW (RAD = 241mm)	2
3	50Ø (2") SCH80 PVC END CAP	2





END CAP DETAIL

CONTAINMENT PIPE DETAIL

NTS

16 / -

NOTES:

1. FLANGE ASSEMBLY BOLTS, STUDS, NUTS & WASHERS CONNECTING STAINLESS TO GALVANIZED STEEL OR DUCTILE/CAST IRON SHALL BE PROVIDED WITH A FLANGE ISOLATION KIT AS A MINIMUM THE KIT SHALL CONSIST OF PHENOLIC OR MYLAR SLEEVE AND ONE PHENOLIC OR EPOXY GLASS WASHER PER BOLT, NUT AND WASHERS SET.
2. INSTALL ISOLATION KIT AS PER THE MANUFACTURER'S INSTRUCTIONS.

TYPICAL FLANGE CONNECTION DETAIL

SCALE NTS

- / -

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DISTRICT OF HOPE

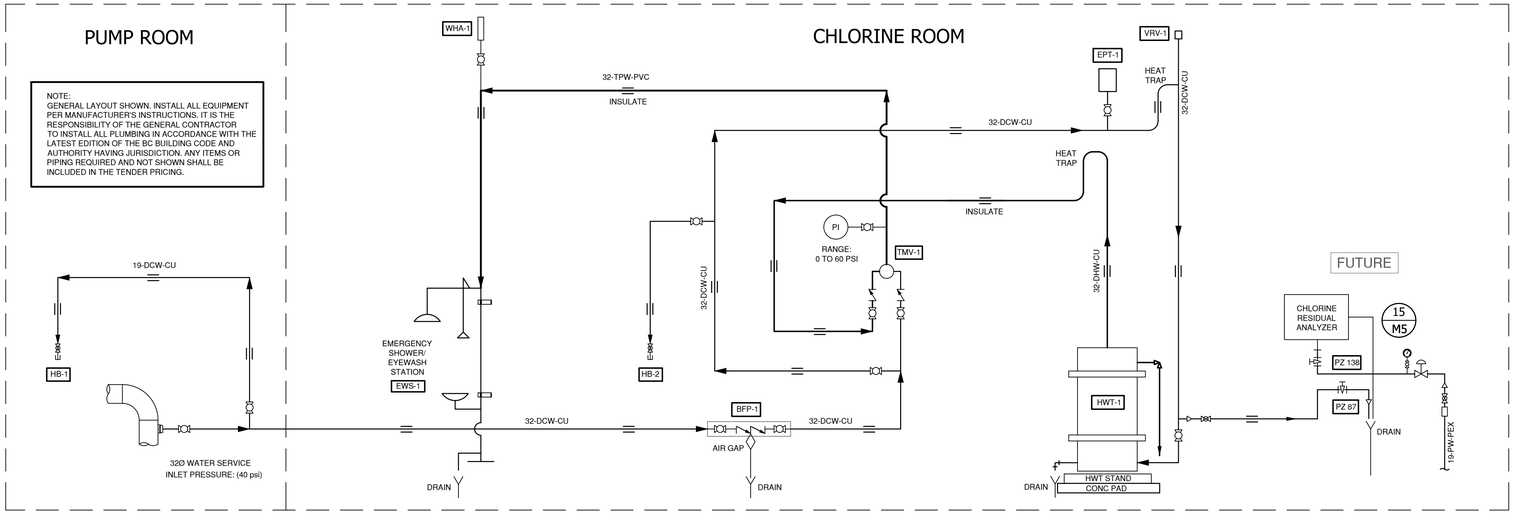
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

DETAILS

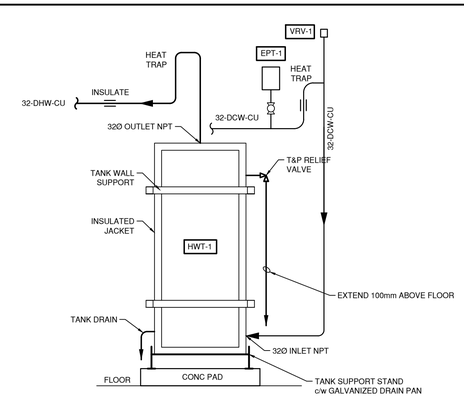
SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-M5
SHEET	5 OF 5
ISSUE/REV.	6

FILE: c:\users\DH\1239\1239-202\00 drawings\cad\00 design drawings\1239-202 booster station



PLUMBING SCHEMATIC

SCALE NTS

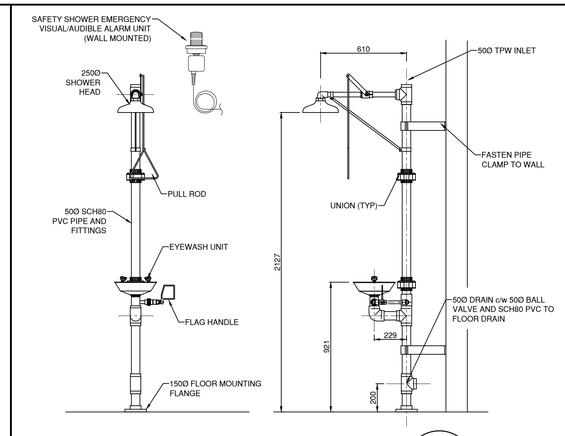


ELECTRIC HOT WATER HEATER DETAIL

SCALE NTS

25

-

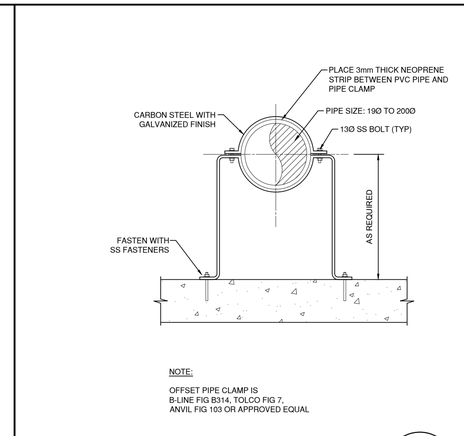


SAFETY STATION (EWS) DETAIL

SCALE 1:20

26

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NOTE:

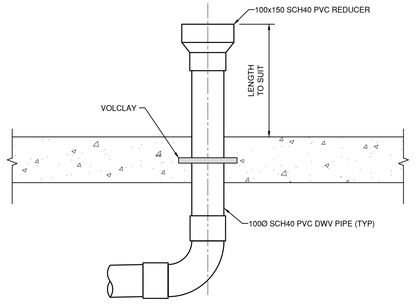
OFFSET PIPE CLAMP IS
B-LINE FIG B314, TOLCO FIG 7,
ANVIL FIG 103 OR APPROVED EQUAL

OFFSET PIPE CLAMP DETAIL

SCALE 1:10

27

-

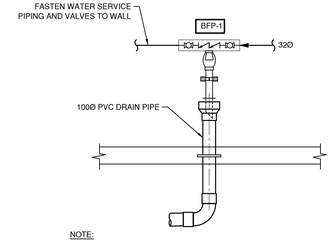


FLOOR DRAIN DETAIL

SCALE 1:10

28

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NOTE:

- REFER TO NOTE #12 ON DRAWING M1 FOR PIPE AND FITTINGS.

BACKFLOW PREVENTOR DETAIL

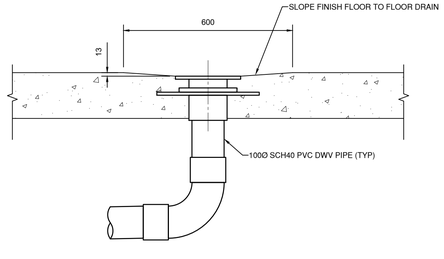
SCALE 1:25

29

-

NOTES:

1. ALL FLOOR DRAINS (FD) OTHERWISE NOTED ARE 130mm DIAMETER EPOXY COATED CAST IRON WITH ANCHOR FLANGE, WEEPHOLES, ADJUSTABLE ROUND HEAD, NICKEL BRONZE STRAINER, TRAP PRIMER TAPPING AND CLAMPING COLLAR. REFER TO FLOOR PLAN FOR FLOOR DRAIN LOCATIONS.
   MANUFACTURER: WATTS FD-200-A OR APPROVED EQUAL.
2. FLOOR DRAINS LOCATED IN CEMICAL ROOM ARE CHEMICAL RESISTANT PVC FLOOR DRAIN WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, 6 1/2"(165) ROUND HEEL PROOF ADJUSTABLE PVC STRAINER SECURED WITH STAINLESS STEEL SCREWS, AND SOCKET OUTLET. REFER TO FLOOR PLAN FOR FLOOR DRAIN LOCATION.
   MANUFACTURER: WATTS FD-1160 OR APPROVED EQUAL.



FLOOR DRAIN DETAIL

SCALE 1:10

30

-

ABBREVIATIONS

DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
TPW	TEPID WATER
CU	COPPER
PVC	POLYVINYL CHLORIDE
SS	STAINLESS STEEL
BFP	BACKFLOW PREVENTER
HB	HOSE BIBB
TMV	THERMOSTATIC MIXING VALVE
PI	PRESSURE INDICATOR
FS	FLOW SWITCH
WHA	WATER HAMMER ARRESTOR
EWS	EYE WASH STATION/ EMERGENCY SHOWER
EPT	WATER EXPANSION TANK
VRV	VACUUM RELIEF VALVE
HWT	HOT WATER TANK

LEGEND

- FULL PORT BALL VALVE (NORMALLY OPEN)
- FULL PORT BALL VALVE (NORMALLY CLOSED)
- CHECK VALVE
- BACKFLOW PREVENTER
- WATER HAMMER ARRESTOR

PLUMBING CONSTRUCTION NOTES:

1. ALL PLUMBING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE BC BUILDING CODE AND AUTHORITY HAVING JURISDICTION.
2. PLUMBING PIPE ROUTING SHOWN AS GENERAL GUIDE ONLY. NEW PLUMBING SYSTEM SHALL BE INSTALLED, FLUSHED AND TESTED IN ACCORDANCE WITH BC PLUMBING CODE.
3. ALL DOMESTIC HOT AND COLD WATER PIPE SHALL BE TYPE 'K' OR 'L' HARD DRAWN COPPER TUBING TO ASTM B88 WITH CAST BRASS OR WROUGHT COPPER FITTINGS AND NON-LEAD SOLDER.
4. ALL DOMESTIC HOT AND COLD WATER PIPE SHALL BE INSULATED WITH 25mm MANSON ALLEY 'K' PIPE INSULATION WITH APT JACKET.
5. ALL SANITARY LINE ENCASED IN CONCRETE FLOOR SLAB SHALL BE ABS-DWV PIPE TO CAN/CSA-B181.1-M AND PVC-DWV PIPE TO CAN/CSA-B181.2-M.
6. ALL SANITARY LINE BURIED OUTSIDE SHALL BE ABS-DWV PIPE TO CAN/CSA-B181.1-M AND PVC-DWV PIPE TO CAN/CSA-B181.2-M.

PLUMBING EQUIPMENT SCHEDULE

ITEM	EQUIPMENT	QTY
HWT-1	(450L/ 119USgal) COMMERCIAL ELECTRIC HOT WATER HEATER - INTERIOR GLASSLINED TANK, FOAM INSULATION - EXTERIOR JACKET SHALL BE BAKED ENAMEL FINISH - MAXIMUM WORKING PRESSURE: 150 PSI - CSA CERTIFIED AND ASME TEMPERATURE AND RELIEF VALVE - 32Ø NPT TOP OUTLET, 32Ø NPT BOTTOM INLET, DRAIN VALVE c/w DRAIN HOSE - TWO ANODE ROD FOR MAXIMUM CORROSION PROTECTION - HEAVY-DUTY MEDIUM WATT DENSITY ELEMENTS - THREE IMMERSION HEATERS SHALL BE RATED 6000W, 600V, 3PH, 60Hz - 140°F THERMOSTAT SETTING (ADJUSTABLE THROUGH RANGE 120° TO 180°) - SINGLE PANEL CONTROL BOX - TERMINAL BLOCK FACTORY INSTALLED - TANK WALL STRAPS AND STAND c/w DRAIN PAN - CERTIFIED TO LATEST EDITION TO CSA C22.2 No.110 - CONSTRUCTION AND TEST OF ELECTRIC STORAGE-TANK WATER HEATER - CERTIFIED TO LATEST EDITION TO CAN/CSA C191 - PERFORMANCE OF ELECTRIC STORAGE WATER HEATER FOR DOMESTIC HOT WATER SERVICE - CERTIFIED TO LATEST EDITION OF CAN/CSA-309 - PERFORMANCE REQUIREMENTS FOR GLASS-LINED STORAGE TANKS FOR HOUSEHOLD HOT WATER SERVICE - HEATER TANK SHALL HAVE A MINIMUM 3 YEARS WARRANTY - CERTIFIED TO UL WATER QUALITY, UL LISTED, CSA, AHRI, ASME MANUFACTURER: AO SMITH, MODEL DRE-120-6 OR EQUAL	1
VRV-1	20Ø VACUUM RELIEF VALVE - CONSTRUCTION: BODY LEAD FREE BRASS - O-RING: BUNA-N - SPRING: 302 STAINLESS STEEL MANUFACTURER: WATTS, MODEL LFN36-M1 or approved equal	1
EPT-1	WATER EXPANSION TANK - CONSTRUCTION: STEEL - LINER: RIGID FLEXIBLE POLYPROPYLENE - DIAPHRAGM: BUTYL RUBBER - MAXIMUM WORKING PRESSURE: 150 psi @ 93°C - INLET CONNECTION: 20mm MALE STAINLESS STEEL NPT - VOLUME: 8L (2.1 gal) - AIR PRECHARGE: 20 psi - CERTIFIED TO ANSI / NSF-61 - MANUFACTURER: WATTS, MODEL PLT-5 or approved equal	1
TMV-1	THERMOSTATIC MIXING VALVE FOR SINGLE EMERGENCY SHOWER - TEMPERATURE CONTROL: BLENDS WATER (65°F TO 95°F / 18°C TO 35° C) SET @ 75° F / 24°C - FLOW CAPACITY: 0.5 TO 59 GPM - MAXIMUM PRESSURE LOSS: 40 PSI - MINIMUM SUPPLY PRESSURE: 125 PSI - UNIT SHALL INCLUDE A BUILT-IN COLD WATER BY-PASS, ROUGH BRONZE FINISH, SOLID BIMETAL THERMOSTAT, - LOCKING TEMPERATURE REGULATOR WITH LIMIT STOP FACTORY SET FOR 90 DEGREES, INTEGRAL CHECK STOPS, AND DIAL THERMOMETER. - MOUNTING: WALL - INLETS: 25mm (1") NPT FEMALE. INLETS CAN BE ROTATED 360°. EACH INLET HAS INTEGRAL STRAINER, CHECK VALVE AND SUPPLY STOP - OUTLETS: 32mm (1-1/4") NPT FEMALE OUTLET - CERTIFIED TO MEET OR EXCEED PROVISIONS OF ANSI Z358.1-2014. - CERTIFIED TO ASSE 1071. LOW LEAD REQUIREMENTS OF WETTED SURFACES AREA LESS THAN 0.25% BY WEIGHT - COMPLETE FULL 1-YEAR WARRANTY MANUFACTURER: GUARDIAN G6040 or approved equal	1
EWS-1	COMBINATION EYE/FACE WASH AND SHOWER SAFETY STATION - 250Ø ABS PLASTIC SHOWER HEAD WITH 20 GPM FLOW CONTROL - ABS PLASTIC EYE/FACE WASH BOWL -STAINLESS STEEL FLAG HANDLE AND PVC FLOOR FLANGE - 50Ø IPS SCHEDULE 80 PVC PIPE AND FITTINGS - 25Ø IPS AND 12Ø IPS STAINLESS STEEL STAY OPEN BALL VALVES - 32Ø TEPID WATER SUPPLY CONNECTION - 32Ø WASTE WATER DRAIN (PLUMB DRAIN TO FLOOR WITH SCH80 PVC) - POLISHED STAINLESS STEEL PULL ROD - UNIT SHALL HAVE (2) POLYPROPYLENE 'FS PLUS' SPRAY HEADS WITH INTEGRAL " FLIP-TOP" DUST COVERS - FILTERS - 3.2 GPM FLOW CONTROL ORIFICES MOUNTED ON A STAINLESS STEEL HEAD ASSEMBLY - UNIT SHALL INCLUDE ANSI COMPLIANT SIGN - UNIT SHALL MEET OR EXCEED ANSI Z358.1 - 2014, AND COME WITH A FULL 2-YEAR WARRANTY - UNIT MOUNTED TO WALL AND FLOOR WITH SS SUPPORTS AND FASTENERS. TO LEVEL UNIT GROUT BETWEEN BASE AND FLOOR. - COMPLETE FULL 1-YEAR WARRANTY. - AP275-200 COMBINATION FLASHING LIGHT AND ALARM HORN (WALL MOUNTED) MANUFACTURER: GUARDIAN G1993 or approved equal	1
WHA-1	WATER HAMMER ARRESTOR - SIZED FOR NUMBER OF FIXTURES IN SYSTEM MANUFACTURER: P.P.P INC, SERIES SC OR EQUAL	1
BFP-1	32mm (1 1/4") REDUCED PRESSURE ZONE ASSEMBLY BACKFLOW PREVENTER - LEAD FREE MODULAR CONSTRUCTION: BRONZE BODY WITH NPT CONNECTIONS - REPLACEABLE POLYMER CHECK SEATS FOR FIRST AND SECOND CHECKS - SILICONE RUBBER DISKS - REMOVABLE RELIEF VALVE SEATS - STAINLESS STEEL COVER BOLTS - SERIES 909AG AIR GAP DRAIN (PLUMB TO FLOOR DRAIN) - MAXIMUM WORKING PRESSURE: 175psi - STANDARDS: AWWA, NSF-61, CSA MANUFACTURER: WATTS, MODEL LF009M2QT or approved equal	1
HB-#	HOSE BIBB - SIZE: 20mm (3 / 4") NPT - BUILT-IN BACKFLOW PROTECTION - SELF DRAINING - BRASS FINISH - C/W VACUUM BREAKER, WATTS MODEL 8A MANUFACTURER: WATTS MODEL LFSC8-6 or approved equal	2
PI	100Ø PRESSURE GAUGE - CASE: 304 STAINLESS STEEL, BOTTOM MOUNT - WINDOW: TEMPERED SAFETY GLASS, BUNA-N GASKET - DIAL: WHITE ALUMINUM WITH BLACK AND RED MARKINGS - DUAL SCALE psi/kPa - POINTER: BLACK ALUMINUM, ADJUSTABLE - MOVEMENT: 304 STAINLESS STEEL - BOURDON TUBE: 316L STAINLESS STEEL - ACCURACY ±1.0% OF SPAN (ASME B40.100 GRADE 1A) - LIQUID: GLYCERINE FILLED - CONNECTION: 12mm NPT MANUFACTURERS: WINTERS MODEL PFP OR EQUAL	1

No.	DATE	DESCRIPTION	BY	APP'D
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2	APR 22/26	REISSUED FOR APPROVALS	DH	AP
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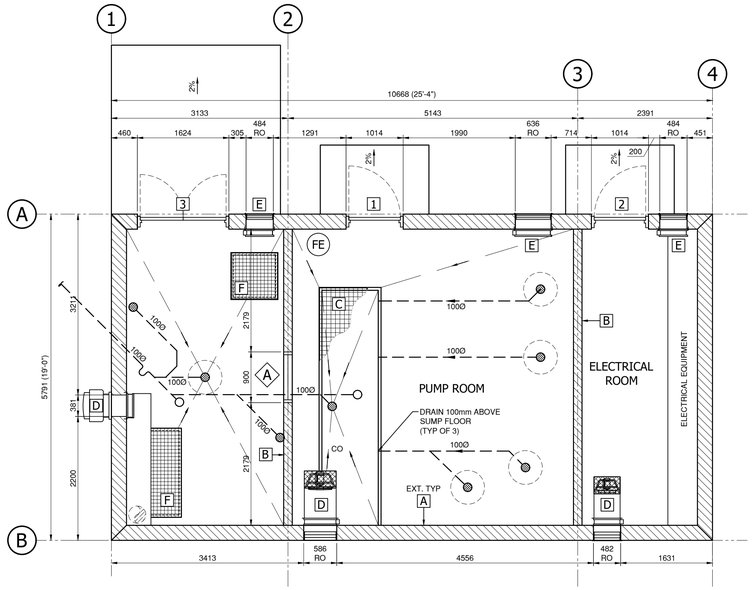
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

PLUMBING DETAILS

SCALE	AS SHOWN
DESIGN BY	DH
DRAWN BY	MS/DH
DATE	APRIL 2026
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-P1
SHEET	1 OF 1
ISSUE/REV.	3

E:\E Volumes\2026\1239\1239-202\03 drawings\cad\02 design drawings\1239-202 booster station

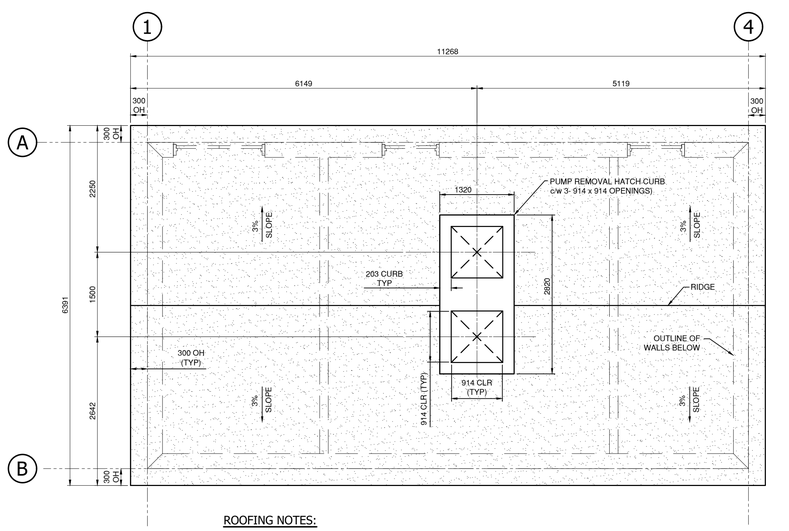


FLOOR PLAN NOTES:

- A 267mm THICK PRECAST CONCRETE EXTERIOR WALL - SEE PRECAST CONCRETE DRAWINGS
- B 152mm THICK PRECAST CONCRETE INTERIOR WALL - SEE PRECAST CONCRETE DRAWINGS
- C ALUMINUM SERRATED BAR GRATING REFER TO STRUCTURAL DRAWING
- D EXHAUST FAN SCHEDULE - REFER TO ELECTRICAL DRAWINGS
- E INTAKE LOUVER / DAMPER SCHEDULE - REFER TO ELECTRICAL DRAWINGS
- F MOLDED FRP GRATING REFER TO STRUCTURAL DRAWING

- 1 PUMP ROOM ACCESS DOOR - REFER TO DOOR SCHEDULE
- 2 ELECTRICAL ROOM DOOR - REFER TO DOOR SCHEDULE
- 3 CHLORINE ROOM ACCESS DOOR - REFER TO DOOR SCHEDULE
- FE FIRE EXTINGUISHER, 10LBS ABC WITH WALL BRACKET OR EQUAL INSTALL 1.22m ABOVE FLOOR

FLOOR PLAN
SCALE 1:50

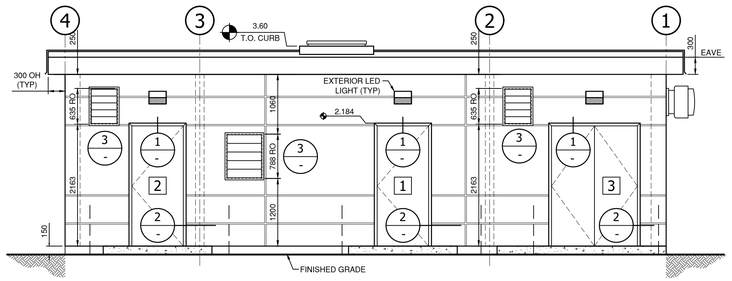


ROOFING NOTES:

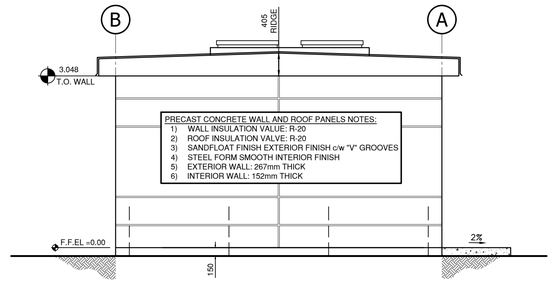
A. ROOFING TREATMENT:
- POLY SBS ROOFING MEMBRANE
- 300 to 405mm 22Ga FLASHING (COLOUR TBD BY OWNER)
- FASTENED FLASHING TO PRECAST ROOF WITH TAPCON CONCRETE SCREW @ 400 o/c

B. ROOFING CONTRACTOR TO BE MEMBER OF RCABC ASSOCIATION

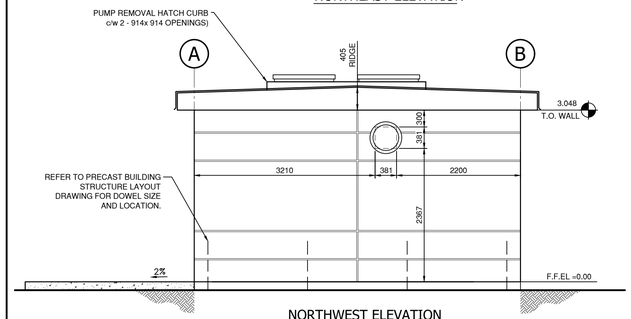
ROOF PLAN
SCALE 1:50



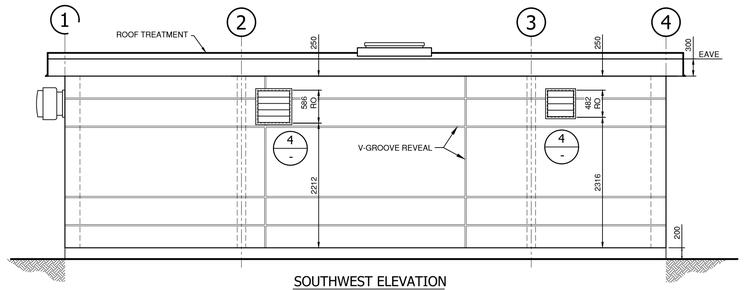
NORTHEAST ELEVATION



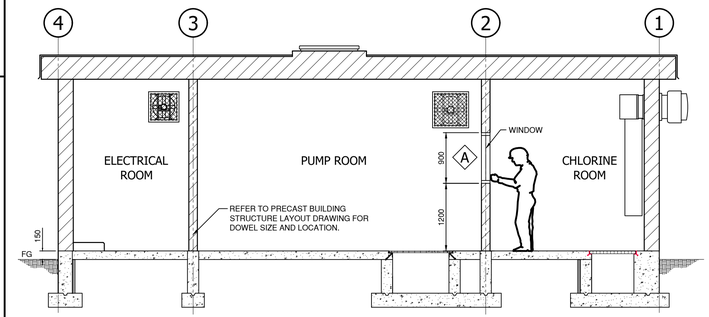
SOUTHEAST ELEVATION



NORTHWEST ELEVATION



SOUTHWEST ELEVATION



INTERIOR ELEVATION

NOTES:

1. PRECAST CONCRETE BUILDING STRUCTURE SHALL BE DESIGNED TO 2024 BCBC CODE FOR POST POST-DISASTER BUILDING REQUIREMENTS.
2. PRECAST CONCRETE WALLS AND ROOF FOR REFERENCE ONLY.
3. REFER TO PRECAST CONCRETE SUPPLIER. DRAWINGS FOR WALLS, ROOF, AND CONNECTION TO FOUNDATION DETAILS
4. FAN , LOUVER, DAMPERS AND EXTERIOR LIGHT SCHEDULES REFER TO ELECTRICAL DRAWINGS.
5. WALLS AND ROOF REFER TO PRECAST CONCRETE BUILDING STRUCTURE DESIGN DRAWINGS.

BUILDING ELEVATIONS
SCALE 1:50

DESIGN FOR ENVIRONMENTAL LOADS BASED ON PARAMETERS FOR HOPE, BC:

DESIGN CRITERIA: (POST DISASTER BUILDING) 2024 BCBC (BRITISH COLUBIA BUILDING CODE)

NOTE: REFER TO STRUCTURAL DRAWING 239-202-S100 FOR BASIS FOR DESIGN

DOOR HARDWARE SCHEDULE

SET# H1			
DOOR#1 - EXTERIOR PUMP ROOM		LHR	914 x 2134 (3'-0" X 7'-0")
3 HINGES	TA314- 4 1/2" x 4" NRP	32D	McKINNEY (SATIN SST)
1 MORTISE LOCKSET	L9453P-06BN	626	SCHLAGE (SATIN CHROME)
1 DOOR CLOSER	4040XP-CUSH	689	LNC CLOSERS (ALUMINUM)
1 DOOR WEATHER STRIP	DS130CR x 17'	AL	DRAFTSEAL
1 DOOR BOTTOM SWEEP	DS156AV x 36"	AL	DRAFTSEAL
1 THRESHOLD	DS8000A x 36"	AL	DRAFTSEAL
1 SECURITY ASTRAGAL	DS179PS x 84"	ST	DRAFTSEAL
SET# H2			
DOOR#2 - EXTERIOR ELECTRICAL ROOM (1.5 HR FR)		LHR	914 x 2134 (3'-0" X 7'-0")
3 HINGES	TA314- 4 1/2" x 4" NRP	32D	McKINNEY (SATIN SST)
1 MORTISE LOCKSET	L9453P-06BN	626	SCHLAGE (SATIN CHROME)
1 DOOR CLOSER	4040XP-CUSH	689	LNC CLOSERS (ALUMINUM)
1 DOOR WEATHER STRIP	DS130CR x 17'	AL	DRAFTSEAL
1 DOOR BOTTOM SWEEP	DS 156AV x 36"	AL	DRAFTSEAL
1 THRESHOLD	DS8000A x 36"	AL	DRAFTSEAL
1 SECURITY ASTRAGAL	DS179PS x 84"	ST	DRAFTSEAL
SET# H3			
DOOR #3 - EXTERIOR CHLORINE ROOM		RHR/LHR	1524 x 2134 (5'-0" X 7'-0")
6 HINGES	TA314- 4 1/2" x 4" NRP	630	McKINNEY (SATIN SST)
2 EXIT DEVICE	9827-EO	630	VON DUPRIN
1 EXIT TRIM	996L-NL-06	626	VON DUPRIN
1 RIM CYLINDER	20-021	626	SCHLAGE
2 DOOR CLOSER	4040XP-HCUSH	689	LNC CLOSERS
1 DOOR WEATHER STRIP	DS130Cx 19'	AL	DRAFTSEAL
2 DOOR BOTTOM SWEEP	DS136C x 30"	AL	DRAFTSEAL
1 THRESHOLD	DS8000A x 60"	AL	DRAFTSEAL
1 SECURITY ASTRAGAL	DS147DN x 84"	AL	DRAFTSEAL

FINISH NOTE:

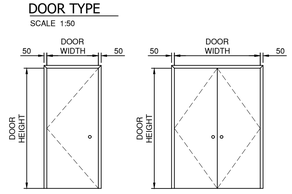
REFER TO SPECIFICATION SECTION 9 90 00 PAINTING AND COATING.
A. HOLLOW METAL DOOR & FRAME AND WINDOW FRAME (2,1,1)
COLOUR: GREY (INTERIOR & EXTERIOR)

DOOR SCHEDULE

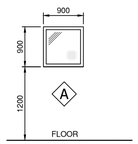
DOOR #	TYPE	SIZE (W X H)	THICKNESS	MATERIAL	FINISH	FIRE RATING	HARDWARE	FRAME DETAILS HEAD	JAM	THRESHTD	MATERIAL	FINISH	REMARKS
1	A	914 X 2134	44	HM	P	-	1	-/-	-/-	-	HM	P	INSULATED
2	A	914 X 2134	44	HM	P	1.5	2	-/-	-/-	-	HM	P	INSULATED
3	B	1524 X 2134	44	HM	P	-	3	-/-	-/-	-	HM	P	INSULATED

DOOR SCHEDULE ABBREVIATIONS
HM = HOLLOW METAL
P = PAINT COLOUR TO BE SELECTED BY OWNER

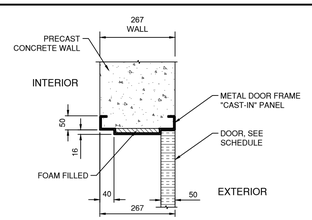
DOOR TYPE
SCALE 1:50



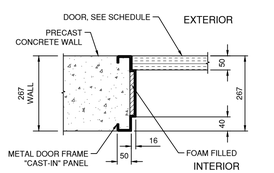
WINDOW TYPE
SCALE 1:50



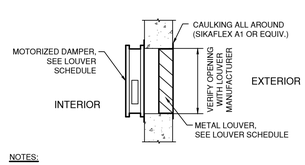
REINFORCED SAFETY GLASS (1HR FF)



EXTERIOR DOOR HEADER DETAIL 1
SCALE 1:10



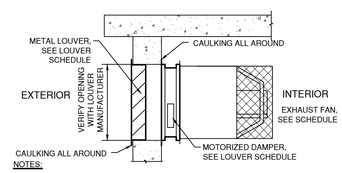
EXTERIOR DOOR JAMB DETAIL 2
SCALE 1:10



NOTES:

1. VERIFY ALL LOUVER AND DAMPER ROUGH OPENINGS WITH LOUVER MANUFACTURER
2. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS STEEL ONLY
3. REFER TO BUILDING ELEVATIONS AND FLOOR PLAN FOR LOUVER LOCATIONS

INTAKE LOUVER DETAIL 3
SCALE 1:20



NOTES:

1. VERIFY ALL LOUVER AND DAMPER ROUGH OPENINGS WITH LOUVER MANUFACTURER
2. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS STEEL ONLY
3. REFER TO BUILDING ELEVATIONS AND FLOOR FOR LOUVER LOCATIONS

EXHAUST FAN AND LOUVER DETAIL 4
SCALE 1:20

No.	DATE	DESCRIPTION	BY	APPD
6	NOV 4/26	ISSUED FOR TENDER	DH	AP
5	APR 22/26	REISSUED FOR APPROVALS	DH	AP
4	APR 7/26	REISSUED FOR CLIENT REVIEW	DH	AP
3	MAR 13/24	ISSUED FOR TENDER	DH	AP
2	FEB 29/24	ISSUED FOR APPROVALS	DH	AP
1	FEB 8/24	ISSUED FOR 50% CLIENT REVIEW	DH	AP

ISSUES / REVISIONS

CONSULTANT SEAL

Permit to Practice No. 1000129
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. M. MACLEOD
46993
2026-11-05

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2089 Falcon Road ≈ Kamloops BC ≈ V2C 4J2
tel 250.828.0881 ≈ info@TRUE.bc.ca

DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELEVATIONS, FLOOR AND ROOF PLANS AND DETAILS

SCALE	AS SHOWN
DESIGN BY	AP/DH
DRAWN BY	DH
DATE	JANUARY 2024
PROJECT REFERENCE No.	1239-202
DRAWING No.	1239-202-B1
SHEET	1 OF 1
ISSUE/REV.	6

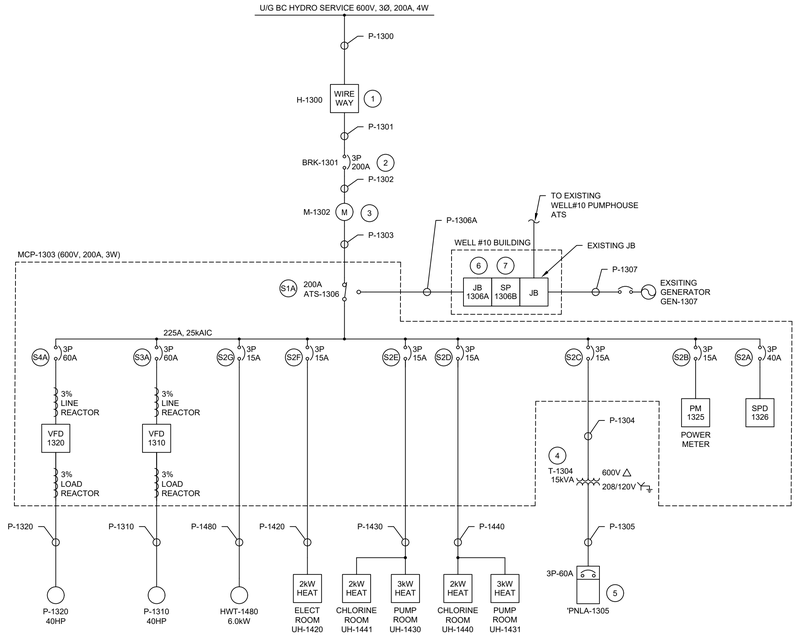
FILE: clients\2024\1239\1239-202\03 drawings\acad\2d design\1239-202 booster station

DISTRIBUTION BILL OF MATERIALS

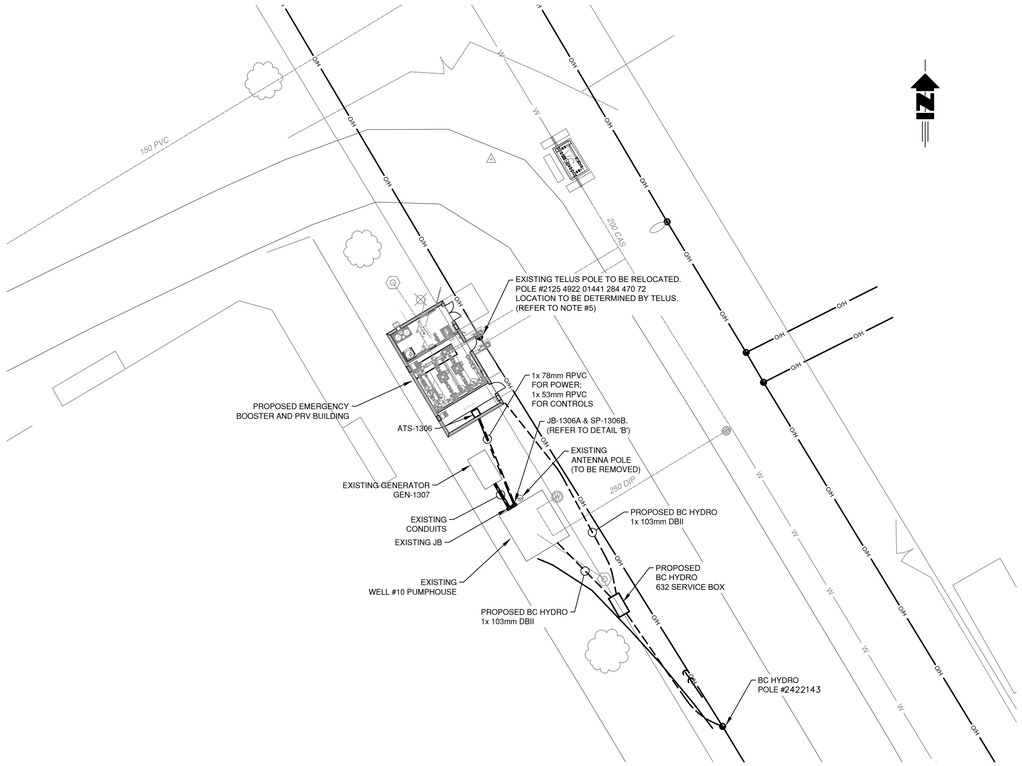
ITEM	DESCRIPTION	CATALOG NUMBER	QTY
1	600V, 200A PULL BOX / WIREWAY	TO BC HYDRO STANDARDS	1
2	200A, 600V, 3Ø-4W, 45kA RATED CIRCUIT BREAKER, LSI TRIP UNIT, SERVICE ENTRANCE RATED C/W NEMA 1 ENCLOSURE	STANDARD OF ACCEPTANCE: SCHNEIDER ELECTRIC OR EQUIVALENT	1
3	METER, 200A, 600V, 3Ø.	TO BC HYDRO STANDARD	1
4	TRANSFORMER: 15KVA, 600V-208/120V, 3Ø, DRY TYPE C/W 2-2 1/2% FCAN AND 2-2 1/2% FCBN TAPS, COPPER WINDINGS.	STANDARD OF ACCEPTANCE: SCHNEIDER ELECTRIC OR EQUIVALENT	1
5	PANELBOARD: 225A BUS, 3Ø-4W, 120/208V C/W 42 SINGLE CIRCUIT SPACES, 3-POLE 60A MAIN BREAKER C/W BOLT-ON BREAKERS, SURFACE MOUNT TRIM AND DOOR.	STANDARD OF ACCEPTANCE: SCHNEIDER ELECTRIC NQ SERIES OR EQUIVALENT	1
6	POLYESTER JUNCTION BOX C/W SOLID COVER, CONTINUOUS HINGE DOOR WITH LOCKABLE SNAP LATCHE, 408mm x 382mm x 207mm, NEMA 4X RATED.	STANDARD OF ACCEPTANCE: HAMMOND CAT.# PJU16148LF OR EQUIVALENT	1
7	SPLITTER: 225A, 600V, 3Ø-3W, 3 FEET IN LENGTH. 12 Ga ALUMINUM ENCLOSURE, NEOPRENE GASKET, NEMA 3 RATED.	STANDARD OF ACCEPTANCE: CODE ELECTRIC CAT.# PAD-WP-A-3623 OR EQUIVALENT	1

MCP-1303 BILL OF MATERIAL

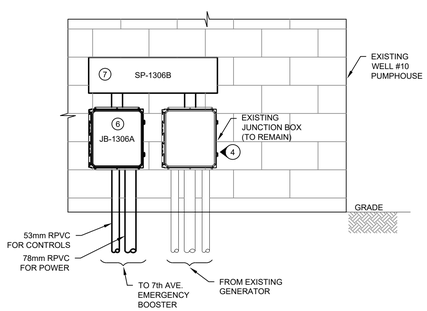
ITEM	DESCRIPTION
MCP-1303	**MOTOR CONTROL PANEL (MCP):** SHALL BE CONSTRUCTED FROM RITTAL TS8 FREE STANDING ENCLOSURES. TO MEET AND EXCEED THE FOLLOWING: ULc, NEMA TYPE 12 RATING 2330mm HIGH x (VARIES) WIDTH x 600mm DEEP ENCLOSURES TS8 FLANGE MOUNT DISCONNECT ENCLOSURES C/W LOCKABLE DISCONNECT HANDLE. COMPONENTS SHALL BE SUPPLIED BY RITTAL TO FORM A COMPLETE CSA APPROVED SYSTEM. LUGS TO ACCEPT UP TO 300kcmil FEEDERS. MCP ENCLOSURE AND ACCESSORIES TO BE SUPPLIED BY RITTAL.
S1A	**AUTOMATIC TRANSFER SWITCH:** 200A, 600V, 3 PHASE, 25kA, MODBUS TCP/IP, SOURCE INDICATORS, OPEN TRANSITION SWITCH. LCD DISPLAY WITH KEYPAD MOUNTED ON DOOR OF ENCLOSURE. STANDARD OF ACCEPTANCE: ASCO POWER TECHNOLOGIES 300 SERIES.
S2A	**SURGE PROTECTIVE DEVICE:** 600VAC, 200kA SCCR, SIGNALING RELAY, PANEL MOUNTED STATUS INDICATORS. BREAKER AS SHOWN ON SINGLE LINE DIAGRAM. STANDARD OF ACCEPTANCE: SIEMENS TPS4 L6 OR EQUIVALENT
S2B	**POWER METER:** 600VAC, WYE, VOLTAGE & CURRENT C/W CT SHORTING BARS, MODBUS TCP COMMUNICATIONS & DOOR MOUNTED DISPLAY. BREAKER AS SHOWN ON SINGLE LINE DIAGRAM. STANDARD OF ACCEPTANCE: SIEMENS PAC 3200 OR EQUIVALENT
S2C	**BREAKER:** 600VAC, 3Ø-3W, 40A, 20kAIC. PUSH-IN TERMINALS FOR FIELD WIRING STANDARD OF ACCEPTANCE: SIEMENS OR EQUIVALENT
S2D	**BREAKER:** 600VAC, 3Ø-3W, 15A, 20kAIC. PUSH-IN TERMINALS FOR FIELD WIRING STANDARD OF ACCEPTANCE: SIEMENS OR EQUIVALENT
S2E	**BREAKER:** 600VAC, 3Ø-3W, 15A, 20kAIC. PUSH-IN TERMINALS FOR FIELD WIRING STANDARD OF ACCEPTANCE: SIEMENS OR EQUIVALENT
S2F	**BREAKER:** 600VAC, 3Ø-3W, 15A, 20kAIC. PUSH-IN TERMINALS FOR FIELD WIRING STANDARD OF ACCEPTANCE: SIEMENS OR EQUIVALENT
S2G	SPACE
S3A	**VARIABLE FREQUENCY DRIVES:** 40HP, 690 VAC, 3 PHASE, MODBUS TCP COMMUNICATIONS, 3% IMPEDANCE LINE REACTOR, 3% IMPEDANCE LOAD REACTOR DOOR MOUNTED KEYPAD, HOA SWITCH, STATUS INDICATION AND RESET PUSHBUTTON, DOOR MOUNTED COOLING FAN MIN. 550CFM, CONTROLLED BY TEMPERATURE SWITCH, BREAKER TO BE MANUFACTURER APPROVED COMBINATION. STANDARD OF ACCEPTANCE: SCHNEIDER ALTIVAR 630.
S4A	**VARIABLE FREQUENCY DRIVES:** 40HP, 690 VAC, 3 PHASE, MODBUS TCP COMMUNICATIONS, 3% IMPEDANCE LINE REACTOR, 3% IMPEDANCE LOAD REACTOR DOOR MOUNTED KEYPAD, HOA SWITCH, STATUS INDICATION AND RESET PUSHBUTTON, DOOR MOUNTED COOLING FAN MIN. 550CFM, CONTROLLED BY TEMPERATURE SWITCH, BREAKER TO BE MANUFACTURER APPROVED COMBINATION. STANDARD OF ACCEPTANCE: SCHNEIDER ALTIVAR 630.



7th AVE EMERGENCY BOOSTER
SINGLE LINE DIAGRAM



SITE PLAN
SCALE 1:250



JB-1306A & SP-1306B
DETAIL 'B'

NOTES:

1. MOTOR CONTROL PANEL (MCP-1303) TO MEET THE FOLLOWING REQUIREMENTS:
   1. COPPER BUSSING TO BE RATED MINIMUM 400AMPS AND BRACED TO MINIMUM 25KAIC. BUSSING TO BE SUPPLIED BY RITTAL AND CSA APPROVED.
   2. ALL EXPOSED BUSSING TO BE COVERED WITH FINGER-SAFE INSULATION BARRIERS.
   3. BREAKER AND DISCONNECT OPERATOR ARMS TO BE PHYSICALLY SUPPORTED TO PREVENT DROOPING WHEN MESHING WITH DOOR MOUNTED OPERATOR HANDLE.
   4. INCOMING SECTION TO BE SUPPLIED WITH ASSEMBLED LUGS FOR SERVICE SUPPLY CONNECTION. LUGS TO ACCEPT UP TO 300kcmil FEEDERS
   5. DOOR MOUNTED OPERATORS TO BE LOCKABLE AND HAVE SHORT TAILS.
   6. SECTION DOORS TO BE UNLOCKED AND OPENED WITH A SCREWDRIVER.
   7. EACH DEVICE TO BE PHYSICALLY ISOLATED SO THAT NO LIVE COMPONENTS ARE EASILY ACCESSIBLE WHEN SERVICING A PARTICULAR DEVICE.
   8. CSA APPROVED.
2. MCP TO BE BUILT BY PANEL SHOP WITH EXPERIENCE BUILDING RITTAL TS-8 ENCLOSURES IN AN MCP-TYPE CONFIGURATION.
   1. REFERENCES OF MINIMUM 3 SUCCESSFUL PROJECTS REQUIRED.
3. BC HYDRO SERVICE REFERENCE NUMBER 4989183. CONTRACTOR TO COORDINATE WITH BC HYDRO FOR SERVICE CHANGE. BC HYDRO SERVICE SHOWN FOR REFERANCE ONLY. INSTALLATION TO BE TO BC HYDRO U07 DESIGN DRAWINGS.
4. CONTRACTOR TO INTERCEPT GENERATOR FEED TO WELL #10 ATS AND CONNECT TO NEW SP-1306B SPLITTER. RECONNECT EXISTING WELL #10 ATS DIRECT TO SPLITTER AND CONNECT NEW ATS-1306 THROUGH JB-1306A TO SPLITTER SP-1306B.
5. CONTRACTOR TO COORDINATE WITH TELUS TO RELOCATE POLE THAT IS NEARBY NEW BUILDING ENVELOPE.
6. CONTRACTOR TO CARRY AN ALLOWANCE FOR A FACTORY ACCEPTANCE TEST (FAT). FAT MUST BE COMPLETE AND ANY OUTSTANDING ISSUES RESOLVED BEFORE RECEIVING RELEVANT EQUIPMENT.
   FAT TO ADHERE TO THE FOLLOWING REQUIREMENTS:
   - TO BE LOCATED AT THE DESIGNATED PANEL SHOP
   - TO BE PERFORMED BY THE ELECTRICAL DESIGN CONSULTANT
   - TO TEST THE FUNCTIONALITY OF:
     MCP-1303;
     CP-1308;
     FVNR-1410 & FVNR-1411

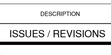
CONTRACTOR TO FACILITATE SCHEDULING AND COORDINATION BETWEEN PANEL SHOP AND ELECTRICAL DESIGN CONSULTANT. LIST OF RECOMMENDED PANEL SHOPS CAN BE PROVIDED UPON REQUEST. A MINIMUM BUDGET OF $2000 CAN BE ASSUMED FOR ANY FAT LOCATED WITHIN 3 HOURS OF KAMLOOPS, BC.

EXCEED ELECTRICAL ENGINEERING
KAMLOOPS, BC ● (250) 434-9489
www.exceedeng.com
Permit to Practice Number: 1000523

No.	DATE	DESCRIPTION	BY	APPD
5	OCT 05/2026	ISSUED FOR TENDER	GT	CJB
4	APR 30/2026	ISSUED FOR TENDER	GT	CJB
3	MAR 11/2024	ISSUED FOR CLIENT REVIEW	GT	CJB
2	MAR 05/2024	BC HYDRO SUBMISSION	GT	CJB
1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

ISSUES / REVISIONS

CONSULTANT SEAL



TRUE CONSULTING
2089 Falcon Road ■ Kamloops BC ■ V2C 4J2
tel 250.828.0881 ■ info@TRUE.bc.ca

DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELECTRICAL SINGLE LINE DIAGRAM & SITE PLAN

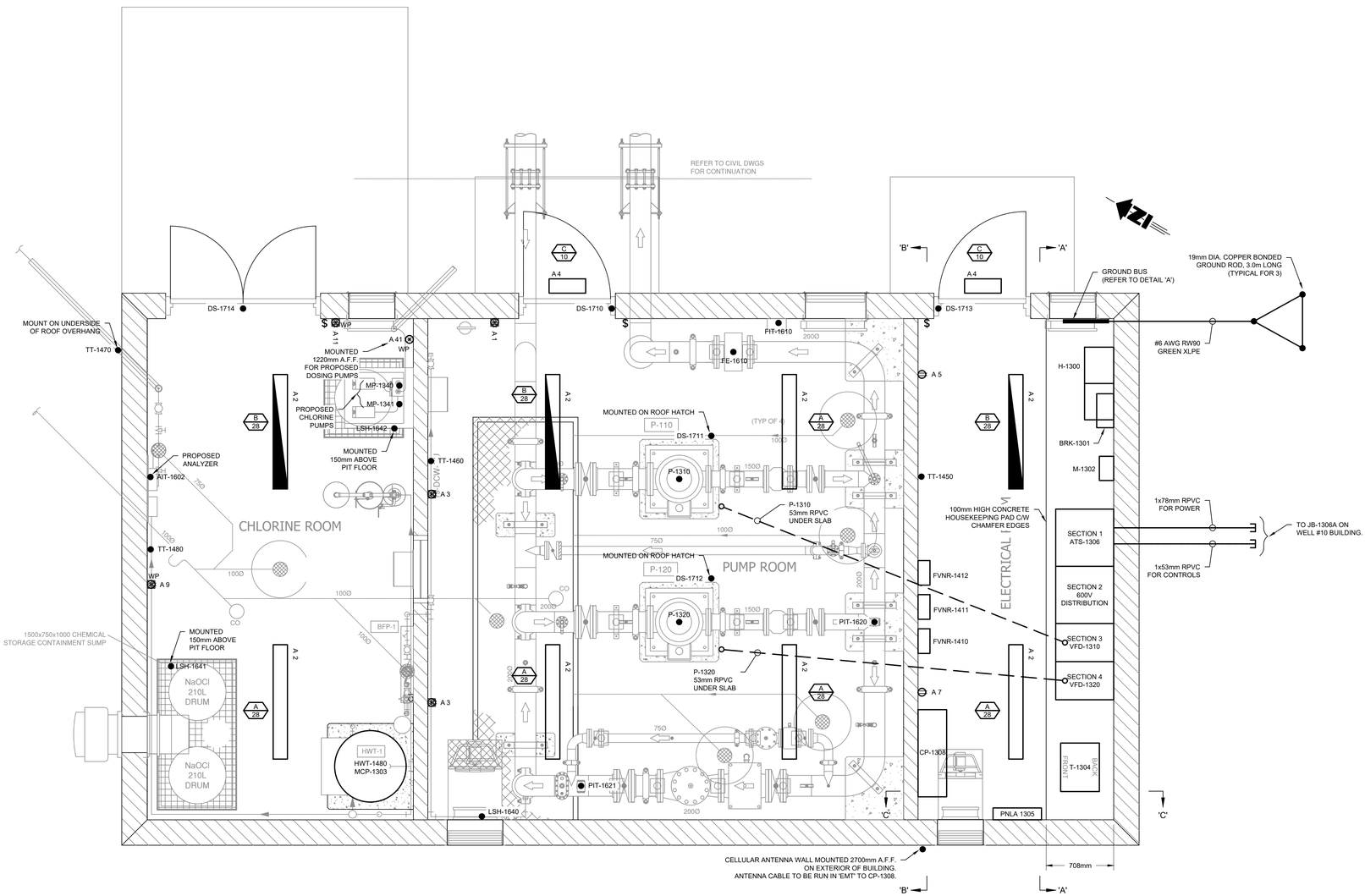
SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E01
SHEET	1 OF 11
ISSUE/REV.	5

F:\E.C.\users\gabe\Documents\exceed electrical engineering\clients - documents\109 - district of hope\10907 - hope 7th ave emergency booster station\work\dwg\dwg\10907

SYMBOLS LEGEND	
⊖	DUPLEX RECEPTACLE, WALL MOUNTED
⊛	GFCI DUPLEX RECEPTACLE, WALL MOUNTED
⊠	20A T-SLOT DUPLEX GFCI RECEPTACLE, WALL MOUNTED
⊠ WP	WEATHERPROOF 20A T-SLOT DUPLEX GFCI RECEPTACLE, WALL MOUNTED
●	INSTRUMENTATION DESIGNATION
⇜	SINGLE POLE SWITCH
⬡	LIGHTING FIXTURE DESIGNATION ie. TYPE A, 100W
▭	SURFACE/SUSPENDED/RECESSED 'LED' FIXTURE
▯	WALL MOUNT 'LED' FIXTURE

NOTE:

1. INSTRUMENTATION TO BE MOUNTED AND ORIENTED IN A POSITION THAT IS EASILY ACCESSIBLE FOR A PERSON TO VIEW.
2. REFER TO 'E01' FOR DISTRIBUTION BILL OF MATERIAL.
3. UNDER GROUND CONDUIT LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY CONFORMANCE WITH ELECTRICAL EQUIPMENT BEFORE INSTALLATION OF THE CONDUITS.
4. DS-1710, DS-1711, DS-1712, DS-1713, DS-1714 TO BE CORROSION RESISTANT DOOR LIMIT SWITCHES, 10A, 120VAC CONTACTS, IP67 RATED, ROLLER LEVER WITH SPRING RETURN ACTION. STANDARD OF ACCEPTANCE: ALLEN-BRADLEY 802MC SERIES.
5. TT-1450, TT-1460 & TT-1480 INTERIOR TEMPERATURE TRANSMITTER: 24VDC, 4-20MA LOOP POWERED 316SS PLATE, SURFACE TRANSMITTER, RANGE: 0 to -50 DEG CELCIUS. STANDARD OF ACCEPTANCE: GREYSTONE TE500AS SERIES.
6. TT-1470 OUTSIDE TEMPERATURE TRANSMITTER: 24VDC, 4-20MA LOOP POWERED, WEATHERPROOF ABS ENCLOSURE WITH A HINGED AND GASKETED COVER, SURFACE TRANSMITTER, RANGE: +50 to -50 DEG CELCIUS. STANDARD OF ACCEPTANCE: GREYSTONE TXOS SERIES.
7. ELECTRICAL CONTRACTOR TO COORDINATE WITH BC HYDRO FOR ELECTRICAL SERVICE INSTALLATION.
8. ALL ELECTRICAL CONDUCTORS TO BE SLEEVED IN EMT, UNLESS OTHERWISE NOTED. FLEXIBLE WHIPS IN LIQUIDTIGHT TO BE USED WITHIN 1'-0" OF INSTRUMENTATION FOR FUTURE CHANGES.
9. ALL WIRING IN CHLORINE ROOM TO BE IN RPVC. LIQUID-TIGHT WHIPS TO BE EXTENDED TO EQUIPMENT. NO METAL CONDUIT SHALL BE USED.



BOOSTER BOOSTER BUILDING
FLOOR PLAN
SCALE 1:25

EXCEED ELECTRICAL ENGINEERING
KAMLOOPS, BC ● (250) 434-9489
www.exceedeng.com
Permit to Practice Number: 1000523

No.	DATE	DESCRIPTION	BY	APPD
5	OCT 05/2026	ISSUED FOR TENDER	GT	CJB
4	APR 30/2026	ISSUED FOR TENDER	GT	CJB
3	MAR 11/2024	ISSUED FOR CLIENT REVIEW	GT	CJB
2	MAR 05/2024	BC HYDRO SUBMISSION	GT	CJB
1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

ISSUES / REVISIONS

CONSULTANT SEAL
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA
C. J. BEHARRELL
45201
2026-05-05

TRUE CONSULTING
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tel 250.828.0881 ■ info@TRUE.bc.ca

DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

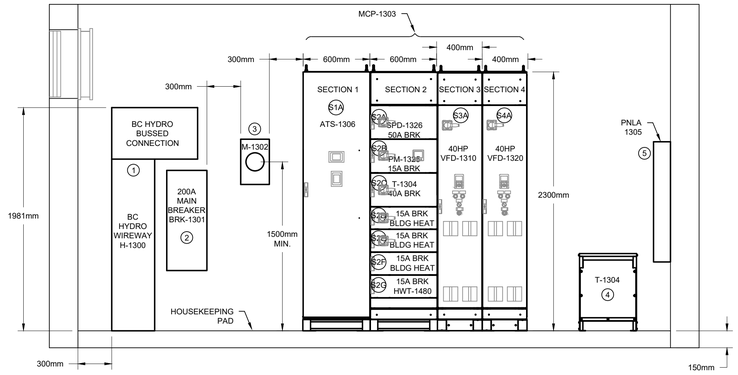
7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELECTRICAL POWER & LIGHTING LAYOUT

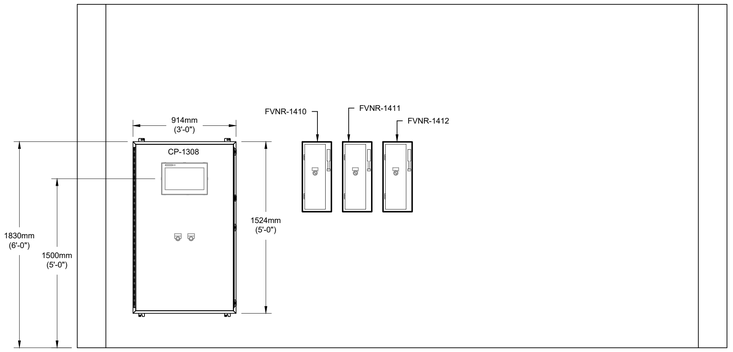
SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E02
SHEET	2 OF 11
ISSUE/REV.	5

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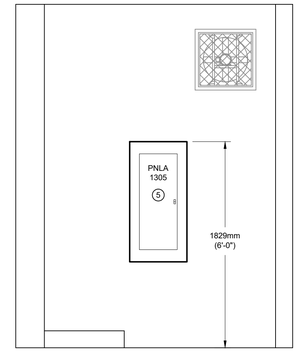
SYMBOLS LEGEND	
⊖	DUPLEX RECEPTACLE, WALL MOUNTED
⊛	GFCI DUPLEX RECEPTACLE, WALL MOUNTED
⊡	20A T-SLOT DUPLEX GFCI RECEPTACLE, WALL MOUNTED
⊡ WP	WEATHERPROOF 20A T-SLOT DUPLEX GFCI RECEPTACLE, WALL MOUNTED
●	INSTRUMENTATION DESIGNATION
⇜	SINGLE POLE SWITCH
⬡	LIGHTING FIXTURE DESIGNATION ie. TYPE A, 100W
▭	SURFACE/SUSPENDED/RECESSED 'LED' FIXTURE
▯	WALL MOUNT 'LED' FIXTURE



ELECTRICAL ELEVATION 'A'
SCALE 1:25



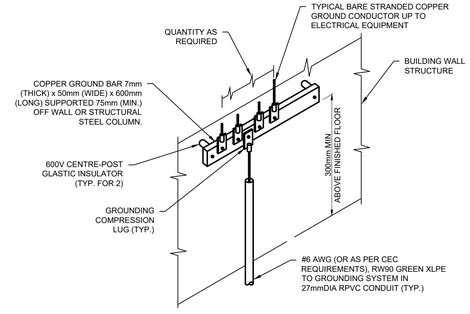
ELECTRICAL ELEVATION 'B'
SCALE 1:25



ELECTRICAL ELEVATION 'C'
SCALE 1:25

PANEL PNLA-1305								LOCATION BOOSTER BUILDING			
120/208 V. 3 PH. 4 W 225 A. MAINS: MAIN BREAKER 3P-60A											
DESIGNATION	LOAD (W)	NO. RECPT	CKT. TRIP	BKR. NO.	Ø	CKT. NO.	BKR. TRIP	NO. RECPT	LOAD (W)	DESIGNATION
PUMP ROOM GFI REC.			20GFI	1	A	2	15			INTERIOR BLDG LTG.
PUMP ROOM GFI REC.			20GFI	3	B	4	15			EXTERIOR BLDG LTG.
ELECT ROOM REC.			15	5	C	6	15			EF-1410 ELECT ROOM
ELECT ROOM REC.			15	7	A	8	15			EF-1411 PUMP ROOM
CHLORINE RM GFI REC.			20GFI	9	B	10	15			EF-1412 CHLORINE RM
CHLORINE RM GFI REC.			20GFI	11	C	12				
				13	A	14				
				15	B	16				
				17	C	18				
				19	A	20				
				21	B	22				
				23	C	24				
				25	A	26				
				27	B	28				
				29	C	30				
				31	A	32				
				33	B	34				
				35	C	36				
				37	A	38				
				39	B	40				
CHLORINE SYSTEM			15GFI	41	C	42	15			CP-1308

LUMINAIRE SCHEDULE									
QUANTITY	TYPE	DESCRIPTION	VOLTAGE	LUMENS (NOMINAL)	CCT (K)	WATTS (NOMINAL)	MOUNTING	CATALOG NUMBER	NOTES
5	A	IP66 LINEAR LED FIXTURE	120VAC	4058	4000K	28W	SURFACE	VISIONEERING CAT.# LSVB48-LED840K040LUNV OR EQUIVALENT	
3	B	IP66 LINEAR LED FIXTURE	120VAC	4058	4000K	28W	SURFACE	VISIONEERING CAT.# LSVB48-LED840K040LUNV-B39 OR EQUIVALENT	C/W 0.5HR BATTERY BACKUP
2	C	EXTERIOR LED WALL LUMINAIRE	120VAC	1050	4000K	10W	SURFACE	KEENE CAT.# LPW710-NW-G3-2-U-NV-BK OR EQUIVALENT	C/W EXTERIOR MOTION DETECTOR



TYPICAL GROUND BUS INSTALLATION DETAIL 'A'

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4	APR 30/2026	ISSUED FOR TENDER	GT	CJB
3	MAR 11/2024	ISSUED FOR CLIENT REVIEW	GT	CJB
2	MAR 05/2024	BC HYDRO SUBMISSION	GT	CJB
1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

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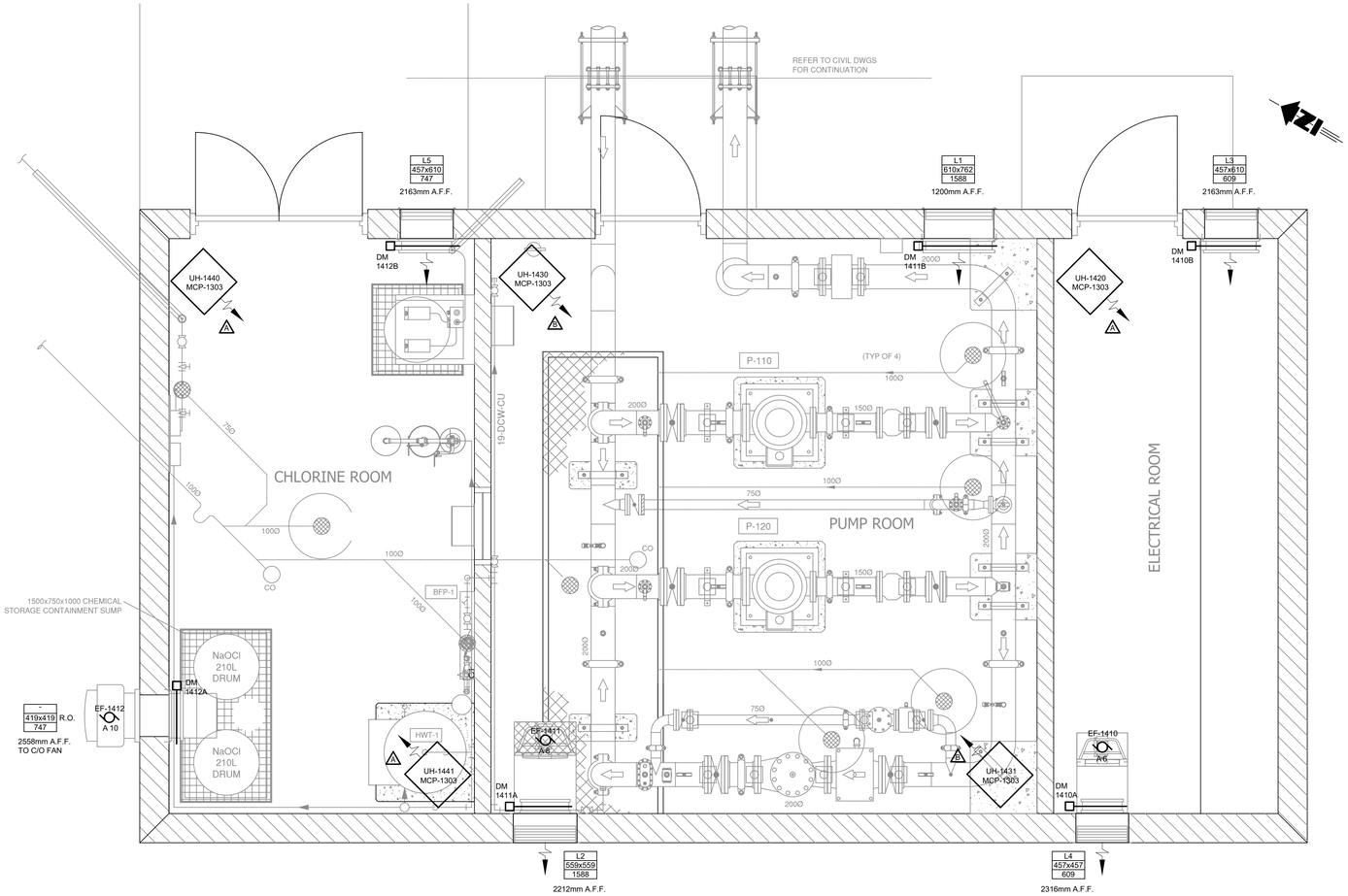
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELECTRICAL ELEVATION, SCHEDULES & DETAILS

SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E03
SHEET	3 OF 11
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BOOSTER BOOSTER BUILDING
HVAC FLOOR PLAN
SCALE 1:25

LOUVER SCHEDULE

ITEM	MANUFACTURER	MODEL	AREA SERVICED	TYPE	DIMENSIONS		ROUGH OPENING		NOTES
					W (mm)	H (mm)	W (mm)	H (mm	
L1	GREENHECK	ESD-635	PUMP ROOM	INTAKE	610	762	636	788	(1), (2)
L2	GREENHECK	ESD-635	PUMP ROOM	EXHAUST	559	559	586	586	(1), (2)
L3	GREENHECK	ESD-635	ELECTRICAL ROOM	INTAKE	457	610	483	636	(1), (2)
L4	GREENHECK	ESD-635	ELECTRICAL ROOM	EXHAUST	457	457	483	483	(1), (2)
L5	GREENHECK	ESD-635	CHLORINE ROOM	INTAKE	457	610	483	636	(1), (2)

NOTES:
(1) MILL FINISH, BIRD SCREEN, FLANGED FRAME
(2) CONTRACTOR TO CONFIRM ROUGH OPENING (RO) WITH LOUVER MANUFACTURE

DAMPER SCHEDULE

ITEM	MANUFACTURER	MODEL	AREA SERVICED	TYPE	DIMENSIONS		ACTUATOR			NOTES
					W (mm)	H (mm)	MAKE/MODEL	V/PH/Hz	ACTION	
DM-1410A	GREENHECK	VCD-34	ELECTRICAL ROOM	INSULATED OPPOSED BLADE	457	457	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)
DM-1410B	GREENHECK	VCD-34	ELECTRICAL ROOM	INSULATED OPPOSED BLADE	457	610	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)
DM-1411A	GREENHECK	VCD-34	PUMP ROOM	INSULATED OPPOSED BLADE	559	559	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)
DM-1411B	GREENHECK	VCD-34	PUMP ROOM	INSULATED OPPOSED BLADE	610	762	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)
DM-1412A	GREENHECK	VCD-34	CHLORINE ROOM	INSULATED OPPOSED BLADE	405	405	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)
DM-1412B	GREENHECK	VCD-34	CHLORINE ROOM	INSULATED OPPOSED BLADE	457	610	BELIMO	24VAC	POWER OPEN SPRING CLOSE	(1), (2), (3), (4)

NOTES:
(1) MILL FINISH, FLANGED FRAME, BIRD SCREEN, INSULATED BLADES, OPPOSED ACTION, REAR MOUNTED FLANGE.
(2) BELIMO MOTORIZED CONTROL ACTUATOR 24 VAC, EXTERNAL MOUNT. INTERLOCK ACTUATORS TO OPEN WITH EF-1410 AND EF-1411 OPERATION
(3) ACTUATOR TO POWER OPEN, SPRING RETURN ON LOSS OF POWER.
(4) ACTUATOR TORQUE DETERMINED BY SUPPLIER.

HEAT FIXTURE SCHEDULE

TYPE	DESCRIPTION	CATALOG NUMBER	QUANTITY	SUPPLIED BY
A	2.0kW UNIT HEATER,CEILING MOUNT. 600V 3Ø. 24VAC CONTROL TRANSFORMER AND CONTACTOR FOR EXTERNAL CONTROL.	OUELLET CAT.# OAS02036AM OR EQUIVALENT	3	ELECTRICAL
B	3.0kW UNIT HEATER,CEILING MOUNT. 600V 3Ø. 24VAC CONTROL TRANSFORMER AND CONTACTOR FOR EXTERNAL CONTROL.	OUELLET CAT.# OAS03036AM OR EQUIVALENT	2	ELECTRICAL

FAN SCHEDULE

ITEM	MANUFACTURER	MODEL	AREA SERVICED	TYPE	DRIVE	CFM	E.S.P. ("wc)	HP	V/PH/HZ	NOTES
EF-1410	GREENHECK	SE1-12-426-VG	ELECTRICAL ROOM	SIDEWALL	DIRECT	609	0.25	1/10 HP	120/1/60	(1), (2), (3), (4)
EF-1411	GREENHECK	SE1-16-426-VG	PUMP ROOM	SIDEWALL	DIRECT	1588	0.25	1/6HP	120/1/60	(1), (2), (3), (4)
EF-1412	GREENHECK	CUE-95-VG	CHLORINE ROOM	SIDEWALL	DIRECT	747	0.10	1/8 HP	120/1/60	(1), (2), (3), (4)

NOTES:
(1) SUPPLY COMPLETE WITH FACTORY MOUNTED NEMA 3R LOCKABLE DISCONNECT SWITCH & TRANSFORMER.
(2) FANS TO BE SUPPLIED COMPLETE WITH STARTER. STARTER SCHEMATIC PER DRAWING E08.
(3) FANS TO BE CONTROLLED ON/OFF VIA PLC.
(4) CONTRACTOR TO CONFIRM ROUGH OPENING (RO) WITH FAN MANUFACTURER.

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3	APR 30/2026	ISSUED FOR TENDER	GT	CJB
2	MAR 11/2024	ISSUED FOR CLIENT REVIEW	GT	CJB
1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

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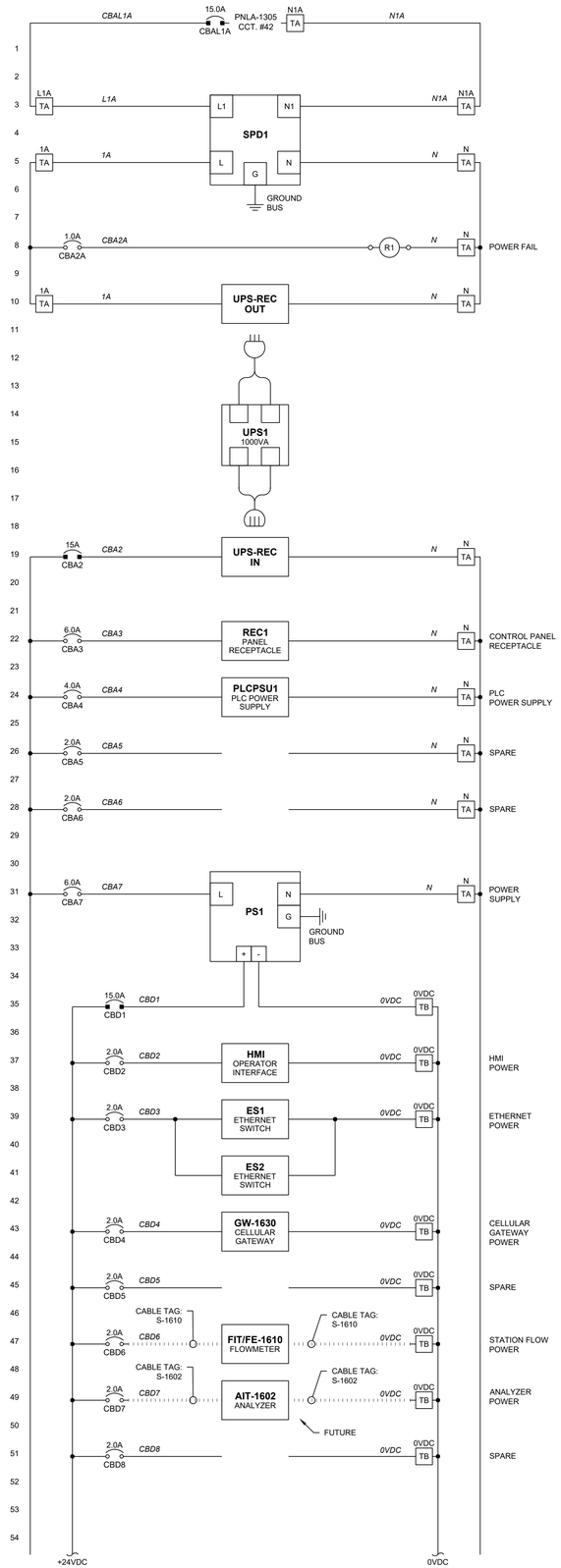
7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

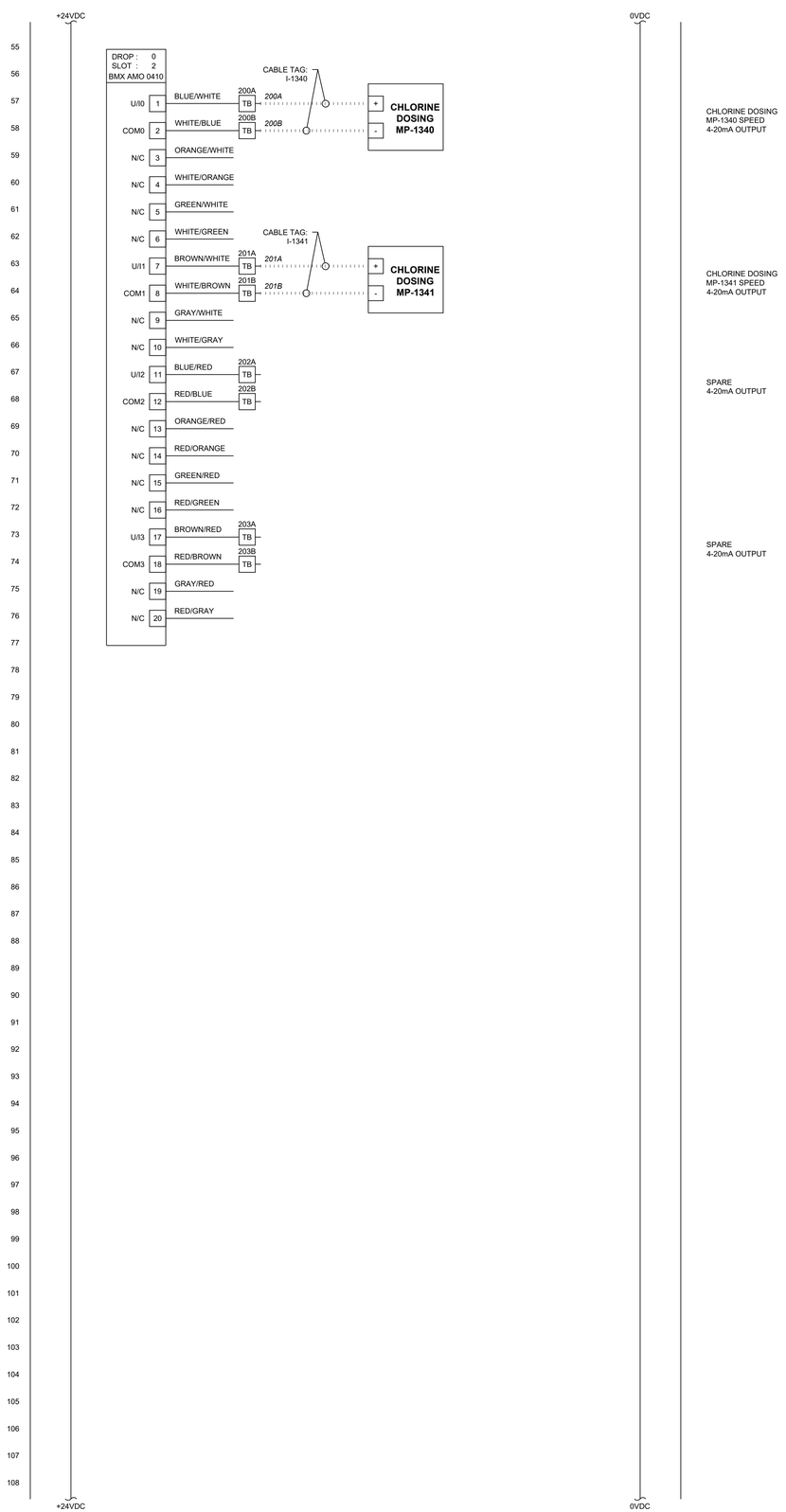
ELECTRICAL HVAC LAYOUT

SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E04
SHEET	4 OF 11
ISSUE/REV.	4

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SCHEMATIC SYMBOLS	
TA	TERMINAL
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
STOP	NORMALLY CLOSED PUSHBUTTON
START	NORMALLY OPEN PUSHBUTTON
R	INDICATING LIGHT
	THEROMAGNETIC CIRCUIT BREAKERS (BRANCH CIRCUITED RATED, 10 kAIC)
	THEROMAGNETIC CIRCUIT BREAKERS (SUPPLEMENTARY BREAKERS)
R1	RELAY
H O A	SELECTOR SWITCH
	FIELD WIRING
	CONTROL PANEL WIRING





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ELECTRICAL SCHEMATIC (1 of 4)

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DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907

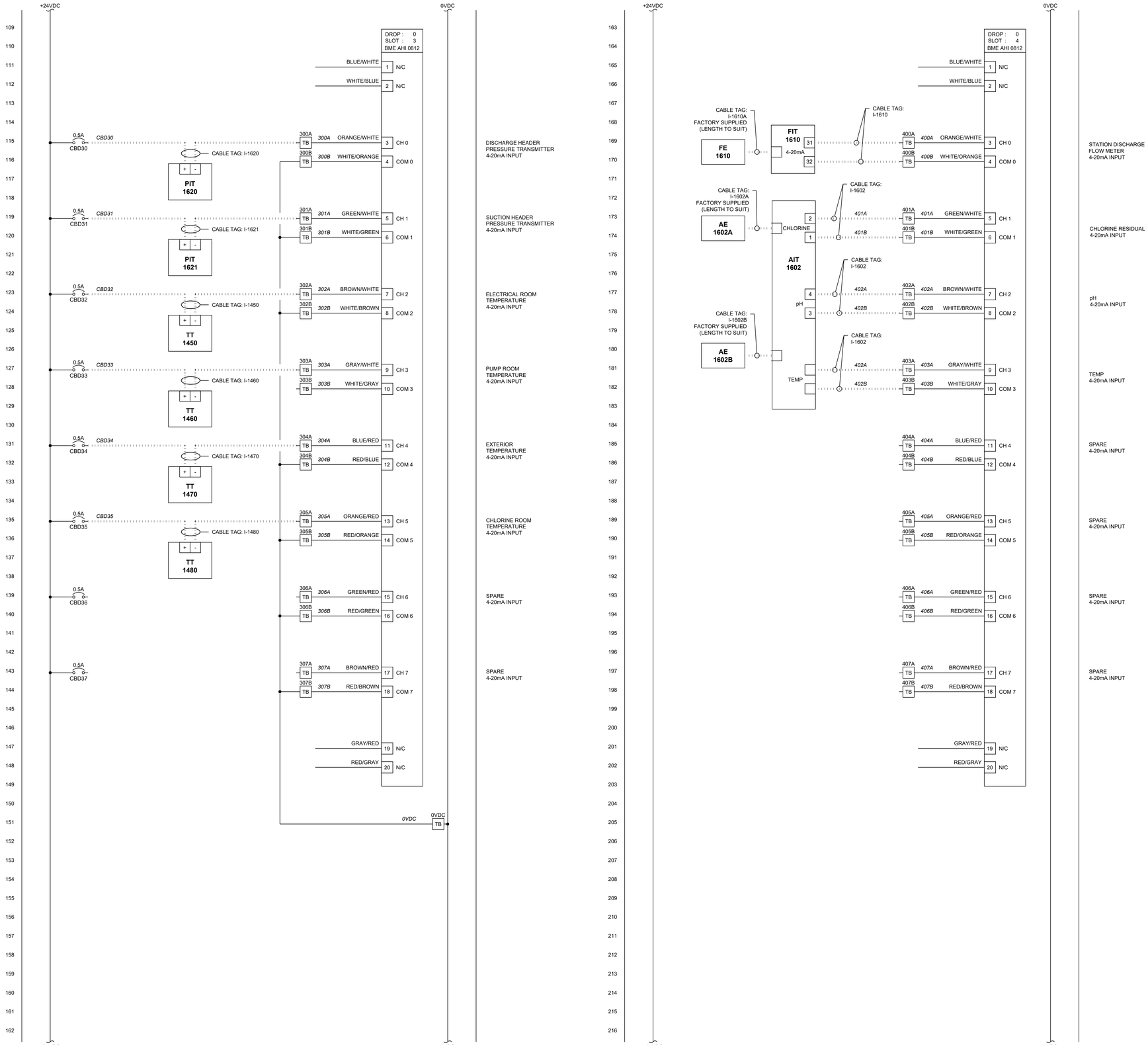
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SCHEMATIC SYMBOLS	
TA	TERMINAL
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
STOP	NORMALLY CLOSED PUSHBUTTON
START	NORMALLY OPEN PUSHBUTTON
R	INDICATING LIGHT
	THEROMAGNETIC CIRCUIT BREAKERS (BRANCH CIRCUITED RATED, 10 kAIC)
	THEROMAGNETIC CIRCUIT BREAKERS (SUPPLEMENTARY BREAKERS)
R1	RELAY
H O A	SELECTOR SWITCH
	FIELD WIRING
	CONTROL PANEL WIRING



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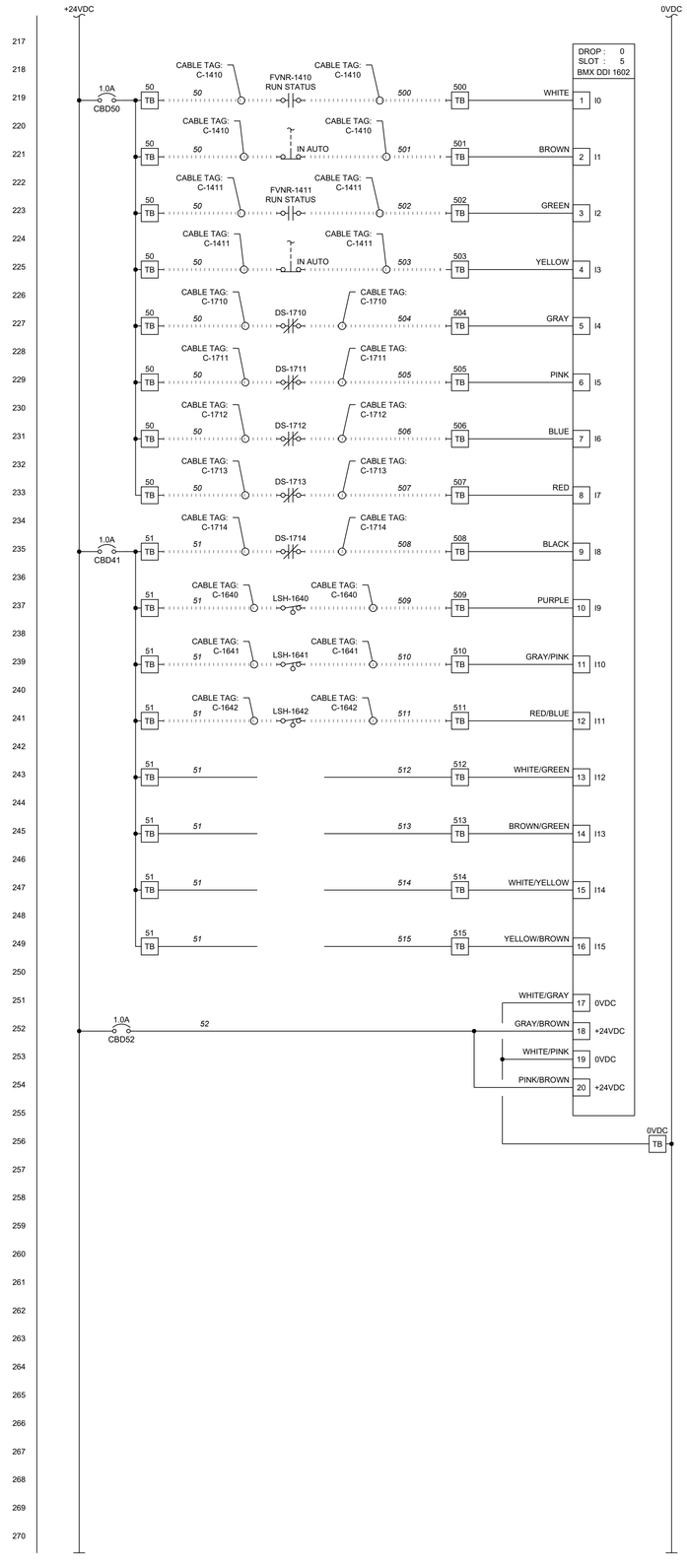
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ELECTRICAL SCHEMATIC (2 of 4)

SCALE	AS SHOWN
DESIGN BY	CJB
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DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E06
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SCHEMATIC SYMBOLS	
TA	TERMINAL
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
STOP	NORMALLY CLOSED PUSHBUTTON
START	NORMALLY OPEN PUSHBUTTON
R	INDICATING LIGHT
	THEROMAGNETIC CIRCUIT BREAKERS (BRANCH CIRCUITED RATED, 10 kAIC)
	THEROMAGNETIC CIRCUIT BREAKERS (SUPPLEMENTARY BREAKERS)
R1	RELAY
H O A	SELECTOR SWITCH
	FIELD WIRING
	CONTROL PANEL WIRING



EF-1410
ELECTRICAL ROOM
RUN STATUS
DIGITAL INPUT

EF-1410
ELECTRICAL ROOM
IN AUTO
DIGITAL INPUT

EF-1411
PUMP ROOM
RUN STATUS
DIGITAL INPUT

EF-1411
PUMP ROOM
IN AUTO
DIGITAL INPUT

PUMP ROOM
DOOR SWITCH
DIGITAL INPUT

PUMP ROOM
ROOF HATCH #1 SWITCH
DIGITAL INPUT

PUMP ROOM
ROOF HATCH #2 SWITCH
DIGITAL INPUT

ELECTRICAL ROOM
DOOR SWITCH
DIGITAL INPUT

CHLORINE ROOM
DOOR SWITCH
DIGITAL INPUT

SUMP PIT
HIGH LEVEL FLOAT
DIGITAL INPUT

CHEMICAL STORAGE PIT
HIGH LEVEL FLOAT
DIGITAL INPUT

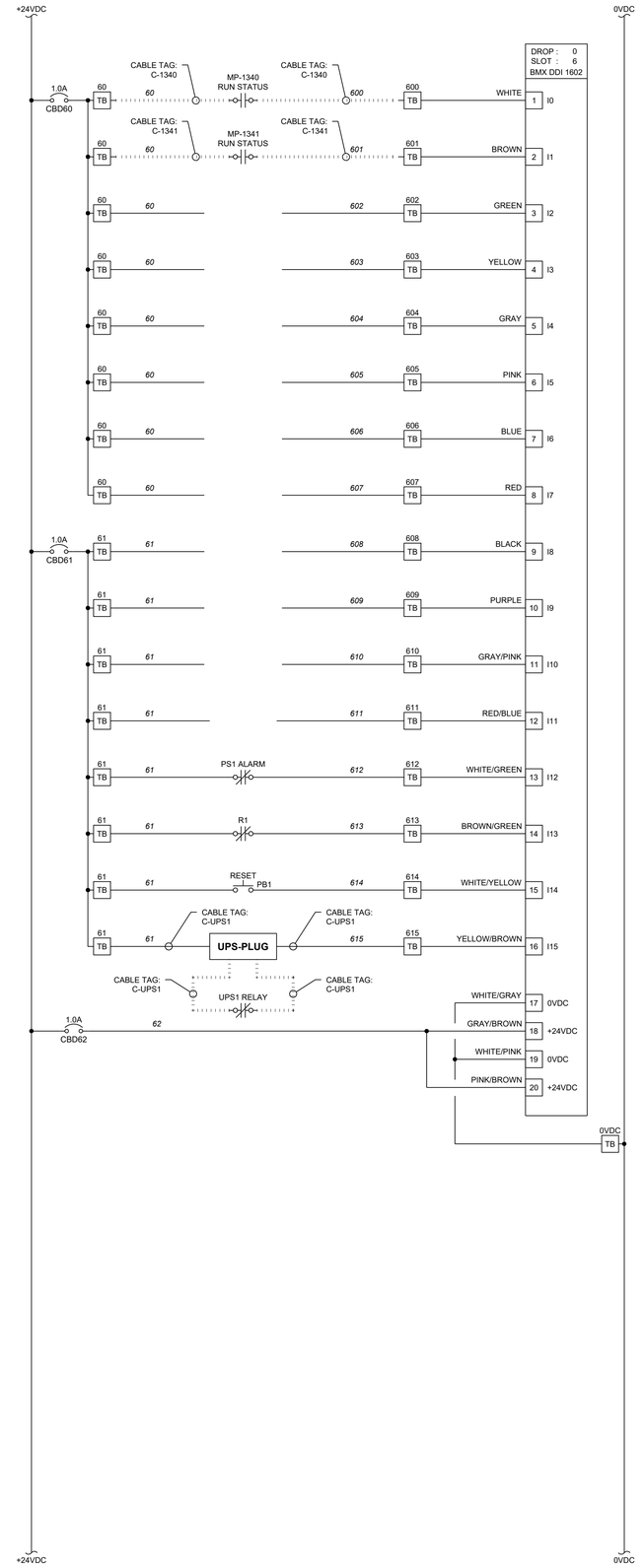
DOSING TANK PIT
HIGH LEVEL FLOAT
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT



MP-1340
CHLORINE DOSING #1
RUN STATUS
DIGITAL INPUT

MP-1341
CHLORINE DOSING #2
RUN STATUS
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

SPARE
DIGITAL INPUT

PS1 ALARM
DIGITAL INPUT

POWER FAIL
DIGITAL INPUT

ALARM RESET
DIGITAL INPUT

UPS1 ALARM
DIGITAL INPUT

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ELECTRICAL SCHEMATIC (3 of 4)

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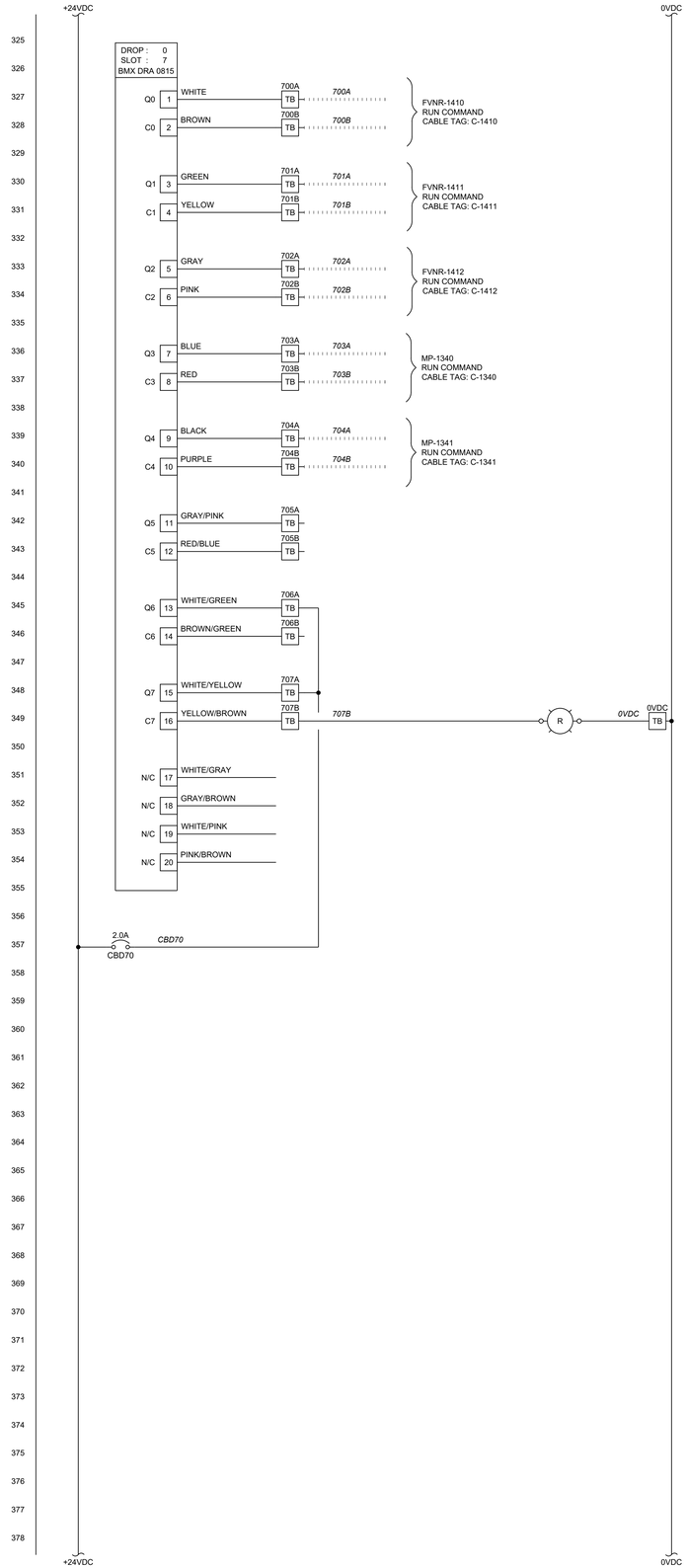
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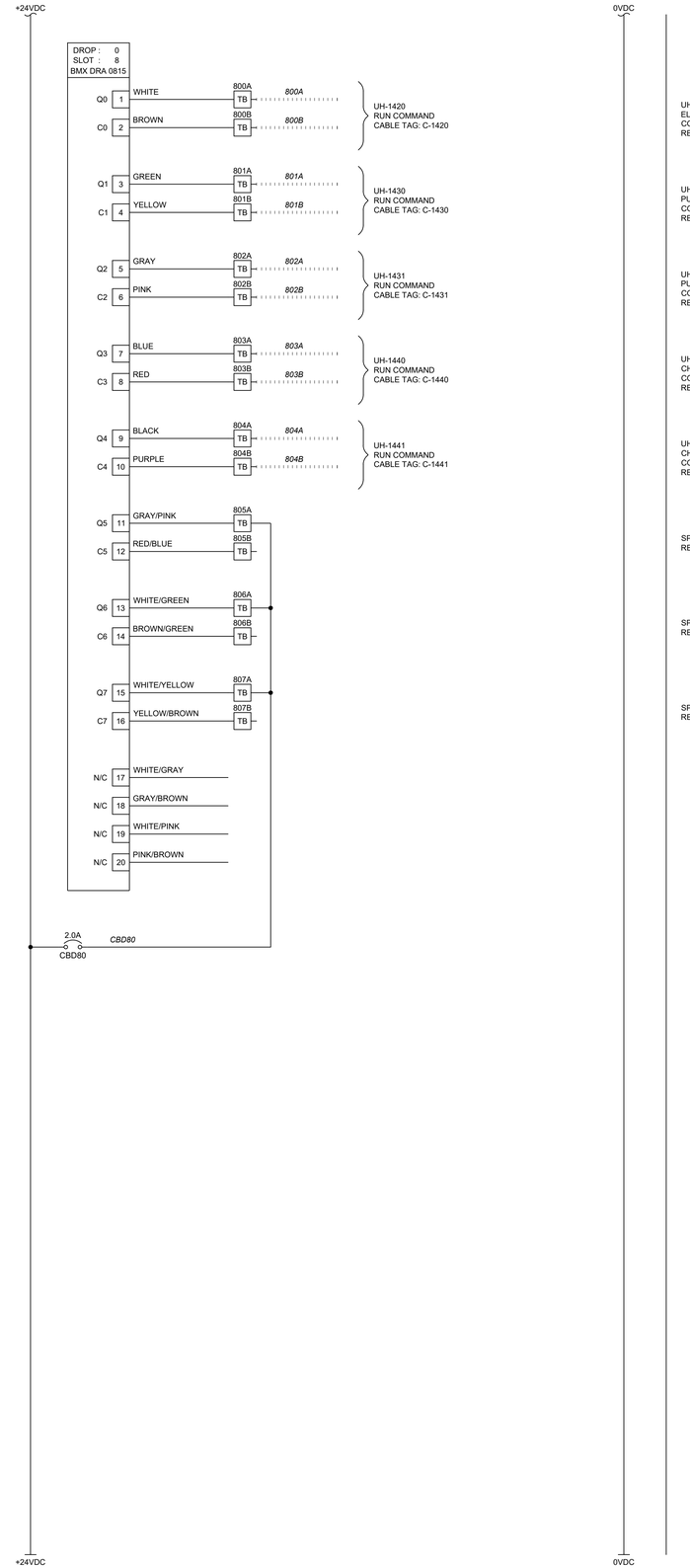
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SCHEMATIC SYMBOLS	
TA	TERMINAL
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
STOP	NORMALLY CLOSED PUSHBUTTON
START	NORMALLY OPEN PUSHBUTTON
R	INDICATING LIGHT
	THEROMAGNETIC CIRCUIT BREAKERS (BRANCH CIRCUITED RATED, 10 kAIC)
	THEROMAGNETIC CIRCUIT BREAKERS (SUPPLEMENTARY BREAKERS)
R1	RELAY
H O A	SELECTOR SWITCH
	FIELD WIRING
	CONTROL PANEL WIRING





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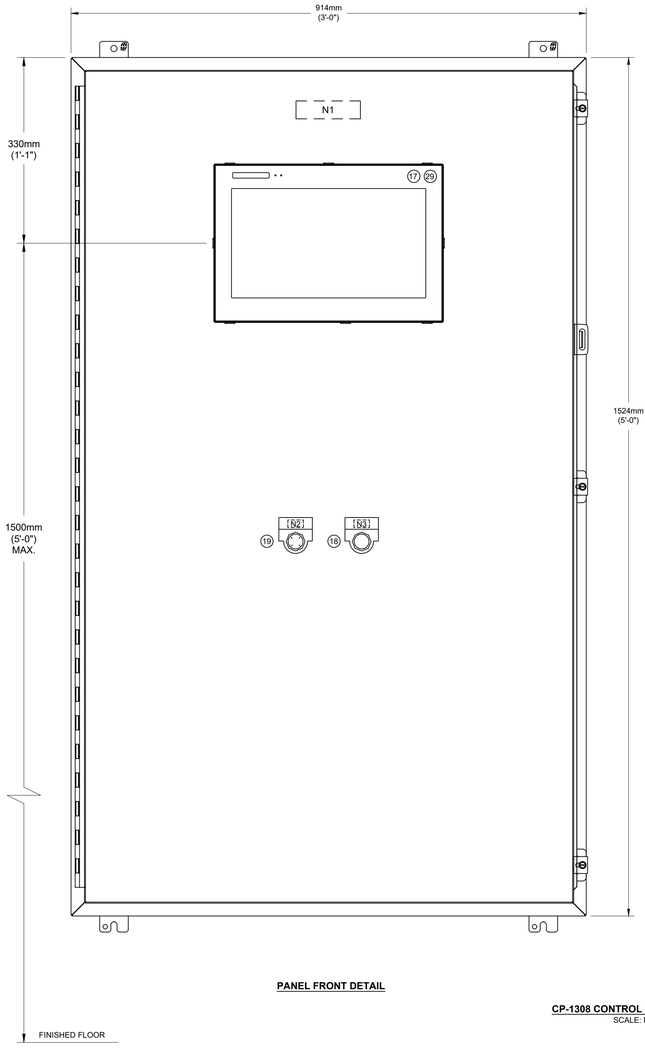
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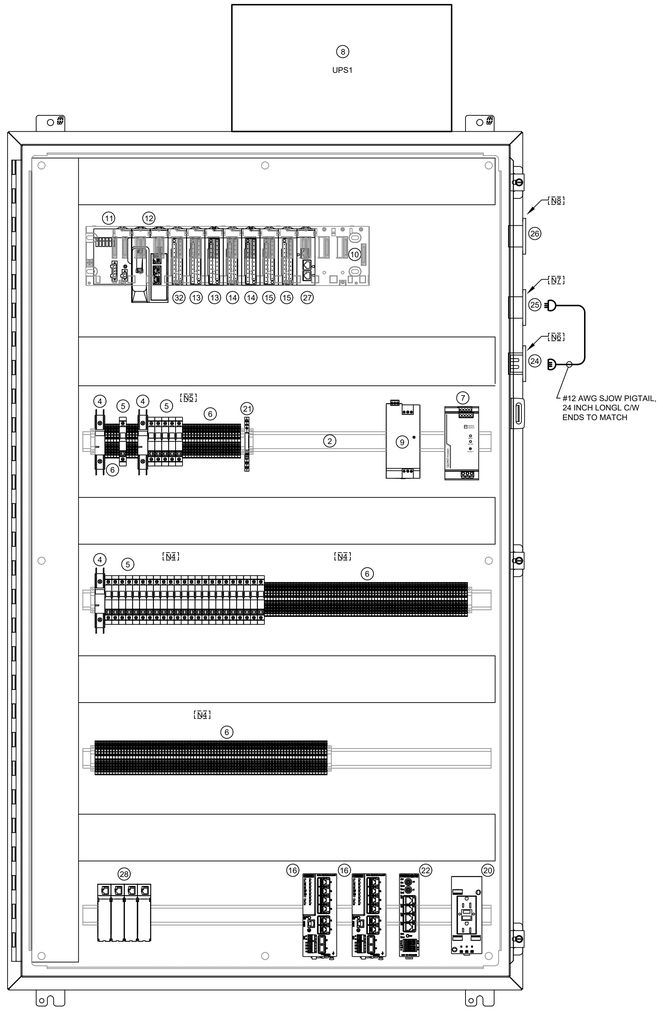
ELECTRICAL SCHEMATIC (4 of 4)

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DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
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PANEL FRONT DETAIL



PANEL INTERNAL DETAIL

CP-1308 CONTROL PANEL LAYOUT
SCALE: NTS

NOTES:

1. ALL WIRING, TERMINAL BLOCKS, RELAYS, ETC. SHALL BE PROPERLY IDENTIFIED.
2. LAMACOID NAMEPLATES SHALL BE PROVIDED FOR ALL FRONT-MOUNTED EQUIPMENT.
3. ALL WIRING IN PANEL TO BE 18 AWG TEW 26 STRAND, 105°C, UNLESS OTHERWISE SPECIFIED.
4. ALL WIRES SHALL BE TAGGED AT BOTH ENDS USING SHRINK TUBE MARKERS OR OTHER ACCEPTABLE WIRE MARKING DEVICES.
5. CONTRACTOR TO VERIFY THAT SUPPLY VOLTAGES ARE COMPATIBLE WITH MANUFACTURERS SPECIFICATIONS OF CONNECTED LOADS BEFORE ENERGIZING
6. ONE (1) SET OF ELECTRICAL DRAWINGS SHALL BE INCLUDED INSIDE THE CONTROL PANEL.
7. SHOP DRAWINGS TO BE PROVIDED TO CONSULTANT FOR REVIEW FOR ALL CP-1305 COMPONENTS.
8. PANEL TO BE BUILT BY NRTL APPROVED PANEL SHOP. SPECIAL INSPECTION NOT ACCEPTABLE.
9. PANEL SHOP TO INCLUDE LABELS ON THE BACK PANEL ABOVE EACH COMPONENT TO MATCH DESIGNATION SHOWN ON THE BILL OF MATERIALS AND CONTROL SCHEMATIC.
10. ALL CAT6A PATCH CABLES SHALL BE SHIELDED, STRANDED CONSTRUCTION AND FACTORY CERTIFIED. LENGTH TO SUIT. STANDARD OF ACCEPTANCE: PHOENIX CONTACT VS-OE-OE-94F SERIES C/W PHOENIX CONTACT RJ45 CONNECTOR CAT. #1148847.

CONTROL PANEL WIRE COLORS:

1. POWER - 120/240VAC SUPPLY - BLACK
2. POWER - 120/240VAC NEUTRAL - WHITE
3. POWER - 24 VDC SUPPLY - YELLOW
4. POWER - 24VDC COMMON – LIGHT BLUE
5. DISCRETE CONTROL - AC - RED
6. DISCRETE CONTROL - DC – LIGHT BLUE
7. INTRINSICALLY SAFE (IS) - ORANGE
8. PROTECTIVE EARTH (PE) - GREEN/YELLOW
9. SIGNAL GROUND / INSTRUMENTATION EARTH (IE) - GREEN

CP-1308 CONTROL PANEL BILL OF MATERIAL

TAG	DESIGNATION	DESCRIPTION	CATALOG NUMBER	QUANTITY
1	CP-1308	WALLMOUNT ENCLOSURE, 1524mm x 914mm x 305mm, NEMA 12, C/W INNER PANEL & LITERATURE POCKET KIT.	HAMMOND CAT.# 1418T12LP C/W 18P5733 OR EQUIVLENT	1
2		T35 DIN RAIL PERFORATED	PREFERRED VENDOR	AS REQUIRED
3		75mm Width X 75mm Depth, WIREWAY C/W COVER.	PREFERRED VENDOR	AS REQUIRED
4	TA/TB	THERMOMAGNETIC CIRCUIT BREAKERS, SIZED AS PER DRAWINGS. BRANCH CIRCUITED RATED, 10 kAIC.	PHOENIX CONTACT CAT.# TMC 81C	AS REQUIRED
5	TA/TB	THERMOMAGNETIC CIRCUIT BREAKERS, SIZED AS PER DRAWINGS. SUPPLEMENTARY RATED.	PHOENIX CONTACT TMC-UT6 SERIES	AS REQUIRED
6	TA/TB	TERMINAL BLOCKS, 24 AMP RATING, WIRE SIZE 12 TO 26 AWG, PUSH-IN C/W END BARRIERS AND RETAINING CLIPS.	PHOENIX CONTACT CAT.# 3209549-TWIN PHOENIX CONTACT CAT.# 3209565 2,5-TWIN-PE (GROUND)	AS REQUIRED
7	PS1	INSTRUMENT POWER SUPPLY, 120VAC INPUT AND 24VDC, 10A OUTPUT, INTEGRATED DECOUPLING MOSFETS. DIN RAIL MOUNTED.	PHOENIX CONTACT CAT.# 2904616 QUINT4-PS/1AC/24DC/10/+	1
8	UPS1	UNINTERUPTIBLE POWER SUPPLY, LINE INTERACTIVE, 750VA, 120VAC INPUT, 120VAC OUTPUT C/W 6 RECEPTACLES AND SMARTCONNECT PORT+SMARTSLOT.	APC SMART-UPS MODEL #. SMT750C	1
9	SPD1	EMC FILTER SURGE PROTECTION DEVICE, 120VAC, 15AMPS	PHOENIX CONTACT CAT.# 1292453 SFP2-1S-1-15A-120AC-UT	1
10		12-SLOT RACK, ETHERNET BACKPLANE.	SCHNEIDER BME XBP 1200	1
11	PLCPSU1	POWER SUPPLY, 120VAC, 36 WATTS OUTPUT	SCHNEIDER BMX CPS 3500	1
12		M580 CPU C/W (1) ETHERNET PORT, (1) USB PORT, (1) MODBUS PORT & (1) SD MEMORY CARD	SCHNEIDER BMEP 58 1020	1
13		8pt. ANALOG INPUT (HART) MODULE. 20-WAY ANALOG TERMINAL BLOCK / FLYING LEAD CONNECTION CABLE.	SCHNEIDER BME AHI 0812	2
14		16pt. 24VDC INPUT MODULE 20-WAY DISCRETE TERMINAL BLOCK / FLYING LEAD CONNECTION CABLE.	SCHNEIDER BMX DDI 1602	2
15		8pt. RELAY OUTPUT MODULE C/W 20-WAY DISCRETE TERMINAL BLOCK / FLYING LEAD CONNECTION CABLE.	SCHNEIDER BMX DRA 0815	2
16	ES1 & ES2	MANAGED ETHERNET SWITCH, 6 PORTS COPPER, 2 PORTS SFP. C/W C-PLUG.	SIEMENS SCALANCE CAT.# XC206-2SFP C/W C-PLUG	2
17	HMI	OPERATOR INTERFACE, 24VDC, 15" TOUCH SCREEN	AUTOMATION DIRECT CM5-T15W	1
18	PB1	PUSHBUTTON, BLACK, FLUSH SPRING RETURN, 1NC CONTACT.	SCHNEIDER HARMONY SERIES OR SIEMENS SIRIUS ACT SERIES	1
19		ROUND PILOT LIGHT, 22mm DIA, RED, INTEGRAL LED, 24VDC.	SCHNEIDER HARMONY SERIES OR SIEMENS SIRIUS ACT SERIES	1
20	REC1	120VAC, 15A, GFI DUPLEX DIN RAIL RECEPTACLE	PHOENIX CONTACT CAT.# 1263626 EO-AB/PT/LED/DUO/V/GFI/15	1
21	R1	RELAY MODULE: 6.2mm 120VAC COIL, 6A CONTACT, 1N.C-1N.O C/W PUSH-IN TERMINALS.	PHOENIX CONTACT CAT. # 2900304 PLC-RPT-120UC/21	1
22	GW-1630	4G CELLULAR MODEM, 24VDC, COPPER WAN PORT C/W KEY PLUG.	SIEMENS SCALANCE M876-4 & KEY-PLUG	1
23		4G ANTENNA W/ SMA CONNECTOR, WALL MOUNTED ON EXTERIOR OF BUILDING.	EWON FAC 90901_0100	1
24		UPS SINGLE INLET RECEPTACLE FLANGED NYLON INLET	HUBBEL CAT# HBL5278C	1
25		UPS SINGLE OUTLET RECEPTACLE FLANGED NYLON RECEPTACLE	HUBBEL CAT# HBL5279C	1
26	UPS-PLUG	UPS PLUG & CABLE FOR UPS ALARM	EB HORSMAN CAT. # FKFD-ESRTA4EE	1
27		ETHERNET COMMUNICATIONS MODULE	SCHNEIDER BMENOC0301	1
28		PATCH PANEL, RJ45 SOCKET ON IDC TERMINAL BLOCKS, 10/100/1000 MBPS, DIN RAIL MOUNTING, IP20, SHIELD CONTACTING WITH STRAIN RELIEF.	PHOENIX CONTACT CAT.# 2703019	4
29		128GB USB FOR HMI	PREFERRED VENDOR	1
30		SURGE PROTECTION DEVICE, BULKHEAD STYLE, SMA CONNECTORS.	POLYPHASER	1
31		PATCH CABLE FROM CELLULAR MODEM TO SURGE ARRESTOR, CS29 COAX OR BETTER C/W SMA CONNECTORS. LENGTH TO SUIT.	PREFERRED VENDOR	1
32		4pt. 4-20mA ISOLATED OUTPUT MODULE. 20-WAY ANALOG TERMINAL BLOCK / FLYING LEAD CONNECTION CABLE.	SCHNEIDER BMX AMO 0410	1

CP-1308 NAMEPLATE SCHEDULE

TYPE	TYPE	TEXT	COLOR	FONT SIZE
N1	LAMACOID	CONTROL PANEL CP-1308	BLACK ON WHITE	12mm
N2	LAMACOID	ALARM	BLACK ON WHITE	6mm
N3	LAMACOID	RESET	BLACK ON WHITE	6mm
N4	LAMACOID	24VDC 'TB' TERMINALS	BLACK ON WHITE	6mm
N5	LAMACOID	120VAC 'TA' TERMINALS	BLACK ON WHITE	6mm
N6	LAMACOID	UPS REC-IN	BLACK ON WHITE	6mm
N7	LAMACOID	UPS REC-OUT	BLACK ON WHITE	6mm
N8	LAMACOID	UPS STATUS	BLACK ON WHITE	6mm

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No.	DATE	DESCRIPTION	BY	APPD
4	OCT 05/2026	ISSUED FOR TENDER	GT	CJB
3	APR 30/2026	ISSUED FOR TENDER	GT	CJB
2	MAR 11/2024	ISSUED FOR CLIENT REVIEW	GT	CJB
1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

ISSUES / REVISIONS

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. BEHARRELL # 45208 ENGINEER
2026-10-05

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DISTRICT OF HOPE

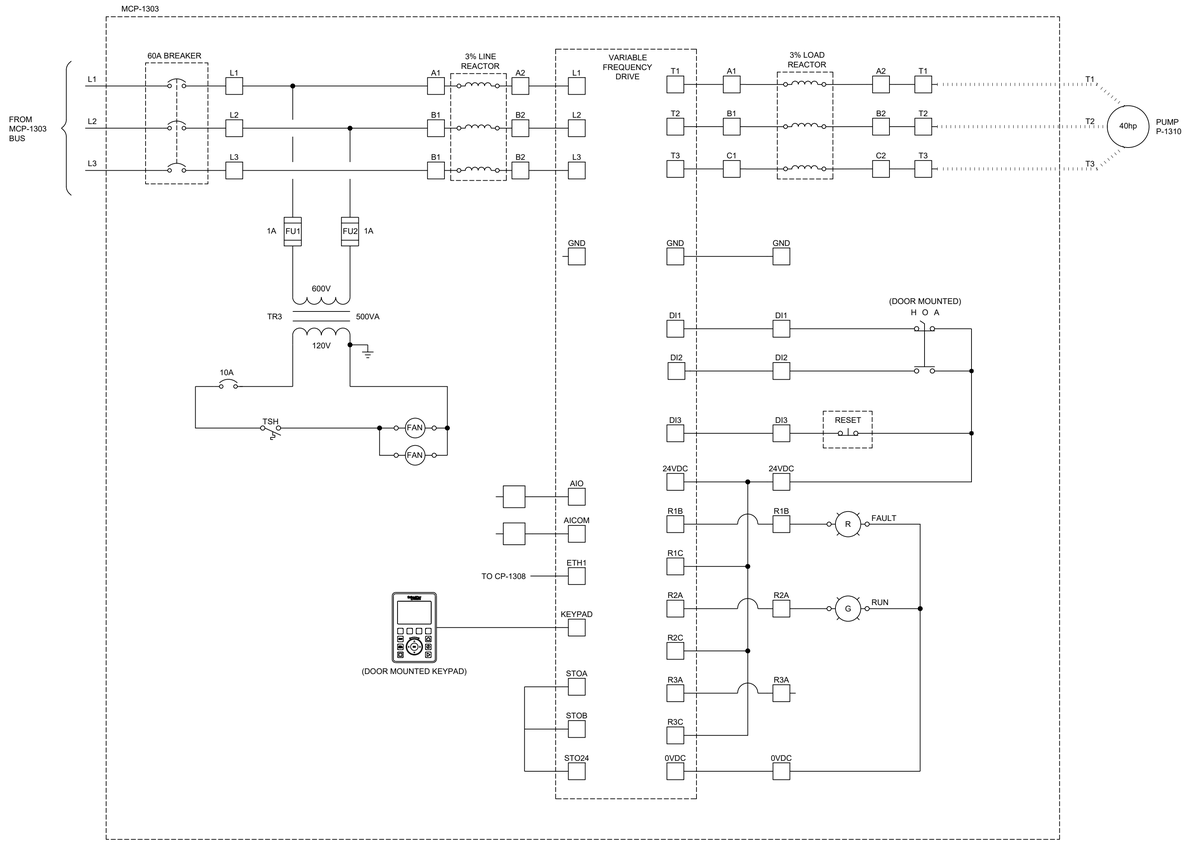
WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

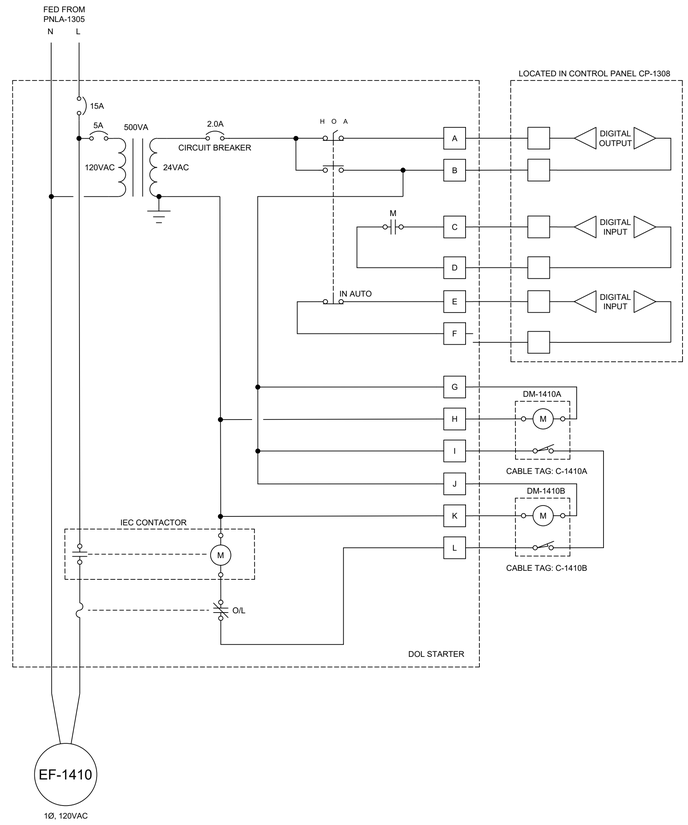
ELECTRICAL CP-1308 LAYOUT & BILL OF MATERIAL

SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E09
SHEET	9 OF 11
ISSUE/REV.	4

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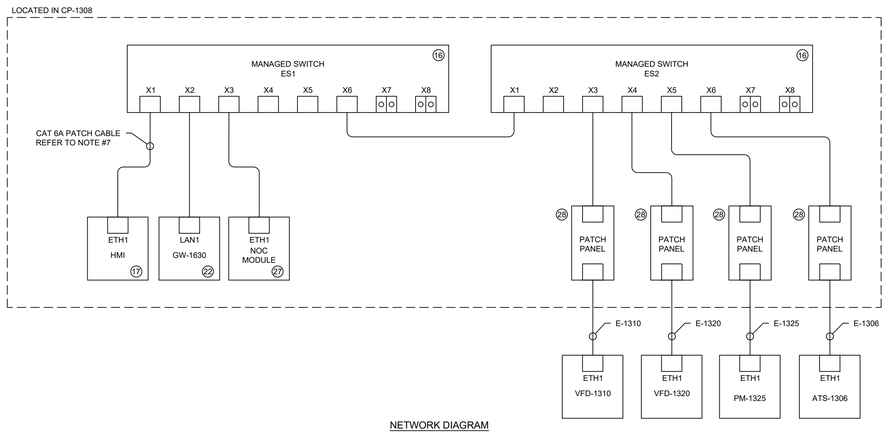
VFD-1310 SCHEMATIC
(TYPICAL FOR VFD-1320)



FVNR-1410
STARTER SCHEMATIC
(TYPICAL FOR FVNR-1411 & FVNR-1412)

NOTES:

1. VFDs TO BE CONFIGURED AS FOLLOWS:
   - 1.1. 'HAND' MODE ON THE HOA SWITCH SHALL RUN THE VFD FORWARD WITH REFERENCE FREQUENCY SET BY THE KEYPAD.
   - 1.2. 'AUTO' SHALL PUT THE VFD INTO REMOTE CONTROL MODE WHERE COMMANDS CAN BE SENT VIA THE NETWORK. REFERENCE FREQUENCY SET OVER THE NETWORK.
   - 1.3. 'OFF' SHALL STOP THE DRIVE.
2. FAN IS PROGRAMMED TO START BY TEMPERATURE SWITCH.
3. PANEL SHOP TO BREAK OUT ALL CONTROL WIRING TO TERMINAL BLOCKS.



NETWORK DIAGRAM

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ISSUES / REVISIONS

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2026-10-05

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DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELECTRICAL FAN STARTER, VFD SCHEMATIC & NETWORK DIAGRAM

SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E10
SHEET	10 OF 11
ISSUE/REV.	4

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CABLE SCHEDULE

TAG	CIRCUIT		FROM	VIA	TO	CONDUIT SIZE/TYPE	CABLE TYPE	CONDUCTORS			COMMENTS
	LOAD	VOLTAGE	EQUIPMENT		EQUIPMENT			NO.	SIZE	VOLTS	
P-1300	200A	600VAC	BC HYDRO SERVICE	CONDUIT	H-1300	103mm DBII					BY BC HYDRO
P-1301	200A	600VAC	H-1300	CONDUIT	M-1301	103mm DBII	RW90	4C	#3/0	1000V	COPPER
P-1302	200A	600VAC	BRK-1301	CONDUIT	M-1302	103mm DBII	RW90	4C	#3/0	1000V	COPPER
P-1303	200A	600VAC	M-1302	CONDUIT	MCP-1303	103mm DBII	RW90	3C	#3/0	1000V	COPPER
P-1304	15kVA	600VAC	MCP-1303	CONDUIT	T-1304	EMT	RW90	3C	#12	1000V	
P-1305	100A	208VAC	T-1304	CONDUIT	PNLA-1305	EMT	RW90	4C	#6	1000V	
P-1306A	200A	600VAC	ATS-1306	CONDUIT	JB-1306A / SP-1306B	78mm RPVC	RW90	3C	#3/0	1000V	
P-1307	200A	600VAC	JB-1306A / SP-1306B	CONDUIT	EXISTING GEN-1307	78mm RPVC	RW90	3C	#3/0	1000V	
P-1310	40HP	600VAC	MCP-1303	CONDUIT	P-1310	53mm RPVC	RW90	3C	#2	1000V	
P-1320	40HP	600VAC	MCP-1303	CONDUIT	P-1320	53mm RPVC	RW90	3C	#2	1000V	
P-1420	2.0kW	600VAC	MCP-1303	CONDUIT	UH-1420	EMT	RW90	3C	#12	1000V	
P-1430	5.0kW	600VAC	MCP-1303	CONDUIT	UH-1430 & UH-1441	PVC	RW90	3C	#12	1000V	
P-1440	5.0kW	600VAC	MCP-1303	CONDUIT	UH-1440 & UH-1431	PVC	RW90	3C	#12	1000V	
P-1480	6.0kW	600VAC	MCP-1303	CONDUIT	HWT-1480	PVC	RW90	3C	#12	1000V	
P-1410		120VAC	PNLA-1305	CONDUIT	FVNR-1410	EMT	RW90	2C	#12	600V	
P-1410A		120VAC	FVNR-1410	CONDUIT	EF-1410	EMT	RW90	2C	#12	600V	
P-1411		120VAC	PNLA-1305	CONDUIT	FVNR-1411	EMT	RW90	2C	#12	600V	
P-1411A		120VAC	FVNR-1411	CONDUIT	EF-1411	EMT	RW90	2C	#12	600V	
P-1305		120VAC	PNLA-1305	CONDUIT	CP-1308	EMT	RW90	2C	#12	600V	
S-1602		24VDC	CP-1308	CONDUIT	AIT-1602	PVC	RW90	2x 1C	#16	300V	
I-1602		24VDC	CP-1308	CONDUIT	AIT-1602	PVC	ISOS	3PR.	#16	300V	
S-1610		24VDC	CP-1308	CONDUIT	FIT-1610	EMT	RW90	2C	#14	300V	
I-1610		24VDC	CP-1308	CONDUIT	FIT-1610	EMT	ISOS	2PR.	#18	300V	
I-1610A		24VDC	FIT-1610	CONDUIT	FE-1610						CABLE SUPPLIED BY MANUFACTURER
I-1620		24VDC	CP-1308	CONDUIT	PIT-1620	EMT	ISOS	1PR.	#18	300V	
I-1621		24VDC	CP-1308	CONDUIT	PIT-1621	EMT	ISOS	1PR.	#18	300V	
I-1450		24VDC	CP-1308	CONDUIT	TT-1450	EMT	ISOS	1PR.	#18	300V	
I-1460		24VDC	CP-1308	CONDUIT	TT-1460	EMT	ISOS	1PR.	#18	300V	
I-1470		24VDC	CP-1308	CONDUIT	TT-1470	EMT	ISOS	1PR.	#18	300V	
I-1480		24VDC	CP-1308	CONDUIT	TT-1480	PVC	ISOS	1PR.	#18	300V	
C-1410		24VDC	CP-1308	CONDUIT	FVNR-1410	EMT	RW90	6C	#16	300V	
C-1410A		24VAC	FVNR-1410	CONDUIT	DM-1410A	EMT	RW90	2C	#16	300V	
C-1410B		24VAC	FVNR-1410	CONDUIT	DM-1410B	EMT	RW90	2C	#16	300V	
C-1411		24VDC	CP-1308	CONDUIT	FVNR-1411	EMT	RW90	6C	#16	300V	
C-1411A		24VAC	FVNR-1411	CONDUIT	DM-1411A	EMT	RW90	2C	#16	300V	
C-1411B		24VAC	FVNR-1411	CONDUIT	DM-1411B	EMT	RW90	2C	#16	300V	
C-1412		24VDC	CP-1308	CONDUIT	FVNR-1412	PVC	RW90	6C	#16	300V	
C-1412A		24VAC	FVNR-1412	CONDUIT	DM-1412A	PVC	RW90	2C	#16	300V	
C-1412B		24VAC	FVNR-1412	CONDUIT	DM-1412B	PVC	RW90	2C	#16	300V	
C-1420		24VDC	CP-1308	CONDUIT	UH-1420	EMT	RW90	2C	#14	300V	
C-1430		24VDC	CP-1308	CONDUIT	UH-1430	EMT	RW90	2C	#14	300V	
C-1431		24VDC	CP-1308	CONDUIT	UH-1431	EMT	RW90	2C	#14	300V	
C-1440		24VDC	CP-1308	CONDUIT	UH-1440	PVC	RW90	2C	#14	300V	
C-1441		24VDC	CP-1308	CONDUIT	UH-1441	PVC	RW90	2C	#14	300V	
C-1340		24VDC	CP-1308	CONDUIT	MP-1340	PVC	RW90	4x 1C	#16	300V	
I-1340		24VDC	CP-1308	CONDUIT	MP-1340	PVC	ISOS	1PR.	#16	300V	
C-1341		24VDC	CP-1308	CONDUIT	MP-1341	PVC	RW90	4x 1C	#16	300V	
I-1341		24VDC	CP-1308	CONDUIT	MP-1341	PVC	ISOS	1PR.	#16	300V	
C-1640		24VDC	CP-1308	CONDUIT	LSH-1640	EMT	RW90	2C	#16	300V	
C-1641		24VDC	CP-1308	CONDUIT	LSH-1641	PVC	RW90	2C	#16	300V	
C-1642		24VDC	CP-1308	CONDUIT	LSH-1642	PVC	RW90	2C	#16	300V	
C-1710		24VDC	CP-1308	CONDUIT	DS-1710	EMT	RW90	2C	#16	300V	
C-1711		24VDC	CP-1308	CONDUIT	DS-1711	EMT	RW90	2C	#16	300V	
C-1712		24VDC	CP-1308	CONDUIT	DS-1712	EMT	RW90	2C	#16	300V	
C-1713		24VDC	CP-1308	CONDUIT	DS-1713	EMT	RW90	2C	#16	300V	
C-1714		24VDC	CP-1308	CONDUIT	DS-1714	PVC	RW90	2C	#16	300V	
C-UPS1		24VDC	CP-1308	SURFACE	UPS1						EB HORSMAN CAT. # FKFD-ESRTA4EE
E-1310		ETHERNET	CP-1308	TRAY/SURFACE	VFD-1310		CAT6				BELDEN 121872A
E-1320		ETHERNET	CP-1308	TRAY/SURFACE	VFD-1320		CAT6				BELDEN 121872A
E-1306		ETHERNET	CP-1308	TRAY/SURFACE	ATS-1306		CAT6				BELDEN 121872A
E-1325		ETHERNET	CP-1308	TRAY/SURFACE	PM-1325		CAT6				BELDEN 121872A

NOTE:

1. CONTRACTOR TO ENSURE THAT CONDUCTORS LISTED IN THE CABLE SCHEDULE ARE ACCURATE AND WILL ENSURE A FULLY FUNCTIONING SYSTEM BEFORE PRICING & ORDERING ANY CABLES. ALL CONDUCTORS ARE TO BE SIZED ACCORDING TO THE CANADIAN ELECTRICAL CODE.
2. CONDUCTORS FOR GENERAL BUILDING ELECTRICAL MAY NOT BE SHOWN IN THE CABLE SCHEDULE, I.E., RECEPTACLES, LIGHTING, ETC...
3. CONTRACTOR TO INSTALL EMT AND CABLES FOR FUTURE ANALYZER AND DOSING PUMPS PER CABLE SCHEDULE TO FUTURE LOCATIONS SHOWN ON DRAWING 'E02'.

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4	OCT 05/2026	ISSUED FOR TENDER	GT	CJB
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1	FEB 15/2024	ISSUED FOR REVIEW	GT	CJB

ISSUES / REVISIONS

CONSULTANT SEAL

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. BEHARRELL # 45201 ELECTRICAL ENGINEER 2026/10/05

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DISTRICT OF HOPE

WATER UTILITY AMALGAMATION

7th AVENUE EMERGENCY BOOSTER STATION AND WATERMAIN LOOPING

ELECTRICAL CABLE SCHEDULE

SCALE	AS SHOWN
DESIGN BY	CJB
DRAWN BY	GT
DATE	FEBUARY 2024
PROJECT REFERENCE No.	1239-202/10907
DRAWING No.	1239-202-E11
SHEET	11 OF 11
ISSUE/REV.	4

FILE: c:\users\gabe\onedrive\exceed electrical engineering\clients - documents\109 - district of hope\10907 - hope - 7th ave emergency booster station\working\drawing\10907

GENERAL REQUIREMENTS

1. DESIGN
   - 1.1. THESE DRAWINGS HAVE BEEN DESIGNED TO MEET THE DESIGN REQUIREMENTS OF THE 2018 BC BUILDING CODE PART 4. PROFESSIONAL STANDARDS OF CARE SPECIFIED BY THE ENGINEERING ASSOCIATION IN PLACE HAVE BEEN MET OR EXCEEDED IN THESE DRAWINGS.
   - 1.2. DESIGN OF NON–STRUCTURAL ELEMENTS (SUCH AS STAIRS, RAILINGS, NON–LOAD BEARING WALLS, VENEERS, CURTAIN WALLS, ETC.) AND THEIR ATTACHMENT ARE NOT INCLUDED AND MUST BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS.
   - 1.3. DESIGN OF PREFABRICATED STRUCTURAL PRODUCTS (SUCH AS WOOD TRUSSES, STEEL JOISTS OR CONCRETE PRE–CAST ELEMENTS, ETC.) ARE NOT INCLUDED AND MUST BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWING
   - 1.4. SPECIFICATION REFERENCES (SUCH AS ASTM, CSA, CAC ETC.) SHALL BE THE LATEST ACCEPTED VERSION WHERE NOTED ON THESE DRAWINGS.

2. EXECUTION/CONSTRUCTION
   - 2.1. PERFORM WORK IN ACCORDANCE WITH THE SPECIFIED BUILDING CODE, AND LOCAL AMENDMENTS, BYLAWS, ORDINANCES, AND SAFETY REGULATIONS. THE COMPLETE WORK UNDER THESE TRADES SHALL BE GOVERNED BY THE DICTATES OF GOOD PRACTICE IN ALL DETAILS OF MATERIALS AND METHODS, EVEN IF NOT MINUTELY SPECIFIED. PROPERLY COORDINATE THE WORK WITH THE REQUIREMENTS OF OTHER UNITS OF WORK SPECIFIED IN OTHER SECTIONS. THE DRAWINGS DESCRIBE THE COMPLETED PROJECT, AND DO NOT INDICATE COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN–AND–ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSEWORK, SHORING, ETC. REQUIRED TO COMPLETE THE PROJECT. MAINTAIN THE WORK, INCLUDING ROOF AND BUILDING SYSTEMS, AT LEAST ON A DAILY BASIS, FREE FROM ACCUMULATIONS OF WASTE MATERIAL AND DEBRIS. IN PREPARATION FOR FINAL ACCEPTANCE OF THE PROJECT ON AN INTERIM, OR FINAL CERTIFICATE OF COMPLETION, PERFORM FINAL CLEANING.
   - 2.2. CONTRACTOR/SUPPLIER SHALL REVIEW ALL DRAWINGS, SPECIFICATIONS, AND OTHER RELATED STANDARDS AND PROJECT DOCUMENTS, TO ENSURE ALL THE INFORMATION IS PRESENTED SO THAT THE CONSTRUCTION WORK CAN BE COMPLETED AS INTENDED AND SPECIFIED IN THE SCOPE OF WORK. IF THE CONTRACTOR/SUPPLIER IS NOT ABLE TO MEET THE REQUIREMENTS OF THE PLANS, A COMMUNICATION DIRECTED TO THE E.O.R. (WEE) SHALL EXPLAIN ITS REASONS AND A PROPOSED SOLUTION SHOULD BE SUBMITTED AS WELL, CONTRACTOR/SUPPLIER SHALL WAIT FOR ENGINEERS APPROVAL TO CONTINUE THE WORK WITH THE PROPOSED SOLUTION. CONTRACTOR/SUPPLIER SHALL REPORT ANY DISCREPANCY IMMEDIATELY TO THE ENGINEER/CONSULTANT, AND AWAIT THEIR APPROVAL PRIOR TO PROCEEDING WITH ANY WORK.
   - 2.3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LAYOUT PLAN, SETBACKS, LANDSCAPING, LAND SURVEYING AS PER LOCAL AUTHORITY REQUIREMENTS.
   - 2.4. DO NOT SCALE THE DRAWINGS. INFORM AND REQUEST CLARIFICATION FROM CONSULTANT FOR DIMENSIONS NOT SHOWN OR IN THE CASE OF CONFUSION.
   - 2.5. LOCATE ALL UNDERGROUND SERVICES AND UTILITIES PRIOR TO COMMENCING THE WORK. ANY COSTS FOR THIS WORK WILL BE BORNE BY THE CONTRACTOR/OWNER.
   - 2.6. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATION FROM THE SPECIFIED PROJECT DRAWINGS, SPECIFICATIONS, STANDARDS AND OTHER PERTAINING DOCUMENT.

3. SHOP DRAWINGS: (AS PER EGBC)
   - 3.1. 'PRIOR TO SUBMISSION TO THE REGISTERED PROFESSIONAL OF RECORD, IT IS RECOMMENDED THAT THE CONTRACTOR REVIEW AND APPROVE ALL SHOP DRAWINGS. THE INTENT IS THAT BY THIS REVIEW AND APPROVAL, THE CONTRACTOR REPRESENTS THAT ITS HAS DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, MATERIALS, CATALOGUE NUMBERS AND SIMILAR DATA, AND THAT IT HAS CHECKED AND COORDINATED EACH SHOP DRAWING WIT THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. IT IS RECOMMENDED THAT THE CONTRACTOR INDICATED ITS REVIEW AND APPROVAL BY INCLUDING THE DATE AND SIGNATURE OF THE PERSON RESPONSIBLE ON EACH SHOP DRAWING.'
   - 3.2. 'THE REGISTERED PROFESSIONAL OF RECORD WILL FORWARD THE SHOP DRAWINGS TO THE APPROPRIATE MEMBERS OF THE REGISTERED PROFESSIONAL OF RECORD'S TEAM FOR REVIEW. IN PERFORMING HIS OR HER REVIEW, THE REGISTERED PROFESSIONAL OF RECORD WILL ONLY REVIEW FOR CONFORMITY TO THE DESIGN CONCEPT AND GENERAL ARRANGEMENT. UNLESS A DEVIATION ON THE SHOP DRAWINGS HAS BEEN PREVIOUSLY APPROVED IN WRITING BY THE REGISTERED PROFESSIONAL OF RECORD, SUCH A REVIEW BY THE REGISTERED PROFESSIONAL OF RECORD DOES NOT RELIEVE THE CONTRACTOR FROM ITS RESPONSIBILITY FOR ANY AND ALL ERRORS OR OMISSIONS IN THE SHOP DRAWINGS OR FROM ITS RESPONSIBILITY FOR MEETING ALL THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS.

BASIS FOR DESIGN

1. GOVERNING BUILDING CODE: 2024 BCBC (BRITISH COLUMBIA BUILDING CODE).
2. STRUCTURE LOCATION: HOPE
3. IMPORTANCE CATEGORY: POST DISASTER

SNOW

GROUND SNOW LOAD: S_S = 2.8 KPA (58.5 PSF)
RAIN ON SNOW: S_R = 0.7 KPA (6.3 PSF)
MIN ROOF LIVE LOAD: 2.94 KPA (61.4 PSF)

WIND I_W = 1.25

WIND: Q_{50} = 0.47 KPA (9.8 PSF)
MIN WIND LOAD: Q_{50} = 0.63 KPA (13.2 PSF)
EQUIV. WIND VELOCITY: 29.2M/S (105 KM/HR)

SEISMIC I_E = 1.5

$S_a(0.2)$ = 0.601
$S_a(0.5)$ = 0.602
$S_a(1.0)$ = 0.434
$S_a(2.0)$ = 0.277
$S_a(5.0)$ = 0.0999
$S_a(10.0)$ = 0.0422

PEAK GROUND ACCELERATION (PGA) = 0.256
PEAK GROUND VELOCITY (PGV) = 0.418
USE 25% OF SNOW LOAD FOR SEISMIC:
SITE CLASS: D

FOUNDATION

1. DESIGN AND REQUIREMENTS
   - 1.1. FOOTINGS AND FOUNDATIONS
     DESIGN SOIL BEARING CAPACITY: 150 kPa (ULS), 100 kPa (SLS)
   - 1.2. ALL FORMS SHALL BE PROPERLY BRACED TO WITHSTAND THE PLACEMENT OF FRESH CONCRETE.

2. EXCAVATING AND BACKFILLING
   - 2.1. EXISTING CONDITIONS
     - 2.1.1. VISIT THE SITE, AND NOTE ALL CHARACTERISTICS AND IRREGULARITIES AFFECTING THE WORK OF THIS SECTION. CONFIRM EXACT LOCATIONS OF ALL UTILITY LINES WITH UTILITY COMPaNIES PRIOR TO PILING OR EXCAVATING. PROTECT UTILITIES DURING CONSTRUCTION, AND ASSUME LIABILITY FOR DAMAGE. OBTAIN AND PAY FOR ANY NECESSARY PERMITS REQUIRED TO COMPLETE THE WORK. REMOVE FROM THE SITE AND DISPOSE OF SURPLUS OR UNSUITABLE MATERIAL NOT REQUIRED FOR BACKFILL OR GRADING. COMPaCTION DENSITIES ARE PERCENTAGES OF STANDARD PROCTOR MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINABLE FROM ASTM D698.
   - 2.2. FIELD REVIEW AND TESTING
     - 2.2.1. OWNER WILL PAY COSTS FOR FIELD REVIEW AND TESTING.
     - 2.2.2. EXCAVATED SURFACES: WHEN UNDISTURBED EXCAVATED SURFACE IS BEING PREPARED, MAKE THREE TESTS OF THE SURFACE.
     - 2.2.3. FILLS UNDER SLABS–ON–GRADE: MAKE THREE TESTS FOR EVERY TWO LIFTS OF COMPaCTED FILL.
     - 2.2.4. BACKFILLING AND COMPaCTION DENSITIES NOT CONFORMING TO THE SPECIFICATIONS AND DRAWINGS AS REPRESENTED BY TEST RESULTS, WILL BE REJECTED DURING THE PROGRESS OF THE WORK WHEN THE DEFECT IS DISCOVERED. REMOVE DEFECTIVE MATERIALS, REPLACE, AND RE–TEST AT THE CONTRACTOR'S EXPENSE.
   - 2.3. PROTECTION
     - 2.3.1. PROTECT BOTTOMS OF EXCAVATIONS FROM SOFTENING OR FREEZING. SHOULD SOFTENING OCCUR, REMOVE SOFTENED SOIL, AND REPLACE WITH TYPE 1 FILL COMPaCTED TO 98%. CONSTRUCT BANKS IN ACCORDANCE WITH LOCAL BYLAWS, AND LOCAL SOIL CONDITIONS. PROTECT EXCAVATIONS BY SHORING, BRACING OR BY OTHER METHODS, AS REQUIRED TO PREVENT CAVE–INS OR LOOSE DIRT FROM FALLING INTO THE EXCAVATION. PROVIDE PROTECTION TO ENSURE NO DAMAGE OCCURS TO EXISTING FACILITIES AND EQUIPMENT SITUATED ON THE SITE. MAINTAIN ADEQUATE BARRIERS AND CONSTRUCTION SIGNS TO PREVENT INJURY TO THE PUBLIC. VERIFY THIS PROCEDURE WITH GEOTECHNICAL ENGINEER RECOMMENDATIONS.

3. MATERIALS
   - 3.1. ALL MATERIALS TO BE SUBJECT TO THE GEOTECHNICAL ENGINEER'S APPROVAL.
   - 3.2. STRUCTURAL FILL SHOULD BE BY GEOTECHNICAL ENGINEER RECOMMENDATIONS IN THE REPORT STATED ABOVE.

CONCRETE

1. MATERIALS
   - 1.1. ALL CAST–IN–PLACE CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
     - 1.1.1. CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION: CSA A23.1–19.
     - 1.1.2. TESTING METHODS FOR CONCRETE: CSA A23.2–19.
     - 1.1.3. DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS (LIMIT STATES DESIGN): CSA A23.3–19.
     - 1.1.4. CONCRETE PROPERTIES TEST: AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
     - 1.1.5. ERECTION, MAINTENANCE AND REMOVAL OF FORMWORK: CONFORM TO APPLICABLE SAFETY REGULATIONS.
   - 1.2. GEOTECHNICAL REPORT SHALL PROVIDE INFORMATION REGARDING ON–SITE SOILS WITH SULFATE EXPOSURES AS PER CURRENT ACCEPTED CODE AS LISTED IN THE BASIS FOR DESIGN.
   - 1.3. CONTRACTOR SHALL VERIFY THAT THE SUPPLY CONCRETE IS "CONTROLLED CONCRETE" AS DEFINED BY CSA A23.1–19, IN ACCORDANCE WITH THE FOLLOWING, UNLESS NOTED OTHERWISE ON THE DRAWINGS:

MEMBER	f'c	EXPOSURE	AIR %	AGGREGATE	SLUMP
FOOTINGS					
STRIP	32 MPa*	S–2	4%–7%	20 mm	80±20mm
PAD	32 MPa*	S–2	4%–7%	20 mm	80±20mm
WALLS					
FROST/GRADE BEAM	32 MPa*	S–2	4%–7%	20 mm	80±20mm
BASEMENT RETAINING	32 MPa*	S–2	4%–7%	20 mm	80±20mm
SLABS					
INTERIOR–PARKING	32 MPa	S–2	4%–7%**	20 mm	80±20mm
INTERIOR–BASEMENT	32 MPa	N	1%–4%**	20 mm	80±20mm
EXTERIOR	32 MPa*	C–2	5%–8%**	20 mm	80±20mm
SUSPENDED SLAB	32 MPa	N	1%–4%**	20 mm	80±20mm
COLUMNS	32 MPa*	F–2	4%–7%	20 mm	80±20mm

* WHERE THE GEOTECHNICAL REPORT INDICATES THAT SULPHUR IS PRESENT IN THE SOIL, USE 32 MPa SULPHATE RESISTANT CONCRETE.
** WHERE HARDENER IS TO BE APPLIED TO THE SLAB, AIR CONTENT SHALL BE LESS THAN OR EQUAL TO 3%.

NOTES:
- CONCRETE COMPRESSIVE STRENGTH (f'c) IS SUBJECT TO CHANGE IF REQUIRED BY GEOTECHNICAL REPORT OR VARIABLE FIELD CONDITIONS.
- STRENGTH OF CONCRETE IS AT 28 DAYS PER RECOMMENDATIONS BY CSA A23.2–19.
- USE EXPOSURE CLASS PER CSA A23.1 FOR DETERMINATION OF WATER/CEMENT RATIO.
- AIR CONTENT IS IN % BY VOLUME.
- HIGH RANGE WATER REDUCING AGENTS MAY BE ADDED TO INCREASE WORKABILITY, AND IN THE PLACEMENT OF CONCRETE WHERE THE SPECIFIED SLUMP IS LESS THAN 80mm, OR WHERE STEEL FIBRE REINFORCED CONCRETE IS USED.

   - 1.4. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED CONCRETE TESTING LABORATORY AND APPROVED BY THE EOR
   - 1.5. FLY ASH SHALL COMPLY WITH ASTM C 618, CLASS F, AND SHALL BE APPROVED BY THE ARCHITECT IN WRITING BEFORE BEING USED ON THE JOB. WHEN USED, FLY ASH CONTENT SHALL BE 15% – 20%. WATER/CEMENT RATIO SHALL BE BASED ON TOTAL CEMENTITIOUS MATERIAL.
   - 1.6. AGGREGATES SHALL COMPLY WITH ASTM C 33, USE 19 mm MAXIMUM AGGREGATE SIZE IN STRUCTURAL CONCRETE. 38 mm MAXIMUM IN SLAB ON GRADES AND 9 mm PEA GRAVEL IN GROUTS ONLY U.N.O. ON THE PLANS OR BY APPROVAL BY THE EOR IN WRITING.

2. ACCESSORIES
   - 2.1. VAPOUR BARRIER SHALL BE 0.15 mm (6 MIL) THICK POLYETHYLENE SHEET TO CGSB 70–GP–A1. LAP VAPOUR BARRIER A MINIMUM OF 300 mm.
   - 2.2. COMPRESSIBLE MATERIAL SHALL BE PRE–FORMED FLEXIBLE JOINT FILLER CONSISTING OF ASPHALT, VEGETABLE FIBRE, AND MINERAL FILLERS SECURELY BONDED TOGETHER, AND UNIFORMLY IMPREGNATED WITH A BITUMINOUS BINDER.
   - 2.3. BITUMINOUS DAMPPROOFING SHALL BE WATERPROOF EMULSION COMPOSED OF ASPHALT DISPERSED IN A MINERAL COLLOID EMULSIFIER TO CGSB 37–GP–16M.
   - 2.4. BONDING AGENT TO BE "SIKADUR 32, HI–MOD" EPOXY BONDING AGENT AS MANUFACTURED BY THE SIKA CORPORATION UNO ON PLANS.
   - 2.5. EPOXY GROUT SHALL BE PRE–MIXED AND PLACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO OBTAIN A MINIMUM STRENGTH OF 100 MPa IN 7 DAYS.

3. CONCRETE DELIVERY AND PLACEMENT
   - 3.1. HIGH EARLY STRENGTH CONCRETE MAY BE USED WHEN REQUESTED BY CONTRACTOR. MIX DESIGN DATA USING FIELD CURED SPECIMENS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
   - 3.2. A MAXIMUM OF 120 MINUTES FROM THE TIME OF INITIAL MIXING TO COMPLETE DISCHARGE. CLEAN PREVIOUSLY PLACED CONCRETE TO ENSURE BOND. MIX AND BRUSH ON BONDING AGENT, WHERE SPECIFIED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PLACE CONCRETE AS A CONTINUOUS OPERATION.
   - 3.3. MECHANICALLY VIBRATE ALL CONCRETE. VIBRATE SLABS ON GRADE AROUND AND UNDER FLOOR DUCTS OR SIMILAR ELEMENTS.
   - 3.4. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL BE CAREFULLY PLACED IN REINFORCED ELEMENTS SO AS TO AVOID SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED FIVE FEET UNLESS APPROVED BY THE EOR IN WRITING.
   - 3.5. CONTROL JOINTS IN SLABS ON GRADE SHALL BE AS NOTED ON THE STANDARD DETAILS. SAW CUT JOINTS SHALL BE CUT WITHIN 24 HOURS OF CONCRETE PLACEMENT TO MAINTAIN A MINIMUM DEPTH OF T/4. DOWELED JOINTS SHALL BE USED WHERE NOTED ON THE PLANS. DO NOT JOINT POST–TENSIONED CONCRETE WITH SLABS ON GRADE UNO. SPACE CONTROL JOINS AS LISTED HEREIN.

SLAB THICKNESS (T)	JOINT SPACING (EACH WAY)
4" OR SMALLER	3050 (10'–0")
5"	3800 (12'–6")
6"	4575 (15'–0")

   - 3.6. CONTRACTOR TO PROTECT ELEMENTS FROM COLD AND HOT WEATHER. CONTRACTOR SHALL TAKE SPECIAL CURING PRECAUTIONS TO MINIMIZE SHRINKAGE CRACKING OF CONCRETE SLABS.
   - 3.7. CONSTRUCTION JOINTS IN STRUCTURAL ELEMENTS (WALLS, BEAMS, COLUMNS, ELEVATED SLABS, ETC.) NOT DETAILED ON THE DRAWINGS REQUIRES PRIOR WRITTEN APPROVAL FROM THE EOR. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING PROPOSED JOINT LAYOUT.
   - 3.8. CONCRETE OVER STEEL DECK MAY HAVE SAW–CUT CONTROL JOINTS SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 225 SQUARE FEET. REINFORCING U.N.O. ON PLANS SHALL BE 6X6 W1.4XW1.4 WELDED WIRE FABRIC (WWF) PLACED APPROXIMATE CENTRE OF CONCRETE DEPTH OVER THE DECK

CONCRETE FORMWORK & FALSEWORK

1. A FORMWORK CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR COMPLETE DESIGN AND ENGINEERING OF FORMWORK INCLUDING SHORINGS, BRACINGS, STRIPPING AND RESHORING.
2. ALL FORMWORK AND FALSEWORK SHALL BE DESIGNED AND SUPERVISED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. PREPARE DETAILED SHOP DRAWINGS STAMPED AND SIGNED BY THE ENGINEER, SHOWING ALL PERTINENT INFORMATION INCLUDING REMOVAL OF FORMWORK AND RESHORING PROCEDURES. THE STRUCTURAL CONSULTANT WILL NOT APPROVE FORMWORK/SHORING SHOP DRAWINGS. PRIOR TO STRIPPING RESHORING TO BE REVIEWED BY THE ENGINEER FOR DESIGN LOADS FOR SUSPENDED SLABS, IF ANY.
3. LEAVE OPEN ONE SIDE OF FORMS FOR THE FOLLOWING STRUCTURAL UNITS UNTIL ALL REINFORCING IS SECURED IN PLACE, REVIEWED AND ACCEPTED BY THE ENGINEER.
   - 3.1. ALL COLUMNS
   - 3.2. WALLS OR DEEP BEAMS CONTAINING HEAVY OR COMPLICATED REINFORCING.
4. LOCATION AND DETAILS FOR CONSTRUCTION JOINTS NOT SHOWN ON DRAWINGS SHALL BE SUBJECT TO ENGINEER AND ARCHITECT'S APPROVAL.
5. FORM OPENINGS IN WALLS AND SLABS AS SHOWN ON THE DRAWINGS. FORMED OPENINGS NOT SHOWN, BUT OTHERWISE REQUIRED, SHALL BE PROVIDED BY THE FORMWORK CONTRACTOR AND BE APPROVED BY THE ENGINEER AND ARCHITECTS PRIOR TO PROCEEDING WITH THE WORK. PROVIDE REINFORCING AS REQUIRED BY THE STRUCTURAL CONSULTANT.
6. NO SLEEVES, DUCTS, PIPES OR OTHER OPENINGS SHALL PASS THROUGH JOISTS, BEAMS, OR COLUMNS EXCEPT WHERE INDICATED OR DETAILED ON THE STRUCTURAL DRAWINGS, OR WHERE APPROVED IN WRITING BY THE ARCHITECT AND ENGINEER.
7. ALL SLABS (INCLUDING ONE WAY AND TWO WAY SLABS) AND BEAMS MUST CAMBERED. ALL SLAB/BEAM SPANS TO BE CAMBERED TO MATCH DEAD LOAD DEFLECTION. MINIMUM CAMBER TO BE 1/4" (6mm) FOR EACH 10'–0" (3000mm) OF SPAN, UNLESS NOTED OTHERWISE ON THE PLANS. G.C. TO SURVEY FORMWORK WITH CAMBER PRIOR TO CASTING CONCRETE AND FINISH FLOOR ELEVATION IMMEDIATELY AFTER CASTING CONCRETE.
8. SLABS TO BE RESHORED IMMEDIATELY AFTER STRIPPING. A RECORD SHALL BE MAINTAINED FOR TIME OF STRIPPING AND RESHORING. STRIPPING AND RESHORING SHOULD BE DONE IN STAGES AND NOT WHOLE SLAB AT ONCE.
9. COLUMN/WALL FORMS SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED 60% OF DESIGN STRENGTH
10. ALL SUSPENDED CONCRETE TO BE RESHORED UNTIL CONCRETE HAS REACHED ITS DESIGN STRENGTH
11. PROVIDE A 3/4" (20mm) CHAMFER ON ALL EXPOSED CONCRETE EDGES UNO.

REINFORCING STEEL

1. MATERIALS
   - 1.1. REINFORCING STEEL SHALL BE CSA G30.18 (NEW BILLET STEEL), GRADE 400R FOR 10M AND LARGER DEFORMED BARS.
   - 1.2. WELDABLE REINFORCING STEEL SHALL BE CSA G30.18 (NEW BILLET STEEL) GRADE 300R DEFORMED BARS.
   - 1.3. CHAIRS, BOLSTERS, BAR SUPPORTS, AND SPACERS SHALL BE ADEQUATE FOR STRENGTH AND SUPPORT OF REINFORCING, AND MUST NOT CAUSE STAINING OF EXPOSED CONCRETE. ALL SUPPORTS USED TO SUPPORT EPOXY COATED REINFORCING SHALL BE PLASTIC COATED. EPOXY COATINGS TO BE PER ASTM A775 RECOMMENDATIONS.

2. PLACEMENT
   - 2.1. REINFORCEMENT IS TO BE PLACED ON PURPOSE–MADE SUPPORTS. A REINFORCEMENT TECHNICIAN IS TO BE ON SITE DURING THE PLACEMENT OF CONCRETE FLOOR SLABS, AND IS TO RECHAIR AND/OR ADJUST SUPPORTS FOR REINFORCEMENT AS REQUIRED DURING THE PLACEMENT OF CONCRETE. WELDING REINFORCEMENT IS NOT PERMITTED U.N.O.
   - 2.2. ALL REINFORCING STEEL DIMENSIONS ARE CENTRE TO CENTRE OF THE STEEL UNLESS NOTED AS CLEAR (CLR) COVER. MINIMUM COVER FOR REINFORCING (CSA A23.1)SHALL BE AS FOLLOWS: (U.N.O. ON THESE PLANS OR PLAN DETAILS)

EXPOSURE	MIN COVER	TOLERANCES
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.	75 (3")	10 (⅜")
WALLS AND JOIST		
10M	20 (¾")	3 (⅛")
15M AND LARGER	40 (1½")	10 (⅜")
EXPOSED TO EARTH OR WEATHER	40 (1½")	10 (⅜")
BEAMS		
TIES, STIRRUPS	40 (1½")	10 (⅜")
COLUMNS		
VERTICAL REINFORCING	50 (2")	10 (⅜")
SUSPENDED SLABS		
TOP REINFORCING	40 (1½")	10 (⅜")
BOTTOM REINFORCING	25 (1")	3 (⅛")
PARKING SLAB		
TOP REINFORCING	40 (1½")	10 (⅜")
BOTTOM REINFORCING	30 (1¼")	6 (¼")
SLABS ON GRADE	40 (1½")	10 (⅜")

   - 2.3. LAP SPLICES IN BEAMS, SLABS AND FOOTINGS SHALL BE AS PER CURRENT GOVERNING CODE OR LAP SCHEDULE WHERE PRESENT. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. THE TACK WELDING OF REINFORCING BARS SHALL NOT BE ALLOWED. PROVIDE BENT CORNERS BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE TOP BARS AT CENTRE LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, JOIST AND GRADE BEAMS U.N.O. ON THE PLANS.
   - 2.4. REINFORCING BAR SPACING SHOWN ON PLANS REPRESENTS THE MAXIMUM ON CENTRE SPACING.
   - 2.5. ALL REINFORCING SHALL BE BENT COLD, ONE TIME ONLY.
   - 2.6. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION, AS SPECIFIED ON PLANS OR DETAILS. SECURELY TIE ALL BARS IN LOCATION PRIOR TO PLACEMENT OF CONCRETE.
   - 2.7. MINIMUM CLEAR SPACING BETWEEN PARALLEL REINFORCEMENT SHALL BE 1½ TIMES BAR DIAMETER, 1½ TIMES MAX AGGREGATE OR 1½" WHICH EVER IS LARGER.

EMBEDMENT & SPLICE LENGTH NOTES - CSA A23.3-19

1. EMBEDMENT OR SPLICES AS DIMENSIONED ON THE DRAWINGS SHALL APPLY
2. WHERE THE DRAWINGS INDICATE COMPRESSION EMBEDMENT IT SHALL BE AS NOTED BELOW.
3. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT (EXCEPT AT TOWER COLUMNS.)
4. WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE (EXCEPT AS NOTED ON THE COLUMN PLAN OR SCHEDULE).
5. IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.
6. ALL LENGTHS ARE FOR Fy 400 MPa REBAR AND SPLICE LENGTHS ARE CLASS B

COMPRESSION EMBEDMENT & SPLICE LENGTHS.

REBAR DESIGNATION	FUNCTION	CONCRETE STRENGTH 25 MPa	30 MPa & GREATER
10M	EMBEDMENT	220	200
	(SPLICE)	(330)	(330)
15M	EMBEDMENT	310	280
	(SPLICE)	(470)	(470)
20M	EMBEDMENT	370	340
	(SPLICE)	(570)	(570)
25M	EMBEDMENT	480	440
	(SPLICE)	(740)	(740)
30M	EMBEDMENT	570	530
	(SPLICE)	(870)	(870)
35M	EMBEDMENT	690	630
	(SPLICE)	(1040)	(1040)

TENSION EMBEDMENT & SPLICE LENGTH - TYPE A CONDITION

1. TENSION EMBEDMENT AND SPLICE LENGTHS ARE TO BE AS PER THE FOLLOWING TABLE FOR:
   - A. MEMBERS CONTAINING MINIMUM STIRRUPS OR TIES (CSA A23.3–19 CLAUSES 11.2.8.4 OR 7.6.5) WITHIN THE EMBEDMENT OR SPLICE LENGTHS. (IE TYPICAL BEAMS AND GIRDERS)
   - B. SLABS, WALLS, SHELLS, OR FOLDED PLATES HAVING CLEAR SPACING OF NOT LESS THAN 2 BAR DIAMETERS BETWEEN BARS BEING DEVELOPED OR BETWEEN ADJACENT CONTACT SPLICES, AND WHERE THERE IS A LAYER OF REINFORCING BARS PERPENDICULAR TO, AND IN CONTACT WITH THE BARS BEING DEVELOPED OR SPLICED. THIS PERPENDICULAR LAYER SHALL NOT BE LESS THAN SLAB TEMPERATURE REINFORCING. (IE TYPICAL SLAB BOTTOM REINFORCEMENT)

REBAR DESIGNATION	FUNCTION	CONCRETE STRENGTH 25 MPa	30 MPa	35 MPa	40 MPa
10M	EMBEDMENT	300	300	300	300
	(SPLICE)	(390)	(390)	(390)	(390)
15M	EMBEDMENT	430	390	370	340
	(SPLICE)	(560)	(510)	(480)	(440)
20M	EMBEDMENT	580	530	490	460
	(SPLICE)	(750)	(680)	(630)	(590)
25M	EMBEDMENT	900	820	760	710
	(SPLICE)	(1170)	(1070)	(990)	(930)
30M	EMBEDMENT	1080	990	910	850
	(SPLICE)	(1400)	(1280)	(1190)	(1110)
35M	EMBEDMENT	1200	1150	1070	1000
	(SPLICE)	(1640)	(1500)	(1380)	(1300)

NOTE: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS
"TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300mm OR MORE OF CONCRETE BELOW THE BAR.

NOTE: EPOXY REINFORCEMENT
INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCEMENT.
INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

2. MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER TYPE B TABLE BELOW

TENSION EMBEDMENT & SPLICE LENGTH - TYPE B CONDITION

1. TENSION EMBEDMENT AND SPLICE LENGTHS ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING TYPE A CONDITIONS AS SET OUT ABOVE

FOR EXAMPLE:

A. TOP LAYER BARS IN MOST ONE WAY SLABS.
B. SLAB BAND BOTTOM BARS.
C. SLAB BARS SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS.

REBAR DESIGNATION	FUNCTION	CONCRETE STRENGTH 25 MPa	30 MPa	35 MPa	40 MPa
10M	EMBEDMENT	380	350	330	300
	(SPLICE)	(500)	(460)	(420)	(400)
15M	EMBEDMENT	580	530	490	460
	(SPLICE)	(750)	(680)	(630)	(590)
20M	EMBEDMENT	770	700	650	610
	(SPLICE)	(1000)	(910)	(840)	(790)
25M	EMBEDMENT	1200	1100	1010	950
	(SPLICE)	(1560)	(1420)	(1320)	(1230)
30M	EMBEDMENT	1440	1320	1220	1140
	(SPLICE)	(1870)	(1710)	(1580)	(1480)
35M	EMBEDMENT	1680	1530	1420	1330
	(SPLICE)	(2180)	(1990)	(1850)	(1730)

NOTE: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS
"TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300mm OR MORE OF CONCRETE BELOW THE BAR.

NOTE: EPOXY REINFORCEMENT
INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATE D REINFORCEMENT.
INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

FLOOR SLAB SUPPORTED ON GRADE NOTES

1. REMOVE ALL TOP SOIL AND SOILS CONTAINING ORGANICS. CONTRACTOR IS TO REFER TO SOILS REPORT, IF AVAILABLE, FOR INDICATION OF DEPTHS OF UNSUITABLE SOIL AND IS TO REMOVE SOFT OR WEAK AREAS TO COMPETENT MATERIAL. ALL OF THIS WORK IS TO BE CARRIED OUT UNDER THE DIRECT INSTRUCTIONS OF THE SOILS ENGINEER.
2. PROOF ROLL SUB–GRADE AS DIRECTED BY SOILS ENGINEER.
3. PREPARE GRANULAR LAYER AND SUB–BASE AS PER SOILS ENGINEERS RECOMMENDATION AND SOILS REPORT.
4. A GEOTECHNICAL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION, WITH AN ENGINEER'S SEAL, STATING THAT THE GRANULAR LAYER AND SUB–BASE PREPARATION HAS BEEN DONE TO THEIR RECOMMENDATIONS AND REQUIREMENTS. THE STRUCTURAL CONSULTANT WILL NOT CERTIFY THESE ITEMS. THE LETTER OF CERTIFICATION IS TO BE FORWARDED TO THE CONTRACTOR, ARCHITECT AND OWNER PRIOR TO THE CONCRETE SLAB ON GRADE BEING CAST.
5. SLAB MOVEMENT/CRACKING:
   - 5.1. SINCE THE STABILITY OF A SLAB–ON–GRADE IS ENTIRELY DEPENDENT ON THE NATURE OF THE SOIL UPON WHICH IT IS SUPPORTED, SOME MOVEMENT RESULTING IN DISPLACEMENT AND CRACKING OF THE SLAB SHOULD BE EXPECTED
   - 5.2. ACCURATE LIMITS DEFINING THE AMOUNT AND FREQUENCY OF MOVEMENT CANNOT BE GIVEN DUE TO UNKNOWN AND/OR UNCONTROLLABLE FACTORS SUCH AS SOIL MOISTURE CONTENT, WATER TABLE, SILT POCKETS, ETC. THE OWNER SHALL ASSUME ALL RISKS ASSOCIATED WITH THIS SYSTEM.

COLD WEATHER REQUIREMENTS

IN COLD WEATHER, ALL HEATING EQUIPMENT AND PROTECTIVE ENCLOSURES SHALL BE ON THE JOB READY FOR USE WHEN CONCRETE IS PLACED. SUCH EQUIPMENT SHALL BE ADEQUATE FOR THE PURPOSE OF HEATING THE CONCRETE MATERIALS AND PROTECTING THE CONCRETE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

1. WHENEVER THE TEMPERATURE OF THE SURROUNDING ATMOSPHERE IS 5 DEG C OR LOWER, OR THERE IS A PROBABILITY OF IT FALLING BELOW 5 DEG C, ALL AGGREGATES AND WATER SHALL BE PRE–HEATED AND ALL FORMS, FILL AND GROUND WITH WHICH THE CONCRETE IS IN CONTACT WITH, OR IS CALCULATED TO COME IN CONTACT WITH, SHALL BE DEFROSTED. STEEL REINFORCEMENT AND AGGREGATES SHALL BE PROTECTED BY ADEQUATE MEANS TO PREVENT FORMATION OF AN ICE FILM.
2. ALL CONCRETE, WHEN PLACED IN THE FORMS, SHALL HAVE A TEMPERATURE BETWEEN 16 DEG C AND 27 DEG C. ALSO, ADEQUATE MEANS SHALL BE PROVIDED BY ENCLOSURES AND HEATING APPURTENANCES FOR MAINTAINING A TEMPERATURE OF AT LEAST 22 DEG C FOR THE FIRST SEVEN DAYS, AND AT LEAST 10 DEG C FOR AS MUCH MORE TIME AS MAY BE NECESSARY, AS DETERMINED BY THE CONSULTANT, TO ENSURE THE PROPER CURING OF THE CONCRETE.
3. ALL CANVAS OR OTHER PROTECTIVE COVERING SHALL BE KEPT CLEAR OF ALL CONCRETE IN ORDER TO PERMIT FREE CIRCULATION OF AIR AROUND ALL WALLS, COLUMNS, AND OVER THE TOPS OF ALL SLABS.
4. THE CONTRACTOR IS TO PROTECT THE SOIL FROM FREEZING DURING THE CONSTRUCTION PERIOD. THIS INCLUDES FOOTINGS THAT HAVE BEEN CAST.

INSTALLATION PROCEDURES FOR ANCHOR PLATES & BOLTS

1. ANCHORS TO BE MANUFACTURED BY 'HILTI FASTENING SYSTEMS'. USED IN STRICT ACCORDANCE WITH MANUFACTURES'S SPECIFICATIONS.
2. FIRST LOCATE EXISTING CONCRETE COLUMN (OR WALL) REINFORCING ON SITE USING ELECTROMAGNETIC METHODS.
3. DRILL ANCHOR HOLES IN CONCRETE IN REQUIRED LOCATIONS TO SUIT DETAILS. NO EXISTING REINFORCING CAN BE CUT UNLESS NOTED OTHERWISE AND ONLY WITH THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL CONSULTANT.
4. FABRICATE END ANCHOR PLATES TO SUIT ACTUAL SITE–MEASURED HOLE LOCATIONS. PLATE DIMENSIONS AS INDICATED ON DETAILS ARE MINIMUM SIZES ONLY, UNLESS NOTED OTHERWISE. OVERCUTTING OF PLATE HOLES OR OF HOLES IN EXISTING CONCRETE WILL NOT BE ACCEPTED.
5. INSTALL ANCHOR PLATES IN REQUIRED LOCATIONS AND TORQUE ANCHORS TO MANUFACTURER'S SPECIFICATIONS.
6. PLATES MUST BE INSTALLED AGAINST SMOOTH CONCRETE. IF CONCRETE IS ROUGH, A SKIM COAT OF HIGH STRENGTH GROUT MUST BE APPLIED BEFORE INSTALLATION.

ANCHOR BOLTS AND STEEL EMBEDMENTS

1. GENERAL SPECIFICATIONS
   - 1.1. ALL ANCHOR BOLTS AND EMBEDDED STEEL SHALL BE SECURED IN PLACE PRIOR TO PLACEMENT OF CONCRETE
2. ANCHOR BOLTS
   - 2.1. ANCHOR BOLTS SHALL CONFORM TO ASTM STANDARD A307 OR EQUIVALENT.
   - 2.2. ALL THREADS SHALL BE COARSE THREAD SERIES AS SPECIFIED IN A.N.S.I. STANDARD B1.1 AND SHALL HAVE CLASS 2A TOLERANCES.
   - 2.3. AFTER ANCHOR BOLTS ARE COMPLETELY INSTALLED AND BASE PLATES ARE GROUTED. SET THREADS SO THAT NUTS CAN NOT BECOME LOOSE.
3. EMBEDDED STEEL
   - 3.1. EMBEDDED STEEL SHALL CONFORM TO CSA G40.21–300W U.N.O. AND BE DETAILED IN ACCORDANCE WITH THE REQUIREMENT OF STRUCTURAL STEEL.

EPOXY NOTES

1. GENERAL SPECIFICATIONS
   - 1.1. THE EOR HAS TO BE INFORMED OF ALL EPOXY APPLICATIONS ON THE SITE. EPOXY SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS
   - 1.2. EPOXY FOR ALL CONCRETE APPLICATIONS SHALL BE PER THE FOLLOWING TABLE. INSTALL PER MANUFACTURER'S SPECIFICATIONS. IN THE CASE THAT THE CONTRACTOR WOULD PREFER TO USE ANOTHER PRODUCT, CONTACT WEST EDGE ENGINEERING LTD FOR APPROVAL.

CONCRETE	MASONRY
SIMPSON SET–XP	SIMPSON SET
HILTI HIT HY 200 MAX	HILTI HIT HY 200 MAX
HILTI HIT RE 500	SIKA ANCHOR FIX 3
SIKA ANCHOR FIX 3	

STRUCTURAL FIELD REVIEWS

1. GENERAL SPECIFICATIONS
   - 1.1. IT IS ENFORCED BY CANADIAN LAW THAT THE OWNER/CONTRACTOR HAS TO EMPLOY THE ENGINEER OF RECORD (EOR) FOR STRUCTURAL FIELD REVIEWS ON CONSTRUCTION PROJECTS. THE OWNER/CONTRACTOR SHALL INFORM THE EOR AT LEAST 24 HOURS IN ADVANCE FOR STRUCTURAL REVIEW SITE VISITS AT THE STAGES OUTLINED BELOW.
   - 1.2. WEST EDGE ENGINEERING PROVIDES FIELD REVIEW FOR ONLY THE WORK SHOWN ON THE STRUCTURAL DRAWINGS. THIS REVIEW IS A PERIODIC REVIEW AT THE PROFESSIONAL JUDGEMENT OF WEST EDGE ENGINEERING. THE PURPOSE OF THE REVIEW IS TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY WEST EDGE ENGINEERING AND TO FACILITATE COMPLETION OF THE LETTERS OF ASSURANCE REQUIRED BY BUILDING CODE REQUIREMENTS. FIELD REVIEW BY WEST EDGE ENGINEERING IS NOT CARRIED OUT FOR THE CONTRACTORS BENEFIT, NOR DOES IT MAKE WEST EDGE ENGINEERING GUARANTORS OF THE CONTRACTORS WORK. IT REMAINS THE CONTRACTORS RESPONSIBILITY TO PROVIDE THEIR OWN QUALITY CONTROL AND TO PERFORM THE WORK WITH GOOD WORKMANSHIP AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
   - 1.3. LIST OF STRUCTURAL ELEMENTS TO BE FIELD REVIEWED:
     - 1.3.1. FOUNDATION (PRIOR TO CONCRETE PLACEMENT)
       - 1.3.1.1. COMPaCTION CERTIFICATION BY THE GEOTECHNICAL ENGINEER
       - 1.3.1.2. STRIP/PAD FOOTINGS AND GRADE BEAMS (SIZE AND REINFORCING)
       - 1.3.1.3. DOWELS AND ANCHORS (SIZE AND LOCATION)
     - 1.3.2. BASEMENT
       - 1.3.2.1. CONCRETE WALLS AND COLUMNS (SIZE AND REINFORCING)
       - 1.3.2.2. DOWELS AND ANCHORS (SIZE AND LOCATION)
     - 1.3.3. SUSPENDED FLOOR SLAB
       - 1.3.3.1. SLAB AND SLAB BEAM/BAND (SIZE AND REINFORCING)
     - 1.3.4. ELEVATOR MASONRY WALLS
     - 1.3.5. BUILDING FRAMING
       - 1.3.5.1. FRAMING AND SHEAR WALLS
       - 1.3.5.1. FLOOR DECKING AND JOISTS (LAYOUT PER SHOP DRAWINGS)
       - 1.3.5.2. ROOF DECKING AND TRUSSES/JOISTS (LAYOUT PER SHOP DRAWINGS)
     - 1.3.6. OTHER STRUCTURAL ELEMENTS AS REQUIRED BY THE EOR

IMPORTANT NOTE: IF THE ABOVE SPECIFICATIONS ARE NOT MET AND COMPLETED BY THE OWNER/CONTRACTOR THE EOR IS ENTITLED TO DENY THE PROJECT THE SCHEDULE "C" DUE TO NON COMPLIANCE WITH WEST EDGE ENGINEERING REQUESTS AND THE BUILDING CODE REQUIREMENTS.

TESTING

1. CONTRACTOR WILL PAY COSTS FOR TESTING.
2. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH CSA–A23.2–19 COMPRISING A SLUMP TEST, AN AIR ENTRAINMENT TEST, AND 4 TEST CYLINDERS (SITE CURED UNDER THE SAME POUR CONDITIONS)
   - 2.1. CONCRETE TESTS SHALL BE PERFORMED:
     - 2.1.1. AT LEAST ONCE FOR EVERY POUR.
     - 2.1.2. AT LEAST ONCE ON EVERY STRUCTURE POURED.
     - 2.1.3. AT LEAST ONCE FOR EVERY 30m³ OF CONCRETE POURED.

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Suite 203, 655 Victoria Street
Kamloops, BC V2C 2B3
Phone 250.374.5433
Fax 250.374.7022
Website www.westedge.ca

No.	DATE	DESCRIPTION	BY	APP'D
3	OCT 21/26	TENDER	KR	YK
2	MAY 20/24	TENDER	KR	YK
1	JULY 15/24	TENDER	KR	YK
0	MAY 17/24	TENDER	KR	YK
A	APRIL 18/24	REVIEW	KR	YK

ISSUES / REVISIONS

CONSULTANT SEAL
PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA Y. KANG # 33635
2026-10-22
EGBC PERMIT NUMBER: 1001594

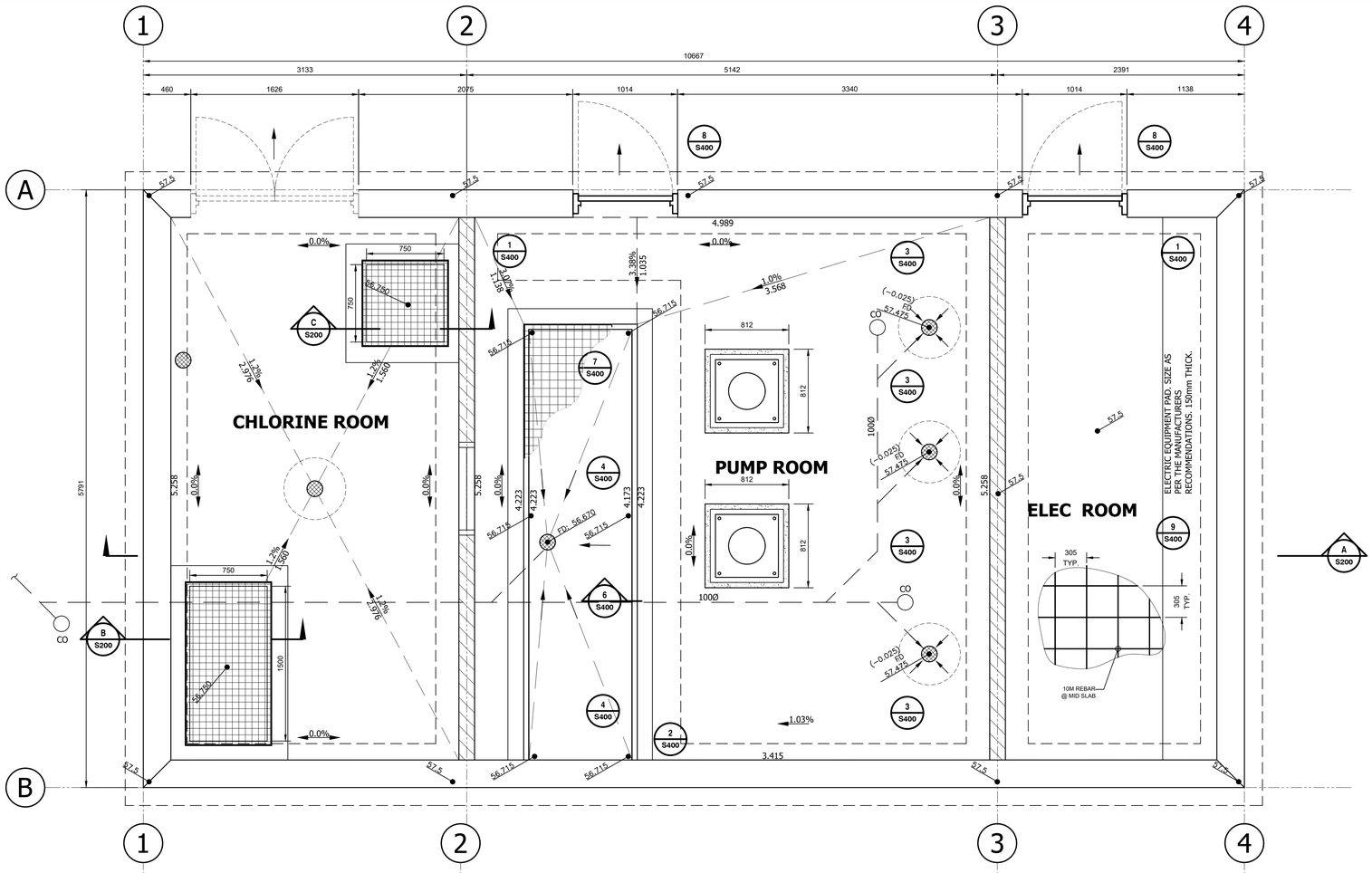
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info@TRUE.bc.ca

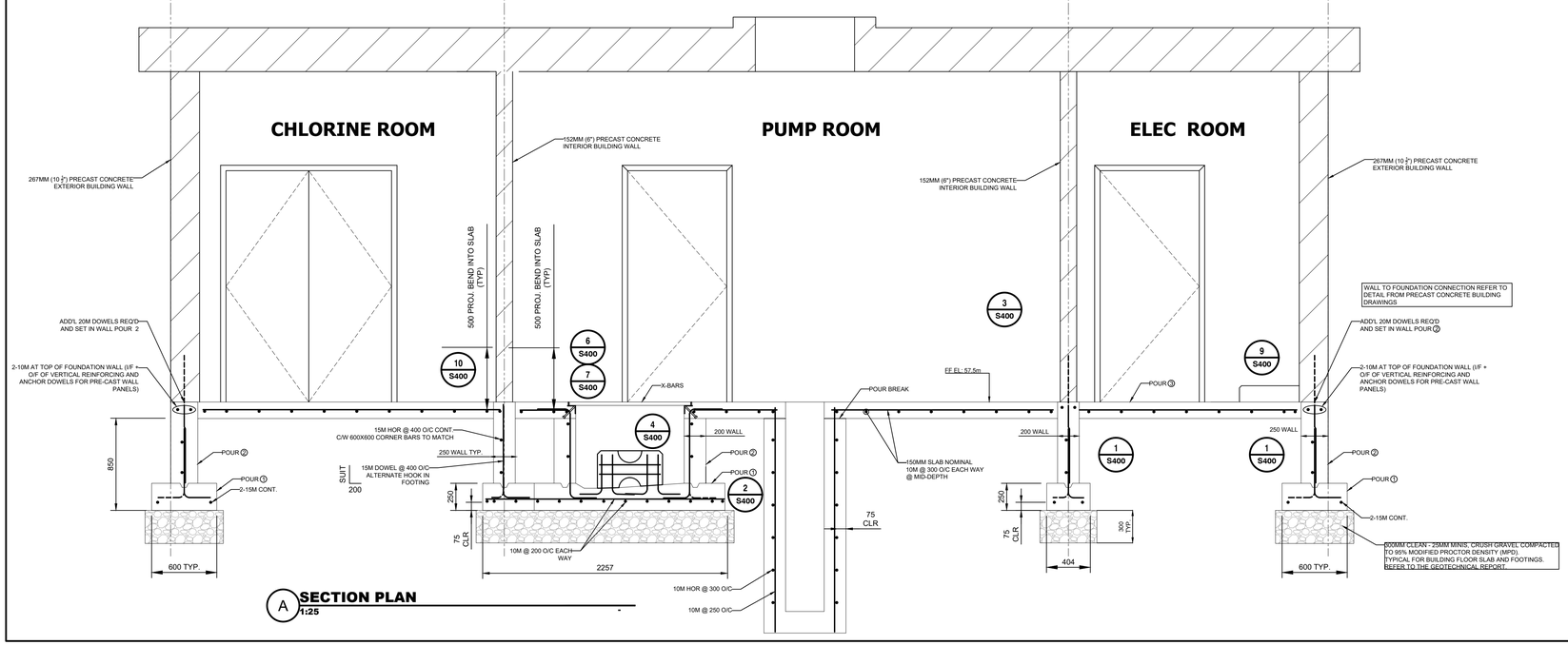
WATER UTILITY AMALGAMATION

STRUCTURAL

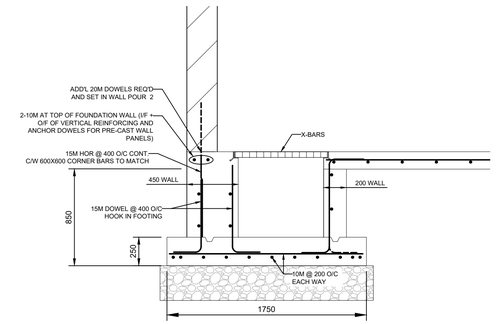
GENERAL STRUCTURAL NOTES (G.S.N.)

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DESIGN BY	YK
DRAWN BY	KR
DATE	APRIL 2024
PROJECT REFERENCE No.	WEE#24-080
DRAWING No.	1239-202-S100
SHEET	1 OF 3
REVISION	3

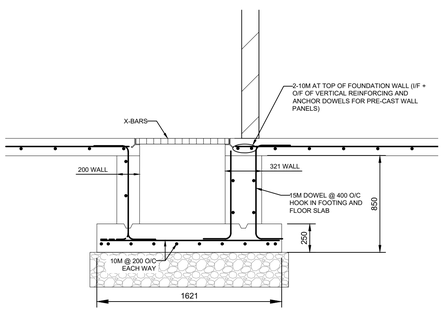




A **SECTION PLAN**
1:25



B **SECTION PLAN**
1:25



C **SECTION PLAN**
1:25

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ABBREVIATIONS
CLR = CLEAR
EXT. = EXTERIOR
F.F. = FINISH FLOOR
T.O.C. = TOP OF CURB
T.O. = TOP OF
O.H. = OVER HANG
R.O. = ROUGH OPENING
TYP = TYPICAL

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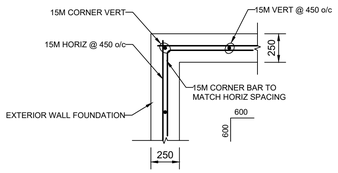
WATER UTILITY AMALGAMATION

STRUCTURAL

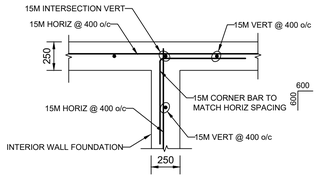
FOUNDATION PLAN AND SECTION

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DESIGN BY	YK
DRAWN BY	KR
DATE	APRIL 2024
PROJECT REFERENCE No.	WEE# 24-080
DRAWING No.	1239-202-S200
SHEET	2 OF 3
REVISION	3

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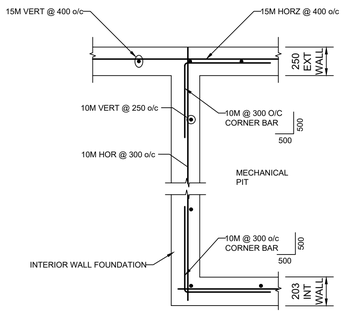
CORNER DETAIL



INTERSECTION DETAIL

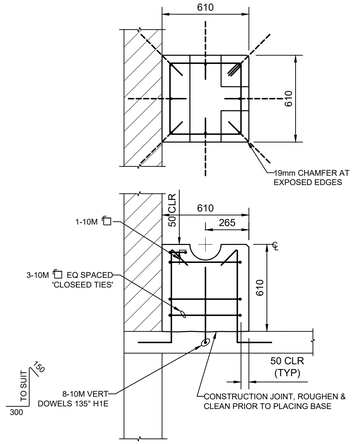
WALL REINFORCING DETAIL — 1

SCALE 1:20



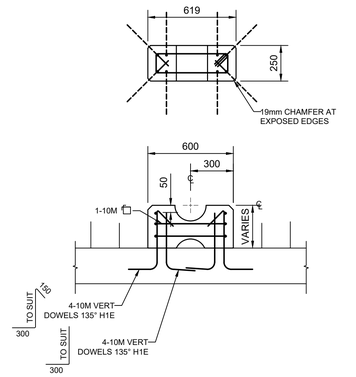
WALL INTERSECTION REINFORCING DETAIL — 2

SCALE 1:20



CONCRETE SUPPORT DETAIL — 3

SCALE 1:20

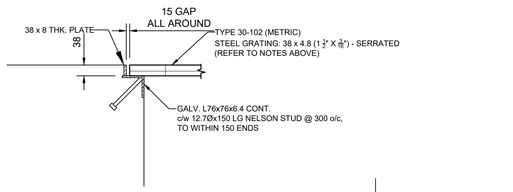


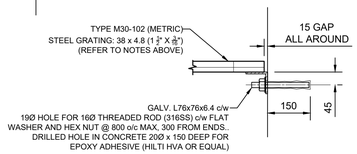
CONCRETE SUPPORT DETAIL — 4

SCALE 1:20

NOTES:

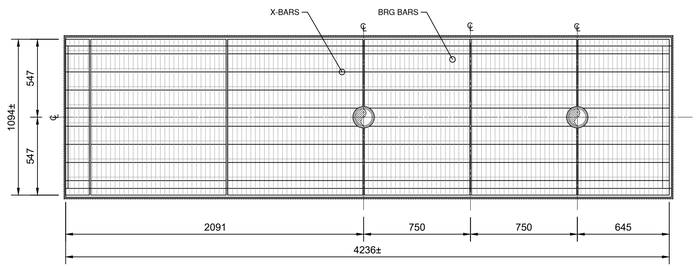
1. CONFIRM DIMENSIONS IN FIELD PRIOR SHOP DRAWING SUBMITTAL AND ORDERING
2. BANDING AROUND ALL GRATING PANELS
3. ALL GRATING USES MANUFACTURER'S CLIPS TO HOLD TIGHT - MINIMUM 4 CLIPS PER GRATING PANEL.
4. ALL GRATING PANELS SHALL BE HOT DIPPED GALVANIZED AND COME WITH SERRATED SURFACE
5. NUCOR GRATING STANDARD TRU-WELD, TYPE 30-102 (METRIC) BEARING BARS SIZE (MM): 38 X 4.8 (1 ½"X 3/16") OR APPROVED EQUAL





GRATING DETAIL — 6

SCALE 1:10

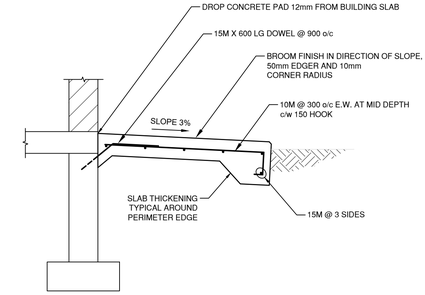


NOTES:

1. CONFIRM DIMENSIONS IN FIELD PRIOR TO SHOP DRAWING SUBMITTAL AND ORDERING
2. BANDING AROUND ALL GRATING PANELS
3. ALL GRATING USES MANUFACTURER'S CLIPS TO HOLD TIGHT - MINIMUM 4 CLIPS PER GRATING PANEL.
4. ALL GRATING PANELS SHALL BE HOT DIPPED GALVANIZED AND COME WITH SERRATED SURFACE
5. NUCOR GRATING STANDARD TRU-WELD, TYPE 30-102 (METRIC) BEARING BARS SIZE (MM): 38 X 4.8 (1 ½"X 3/16") OR APPROVED EQUAL
6. INDIVIDUAL SECTIONS OF GRATING NOT TO EXCEED 120lbs (54kg)

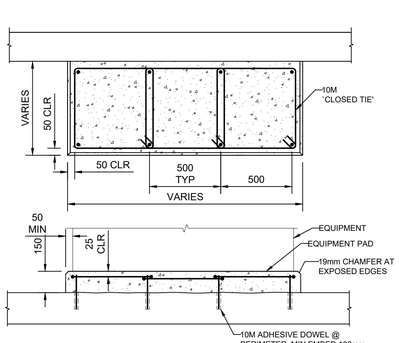
GRATING LAYOUT DETAIL — 7

SCALE 1:25



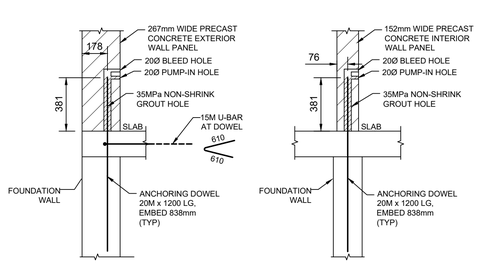
CONCRETE PAD SECTION — 8

SCALE 1:20



CONCRETE EQUIPMENT PAD DETAIL — 9

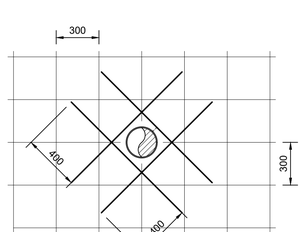
SCALE 1:20



REFER TO PRECAST CONCRETE WALL PANEL SUPPLIER FOR CONSTRUCTION DRAWINGS SHOWING DOWEL SCHEDULE AND LOCATION

PRECAST CONCRETE WALL PANEL CONNECTION DETAIL — 10

SCALE 1:20



PIPE PENETRATION

NOTES:

1. ALL REINFORCING TO HAVE CONCRETE COVER TO OPENING OF 40mm MINIMUM.
2. WHERE PIPE REQUIRES NO BARS TO BE CUT NO ADDITIONAL STEEL REQUIRED.

REINFORCING AROUND OPENING DETAIL — 11

SCALE 1:50

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WATER UTILITY AMALGAMATION

STRUCTURAL

DETAILS

SCALE	AS NOTED
DESIGN BY	YK
DRAWN BY	KR
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PROJECT REFERENCE No.	WEE# 24-080
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SHEET	3 OF 3
REVISION	3

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