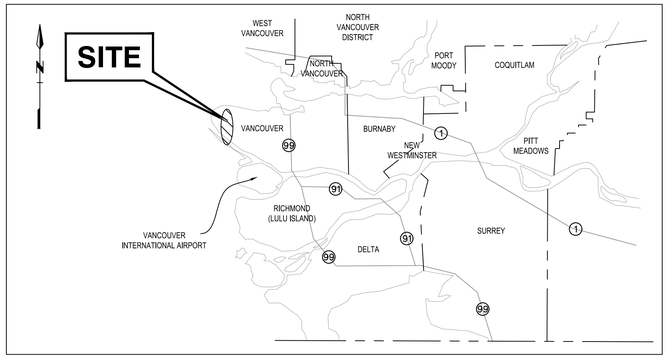
McElhanney ANSI D - 2024-02-05

Client:

THE UNIVERSITY OF BRITISH COLUMBIA

6200 University Blvd
Vancouver, BC V6T 1Z4



LOCATION PLAN
N.T.S.

SOUTH CAMPUS WORKS YARD

ISSUED FOR
90% CONSTRUCTION DESIGN
AUG 29, 2025

Status: ISSUED FOR 90% CONSTRUCTION DESIGN

McElhanney Project No: 2121-01293-00

DWG.No.	DWG. NAME	REV. NO.
	GENERAL	
G000	COVER SHEET	D
	CIVIL	
C001	KEY PLAN, LEGEND, AND GENERAL NOTES	D
C002	REMOVALS PLAN	D
C003	UTILITIES REMOVALS PLAN	B
C004	CONTEXT PLAN	C
C102	SITE LAYOUT PLAN - WAREHOUSE YARD	D
C103	SITE LAYOUT PLAN - MATERIAL RECOVERY FACILITY	D
C200	OVERALL UTILITY PLAN	D
C202	GRADING AND DRAINAGE PLAN - WAREHOUSE YARD	D
C203	GRADING AND DRAINAGE PLAN - MATERIAL RECOVERY FACILITY	D
C204	DRAINAGE DETAILS	D
C205	STORM SEWER PLAN AND PROFILE - WAREHOUSE YARD	A
C206	STORM SEWER PLAN AND PROFILE - MATERIAL RECOVERY FACILITY	A
C207	STORM SEWER PLAN AND PROFILE - MATERIAL RECOVERY FACILITY	A
C301	WATER SERVICING PLAN AND PROFILE	D
C302	WATER SERVICE DETAILS	D
C401	SANITARY SERVICE PLAN AND PROFILE	D
C402	SANITARY SERVICE DETAILS	D
C403	DESIGN ELEMENT INFORMATION	D
C501	TYPICAL SECTIONS - WAREHOUSE YARD	C
C502	TYPICAL SECTIONS - MATERIAL RECOVERY FACILITY	B
C503	DETAILS - SHEET 1 OF 2	B
C504	DETAILS - SHEET 2 OF 2	B
C601	SIGNING AND PAVEMENT MARKINGS PLAN	B
C1001	MRF CROSS SECTIONS	A
C1002	MRF CROSS SECTIONS	A

DWG.No.	DWG. NAME	REV. NO.
	ELECTRICAL	
E100	SYMBOLS AND DRAWING INDEX	D
E101	ELECTRICAL SCHEDULES	D
E102	SINGLE LINE DIAGRAM	D
E103	OVERALL LAYOUT	D
E104	SITE LAYOUTS	D
E105	CNG ELECTRICAL ROOM LAYOUT	B
E106	MRF - NEW MECH ROOM LAYOUT	B
E200	TYPICAL DETAILS	D

DWG.No.	DWG. NAME	REV. NO.
	MECHANICAL	
M000	SITE PLAN, NOTES, LEGENDS, AND DRAWING LIST	C
M001	MECHANICAL EQUIPMENT SCHEDULES AND MOTORLIST	C
M002	MECHANICAL EQUIPMENT SCHEDULES	C
M100	WAREHOUSE YARD SITE LAYOUT PLAN	C
M101	MATERIAL RECOVERY FACILITY LAYOUT PLAN	C
M200	DETAILS	C
M201	DETAILS	C
M202	DETAILS	C
M300	SPECIFICATIONS	C

DWG.No.	DWG. NAME	REV. NO.
	STRUCTURAL	
S100	STRUCTURAL GENERAL NOTES	B
S101	BULK MATERIAL STORAGE AREAS - FOUNDATION DETAILS	D
S102	MECHANICAL ROOM, EMERGENCY EYEWASH, AND PESTICIDE SHED - FOUNDATION DETAILS	D
S103	WEIGH SCALE - FOUNDATION DETAILS	D
S104	DIESEL TANK - FOUNDATION DETAILS	D
S105	CNG STATION - FOUNDATION DETAILS	D

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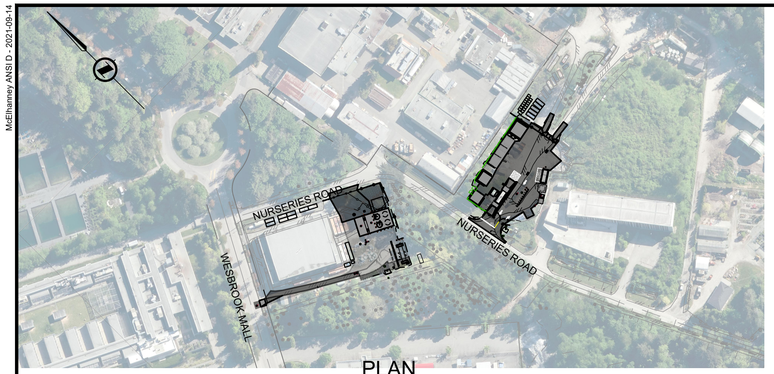
DATE: 2025-08-29, 19:12 FILE: X:\2121\Projects\2121012930\UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-000.dwg



PLAN
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GENERAL NOTES

1. ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
2. EXISTING BUILDING DIMENSIONS SHOWN ARE ROOF OUTLINES.
3. ALL CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH THE EDITION OF THE NATIONAL BUILDING CODE OF CANADA, NATIONAL PLUMBING CODE OF CANADA, MASTER MUNICIPAL CONSTRUCTION DOCUMENTS AND SUPPLEMENTS 2019 EDITION, MMCD DESIGN GUIDELINES, AND UBC TECHNICAL GUIDELINES.
4. CONTACT BC 1 CALL (604-257-1900) TO OBTAIN UTILITY LOCATION INFORMATION 1-2 WEEKS PRIOR TO CONSTRUCTION.
5. USE CAUTION WHEN WORKING NEAR EXISTING SERVICES AND INFRASTRUCTURE. ALL SERVICES AND INFRASTRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AND TO THE SATISFACTION OF THE ENGINEER.
6. REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. THE EXISTENCE, LOCATION AND ELEVATION OF UTILITIES AND/OR CONCEALED STRUCTURES AT THE PROJECT SITE ARE NOT GUARANTEED BY MCELHANNEY LTD. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION AND ELEVATION OF ALL SUCH UTILITIES AND/OR STRUCTURES AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT OR PERSON(S) OF ITS INTENTION TO CARRY OUT ITS OPERATIONS.
8. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL DURING CONSTRUCTION. ALL TRAFFIC CONTROL SHALL BE APPROVED BY UBC AND CONSULTANT PRIOR TO CONSTRUCTION.
10. DISPOSE OF EXCAVATED MATERIALS TO DISPOSAL FACILITIES OFF-SITE. CONTRACTOR TO COORDINATE WITH UBC FOR WHO WILL PROVIDE THESE FACILITIES.
11. THE CONTRACTOR SHALL MAINTAIN THE SAFE PASSAGE OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION.
12. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OF THE NECESSARY PERMITS FROM UBC.
13. CONTRACTOR SHALL HIRE AN INDEPENDENT TESTING AGENCY AND PROVIDE A QUALITY MANAGEMENT PLAN (QMP). THE QMP SHALL BE SUBMITTED PRIOR TO THE START OF ANY WORK AND NEEDS TO REVIEWED AND APPROVED BY THE ENGINEER.
14. THE QUALITY MANAGEMENT PLAN SHALL SHOW REQUIRED HOLD POINTS, TESTING REQUIREMENTS, AND PROCURE FOR CORRECTIVE ACTIONS.

SURVEY NOTES:

1. GROUND SURVEY WAS COMPLETED ON DEC. 21, 2023, JAN. 18-19, 2024 AND JAN. 21 AND 29 2025.
2. LOCAL GROUND COORDINATES ARE DERIVED FROM DUAL FREQUENCY GPS DIFFERENTIAL CARRIER PHASE OBSERVATIONS. TO CONVERT TO UTM ZONE 10 NAD83 (CSRS), FIRST APPLY THE FOLLOWING SHIFT:

   NORTHING = +5402194.83
   EASTING = +450194.42

   THEN MULTIPLY BY THE COMBINED SCALE FACTOR OF 0.9995978 AROUND POINT #6886.
3. THIS SURVEY SHALL NOT BE USED TO DEFINE PROPERTY LINES OR PROPERTY CORNERS.

REMOVAL AND RESTORATION NOTES:
REF. SPECS. SECTIONS

1. ALL EXISTING ASPHALT, CONCRETE, FENCING, OR OTHER UNSUITABLE MATERIAL DENOTED AS BEING REMOVED ON CONTRACT DRAWINGS SHALL BE DISPOSED OF OFFSITE AT A CONTRACTOR PROVIDED DISPOSAL SITE UNLESS NOTED OTHERWISE.
2. ANY EXCAVATED MATERIAL, DEBRIS, WASTE, AND EXCESS MATERIALS IDENTIFIED TO BE REMOVED FROM SITE AND DISPOSED OF OFF SITE SHALL BE DONE IN ACCORDANCE WITH FEDERAL, PROVINCIAL, AND MUNICIPAL REGULATIONS.
3. WHERE NO IMPROVEMENTS OR MODIFICATIONS ARE PROPOSED UNDER THIS CONTRACT, THE EXISTING SITE AND ROADWAY SHALL BE KEPT CLEAN AND CLEAR FOR THE DURATION OF CONSTRUCTION AND LEFT IN THE SAME CONDITION AS IT WAS PRIOR TO CONSTRUCTION.
4. ANY DAMAGE TO EXISTING INFRASTRUCTURE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
5. EXISTING MANHOLES, VALVE BOXES, JUNCTION BOXES, ETC. TO REMAIN SHALL BE ADJUSTED TO FINAL GRADE ELEVATIONS, UNLESS NOTED OTHERWISE. ENSURE THERE IS NO EXCESSIVE USE OF MH RISER RINGS THAT COULD ADVERSELY IMPACT ABILITY TO ENTER THE MH/REACH THE RUNGS.
6. REMOVAL OF ALL LANDSCAPING MATERIALS SHALL BE COORDINATED WITH UBC.
7. TREE PROTECTION AND REMOVAL SHALL BE COORDINATED WITH DIAMOND HEAD. BIRD AND BIRD NESTING SWEEPS WILL NEED TO BE DONE BY THE QUALIFIED PROFESSIONAL PRIOR OF CLEARING AND TREE REMOVAL.

EARTHWORKS NOTES:
REF. SPECS. SECTIONS

1. REFER TO GEOWEST'S GEOTECHNICAL REPORTS DATED MARCH 1, 2024, FOR ON-SITE AND NURSERIES ROAD SITE PREPARATION DETAILS.
2. STRIPPING SHALL INCLUDE TOPSOIL, VEGETATION, ORGANIC SOILS, LOOSE, SOFT, AND DELETERIOUS MATERIAL, OR ANY OTHER MATERIAL DEEMED NOT SUITABLE FOR THE EMBANKMENT SUBGRADE. THE STRIPPED OR EXCAVATED SUBGRADE SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY BACKFILL, NONWOVEN GEOTEXTILE OR PAVEMENT STRUCTURE.
3. THE SITE SHOULD BE GRADED TO DIRECT ANY SURFACE WATER AWAY FROM THE EXCAVATION. IF PERCHED WATER LAYERS ARE ENCOUNTERED, WATER SHALL BE READILY CONTROLLED VIA A SYSTEM OF SUMP AND SUMP PUMPS. MACHINERY AND TRUCKS SHALL NOT WORK DIRECTLY ON THE SUBGRADE OR CLOSE TO THE CREST OF THE EMBANKMENT SLOPE.
4. TEMPORARY SLOPE CUTS SHOULD BE COVERED WITH POLY SHEETING DURING THE ENTIRE WORK DURATION. ALL SLOPE CUTS, EXCAVATIONS, AND TRENCHING SHALL ADHERE TO WORKSAFE BC WORK STANDARDS AND OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
5. ANY GRADE REINSTATEMENT UNDERLYING THE PAVEMENT STRUCTURE SHOULD BE COMPLETED WITH ENGINEERED FILL, AS DEFINED IN THE GEOTECHNICAL REPORTS.
6. COMPACT AND PROOF ROLL EXPOSED SUBGRADES USING A LOADED TRUCK OR HEAVY CONSTRUCTION EQUIPMENT, AND OBSERVE THE SURFACE DEFLECTION AND THE DEVELOPMENT OF RUTTING. ANY AREAS WHERE RUTTING, CRACK, OR OTHER DEFORMATIONS OCCUR SHOULD BE EXCAVATED TO MEET COMPETENT SUBGRADE AND REPLACED WITH ENGINEERED FILL.

PAVEMENT NOTES:
REF. SPECS. SECTIONS

1. CONTRACTOR TO SUPPLY CONSULTANT WITH SIEVE ANALYSIS, MATERIAL TEST REPORTS AND PROCTOR DENSITY REPORTS OF ALL ASPHALT, GRANULAR MATERIALS, AND TACK COAT MATERIAL PRIOR TO PROCUREMENT FOR REVIEW AND APPROVAL.
2. CONTRACTOR WILL GIVE CONSULTANT AT LEAST 48 HOURS NOTICE PRIOR TO THE SUBBASE AND BASE LAYER PROOF ROLLS.
3. ALL SAW-CUTS INTO EXISTING ASPHALT REQUIRED FOR TRENCHING OR TIE-INS SHALL BE VERTICAL AND MATCH THE EXISTING ASPHALT THICKNESS. ALL NEW PAVEMENT SHALL HAVE CLEAN AND STRAIGHT SAWCUT.
4. SUBBASE MATERIAL SHALL BE 75MM MINUS CRUSHED SAND AND GRAVEL MATERIAL AS PER SPECIFICATION SECTION 31 05 17 AND SHALL BE PLACED IN ACCORDANCE WITH SPECIFICATION SECTION 32 11 16.1, COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
5. BASE MATERIAL SHALL BE 19mm MINUS CRUSHED GRAVEL WITH GRADATION REQUIREMENTS BEING EQUIVALENT OR EXCEEDING 19mm CRUSHED GRANULAR BASE AS PER SPECIFICATION SECTION 31 05 17 AND SHALL BE PLACED IN ACCORDANCE WITH SPECIFICATION SECTION 32 11 23, COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
6. TACK COAT AND PRIME MATERIAL AND PLACEMENT SHALL BE AS PER SPECIFICATION SECTION 32 12 13.
7. CONTRACTOR TO ENSURE THAT EXISTING PAVEMENT STRUCTURES ADJACENT TO NEW PAVEMENT REPLACEMENT IS NOT UNDERMINED DURING EXCAVATION.
8. FULL DEPTH RECLAMATION OF PAVEMENT STRUCTURE SHALL BE PERFORMED IN ACCORDANCE TO SPECIFICATION SECTION 32 01 16.8.
9. EXISTING VALVE BOXES, MANHOLES, ETC. WITHIN THE ROAD ALLOWANCE MUST BE ADJUSTED TO SUIT THE PROPOSED FINISHED GRADE.
10. ASPHALT PAVING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 32 12 16 HOT-MIX ASPHALT CONCRETE PAVING.

WATER NOTES
REF. SPECS. SECTION AND UBC TECHNICAL GUIDELINES

1. HAND DIG OR HYDROVAC WHEN EXCAVATING WITHIN 1m OF EXISTING UTILITIES.
2. ALL WATER MAIN AND SERVICE MAIN TO BE FULLY RESTRAINED AT MECHANICAL JOINT AND FITTING LOCATIONS NOTED ON THE DRAWINGS.
3. PIPE TRENCH, BEDDING AND SURROUND DIMENSIONS SHALL BE AS PER MMCD DETAIL G4 NOTED IN THIS DRAWING SET.
4. CONTRACTOR TO SUPPLY CONSULTANT WITH SHOP DRAWINGS FOR ALL WATER MAIN, FITTINGS, VALVES AND OTHER APPURTENANCES PRIOR TO PROCUREMENT FOR REVIEW AND APPROVAL THAT MEETS THE SPECIFICATIONS AS PER UBC TECHNICAL GUIDELINES.
5. ANY BURIED METALLIC HARDWARE AND/OR COMPONENTS SHALL BE 316 STAINLESS STEEL WRAPPED WITH DENSO OUTERWRAP.
6. WATER SERVICE CONNECTIONS TO BE CLASS 50 DUCTILE IRON TO AWWA C151.
7. MINIMUM COVER OVER WATER PIPE TO BE NO LESS THAN 1.0m UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS.
8. ENTIRE WATER SERVICE TO BE PRESSURE TESTED, FLUSHED, AND CHLORINATED PER AWWA C651-23. BACTERIOLOGICAL TESTING TO BE PROVIDED BY A LAB APPROVED BY THE PROVINCIAL HEALTH OFFICER FOR DRINKING WATER.
9. PROVIDE COMPLETE, FULLY TESTED BY THE AUTHORITY HAVING JURISDICTION AND OPERATIONAL SYSTEMS TO MEET THE REQUIREMENTS DESCRIBED HEREIN AND IN COMPLETE ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES. THE CONTRACTOR SHALL PROVIDE LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE THE WORK AS SPECIFIED.
10. FOLLOW MANUFACTURE'S RECOMMENDED INSTALLATION DETAILS AND PROCEDURES FOR EQUIPMENT, SUPPLEMENTED BY THE REQUIREMENTS OF THE SPECIFICATIONS. THESE DRAWINGS ARE NOT TO BE CONSIDERED DETAILED INSTALLATION INSTRUCTIONS.
11. FIELD VERIFY ALL SITE DIMENSIONS PRIOR TO ANY FABRICATION AND INSTALLATION OF EQUIPMENT OR MATERIALS. NO ADDITIONAL CHARGE WILL BE CONSIDERED FOR FAILURE TO VERIFY THESE DIMENSIONS ON SITE.
12. COORDINATE WITH ALL OTHER SUB-TRADES AT THE START AND THROUGHOUT THE PROJECT TO PREVENT AVOIDABLE CONFLICTS. IF THERE IS A CONCERN OF CONFLICT, COORDINATE THROUGH GENERAL CONTRACTOR. IF CONFLICTS ARE UNAVOIDABLE, CONTACT CONSULTANTS IMMEDIATELY TO ASSIST WITH A SOLUTION.
13. ALL TRENCHING AND EXCAVATIONS SHALL BE CARRIED OUT IN A MANNER RECOMMENDED BY THE WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA, OR AS NECESSARY TO PROTECT LIFE, PROPERTY, STRUCTURES ADJACENT TO THE WORK AND THE WORK ITSELF.
14. CONFIRM LOCATION AND SIZES OF EXISTING WATERMAINS & SERVICES PRIOR TO CONSTRUCTION. NOTIFY THE CONSULTANT OF ANY DISCREPANCIES WITH THE DRAWINGS.
15. ALL OR ANY EXISTING UNDERGROUND UTILITIES ARE NOT NECESSARILY SHOWN. THE CONTRACTOR IS TO VERIFY UTILITY LOCATIONS PRIOR TO EXCAVATION.

STORM NOTES
REF. SPECS. SECTIONS AND UBC TECHNICAL GUIDELINES

1. HAND DIG OR HYDROVAC WHEN EXCAVATING WITHIN 0.5m OF EXISTING UTILITIES.
2. HORIZONTAL TOLERANCE SHALL BE PLUS OR MINUS 50mm FROM SPECIFIED ALIGNMENT. VERTICAL TOLERANCE SHALL BE PLUS OR MINUS 25mm FROM SPECIFIED GRADE.
3. ALL NEW STORM DRAINS SHALL BE VIDEO INSPECTED AS NOTED UNDER SPECIFICATION SECTION 33 01 30.1.
4. ALL CONNECTIONS BETWEEN PIPES AND CONCRETE STRUCTURES SHALL BE GASKETED OR NON-SHRINK GROUT WITH APPROVAL BY THE CONTRACTOR ADMINISTRATOR IF GASKET IS NOT APPLICABLE. ALL PIPE JOINTS SHALL BE CLOSED JOINTS. PROVIDE FOR NON-SHRINK GROUT AT INTERIOR AND EXTERIOR OF ALL INTERFACES.
5. PIPE AND BOX TRENCH, BEDDING AND SURROUND DIMENSIONS SHALL BE AS PER MMCD STANDARD DETAIL DRAWING G4.
6. CONTRACTOR TO SUPPLY CONSULTANT WITH SHOP DRAWINGS FOR ALL FITTINGS AND MANHOLES PRIOR TO PROCUREMENT FOR REVIEW AND APPROVAL.
7. CONTRACTOR TO SUPPLY CONSULTANT WITH MATERIAL DATA SHEETS OF PIPE BEDDING MATERIAL FOR APPROVAL.
8. ANY BURIED METALLIC HARDWARE AND/OR COMPONENTS SHALL BE 316 STAINLESS STEEL WRAPPED WITH DENSO OUTERWRAP.
9. MANHOLE FRAME AND COVERS TO BE CL625 LOADING. COVER CAST WITHOUT PERFORATION AND COMPLETE WITH TWO 25mm SQUARE LIFTING HOLES. MINIMUM SIZE CLEAR OPENING TO BE 610mm DIAMETER. STEEL HATCHES AND COVERS TO BE GALVANIZED TO CSA G164, MINIMUM ZINC COATING OF 600g/m2.
10. MANHOLE LIDS TO BE EMBOSSED WITH SERVICE TYPE.

SANITARY NOTES
REF. SPECS. SECTIONS AND UBC TECHNICAL GUIDELINES

1. HAND DIG OR HYDROVAC WHEN EXCAVATING WITHIN 0.5m OF EXISTING UTILITIES.
2. VANCOUVER COASTAL HEALTH PERMIT FOR WATER-SANITARY CROSSING REQUIRED.
3. HORIZONTAL TOLERANCE SHALL BE PLUS OR MINUS 50mm FROM SPECIFIED ALIGNMENT. VERTICAL TOLERANCE SHALL BE PLUS OR MINUS 25mm FROM SPECIFIED GRADE.
4. ALL TESTING SHALL BE CARRIED OUT BY A QUALIFIED TESTING FIRM APPROVED BY UBC. THE CONTRACTOR WILL BE REQUIRED TO ADVISE THE CONSULTANT AND UBC IN ADVANCE OF ANY TESTING IN ACCORDANCE WITH THE ESTABLISHED UBC PROCEDURES.
5. ALL NEW SANITARY DRAINS SHALL BE VIDEO INSPECTED. ALL ASSOCIATED COSTS FOR VIDEO TESTING, INCLUDING SUBMISSION OF WRITTEN REPORTS AS WELL AS VIDEO LOGS, WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. CCTV REQUIREMENTS TO SPECIFICATION SECTION 33 01 30.1.
6. ALL CONNECTIONS BETWEEN PIPES AND CONCRETE STRUCTURES SHALL BE GASKETED OR NON-SHRINK GROUT WITH APPROVAL BY THE CONTRACTOR ADMINISTRATOR IF GASKET IS NOT APPLICABLE. ALL PIPE JOINTS SHALL BE CLOSED JOINTS. PIPE TRENCH, BEDDING AND SURROUND DIMENSIONS SHALL BE AS PER MMCD STANDARD DETAIL DRAWING G4.
7. CONTRACTOR TO SUPPLY DESIGN CONSULTANT WITH SHOP DRAWINGS FOR ALL FITTINGS AND MANHOLES PRIOR TO PROCUREMENT FOR REVIEW AND APPROVAL. CONTRACTOR TO SUPPLY CONSULTANT WITH MATERIAL DATA SHEETS OF PIPE BEDDING MATERIAL FOR APPROVAL.
8. ANY BURIED METALLIC HARDWARE AND/OR COMPONENTS SHALL BE 316 STAINLESS STEEL WRAPPED WITH DENSO OUTERWRAP.
9. MANHOLE FRAME AND COVERS TO BE CL625 LOADING. COVER CAST WITHOUT PERFORATION AND COMPLETE WITH TWO 25mm SQUARE LIFTING HOLES. MINIMUM SIZE CLEAR OPENING TO BE 610mm DIAMETER. STEEL HATCHES AND COVERS TO BE GALVANIZED TO CSA G164, MINIMUM ZINC COATING OF 600g/m2.
10. IDENTIFICATION MARKER TAPE TO BE PMS 3415 GREEN PER APWA UNIFORM COLOR CODES AND 300mm ABOVE SANITARY MAIN. MARKER TAPE TO BE CONTINUOUS 75 mm WIDE AND LETTERED PERMANENTLY WITH "SEWAGE PIPE" AT 1m INTERVAL.
11. MANHOLE LIDS TO BE EMBOSSED WITH SERVICE TYPE.
12. WHERE SANITARY FINAL BURIAL DEPTH IS LESS THAN 1m TO CROWN OF PIPE, PIPE DEFLECTIONS ARE NOT PERMITTED. ABSOLUTE MINIMAL PIPE BURIAL FOR SANITARY DR35 PVC PIPE IS 0.6m, INSTALLATION TO CONFORM WITH ASTM D3034 AND MMCD SECTION 33 30 03.
13. PVC PIPE TO BE DR35 AND MEETING ASTM D2312, ASTM D3034 AND CERTIFIED TO CSA B182.2. PIPE JOINTS TO CONFORM TO ASTM D3212 GASKETS TO ASTM F477.

LEGEND

	EXISTING	PROPOSED
	PROPERTY LINE	
	LEASE BOUNDARY	
	PAVEMENT EDGE	
	GRAVEL EDGE	
	GRADING LIMIT	
	TOP OF BANK	
	BOTTOM OF BANK	
	FENCE	
	DITCH CENTRELINE	
	UNDERGROUND POWER	E
	OVERHEAD POWER	
	COMMUNICATION UNDERGROUND	T
	UNDERGROUND N. GAS	G
	WATER PIPE	W
	SANITARY SEWER	S
	STORM PIPE	D
STORM		
	STORM MANHOLE	
	OIL-GRIT SEPARATOR	
	CLEANOUT	
	HEADWALL WINGWALL	
	CULVERT END	
	CATCH BASIN, MANHOLE CATCH BASIN	
WATER		
	WATER MANHOLE	
	FIRE HYDRANT	
	WATER VALVE	
SANITARY		
	COMBINED MANHOLE	
	OIL-WATER SEPARATOR	
	SANITARY MANHOLE	
LIGHTING		
	LAMP STANDARD	
POWER		
	POWER GUY WIRE	
	POWER GUY POLE	
	POWER POLE	
	POLE WITH PILASTER	
	POLE WITH TRANSFORMER	
	POLE WITH LIGHT	
	JUNCTION BOX	JB
	TRANSFORMER	
GAS		
	GAS VALVE	
CABLE VISION		
	CABLEVISION SERVICE BOX	
	COMMUNICATION MANHOLE	
VEGETATION		
	DECIDUOUS TREE	
	CONIFEROUS TREE	
OTHER SITE FEATURES		
	MONITORING WELL	
	BOLLARD	
	SIGN (STEEL POST)	

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	KY	KY	VT

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

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PRELIMINARY
NOT FOR CONSTRUCTION

THIS DRAWING HAS NOT BEEN APPROVED AND MAY CONTAIN ERRORS AND OMISSIONS.

THE UNIVERSITY OF BRITISH COLUMBIA
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UBC SOUTH CAMPUS WORKS YARD

KEY PLAN, LEGEND, AND GENERAL NOTES

Drawing No.
C001

Project Number
2121-01293-00

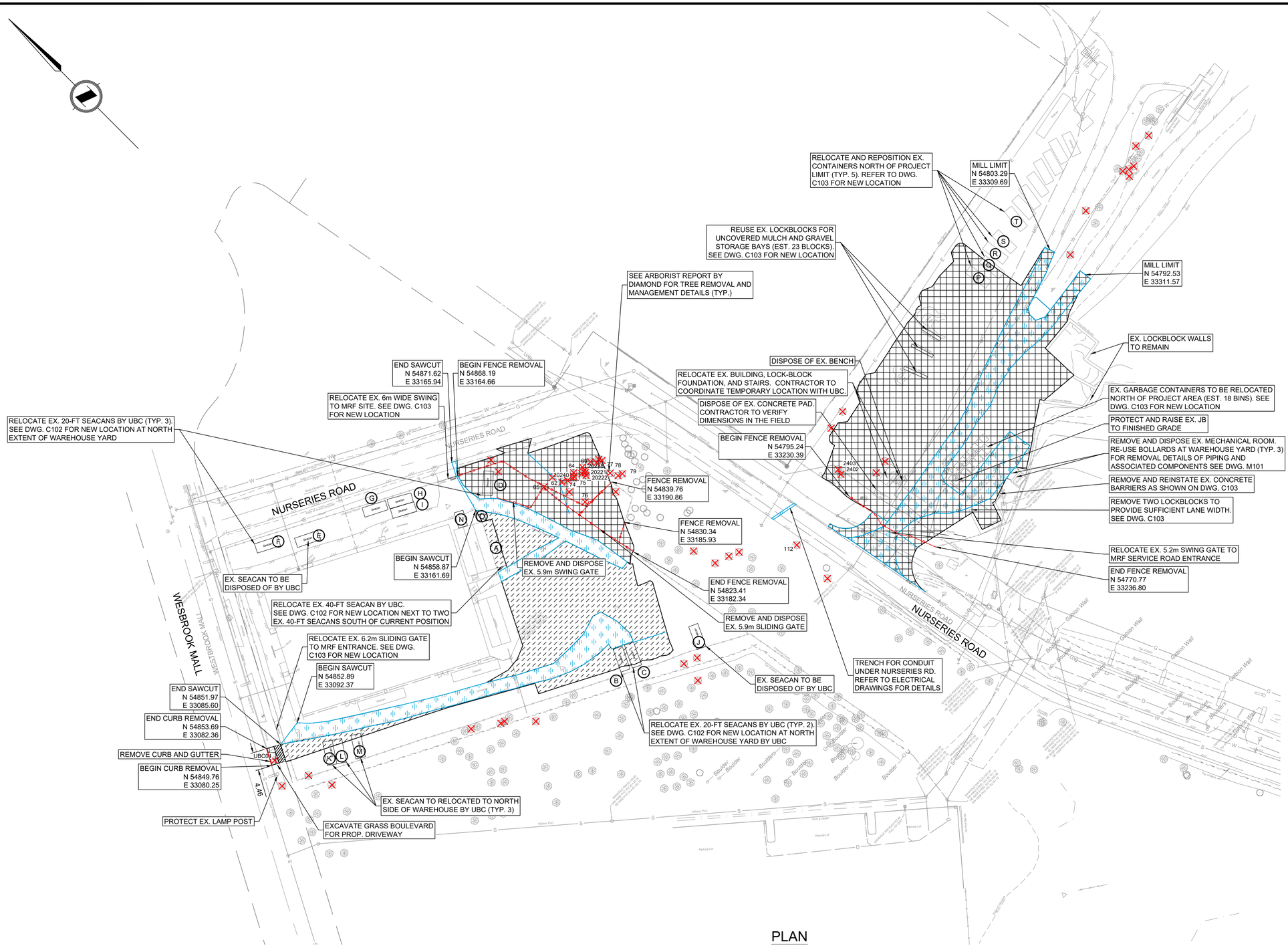
Rev.
D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14

DATE: 2025-08-29, 19:58 FILE: X:\212\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-001.dwg

McElhanney ANSI D - 2021-09-14



PLAN
1:500

NOTES:

1. PRIOR TO THE START OF WORK, CONTRACTOR COORDINATE WITH UBC'S ABORIST, DIAMOND HEAD, TO CONFIRM TREE REMOVAL. DIAMOND HEAD SHALL BE PRESENT AND APPROVE TREE PROTECTION. TREE REMOVAL WORK IS TO BE COMPLETED BY A CERTIFIED ARBORIST.
2. GEOWEST IS CURRENTLY DEVELOPING THE GEOTECHNICAL REPORT FOR THE WAREHOUSE YARD AND MRF SITE AND WILL BE PROVIDED ONCE AVAILABLE.
3. EXCAVATION SHALL INCLUDE REMOVAL OF ALL VEGETATION, FILL SOILS, ORGANIC SOILS, AND SOFT SOILS TO EXPOSE TILL-LIKE SOILS.
4. THE SUBGRADE MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO ANY CONSTRUCTION.
5. EXCAVATED SUBGRADE SHALL BE COMPACTED AND PROOF ROLLED WITH A HEAVILY LOADED DUMP TRUCK AND HEAVY CONSTRUCTION EQUIPMENT. SURFACE DEFLECTION, DEFORMATIONS, RUTTING, OR CRACKING SHOULD BE EXCAVATED TO COMPETENT SUBGRADE AND REPLACED WITH ENGINEERED FILL.
6. REFER TO THE SITE LAYOUT PLANS DWG. C101 TO C103 AND GRADING AND DRAINAGE PLANS DWG. C201 TO C203 FOR LIMITS OF REMOVAL.
7. CONTRACTOR SHALL REMOVE AND DISPOSE MISCELLANEOUS ITEMS THAT ARE IN CONFLICT WITH NEW CONSTRUCTION.
8. PROTECT ALL EXISTING UTILITIES NOT DESIGNATED FOR RELOCATION OR REMOVAL WITHIN THE PROJECT AREA.
9. TEMPORARY CUT SLOPES SHALL BE COVERED WITH POLY SHEETING DURING THE ENTIRE WORK DURATION.

LEGEND

- TREE REMOVAL
- CURB REMOVAL
- CHAIN LINK FENCE REMOVAL
- EXCAVATE EXISTING GRAVEL / SOIL TO BOTTOM OF SUBGRADE ELEVATION (DEPTH VARIES) RESHAPE AND RECOMPACT
- REGRADE EXISTING GRAVEL SURFACE TO TOP OF DESIGN SUBGRADE ELEVATION (DEPTH VARIES) RESHAPE AND COMPACT
- REMOVE EX. ASPHALT
- CONCRETE REMOVAL

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
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A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	KY	KY	VT

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD

REMOVALS PLAN

Drawing No. C002

Project Number 2121-01293-00

Rev. D

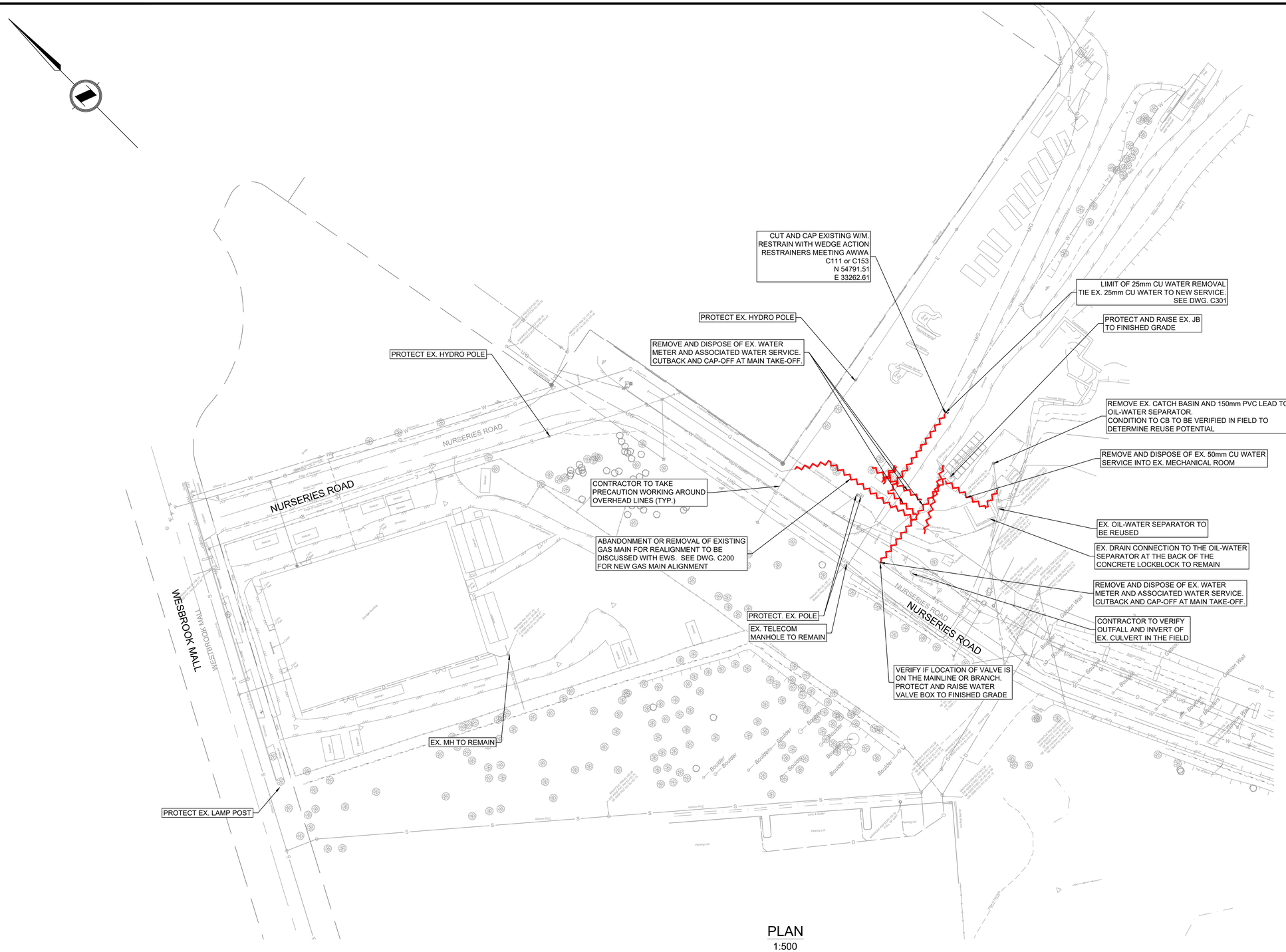
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:00 FILE: X:\212\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-002.dwg

McElhanney ANSI D - 2021-09-14

NOTES:

1. PROTECT ALL EXISTING UTILITIES NOT DESIGNATED FOR RELOCATION OR REMOVAL WITHIN THE PROJECT AREA.
2. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES WITHIN THE PROJECT AREA. NOTIFY THE CONSULTANT OF THE RESULTS AND ANY DISCREPANCIES FROM THE DRAWINGS.
3. UTILITIES DESIGNATED FOR REMOVAL SHALL INCLUDE PIPING, APPURTENANCES, VALVES, AND OTHER INFRASTRUCTURE ALONG THE ALIGNMENT.



PLAN
1:500

LEGEND

UTILITY REMOVAL

Rev	Date	Description	Drawn	Design	App'd
B	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
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UBC SOUTH CAMPUS WORKS YARD

UTILITIES REMOVALS PLAN

Drawing No. C003

Project Number 2121-01293-00

Rev. B

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:11 FILE: X:\212\Projects\212101293\00 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-003.dwg

McElhanney ANSI D - 2021-09-14

PLAN
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GENERAL NOTE:

1. THIS DRAWING IS FOR OVERALL CONTEXT ONLY. REFER TO OTHER DRAWINGS FOR DETAILS.

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C	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
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UBC SOUTH CAMPUS WORKS YARD

CONTEXT PLAN

Drawing No.
C004

Project Number
2121-01293-00

Rev.
C

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:20 FILE: X:\2121\Projects\21210129300 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-004.dwg

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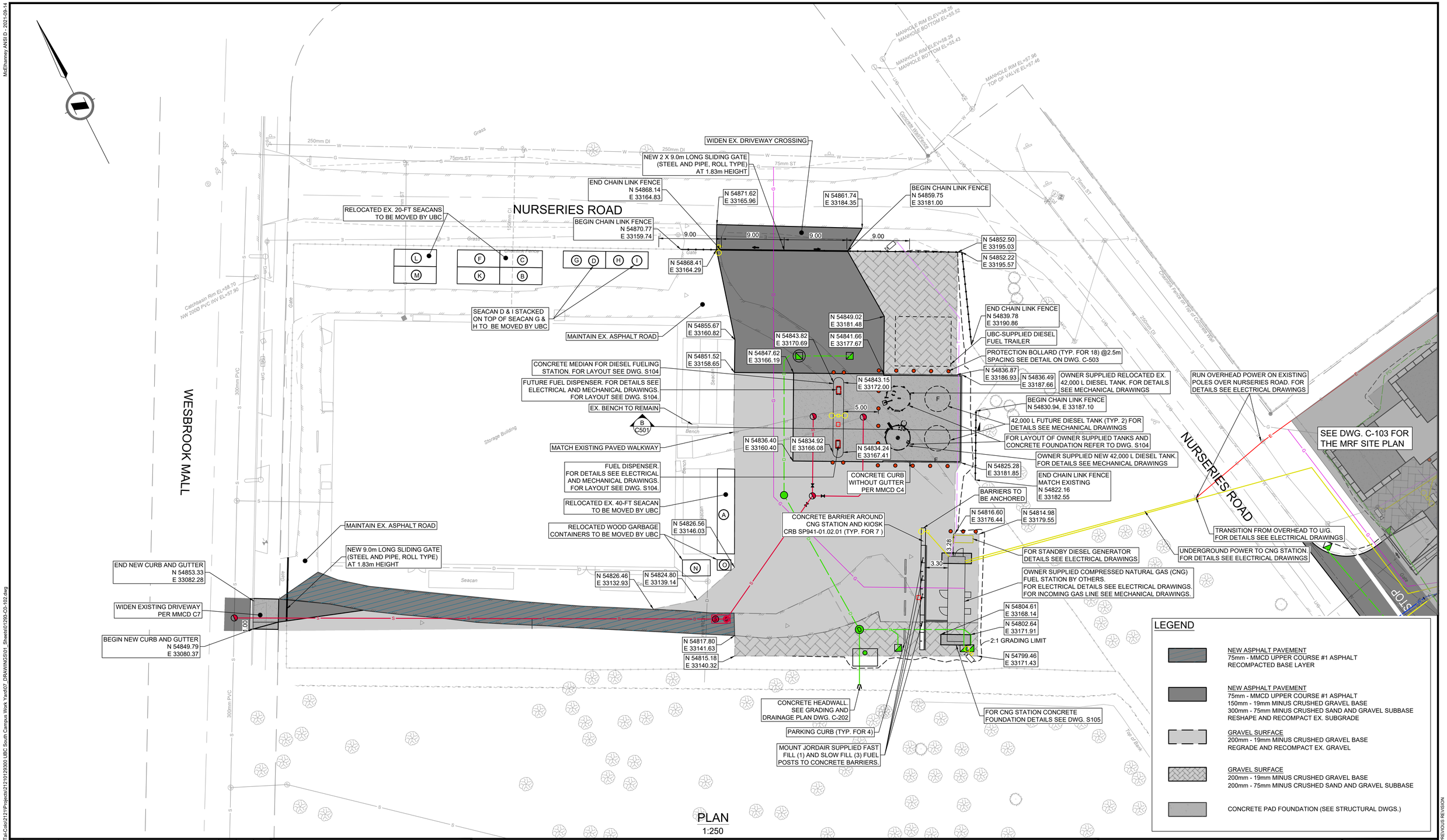

LEGEND

- NEW ASPHALT PAVEMENT
  75mm - MMCD UPPER COURSE #1 ASPHALT
  RECOMPACTED BASE LAYER
- NEW ASPHALT PAVEMENT
  75mm - MMCD UPPER COURSE #1 ASPHALT
  150mm - 19mm MINUS CRUSHED GRAVEL BASE
  300mm - 75mm MINUS CRUSHED SAND AND GRAVEL SUBBASE
  RESHAPE AND RECOMPACT EX. SUBGRADE
- GRAVEL SURFACE
  200mm - 19mm MINUS CRUSHED GRAVEL BASE
  REGRADE AND RECOMPACT EX. GRAVEL
- GRAVEL SURFACE
  200mm - 19mm MINUS CRUSHED GRAVEL BASE
  200mm - 75mm MINUS CRUSHED SAND AND GRAVEL SUBBASE
- CONCRETE PAD FOUNDATION (SEE STRUCTURAL DWGS.)

PLAN
1:250

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UBC SOUTH CAMPUS WORKS YARD

SITE LAYOUT PLAN
WAREHOUSE YARD

Drawing No. C102

Project Number 2121-01293-00

Rev. D

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DATE: 2025-08-29, 20:17 FILE: \\corp\Tal-Cab\2121\Projects\2121012930\ UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-102.dwg

McElhanney ANSI D - 2021-09-14

SEE DWG. C-102 FOR THE WAREHOUSE YARD SITE PLAN

RELOCATED GATE HOUSE AND STAIRS PLACED ON EX. CONCRETE BLOCKS

OWNER SUPPLIED COVERED STRUCTURE AND LOCK BLOCKS INSTALLED BY OTHERS. CONTRACTOR TO PREPARE SUBGRADE OF LOCK BLOCKS

SEE STRUCTURAL DWGS. FOR CONCRETE PAD FOUNDATION DETAILS (TYP.)

BEGIN CHAIN LINK FENCE
N 54823.53
E 33290.30

N 54808.18
E 33241.86

USE CAUTION WHEN WORKING UNDER OVERHEAD LINES

PROTECTION BOLLARD (TYP. 2) SEE DETAIL ON DWG. C-503

N 54809.95
E 33250.69

5.00 CLEAR (TYP.)

PROTECT EX. POWER POLE

LOCATION FOR RELOCATED GARBAGE BINS AREA TO BE CLEARED OF VEGETATION AND RECOMPACTED

9.00 UNCOVERED MATERIALS

23.25 COVERED MATERIALS

N 54807.46
E 33238.36

N 54810.91
E 33255.59

N 54815.45
E 33278.40

Steel Fence

Gate

N 54803.17
E 33229.21

N 54804.89
E 33238.81

3.00 (TYP.)

GRADING LIMIT

PROPOSED GAS REALIGNMENT. FOR DETAILS SEE MECHANICAL DRAWINGS (DETAILS TO BE ADDED IN NEXT SUBMISSION)

5.00 CLEAR

RELOCATED GARBAGE BINS TO BE ROTATED FOR VEHICLES TO BACK IN (TYP.5)

N 54815.79
E 33280.11

N 54817.84
E 33290.41

5.00 CLEAR

N 54794.31
E 33230.81

0.3m GRVL SHLDR

GRADING LIMIT

9.00 UNCOVERED MATERIALS

GRAVEL

SOIL

SAND

SALT / SAND

SALT

N 54794.82
E 33242.06

MULCH

RELOCATED 6m SWING GATE FROM WAREHOUSE YARD

N 54793.34
E 33220.41

N 54789.06
E 33237.89

N 54795.75
E 33246.88

N 54791.98
E 33253.01

EDGE OF CONCRETE PAD

LIMIT OF CONSTRUCTION
N 54803.29
E 33309.68

PROTECT EX. POWER POLE WITH TRANSFORMER

EXTEND CONCRETE PAD 1.5m BEYOND LOCKBLOCK STORAGE

BEGIN CHAIN LINK FENCE
N 54788.69
E 33231.48

5% ASPHALT RAMP (TYP.)

MRF SERVICE ROAD

N 54801.47
E 33294.69

N 54788.13
E 33231.86

RELOCATED 6m SLIDING GATE FROM WAREHOUSE YARD

CONCRETE BARRIERS
6 - CRB-E SP941-01.02.02

OWNER SUPPLIED WEIGH SCALE INSTALLED BY OTHERS

N 54795.58
E 33295.86

2:1 GRADING LIMIT

NEW 8.5m SWING GATE

N 54789.63
E 33240.89

N 54791.40
E 33250.01

PROP. CATCH BASIN (TYP.) SEE DWG. C203

N 54793.20
E 33296.33

N 54789.57
E 33299.68

MATCH EXISTING PAVEMENT AND ROAD WIDTH

PROTECT AND RAISE WATER VALVE BOX TO FINISHED GRADE

N 54781.49
E 33279.26

N 54788.10
E 33297.35

TIE INTO EXISTING NURSERIES ROAD

N 54773.54
E 33266.58

N 54775.95
E 33270.26

N 54786.63
E 33291.40

MRF SERVICE ROAD

RELOCATE MRF SIGN BEHIND PAVEMENT

LOADING BAY

3.50 PAINTED PARKING

RELOCATED 5.2m SWING GATE FROM MRF

LIMIT OF CONSTRUCTION
N 54792.53
E 33311.55

N 54787.50
E 33300.10

CONCRETE HEADWALL. SEE GRADING AND DRAINAGE PLAN DWG. C203

BRINE MIXING UNIT AREA

END CHAIN LINK FENCE
N 54787.24
E 33297.52

PAVEMENT EDGE

LOCKBLOCK WALL TO REMAIN

N 54770.50
E 33265.43

END CHAIN LINK FENCE
N 54770.77
E 33236.78

VEHICLE TURNAROUND AREA FOR WASH BAY

BEGIN ROLLOVER CURB AND GUTTER
N 54773.95
E 33233.49

NEW MMCD TYPE C4 ROLLOVER CURB AND GUTTER

N 54777.56
E 33281.96

N 54776.75
E 33291.73

N 54764.44
E 33226.01

NURSERIES ROAD

REMOVE AND REUSE 3 CONCRETE BARRIERS - SEE ABOVE

N 54767.76
E 33261.25

LOCKBLOCK WALL TO REMAIN

OWNER SUPPLIED MECHANICAL SHED INSTALLED BY OTHERS. SEE MECHANICAL DRAWINGS FOR PIPING AND ASSOCIATED COMPONENTS.

REUSE BOLLARD FOR LAMP STANDARD (TYP. 2)

RELOCATE EX. GARBAGE BINS. LOCATION TO BE CONFIRMED BY UBC

EMERGENCY EYE WASH AND SHOWER, MIXING TABLE, AND SPILL CONTAINMENT SEE MECHANICAL DRAWINGS FOR DETAILS.

END ROLLOVER CURB AND GUTTER
N 54770.40
E 33249.55

RELOCATED PESTICIDE CONTROL UNIT SEE STRUCTURAL DRAWINGS FOR DETAILS.

REMOVE LOCKBLOCK AND EXTEND PAVEMENT

OWNER SUPPLIED CAR WASH SYSTEM INSTALLED BY OTHERS. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR SERVICING DETAILS.

REMOVE AND REUSE BOLLARDS (TYP. 3)

OWNER SUPPLIED COVERED STRUCTURE AND LOCK BLOCKS INSTALLED BY OTHERS. CONTRACTOR TO PREPARE SUBGRADE OF LOCK BLOCKS.

CURVE TABLE

CURVE No.	LENGTH	RADIUS	DELTA	TANGENT	B.C. COORD.	E.C. COORD.
C1	10.361	7.000	84°48'12"	6.392	N 54792.840 E 33221.537	N 54787.730 E 33229.475
C2	12.636	8.000	90°29'43"	8.070	N 54773.954 E 33233.489	N 54764.629 E 33226.994

LEGEND

- NEW ASPHALT PAVEMENT
  75mm - MMCD UPPER COURSE #1 ASPHALT
  150mm - 19mm MINUS CRUSHED GRAVEL BASE
  300mm - 75mm MINUS CRUSHED SAND AND GRAVEL SUBBASE
  ALLOW FOR A MINIMUM OF 300mm OVER EXCAVATION BELOW SUBBASE AND REPLACE WITH STRUCTURAL FILL
- GRAVEL SURFACE
  200mm - 19mm MINUS CRUSHED GRAVEL BASE
  RECOMPACTED SUBBASE LAYER
- GRAVEL SURFACE
  200mm - 19mm MINUS CRUSHED GRAVEL BASE
  200mm - 75mm MINUS CRUSHED SAND AND GRAVEL SUBBASE
- CONCRETE PAD FOUNDATION (SEE STRUCTURAL DWGS.)
- EMBANKMENT FILL

PLAN
1:250

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UBC SOUTH CAMPUS WORKS YARD

SITE LAYOUT PLAN
MATERIAL RECOVERY FACILITY

Drawing No. C103

Project Number 2121-01293-00

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DATE: 2025-08-29, 20:17 FILE: \\corp\Tak-Cole\c2121\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\012393-C0-103.dwg

McElhanney ANSI D - 2021-09-14

PLAN
1:500

Rev	Date	Description	Drawn	Design	App'd
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UBC SOUTH CAMPUS WORKS YARD

OVERALL UTILITY PLAN

Drawing No.
C200

Project Number
2121-01293-00

Rev.
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DATE: 2025-08-29, 20:27 FILE: X:\2121\Projects\21210129300 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-200.dwg

McElhanney ANSI D - 2021-09-14

STORM SEWER STRUCTURES				
No.	DIAMETER	RIM ELEV.	INV. ELEV.	COORDINATES
CB1-1	610mm	57.47	56.30 NW	N 54846.004 E 33174.814
CB1-2	610mm	56.50	55.92 NE	N 54805.184 E 33161.500
CB1-3	610mm	56.64	55.76 NE	N 54801.187 E 33171.237
CB1-4	610mm	56.62	56.20 NE	N 54801.636 E 33170.343
CBMH1	1050mm	57.45	56.23 SE 56.23 NW	N 54849.431 E 33168.036
HW1	250mm	55.76	55.49 NE	N 54803.264 E 33154.366
MH1-1	1050mm	57.41	56.01 NE 56.01 S	N 54832.587 E 33157.059
MH1-2	1050mm	56.79	55.55 SW	N 54807.529 E 33156.523
OGS1	1050mm	56.91	55.60 N 55.58 SE 55.58 SW	N 54810.501 E 33158.022

NURSERIES ROAD

WESTBROOK MALL

EXIT DRIVEWAY FROM WAREHOUSE YARD

PROTECT EX. HYDRO POLE

MATCH EXISTING PAVEMENT ELEVATION

CB1-1

CBMH1

ELEVATION AT BASE OF CONCRETE PAD (TYP.)

GRADE BREAK (TYP.)

SEE STRUCTURAL DWG. S104 FOR DIESEL TANK SLAB ELEVATION

MATCH EXISTING GROUND ELEVATION

MH1-1

SEE STRUCTURAL DWG. S105 FOR CNG STATION SLAB ELEVATION

2:1 GRADING LIMIT

CB1-3

CB1-4

CB1-2

MH1-2

HW1

STORMCEPTOR EFO3 OGS

3.05m x 1.8m x 2.5m PRE CAST CONCRETE DETENTION TANK

DITCH INVERT AT OUTFALL
APPROX EL. 55.15
CONTRACTOR TO VERIFY IN FIELD

SEE DWG. C-203 FOR THE MRF GRADING AND DRAINAGE PLAN

MATCH EXISTING PAVEMENT ELEVATION

LEGEND

- PROPOSED SWALE
- PROPOSED STORM SEWER
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN MANHOLE

PLAN
1:250

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	KY	KY	VT

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD

GRADING AND DRAINAGE PLAN
WAREHOUSE YARD

Drawing No.
C202

Project Number: 2121-01293-00
Rev.: D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:20 FILE: \\corp\TAL-cole\2121\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\012930-C0-202.dwg

McElhanney ANSI D - 2021-09-14

SEE DWG. C-202 FOR THE WAREHOUSE YARD GRADING AND DRAINAGE PLAN

NURSERIES ROAD

90° BEND
N 54803.25
E 33229.10

45° BEND
N 54805.03
E 33238.99

45° BEND
N 54809.01
E 33241.65

22.5° BEND
N 54790.08
E 33231.47

LIMIT OF IMPACT 1.0m CLEAR FROM EX. POLE

LOCK BLOCK BASE ELEV. 56.173m

LOCK BLOCK BASE ELEV. 56.203m

LOCK BLOCK BASE ELEV. 56.052m

LOCK BLOCK BASE ELEV. 55.938m

100mmØ PERF STM @ 0.50%

CONSTRUCTION IMPACT LIMIT

100mmØ PERF STM @ 4.00%

ASPHALT EDGE

GRADING LIMIT

MATCH EXISTING PAVEMENT ELEVATION

CB2-1 CB2-2 CB2-3 CB2-4 CB2-5 CB2-6 CB2-7

SEE STRUCTURAL DWG. S103 FOR WEIGH SCALE FOUNDATION DETAILS

MAX. 6% DRIVEWAY GRADE

LOCK BLOCK BASE ELEV. 55.635m

250mmØ PVC STM

250mmØ STM

MH2-1

HW2

HW3

CBMH2

MH2-2

3.05m x 1.8m x 2.5m PRE CAST CONCRETE DETENTION TANK

PAVE EXISTING LOCKBLOCK STORAGE

STORMCEPTOR EFO3 OGS

DEDICATED BASIN FOR RUNOFF FROM WASH BAY. SEE DWG. C-401 FOR SANITARY PLAN

DEDICATED BASIN FOR RUNOFF FROM EMERGENCY EYEWASH AND SHOWER. SEE DWG. C-401 FOR SANITARY PLAN

VERIFY OUTFALL OF EXISTING CATCH BASIN AND OIL-GRIT SEPARATOR

Steel Fence
Gate
Concrete Pad
No Post Barrier
Seacan
Chainlink Fence on Top of Concrete Wall
Edge of Pavement
Road Centreline
Top of Bank
Bottom of Bank
Retaining Wall With Handrail
Stairs
Driveway
Concrete Barrier
Gravel Area
Boulder
Gabion Wall
Telecom Rim EL=55.11
Bottom Floor EL=52.61

STORM SEWER STRUCTURES

No.	DIAMETER	RIM ELEV.	INV. ELEV.	COORDINATES
CB2-1	610mm	55.64	54.49 S	N 54793.237 E 33253.139
CB2-2	610mm	55.30	54.48 S	N 54788.051 E 33288.794
CB2-3	610mm	55.40	54.40 S	N 54786.442 E 33269.228
CB2-4	610mm	55.64	54.72 NW 54.33 S	N 54788.784 E 33232.419
CB2-5	610mm	55.45	54.38 S	N 54790.607 E 33223.025
CB2-6	610mm	55.40	54.40 S	N 54786.665 E 33270.218
CB2-7	610mm	55.30	54.48 S	N 54788.280 E 33289.786
CBMH2	1050mm	55.09	54.18 N 54.18 E 54.18 S	N 54774.337 E 33234.085
CO	200mm	56.42	56.12 W	N 54818.819 E 33290.980
HW2	250mm	54.37	54.10 E	N 54768.589 E 33229.024
HW3	150mm	54.32	54.16 N	N 54768.942 E 33228.277
MH2-1	1050mm	55.64	54.30 E 54.35 N 54.30 W	N 54780.324 E 33257.962
MH2-2	1050mm	54.89	54.00 E	N 54771.423 E 33232.741
OGS2	914mm	54.88	54.05 N 54.00 W	N 54771.804 E 33234.370

LEGEND

- PROPOSED SWALE
- PROPOSED STORM SEWER
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN MANHOLE

PLAN
1:250

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UBC SOUTH CAMPUS WORKS YARD

GRADING AND DRAINAGE PLAN
MATERIAL RECOVERY FACILITY

Drawing No. C203

Project Number 2121-01293-00

Rev. D

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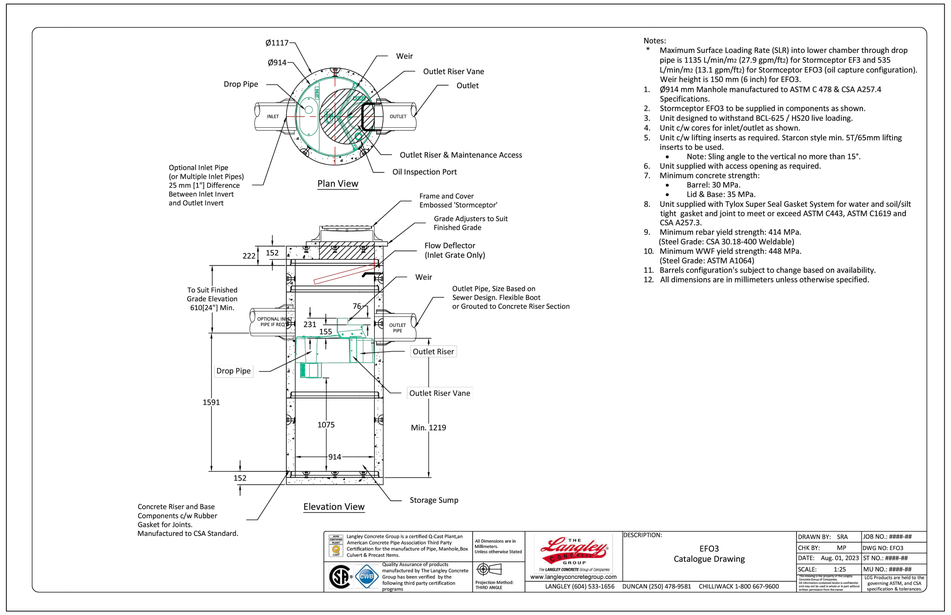
McElhanney ANSI D - 2021-09-14

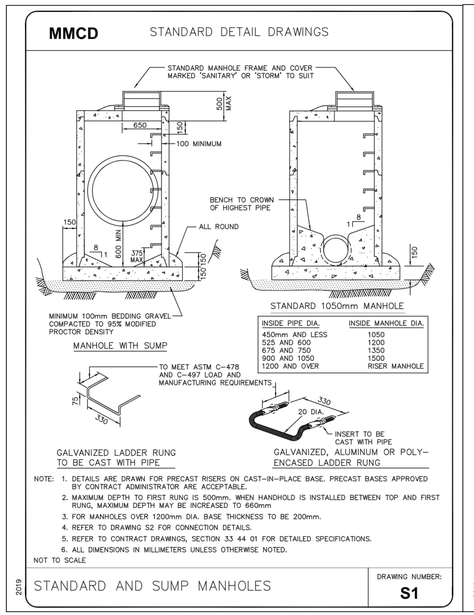


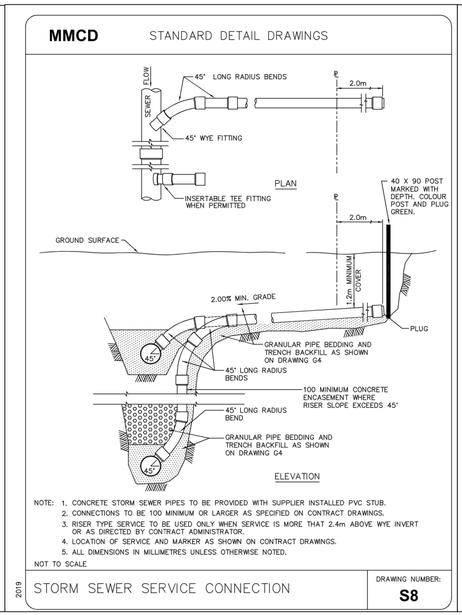
Notes:
- Maximum Surface Loading Rate (SLR) into lower chamber through drop pipe is 1135 L/min/m² (27.9 gpm/ft²) for Stormceptor EF3 and 535 L/min/m² (13.1 gpm/ft²) for Stormceptor EFO3 (oil capture configuration). Weir height is 150 mm (6 inch) for EFO3.

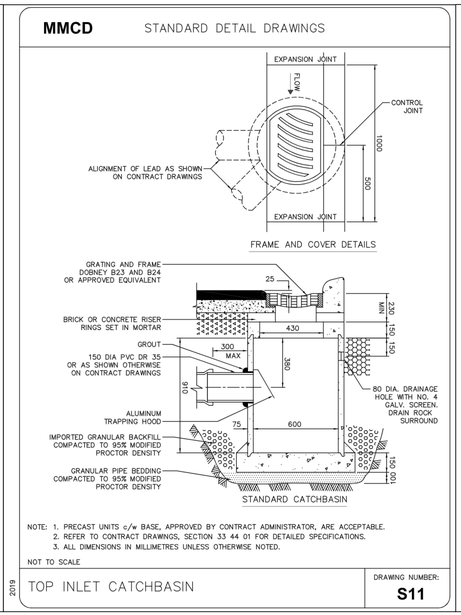
1. Ø914 mm Manhole manufactured to ASTM C 478 & CSA A257.4 Specifications.
2. Stormceptor EFO3 to be supplied in components as shown.
3. Unit designed to withstand BCL-625 / HS20 live loading.
4. Unit c/w cores for inlet/outlet as shown.
5. Unit c/w lifting inserts as required. Starcon style min. 5T/65mm lifting inserts to be used.
   - Note: Sling angle to the vertical no more than 15°.
6. Unit supplied with access opening as required.
7. Minimum concrete strength:
   - Barrel: 30 MPa.
   - Lid & Base: 35 MPa.
8. Unit supplied with Tylox Super Seal Gasket System for water and soil/silt tight gasket and joint to meet or exceed ASTM C443, ASTM C1619 and CSA A257.3.
9. Minimum rebar yield strength: 414 MPa. (Steel Grade: CSA 30.18-400 Weldable)
10. Minimum WWF yield strength: 448 MPa. (Steel Grade: ASTM A1064)
11. Barrels configuration's subject to change based on availability.
12. All dimensions are in millimeters unless otherwise specified.

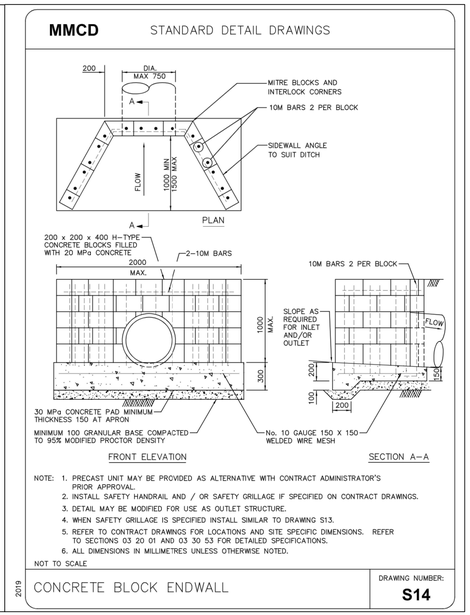
STORMCEPTOR EFO3 OIL-GRIT SEPARATOR DETAIL - WAREHOUSE YARD AND MRF

SCALE N.T.S









DETAILS

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
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UBC SOUTH CAMPUS WORKS YARD

DRAINAGE DETAILS

Drawing No. C204

Project Number 2121-01293-00

Rev. D

DATE: 2025-08-29, 20:21 FILE: \\corp\TAL-ocl\2121\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-204.dwg

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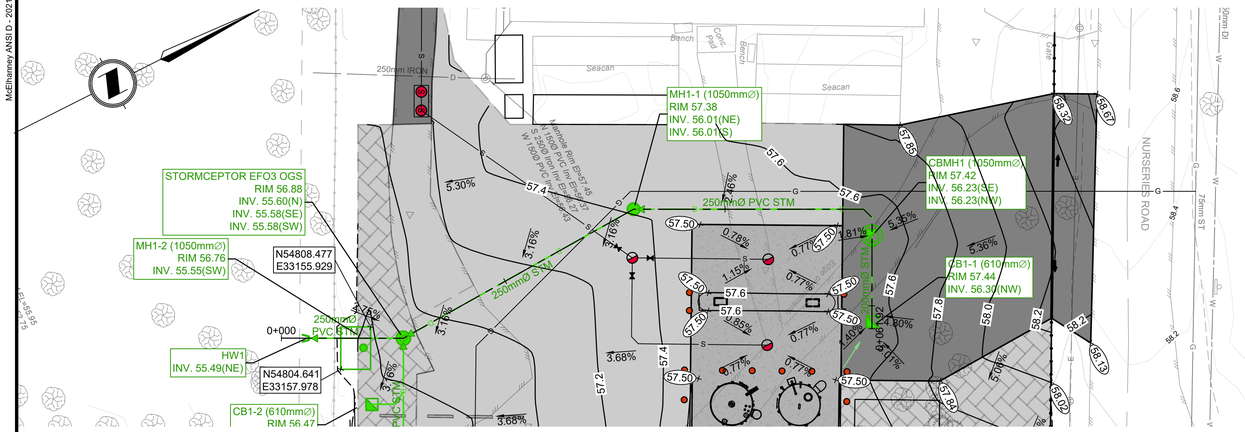
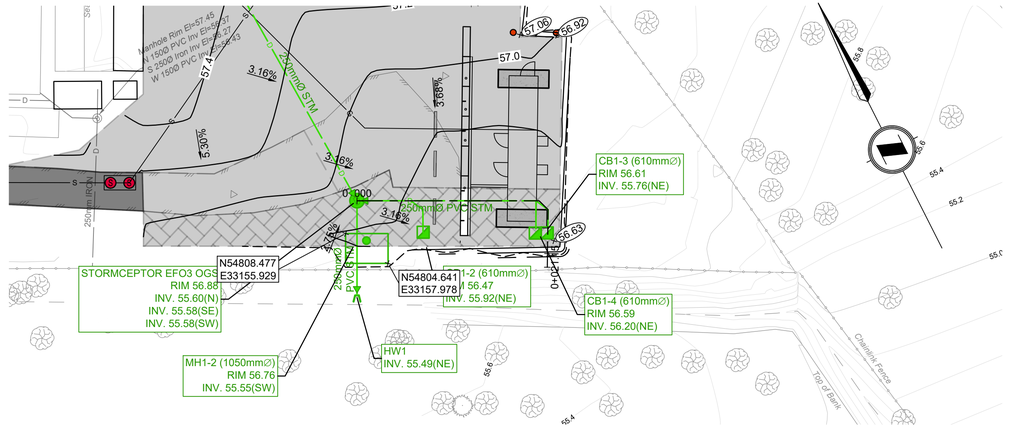


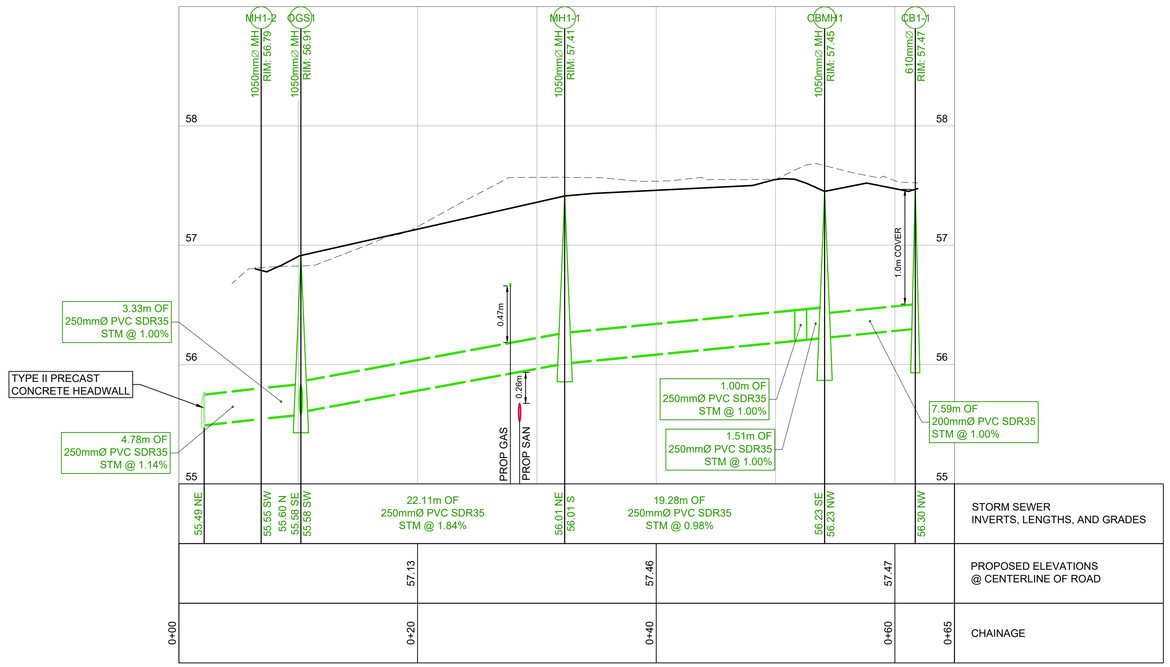
L33 STORM - PLAN AT WAREHOUSE

1:250



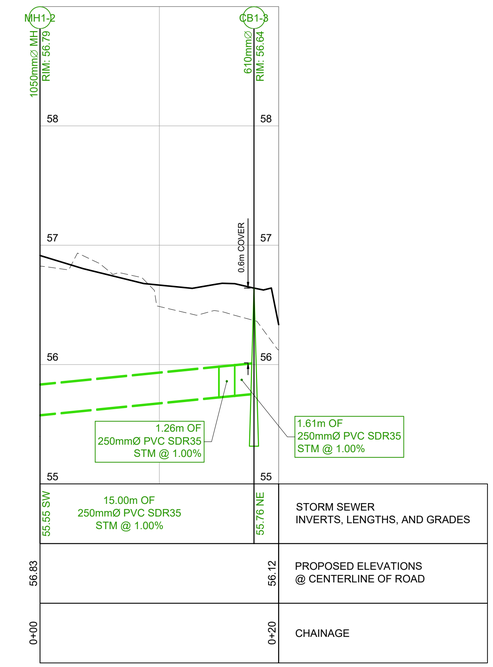
L34 STORM - PLAN AT WAREHOUSE

1:250



L33 STORM - PROFILE

H 1:250 V 1:25



L34 STORM - PROFILE

H 1:250 V 1:25

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UBC SOUTH CAMPUS WORKS YARD

STORM SEWER PLAN AND PROFILE
WAREHOUSE YARD

Drawing No.
C205

Project Number
2121-01293-00

Rev.
A

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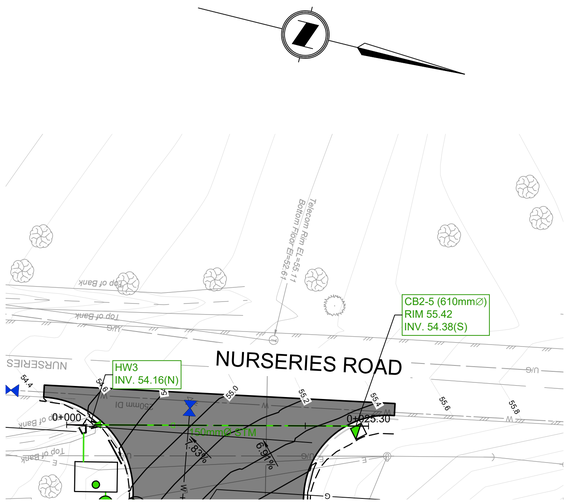
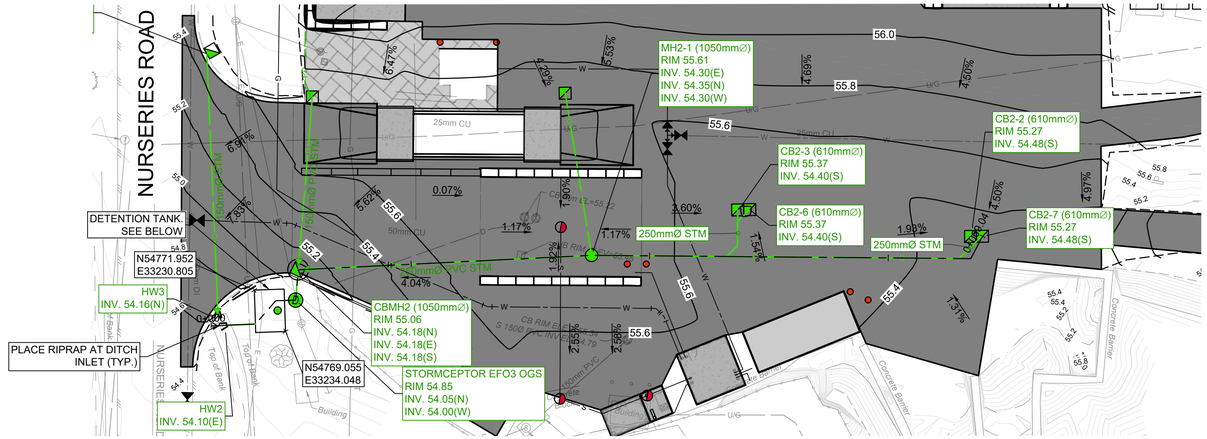
DATE: 2025-08-29, 20:21 FILE: \\corp\TaiCob\21219\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-205.dwg

McElhanney ANSI D - 2021-09-14

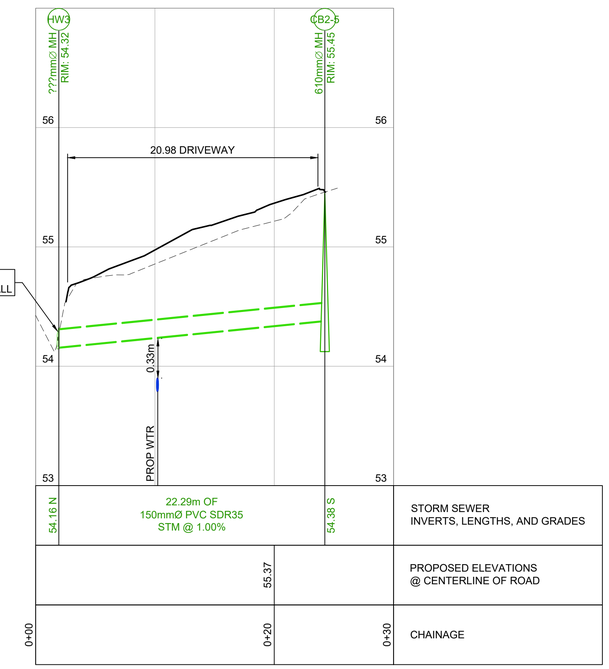
McElhanney ANSI D - 2021-09-14



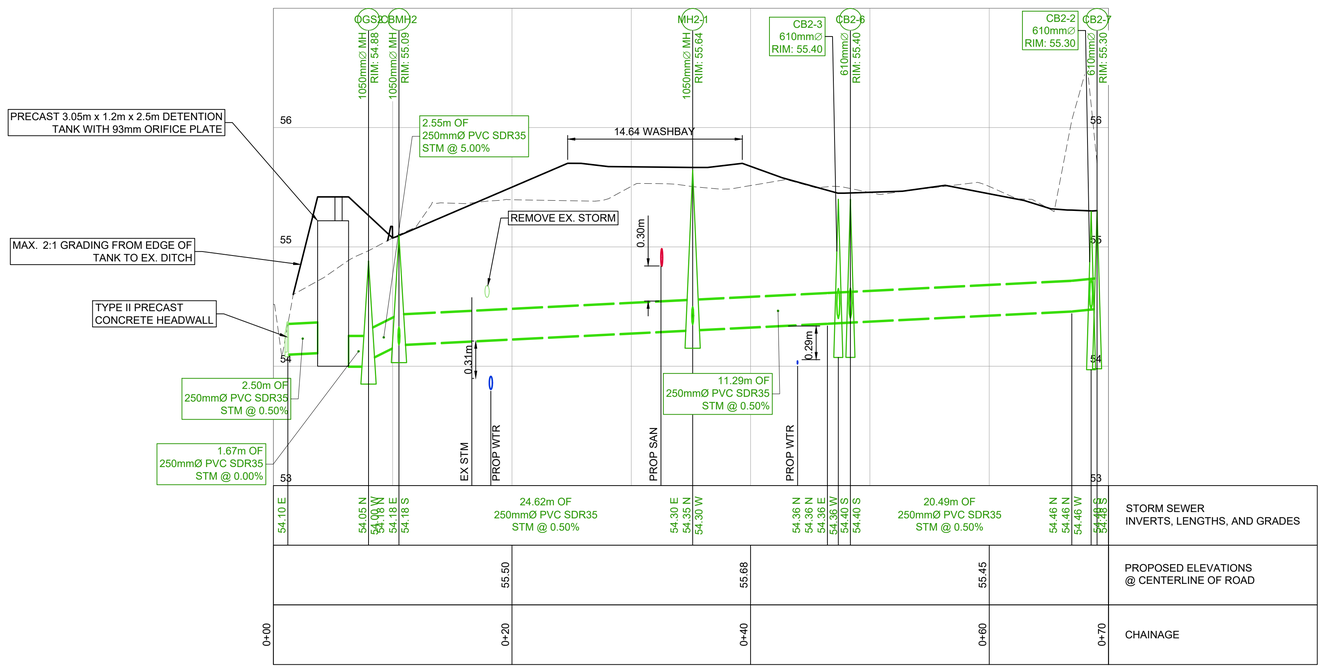
L30 STORM - PLAN AT DRIVEWAY
1:250



L31 STORM - PLAN AT MRF
1:250



L30 STORM - PROFILE
H 1:250 V 1:25



L31 STORM - PROFILE
H 1:250 V 1:25

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UBC SOUTH CAMPUS WORKS YARD

STORM SEWER PLAN AND PROFILE
MATERIAL RECOVERY FACILITY

Drawing No. C206

Project Number	Rev.
2121-01293-00	A

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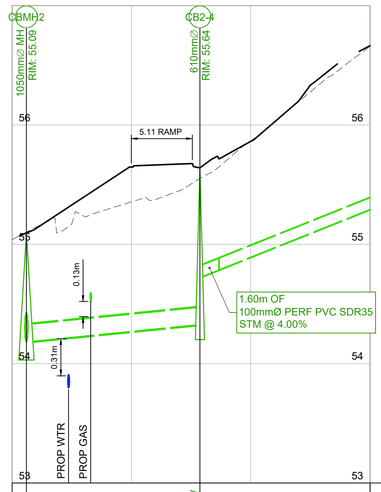
DATE: 2025-08-29, 20:22 FILE: \\corp\Tal-Cob\2121Projects\212101293\00 UBC South Campus Work Yard\07_DRAWINGS\01 Sheets\01293-C0-206.dwg

L32 STORM - PLAN AT DRIVEWAY

1:250

L35 STORM - PLAN AT MRF

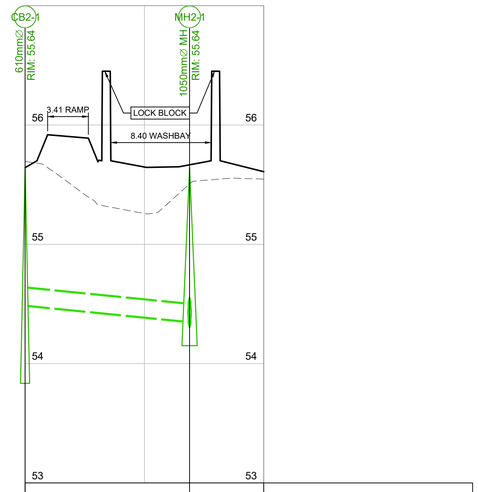
1:250



54.18 N 54.18 E 54.18 S	14.54m OF 150mmØ PVC SDR28 STM @ 1.00%	54.72 NW 54.33 S	13.38m OF 100mmØ PERF PVC SDR35 STM @ 4.00%
STORM SEWER INVERTS, LENGTHS, AND GRADES			
55.04	55.87	56.66	PROPOSED ELEVATIONS @ CENTERLINE OF ROAD
32+00	32+20	32+30	CHAINAGE

L32 STORM - PROFILE

H 1:250 V 1:25



54.49 S	13.78m OF 150mmØ PVC SDR28 STM @ 1.00%	54.30 E 54.35 N 54.30 W	
STORM SEWER INVERTS, LENGTHS, AND GRADES			
55.69	55.55		PROPOSED ELEVATIONS @ CENTERLINE OF ROAD
35+00	35+20		CHAINAGE

L35 STORM - PROFILE

H 1:250 V 1:25

Rev	Date	Description	Drawn	Design	App'd
A	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD

STORM SEWER PLAN AND PROFILE
MATERIAL RECOVERY FACILITY

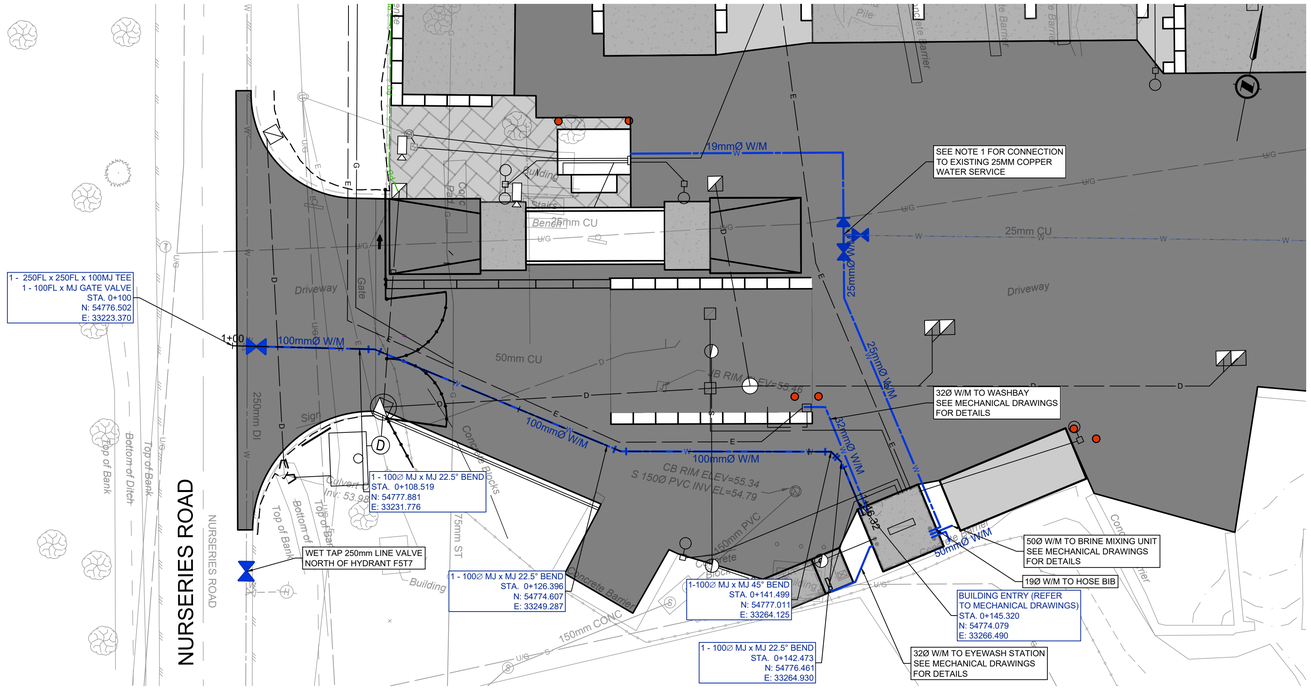
Drawing No.
C207

Project Number	Rev.
2121-01293-00	A

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

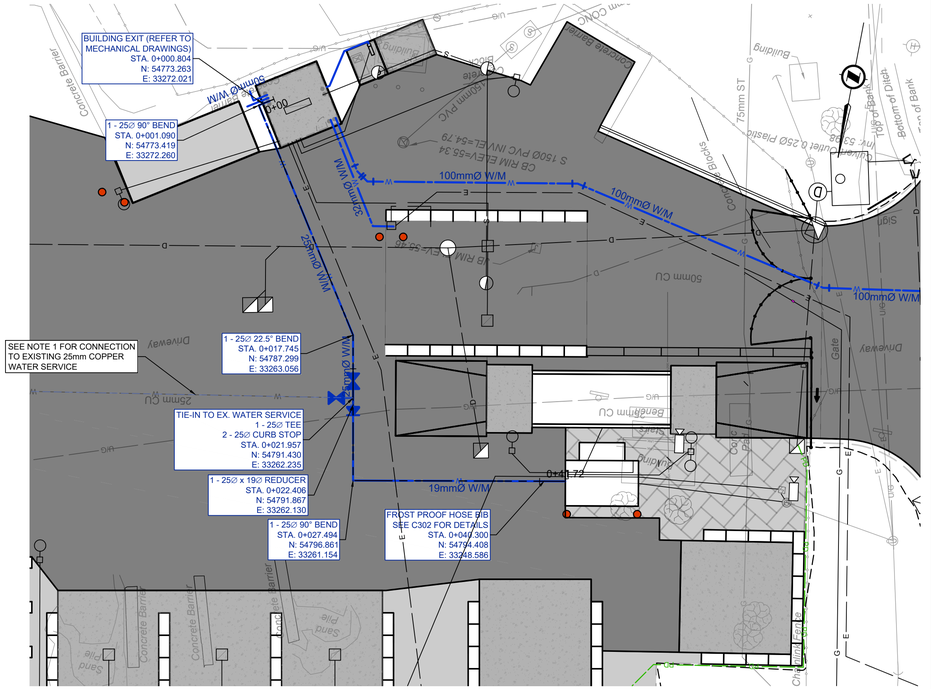
McElhanney ANSI D - 2021-09-14

DATE: 2025-08-29, 20:22 FILE: \\corp\Tal-Cob\2121Projects\212101293\00 UBC South Campus Work Yard\07_DRAWINGS\01 Sheets\01293-C0-207.dwg



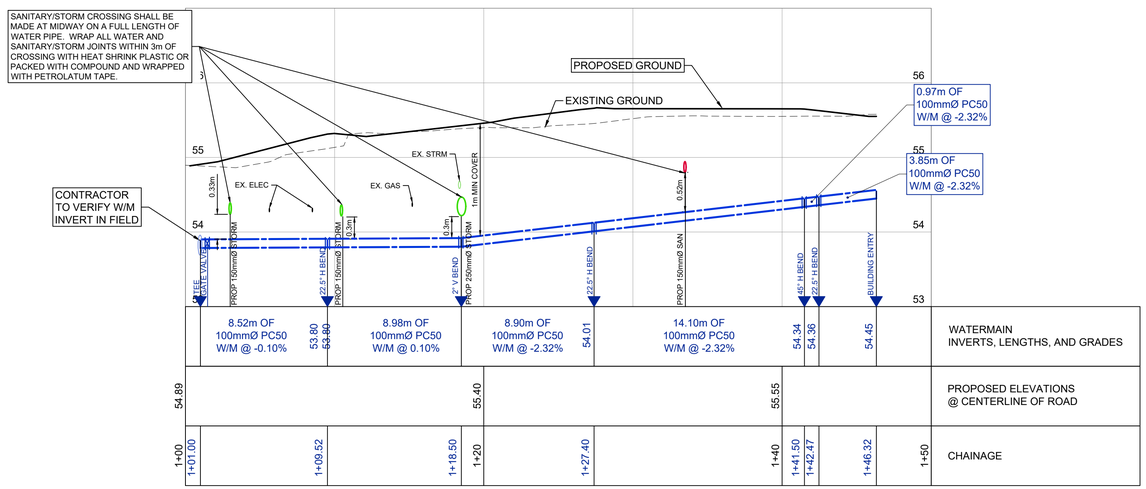
L10 WATERMAIN - PLAN

1:200



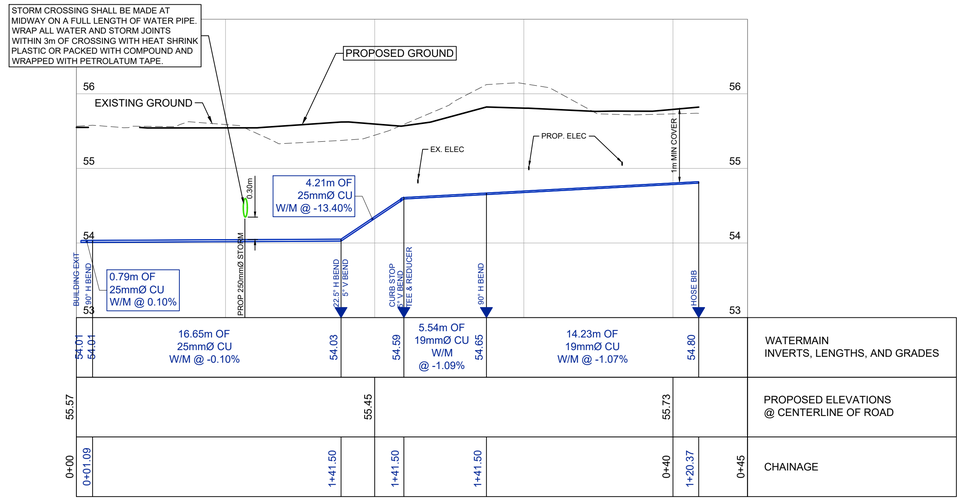
L15 WATERMAIN - PLAN

1:200



L10 WATERMAIN - PROFILE

H 1:200 V 1:40



L15 WATERMAIN - PROFILE

H 1:200 V 1:40

NOTE:
1. CONTRACTOR TO COORDINATE REMOVAL OF THE EXISTING WATER SERVICE AND INSTALLATION OF THE NEW SERVICE WITH UBC EWS TO MINIMIZE WATER SHUTDOWN TIME. CONTRACTOR TO SUBMIT A WATER TIE-IN WORK PLAN FOR REVIEW AND APPROVAL.

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	KY	KY	VT

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UBC SOUTH CAMPUS WORKS YARD

WATER SERVICING PLAN AND PROFILE

Drawing No.
C301

Project Number
2121-01293-00

Rev.
D

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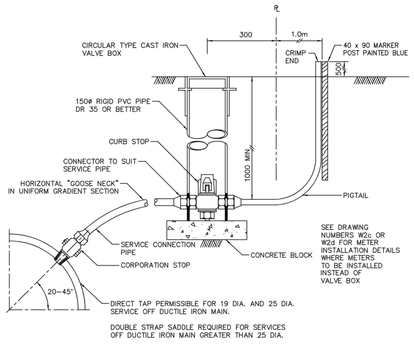
McElhanney ANSI D - 2021-09-14
DATE: 2025-08-29, 20:26 FILE: \\corp\TAL-cok\21219\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-301.dwg

McElhanney ANSI D - 2021-09-14

MMCD STANDARD DETAIL DRAWINGS



NOTE:
1. THIS DETAIL FOR SERVICES 19 TO 50mm ONLY.
2. PVC SADDLES TO SECTION 33 11 01.
3. INSTALL SERVICE PIPE WITH "GOOSE NECK" IN HORIZONTAL POSITION.
4. WHEN CURB STOP INSTALLED IN DRIVEWAY PLACE COVER IN CHAMBER. MARK "WATER". SEE DRAWING S9 FOR TYPICAL DETAIL.
5. REFER TO CONTRACT DRAWINGS, SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.
6. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.

NOT TO SCALE

2019 WATER SERVICE CONNECTION – VALVE BOX — DRAWING NUMBER: **W2b**

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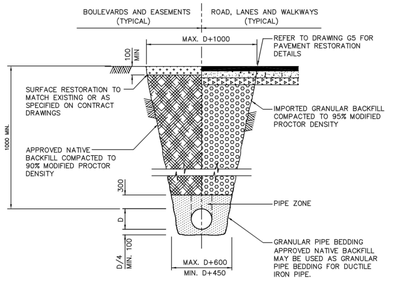
MMCD STANDARD DETAIL DRAWINGS



NOTE:
1. TRENCHING TO COMPLY WITH ALL REQUIREMENTS OF WORKSAFE BC.
2. REFER TO CONTRACT DRAWINGS, SECTION 31 23 01 FOR DETAILED SPECIFICATIONS.
3. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

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2019 UTILITY TRENCH — DRAWING NUMBER: **G4**

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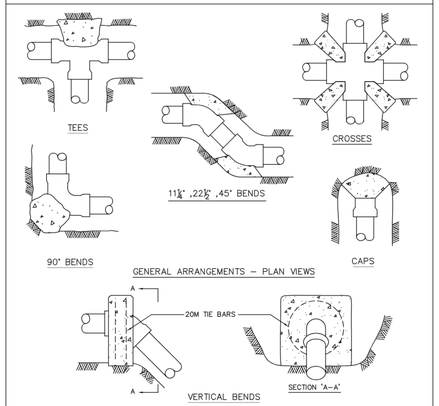

NOTE:
1. REFER TO CONTRACT DRAWINGS FOR SPECIFIED BEARING AREAS OF THRUST BLOCKS AND/OR SPECIFIC REQUIREMENTS NOT SHOWN ON THIS DRAWING.
2. PLACE 6 mil POLYETHYLENE ON INTERFACE BETWEEN CONCRETE AND FITTING.
3. PLACE 20 MPa CONCRETE AGAINST UNDISTURBED GROUND; KEEP CONCRETE CLEAR OF FITTING JOINTS.
4. REFER TO CONTRACT DRAWINGS, SECTIONS. 33 11 01 AND 03 30 53 FOR DETAILED SPECIFICATIONS.
5. REFER TO CONTRACT DRAWINGS, SECTIONS. 33 11 01 AND 03 30 53 FOR DETAILED SPECIFICATIONS.
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2019 TYPICAL THRUST BLOCK ARRANGEMENTS — DRAWING NUMBER: **W1**

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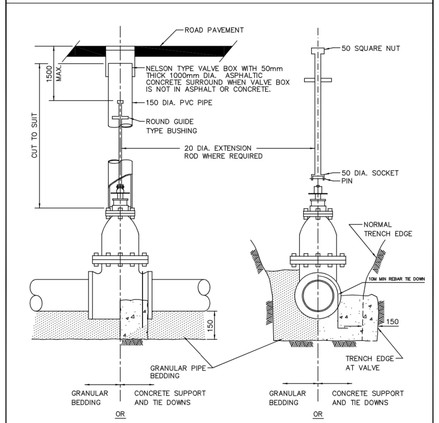

NOTE:
1. REFER TO CONTRACT DRAWINGS FOR VALVE INSTALLATION DETAILS IN AREAS OF UNSTABLE GROUND (WHERE APPLICABLE).
2. REFER TO CONTRACT DRAWINGS, SECTION 33 11 01 FOR DETAILED SPECIFICATIONS.
3. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.

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2019 GATE VALVE INSTALLATION — DRAWING NUMBER: **W3**

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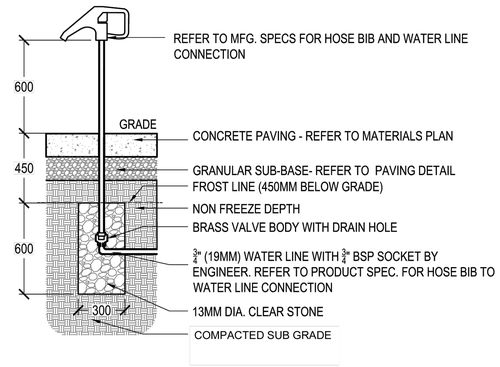
MFG: CAMPBELL

TYPE: FROST PROOF, LEAD FREE YARD HYDRANT: 2 FT BURY DP, 57 IN L, ¾ IN FNPT INLET SIZE

HT: 57 INCH (1447mm).

OR APPROVED EQUIVALENT.



FROST PROOF YARD HYDRANT
SCALE NTS

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	KY	KY	VT

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UBC SOUTH CAMPUS WORKS YARD

WATER SERVICING DETAILS

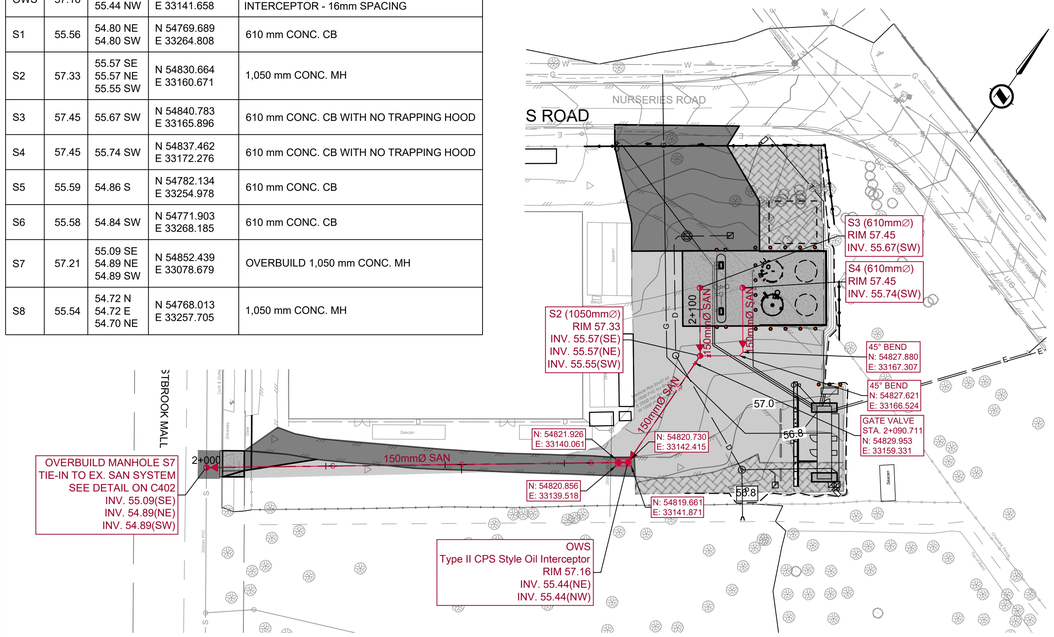
Drawing No. **C302**

Project Number 2121-01293-00 | Rev. D

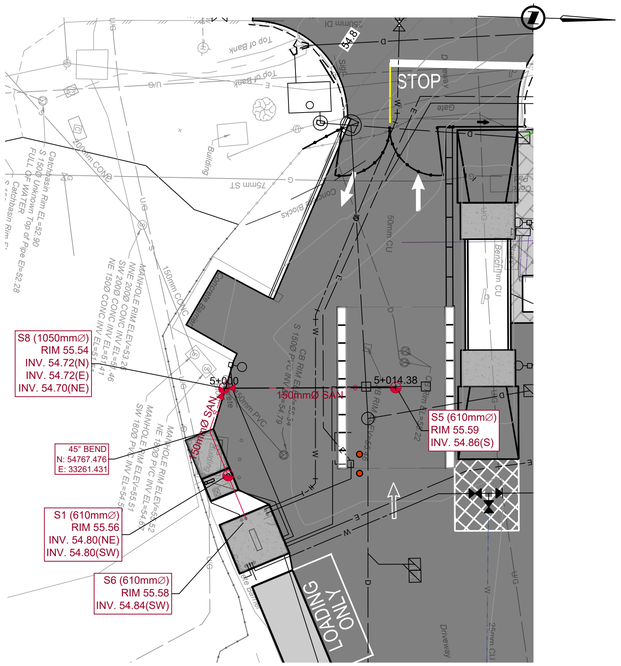
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:26 FILE: \\corp\TAL-cols\21\Projects\21210129300 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-302.dwg

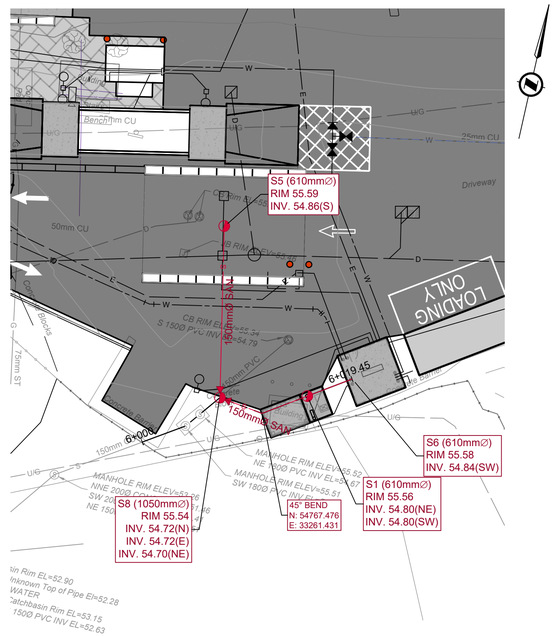
SANITARY SEWER STRUCTURES				
No.	RIM ELEV.	INV. ELEV.	COORDINATES	DESCRIPTION
OWS	57.16	55.44 NE 55.44 NW	N 54820.442 E 33141.658	TYPE II COALESCING PLAT OIL INTERCEPTOR - 16mm SPACING
S1	55.56	54.80 NE 54.80 SW	N 54769.689 E 33264.808	610 mm CONC. CB
S2	57.33	55.57 SE 55.57 NE 55.55 SW	N 54830.664 E 33160.671	1,050 mm CONC. MH
S3	57.45	55.67 SW	N 54840.783 E 33165.896	610 mm CONC. CB WITH NO TRAPPING HOOD
S4	57.45	55.74 SW	N 54837.462 E 33172.276	610 mm CONC. CB WITH NO TRAPPING HOOD
S5	55.59	54.86 S	N 54782.134 E 33254.978	610 mm CONC. CB
S6	55.58	54.84 SW	N 54771.903 E 33268.185	610 mm CONC. CB
S7	57.21	55.09 SE 54.89 NE 54.89 SW	N 54852.439 E 33078.679	OVERBUILD 1,050 mm CONC. MH
S8	55.54	54.72 N 54.72 E 54.70 NE	N 54768.013 E 33257.705	1,050 mm CONC. MH



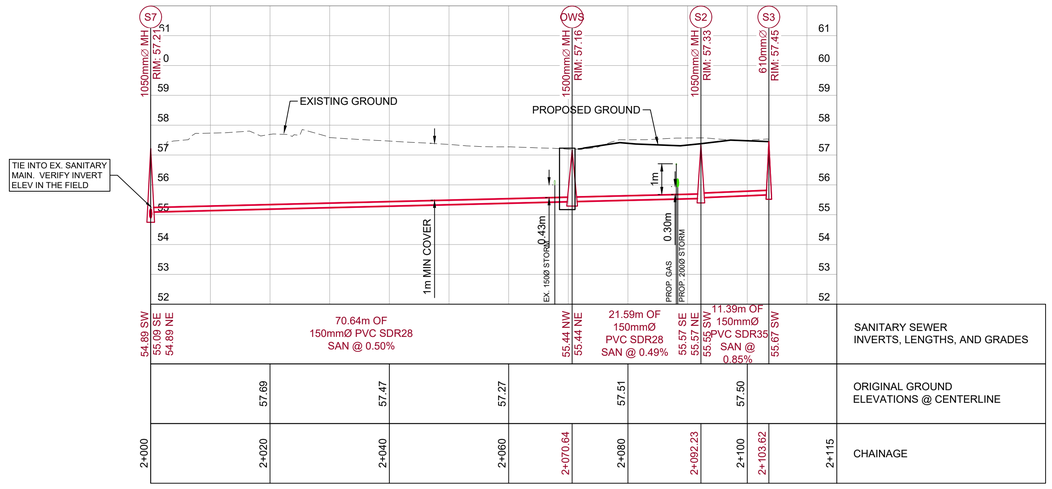
L20 SANITARY - PLAN AT DIESEL TANK
1:500



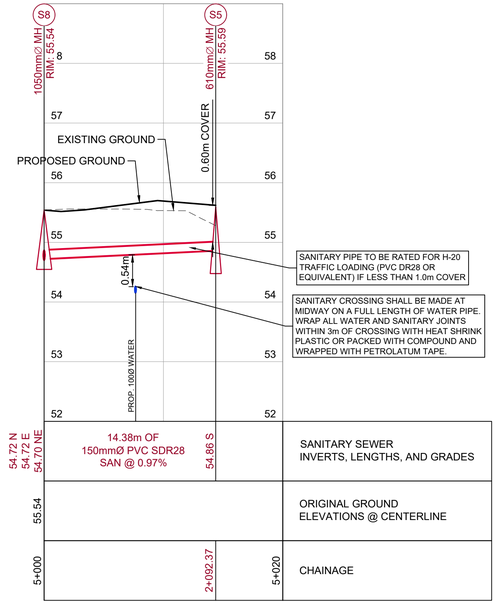
L50 SANITARY - PLAN AT VEHICLE WASH BAY
1:250



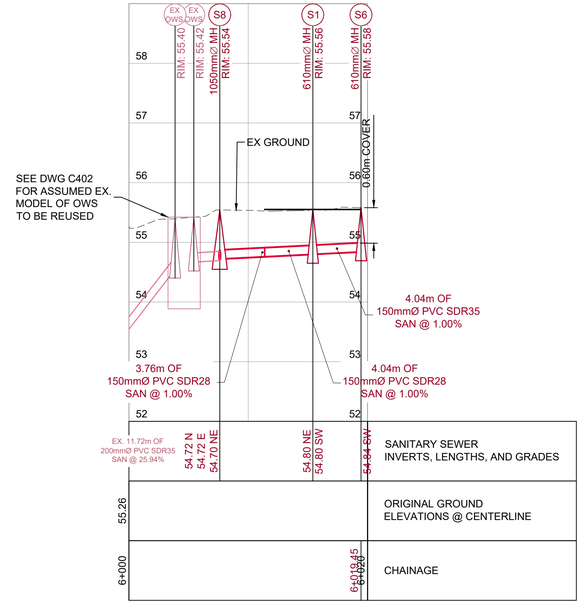
L60 SANITARY - PLAN AT EMERGENCY EYEWASH AND SHOWER STATION
1:250



L20 SANITARY - PROFILE
H 1:500 V 1:100



L50 SANITARY - PROFILE
H 1:250 V 1:50



L60 SANITARY - PROFILE
H 1:250 V 1:50

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	TP	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	TP	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	TP	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	TP	KY	VT

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UBC SOUTH CAMPUS WORKS YARD

SANITARY SERVICE PLAN AND PROFILE

Drawing No. C401

Project Number 2121-01293-00

Rev. D

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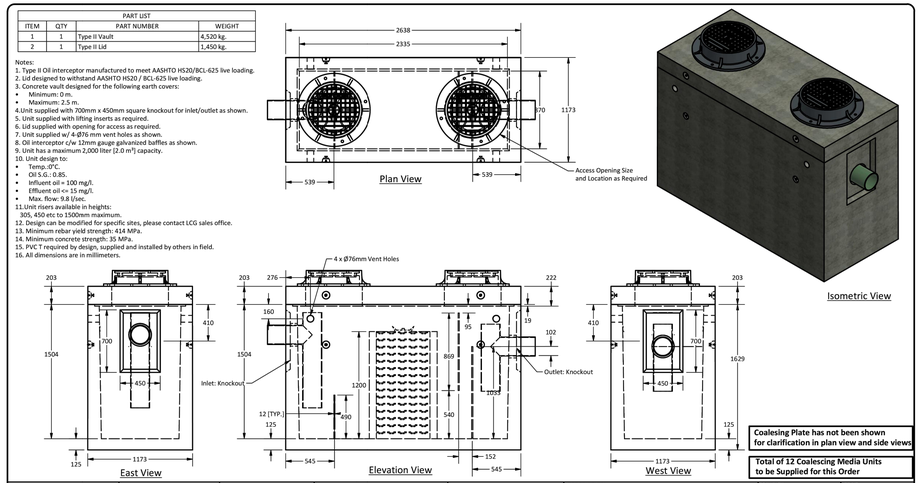
DATE: 2025-08-29, 20:33 FILE: \\corp\Tal-Cdo\2121\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-401.dwg

McElhanney ANSI D - 2021-09-14

McElhanney ANSI D - 2021-09-14

PART LIST			
ITEM	QTY	PART NUMBER	WEIGHT
1	1	Type II Vault	4,520 kg.
2	1	Type II Lid	1,450 kg.

Notes:
1. Type II Oil interceptor manufactured to meet AASHTO HS20/BCL-625 live loading.
2. Lid designed to withstand AASHTO HS20 / BCL-625 live loading.
3. Concrete vault designed for the following earth covers:
   - Minimum: 0 m.
   - Maximum: 2.5 m.
4. Unit supplied with 700mm x 450mm square knockout for inlet/outlet as shown.
5. Unit supplied with lifting inserts as required.
6. Lid supplied with opening for access as required.
7. Unit supplied w/ 4-Ø76 mm vent holes as shown.
8. Oil interceptor c/w 12mm gauge galvanized baffles as shown.
9. Unit has a maximum 2,000 liter [2.0 m³] capacity.
10. Unit design to:
   - Temp.:0°C.
   - Oil S.G.: 0.85.
   - Influent oil = 100 mg/l.
   - Effluent oil <= 15 mg/l.
   - Max. flow: 9.8 l/sec.
11. Unit risers available in heights:
   305, 450 etc to 1500mm maximum.
12. Design can be modified for specific sites, please contact LCG sales office.
13. Minimum rebar yield strength: 414 MPa.
14. Minimum concrete strength: 35 MPa.
15. PVC T required by design, supplied and installed by others in field.
16. All dimensions are in millimeters.



Coalesing Plate has not been shown for clarification in plan view and side views

Total of 12 Coalescing Media Units to be Supplied for this Order

Langley Concrete Group is a certified Q-Cast Plant, an American Concrete Pipe Association Third Party Certification for the manufacture of Pipe, Manhole, Box Culvert & Precast Items.

Quality Assurance of products manufactured by The Langley Concrete Group has been verified by the following third party certification programs.

All Dimensions are in Millimeters. Unless otherwise Stated

Projection Method: THIRD ANGLE

THE Langley CONCRETE GROUP
www.langleyconcretegroup.com
LANGLEY (604) 533-1656
VICTORIA (250) 478-9581
CHILLIWACK 1-800 667-9600

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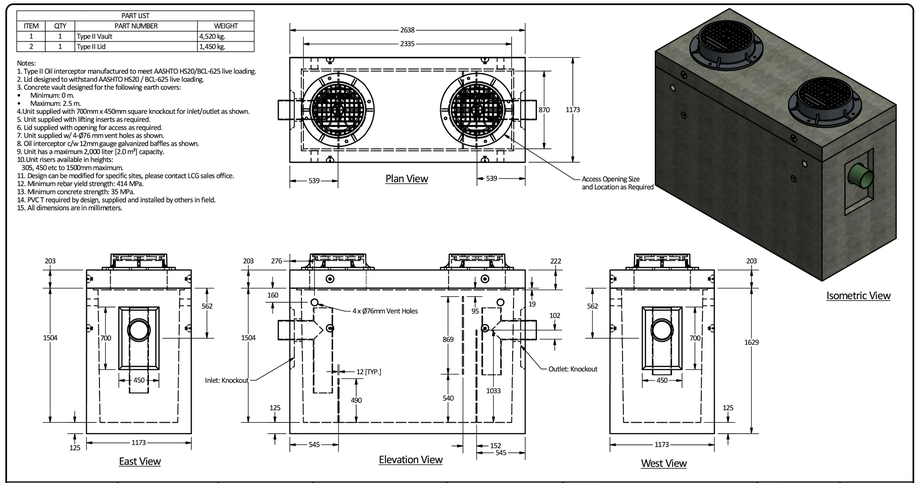
DESCRIPTION: Type II Coalescing Plate Oil Interceptor 16mm Spacing

DRAWN BY: SR	JOB NO.
CHK BY: KS	DWG NO: TYPE II-COI-16
DATE: Sep.28, 2018	
SCALE: 1:25	
SIZE: 11 x 17	REV: SHEET 1 OF 1

TYPE II COALESCING PLATE OIL INTERCEPTOR DETAIL - WAREHOUSE YARD
SCALE N.T.S

PART LIST			
ITEM	QTY	PART NUMBER	WEIGHT
1	1	Type II Vault	4,520 kg.
2	1	Type II Lid	1,450 kg.

Notes:
1. Type II Oil interceptor manufactured to meet AASHTO HS20/BCL-625 live loading.
2. Lid designed to withstand AASHTO HS20 / BCL-625 live loading.
3. Concrete vault designed for the following earth covers:
   - Minimum: 0 m.
   - Maximum: 2.5 m.
4. Unit supplied with 700mm x 450mm square knockout for inlet/outlet as shown.
5. Unit supplied with lifting inserts as required.
6. Lid supplied with opening for access as required.
7. Unit supplied w/ 4-Ø76 mm vent holes as shown.
8. Oil interceptor c/w 12mm gauge galvanized baffles as shown.
9. Unit has a maximum 2,000 liter [2.0 m³] capacity.
10. Unit risers available in heights:
   305, 450 etc to 1500mm maximum.
11. Design can be modified for specific sites, please contact LCG sales office.
12. Minimum rebar yield strength: 414 MPa.
13. Minimum concrete strength: 35 MPa.
14. PVC T required by design, supplied and installed by others in field.
15. All dimensions are in millimeters.



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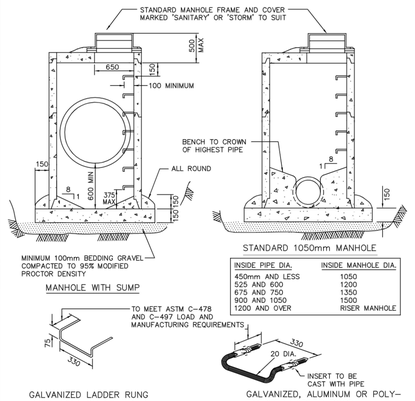
DESCRIPTION: Type II Oil Interceptor [API Style]

DRAWN BY: SR	JOB NO.
CHK BY: KS	DWG NO: TYPE II-API
DATE: Aug.14, 2018	
SCALE: 1:25	
SIZE: 11 x 17	REV: SHEET 1 OF 1

POTENTIAL EXISTING OIL INTERCEPTOR MODEL AT MRF - TO BE REUSED
SCALE N.T.S

MMCD STANDARD DETAIL DRAWINGS



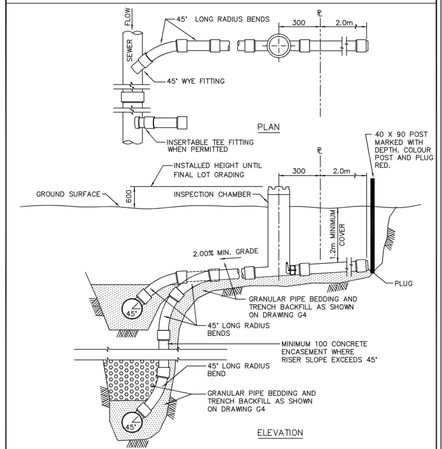
INSIDE PIPE DIA.	INSIDE MANHOLE DIA.
450mm AND LESS	1050
525 AND 600	1200
675 AND 750	1350
900 AND 1050	1500
1200 AND OVER	RISER MANHOLE

NOTE:
1. DETAILS ARE DRAWN FOR PRECAST RISERS ON CAST-IN-PLACE BASE. PRECAST BASES APPROVED BY CONTRACT ADMINISTRATOR ARE ACCEPTABLE.
2. MAXIMUM DEPTH TO FIRST RUNG IS 500mm. WHEN HANDHOLD IS INSTALLED BETWEEN TOP AND FIRST RUNG, MAXIMUM DEPTH MAY BE INCREASED TO 660mm
3. FOR MANHOLES OVER 1200mm DIA. BASE THICKNESS TO BE 200mm.
4. REFER TO DRAWING S2 FOR CONNECTION DETAILS.
5. REFER TO CONTRACT DRAWINGS, SECTION 33 44 01 FOR DETAILED SPECIFICATIONS.
6. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

NOT TO SCALE

2019 STANDARD AND SUMP MANHOLES — DRAWING NUMBER: **S1**

MMCD STANDARD DETAIL DRAWINGS

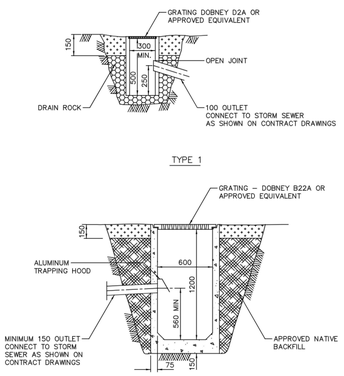


NOTE:
1. CONNECTIONS TO BE 100 OR AS SPECIFIED ON CONTRACT DRAWINGS.
2. RISER TYPE SERVICE TO BE USED ONLY WHEN SERVICE IS MORE THAN 2.4m ABOVE WYE INVERT OR AS DIRECTED BY CONTRACT ADMINISTRATOR.
3. LOCATION OF SERVICE AND MARKER AS SHOWN ON CONTRACT DRAWINGS.
4. SEE DRAWING S9 FOR DETAILS OF INSPECTION CHAMBER AND INSTALLATION REQUIREMENTS.
5. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

NOT TO SCALE

2019 SANITARY SEWER SERVICE CONNECTION — DRAWING NUMBER: **S7**

MMCD STANDARD DETAIL DRAWINGS

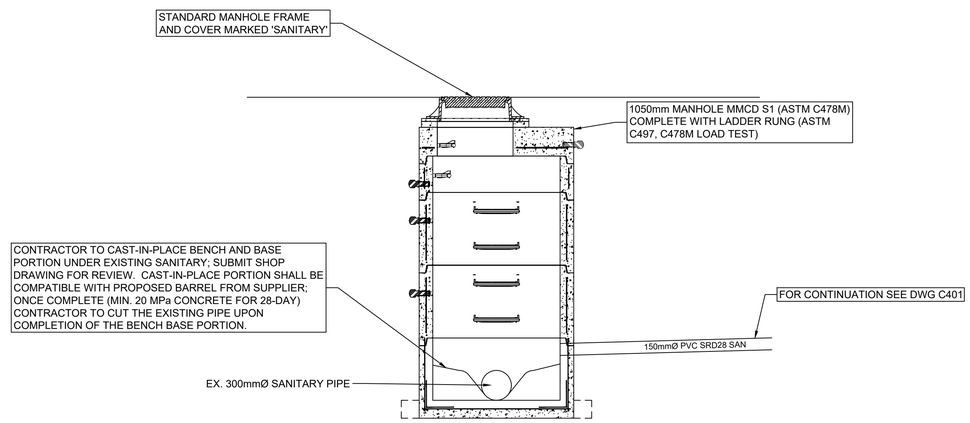


NOTE:
1. REFER TO CONTRACT DRAWINGS, SECTION 33 44 01 FOR DETAILED SPECIFICATIONS.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE NOTED.

NOT TO SCALE

2019 LAWN DRAINS — DRAWING NUMBER: **S12**

DETAILS



OVERBUILD MANHOLE
SCALE 1:25

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT
A	2025-04-25	ISSUED FOR 100% DEVELOPMENT FOR CONSTRUCTION	KY	KY	VT

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

McElhanney
Suite 200
858 Beatty Street
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T 604 683 8521

PRELIMINARY NOT FOR CONSTRUCTION

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THE UNIVERSITY OF BRITISH COLUMBIA
6200 UNIVERSITY BLVD, VANCOUVER, BC V6T 1Z4

UBC SOUTH CAMPUS WORKS YARD

SANITARY SERVICE DETAILS

Drawing No. C402

Project Number 2121-01293-00 | Rev. D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:28 FILE: \\vcon\TAL-colo\2121\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\012930-COI-402.dwg

LOCATION	ELEMENT	SUPPLY	INSTALLATION	COMMISSIONING
MATERIAL RECOVERY FACILITY	BULK MATERIAL STORAGE	- COVERED CANOPY STRUCTURES FOR SALT, SALT/SAND AND SOIL BAYS INCLUDING LOCK-BLOCKS ARE OWNER SUPPLIED THROUGH LINDOME STRUCTURES. - UNCOVERED BULK MATERIAL BAYS FOR MULCH AND GRAVEL INCLUDING INTERLOCKING CONCRETE BLOCKS TO BE SUPPLIED BY ETRO TRADES. - CONCRETE SLAB FOR ALL BULK MATERIAL BAYS SUPPLIED BY ETRO TRADES.	- COVERED CANOPY STRUCTURES FOR SALT, SALT/SAND AND SOIL BAYS INCLUDING LOCK-BLOCKS TO BE OWNER INSTALLED BY LINDOME STRUCTURES. - UNCOVERED BULK MATERIAL BAYS FOR MULCH AND GRAVEL INCLUDING INTERLOCKING CONCRETE BLOCKS TO BE INSTALLED BY ETRO TRADES. - CONCRETE SLAB FOR ALL BULK MATERIAL BAYS TO BE INSTALLED BY ETRO TRADES. - FOUNDATION PREPARATION FOR LOCK-BLOCKS FOR ALL BULK MATERIAL BAYS TO BE INSTALLED BY ETRO TRADES.	
	VEHICLE WASHBAY	- COVERED CANOPY STRUCTURES FOR WASH BAY INCLUDING LOCK-BLOCKS ARE OWNER SUPPLIED THROUGH LINDOME STRUCTURES. - CAR WASH SYSTEM (COMPRESSOR FOR SOAP MIXING AND AIR, WITH VACUUM) ARE OWNER SUPPLIED THROUGH NOVICLEAN INC. - PIPING AND ELECTRICAL COMPONENTS LEADING TO CAR WASH SYSTEM TO BE SUPPLIED BY ETRO TRADES. - CAR WASH PAYMENT MANAGEMENT SYSTEM TO BE SUPPLIED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- COVERED CANOPY STRUCTURES FOR WASH BAY INCLUDING LOCK-BLOCKS TO BE OWNER INSTALLED THROUGH LINDOME STRUCTURES. - FOUNDATION PREPARATION FOR LOCK-BLOCKS FOR WASH BAY TO BE INSTALLED BY ETRO TRADES. - CAR WASH SYSTEM (COMPRESSOR FOR SOAP MIXING AND AIR, WITH VACUUM) TO BE OWNER INSTALLED THROUGH NOVICLEAN INC. - CAR WASH PAYMENT MANAGEMENT SYSTEM TO BE INSTALLED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- CAR WASH SYSTEM (COMPRESSOR FOR SOAP MIXING AND AIR, WITH VACUUM) TO BE OWNER COMISSIONED THROUGH NOVICLEAN INC. - CAR WASH PAYMENT MANAGEMENT SYSTEM TO BE COMMISSIONED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.
	RELOCATED PESTICIDE CONTROL UNIT	- EXISTING PESTICIDE CONTROL UNIT SHED IS OWNER SUPPLIED. - CONCRETE FOUNDATION SUPPLIED BY ETRO TRADES.	- EXISTING PESTICIDE CONTROL UNIT SHED TO BE RELOCATED AND INSTALLED BY ETRO TRADES. - CONCRETE FOUNDATION INSTALLED BY ETRO TRADES.	
	NEW MECHANICAL ROOM	- NEW MECHANICAL ROOM SHED IS OWNER SUPPLIED - PIPING AND ASSOCIATED COMPONENTS WITHIN AND LEADING TO THE NEW MECHANICAL SHED SUPPLIED BY ETRO TRADES. - CONCRETE FOUNDATION SUPPLIED BY ETRO TRADES.	- NEW MECHANICAL ROOM SHED TO BE OWNER INSTALLED THROUGH JAW PORTABLE BUILDINGS. - PIPING AND ASSOCIATED COMPONENTS WITHIN AND LEADING TO THE NEW MECHANICAL SHED INSTALLED BY ETRO TRADES. - CONCRETE FOUNDATION TO BE INSTALLED BY ETRO TRADES.	- PIPING AND ASSOCIATED COMPONENTS WITHIN AND LEADING TO THE NEW MECHANICAL SHED COMMISSIONED BY ETRO TRADES.
	EXISTING MECHANICAL ROOM	- EXISTING MECHANICAL ROOM, PIPING, AND ASSOCIATED COMPONENTS ARE CURRENTLY ON SITE.	- EXISTING MECHANICAL SHED, PIPING, AND ASSOCIATED COMPONENTS TO BE REMOVED AND DISPOSED BY ETRO TRADES. - EXISTING HOSE REEL TO BE RELOCATED AND REINSTALLED BY ETRO TRADES.	
	EYE WASH AND SHOWER / MIXING TABLE WITH SINK / SPILL CONTAINMENT	- EMERGENCY EYEWASH AND SHOWER, MIXING TABLE WITH SINK, AND 50L SPILL CONTAINMENT SUPPLIED BY ETRO TRADES.	- EMERGENCY EYEWASH AND SHOWER, MIXING TABLE WITH SINK, AND 50L SPILL CONTAINMENT TO BE INSTALLED BY ETRO TRADES.	- EMERGENCY EYEWASH AND SHOWER, MIXING TABLE WITH SINK, AND 50L SPILL CONTAINMENT TO BE COMMISSIONED BY ETRO TRADES.
	WEIGHT SCALE	- CONCRETE DECK TRUCK SCALE 30' x 11', WESTERN APX PROGRAMMABLE DIGITAL WEIGHT INDICATOR, WESTERN AURORA 20 OUTDOOR REMOTE DISPLAY, AND ASSOCIATED COMPONENTS PER QUOTE OWNER SUPPLIED THROUGH WESTERN SCALE CO. LTD. - CONCRETE FOUNDATION AND ASPHALT RAMPS FOR TRUCK SCALE SUPPLIED BY ETRO TRADES. - ELECTRICAL CONDUIT AND POWER LEADING TO TRUCK SCALE AND TO GATE HOUSE SUPPLIED BY ETRO TRADES.	- CONCRETE DECK TRUCK SCALE 30' x 11', WESTERN APX PROGRAMMABLE DIGITAL WEIGHT INDICATOR, WESTERN AURORA 20 OUTDOOR REMOTE DISPLAY, AND ASSOCIATED COMPONENTS PER QUOTE TO BE INSTALLED BY OWNER THROUGH WESTERN SCALE CO. LTD. - CONCRETE FOUNDATION AND ASPHALT RAMPS FOR TRUCK SCALE TO BE INSTALLED BY ETRO TRADES. - ELECTRICAL CONDUIT AND POWER LEADING TO TRUCK SCALE AND TO GATE HOUSE TO BE INSTALLED BY ETRO TRADES.	- CONCRETE DECK TRUCK SCALE 30' x 11', WESTERN APX PROGRAMMABLE DIGITAL WEIGHT INDICATOR, WESTERN AURORA 20 OUTDOOR REMOTE DISPLAY, AND ASSOCIATED COMPONENTS PER QUOTE TO BE COMMISSIONED AND MEASUREMENT CANADA CERTIFIED BY OWNER THROUGH WESTERN SCALE CO. LTD.
	GATE HOUSE	- EXISTING GATE HOUSE, CONCRETE BLOCKS, AND STAIRS ARE CURRENTLY ON SITE.	- EXISTING GATE HOUSE, FOUNDATION BLOCKS,AND STAIRS TO BE RELOCATED BY ETRO TRADES. - GATE HOUSE TO BE RE-INSTALLED ONTO CONCRETE BLOCKS BY ETRO TRADES.	
WAREHOUSE YARD	DIESEL TANKS	- EXISTING 42,000L DIESEL TANK IS CURRENTLY OFF SITE. - NEW 42,000L DIESEL TANK, GASBOY PUMPS, VEEDER-ROOT PROBES AND SENSORS, ABOVE GROUND TANK AND ASSOCIATED COMPONENTS PER QUOTE OWNER SUPPLIED THROUGH MI PETRO. - CONCRETE FOUNDATION FOR DIESEL TANKS AND FUEL DISPENSER SUPPLIED BY ETRO TRADES. - FUEL MANAGEMENT SYSTEM TO BE SUPPLIED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- EXISTING 42,000L DIESEL TANK TO BE RELOCATED AND INSTALLED BY ETRO TRADES THROUGH EVOLVE CONSTRUCTION. - NEW 42,000L DIESEL TANK, GASBOY PUMPS, VEEDER-ROOT PROBES AND SENSORS, ABOVE GROUND TANK AND ASSOCIATED COMPONENTS PER QUOTE TO BE INSTALLED BY ETRO TRADES THROUGH EVOLVE CONSTRUCTION. - CONCRETE FOUNDATION FOR DIESEL TANKS AND FUEL DISPENSER TO BE INSTALLED BY ETRO TRADES. - FUEL MANAGEMENT SYSTEM TO BE SUPPLIED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- EXISTING 42,000L DIESEL TANK TO BE COMMISSIONED BY ETRO TRADES THROUGH EVOLVE CONSTRUCTION. - NEW 42,000L DIESEL TANK, GASBOY PUMPS, VEEDER-ROOT PROBES AND SENSORS, ABOVE GROUND TANK AND ASSOCIATED COMPONENTS PER QUOTE TO BE COMMISSIONED BY ETRO TRADES THROUGH EVOLVE CONSTRUCTION. - FUEL MANAGEMENT SYSTEM TO BE COMMISSIONED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.
	COMPRESSED NATURAL GAS FUEL STATION	- DUPLEX NGV FUELING STATION IN 40' CUSTOM CONTAINER WITH ADDED ELECTRICAL ROOM, THREE SLOW SINGLE HOSE FILL POSTS, ONE FAST SINGLE HOSE FILL POST, ESD CONTROLLER, AND ASSOCIATED COMPONENTS PER QUOTE OWNER SUPPLIED THROUGH JORDAIR. - CONCRETE FOUNDATION FOR CNG STATION SUPPLIED BY ETRO TRADES. - 6" COVERED CABLE TRAY, MOUNTED 0.6m AFG ON UNISTRUT SUPPORTS TO BE SUPPLIED BY ETRO TRADES. - CONDUIT AND HOSES WITHIN THE 6" COVERED CABLE TRAY AND ATTACHED TO FILL POSTS TO BE SUPPLIED BY OWNER THROUGH JORDAIR. - INCOMING GAS SERVICE, GAS METER, PRV, POWER, AND CONDUITS LEADING TO CNG STATION SUPPLIED BY ETRO TRADES. - CONCRETE ROADSIDE BARRIERS AND MOUNT FOR SINGLE HOSE FILL POST SUPPLIED BY ETRO TRADES. - FUEL MANAGEMENT SYSTEM TO BE SUPPLIED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- DUPLEX NGV FUELING STATION IN 40' CUSTOM CONTAINER WITH ADDED ELECTRICAL ROOM, THREE SLOW SINGLE HOSE FILL POSTS, ONE FAST SINGLE HOSE FILL POST, ESD CONTROLLER, AND ASSOCIATED COMPONENTS PER QUOTE TO BE INSTALLED BY OWNER THROUGH JORDAIR. - CONCRETE FOUNDATION FOR CNG STATION TO BE INSTALLED BY ETRO TRADES. - 6" COVERED CABLE TRAY, MOUNTED 0.6m AFG ON UNISTRUT SUPPORTS TO BE INSTALLED BY ETRO TRADES. - CONDUIT AND HOSES WITHIN THE 6" COVERED CABLE TRAY AND ATTACHED TO FILL POSTS TO BE INSTALLED BY OWNER THROUGH JORDAIR. - INCOMING GAS SERVICE, GAS METER, PRV, POWER, AND CONDUITS LEADING TO CNG STATION TO BE INSTALLED BY ETRO TRADES. - CONCRETE ROADSIDE BARRIERS AND MOUNT FOR SINGLE HOSE FILL POST INSTALLED BY ETRO TRADES. - FUEL MANAGEMENT SYSTEM TO BE INSTALLED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.	- DUPLEX NGV FUELING STATION IN 40' CUSTOM CONTAINER WITH ADDED ELECTRICAL ROOM, THREE SLOW SINGLE HOSE FILL POSTS, ONE FAST SINGLE HOSE FILL POST, ESD CONTROLLER, AND ASSOCIATED COMPONENTS PER QUOTE TO BE COMMISSIONED BY OWNER THROUGH JORDAIR. - CONDUIT AND HOSES WITHIN THE 6" COVERED CABLE TRAY AND ATTACHED TO FILL POSTS TO BE COMMISSIONED BY OWNER THROUGH JORDAIR. - INCOMING GAS SERVICE, GAS METER, PRV, POWER, AND CONDUITS LEADING TO CNG STATION TO BE COMMISSIONED BY ETRO TRADES. - CONCRETE ROADSIDE BARRIERS AND MOUNT FOR SINGLE HOSE FILL POST TO BE COMMISSIONED BY ETRO TRADES. - FUEL MANAGEMENT SYSTEM TO BE COMMISSIONED BY ETRO TRADES THROUGH FLEET DATA SYSTEMS.
	CNG ELECTRICAL ROOM & STANDBY GENERATOR	- CNG ELECTRICAL ROOM STRUCTURE, HEATING, VENTILATION, ROOM LIGHTING TO BE OWNER SUPPLIED THROUGH JORDAIR. - UBC IT NETWORK SWITCH AND JORDAIR ELECTRICAL PANEL OWNER SUPPLIED. - OTHER ELECTRICAL EQUIPMENT DETAILED ON DWG. E106 AND SITE DISTRIBUTION CABLING TO BE SUPPLIED BY ETRO TRADES	- CNG ELECTRICAL ROOM STRUCTURE, HEATING, VENTILATION, ROOM LIGHTING TO BE INSTALLED BY OWNER THROUGH JORDAIR. - UBC IT NETWORK SWITCH AND JORDAIR ELECTRICAL PANEL TO BE INSTALLED BY OWNER. - OTHER ELECTRICAL EQUIPMENT DETAILED ON DWG. E106 AND SITE DISTRIBUTION CABLING TO BE INSTALLED BY ETRO TRADES	- CNG ELECTRICAL ROOM STRUCTURE, HEATING, VENTILATION, ROOM LIGHTING TO BE COMMISSIONED BY OWNER THROUGH JORDAIR. - UBC IT NETWORK SWITCH AND JORDAIR ELECTRICAL PANEL TO BE COMMISSIONED BY OWNER. - OTHER ELECTRICAL EQUIPMENT DETAILED ON DWG. E106 AND SITE DISTRIBUTION CABLING TO BE COMMISSIONED BY ETRO TRADES
GENERAL	OVERHEAD POWER, SITE LIGHTING AND CAMERAS	- OVERHEAD POWER LINE MOUNTED ON EXISTING UBC OWNED POLES AND UNDERGROUND POWER TO BE SUPPLIED BY ETRO TRADES THROUGH FD VALLEY. - SITE LIGHTING AND POLES TO BE SUPPLIED BY ETRO TRADES. - CAMERAS AND ASSOCIATED CONDUIT TO BE OWNER SUPPLIED.	- OVERHEAD POWER LINE MOUNTED ON EXISTING UBC OWNED POLES AND UNDERGROUND POWER LINE TO BE INSTALLED BY ETRO TRADES THROUGH FD VALLEY. - SITE LIGHTING AND POLES TO BE INSTALLED BY ETRO TRADES. - CAMERAS AND ASSOCIATED CONDUIT TO BE INSTALLED BY OWNER.	- OVERHEAD POWER LINE MOUNTED ON EXISTING UBC OWNED POLES AND UNDERGROUND POWER LINE TO BE COMMISSIONED BY ETRO TRADES THROUGH FD VALLEY. - SITE LIGHTING AND POLES TO BE COMMISSIONED BY ETRO TRADES. - CAMERAS AND ASSOCIATED CONDUIT TO BE COMMISSIONED BY OWNER.
	STORAGE SEACANS		- EXISTING STORAGE SEACANS TO BE CLEANED AND RELOCATED BY OWNER.	

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	AA	KY	VT
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	AA	KY	VT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	AA	KY	VT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	AA	KY	VT

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

McElhanney

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T 604 683 8521

PRELIMINARY
NOT FOR CONSTRUCTION

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THE UNIVERSITY OF BRITISH COLUMBIA
6200 UNIVERSITY BLVD, VANCOUVER, BC V6T 1Z4

UBC SOUTH CAMPUS WORKS YARD

DESIGN ELEMENT INFORMATION

Drawing No.
C403

Project Number
2121-01293-00

Rev.
D

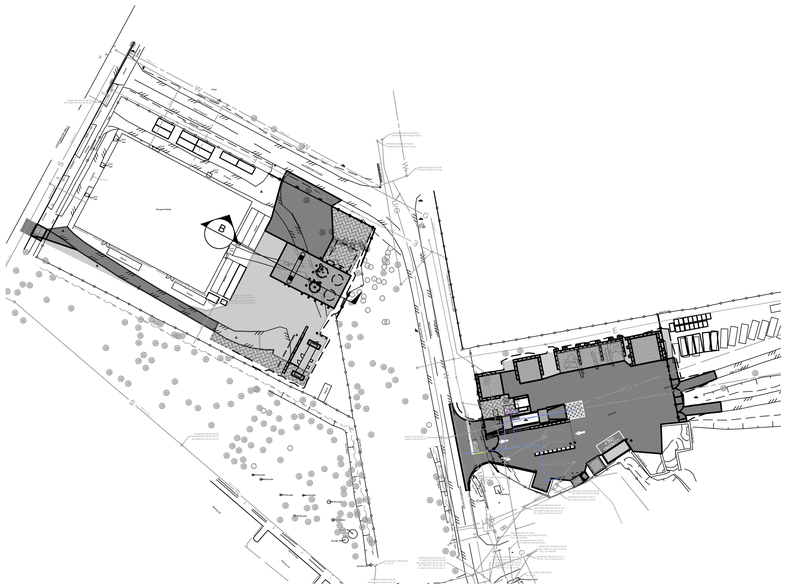
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14

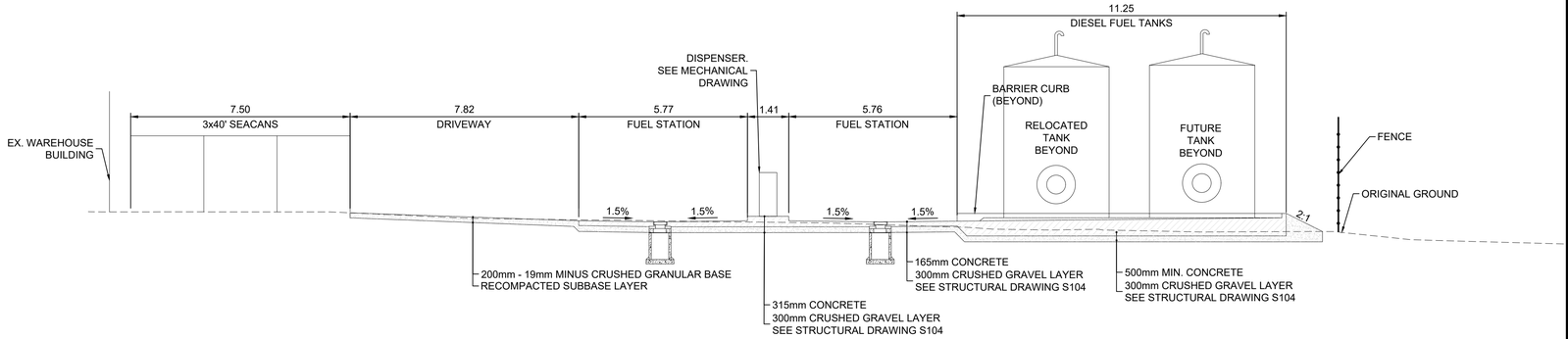
FILE: \\corp\TaleCole\2121\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-CO-403.dwg

DATE: 2025-08-29, 20:28

McElhanney ANSI D - 2021-09-14



OVERALL SITE PLAN
SCALE 1:1000



B WAREHOUSE TYPICAL SECTION
SCALE H 1:100

DATE: 2025-08-29, 20:29 FILE: \\corp\TAL-cdo\21219\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-501.dwg

Rev	Date	Description	Drawn	Design	App'd
C	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
B	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT
A	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	KY	KY	VT

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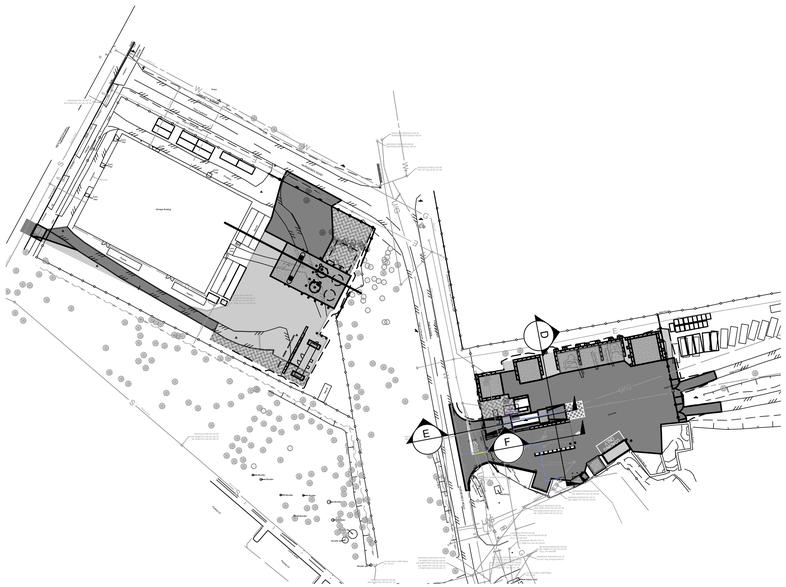
UBC SOUTH CAMPUS WORKS YARD

TYPICAL SECTIONS
WAREHOUSE YARD

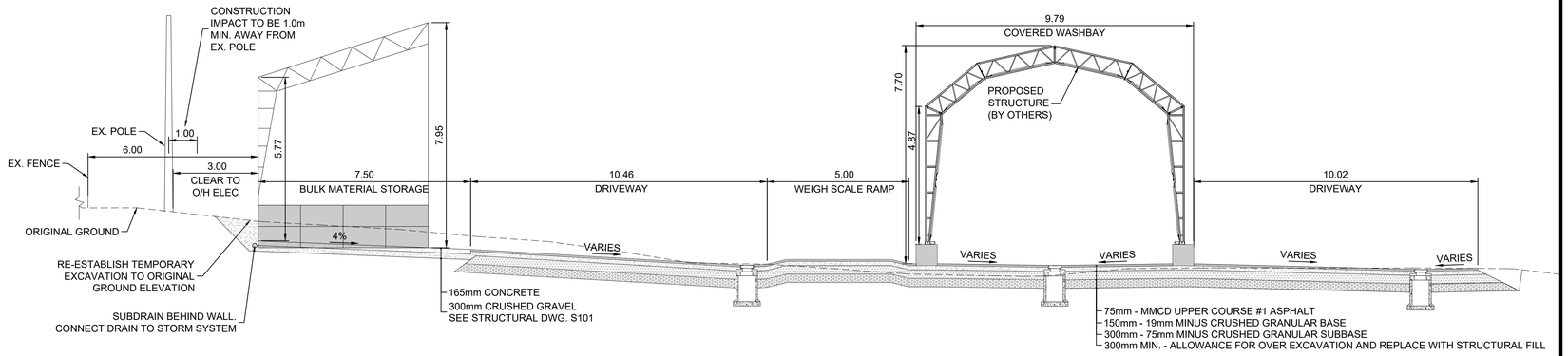
Drawing No.
C501

Project Number	Rev.
2121-01293-00	C

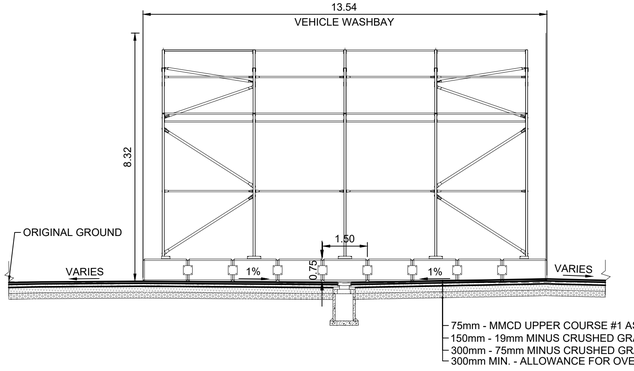
DESTROY ALL PRINTS BEARING PREVIOUS REVISION



OVERALL SITE PLAN
SCALE 1:1000



D MATERIAL RECOVERY FACILITY TYPICAL SECTION
SCALE H 1:100



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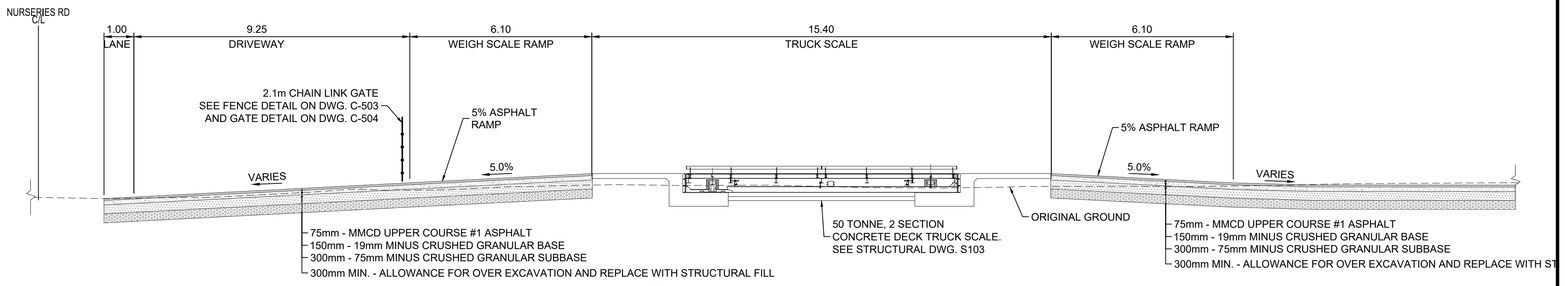
SCALE H 1:100



E TRUCK SCALE TYPICAL SECTION
SCALE H 1:100

Rev	Date	Description	Drawn	Design	App'd
B	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT
A	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	KY	KY	VT

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UBC SOUTH CAMPUS WORKS YARD

TYPICAL SECTIONS
MATERIAL RECOVERY FACILITY

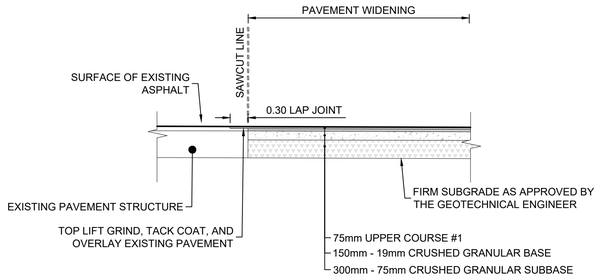
Drawing No.
C502

Project Number	Rev.
2121-01293-00	B

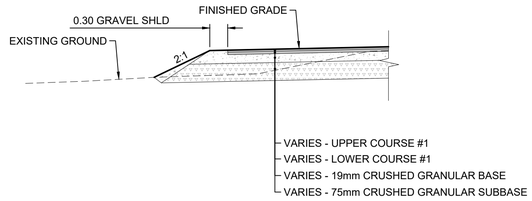
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14
DATE: 2025-08-29, 20:29 FILE: \\corp\TAL-cols\2121\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-502.dwg

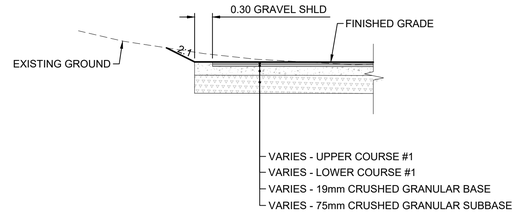
McElhanney ANSI D - 2021-09-14



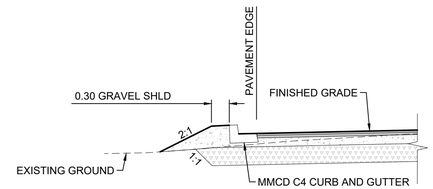
PAVEMENT WIDENING DETAIL - NURSERIES RD
SCALE 1:50



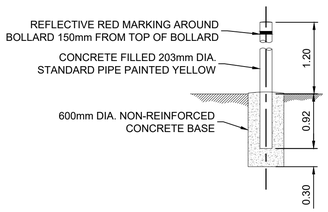
EDGE OF PAVEMENT DETAIL - FILL
SCALE 1:50



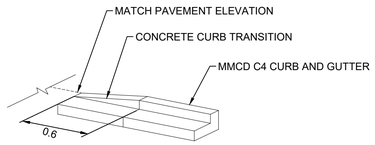
EDGE OF PAVEMENT DETAIL - CUT
SCALE 1:50



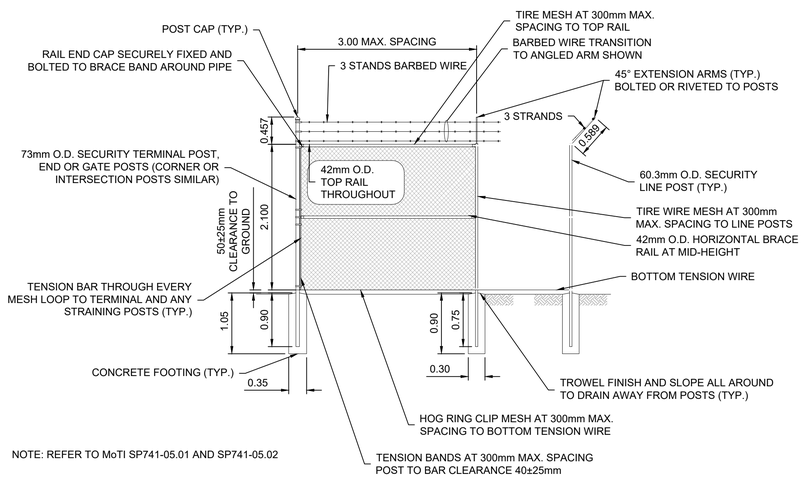
CURB CONSTRUCTION DETAIL
SCALE 1:50



PROTECTION BOLLARD DETAIL
SCALE 1:50



CURB TRANSITION DETAIL
SCALE 1:25



NOTE: REFER TO MoTI SP741-05.01 AND SP741-05.02

2.10 SECURITY CHAIN LINK FENCE DETAIL
SCALE N.T.S

DATE: 2025-08-29, 20:29 FILE: \\corp\TAL-cola\c212\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-503.dwg

Rev	Date	Description	Drawn	Design	App'd
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UBC SOUTH CAMPUS WORKS YARD

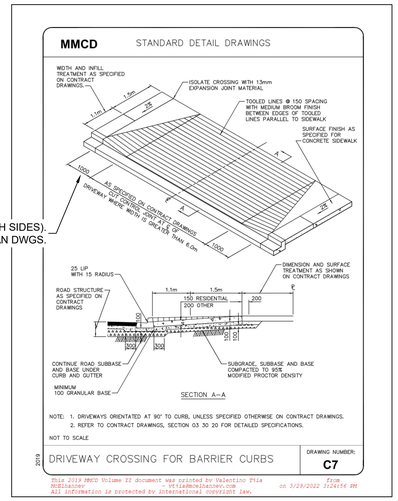
DETAILS
SHEET 1 OF 2

Drawing No.
C503

Project Number	Rev.
2121-01293-00	B

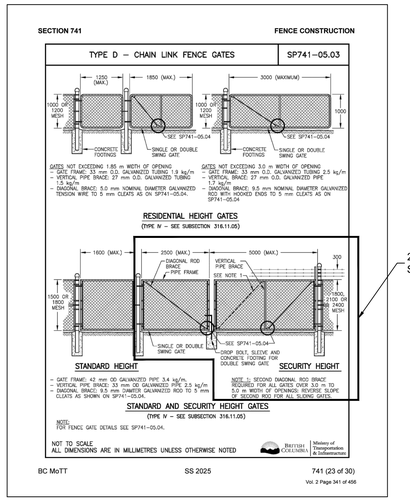
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14



WIDTH VARIES (TYP. BOTH SIDES). SEE PLAN DWGS.

MMCD C7 - DRIVEWAY DETAIL
SCALE N.T.S



2.10m HIGH SECURITY CHAIN LINK FENCE GATE. SEE PLAN DWGS. FOR SWING GATE WIDTHS

BC MoTT - CHAIN LINK FENCE GATE DETAIL
SCALE N.T.S

Rev	Date	Description	Drawn	Design	App'd
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UBC SOUTH CAMPUS WORKS YARD

DETAILS
SHEET 2 OF 2

Drawing No.
C504

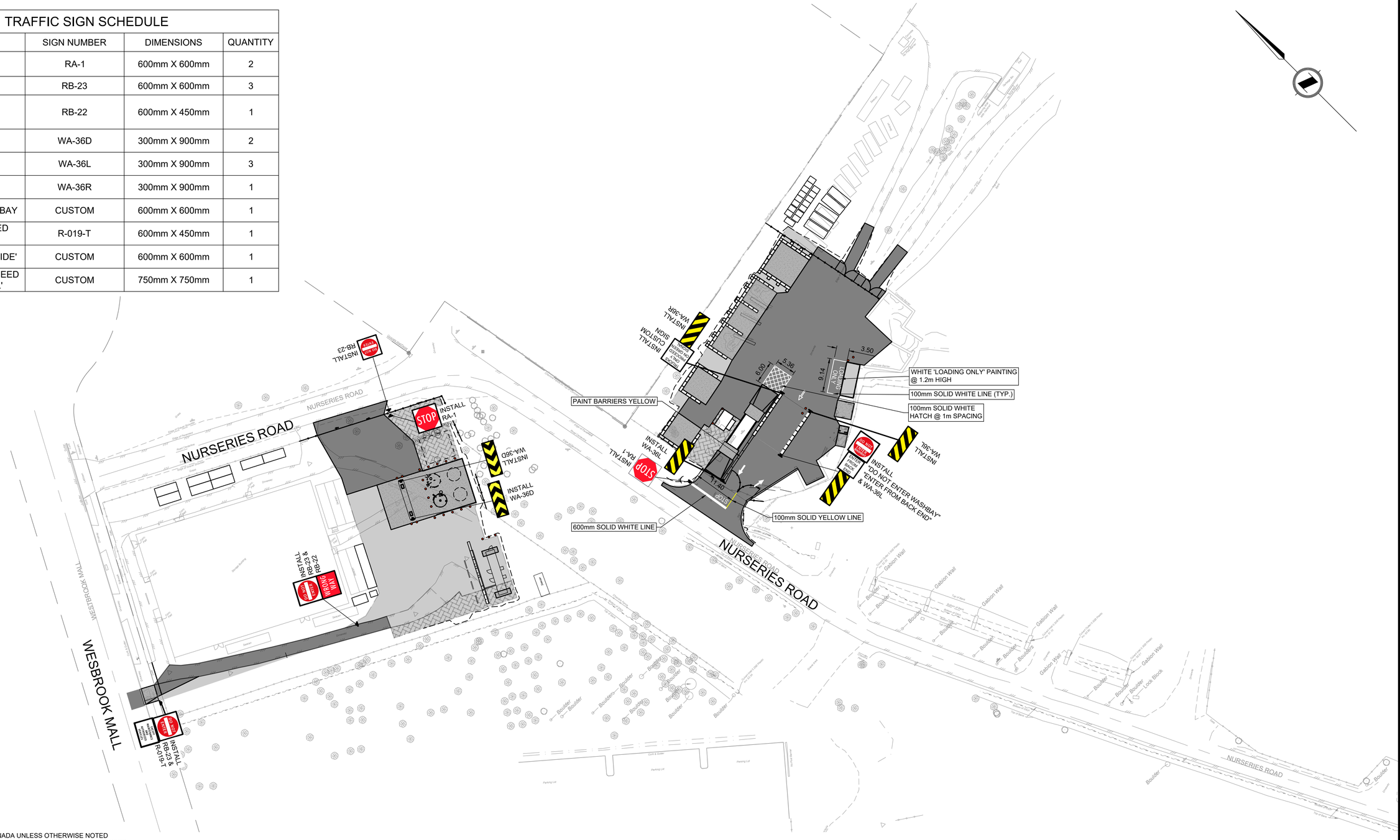
Project Number
2121-01293-00

Rev.
B

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:30 FILE: \\corp\TAL-cols\2121\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-504.dwg

TRAFFIC SIGN SCHEDULE			
DESCRIPTION	SIGN NUMBER	DIMENSIONS	QUANTITY
STOP	RA-1	600mm X 600mm	2
DO NOT ENTER	RB-23	600mm X 600mm	3
WRONG WAY	RB-22	600mm X 450mm	1
OBJECT MARKER	WA-36D	300mm X 900mm	2
OBJECT MARKER	WA-36L	300mm X 900mm	3
OBJECT MARKER	WA-36R	300mm X 900mm	1
DO NOT ENTER WASHBAY	CUSTOM	600mm X 600mm	1
EXCEPT AUTHORIZED VEHICLES	R-019-T	600mm X 450mm	1
'ENTER FROM BACK SIDE'	CUSTOM	600mm X 600mm	1
'TRUCKS ONLY. PROCEED ON GREEN SIGNAL'	CUSTOM	750mm X 750mm	1



NOTES:

1. ALL SIGNS TO BE MUTCD CANADA UNLESS OTHERWISE NOTED
2. ALL PAVEMENT MARKINGS TO BE PAINT UNLESS OTHERWISE NOTED

PLAN
1:500

Rev	Date	Description	Drawn	Design	App'd
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UBC SOUTH CAMPUS WORKS YARD

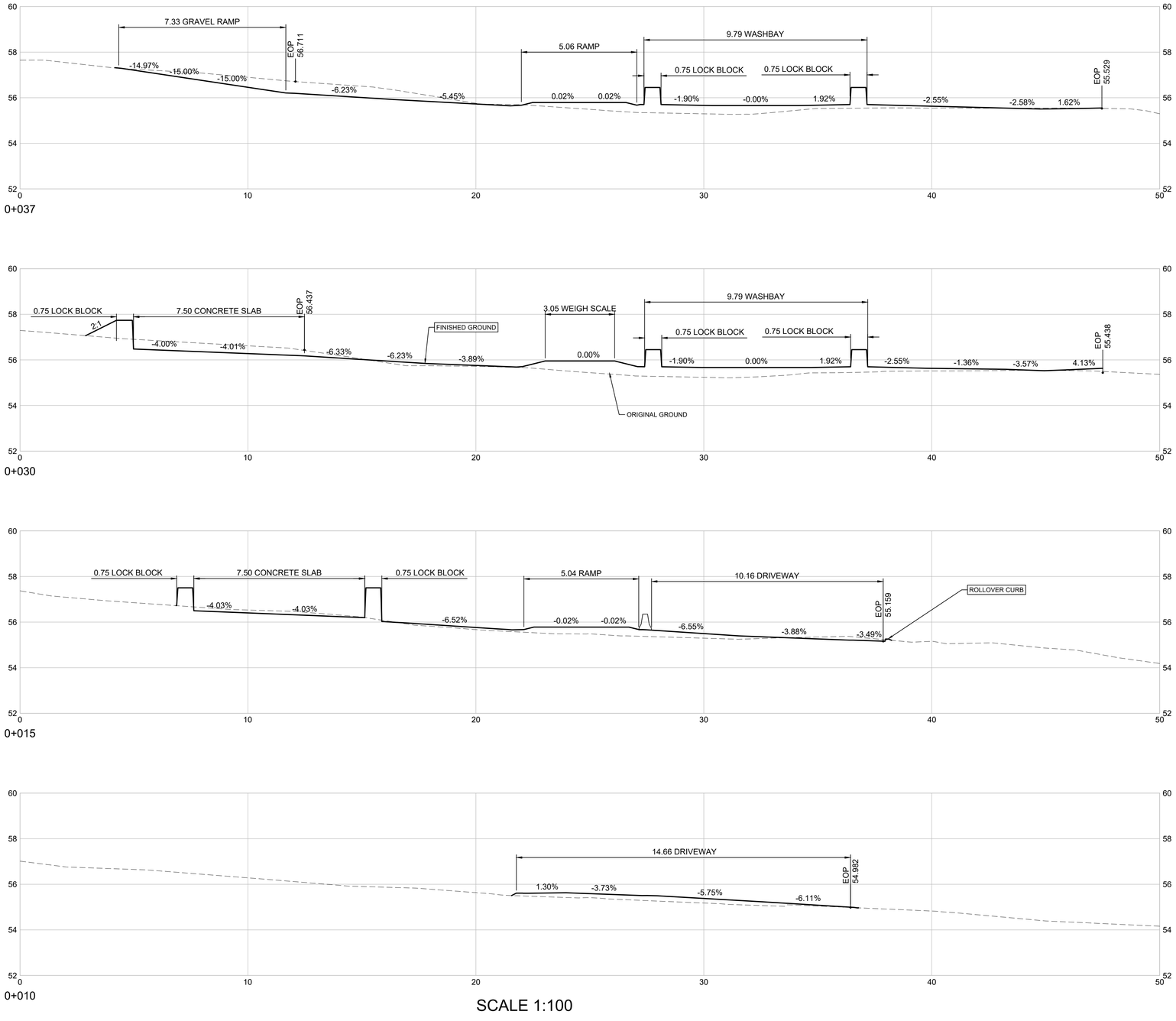
SIGNING AND PAVEMENT MARKINGS PLAN

Drawing No. C601

Project Number	Rev.
2121-01293-00	B

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14
DATE: 2025-08-29, 20:30 FILE: \\corp\TAL-cola\c212\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-601.dwg



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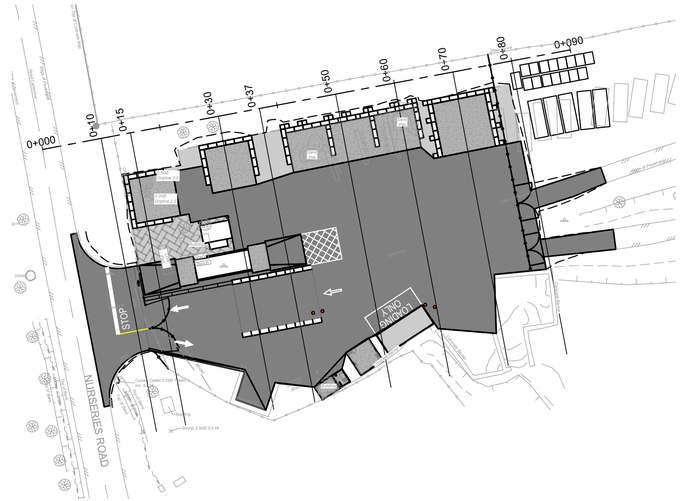

MRF PLAN
1:500

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A	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	KY	KY	VT

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UBC SOUTH CAMPUS WORKS YARD

MRF CROSS SECTIONS
SHEET 1 OF 2

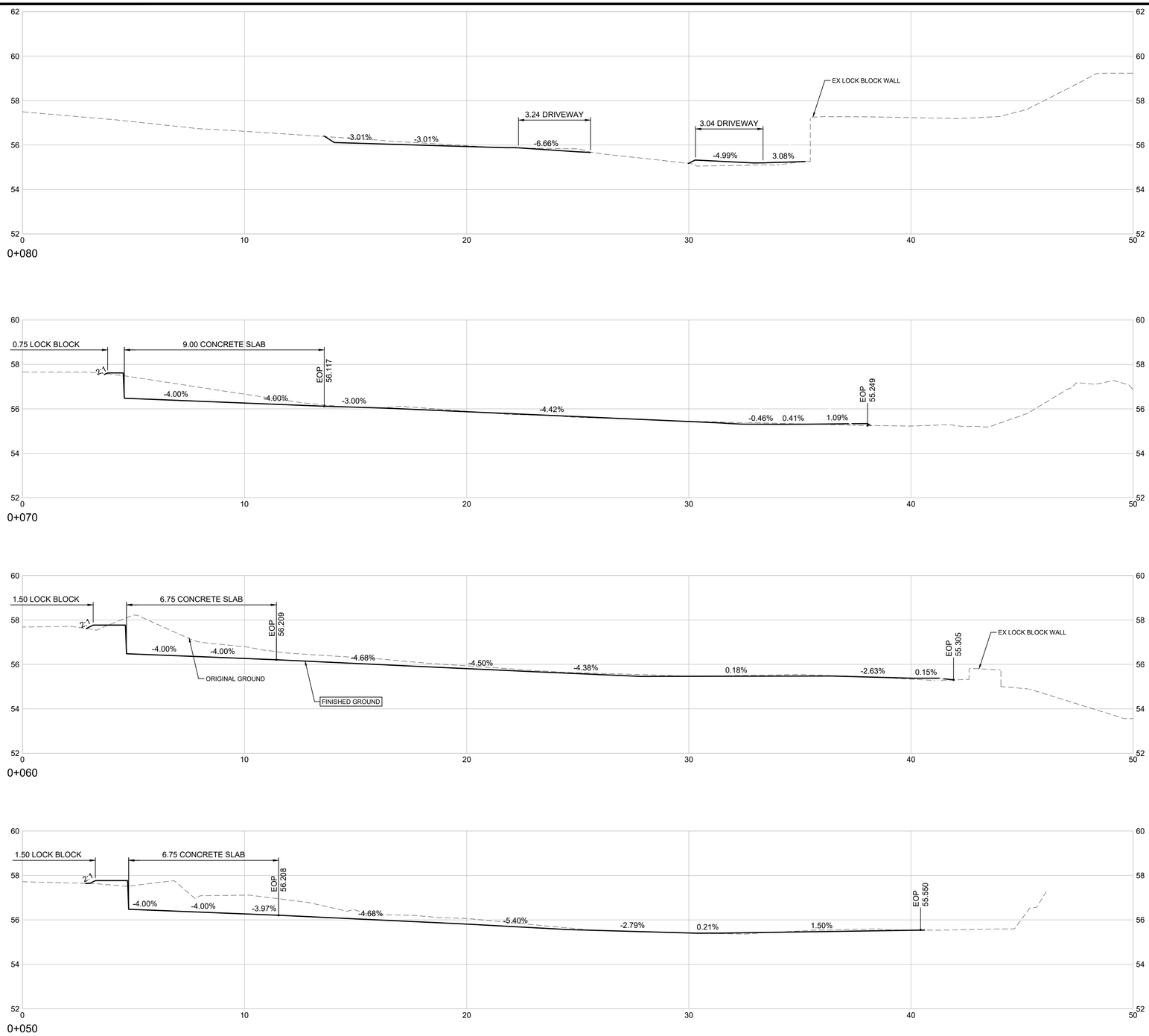
Drawing No.
C1001

Project Number
2121-01293-00

Rev.
A

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

McElhanney ANSI D - 2021-09-14
DATE: 2025-08-29, 20:30 FILE: \\corp\Tal-Cdo\2121\Projects\2121012930 0\UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-1000.dwg



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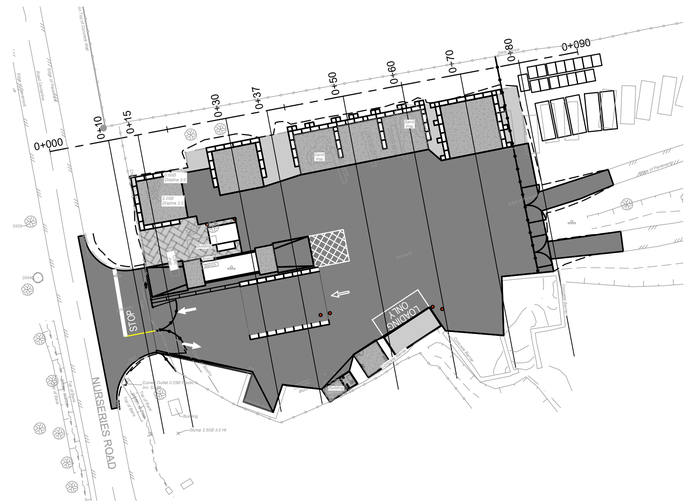

MRF PLAN
1:500

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD

MRF CROSS SECTIONS
SHEET 2 OF 2

Drawing No.
C1002

Project Number
2121-01293-00

Rev.
A

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 20:30 FILE: \\corp\Tal-Cdo\2121\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-C0-1000.dwg
McElhanney ANSI D - 2021-09-14

McElhanney ANSI D - 2021-09-14

SINGLE LINE SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	NOTES
	BREAKER	
	FUSE	
	DISCONNECT SWITCH	
	DISCONNECT SWITCH (FUSED) / FUSED SWITCH	
	FUSED CUTOUT (PRIVATE)	
	FUSED CUTOUT (SERVICE AUTHORITY)	
M	CURRENT TRANSFORMER (WITH METER) - LETTER DENOTES TYPE	
M	METER - LETTER DENOTES TYPE	
	TRANSFORMER	
	TRANSFORMER (Δ-Y)	
S N	TRANSFER SWITCH	
	MOTOR / EQUIPMENT	
MAIN	PANEL - MAIN BREAKER AS INDICATED	
	INDUCTIVE REACTOR	
	GENERATOR	
	LIGHTING ARRESTOR	
	GROUND	
3c #1/0	CONDUCTOR/FEEDER INFORMATION	

POWER & COMMUNICATION SYMBOL SCHEDULE

SYMBOL				DESCRIPTION	NOTES
WALL	ABOVE COUNTER	FLOOR	CEILING		
				15 AMP, 125V DUPLEX RECEPTACLE	
				15 AMP, 125V DUPLEX GROUND FAULT RECEPTACLE (GFCI)	
				15 AMP, 125V DUPLEX ARC FAULT PROTECTED REC. (AFCI)	
				15/20 AMP, 125V DUPLEX RECEPTACLE	
				15/20 AMP, 125V DUPLEX GROUND FAULT RECEPTACLE (GFCI)	
				15/20 AMP, 125V DUPLEX ARC FAULT PROTECTED REC. (AFCI)	
				15 AMP, 125V QUAD RECEPTACLE	
				15/20 AMP, 125V QUAD RECEPTACLE	
				SPECIAL RECEPTACLE AS NOTED ON PLANS	
				SPECIAL POWER CONNECTION AS NOTED ON PLANS	
				50 AMP, 125/250V RANGE RECEPTACLE	
				TELEPHONE OUTLET	
				DATA OUTLET	
				COMBINATION COMMUNICATION OUTLET (#x TEL, #x DATA, #x HDMI/CATV)	
				TELEVISION OUTLET (HDMI / CATV AS NOTED)	
				SPECIAL COMMUNICATION OUTLET AS NOTED ON PLANS	
				PARKING PEDESTAL REFER TO DETAIL	
				MOTOR DISCONNECT SWITCH	
				JB JUNCTION BOX	
				GROUND REFERENCE BUSBAR	
				PANELBOARD - REFER TO PANEL SCHEDULES FOR DETAILS	
				LOW VOLTAGE LIGHTING CONTROL PANEL	
				XX-XXX EQUIPMENT TAG REFER TO MECHANICAL EQUIPMENT SCHEDULE	
				T THERMOSTAT (T-STANDARD, RT-REVERSE ACTING, DH-DEHUMIDISTAT)	

ER - EXISTING TO REMAIN
RL - RELOCATE EXISTING DEVICE AS INDICATED
RM - REMOVE EXISTING DEVICE
RR - REMOVE EXISTING DEVICE AND REPLACE WITH NEW
WP - WEATHERPROOF ENCLOSURE

LIGHTING SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	NOTES
A	LUMINAIRE OF TYPE 'A' REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	LUMINAIRE OF TYPE 'A' REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	LUMINAIRE OF TYPE 'A' ON EMERGENCY POWER REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	LUMINAIRE OF TYPE 'A' ON EMERGENCY POWER REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	WALL MOUNT LUMINAIRE OF TYPE 'A' REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	POLE/POST MOUNT LUMINAIRE OF TYPE 'A' REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
A	TRACK MOUNT LUMINAIRE OF TYPE 'A' REFER TO LUMINAIRE SCHEDULE FOR DETAILS	
	EMERGENCY LIGHTING - REMOTE HEAD - WALL MOUNT C/W TWO (2) 3W (300 LUMEN) LED HEADS	
	EMERGENCY LIGHTING - REMOTE HEAD - CEILING MOUNT C/W TWO (2) 3W (300 LUMEN) LED HEADS	
B	EMERGENCY LIGHTING - REMOTE HEAD - WALL MOUNT C/W TWO (2) 3W(300 lm)LED HEADS - LETTER DENOTES BATTERY	
B	EMERGENCY LIGHTING - REMOTE HEAD - CEILING MOUNT C/W TWO (2) 3W(300 lm)LED HEADS - LETTER DENOTES BATTERY	
	EMERGENCY LIGHTING - BATTERY PACK C/W TWO (2) 3W (300 LUMEN) LED HEADS	
EX1	EXIT SIGN OF TYPE 'EX1' WITH EMERGENCY HEADS REFER TO EXIT SIGN SCHEDULE FOR DETAILS	
EX1	EXIT SIGN OF TYPE 'EX1' REFER TO EXIT SIGN SCHEDULE FOR DETAILS	
$	LIGHTING SWITCH - LOW VOLTAGE UNLESS OTHERWISE NOTED	
	DIMMER SWITCH - ELECTRONIC WITH PRESET	
$	MASTER OVERRIDE SWITCH	
OS1	OCCUPANCY SENSOR OF TYPE 'OS1' REFER TO OCCUPANCY SENSOR SCHEDULE FOR DETAILS	

PC - PHOTOCELL
TC - TIMECLOCK
DS - DAYLIGHT SENSOR
3 - 3-WAY SWITCHING

LUMINAIRE TAG SCHEME: A-## (TYPE - ID NO.)

SECURITY SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	NOTES
DC	DOOR CONTACT	
CR	CARD READER	
PB	HANDICAP DOOR OPENER (PUSH BUTTON)	
KP	KEYPAD	
GB	GLASS BREAK DETECTOR	
PDO	POWERED DOOR OPENER	
MAG	MAGNETIC DOOR HOLDER/LOCK	
EDS	ELECTRONIC DOOR STRIKE	
SAP	SECURITY ALARM PANEL	
	PASSIVE INFRARED MOTION SENSOR	
CAM#	SECURITY CAMERA (WHERE 'CAM' IS ABBREVIATION IDENTIFIER & # IS ID NUMBER)	
	ALARM SIREN/HORN	

- ALL SECURITY LOCATIONS ARE TO BE ROUGH-IN ONLY.
- REFER TO SECURITY DEVICE LAYOUT FOR TYPICAL LOCATIONS, COORDINATE EXACT LOCATIONS ON SITE WITH SECURITY CONTRACTOR.

ABBREVIATIONS:

MRF	MATERIAL RECOVERY FACILITY
WY	WORKS YARD/WAREHOUSE YARD
EX.	EXISTING
CNG	COMPRESSED NATURAL GAS
FD	FUEL DISPENSER
HWT	HOT WATER TANK
WB	WASHBAY
HT	HEAT TRACE
EW	EYE WASH

DRAWING LIST

NO.	TITLE	SCALE
E100	SYMBOLS AND DRAWING INDEX	NOT TO SCALE
E101	SCHEDULES	NOT TO SCALE
E102	SINGLE LINE DIAGRAM	NOT TO SCALE
E103	OVERALL SITE LAYOUT	1:500
E104	SITE LAYOUTS	1:250
E105	CNG ELECTRICAL ROOM LAYOUT	1:25 & 1:10
E106	MRF - NEW MECH. ROOM LAYOUT	NOT TO SCALE
E200	TYPICAL DETAILS	1:50

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	MA	MA	MB
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	MA	MA	TI
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MA	MA	EH
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MA	MA	MB

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UBC SOUTH CAMPUS WORKS YARD ELECTRICAL SYMBOLS AND DRAWING INDEX

Drawing No. E100

Project Number 2121-01293-00

Rev. D

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DATE: 2025-08-29, 17:48 FILE: \\corp\TAL-cols\2121Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01 Sheets\01293-E0-100.dwg

McElhanney ANSI D - 2021-09-14

MECHANICAL EQUIPMENT SCHEDULE

UNIT No.	UNIT DESCRIPTION	LOCATION	LOAD HP	LOAD kW	LOAD FLA	VOLT	PHASE	MOTOR STARTER	STARTER LOCATION	CONTROL	DISC. SWITCH	CIRCUIT No.	FEEDER	BREAKER	NOTES / REMARKS
WAREHOUSE YARD															
CMP-1	CNG COMPRESSOR 1	WY CNG MECH RM	20	--	22	575	3	DOL	--	PRESSURE	X	--	3c #10	50A 3P	--
CMP-2	CNG COMPRESSOR 2	WY CNG MECH RM	20	--	22	575	3	DOL	--	PRESSURE	X	--	3c #10	50A 3P	--
P-WY-1	FUEL TRANSFER PUMP 1	WY DIESEL TANK	0.75	--	3.2	208	1	PCS	--	VFD	X	--	2c #12	15A 2P	--
P-WY-2	FUEL TRANSFER PUMP 2	WY DIESEL TANK	0.75	--	3.2	208	1	PCS	--	VFD	X	--	2c #12	15A 2P	--
FD-WY-1	FUEL DISPENSER	WY DIESEL DISP.	--	--	--	120	1	--	--	--	--	--	2c #12	15A 1P	--
MATERIAL RECOVERY FACILITY															
EW-MRF-1	EM. EYEWASH & SHOWER ELEC.	EYEWASH STN	--	--	--	120	1	--	--	--	--	--	2c #12	15A 1P	--
HMC-MRF-1	EM. EYEWASH HEAT TRACE	EYEWASH STN	--	0.75	--	208	1	--	--	TEMP	--	--	2c #12	15A 2P	--
HWT-MRF-1	EYEWASH HOT WATER TANK CONT.	MRF NEW MECH RM	--	12.5	--	575	3	--	--	--	--	--	3c #12	15A 3P	--
HWT-MRF-2	WASHBAY HOT WATER TANK CONT.	MRF NEW MECH RM	--	35	--	575	3	--	--	--	--	--	3c #8	50A 3P	--
HT-WB-1&2	WASHBAY HEAT TRACE	MRF WASHBAY	--	0.75	--	120	1	--	--	TEMP	--	--	2c #12	15A 1P	--
VAC-WB-1	WASHBAY VACUUM	MRF WASHBAY	--	--	13	120	1	--	--	--	--	--	2c #10	30A 1P	--
CMP-WB-1	WASHBAY COMPRESSOR	MRF WASHBAY	1.5	--	13.2	120	1	--	--	--	--	--	2c #10	30A 1P	--
SOF-WB-1	WASHBAY SOFTENER	MRF WASHBAY	--	--	3	120	1	--	--	--	--	--	2c #12	15A 1P	--
P-WB-1	WASHBAY PUMP	MRF WASHBAY	5	--	5.3	575	3	DOL	--	PRESSURE	X	--	3c #12	15A 3P	--

NOTES:

1. CONFIRM FINAL SIZES AND LOCATIONS OF ALL EQUIPMENT PRIOR TO ORDERING ELECTRICAL EQUIPMENT OR ROUGH-IN.
2. ALL FEEDER AND BREAKER SIZES ARE TO BE CONFIRMED WITH MECHANICAL SHOP DRAWINGS PRIOR TO ORDERING EQUIPMENT. POWER REQUIREMENTS FOR SUBMITTED ALTERNATE EQUIPMENT ARE THE RESPONSIBILITY OF THE CONTRACTOR(S) AND ASSOCIATED COSTS ARE THE RESPONSIBILITY OF THE CONTRACTOR(S).

REMARKS:

1. REFER TO MECHANICAL LAYOUT DRAWINGS FOR MECHANICAL EQUIPMENT LOCATION.

PANEL 6A (PROPOSED)

MOUNTING - WALL
LOCATION - CNG STATION ELECTRICAL ROOM
FEEDER PANEL - N/A
FEEDER BKR - 125A 3P
FEEDER SIZE - 4c #1
VOLTAGE - 600V 3Ø 4W
MAIN BUS - 125A
MAIN BREAKER - N/A (MLO)

NOTE	DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	NOTE
--		50	01	02	60		--
--	CNG COMPRESSOR 1 (CMP-1)	50	03	04	60	TRANSFORMER (TX-1)	--
--		50	05	06	60		--
--		50	07	08	60	SURGE PROTECTION DEVICE (SPD-6A)	--
--	CNG COMPRESSOR 2 (CMP-2)	50	09	10	60		--
--		50	11	12	60		--
--		15	13	14	--	--	--
--	AIR COOLER (FAN-1)	15	15	16	--	--	--
--		15	17	18	--	--	--
--	--	--	19	20	--	--	--
--	--	--	21	22	--	--	--
--	--	--	23	24	--	--	--

PANEL 6B (PROPOSED)

MOUNTING - WALL
LOCATION - MRF AREA - NEW MECH ROOM
FEEDER PANEL - N/A
FEEDER BKR - 100A 3P
FEEDER SIZE - 4c #3
VOLTAGE - 600V 3Ø 4W
MAIN BUS - 100A
MAIN BREAKER - 100A 3P

NOTE	DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	NOTE
--		15	01	02	20		--
--	WASHBAY PUMP (P-WB-1)	15	03	04	20	TRANSFORMER (TX-2)	--
--		15	05	06	20		--
--		40	07	08	60	SURGE PROTECTION DEVICE (SPD-6B)	--
--	WASH SYSTEM WATER HEATER	40	09	10	60		--
--		40	11	12	60		--
--	--	--	13	14	15	EYEWASH WATER HEATER	--
--	--	--	15	16	15		--
--	--	--	17	18	15		--
--	--	--	19	20	--	--	--
--	--	--	21	22	--	--	--
--	--	--	23	24	--	--	--

PANEL 2A (PROPOSED)

MOUNTING - WALL
LOCATION - CNG TRAILER ELEC. ROOM
FEEDER PANEL - PANEL 6A
FEEDER BKR - 600V 60A 3P
FEEDER SIZE -4c #2/0
VOLTAGE - 120V/208V 3PH
MAIN BUS - 200A
MAIN BREAKER - N/A (MLO)

NOTE	DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	NOTE
--	TRANSFER PUMP 1(P-WY-1)	15	01	02	15	CNG ELEC. ROOM	--
--		15	03	04	15	BASEBOARD HEATER	--
--	TRANSFER PUMP 2(P-WY-2)	15	05	06	15	LIGHTING	--
--		15	07	08	15	AREA LIGHTING	--
--	FUEL DISPENSER (FD-WY-1)	15	09	10	15	RECEPTACLES	--
--	GENERATOR ENCLOSURE	30	11	12	15	SITE CONTROLLER - UPS	--
--		30	13	14	15	DIESEL ISLAND CONTROLLER	--
--	SURGE PROTECTION DEVICE (SPD-2A)	30	15	16	15	DIESEL TANK MONITORING SYS.	--
--		30	17	18	15	CNG DISPENSER CONTROLLER	--
--		30	19	20	15	CNG COMPRESSOR HEATER	--
--	SPARE (FUTURE EV CHARGERS)	40	21	22	--	--	--
--		40	23	24	--	--	--
--	SPARE (FUTURE EV CHARGERS)	40	25	26	--	--	--
--		40	27	28	15	NETWORK CABINET	--
--	--	--	29	30	15	NETWORK CABINET	--

PANEL 2B (PROPOSED)

MOUNTING - WALL
LOCATION - MRF - NEW MECH. ROOM
FEEDER PANEL - PANEL 6B
FEEDER BKR - 600V 20A 3P
FEEDER SIZE - 4c #6
VOLTAGE - 120V/208V 3PH
MAIN BUS - 100A
MAIN BREAKER - N/A (MLO)

NOTE	DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	NOTE
--	UNIT HEATER (UH-MRF-1)	20	01	02	15	LIGHTING	--
--		20	03	04	15	AREA LIGHTING	--
--	EW-MRF-1	15	05	06	20	WASH SYSTEM - VACUUM	--
--	HEAT TRACE	15	07	08	15	WASH SYSTEM - CONTROLLER	--
--		15	09	10	15	SPARE	--
--	RECEPTACLES	15	11	12	15	SPARE	--
--	SURGE PROTECTION DEVICE (SPD-2B)	30	13	14	--	--	--
--		30	15	16	--	--	--
--		30	17	18	--	--	--
--	--	--	19	20	--	--	--
--	--	--	21	22	--	--	--
--	--	--	23	24	--	--	--

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMPING	MOUNTING	REMARKS
A1	150W, AREA LIGHTING LED, WITH BI-LEVEL DIMMING	LED 22,500 lm 4000 K	POLE 9.1m AFG	ABOVE ALL LIGHTING ARY-150-40-1-MSW-PC-IV SLIP FITTER ARY-SF-S
A2	240W, AREA LIGHTING LED, WITH BI-LEVEL DIMMING	LED 35,700 lm 4000 K	POLE 9.1m AFG	ABOVE ALL LIGHTING ARY-240-40-1-MSW-PC-IV SLIP FITTER ARY-SF-S
B1	60W, CANOPY LED, WITH BI-LEVEL DIMMING	LED 8,500 lm 4000 K	PENDANT	ABOVE ALL LIGHTING SCAN-SPL-SW-8-MSW C/W PENDANT STEM
B2	80W, CANOPY LED, WITH BI-LEVEL DIMMING	LED 11,800 lm 4000 K	PENDANT	ABOVE ALL LIGHTING SCAN-SPL-SW-8-MSW C/W PENDANT STEM
C1	60W, AREA LIGHTING LED	LED 7,200 lm 4000 K	SURFACE 6m AFG	ABOVE ALL LIGHTING SMT-60-40-1-MS-L3B-TR-T4
C2	75W, AREA LIGHTING LED	LED 8,800 lm 4000 K	SURFACE 6m AFG	ABOVE ALL LIGHTING SMT-80-40-1-MS-L3B-TR-T4
D	30W, VAPORTITE LED	LED 4,200 lm 4000 K	CEILING	ABOVE ALL LIGHTING SVP2-12-D-50SP-SW-1

NOTE: CONTRACTOR TO CONFIRM SITE CONDITIONS PRIOR TO ORDERING LUMINAIRES.

LUMINAIRE TAG EXAMPLE: A1-2 (WHERE 'A1' IS THE LUMINAIRE TYPE AND '2' IS THE SEQUENCE NUMBER.

LUMINAIRE SENSOR DENOTES:
PC - PHOTOCELL
TC - TIMECLOCK
DS - DAYLIGHT SENSOR
OC - OCCUPANCY SENSOR

EX. GATEHOUSE PANEL

MOUNTING - WALL
LOCATION - GATEHOUSE
FEEDER PANEL - N/A
FEEDER BKR - 60A 2P
FEEDER SIZE - EXISTING
VOLTAGE - 120V/240V 1PH
MAIN BUS - N/A
MAIN BREAKER - 60A 2P

NOTE	DESCRIPTION	BKR	CIRCUIT		BKR	DESCRIPTION	NOTE
--	--	--	01	02	15	LOADING CAMERA	--
--	--	--	03	04	15	COMMS. RACK	--
--	--	--	05	06	15	WEIGH SCALE SYSTEM	--
--	--	--	07	08	15	CANOPY & AREA LIGHTS - WEST	--
--	--	--	09	10	--	--	--
--	--	--	11	12	--	--	--
--	--	--	13	14	--	--	--
--	--	--	15	16	--	--	--
--	SPARE	15	17	18	--	--	--
--	GATE CAMERA	15	19	20	--	--	--
--	RECEPTACLES	15	21	22	15	RECEPTACLES	--
--	EXTERIOR RECEPTACLES	15	23	24	15	UNIT HEATER	--
--	LIGHTS	15	25	26	15		--
--	--	--	27	28	60	MAIN BREAKER	--
--	--	--	29	30	60		--

NOTES:

1. ITEMS SHOWN IN GREY ARE EXISTING EQUIPMENT, WHILE ITEMS AND EQUIPMENT SHOWN IN BLACK INDICATE NEW OR MODIFIED EQUIPMENT.

CABLE SCHEDULE

WAREHOUSE YARD

ITEM No.	CONDUIT QTY, SIZE & TYPE	CABLE QTY & SIZE	FROM	TO	NOTES / REMARKS
P-1	N/A	1 x 4c #1/0 AL (QUADPLEX)	UBC 3 x100kVA TRANSFORMER POLE AT MRF	EXISTING GUYED POLE (SEE LAYOUT)	O/H SERVICE POWER
P-2	1 x 53mm RPVC	1 x RWU90 4c #1 AWG	SERVICE POLE AT WAREHOUSE YARD	CNG ELEC. RM	TRANSITION FROM O/H TO U/G AT POLE
P-3	1 x 53mm RPVC	N/A (FUTURE CABLE BY OTHERS)	CNG ELEC. RM	FUTURE EV CHARGING STATION	FUTURE EV CHARGERS POWER
P-4	SHARED WITH P-3	1 x 2c #12 AWG	CNG ELEC. RM	AREA LIGHT A1-1	ENTRANCE AREA LIGHT POWER
P-5	1 x 53mm RPVC	1 x 4c #3 AWG	STANDBY GENERATOR	CNG ELEC. RM	STANDBY POWER
P-6	1 x 35mm RPVC	1 x 3c #10 AWG	CNG ELEC. RM	STANDBY GENERATOR	GENERATOR AUX. POWER
P-7	1 x 35mm RPVC	1 x 2c #12 AWG	CNG ELEC. RM	DIESEL DISPENSER 1	DIESEL DISPENSER 1 POWER
P-8	1 x 35mm RPVC	EMPTY (SPARE FOR FUTURE USE)	CNG ELEC. RM	DIESEL DISPENSER 2(FUTURE)	DIESEL DISPENSER 2 POWER (FUTURE)
P-9	1 x 35mm RPVC	1 x 2c #12 AWG	CNG ELEC. RM	DIESEL ISLAND CONTROLLER	DIESEL ISLAND CONTROLLER POWER
P-10	1 x 35mm RPVC	2 x 3c #12 AWG	CNG ELEC. RM	DIESEL TANKS AREA (TRANSFER PUMPS)	DIESEL TRANSFER PUMPS POWER
P-11	1 x 25mm RPVC	2 x 2c #12 AWG	CNG ELEC. RM	AREA LIGHT A2-2 & A2-3	DIESEL REFILLING AREA LIGHT POWER
P-12	1 x 25mm RPVC	1 x 2c #12 AWG	CNG ELEC. RM	AREA LIGHT A2-4	CNG REFILLING AREA LIGHT POWER
P-13	1 x 25mm RPVC	1 x 2c #12 AWG	CNG ELEC. RM	CNG DISPENSER CONTROLLER	CNG DISPENSER CONTROLLER POWER
T-1	1 x 35mm RPVC	BY UBC	SERVICE POLE AT WAREHOUSE YARD	CNG ELEC. RM	NETWORK CONNECTION TO NETWORK CABINET
T-2	SHARED WITH T-1	BY UBC	CNG ELEC. RM	SERVICE POLE AT WAREHOUSE YARD	NETWORK CONNECTION FOR CAM1
T-3	1 x 25mm RPVC	BY UBC	CNG ELEC. RM	POLE MOUNTED CAM2	NETWORK CONNECTION FOR CAM2
C-1	1 x 35mm RPVC	1 x 2c #22AWG (CAROL C6348)	CNG ELEC. RM	DIESEL ISLAND CONTROLLER	COMMS. BETWEEN SITE & ISLAND CONTROLLER
C-2	1 x 35mm RPVC	1 x 8c #22AWG (CAROL C0764)	CNG ELEC. RM	DIESEL DISPENSER 1	DIESEL DISPENSER 1 CONTROLS (SEE NOTE 4)
C-3	SHARED WITH C-2	2 x BELDEN 9942	CNG ELEC. RM	DIESEL DISPENSER 1	DIESEL DISPENSER 1 CONTROLS (SEE NOTE 4)
C-4	1 x 35mm RPVC	EMPTY (SPARE FOR FUTURE USE)	CNG ELEC. RM	DIESEL DISPENSER 2 (FUTURE)	DIESEL DISPENSER 2 CONTROLS (FUTURE)
C-5	SHARED WITH C-4	EMPTY (SPARE FOR FUTURE USE)	CNG ELEC. RM	DIESEL DISPENSER 2 (FUTURE)	DIESEL DISPENSER 2 CONTROLS (FUTURE)
C-6	1 x 35mm RPVC	1 x BELDEN 8760	CNG ELEC. RM	DIESEL DISPENSER 1	DIESEL DISPENSER 1 SUMP LEAK MONITORING
C-7	1 x 35mm RPVC	EMPTY (SPARE FOR FUTURE USE)	CNG ELEC. RM	DIESEL DISPENSER 2 (FUTURE)	DIESEL DISP. 2 SUMP LEAK MONITORING (FUTURE)
C-8	1 x 25mm RPVC	2 x #16 AWG	DIESEL ISLAND CONTROLLER	DIESEL DISPENSER 1	CONTROL WIRES FOR DIESEL DISPENSER 1 (SEE NOTE 3)
C-9	1 x 25mm RPVC	EMPTY (SPARE FOR FUTURE USE)	DIESEL ISLAND CONTROLLER	DIESEL DISPENSER 2 (FUTURE)	CONTROL WIRES FOR DIESEL DISPENSER 2 (FUTURE)
C-10	1 x 35mm RPVC	2 x BELDEN 8760 (1 IS SPARE)	CNG ELEC. RM	DIESEL TANKS AREA	FUEL TANKS' TRANSITION SUMP LEAK DETECTION
C-11	1 x 35mm RPVC	2 x BELDEN 8760 (1 IS SPARE)	CNG ELEC. RM	DIESEL TANK 1	FUEL TANK 1 LEAK DETECTION
C-12	SHARED WITH C-9	1 x BELDEN 8760	CNG ELEC. RM	DIESEL TANK 1	FUEL TANK 1 LEVEL INDICATOR
C-13	1 x 35mm RPVC	2 x BELDEN 8760 (1 IS SPARE)	CNG ELEC. RM	DIESEL TANK 2	FUEL TANK 2 LEAK DETECTION
C-14	SHARED WITH C-11	1 x BELDEN 8760	CNG ELEC. RM	DIESEL TANK 2	FUEL TANK 2 LEVEL INDICATOR
C-15	1 x 53mm RPVC	1 x BELDERN RS485 CABLE (3 PR + SHLD)	CNG ELEC. RM	MRF - WASHBAY CONTROLLER	WASH SYSTEM CONTROLLER
C-16	1 x 35mm RPVC	1 x 10c #18 AWG (BELDEN OR CAROL)	CNG ELEC. RM	CNG DISPENSER CONTROLLER	COMMS. BETWEEN SITE CTRL & CNG DISPENSER CONTROLLER
C-17	SHARED WITH C-16	4 x #16 AWG	CNG ELEC. RM	CNG DISPENSER CONTROLLER	CONTROL WIRES FOR CNG DISPENSERS
C-18	1 x 35mm RPVC	1 x 4c #18 AWG (BELDEN OR CAROL)	CNG ELEC. RM	CNG DISPENSER CONTROLLER	CONTROL WIRES FOR CNG DISPENSER CONTROLLER
C-19	SHARED WITH C-15	1 x 4c #18 AWG (BELDEN OR CAROL)	CNG ELEC. RM	MRF - WASHBAY CONTROLLER	WAND SYSTEM CONTROLLER
C-20	SHARED WITH C-1	1 x 4c #18 AWG (BELDEN OR CAROL)	CNG ELEC. RM	DIESEL ISLAND CONTROLLER	WAND SYSTEM CONTROLLER
C-21	SHARED WITH C-18	2 x 4c #18 AWG (BELDEN OR CAROL)	CNG ELEC. RM	CNG DISPENSER CONTROLLER	SLOW & FAST FILL WAND SYSTEM CONTROLLER

MRF (MATERIAL RECOVERY FACILITY)

ITEM No.	CONDUIT QTY, SIZE & TYPE	CABLE QTY & SIZE	FROM	TO	NOTES / REMARKS
P-20	1 x 53mm RPVC	1 x RWU90 4c #3 AWG	UBC 3 x100kVA TRANSFORMER POLE	NEW MECH. RM	U/G SERVICE POWER
P-21	1 x 103mm RPVC	CABLES IN P-22, P-23, P-24, P-28	NEW MECH. RM	WASH BAY JB	WASH BAY SYSTEM AND LIGHTING POWER
P-22	1 x 35mm RPVC	1 x 4c #12 AWG	WASH BAY JB	WASH BAY MOTOR	WASH BAY MOTOR POWER
P-23	1 x 53mm RPVC	1 x 4c #8 AWG	WASH BAY JB	WASH BAY WATER HEATER	WASH BAY VACUUM POWER
P-24	1 x 35mm RPVC	1 x 3c #12 AWG	WASH BAY JB	WASH BAY VACUUM	WASH BAY WATER HEATER POWER
P-25	1 x 35mm RPVC	1 x 2c #12 AWG	WASH BAY JB	WASH BAY CONTROLLER	WASH BAY CONTROLLER POWER
P-26	RESERVED				
P-27	1 x 25mm RPVC	1 x 2c #12 AWG	NEW MECH. RM	EYEWASH STATION	EYEWASH SYSTEM POWER
P-28	1 x 35mm RPVC	2 x 2c #12 AWG	WASH BAY JB	CANOPY LIGHTING B2-23 & B2-24	CANOPY LIGHTING POWER
P-29	1 x 25mm RPVC	1 x 2c #12 AWG	NEW MECH. RM	AREA LIGHTING A1-21	AREA LIGHTING POWER
P-30	1 x 25mm RPVC	1 x 2c #12 AWG	NEW MECH. RM	AREA LIGHTING A1-20	AREA LIGHTING POWER
P-31	1 x 53mm RPVC	6 x 2c #12 AWG	RELOCATED GATEHOUSE	BULK MATERIAL JB	CANOPY & AREA LIGHTING POWER
P-32	1 x 25mm RPVC	1 x 2c #12 AWG	BULK MATERIAL JB	CANOPY LIGHTING B1-28	CANOPY LIGHTING POWER
P-33	1 x 25mm RPVC	1 x 2c #12 AWG	BULK MATERIAL JB	CANOPY LIGHTING B1-29	CANOPY LIGHTING POWER
P-34	1 x 25mm RPVC	1 x 2c #12 AWG	BULK MATERIAL JB	CANOPY LIGHTING B1-30	CANOPY LIGHTING POWER
P-35	1 x 25mm RPVC	1 x 2c #12 AWG	BULK MATERIAL JB	AREA LIGHTING A1-22	AREA LIGHTING POWER
P-36	1 x 25mm RPVC	1 x 2c #12 AWG	BULK MATERIAL JB	CANOPY LIGHTING B2-31	CANOPY LIGHTING POWER
P-37	1 x 53mm RPVC	1 x 3c #12 AWG	EX. 10kVA TRANSFORMER	RELOCATED GATEHOUSE	GATEHOUSE DISTRIBUTION PANEL POWER
P-38	1 x 25mm RPVC	1 x 2c #12 AWG	RELOCATED GATEHOUSE	WEIGHT LED DISPLAY	REMOTE DISPLAY POWER
P-39	1 x 25mm RPVC	2 x 2c #12 AWG	RELOCATED GATEHOUSE	AREA LIGHTING A1-26 & A1-27	AREA LIGHTING POWER
P-40	1 x 25mm RPVC	1 x 2c #12 AWG	RELOCATED GATEHOUSE	AREA LIGHTING A1-25	AREA LIGHTING POWER
T-20	1 x 35mm RPVC	BY UBC	SERVICE POLE AT MRF	RELOCATED GATEHOUSE	NETWORK CONNECTION TO NETWORK CABINET
T-21	1 x 25mm RPVC	BY UBC	SERVICE POLE AT MRF	POLE MOUNTED CAM4	EXISTING NETWORK CONNECTION FOR CAM4
T-22	1 x 25mm RPVC	BY UBC	RELOCATED GATEHOUSE	WEIGH SCALE AREA CAM5	NETWORK CONNECTION FOR CAM5
C-30	1 x 25mm RPVC	1 x BELDEN 8760 (2 PAIR + SHLD)	RELOCATED GATEHOUSE	LOAD CELL SUM BOX	LOAD CELL COMMS.
C-31	1 x 25mm RPVC	1 x BELDEN 8760 (2 PAIR + SHLD)	RELOCATED GATEHOUSE	WEIGHT LED DISPLAY	REMOTE DISPLAY COMMS.
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NOTES:

1. ITEM NUMBER DENOTES:

   P - POWER
   T - COMMS./DATA
   C - CONTROLS

2. SPARE EMPTY CONDUITS ARE FOR FUTURE USE AND SHALL BE STUBBED AND CAPPED C/W NYLON PULL STRING.
3. ONE CONDUIT FOR SIGNAL & PULSER WIRES FROM PROPOSED LOCATION OF FUEL ISLAND CONTROLLER TO EACH DISPENSER IS REQUIRED. THIS CONDUIT MUST TERMINATE IN THE PUMP POWER JUNCTION BOX. WIRING AS PER CONTROLLER SUPPLIER REQUIREMENTS.
4. ONE DEDICATED CONDUIT FOR INTRINSICALLY SAFE WIRING FROM PROPOSED LOCATION OF THE FUEL ISLAND CONTROLLER MUST TERMINATE INSIDE EACH DISPENSER HOUSING IN A 4"X4" EXPLOSION-PROOF ENCLOSURE. WIRING AS PER CONTROLLER SUPPLIER REQUIREMENTS.
5. CABLE SCHEDULE SHOWS CONNECTIONS FOR OUTSIDE BUILDING CONNECTIONS ONLY. REFER TO SINGLE LINE DIAGRAM FOR CONNECTIONS WITHIN SERVICE ROOMS AND SPECIFICATIONS FOR INSTALLATION REQUIREMENTS.

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C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	MA	MA	TI
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MA	MA	EH
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MA	MA	MB

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD
ELECTRICAL
SCHEDULES

Drawing No.
E101

Project Number
2121-01293-00

Rev.
D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 17:46 FILE: \\corp\TAL-cols\2121\Projects\2121012930 UBC South Campus Work Yard\07_DRAWINGS\01 Sheets\01293-E0-100.dwg

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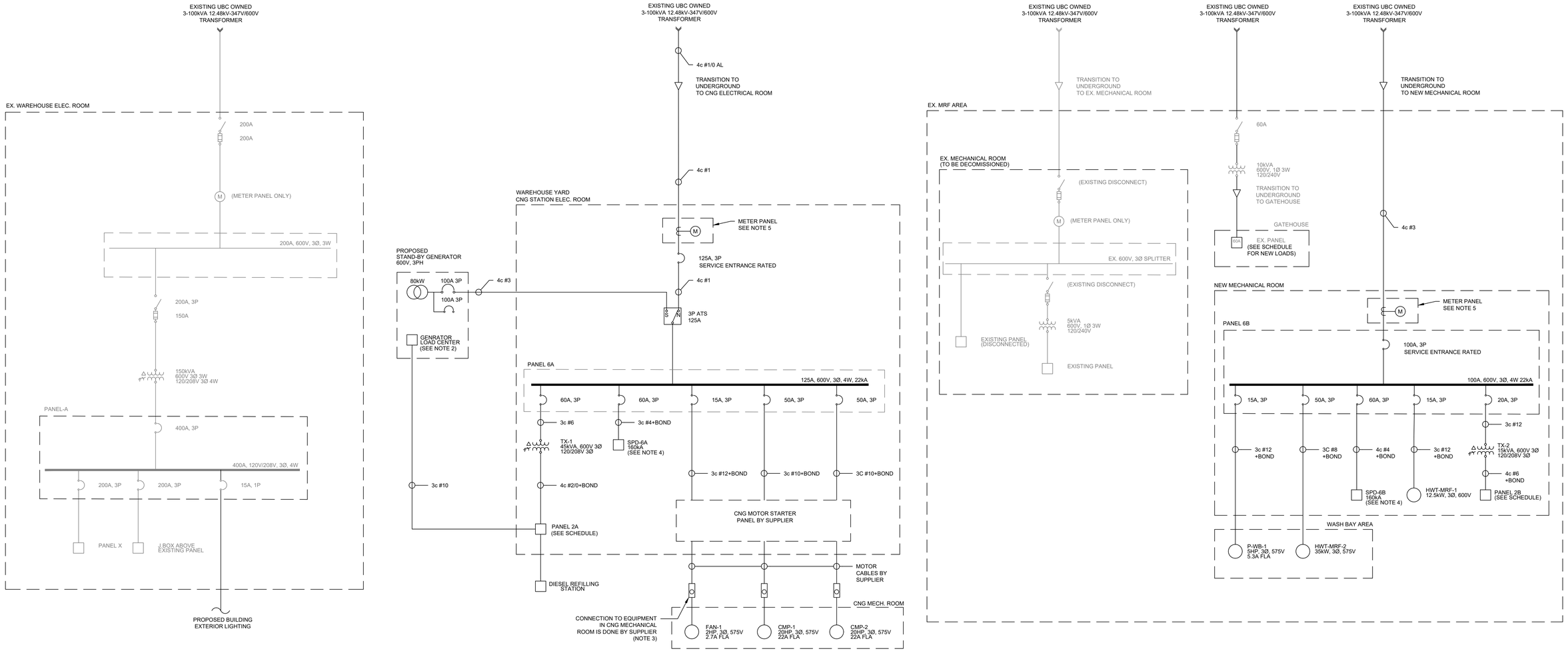

NOTES:

1. ITEMS SHOWN IN GREY ARE EXISTING EQUIPMENT, WHILE ITEMS AND EQUIPMENT SHOWN IN BLACK INDICATE NEW OR MODIFIED EQUIPMENT.
2. STAND-BY GENERATOR ENCLOSURE SHALL COME WITH LOAD CENTER. ALL ENCLOSURE AUXILIARY LOADS (HEATER, LIGHT, PLUG, DAMPERS, BATTERY CHARGER, ETC.) TO BE WIRED TO LOAD CENTER.
3. HAZARDOUS CLASSIFICATION DRAWING FOR CNG STATION TO BE PROVIDED BY SUPPLIER.
4. SURGE PROTECTION DEVICE SHALL BE TOTAL PROTECTION SOLUTIONS PRODUCT LISTED BELOW OR ENGINEER APPROVED EQUAL:
   a. SPD-6A & SPD-6B: TK-ST160-3Y600-FL
   b. SPD-2A: TK-ST120-3Y208-FL (FOR PANEL 2A - SEE SCHEDULE)
   c. SPD-2B: TK-ST080-3Y208-FL (FOR PANEL 2B - SEE SCHEDULE)
5. METERING SHALL COMPLY WITH UBC TECHNICAL GUIDELINES SECTIONS 26 16 00 & 26 27 13.
   a. SEE DWG E200 FOR METER WIRING CONNECTION DIAGRAM (DETAIL FROM UBC STANDARD ELECTRICAL DRAWING E4-5a).

PROPOSED SINGLE LINE DIAGRAM

SCALE:NTS

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD ELECTRICAL SINGLE LINE DIAGRAM

Drawing No. E102

Project Number 2121-01293-00

Rev. D

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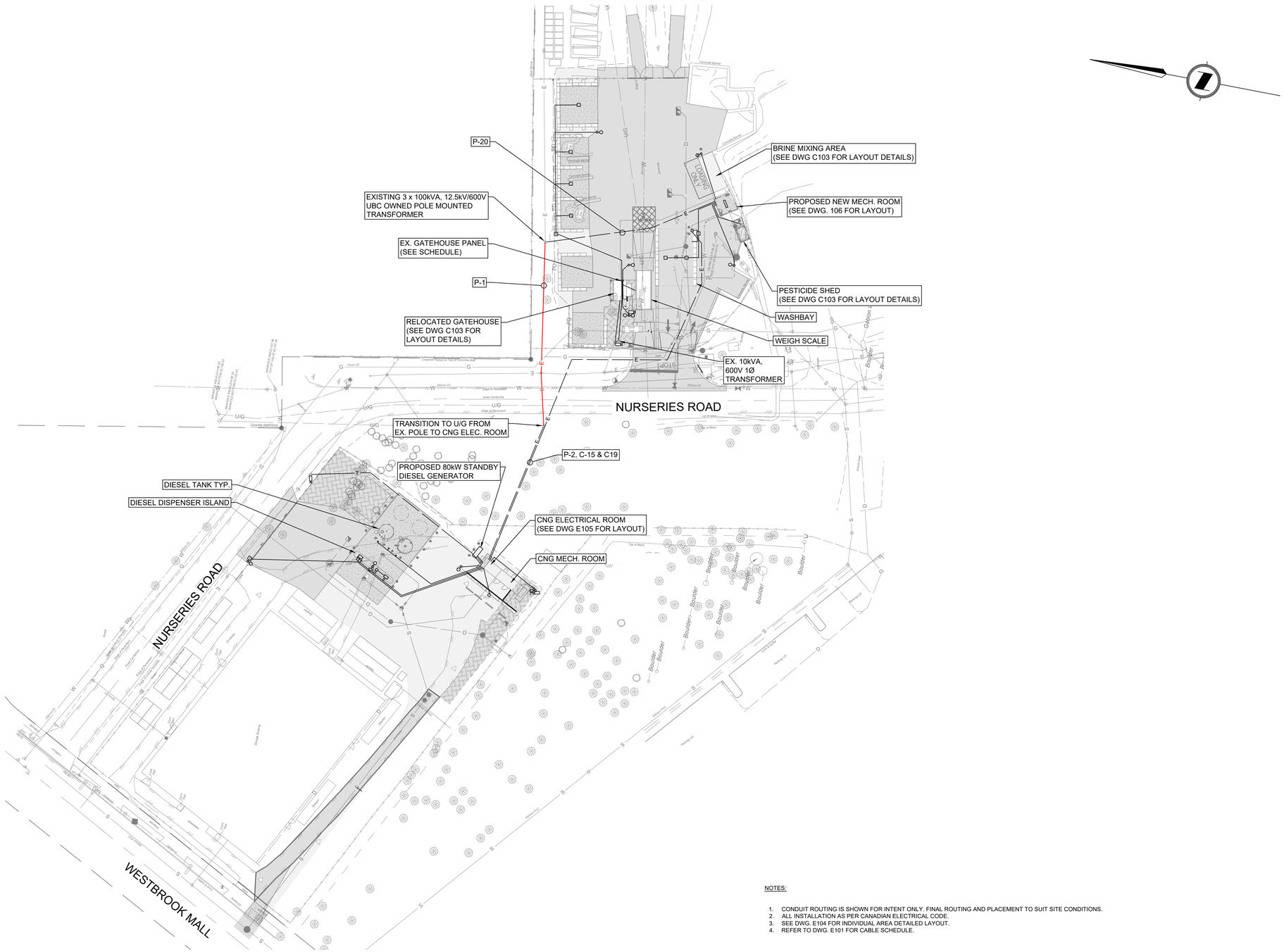

NOTES:

1. CONDUIT ROUTING IS SHOWN FOR INTENT ONLY. FINAL ROUTING AND PLACEMENT TO SUIT SITE CONDITIONS.
2. ALL INSTALLATION AS PER CANADIAN ELECTRICAL CODE.
3. SEE DWG. E104 FOR INDIVIDUAL AREA DETAILED LAYOUT.
4. REFER TO DWG. E101 FOR CABLE SCHEDULE.

OVERALL SITE LAYOUT

SCALE:1:500

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D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	MA	MA	MB
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A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MA	MA	MB

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UBC SOUTH CAMPUS WORKS YARD
ELECTRICAL
OVERALL LAYOUT

Drawing No.
E103

Project Number
2121-01293-00

Rev.
D

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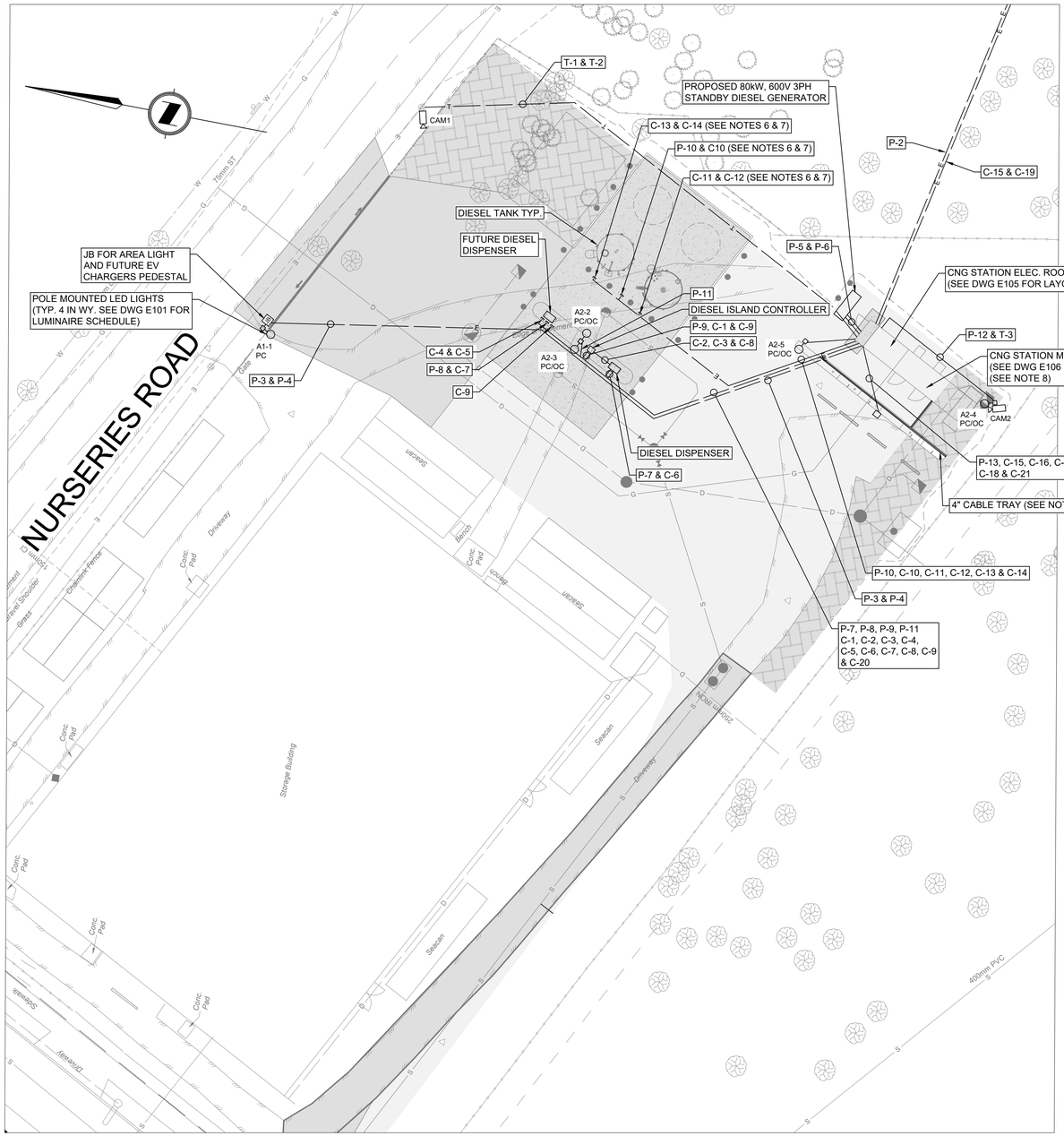
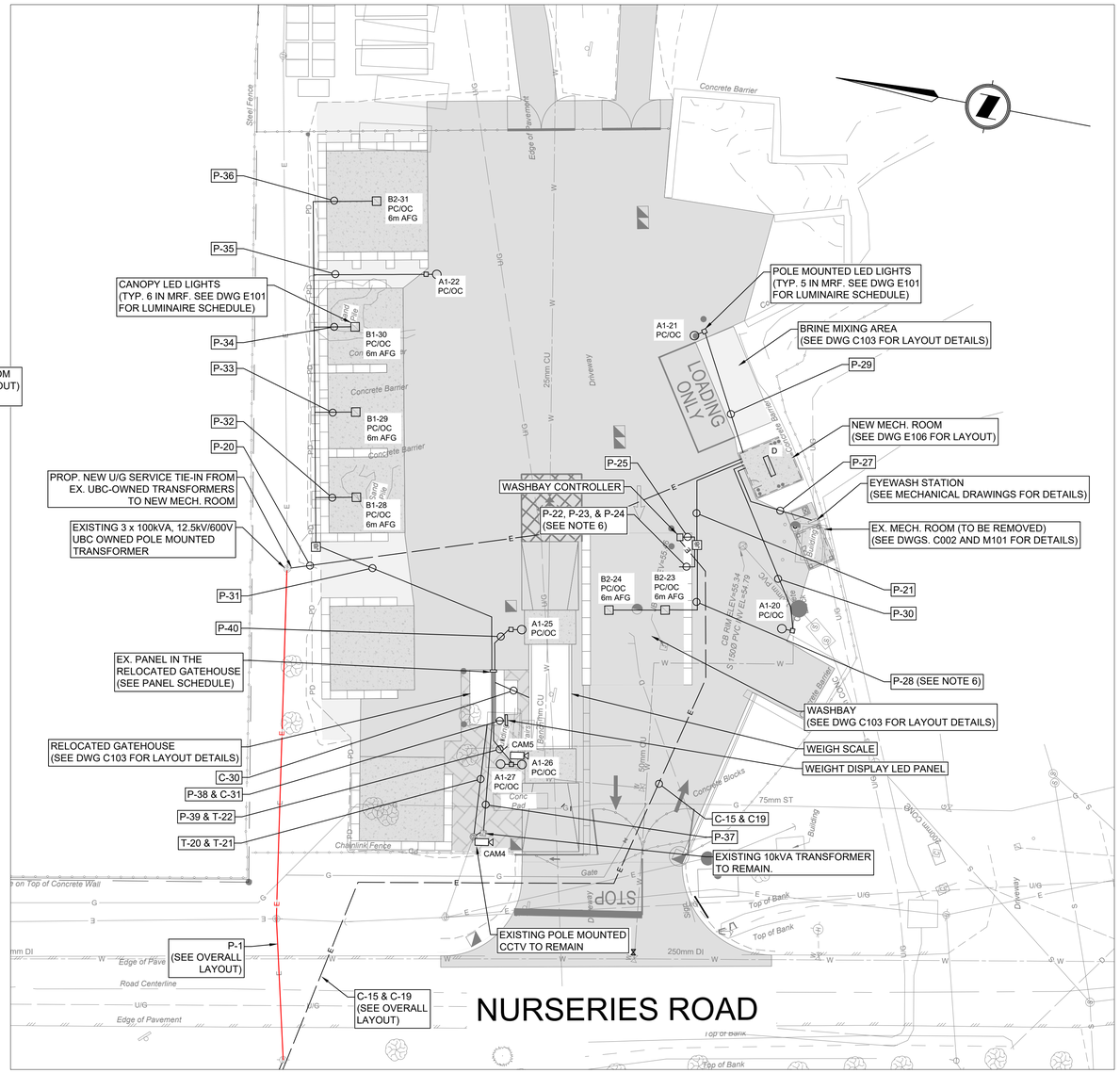


WAREHOUSE/ WORKS YARD LAYOUT

SCALE:1:250



MATERIAL RECOVERY FACILITY (MRF) LAYOUT

SCALE:1:250

NOTES:

1. CONDUIT ROUTING IS SHOWN FOR INTENT ONLY. FINAL ROUTING AND PLACEMENT TO SUIT SITE CONDITIONS.
2. ALL INSTALLATION AS PER CANADIAN ELECTRICAL CODE.
3. SEE DWG E101 FOR LUMINAIRE AND CABLE SCHEDULE.
4. CNG STATION INTERIOR LIGHTING TO BE PROVIDED BY OTHERS.
5. RELOCATED GATEHOUSE INTERIOR LIGHTING WILL REMAIN.
6. TRANSITION CONDUIT TO GRC PRIOR TO RISING ABOVE FOR TERMINATION.
7. PROVIDE NEMA 4X JUNCTION BOX MOUNTED 1m MIN. ABOVE THE FINISHED GROUND ON A UNISTRUT FRAME AND LOCATED 1m MIN. AWAY FROM THE DIESEL TANK OPENING.
8. CNG MECHANICAL ROOM IS CLASSIFIED ZONE 1. ALL WIRING TO BE IN ACCORDANCE WITH SECTION 20-064 OF CANADIAN ELECTRICAL CODE. ELECTRICAL & CONTROLS CONNECTIONS FROM MECH. ROOM TO ELECTRICAL ROOM ARE BY CNG SYSTEM SUPPLIER.
9. PROVIDE 6" COVERED CABLE TRAY, MOUNTED 0.6m(2')AFG ON A UNISTRUT SUPPORT.
   - 9.1. CABLE TRAY TO RUN FROM MECHANICAL ROOM CABLE GLAND OPENING TO AND ALONG BACKSIDE OF JERSEY BARRIERS.
   - 9.2. INFORMATION REGARDING OTHER REQUIRED WIRING FOR ESD AND HOSES RUNNING ALONG THE CABLE TRAY TO BE CONFIRMED AND COORDINATED WITH CNG SYSTEM SUPPLIER.

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UBC SOUTH CAMPUS WORKS YARD ELECTRICAL SITE LAYOUTS

Drawing No. E104

Project Number 2121-01293-00

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McElhanney ANSI D - 2021-09-14
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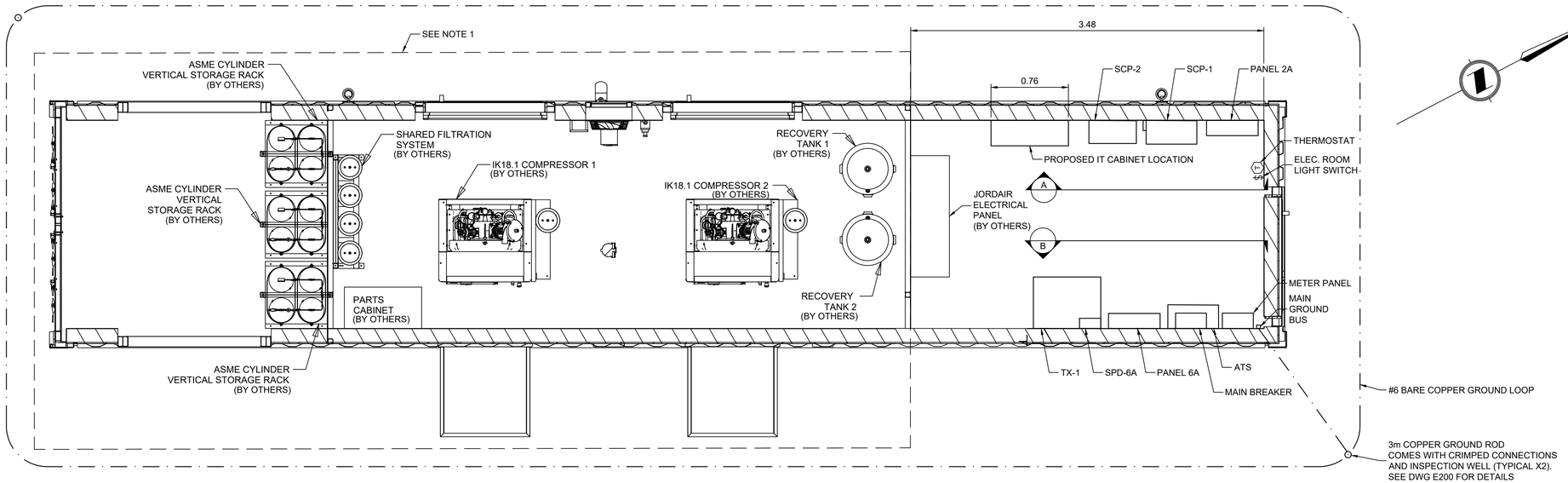
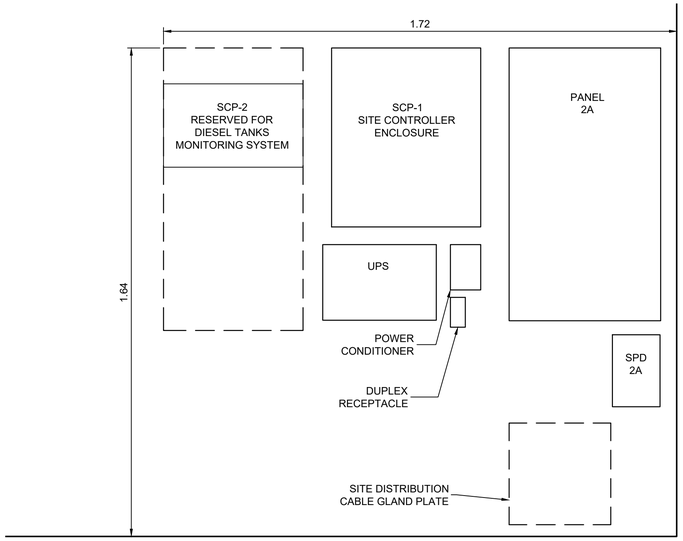


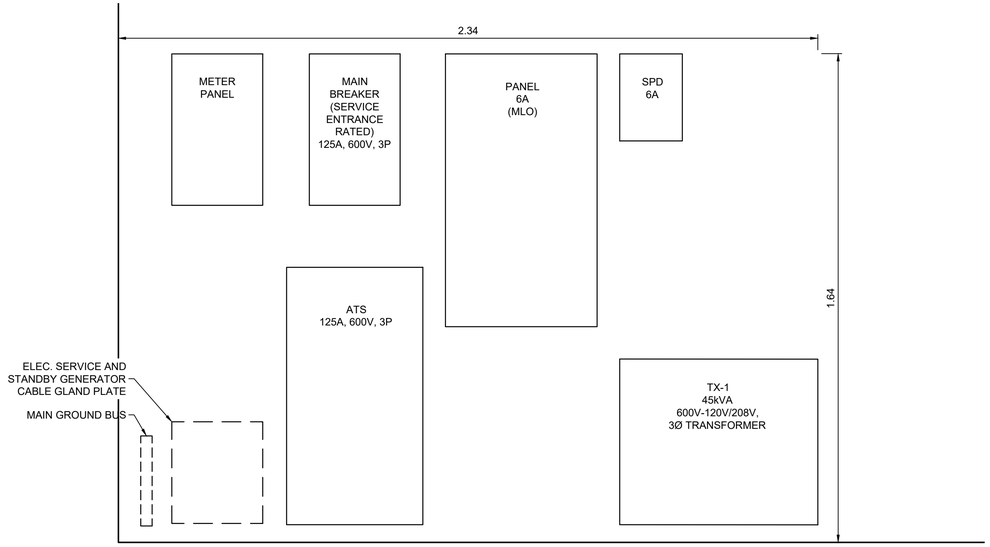
WAREHOUSE YARD - CNG STATION - LAYOUT

SCALE: 1:25



A WAREHOUSE YARD - CNG ELECTRICAL ROOM - WEST WALL LAYOUT

SCALE H 1:10



B WAREHOUSE YARD - CNG ELECTRICAL ROOM - EAST WALL LAYOUT

SCALE H 1:10

NOTES:

1. SEE JORDAIR DRAWINGS FOR COMPLETE CNG STATION LAYOUT AND DETAILS.

Rev	Date	Description	Drawn	Design	App'd
B	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	MA	MA	MB
A	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	MA	MA	TI

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

McElhanney

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858 Beatty Street
Vancouver BC
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6200 UNIVERSITY BLVD, VANCOUVER, BC V6T 1Z4

UBC SOUTH CAMPUS WORKS YARD ELECTRICAL CNG ELECTRICAL ROOM LAYOUT

Drawing No. E105

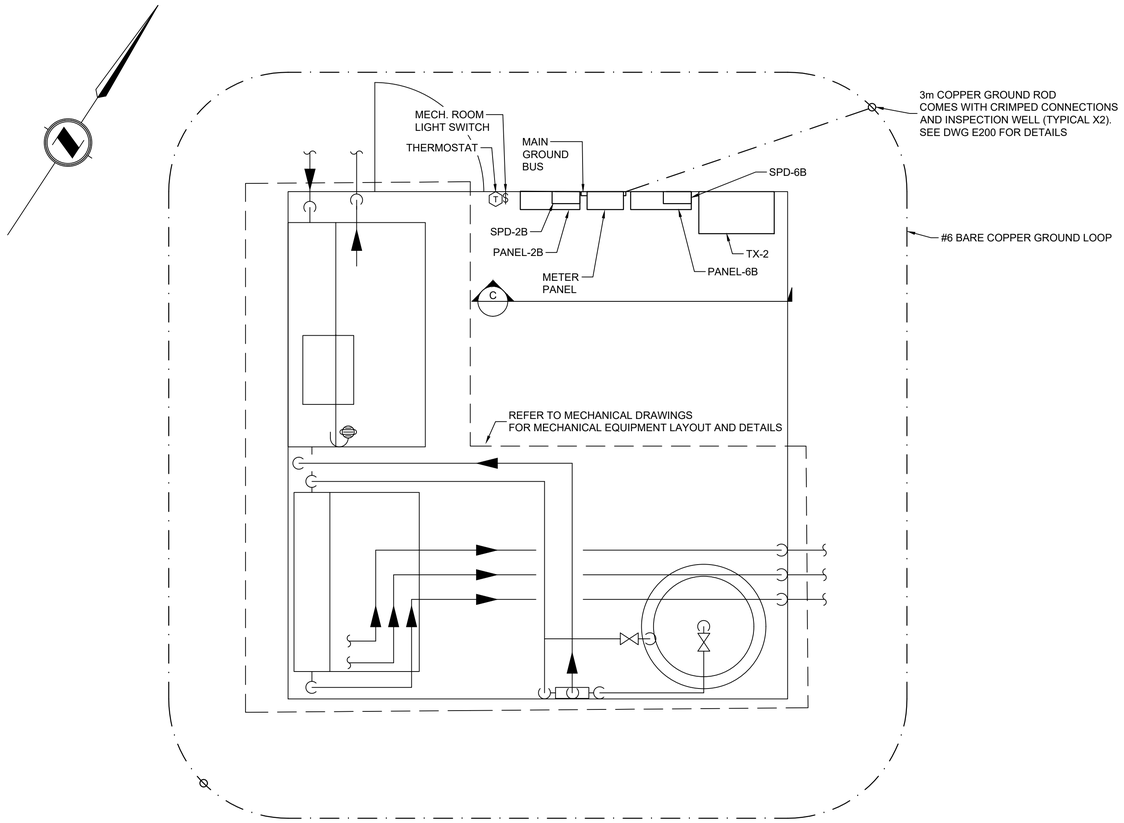
Project Number 2121-01293-00

Rev. D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

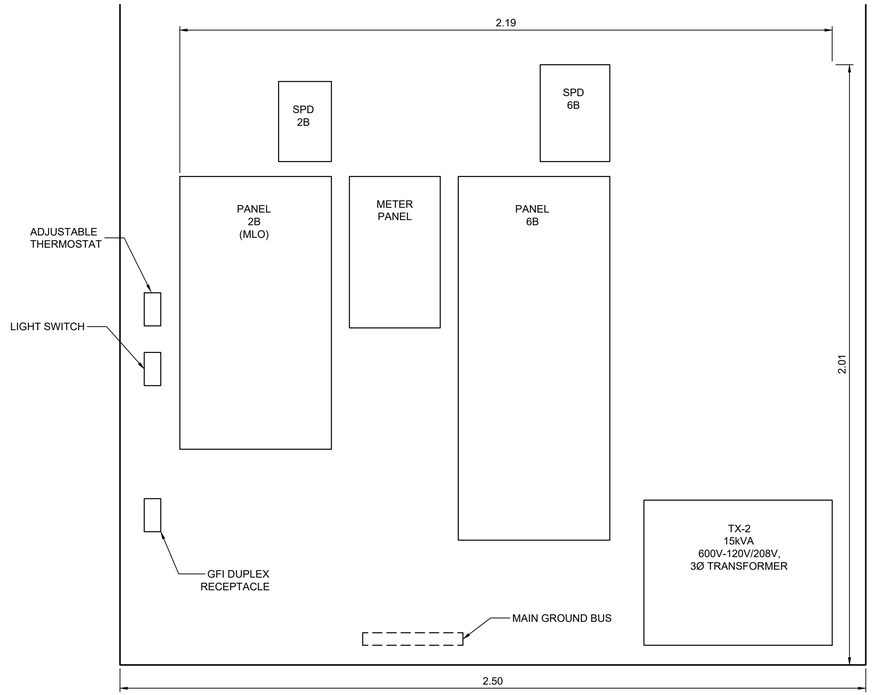
McElhanney ANSI D - 2021-09-14

DATE: 2025-08-29, 17:46 FILE: \\corp\TAL-cols\2121\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-E0-100.dwg



MRF - NEW MECH. ROOM LAYOUT

SCALE: 1:25



C MRF - NEW MECH. ROOM - NORTHEAST WALL LAYOUT

SCALE H 1:10

Rev	Date	Description	Drawn	Design	App'd
B	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	MA	MA	MB
A	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	MA	MA	TI

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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6200 UNIVERSITY BLVD, VANCOUVER, BC V6T 1Z4

UBC SOUTH CAMPUS WORKS YARD
ELECTRICAL
MRF - NEW MECH. ROOM LAYOUT

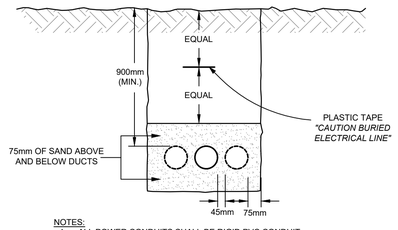
Drawing No.
E106

Project Number	Rev.
2121-01293-00	D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 17:46 FILE: \\corp\TAL-cole\2121\Projects\2121012930O UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-E0-100.dwg

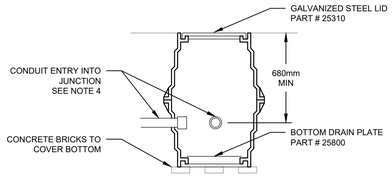
McElhanney ANSI D - 2021-09-14



NOTES:
1. ALL POWER CONDUITS SHALL BE RIGID PVC CONDUIT.
2. ALL CONDUITS USED FOR BUILDING SERVICES SHALL BE MINIMUM 100mm DIAM.
3. UNLESS OTHERWISE NOTED MAINTAIN A MINIMUM SPACING OF 300MM FROM ALL OTHER BURIED UTILITIES

TYPICAL TRENCH DETAIL FOR DIRECTLY BURIED ELECTRICAL CONDUIT

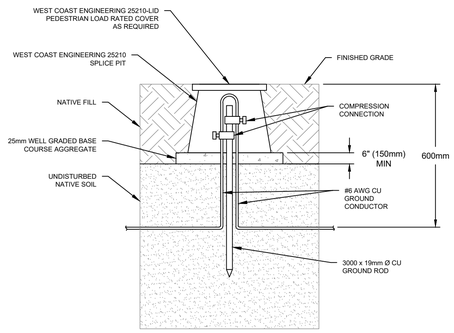
SCALE: NTS



JUNCTION BOX NOTES:
1. TWO ROUND JUNCTION BOXES INSTALLED WITH ONE INVERTED UNDER THE OTHER.
2. PROVIDE BONDING FOR STEEL LID.
3. JUNCTION BOX IS TO BE WEST COAST ENGINEERING 25010 OR APPROVED EQUAL.
4. CONDUIT IS TO BE RUN AT A DEPTH OF 900mm AND HAVE A GENTLE RISE UP FOR ENTRY INTO JUNCTION BOX.

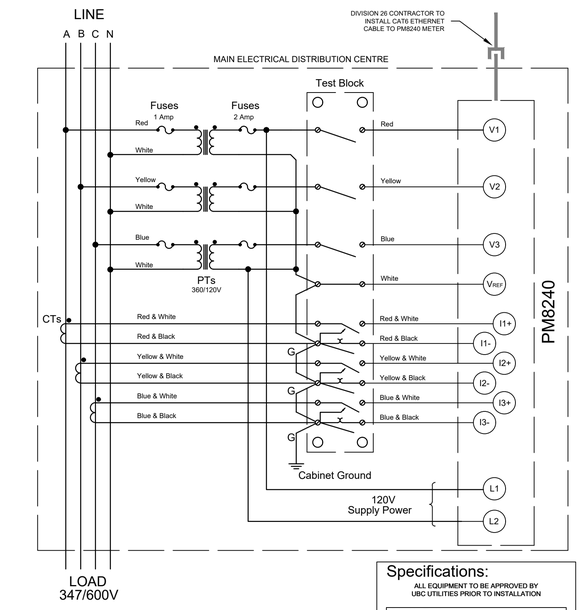
JUNCTION BOX DETAIL

SCALE: NTS



GROUND WELL DETAIL

SCALE: NTS



Notes:

- Use SIS switchboard wire for all connections.
- All CT wiring to be MIN #12.
- All Potential wiring to be MIN #14.
- Final wiring to be as per manufacturer.
- Provide colour coding or numbering on wiring as shown.
- Ground system at test block only as shown.

Specifications:

ALL EQUIPMENT TO BE APPROVED BY UBC UTILITIES PRIOR TO INSTALLATION

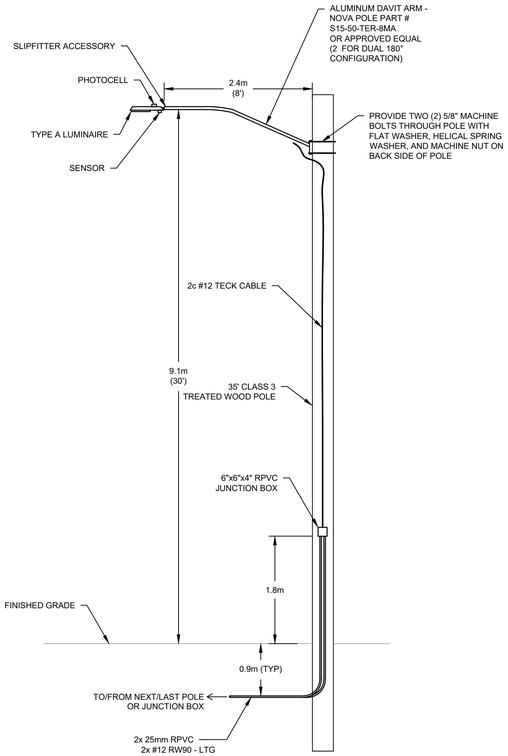
Schneider Electric meter:
- METSEPM8240, 120V input, c/w ethernet port
- Programmed with UBC Utilities standard displays

Schneider Electric Digital I/O Module:
- METSEPM89M2600

Test Switch (Equivalent To):
- Superior 10 Pole/30 Amp/600 Volt - CAT# 1082F
- ABB FT-1

Fuses & Holders: Gould Ultrasafe class CC or equivalent
CTs: Revenue class 0.3B0.9
PTs: Revenue class with 360/120 ratio

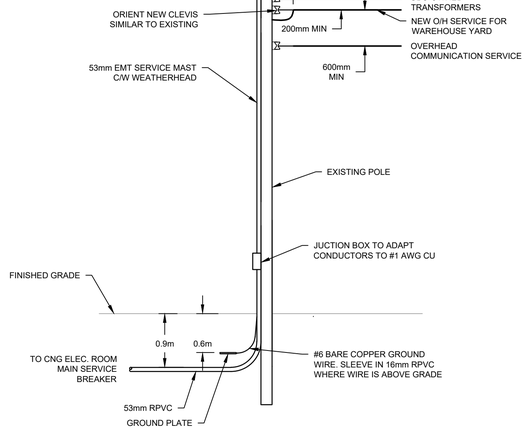
Meter Location to be in a separately barriered compartment per UBC Technical Guidelines 26 27 13 2.2.3



NOTES:
1. NEMA 4X RATED JUNCTION BOX SHALL BE PROVIDED FOR THE LIGHT POLE LOCATED AT DIESEL DISPENSING ISLAND.

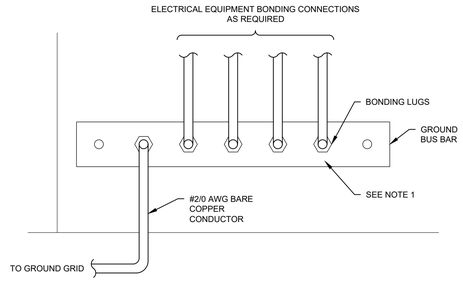
AREA LIGHT POLE ELEVATION (TYP)

SCALE 1:50



WAREHOUSE YARD SERVICE POLE ELEVATION

SCALE 1:50



GROUND BUS BAR

SCALE: NTS

GROUND BUS BAR NOTES:
1. LABEL EACH BUS BAR CONNECTION ACCORDING TO PURPOSE.

SCHNEIDER ELECTRIC PM8240 METER 600/347V 3-PHASE 4-WIRE SYSTEM 3 ELEMENT WIRING CONNECTION DIAGRAM

SCALE: NTS

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CONSTRUCTION DESIGN	MA	MA	MB
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	MA	MA	TI
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MA	MA	EH
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MA	MA	MB

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UBC SOUTH CAMPUS WORKS YARD ELECTRICAL TYPICAL DETAILS

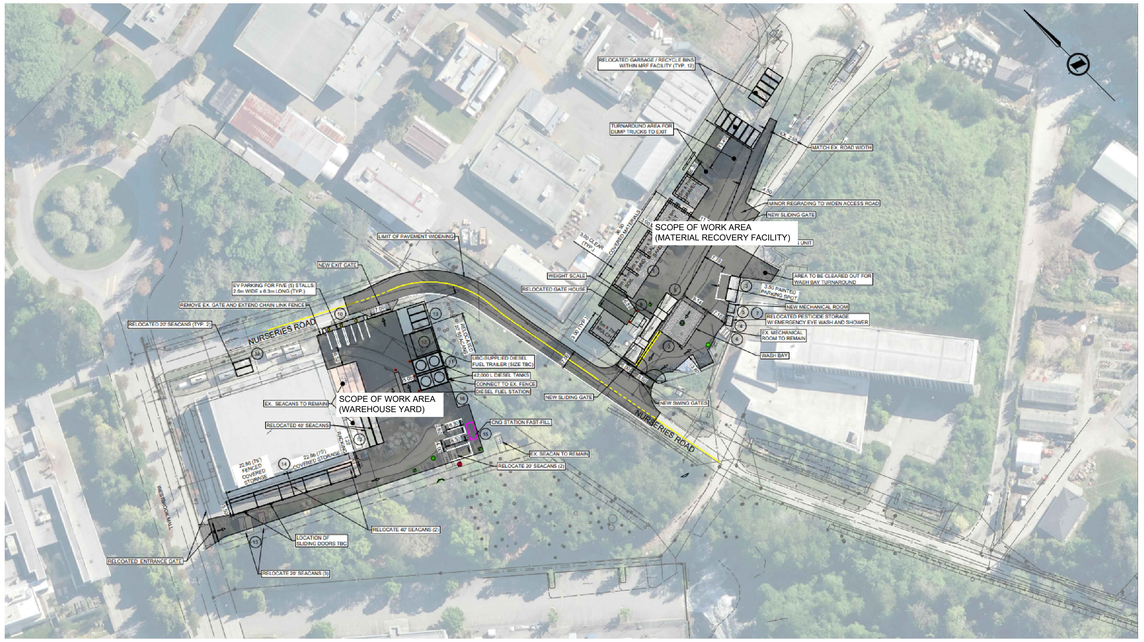
Drawing No.
E200

Project Number: 2121-01293-00
Rev.: D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

DATE: 2025-08-29, 17:46 FILE: \\corp\TAL-cole\2121\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\012293-E0-100.dwg

McElhanney ANSI D - 2021-09-14



TRUE NORTH

1 M000 SITE PLAN

SCALE: NTS

MECHANICAL GENERAL NOTES

1. THE MECHANICAL SYSTEM SHALL CONSIST OF ALL WORK SHOWN ON THE DRAWINGS, DIAGRAMS, SCHEMATICS AND AS DESCRIBED IN THE SPECIFICATIONS.
2. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. REFER TO CIVIL AND ELECTRICAL DRAWINGS FOR ADDITIONAL CONSTRUCTION DETAILS.
3. COORDINATE THE DRAWINGS WITH THE SPECIFICATIONS AND IN CASES WHERE CONFLICTS OCCUR THE MOST STRINGENT REQUIREMENT SHALL APPLY.
4. CONTRACTOR TO COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER AND ADEQUATE INTERFACE WITH THE WORK OUTLINED FOR THIS PROJECT.
5. CONTRACTOR TO PROVIDE HORIZONTAL AND VERTICAL CLEARANCE REQUIREMENTS AS PER CEC (CANADIAN ELECTRICAL CODE) FOR ALL INSTALLED EQUIPMENT. OFFSET MECHANICAL WORK AS REQUIRED TO MEET THIS REQUIREMENT.
6. MECHANICAL EQUIPMENT SHALL NOT BE USED FOR TEMPORARY HEATING DURING THE CONSTRUCTION PROCESS. A WRITTEN LETTER FROM THE OWNER IS REQUIRED TO DO SO.
7. THE CONTRACTOR SHALL BE REQUIRED TO ATTEND A PRE-BID WALK THROUGH TO ENSURE A PROPER UNDERSTANDING OF THE MECHANICAL SCOPE OF WORK.
8. CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND VERIFYING ACTUAL ON-SITE CONDITIONS AND EQUIPMENT LOCATIONS PRIOR TO ANY AND ALL DEMOLITION WORK AND/OR EQUIPMENT REMOVAL.
9. CONTRACTOR TO INCLUDE AS A PART OF THE BID ALL COSTS ASSOCIATED WITH CUTTING AND PATCHING THAT IS REQUIRED TO INSTALL ALL NEW MECHANICAL SYSTEMS AS REQUIRED TO MEET THE SITE CONDITIONS AS SHOWN ON THE DRAWINGS. PATCHING SHALL MEET THE AESTHETIC CONDITIONS WHICH WAS THE CONDITION PRIOR TO ANY CUTTING BEING PREFORMED.
10. CONTRACTOR TO PROPERLY SEAL AND REPAIR ANY AND ALL DAMAGE THAT IS A RESULT OF REMOVAL OR DEMOLITION OF MECHANICAL EQUIPMENT. THIS INCLUDES BUT IS NOT LIMITED TO WALL, DOOR, CEILINGS, ETC.
11. THE EXISTING FACILITIES MECHANICAL SYSTEMS SHALL REMAIN OPERATIONAL DURING THE CONSTRUCTION AND RENOVATION PERIOD. CONTRACTOR TO COORDINATE CONSTRUCTION ACTIVITIES AND PHASING WITH OWNER TO MINIMIZE DISRUPTIONS TO OWNERS OPERATIONS AND ACCESS, AND TO ENSURE SAFETY OF THE USERS. PROVIDE ALL MEASURES REQUIRED TO PREVENT HAZARDS TO PEOPLE AND DAMAGE TO ITEMS REMAINING INCLUDING BUT NOT LIMITED TO DAMAGE FROM DUST AND HEAT.
12. THE EXISTING DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. AS A RESULT, THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT.
13. DURING REMOVAL OF ITEMS SO INDICATED, CAUTION SHOULD BE USED TO PREVENT DAMAGE TO ANY EQUIPMENT HAVING SALVAGE VALUE. ALL REUSABLE SALVAGED MATERIAL SHALL REMAIN THE PROPERTY OF THE OWNER AND BE RETAINED FOR THEIR INSPECTION. ONLY ITEMS AGREED BY THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR.
14. CONTRACTOR SHALL COORDINATE AND SCHEDULE WORK WITH FACILITY TO LIMIT INTERFERENCE WITH OPERATION.
15. MECHANICAL CONTRACTOR TO RETAIN AN ELECTRICIAN AS REQUIRED TO INSTALL ANY LINE VOLTAGE THERMOSTATS AND CONTROLS.

MECHANICAL ABBREVIATIONS

AD	AREA DRAIN	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	KS	KITCHEN SINK
AHU	AIR HANDLING UNIT	LV	LAVATORY
ARCH	ARCHITECTURAL	LAT	LEAVING AIR TEMPERATURE
BB	BASEBOARD HEATER	LWT	LEAVING WATER TEMPERATURE
BDD	BACKDRAFT DAMPER	MAU	MAKE-UP AIR UNIT
BF	BOTTLE FILLER	MAX	MAXIMUM
BFP	BACKFLOW PREVENTER	MH	MANHOLE
BHP	BREAK HORSEPOWER	MBH	1000 BRITISH THERMAL UNITS/HOUR
BMS	BUILDING MANAGEMENT SYSTEM	MD	MOTORIZED DAMPER
BT	BATH TUB	MECH	MECHANICAL
CB	CATCH BASIN	MIN	MINIMUM
CFM	CUBIC FEET PER MINUTE	NFHB	NON FREEZE HOSE BIB
CLG	CEILING	NIC	NOT IN CONTRACT
CO	CLEANOUT	NC	NOISE CRITERIA/NORMALLY CLOSED
CONN	CONNECTION	NO	NORMALLY OPEN
C/W	COMPLETE WITH	NTS	NOT TO SCALE
CONT	CONTINUATION	O/A	OUTDOOR AIR
CTE	CONNECT TO EXISTING	OBD	OPPOSED BLADE DAMPER
DB	DRY BULB	OED	OPEN ENDED DUCT
DCVA	DOUBLE CHECK VALVE ASSEMBLY	OD	OUTSIDE DIAMETER
DDC	DIRECT DIGITAL CONTROL	POC	POINT OF CONNECTION
DEG	DEGREE	PRV	PRESSURE REDUCING VALVE
DF	DRINKING FOUNTAIN	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	R/A	RETURN AIR
DN	DOWN	RF	RETURN FAN
DUC	DUAL CHECK VALVE	RM	ROOM
DW	DISH WASHER	RPM	REVOLUTIONS PER MINUTE
DWG	DRAWING	RWL	RAIN WATER LEADER
E/A	EXHAUST AIR	S/A	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SF	SUPPLY FAN
EF	EXHAUST FAN	SH	SHOWER
EFF	EFFICIENCY	SK	SINK
ELEC	ELECTRICAL	SS	STAINLESS STEEL
ENT	ENTERING	SP	STATIC PRESSURE
ESP	EXTERNAL STATIC PRESSURE	SPEC	SPECIFICATION
EWT	ENTERING WATER TEMPERATURE	ST	STORM
EXH	EXHAUST	T/A	TRANSFER AIR
FA	FROM ABOVE	TA	TO ABOVE
FB	FROM BELOW	TB	TO BELOW
FD	FLOOR DRAIN	TBC	TO BE CONFIRMED
FE	FIRE EXTINGUISHER	TBD	TO BE DETERMINED
FFD	FUNNEL FLOOR DRAIN	TD	TRENCH DRAIN
FLA	FULL LOAD AMPS	THRU	THROUGH
FLR	FLOOR	TS	TAMPER SWITCH
FPM	FEET PER MINUTE	TSP	TOTAL STATIC PRESSURE
GPM	GALLONS PER MINUTE	TYP	TYPICAL
GWB	GYPSUM WALL BOARD	UR	URINAL
HD	HUB DRAIN	VFD	VARIABLE FREQUENCY DRIVE
HB	HOSE BIBB	VTR	VENT THROUGH ROOF
HP	HORSEPOWER	W	WATER MAIN
ID	INSIDE DIAMETER	WB	WET BULB
INV	INVERT	WC	WATER CLOSET
JS	JANITOR SINK	WG	WATER GAUGE

MECHANICAL DRAWING LIST

DRAWINGS NO.	DESCRIPTION	SCALE
M000	SITE PLAN, NOTES, LEGENDS, AND DRAWINGS LIST	N.T.S.
M001	MECHANICAL EQUIPMENT SCHEDULES AND MOTORLIST	N.T.S.
M002	MECHANICAL EQUIPMENT SCHEDULES	N.T.S.
M100	WAREHOUSE YARD SITE LAYOUT PLAN	1:250
M101	MATERIAL RECOVERY FACILITY SITE LAYOUT PLAN	1:250
M200	DETAILS	N.T.S.
M201	DETAILS	N.T.S.
M202	DETAILS	N.T.S.
M300	SPECIFICATIONS	N.T.S.

SYMBOL SCHEDULE

PIPING SYSTEMS

- DOMESTIC COLD WATER (DCW)
- DOMESTIC HOT WATER (DHW)
- DOMESTIC HOT WATER RECIRC. (DHWR)
- SANITARY VENT
- SANITARY SEWER ABOVE GRADE
- SANITARY SEWER BELOW GRADE
- STORM SEWER ABOVE GRADE
- STORM SEWER BELOW GRADE
- DRAIN TILE
- IRRIGATION
- GAS ABOVE GRADE
- GAS BELOW GRADE
- CONDENSATE DRAIN
- FUEL OIL SUPPLY
- FUEL OIL RETURN
- CHILLED WATER SUPPLY
- CHILLED WATER RETURN
- CONDENSER WATER SUPPLY
- CONDENSER WATER RETURN
- REFRIGERANT SUCTION(GAS)
- REFRIGERANT LIQUID

FITTINGS AND VALVES

- DIRECTION OF FLOW
- PIPE DROP
- PIPE RISE
- PIPE TEE UP
- PIPE TEE DOWN
- PIPE UNION
- PIPE CLEAN-OUT
- PIPE CLEAN-OUT TO GRADE
- PIPE CAP-OFF
- ISOLATION VALVE
- ISOLATION VALVE (NORMALLY CLOSED)
- CHECK VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- SOLENOID VALVE
- BALANCING VALVE
- CIRCUIT SETTER VALVE
- PRESSURE REDUCING VALVE
- PRESSURE INDEPENDENT VALVE
- STRAINER
- RELIEF VALVE
- BACKFLOW PREVENTOR
- AUTOMATIC AIR VENT
- SEISMIC GAS SHUT-OFF VALVE
- PIPE ANCHOR
- EXPANSION JOINT
- FLEX COUPLING
- PIPE SLEEVE
- HEAT TRACING

OUTLETS AND DRAINS

- OPEN DRAIN
- HOSE-BIBB
- FLOOR DRAIN
- FUNNEL FLOOR DRAIN
- ROOF DRAIN
- AREA DRAIN
- P-TRAP
- VENT TO ABOVE

MECHANICAL EQUIPMENT

- PUMP
- CABINET FAN
- PROPELLER FAN
- UNIT HEATER
- FORCE FLOW HEATER
- REHEAT COIL

SYSTEM MONITORING AND CONTROLS

- ROOM TEMPERATURE SENSOR
- REVERSE ACTING TEMPERATURE SENSOR
- TEMPERATURE SENSOR
- HUMIDITY SENSOR
- CO_2 SENSOR
- PIPE TEMPERATURE SENSOR
- PRESSURE GUAGE
- THERMOMETER
- FLOW SWITCH
- GAS METER
- WATER METER
- CONTROL WIRING

DUCTWORK

- SUPPLY OR OUTDOOR AIR DUCT UP
- SUPPLY OR OUTDOOR AIR DUCT DOWN
- RETURN AIR DUCT UP
- RETURN AIR DUCT DOWN
- EXHAUST AIR DUCT UP
- EXHAUST AIR DUCT DOWN
- TURNING VANES
- ACOUSTIC INSULATION
- BALANCING DAMPER
- BDD — BACKDRAFT DAMPER
- MOTORIZED DAMPER
- FIRE DAMPER - VERTICAL
- FIRE DAMPER - HORIZONTAL
- FIRE/SMOKE DAMPER
- DUCT CAP-OFF
- RETURN OR EXHAUST AIR GRILLE
- UC — UNDER-CUT DOOR

FIRE PROTECTION

- FIRE EXTINGUISHER
- FIRE DEPARTMENT SIAMESE CONNECTION
- PENDANT SPRINKLER HEAD
- EXT. COVERAGE PENDANT SPRINKLER HEAD
- UPRIGHT SPRINKLER HEAD
- EXT. COVERAGE UPRIGHT SPRINKLER HEAD
- UP AND DOWN SPRINKLER HEAD
- UP AND DOWN EXTENDED COVERAGE HEAD
- SIDEWALL SPRINKLER HEAD
- EXTENDED COVERAGE SIDEWALL HEAD
- DRY SPRINKLER ALARM VALVE
- SP — WET SPRINKLER SUPPLY LINE
- DRY — DRY SPRINKLER SUPPLY LINE
- PRE — PRE-ACTION SPRINKLER LINE
- F — FIRE LINE TO STANDPIPE

EQUIPMENT TAGS & CALLOUTS

- GRILLE TYPE / NECK/GRILLE SIZE / AIR VOLUME
- EQUIPMENT/FIXTURE TYPE
- GENERAL NOTE
- DRAWING REVISION
- DETAIL NUMBER / DRAWING NUMBER (M-)
- SECTION NUMBER / DRAWING NUMBER (M-)

BUILDING LOAD SUMMARY - WY

DESCRIPTION	LOAD	UNITS	PIPE SIZE (MM)
GAS (34 KPA)	774	kW	25Ø

BUILDING LOAD SUMMARY - MRF

DESCRIPTION	LOAD	UNITS	PIPE SIZE (MM)
DOMESTIC WATER	166	FU	75Ø
GAS (14 KPA)	204	kW	25Ø

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CD	MC/SD	MC/SD	IT
C	2025-07-04	ISSUED FOR 50% CD	MC/SD	MC/SD	IT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MC/SD	MC/SD	IT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MC/SD	MC/SD	IT

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ORIGINAL DWG SIZE: A1 (594 x 841mm)

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UBC SOUTH CAMPUS WORK YARD SITE PLAN, NOTES, LEGENDS, AND DRAWING LIST

Drawing No. M000

Project Number 2121-01293-00

Rev. D

MECHANICAL MOTORLIST

UNIT NUMBER	QTY	UNIT DESCRIPTION	UNIT LOCATION	ELECTRICAL LOAD				VOLT	PH	EQUIPMENT			STARTER				DISCONNECT			CONTROL				EMERGENCY POWER (YES/NO)	NOTES
				MCA	FLA	KW	HP			S	I	C	S	I	C	TYPE	S	I	C	S	I	C	TYPE		
		EMERGENCY EYEWASH AND SHOWER																							
EW-MRF-1	1	ELECTRICAL CONNECTION	MRF					120	1	M	M	E	-	-	-	-	E	E	E	M	M	E	INT		
		HEAT MAINTENANCE CABLE																							
HMC-MRF-1	1	HEAT TRACE FOR EMERGENCY SHOWER/EYEWASH	MRF			0.75		208	1	M	M	E	-	-	-	-	E	E	E	M	M	E	INT		
		UNIT HEATER																							
UH-MRF-1	1	ELECTRIC UNIT HEATER	MRF - NEW MECHANICAL ROOM			3		208	1	M	M	E	-	-	-	-	E	E	E	M	M	E	T		
		WATER HEATER (ELECTRIC)																							
HWT-MRF-1	1	HOT WATER TANK FOR EYEWASH/SHOWER	MRF - NEW MECHANICAL ROOM	12		12.5		600	3	M	M	E	-	-	-	-	E	E	E	M	M	E	INT		
HWT-MRF-2	1	INSTANT WATER HEATER FOR NOVICLEAN	MRF - WASHBAY	34		35		600	3	M	M	E	-	-	-	-	E	E	E	M	M	E	INT		
		NOVICLEAN SYSTEM																							
-	1	NOVICLEAN SYSTEM	MRF - WASH BAY				5	575	3	-	-	E	-	-	-	-	E	E	E	-	-	E	INT		
-	2	HEAT TRACE FOR NOVICLEAN SYSTEM	MRF - WASH BAY			0.75		120	1	M	M	E	-	-	-	-	E	E	E	M	M	E	INT		
		FUEL DISPENSER																							
FD-WY-1	1	FUEL DISPENSER	WAREHOUSE YARD					120	1	M	M	E	-	-	-	-	E	E	E	M	M	E	INT	Y	
		PUMP																							
P-WY-1	1	FUEL TRANSFER PUMP	WAREHOUSE YARD DIESEL TANK				0.75	208	1	M	M	E	M	M	E	PCS	E	E	E	M	M	E	VFD	Y	7
P-WY-2	1	FUEL TRANSFER PUMP	WAREHOUSE YARD DIESEL TANK				0.75	208	1	M	M	E	M	M	E	PCS	E	E	E	M	M	E	VFD	Y	7
		FUEL SYSTEM ACCESSORIES																							
-	2	LEVEL INDICATOR	WAREHOUSE YARD DIESEL TANK					120	1	M	M	E	-	-	-	-	E	E	E	M	M	E	LS	Y	
-	2	LEAK DETECTION	WAREHOUSE YARD DIESEL TANK					120	1	M	M	E	-	-	-	-	E	E	E	M	M	E	-	Y	
		VEEDER ROOT CONSOLE TLS-450 PLUS	ELECTRICAL ROOM CNG FILL - TBC					120	1	M	M	E											INT		

SUPPLIER / INSTALL / WIRE CODES:
MECH = MECHANICAL
ELEC = ELECTRICAL
G = GENERAL CONTRACTOR
S = SUPPLIED BY
I = INSTALLED BY
C = CONNECTED BY

STARTER CODES:
MAN = MANUAL STARTER
HOA = MAGNETIC STARTER W/ HAND/OFF/AUTO SWITCH W/ AUX. CONTACTS
MAG = MAGNETIC STARTER C/W AUX STATUS CONTACTS
MRR = MOTOR RATED RELAY, 24 VAC COIL & MOTOR PROTECTION SWITCH
PCS = PACKAGED CONTROL SYSTEM
VFD = VARIABLE FREQUENCY DRIVE
RVS = REDUCED VOLTAGE STARTER
WS = WALL SWITCH
CP = CONTROL PANEL

CONTROL DEVICE CODES:
AQUA = PUMP CONTROLLED BY AQUASTAT
BMS = BLDG MANAGEMENT SYSTEM
ES = END SWITCH
ET = LINE VOLTAGE T'STAT
FA = FIRE ALARM
FAP = FIRE ALARM PANEL
FS = FLOW SWITCH
GS = GAS SENSOR
H = HUMIDITY SENSOR
I = INTERLOCK, SEE NOTES
LIGHT = WIRED TO LIGHT SWITCH
LS = LEVEL SWITCH
OS = OCCUPANT SENSOR
PS = PRESSURE SWITCH
R. STAT = REVERSE ACTING THERMOSTAT
TC = TIME CLOCK
T = LOW VOLTAGE T'STAT OR SENSOR
TS = TAMPER SWITCH
VS = VARIABLE SPEED SWITCH
WS = WALL SWITCH

ELECTRICAL LOAD CODES:
BHP = BRAKE HORSEPOWER
FLA = UNIT FULL LOAD AMPS
HP = UNIT OR MOTOR HORSE POWER
PH = POWER PHASE
MCA = MINIMUM CIRCUIT AMPS
VOLT = REQUIRED SUPPLY VOLTAGE

MISCELLANEOUS CODES:
FFCP = FIRE FIGHTERS CONTROL PANEL
FRAC = FRACTIONAL HORSEPOWER
INT = INTEGRAL PART OF UNIT

GENERAL NOTES:
A. ALL FIRE ALARM DEVICES WIRED BY ELECTRICAL
B. CONTROL PANELS ARE SHIPPED LOSS & REQUIRE FIELD WIRING
C. PCS EQUIPMENT REQUIRES SINGLE SOURCE POWER CONNECTION, UNLESS NOTED OTHERWISE
D. CP, VFD EQUIPMENT REQUIRES POWER WIRING TO AND FROM CONTROL PANEL TO CONTROLLED EQUIPMENT

NOTES:
1. SINGLE POINT POWER CONNECTION (EXCEPT FOR LIGHTS).
2. SPRINKLER ZONE VALVES AND FLOW SWITCHES TO BE MONITORED BY THE FIRE ALARM SYSTEM.
3. FIRE ALARM PANEL TO HAVE DRY CONTACT FOR BMS
4. MONITOR STATUS AT FFCP
5. PROVIDE SWTICH AT FFCP
6. FFCP TO ENABLE DURING ALARM
7. C/W EMERGENCY POWER OFF (E.P.O.) BUTTON PROVIDED BY MECHANICAL

DOMESTIC WATER HEATER (ELECTRIC)

EQUIPMENT TAG	LOCATION	MANUFACTURER	MODEL	INPUT (KW)	TANK CAPACITY (L)	RECOVERY AT TEMP RISE 56C (L/H)	AMPS	POWER (V/PH/HZ)	SHIPPING WEIGHT (KG)	NOTES
HWT-MRF-1	NEW MECHANICAL ROOM	HUBBEL	SE120-0-12.5SLT6	12.5	454	193	12	600/3/60	225	1,2
HWT-MRF-2	WASHBAY	HUBBEL	TX035-6T6	35.0	-	-	34	600/3/60	-	3

NOTES:
1. C/W DRAIN PAN.
2. C/W VACUUM RELIEF VALVE.
3. INSTANTANEOUS WATER HEATER C/W TANKLESS VALVE KIT

FUEL DISPENSER

EQUIPMENT TAG	LOCATION	SERVICE	DESCRIPTION	MANUFACTURER	MODEL NO	FLOW RATE (L/S)	ELECTRICAL	WEIGHT (KG)	NOTES
FD-WY-1	WAREHOUSE YARD	DIESEL	DIESEL FUEL DISPENSER	GASBOY	ATLASX 9153GTW1M	1.39	120/1/60	227	ALL

NOTES:
1 CONNECT TO EXISTING VEEDER ROOT CONSOLE.
2 DUAL SIDE DISPENSERS AND HOSES
3 INTERNAL FILTER, ELECTRONIC DISPENSER C/W OPW HANGING HARDWARE
4 C/W TRANSITION SUMPS (INCLUDING AT DISPENSER AND AT THE STORAGE TANK), LEAK DETECTION MONITORING WITH ALARM, AND THE ASSOCIATED DOUBLE WALL FLEXIBLE PIPES..
5 C/W ALL REQUIRED COMPONENTS (BOTH HARDWARES AND SOFTWARE), ACCESSORIES FOR FULL OPERATIONAL SYSTEM.
6 C/W 24VAC TRANSFORMER FOR MECHANICAL LOW VOLTAGE CONTROLS.
7 C/W SUBMERSIBLE PUMP (FOR EACH TANK, IE. TOTAL 2) INCLUDING STARTERS AND DISCONNECT.

UNIT HEATER (ELECTRIC)

EQUIPMENT TAG	QTY	LOCATION	MANUFACTURER	TYPE	MOUNTING TYPE	MODEL	HGT CAP (KW)	ELEC (V/PH/HZ)	NOTES
UH-MRF-1	1	MRF - NEW MECHANICAL ROOM	OUELLET	ELECTRIC	CEILING SUSPENDED	OAS03008AM	3.0	208/1/60	ALL

NOTES:
1 PROVIDE MOUNTING BASE.
2 PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTAT

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UBC SOUTH CAMPUS WORK YARD MECHANICAL EQUIPMENT SCHEDULES AND MOTORLIST

Drawing No.
M001

Project Number
2121-01293-00

Rev.
D

FUEL STORAGE TANK

EQUIPMENT TAG	LOCATION	SERVICE	DESCRIPTION	MANUFACTURER	MODEL NO	DIMENSIONS (MM)	CAPACITY (L)	CONSTRUCTION	WEIGHT (KG)	NOTES
TK-WY-1	SEE DRAWINGS	DIESEL	ABOVE-GROUND VERTICAL DIESEL STORAGE TANK	AGI WESTEEL	CUSTOM TANK	3,480 Ø x 4,568 (H)	42,000	DOUBLE WALL	6,690	ALL

NOTES:

1. PROVIDE ALL OF THE COMPLETE REQUIREMENT AND COMPONENTS FOR INTEGRATION TO THE EXISTING THE FUEL MANAGAMENT SYSTEM.
2. PROVIDE ALL OF THE COMPLETE REQUIREMENT AND COMPONENT FOR INTEGRATION WITH THE NEW FUEL DISPENSING SYSTEM, SUCH AS LEAK DETECTION, CONTROL VALVE, SUBMERSIBLE PUMPS, TRANSITION SUMPS, ETC.
3. EXTERIOR TO BE SANDBLASTED TO SSPC-SP10, WITH 1 COAT OF EPOXY AND POLYURETHANE, AND SEAL WELDED, GROUND SANDBLASTED TO SSPC-SP10, WITH 2 COATS OF EPOXY TANK LINING.
4. LEVEL INDICATOR
5. ULC S601 - DOUBLE WALL VACUUM MONITORED TANK.
6. C/W TRANSFER PUMP C/W EMERGENY POWER OFF (E.P.O.) BUTTON (SUPPLIED BY MECHANICAL AND INSTALLED BY ELECTRICAL).
7. GROUNDING LUG.
8. C/W ALL REQUIRED COMPONENTS (BOTH HARDWARES AND SOFTWARE), ACCESSORIES FOR FULL OPERATIONAL SYSTEM.
9. NEW LEAK DETECTION SYSTEM TO BE CONNECTED TO THE EXISTING TLS-450 PLUS VEEDER ROOT.
10. C/W 24VAC TRANSFORMER FOR MECHANICAL LOW VOLTAGE CONTROLS.
11. DISCRIMINATING SENSORS AND ALARM FOR NEW TRANSITION SUMPS

EXISTING FUEL STORAGE TANK

EQUIPMENT TAG	LOCATION	SERVICE	DESCRIPTION	MANUFACTURER	MODEL NO	DIMENSIONS (MM)	CAPACITY (L)	CONSTRUCTION	WEIGHT (KG)	NOTES
	SEE DRAWINGS	DIESEL	ABOVE-GROUND VERTICAL DIESEL STORAGE TANK	TIDY STEEL-FAB LTD.	EC-T-801	3,620 Ø x 5,130 (H)	42,000	DOUBLE WALL	-	-

HEAT TRACE

EQUIPMENT TAG	SERVICE	MANUFACTURER	MEAN AMBIENT TEMP (DEG C)	PIPES SIZE (MM)	MODEL	CAPACITY (W/M)	ELECTRICAL INFO (V/Ph/Hz)	NOTES
HT-MRF-1	HOSE BIB PIPING	RAYCHEM	-9	20	XL-TRACE	16.35	120/1/60	1,2
HMC-MRF-1	EMERGENCY SHOWER/EYEWASH	RAYCHEM	-9	40	XL-TRACE	16.35	240/1/60	1,2
-	NOVICLEAN SYSTEM	RAYCHEM	-9	20	XL-TRACE	16.35	120/1/60	1,2

NOTES:

1. REFER TO MECHANICAL FLOOR PLANS FOR ACTUAL LENGTH OF HEAT TRACING REQUIRED
2. SEE MECHANICAL MOTORLIST FOR HEAT TRACING ELECTRICAL LOADS

PLUMBING FIXTURE SCHEDULE

TAG	MAKE / MODEL	DESCRIPTION/TYPE
FFD-MRF-1	WATTS FD-100-C-EG	150Ø FLOOR DRAIN C/W OVAL FUNNEL.
EW-MRF-1	GUARDIAN GFR3110-G6040-FP	ELECTRIC HEAT-TRACED EMERGENCY SHOWER/EYEWASH STATION, BOTTOM INLET C/W THERMOSTATIC MIXING VALVE AND FREEZE PROTECTION VALVE.
SK-MRF-1	NELLA 43242	750X1500X850 (30"X60"X34") 18 GAUGE 430 STAINLESS STEEL TABLE WITH RIGHT SIDE SINK C/W 1000MM (40") BACKSPLASH. SINK: 400X500X500 (16"X20"X10") 18 GAUGE 304 STAINLESS STEEL.

NOTES:

1: PROVIDE TEE, ADAPTORS AND FLEX FOR FITTINGS.
2: PROVIDE FLOOR FLANGES FOR CONNECTING PIPE DRAINS OFF FIXTURES

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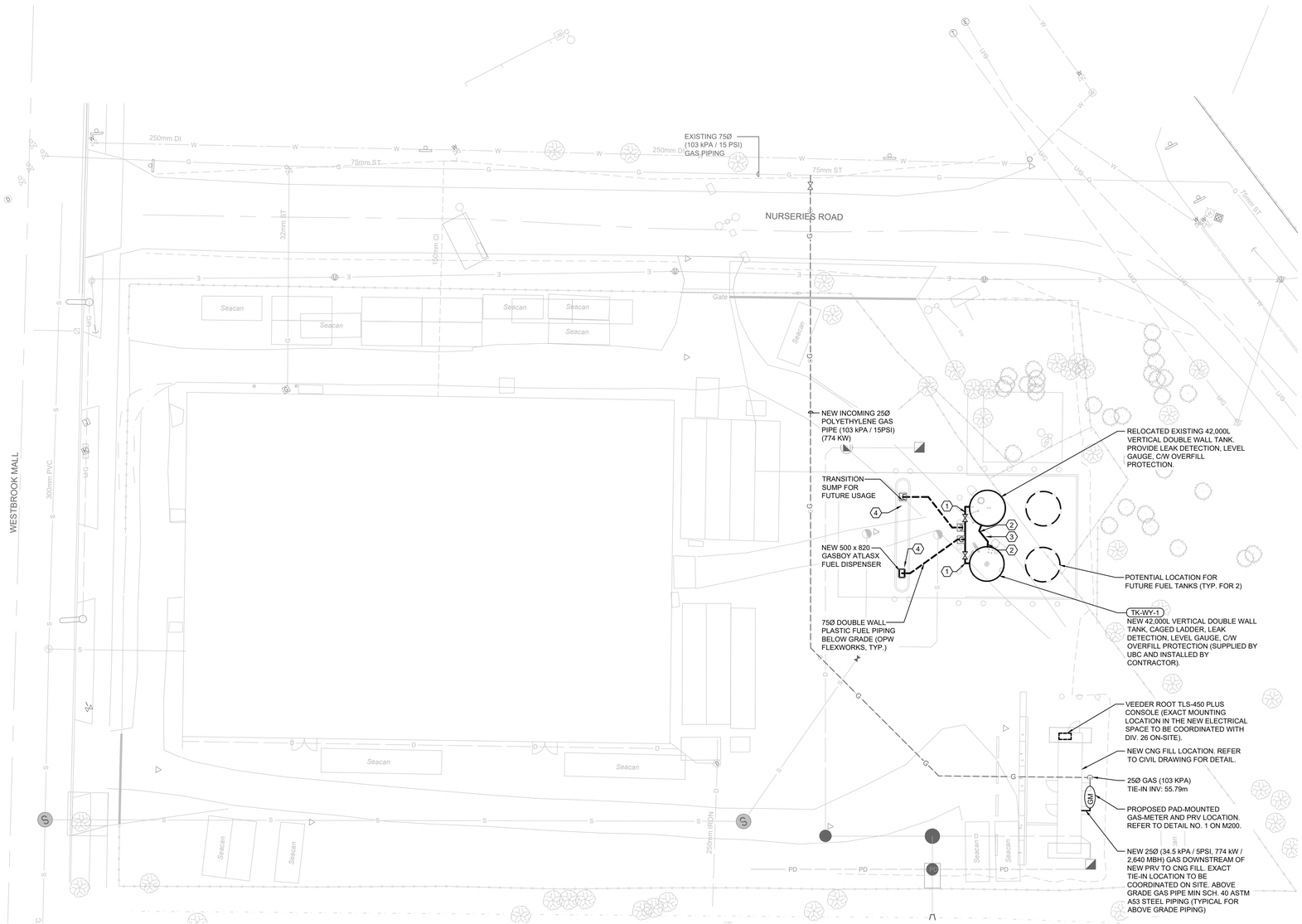
UBC SOUTH CAMPUS WORK YARD MECHANICAL EQUIPMENT SCHEDULES

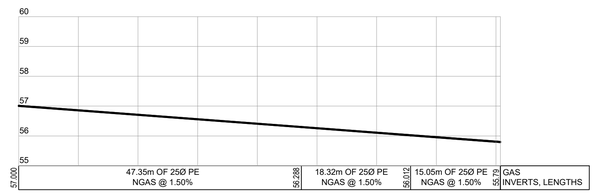
Drawing No.
M002

Project Number
2121-01293-00

Rev.
D



1 M100 WAREHOUSE YARD SITE LAYOUT PLAN
SCALE: 1:250



2 M100 GAS PROFILE
SCALE: NTS

GENERAL NOTES:

NEW INCOMING GAS PIPING:

CONTRACTOR IS TO CONNECT NEW 25Ø (34.5 kPA/5 PSI) GAS PIPE TO NEW INCOMING FROM THE EXISTING 75Ø GAS MAIN.

INSTALL A NEW GAS METER SET USING DRESSER 800 METER AND REGULATORS PER UBC TECHNICAL GUIDELINE. UBC WILL FACILITATE THE PROPOSED GAS METER SET ORDERING, BUT THE PROJECT WILL PAY FOR THE NEW METER SET PURCHASE AND INSTALLATION COST.

CONTRACTOR TO NOTE THE GAS METER AND RELATED FITTINGS WILL BE PROVIDED BY UBC. THE PROJECT SCOPE OF WORK IS THAT QUALIFIED GAS CONTRACTOR (AS APPROVED BY UBC EWS) TO PERFORM THE PROPOSED METER SET INSTALLATION (PRE-MANUFACTURED) AND SERVICE CONNECTION FROM METER TO SET TO EXISTING HIGH PRESSURE PIPE. TO SUBMIT UTILITY SERVICE ACTIVATION APPLICATION REQUEST FOR GAS SERVICE ACTIVATION AFTER THE NEW METER SET IS INSTALLED. COORDINATION OF THE NEW GAS METER INSTALLATION WITH THE UBC MECHANICAL UTILITIES ENERGY AND WATER SERVICES TEAM, PURGE THE EXISTING GAS LINE, CONNECT THE NEW 34.5kPa 25Ø G/S GAS PIPING AS WELL AS THE EXISTING GAS PIPING TO THE NEW GAS METER ASSEMBLY. THE ALL NEW GAS PIPING NEEDS TO BE TAGGED ACCORDING TO UBC SAFETY REQUIREMENTS.

GAS CONTRACTORS NOT ALREADY PRE-APPROVED BY UBC EWS WILL NEED TO SUBMIT THEIR QUALIFICATION DOCUMENTS INCLUDING CONTRACTOR'S BUSINESS PERMIT CREDENTIAL, GAS MAIN HOT TAP EXPERIENCE AND PROJECT REFERENCES FOR UBC REVIEW AND APPROVAL.

PIPING:

BELOW GRADE: SDR11 SERIES 125 POLYETHYLENE, MANUFACTURED TO CAN 3-B137.4M86. NEW UNDERGROUND VALVES SHALL BE PSV POLYETHYLENE SHUT OFF VALVES WITH BUTT FUSION OUTLET ENDS, TO ACCOMMODATE SDR 11 PIPE, CONFIRMING TO ASTM D-2513. PIPE FITTINGS SHALL BE BUTT HEAT FUSION POLYETHYLENE MANUFACTURED TO ASTM D-3261-85.

ABOVE GRADE: MIN. SCH. 40 ASTM A53 STEEL PIPING. UP TO, BUT NOT INCLUDING THE GAS METER ASSEMBLY, ALL PIPING SHALL BE PAINTED YELLOW. ALL PIPING UP TO 2" SIZE SHALL BE SOCKET WELDED, MANUFACTURED TO ASTM A182. NEW PIPING OVER 2" MAY BE BUTT WELDED. ALL ABOVEGROUND VALVES SHALL BE BRONZE PLUG-TYPE SHUTOFF VALVES WITH THREADED OUTLET ENDS TO ACCOMMODATE A53 STEEL PIPE, AND CONFORMING TO ASTM B62.

EXISTING CNG FACILITY DECOMMISSIONING:

CONTRACTOR TO REMOVE THE EXISTING CNG FILL STATION AND DECOMMISSION THE EXISTING GAS LINE. ALL WORK, INCLUDING THE EXISTING CNG DECOMMISSIONING AND PURGING SHALL BE IN ACCORDANCE WITH CSA B108.23, THE EXISTING GAS LINE PURGING SHALL BE IN ACCORDANCE WITH CSA B149.1-20.

FOR ADDITIONAL INFORMATION, CONTACT TECHNICAL SAFETY BC:

RYAN MILLIGAN | SENIOR SAFETY OFFICER, GAS
M: 250-213-1070
E: engage@technicalsafetybc.ca

FUEL (DIESEL) STORAGE AND MANAGEMENT SYSTEM:

PROVIDE NEW LEAK DETECTIONS, LEVEL INDICATORS (GAUGE AND SENSOR), OVERFILL PROTECTIONS, ALARMS, VENTS, ETC. FOR BOTH NEW AND EXISTING DIESEL TANKS.

INTEGRATE LEVEL INDICATOR, LEAK DETECTION, AND ALARMS FOR BOTH NEW AND EXISTING DIESEL TANKS TO THE NEW VEEDER ROOT CONSOLE.

FUEL SYSTEM EQUIPMENT AND COMPONENTS, SUCH AS NEW STORAGE TANK, FUEL DISPENSER, AND FUEL MANAGEMENT SYSTEM-RELATED ACCESSORIES WILL BE SUPPLIED BY UBC. FUEL SYSTEM EQUIPMENT AND PIPING WILL BE INSTALLED BY CONTRACTOR.

KEY NOTES

1. 75Ø FUEL (DIESEL) SUPPLY LINE.
2. 50Ø TANK EQUALIZING LINE/INTERCONNECTION. COORDINATE TANKS' ORIENTATION ON-SITE. MAINTAIN TANK AND TANK'S EQUALIZING LINE BETWEEN TANKS AT THE SAME ELEVATION. REFER TO DRAWING NO. 4 ON M201.
3. PROVIDE HEAVY DUTY PIPE COVER.
4. TRANSITION SUMP FOR CLARITY.

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THE UNIVERSITY OF BRITISH COLUMBIA

TRUE NORTH

ORIGINAL DWG SIZE: A1 (594 x 841mm)

McElhanney
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13450 102nd Avenue
Surrey BC
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T 604 596 0391

AMEGroup
200 - 638 Smithe St
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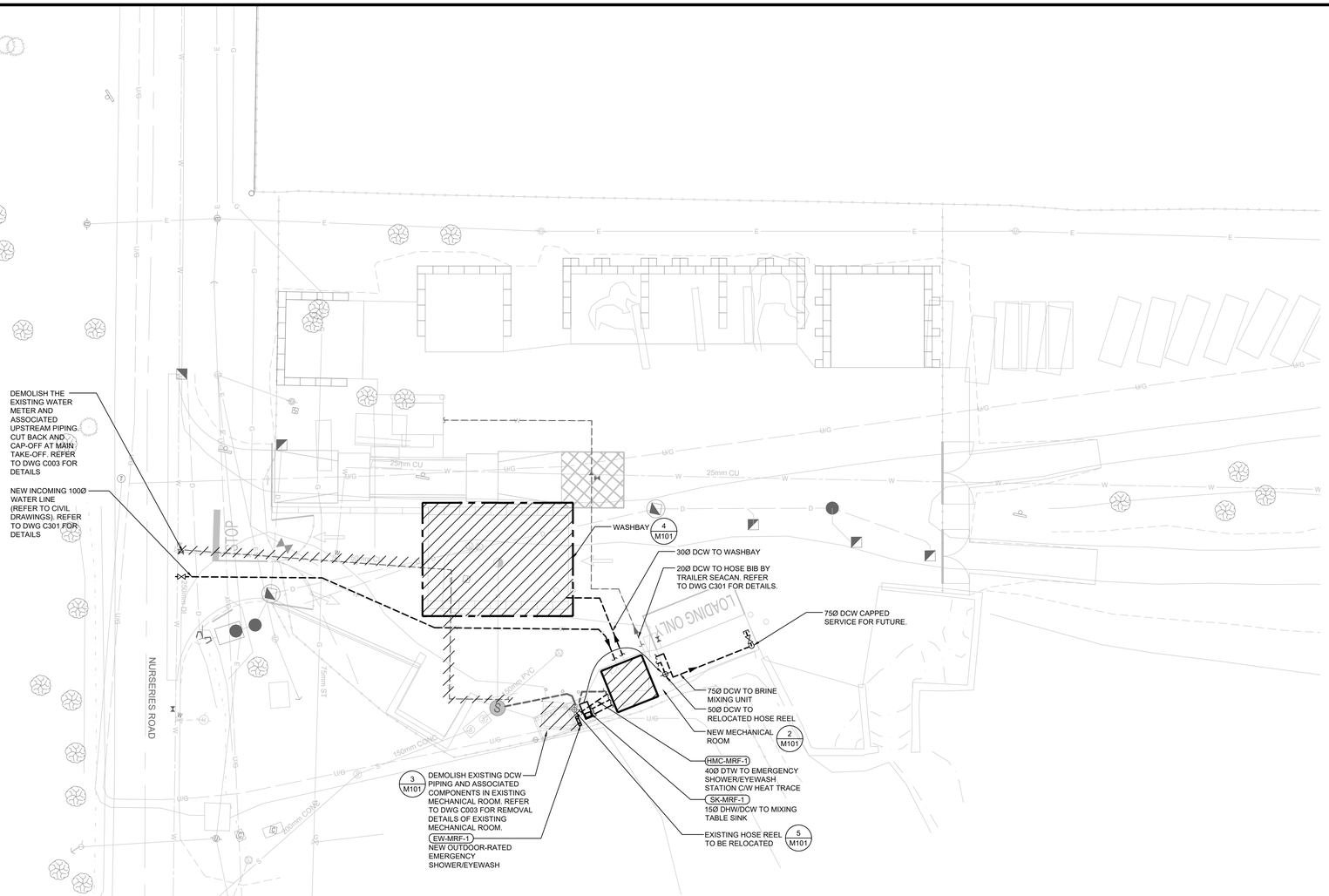
6200 UNIVERSITY BLVD, VANCOUVER, BC V6T 1Z4

UBC SOUTH CAMPUS WORK YARD
WAREHOUSE YARD SITE LAYOUT PLAN

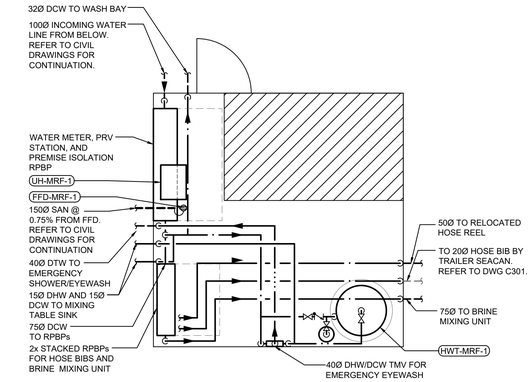
Drawing No.
M100

Project Number
2121-01293-00

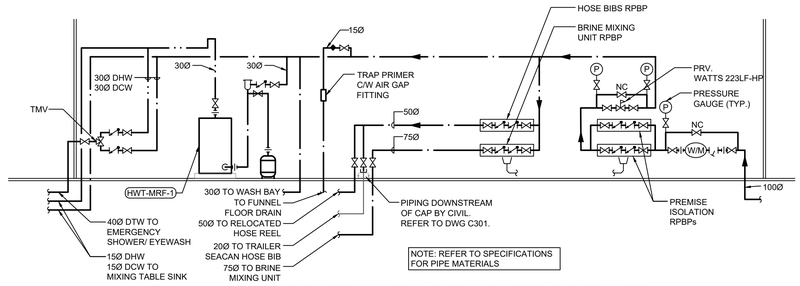
Rev.
D



1/M101 MATERIAL RECOVERY FACILITY SITE LAYOUT PLAN
SCALE: 1:250



2/M101 NEW MECHANICAL ROOM DETAIL
SCALE: 1:50



3/M101 NEW MECHANICAL ROOM WATER SCHEMATIC
SCALE: 1:50

3/M101 EXISTING MECHANICAL ROOM
SCALE: N.T.S.

5/M101 EXISTING HOSE REEL
SCALE: N.T.S.

GENERAL NOTES:

- **NEW INCOMING GAS PIPING**:

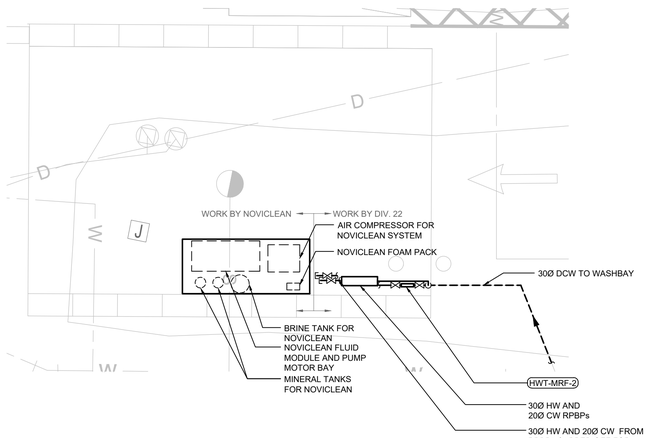
CONTRACTOR IS TO CONNECT NEW 25Ø (14 kPA/2 PSI) GAS PIPE TO NEW INCOMING GAS FROM THE EXISTING 75Ø GAS MAIN.

INSTALL A NEW GAS METER SET USING DRESSER 800 METER AND REGULATORS PER UBC TECHNICAL GUIDELINE. UBC WILL FACILITATE THE PROPOSED GAS METER SET ORDERING, BUT THE PROJECT WILL PAY FOR THE NEW METER SET PURCHASE AND INSTALLATION COST.

CONTRACTOR TO NOTE THE GAS METER AND RELATED FITTINGS WILL BE PROVIDED BY UBC. THE PROJECT SCOPE OF WORK IS THAT QUALIFIED GAS CONTRACTOR (AS APPROVED BY UBC EWS) TO PERFORM THE PROPOSED METER SET INSTALLATION (PRE-MANUFACTURED) AND SERVICE CONNECTION FROM METER TO SET TO EXISTING HIGH PRESSURE PIPE, TO SUBMIT UTILITY SERVICE ACTIVATION APPLICATION REQUEST FOR GAS SERVICE ACTIVATION AFTER THE NEW METER SET IS INSTALLED. COORDINATION OF THE NEW GAS METER INSTALLATION WITH THE UBC MECHANICAL UTILITIES ENERGY AND WATER SERVICES TEAM, PURGE THE EXISTING GAS LINE, CONNECT THE NEW 14kPa 25Ø G/S GAS PIPING AS WELL AS THE EXISTING GAS PIPING TO THE NEW GAS METER ASSEMBLY. THE ALL NEW GAS PIPING NEEDS TO BE TAGGED ACCORDING TO UBC SAFETY REQUIREMENTS.

GAS CONTRACTORS NOT ALREADY PRE-APPROVED BY UBC EWS WILL NEED TO SUBMIT THEIR QUALIFICATION DOCUMENTS INCLUDING CONTRACTOR'S BUSINESS PERMIT CREDENTIAL, GAS MAIN HOT TAP EXPEREINCE AND PROJECT REFERENCES FOR UBC REVIEW AND APPROVAL.

- NEW BELOW GRADE DOMESTIC WATER PIPING TO BE BURIED BELOW UBC FROST LINE.



4/M101 COVERED WASHBAY DETAIL
SCALE: 1:100

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CD	MC/SD	MC/SD	IT
C	2025-07-04	ISSUED FOR 50% CD	MC/SD	MC/SD	IT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MC/SD	MC/SD	IT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MC/SD	MC/SD	IT

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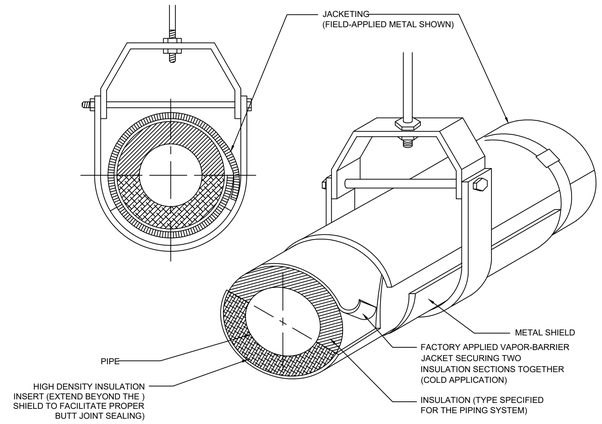
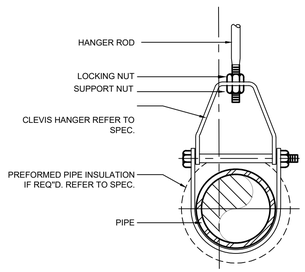
UBC SOUTH CAMPUS WORK YARD MATERIAL RECOVERY FACILITY SITE LAYOUT PLAN

Drawing No. M101

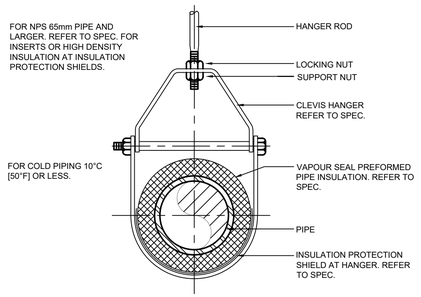
Project Number 2121-01293-00

Rev. D



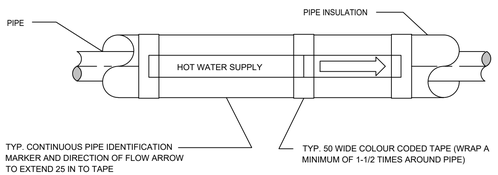


HANGER DETAIL FOR INSULATED HOT PIPING
UP TO NPS 3 (75mm) OR ALL SIZES OF BARE PIPE



HANGER DETAIL FOR PIPING WITH
VAPOUR SEALED INSULATION

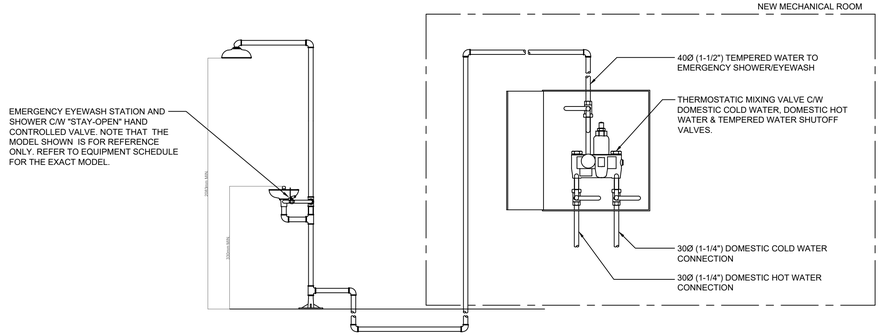
5 M200 INSULATED PIPE HANGERS
SCALE: NTS



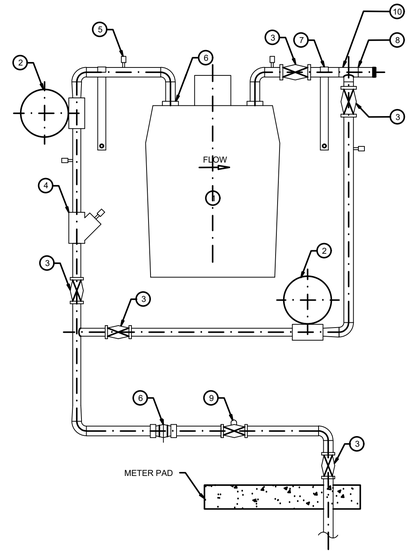
DETAIL NOTES
1. ALL DIMENSIONS IN MM.
2. APPLY A CONTINUOUS COATING OF CONTACT CEMENT TO THE LABEL TO ENSURE PERMANENT ADHESION
3. REFER TO SPECIFICATION FOR COLOUR CODING OF SERVICES AND INSTALLATION

6 M200 PIPE IDENTIFICATION
SCALE: NTS

3 M200 NOT USED
SCALE: NTS



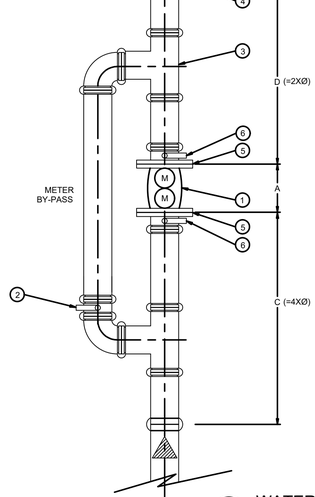
4 M200 EMERGENCY SHOWER/EYEWASH PIPING
SCALE: NTS



NOTES
1. TYPE OF METER BASED ON CAPACITIES/CONS. < 2000 CFH - DIAPHRAGM > 2000 CFH - TURBINE OR ROTARY
2. ALL MATERIAL TO BE SUPPLIED BY UBC UTILITIES. USER MUST PROVIDE THE REQUIRED GAS LOADS.
3. METER SET TO BE FABRICATED USING WELDED FITTINGS WHERE POSSIBLE.
4. METERS TO BE INSTALLED OUTDOORS ONLY.
5. METER ASSEMBLY TO MEET CANADA ELECTRICITY AND GAS INSPECTIONS ACT AND MEASUREMENT CANADA'S PRESSURE FACTOR MEASUREMENT (PFM) REQUIREMENTS.
6. BOLLARDS AND/OR CHAINLINK FENCE ARE REQUIRED WHERE THERE IS RISK OF DAMAGE BY VEHICLES OR VANDALISM.
7. METER TO BE INTEGRATED INTO ELECTRICAL METERING SYSTEM AS PER DIVISION-16, SECTION 16460, DRAWING E4-6.
8. DEMARCATION POINT OF SERVICE IS:
a) IMMEDIATELY DOWNSTREAM LAST VALVE.
b) IMMEDIATELY DOWNSTREAM OF SERVICE TEE IF THERE IS NO VALVE AT METER OUTLET.
9. SEISMIC VALVE IS INSTALLED ONLY IF REQUIRED BY DESIGN ENGINEER.

PART LIST:
1. DIAPHRAGM GAS METER (SEE NOTE 1)
2. GAS PRESSURE REGULATOR
3. GAS VALVE
4. STRAINER
5. PRESSURE TEST PORT
6. DIELECTRIC UNION
7. SUPPORT BRACKET
8. DEMARCATION POINT
9. SEISMIC VALVE (SEE NOTES)
10. SERVICE TEE

1 M200 GAS METER INSTALLATION DETAIL
SCALE: NTS



NOTES
1. ALL MATERIAL TO BE SUPPLIED (WATER METER TO BE PURCHASED THROUGH UBC EWS) AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE SPECIFIED.
2. PIPE MATERIAL: Ø4" AND LARGER TO BE CL 54 DUCTILE IRON (CEMENT LINED). SMALLER THAN Ø4" TO BE TYPE "K" COPPER.
3. METER TO BE INTEGRATED INTO ELECTRICAL METERING SYSTEM AS PER DIVISION-16, SECTION 261600, DRAWING E4-6.
4. MINIMUM AND MAXIMUM INSTALLATION HEIGHT OF THE CENTRELINE OF THE WATER METER: MINIMUM ABOVE THE FINISHED FLOOR: 600 mm MAXIMUM ABOVE THE FINISHED FLOOR: 1350mm

PART LIST:
1. NEPTUNE MACH 10 ULTRASONIC WATER METER WITH R900i ARB PIT METER RECEPTACLE, AS SPECIFIED BY UBC EWS (SUPPLIED ONLY BY UBC EWS, AT PROJECT COST).
2. VIC 300 BUTTERFLY VALVE (LOCKABLE REQUIRED)
3. VIC 25 TEE (2 OFF)
4. STYLE 77 STD FLEXIBLE COUPLING
5. STYLE 741 VIC FLANGE ADAPTER
6. VIC 300 BUTTERFLY VALVE

SIZE:	DIM. "A"	DIM. "C"	DIM. "D"
2"	10"	8"	4"
3"	12"	12"	6"
4"	14"	16"	8"
6"	18"	24"	12"

2 M200 WATER METER DETAIL (MACH 10)
SCALE: NTS

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D	2025-08-29	ISSUED FOR 90% CD	MC/SD	MC/SD	IT
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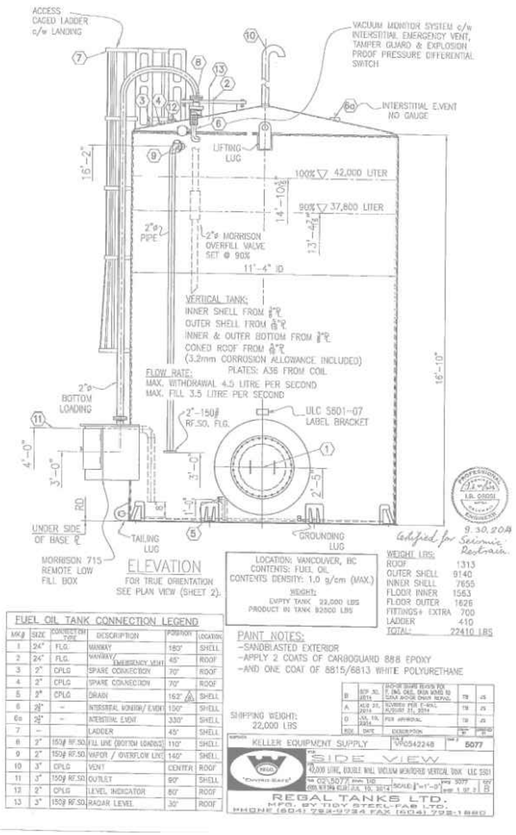
UBC SOUTH CAMPUS WORK YARD DETAILS

Drawing No.
M200

Project Number
2121-01293-00

Rev.
D



FUEL OIL TANK CONNECTION LEGEND						
MK#	SIZE	CONNECTION TYPE	DESCRIPTION	POSITION	LOCATION
1	2½"	FLG.	MANWAY	180°	SHELL
2	24"	FLG.	MANWAY EMERGENCY VENT	45°	ROOF
3	2"	OPLG	SPARE CONNECTION	70°	ROOF
4	2"	OPLG	SPARE CONNECTION	70°	ROOF
5	3"	OPLG	DRAIN	162.5°	SHELL
6	2½"	–	INTERSTIAL MONITOR/ EVENT	150°	SHELL
6a	2½"	–	INTERSTIAL EVENT	330°	SHELL
7	–	–	LADDER	45°	SHELL
8	3"	150# RF.SO.	FILL LINE (BOTTOM LOADED)	110°	SHELL
9	2"	150# RF.SO.	VAPOR / OVERFLOW LINE	140°	SHELL
10	3"	OPLG	VENT	CENTER	ROOF
11	3"	150# RF.SO.	OUTLET	90°	SHELL
12	2"	OPLG	LEVEL INDICATOR	80°	ROOF
13	3"	150# RF.SO.	RADAR LEVEL	30°	ROOF

LOCATION: VANCOUVER, BC
CONTENTS: FUEL OIL
CONTENTS DENSITY: 1.0 g/cm (MAX.)
WEIGHT:
EMPTY TANK 22,000 LBS
PRODUCT IN TANK 92000 LBS

Seismic Restrain. Ratified for 9.30.2014

WEIGHT LBS:	
ROOF	1313
OUTER SHELL	9140
INNER SHELL	7655
FLOOR INNER	1563
FLOOR OUTER	1626
FITTINGS+ EXTRA	700
LADDER	410
TOTAL:	22410 LBS

PAINT NOTES:
-SANDBLASTED EXTERIOR
-APPLY 2 COATS OF CARBOGUARD 888 EPOXY
-AND ONE COAT OF 8815/6813 WHITE POLYURETHANE

SHIPPING WEIGHT: 22,000 LBS

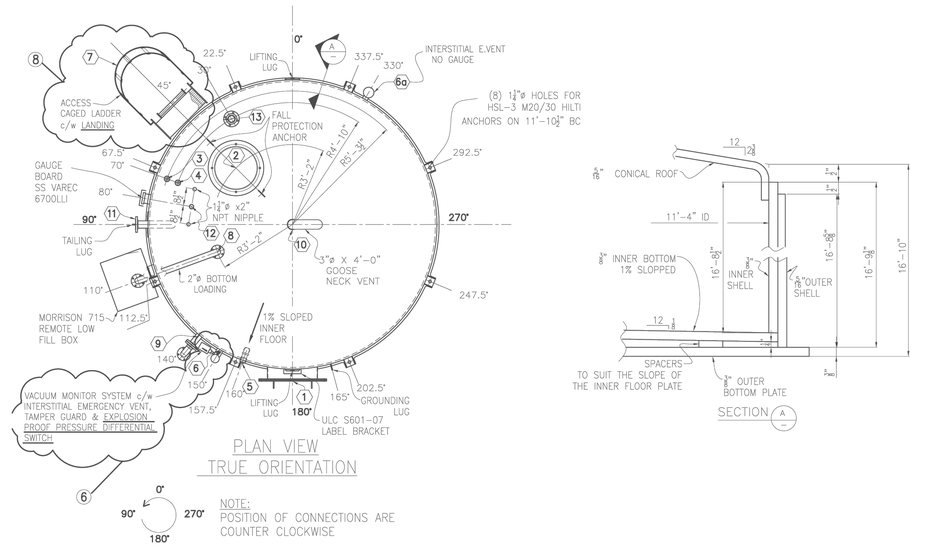
REV	DATE	DESCRIPTION	BY	APP'D
B	NOV. 30, 2014	SHOP DRAWING REVIEW FOR TANK, OIL, RUN WIRES TO CONTROL BOOTH ONLY REVISED	TB	JS
A	AUG. 22, 2014	SUBMISSION FOR REVIEW	TB	JS
0	JUL. 15, 2014	FOR APPROVAL	TB	JS

KELLER EQUIPMENT SUPPLY
ORDER NO. 0542248
5077

SIDE VIEW
12,000 USG, DOUBLE WALL VACUUM MONITORED VERTICAL TANK LLC 5301
CSA B139 FUEL OIL TANK
SCALE: 1"=1'-0" DWG NO. 5077 REV B

REGAL TANKS LTD.
MFG. BY TIDY STEEL-FAB LTD.
PHONE (604) 794-3234 FAX (604) 794-1882

3 M201 EXISTING FUEL TANK DETAIL
SCALE: NTS



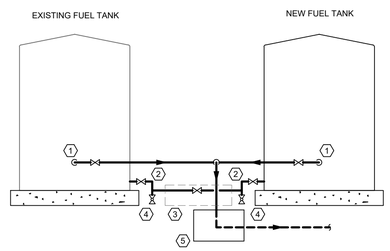
PLAN VIEW
TRUE ORIENTATION

NOTE:
POSITION OF CONNECTIONS ARE COUNTER CLOCKWISE

SECTION A

1 M201 EXISTING FUEL TANK DETAIL
SCALE: NTS

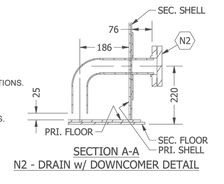
KEY NOTES
1 75Ø FUEL (DIESEL) SUPPLY LINE.
2 50Ø TANK EQUALIZING (INTERCONNECTION) PIPE .
3 PROVIDE HEAVY DUTY PIPE COVER.
4 DRAIN VALVE.
5 TRANSITION SUMP.



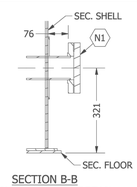
4 M201 NEW AND EXISTING FUEL TANKS' INTERCONNECTION
SCALE: NTS

SHIPPED LOOSE SCHEDULE			
MARK	QTY	DESCRIPTION	REMARKS
1	1	PRESSURE/VACCUUM NORMAL VENT	
2	1	3"x48" VENT PIPE	
3	1	ACCESS LADDER CAGE	
4	1	3" REMOTE FILL	c/w CAMLOCK, DUST CAP, 40L SPILL PREVENTOR

NOTES:
1. TANK DESIGN, FABRICATION AND TESTING CONFORMS TO ULC-S601 SPECIFICATIONS.
2. TANK PRODUCTION AIR/SOAP LEAK TESTING: 10-20 kPa (1.5-3.0 PSI)
3. DIMENSIONS MAY VARY DUE TO MANUFACTURING TOLERANCES.
4. FITTING AND LUG MEASUREMENTS ARE FROM THE TOP OF THE FLOOR.
5. FLANGE BOLT HOLES TO STRADDLE OR '2-HOLED' TANK VERTICAL CENTERLINES.
6. DECALS: WESTEEL AND UCI, STANDARD DECALS ARE APPLIED AS REQUIRED.
7. INT. FINISH: AS WELDED - SWEEP TANK CLEAN.
8. EXT. FINISH: WESTEEL STANDARD WHITE.
9. NORMAL VENT MUST BE INSTALLED PRIOR TO USE.
10. TOUCH-UP PAINT AND GAUGE CHART ARE SHIPPED LOOSE WITH TANK.
11. STANDARD WESTEEL DECALS INSTALLED.

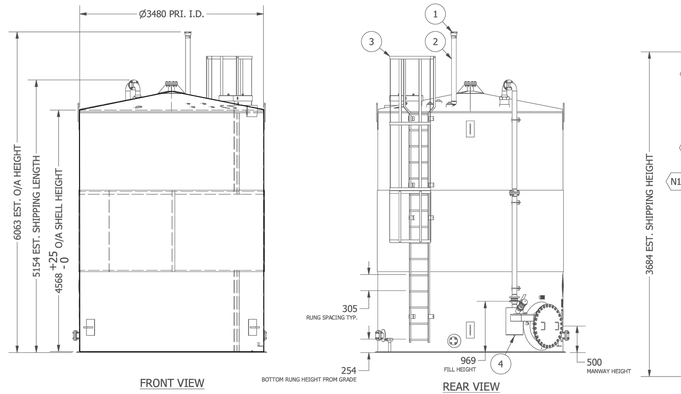


SECTION A-A
N2 - DRAIN w/ DOWNCOMER DETAIL



SECTION B-B
N1 - INLET/OUTLET DETAIL

GENERAL ARRANGEMENT SCHEDULE			
MARK	QTY	DESCRIPTION	REMARKS
L1	2	VERTICAL LIFT LUG (TOP)	3/4" PL. x 6" x 13 3/4" Lg. - 2 1/2"Dia. HOLE - c/w REPAD
L2	1	TAILING LUG (SIDE)	1/2" PL. x 5" x 7-1/2" Lg. - 2 1/2"Dia. HOLE - c/w REPAD
L3	1	CONSTRUCTION LUG	1/2" PL. x 5" x 7-1/2" Lg. - 2 1/2"Dia. HOLE - c/w REPAD
L4	2	TIE-DOWN LUGS (SIDE)	1/2" PL. x 5" x 7-1/2" Lg. - 2 1/2"Dia. HOLE - c/w REPAD
L5	2	GROUNDING LUG	1/4" PL. x 3" x 3"
NP	1	NAMEPLATE MOUNT BRACKET	c/w ULC NAMEPLATE, INSTALLED
M1	1	24" Dia. SIDE ELL MANHOLE	c/w BOLTED COVER, GARLOCK GASKET, REPAD
N1	2	3" 150# ANSI RF FLANGE - INLET/OUTLET	c/w BLIND FLANGE
N2	1	2" 150# ANSI RF FLANGE - DRAIN	c/w DOWNCOMER, BLIND FLANGE
N3	1	1" NPT - SECONDARY MONITOR	c/w THOMAS 5100 LEAK GAUGE
V1	1	12" PRE. EMERGENCY VENT	MORR FLG 24/40F-0100AV BOZ
V2	1	12" SEC. EMERGENCY VENT	MORR FLG 24/40F-0100AV BOZ
V3	1	3" NORMAL VENT	VENT: PRESSURE VAC & 48" VENT STACK (SHIPPED LOOSE)
C1	1	4" NPT CPLG - SPARE	c/w M.I. PLUG
C2	2	4" NPT CPLG - SPARE	c/w 4"x2" BSHG, M.I. PLUG
C3	1	6" NPT CPLG - FILL PORT	c/w 3" OVERFILL PREVENTION VALVE, DROP TUBE, 3" FILL PIPING



TANK SPECIFICATIONS:
FABRICATION CODE: ULC S601
TANK TYPE: VERTICAL DOUBLE WALL
NOMINAL CAPACITY L: 42 00
MATERIAL: CARBON STEEL
MINIMUM PRIMARY MATERIAL THICKNESS (mm): 1/4" (SHELL)
MAX. OPERATING PRESSURE: 7 kPa
MAX. OPERATION VACUUM: 300 Pa
REQUIRED VENTING CAPACITY (m^3/min): 209
*LIFT LUG **NOT** CERTIFIED TO LIFT TANK CONTAINING PRODUCT

2 M201 NEW FUEL TANK DETAIL
SCALE: NTS

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CD	MC/SD	MC/SD	IT
C	2025-07-04	ISSUED FOR 50% CD	MC/SD	MC/SD	IT
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MC/SD	MC/SD	IT
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MC/SD	MC/SD	IT

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: A1 (594 x 841mm)

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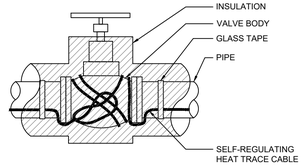
UBC SOUTH CAMPUS WORK YARD DETAILS

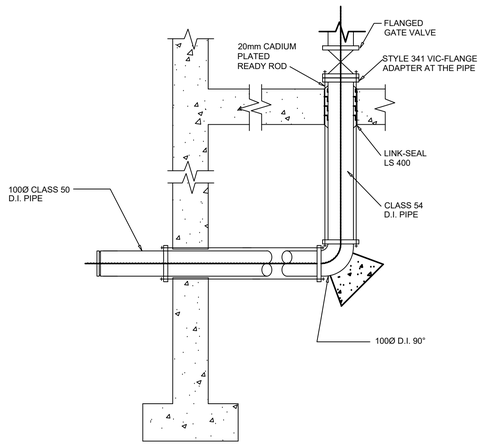
Drawing No.
M201

Project Number	Rev.
2121-01293-00	D



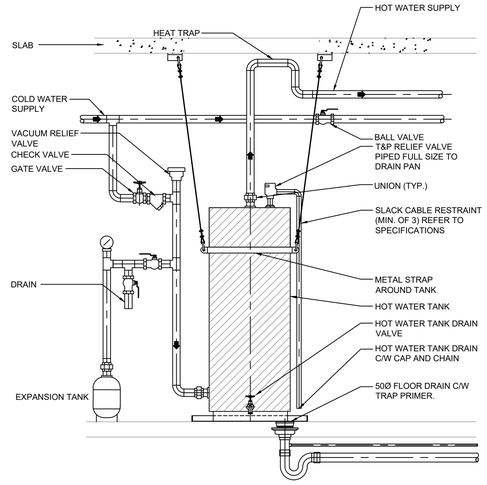
5 M202 HEAT TRACE FOR VALVE BODY

SCALE: NTS



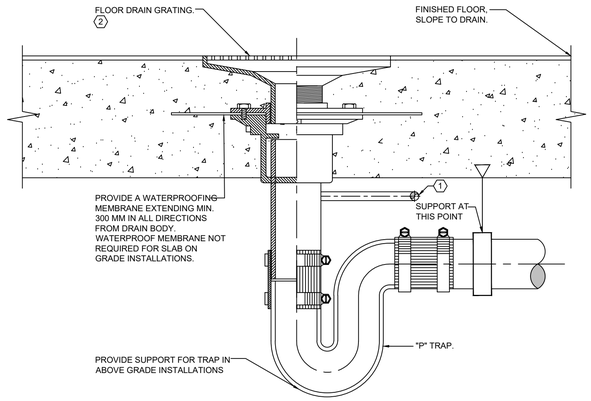
6 M202 WATER ENTRY DETAIL

SCALE: NTS



3 M202 ELECTRIC DOMESTIC HOT WATER TANK

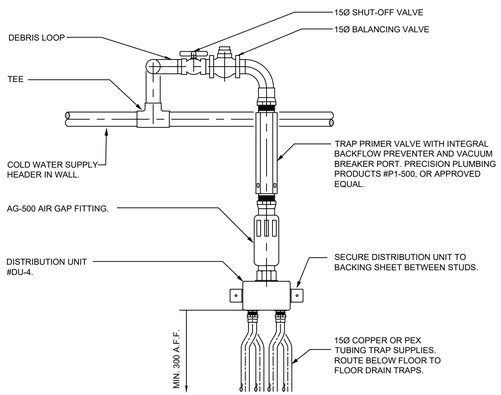
SCALE: NTS



1. 15Ø TRAP PRIMER SUPPLY LINE.
2. REFER TO SPECIFICATIONS ON FLOOR GRATINGS FOR SPECIFIC APPLICATIONS. FOR INSTALLATIONS WHERE SEAMLESS FLOORING IS TO BE USED, A SURFACE MEMBRANE STYLE GRATING IS TO BE USED AND THE INSTALLATION MUST MEET WITH THE APPROVAL OF THE FLOORING CONTRACTOR.

1 M202 FLOOR DRAIN INSTALLATION DETAIL

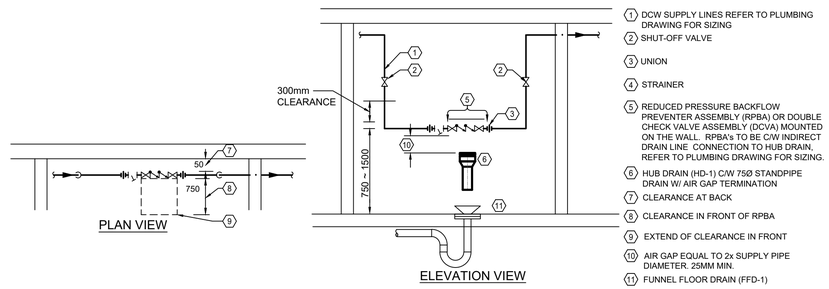
SCALE: NTS



DETAIL NOTES
1. ALL DIMENSIONS IN MM.
2. MOUNT ASSEMBLY WITHIN WALL CAVITY AND PROVIDE ACCESS PANEL.
3. FOR PROPER FUNCTION, DO NOT INSTALL OFF A COLD WATER PIPE LARGER THAN 30Ø

7 M202 TRAP PRIMER DETAIL

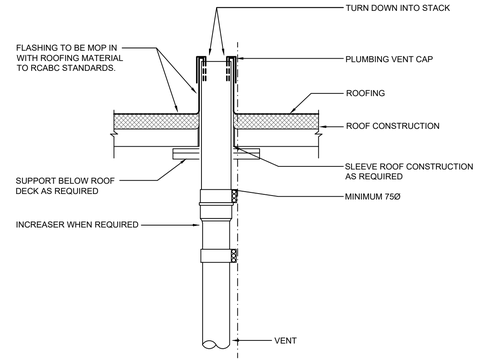
SCALE: NTS



1. DCW SUPPLY LINES REFER TO PLUMBING DRAWING FOR SIZING
2. SHUT-OFF VALVE
3. UNION
4. STRAINER
5. REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY (RPBA) OR DOUBLE CHECK VALVE ASSEMBLY (DCVA) MOUNTED ON THE WALL. RPBA's TO BE C/W INDIRECT DRAIN LINE CONNECTION TO HUB DRAIN. REFER TO PLUMBING DRAWING FOR SIZING.
6. HUB DRAIN (HD-1) C/W 75Ø STANDPIPE DRAIN W/ AIR GAP TERMINATION
7. CLEARANCE AT BACK
8. CLEARANCE IN FRONT OF RPBA
9. EXTEND OF CLEARANCE IN FRONT
10. AIR GAP EQUAL TO 2x SUPPLY PIPE DIAMETER. 25MM MIN.
11. FUNNEL FLOOR DRAIN (FFD-1)

4 M202 RPBP AND DCVA INSTALLATION DETAIL

SCALE: NTS



2 M202 PLUMBING VENT THROUGH ROOF

SCALE: NTS

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-29	ISSUED FOR 90% CD	MC/SD	MC/SD	IT
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THE UNIVERSITY OF BRITISH COLUMBIA
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UBC SOUTH CAMPUS WORK YARD DETAILS

Drawing No.
M202

Project Number
2121-01293-00

Rev.
D

COMMON WORKS

1. GENERAL

1.1 THE UNIVERSITY OF BRITISH COLUMBIA TECHNICAL GUIDELINES

THE UBC TECHNICAL GUIDELINES SERVE AS THE CODE OF QUALITY AND PERFORMANCE FOR THE CONSTRUCTION AND RENOVATION OF UNIVERSITY-OWNED INSTITUTIONAL BUILDINGS. THE UBC TECHNICAL GUIDELINES OUTLINE THE TECHNICAL REQUIREMENTS AND ESTABLISHES THE MINIMUM ACCEPTABLE STANDARDS FOR UBC PROJECTS.

THE UBC TECHNICAL GUIDELINES SHALL BE READ, INTERPRETED AND COORDINATED WITH ALL OTHER PARTS OF THIS SPECIFICATION.

WHERE A UBC TECHNICAL GUIDELINE IS INTERPRETED TO CONFLICT WITH THE PROVISIONS OF THIS SPECIFICATION WITH REGARD TO PRODUCT TYPE THE UBC TECHNICAL GUIDELINES SHALL PREVAIL. WHERE THE UBC TECHNICAL GUIDELINES CONFLICT WITH REGARD TO QUALITY, THE MORE STRINGENT SHALL PREVAIL. WHERE THE UBC TECHNICAL GUIDELINES CONFLICT WITH INDUSTRY STANDARDS, ACTS AND CODES, COMPLIANCE WITH THE STANDARDS, ACTS AND CODES SHALL PREVAIL.

THE CONTRACTOR SHALL BRING THESE CONFLICTS IN WRITING TO THE ATTENTION OF THE OWNER'S CONSULTANT.

1.2 GENERAL SCOPE

'PROVIDE' SHALL MEAN SUPPLY AND INSTALL.

'CONSULTANT' SHALL MEAN AME GROUP CONSULTING PROFESSIONAL ENGINEERS

PROVIDE COMPLETE, FULLY TESTED AND OPERATIONAL SYSTEMS TO MEET THE REQUIREMENTS DESCRIBED HEREIN AND IN COMPLETE ACCORD WITH APPLICABLE CODES AND ORDINANCES.

CONTRACT DOCUMENTS AND DRAWINGS ARE DIAGRAMMATIC. THEY ESTABLISH SCOPE, MATERIAL AND INSTALLATION QUALITY BUT ARE NOT DETAILED INSTALLATION INSTRUCTIONS.

FOLLOW MANUFACTURERS' RECOMMENDED INSTALLATION INSTRUCTIONS, DETAILS AND PROCEDURES FOR EQUIPMENT, SUPPLEMENTED BY REQUIREMENTS OF THE CONTRACT DOCUMENTS.

CLARIFICATIONS OR REQUESTS FOR ALTERNATE MATERIALS OR EQUIPMENT MUST BE SUBMITTED IN WRITING TO THE CONSULTANT NO LATER THAN SEVEN (7) WORKING DAYS PRIOR TO THE MECHANICAL TRADES' CLOSING TENDER DATE. APPROVAL OF REQUESTS SHALL ONLY BE GIVEN BY ADDENDUM.

MAKE REFERENCE TO ELECTRICAL, MECHANICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS WHEN SETTING OUT WORK. CONSULT WITH RESPECTIVE DIVISIONS IN SETTING OUT LOCATIONS FOR DUCTWORK, EQUIPMENT, AND PIPING, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL EVEN SPACING IS MAINTAINED. JOINTLY WORK OUT ALL CONFLICTS ON SITE BEFORE FABRICATING OR INSTALLING ANY MATERIALS OR EQUIPMENT.

1.3 CODE COMPLIANCE, PERMITS AND FEES

ALL WORK SHALL COMPLY WITH CURRENT EDITIONS OF THE NATIONAL, PROVINCIAL AND MUNICIPAL CODES, STANDARDS, ACTS AND BYLAWS AND WILL MEET THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

OBTAIN ALL PERMITS AND PAY ALL FEES APPLICABLE TO THE SCOPE OF WORK. CONTRACTOR SHALL ARRANGE FOR INSPECTIONS OF THE WORK BY THE AUTHORITIES HAVING JURISDICTION AND SHALL PROVIDE CERTIFICATES INDICATING FINAL APPROVAL.

1.4 COMPLIANCE WITH ENERGY CODE

ALL EQUIPMENT INSTALLED ON THIS PROJECT SHALL COMPLY WITH THE NATIONAL ENERGY CODE OF CANADA FOR BUILDINGS - 2020, ASHRAE STANDARD 90.1 - 2019

1.5 TENDER PRICE BREAKDOWN

SUBMIT A TENDER PRICE BREAKDOWN WITHIN THIRTY (30) DAYS OF TENDER CLOSING AND BEFORE FIRST PROGRESS CLAIM, IN A FORMAT AGREED TO WITH THE CONSULTANT. AS A MINIMUM INCLUDE EQUIPMENT, MATERIALS AND LABOUR FOR MECHANICAL, PLUMBING, SHEET METAL, FIRE PROTECTION AND CONTROLS.

1.6 SUBMITTALS

COMPLY WITH DIVISION 1 - SUBMISSION AND CLOSEOUT PROCEDURES AND IN ADDITION THE FOLLOWING:

SHOP DRAWINGS: PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT AS ELECTRONIC FILES (FILE FORMAT: . PDF, OR COMPARABLE). WHEN MANUFACTURER'S CUT SHEETS APPLY TO A PRODUCT SERIES RATHER THAN A SPECIFIC PRODUCT, THE DATA SPECIFICALLY APPLICABLE TO THE PROJECT SHALL BE HIGHLIGHTED OR CLEARLY INDICATED BY OTHER MEANS. EACH SUBMITTED PIECE OF LITERATURE AND DRAWINGS SHALL CLEARLY REFERENCE THE SPECIFICATION AND/OR DRAWING THAT THE SUBMITTAL IS TO COVER. GENERAL CATALOGS SHALL NOT BE ACCEPTED AS CUT SHEETS TO FULFILL SUBMITTAL REQUIREMENTS.

CLOSEOUT SUBMITTALS: PROVIDE A MINIMUM OF TWO (2) MECHANICAL OPERATION AND MAINTENANCE MANUALS AND ONE DIGITAL COPY, PREPARED BY THE TAB AND MECHANICAL CONTRACTOR.

OPERATION AND MAINTENANCE MANUAL APPROVED BY, AND FINAL COPIES DEPOSITED WITH THE CONSULTANT A MINIMUM OF 7-DAYS BEFORE FINAL INSPECTION.

OPERATION AND MAINTENANCE MANUAL TO INCLUDE BUT NOT LIMITED TO: LAYMAN'S DESCRIPTION OF THE SYSTEMS AND ASSOCIATED CONTROLS ORDERED BY THE AUTHORITY IN SERVICING, MAINTENANCE, OPERATION AND TROUBLE-SHOOTING INSTRUCTIONS FOR EACH ITEM OF EQUIPMENT; WARRANTIES; EQUIPMENT MANUFACTURER'S PERFORMANCE DATASHEETS INDICATING POINT OF OPERATION AS LEFT AFTER COMMISSIONING IS COMPLETE; TESTING, ADJUSTING AND BALANCING REPORTS.

SITE RECORDS: CONTRACTOR SHALL MAINTAIN 1 SET OF WHITE PRINTS AT CONTRACTORS COST TO MARK CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR. USE DIFFERENT COLOUR WATERPROOF INK FOR EACH SERVICE. DO NOT USE PENCIL OR BLACK INK. TRANSFER INFORMATION WEEKLY TO SHOW WORK AS ACTUALLY INSTALLED. DRAWINGS SHALL BE AVAILABLE FOR REFERENCE PURPOSES AND REVIEW.

RECORD DRAWINGS: PRIOR TO START OF TESTING, ADJUSTING AND BALANCING FOR MECHANICAL FINALIZE PRODUCTION OF RECORD DRAWINGS

RECORD DRAWINGS: USE FINAL SITE RECORD TO ELECTRONICALLY PRODUCE CAD AND PDF FILES THUS FORMING A "RECORD DRAWING" SET. IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 12 MM HIGH AS FOLLOWS: - "RECORD DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (SIGNATURE OF CONTRACTOR) (DATE); PERFORM TESTING, ADJUSTING AND BALANCING FOR HVAC USING RECORD DRAWINGS. SUBMIT RECORD DRAWINGS TO CONSULTANT FOR APPROVAL AND MAKE CORRECTIONS AS DIRECTED. PERFORM TESTING, ADJUSTING, AND BALANCING FOR HVAC USING RECORD DRAWINGS. PROVIDE COMPLETED REPRODUCIBLE RECORD DRAWINGS WITH FINAL OPERATING AND MAINTENANCE MANUALS WITHIN TWO (2) WEEKS OF SUBSTANTIAL COMPLETION. FAILURE TO SUBMIT DRAWINGS WILL RESULT IN THE WORK BEING UNDERTAKEN BY THE OWNER AND DEDUCTED FROM THE CONTRACTOR'S DEFICIENCY HOLD BACK AMOUNT. COST TO TRANSFER RECORD INFORMATION ONTO REPRODUCIBLE MEDIA & AUTO-CAD OR REVIT ARE THIS CONTRACTOR'S RESPONSIBILITY. CONSULTANT WILL RELEASE CAD DRAWINGS TO CONTRACTOR AFTER SIGNING A COPYRIGHT FORM. SHOULD THE CONTRACTOR CHOOSE TO UTILIZE THIS CONSULTANT FOR TRANSFERRING AS BUILT INFORMATION TO RECORD DRAWINGS, ALLOW $400 / SHEET FOR ALL DRAWINGS IN THE CONSTRUCTION SET. THIS WILL COVER COSTS FOR DRAFTING TIME & PRINTING COSTS.

1.7 QUALITY OF WORK

ALL WORK SHALL BE BY QUALIFIED TRADESMEN WITH VALID PROVINCIAL TRADE QUALIFICATION CERTIFICATES. SPOT CHECKS WILL BE MADE BY THE CONSULTANT. WORK WHICH DOES NOT CONFORM TO STANDARDS MAY BE REJECTED BY THE CONSULTANT. THE CONTRACTOR SHALL REDO REJECTED WORK TO THE ACCEPTED STANDARD AT NO COST TO THE OWNER.

1.8 METRIC CONVERSION

ALL UNITS ARE EXPRESSED IN SI UNITS. ON ALL SUBMITTALS (SHOP DRAWINGS ETC.) USE THE SAME SI UNITS AS STATED IN THE SPECIFICATION.

WHERE PIPES ARE SPECIFIED WITH METRIC DIMENSIONS AND IMPERIAL SIZED PIPES ARE AVAILABLE, PROVIDE EQUIVALENT NOMINAL IMPERIAL SIZED PIPE AS INDICATED IN THE TABLE, AND PROVIDE AT NO EXTRA COST ADAPTERS TO ENSURE COMPATIBLE CONNECTIONS TO ALL METRIC SIZED FITTINGS, EQUIPMENT AND PIPING.

WHEN CSA APPROVED SI METRIC PIPES ARE PROVIDED, THE CONTRACTOR SHALL PROVIDE AT NO EXTRA COST ADAPTERS TO ENSURE COMPATIBLE CONNECTIONS BETWEEN THE SI METRIC PIPES AND ALL NEW AND EXISTING PIPES, FITTINGS, AND EQUIPMENT.

EQUIVALENT NOMINAL DIAMETER OF PIPES

15MM = NPS ½
20MM = NPS ¾
25MM = NPS 1
30MM = NPS 1-1/4
40MM = NPS 1-1/2
50MM = NPS 2
65MM = NPS 2-1/2
75MM = NPS 3
100MM = NPS 4

1.9 DRAWINGS AND SPECIFICATIONS

SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS OBTAIN WRITTEN CLARIFICATION FROM THE CONSULTANT DURING THE TENDER PERIOD. WITHOUT A WRITTEN CLARIFICATION THE BETTER QUALITY AND/OR GREATER QUANTITY OF WORK OR MATERIALS SHALL BE ESTIMATED, PERFORMED AND FURNISHED WITHIN THE TENDERED PRICE.

1.10 CUTTING, PATCHING AND CORING

PROVIDE HOLES AND SLEEVES, CUTTING AND FITTING REQUIRED FOR MECHANICAL WORK. RELOCATE IMPROPERLY LOCATED HOLES AND SLEEVES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES.

OBTAIN WRITTEN APPROVAL FROM THE STRUCTURAL CONSULTANT BEFORE CUTTING OR BURNING STRUCTURAL MEMBERS.

PROVIDE X-RAY OF ALL REQUIRED PENETRATIONS OF THE FLOOR. X-RAY USE FOR LOCATING IN FLOOR REBAR AND CONDUIT TO BE DONE AFTER NORMAL WORKING HOURS. TAKE NECESSARY PRECAUTIONS TO PROTECT COMPUTER EQUIPMENT WHEN X-RAYING FLOORS. COORDINATE WITH OWNER.

1.11 INSTALLATION OF EQUIPMENT

PIPE ALL EQUIPMENT DRAINS TO BUILDING DRAINS EXCEPT SYSTEMS CONTAINING GLYCOL.

UNIONS AND FLANGES SHALL BE PROVIDED IN PIPING OR DUCTWORK TO PERMIT EASY REMOVAL OF EQUIPMENT.

MAINTAIN PERMANENT ACCESS TO EQUIPMENT FOR MAINTENANCE.

1.12 CONNECTIONS TO EXISTING SERVICES

MAINTAIN LIAISON WITH THE OWNER AND PROVIDE A MUTUALLY ACCEPTABLE SCHEDULE TO INTERRUPT, REROUTE, OR CONNECT TO EXISTING BUILDING SERVICES WITH THE MINIMUM OF INTERRUPTION OF THOSE SERVICES.

1.13 SELECTIVE DEMOLITION

REMOVE FROM SITE ALL EQUIPMENT, DUCTING OR PIPING WHICH IS NO LONGER REQUIRED BECAUSE OF WORK UNDER THIS CONTRACT. EXCEPT AS OTHERWISE STATED, SALVAGEABLE MATERIALS FROM AREA OF DEMOLITION SHALL BECOME THE PROPERTY OF THE OWNER AT HIS DISCRETION.

THE INTENT IS FOR A HAZ-MAT CONTRACTOR TO REMOVE ALL ASBESTOS CONTAINING MATERIAL PRIOR TO THE PROPOSED PROJECT WORK TAKING PLACE. NOTIFY THE CONSULTANT IF ASBESTOS CONTAINING MATERIAL IS SUSPECTED TO REMAIN ON SITE.

1.14 EQUIPMENT AND MATERIALS

WHERE TWO OR MORE PRODUCTS OF THE SAME TYPE ARE REQUIRED, PRODUCTS SHALL BE OF THE SAME MANUFACTURER.

NOTIFY THE CONSULTANT IN WRITING TEN (10) DAYS PRIOR TO THE TENDER CLOSE, ANY MATERIALS OR EQUIPMENT SPECIFIED WHICH IS NOT CURRENTLY AVAILABLE OR WILL NOT BE AVAILABLE FOR USE AS CALLED FOR HEREIN. FAILING THIS, THE CONTRACT WILL ASSUME THAT THE MOST EXPENSIVE ALTERNATE HAS BEEN INCLUDED IN THE TENDER PRICE.

APPROVED EQUIVALENTS AND/OR ALTERNATIVES TO SPECIFIED PRODUCTS SHALL BE EQUAL TO THE SPECIFIED PRODUCT IN EVERY RESPECT, OPERATE AS INTENDED, AND MEET THE SPACE, CAPACITY, AND NOISE REQUIREMENTS OUTLINED.

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL LABOUR AND MATERIALS REQUIRED BY ANY TRADES OR OTHER CONTRACTORS TO ACCOMMODATE THE USE OF OTHER THAN SPECIFIED MATERIALS OR EQUIPMENT. THE CONTRACTOR SHALL BEAR ANY AND ALL COSTS FOR DESIGN/SYSTEM MODIFICATIONS TO ACCOMMODATE THE "ALTERNATE" EQUIPMENT. EXTRAS WILL NOT BE APPROVED TO COVER SUCH WORK.

1.15 DELIVERY, STORAGE AND HANDLING

STORE MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN A CLEAN, DRY, WELL-VENTILATED AREA.

REPLACE DEFECTIVE OR DAMAGED MATERIALS WITH NEW.

1.16 FIRESTOPPING AND SMOKE SEALS

PROVIDE FIRESTOPPING SYSTEM(S) TO PROVIDE AND MAINTAIN A FIRE RESISTANCE RATING, AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH UL, WH, ULC, CUL OR FM DESIGN DETAILS FOR ALL MECHANICAL WORK IN DIVISIONS 21, 22, 23 AND 25

SOUND TRANSMISSION COEFFICIENT (STC) RATINGS TESTED TO ASTM E90-09 TO ACHIEVE STC RATINGS AS REQUIRED BY ARCHITECTURAL DRAWINGS.

ALL FIRESTOP SYSTEM INSTALLATIONS MUST MEET THE REQUIREMENTS OF CAN4-S115-M OR ULC S-115-M TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING. PROPOSED FIRESTOP MATERIALS AND METHODS SHALL CONFORM TO APPLICABLE GOVERNING CODES HAVING LOCAL JURISDICTION.

A MANUFACTURER'S DIRECT REPRESENTATIVE (NOT DISTRIBUTOR OR AGENT) SHALL BE ON-SITE DURING THE INITIAL INSTALLATION OF FIRESTOP SYSTEMS TO TRAIN APPROPRIATE CONTRACTOR PERSONNEL IN CORRECT SELECTION AND INSTALLATION PROCEDURES. THIS WILL BE DONE PER MANUFACTURER'S WRITTEN RECOMMENDATIONS PUBLISHED IN THEIR LITERATURE AND DRAWING DETAILS.

RETAIN AND PAY FOR THE SERVICE OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO INSPECT EACH AND EVERY MECHANICAL FIRESTOPPING INSTALLATION, AND AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, AND PROVIDE A REPORT ON ALL INSTALLATIONS. THE FIRESTOPPING ENGINEER SHALL PROVIDE LETTERS OF ASSURANCE TO THE OWNER'S CONSULTANT, IN ACCORDANCE WITH THE BC BUILDING CODE.

FOR THOSE FIRESTOP APPLICATIONS THAT EXIST FOR WHICH NO ULC OR CUL TESTED SYSTEM IS AVAILABLE THROUGH A MANUFACTURER, A MANUFACTURER'S ENGINEERING JUDGMENT DERIVED FROM SIMILAR ULC OR CUL SYSTEM DESIGNS OR OTHER TESTS WILL BE SUBMITTED TO LOCAL AUTHORITIES HAVING JURISDICTION FOR THEIR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ENGINEER JUDGMENT DRAWINGS WILL FOLLOW REQUIREMENTS SET FORTH BY THE INTERNATIONAL FIRESTOP COUNCIL AND THE AUTHORITIES HAVING JURISDICTION AND BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.

SUBMIT SHOP DRAWINGS OF ALL FIRESTOPPING SYSTEMS UNDER THIS SCOPE OF WORK. INCLUDE A SUMMARY OF ALL FIRESTOP SYSTEMS INCLUDED IN THE SUBMITTAL. INDICATE PENETRATING MATERIAL, WALL OR FLOOR CONSTRUCTION AND RATING, FIRESTOPPING ASSEMBLY.

1.17 ESCUTCHEONS AND PLATES

PROVIDE ESCUTCHEONS AND PLATES ON ALL PIPING AND DUCTWORK PASSING THROUGH FINISHED WALLS, FLOORS, AND CEILINGS.

1.18 GUARANTEE / WARRANTY

FURNISH A WRITTEN GUARANTEE STATING THAT ALL WORK EXECUTED IN THIS CONTRACT WILL BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL PERFORMANCE.

1.19 BALANCING

THE APPROVED BALANCING AGENCIES ARE: WESTERN MECHANICAL, K.D. ENGINEERING, FLOTECH MECHANICAL, BLUE COLLAR, CONTROLTEK, RAIN CITY TECHNICAL SERVICES, NOVA GREEN, KANE, CRANBERRY TECHNICAL SERVICES.

BALANCE EQUIPMENT QUANTITIES INDICATED ON THE DRAWINGS AND IN THIS SPECIFICATION. SUBMIT A PDF COPY OF THE REPORT TO THE CONSULTANT WITHIN TWO (2) WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO SUBMIT THE REPORT WITHIN THE SPECIFIED TIME WILL RESULT IN THE WORK BEING DONE BY THE OWNER AND THE COSTS DEDUCTED FROM FINAL PAYMENT.

BALANCING SHALL BE PERFORMED TO THE FOLLOWING:

PUMPS AND CENTRAL EQUIPMENT ±5%

PROVIDE A DROP TEST OF ALL FIRE DAMPERS AND A LETTER/CERTIFICATE CONFIRMING THIS WORK.

COOPERATE WITH THE BALANCING AGENCY AND MAKE ANY CORRECTIONS AS REQUIRED BY BALANCING AGENCY.

PROVIDE BALANCING VALVES AS REQUESTED BY THE BALANCING AGENCY AND/OR NECESSARY TO PROPERLY ADJUST OR CORRECT THE SYSTEMS TO DESIGN FLOWS, WITHOUT ADDITIONAL COST TO OWNER.

1.20 COMMISSIONING AND DEMONSTRATION

ENGAGE IN A COMMISSIONING AGENT CXA

BE RESPONSIBLE FOR THE PERFORMANCE AND COMMISSIONING OF ALL EQUIPMENT SUPPLIED AND RE-USED UNDER DIVISIONS 22 AND 23).

CONFIRM OPERATION AND REVIEW CONDITION OF ALL EXISTING MECHANICAL EQUIPMENT(AND ASSOCIATED CONTROL DEVICES IN THE RENOVATED AREA. SUBMIT REPORT NOTING ANY REMEDIAL WORK REQUIRED.

AT THE CONCLUSION OF COMMISSIONING, DEMONSTRATE THE OPERATION OF THE SYSTEMS TO THE CONSULTANT AND THEN TO THE OWNER'S OPERATING STAFF.

AT THE COMPLETION OF THE COMMISSIONING, TESTING, BALANCING AND DEMONSTRATION SUBMIT TO THE CONSULTANT A LETTER CERTIFYING THAT ALL WORK SPECIFIED UNDER THIS CONTRACT IS COMPLETE, CLEAN AND OPERATIONAL IN ACCORDANCE WITH THE SPECIFICATION AND DRAWINGS.

1.21 SEISMIC CONTROL

PROVIDE SEISMIC RESTRAINTS FOR ALL REQUIRED EQUIPMENT, PIPING, AND DUCTWORK IN ACCORDANCE WITH THE LATEST EDITION OF THE SEISMIC RESTRAINTS MANUAL FOR MECHANICAL SYSTEMS PRODUCED BY SMACNA, AND THE LATEST EDITION OF THE ASHRAE APPLICATION HANDBOOK CHAPTER 49, SEISMIC RESTRAINTS.

THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED PROFESSIONAL SEISMIC ENGINEER (SEISMIC ENGINEER) REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. THE SEISMIC ENGINEER SHALL DESIGN AND REVIEW THE INSTALLATION OF ALL SEISMIC RESTRAINTS AS WELL AS MECHANICAL EQUIPMENT AND MECHANICAL SYSTEM SUPPORTS. THE RESTRAINTS AND SUPPORTS SHALL BE SPECIFICALLY DESIGNED TO FASTEN TO THE STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS AND INSTALLED IN THE FIELD. THE COMPLETE DESIGN FOR THESE SYSTEMS SHALL COMPLY WITH ALL APPLICABLE BUILDING CODE REQUIREMENTS.

SEISMIC ENGINEER SHALL PROVIDE AND SUBMIT TO THE OWNER'S CONSULTANT ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW SCHEDULE S-B AND ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE SCHEDULE S-C FOR SEISMIC ENGINEERING.

SUBMIT SHOP DRAWINGS OF ALL SEISMIC RESTRAINT DETAILS PREPARED AND SEALED BY THE SEISMIC ENGINEER. PRIOR TO SUBSTANTIAL COMPLETION, THE SEISMIC ENGINEER SHALL VISIT THE SITE AND VERIFY THE SEISMIC RESTRAINT INSTALLATION AS REQUIRED TO SATISFY THE ASSURANCE OF PROFESSIONAL FIELD REVIEW

THE CONTRACTOR SHALL OBTAIN APPROVAL FOR THE LOCATION OF ALL RESTRAINT FIXING POINTS FROM THE STRUCTURAL ENGINEER, ON SITE, PRIOR TO INSTALLATION.

WHERE EQUIPMENT IS MOUNTED ON SPRING OR RESILIENT MOUNTS FOR VIBRATION ISOLATION IT SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER OF THE MOUNT TO INCORPORATE SEISMIC RESTRAINT. PROVIDE STEEL FRAME BASES WHERE NECESSARY TO ACHIEVE THIS AND ALSO AID IN OVERTURNING. THE MANUFACTURER SHALL SUPPLY CERTIFICATES, SIGNED BY A PROFESSIONAL ENGINEER REGISTERED WITHIN THE JURISDICTION, VERIFYING THE DESIGN OF THE SEISMIC RESTRAINTS IS IN ACCORDANCE WITH THIS SECTION.

1.22 VIBRATION ISOLATION

PROVIDE NEOPRENE ISOLATORS FOR DEFLECTIONS 6MM (¼") AND UNDER.

PROVIDE EITHER NEOPRENE OR STEEL SPRING ISOLATORS FOR DEFLECTIONS BETWEEN 6MM AND 12MM (½").

PROVIDE STEEL SPRING ISOLATORS FOR DEFLECTIONS OF 12MM (½") AND OVER.

PROVIDE ADJUSTABLE LIMIT STOPS FOR SPRING ISOLATION MOUNTS ON EQUIPMENT WITH OPERATING WEIGHTS SUBSTANTIALLY DIFFERENT FROM THE INSTALLED WEIGHTS

ALL SPRING ISOLATORS SHALL BE "OPEN SPRING" UNLESS OTHERWISE STATED. SEISMICALLY RATED HOUSED SPRING ISOLATORS MAY BE USED IN LIEU PROVIDED THAT THEY MEET THIS PROJECT'S REQUIREMENTS FOR SEISMIC RESTRAINT.

SELECT ISOLATORS IN ACCORDANCE WITH EQUIPMENT WEIGHT DISTRIBUTION TO ALLOW FOR AN AVERAGE DEFLECTION MEETING OR EXCEEDING THE SPECIFIED DEFLECTION REQUIREMENTS AND SO THAT NO ISOLATOR HAS A DEFLECTION LESS THAN 80% OF THE STATIC DEFLECTION SPECIFIED. A MINIMUM OF 4 ISOLATORS ARE REQUIRED FOR EACH PIECE OF EQUIPMENT, UNLESS SPECIFIED OTHERWISE.

1.23 SUBSTANTIAL AND TOTAL PERFORMANCE

PRIOR TO REQUESTING AN INSPECTION FOR SUBSTANTIAL PERFORMANCE, PROVIDE A COMPLETE LIST OF ITEMS, WHICH ARE DEFICIENT.

A CERTIFICATE OF SUBSTANTIAL PERFORMANCE WILL NOT BE GRANTED UNLESS THE FOLLOWING ITEMS ARE COMPLETED AND AVAILABLE TO THE OWNER'S CONSULTANT:

FINAL PLUMBING INSPECTION CERTIFICATE FROM THE AUTHORITY HAVING JURISDICTION.

FINAL GAS INSPECTION CERTIFICATE FROM THE AUTHORITY HAVING JURISDICTION.

SCHEDULE S-B & S-C FOR SEISMIC ENGINEERING.

FINAL BACKFLOW PREVENTION TEST REPORTS FOR ALL BACKFLOW DEVICES.

DRAFT OPERATING/MAINTENANCE MANUALS HAVE BEEN SUBMITTED FOR REVIEW.

ALL MECHANICAL SYSTEMS HAVE BEEN COMMISSIONED AND ARE CAPABLE OF OPERATION WITH ALARM CONTROLS FUNCTIONAL AND AUTOMATIC CONTROLS IN OPERATION.

WATER SYSTEMS HAVE BEEN BALANCED WITH DRAFT REPORT SUBMITTED TO THE CONSULTANT.

OPERATING AND MAINTENANCE DEMONSTRATIONS HAVE BEEN PROVIDED TO THE OWNER.

RECORD DRAWINGS HAVE BEEN SUBMITTED.

ALL PREVIOUSLY IDENTIFIED DEFICIENCIES HAVE BEEN CORRECTED AND ACCEPTED.

PRIOR TO A TOTAL PERFORMANCE INSPECTION PROVIDE DECLARATION IN WRITING THAT SUBSTANTIAL PERFORMANCE DEFICIENCIES HAVE BEEN CORRECTED AND FINAL TAB REPORTS AND O&M MANUALS HAVE BEEN SUBMITTED.

THE CONSULTANT SHALL PROVIDE ONE (1) VISITATION FOR THE PURPOSE OF TOTAL PERFORMANCE INSPECTION.

SUBSEQUENT VISITATIONS IF REQUIRED SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

2. PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

LISTED MANUFACTURERS ARE ACCEPTABLE FOR THEIR ABILITY TO MEET THE GENERAL DESIGN INTENT, QUALITY AND PERFORMANCE CHARACTERISTICS OF THE SPECIFIED PRODUCT. THE LIST DOES NOT ENDORSE THE ACCEPTABILITY OF ALL PRODUCTS AVAILABLE FROM THE LISTED MANUFACTURERS/SUPPLIERS.

IT REMAINS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE PRODUCTS SUPPLIED ARE EQUAL TO THE SPECIFIED PRODUCTS IN EVERY RESPECT, OPERATE AS INTENDED, AND MEET THE PERFORMANCE SPECIFICATIONS AND PHYSICAL DIMENSIONS OF THE SPECIFIED PRODUCT.

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR MATERIALS, TO ACCOMMODATE THE USE OF EQUIPMENT FROM THE ACCEPTABLE MANUFACTURERS AND SUPPLIERS LISTED.

2.2 FIRESTOPPING AND SMOKE SEALS

USE THE SAME MANUFACTURER THROUGHOUT THE PROJECT AND COMPATIBLE MATERIALS FOR RESTORATION WORK.

PROVIDE FILL MATERIAL COMPONENTS FOR EACH FIRESTOPPING SYSTEM AS NEEDED. USE ONLY COMPONENTS SPECIFIED BY THE FIRESTOPPING MANUFACTURER FOR THE DESIGNATED FIRE-RESISTANCE-RATED SYSTEMS.

ACCEPTABLE PRODUCT LISTED IN THE ULC FIRE RESISTANCE DIRECTORY - VOLUME III OR UL PRODUCTS CERTIFIED FOR CANADA (CUL) DIRECTORY.

ACCEPTABLE MANUFACTURERS: 3M, HILTI, AD FIREBARRIER, TREMCO

2.3 PIPE HANGERS AND SUPPORTS

PROVIDE HANGERS AND SUPPORTS TO SECURE EQUIPMENT IN PLACE, PREVENT VIBRATION, PROTECT AGAINST DAMAGE FROM EARTHQUAKE, MAINTAIN GRADE, PROVIDE FOR EXPANSION AND CONTRACTION, AND ACCOMMODATE INSULATION.

PROVIDE GALVANIZED HANGERS AND SUPPORTS FOR ALL PIPING EXCEPT HANGERS AND SUPPORTS SHALL BE COPPER PLATED OR EPOXY COATED FOR COPPER PIPING.

TOGGLE HANGERS AND/OR STRAP HANGERS SHALL NOT BE USED FOR PIPE HANGERS.

POWER ACTUATED FASTENERS AND "DROP-IN" ANCHORS SHALL NOT BE USED.

PROVIDE RING TYPE HANGERS FOR PIPING UP TO NPS 1½ AND CLEVIS TYPE HANGERS FOR PIPING OVER NPS 1½.

2.4 IDENTIFICATION

REFER TO UBC TECHNICAL GUIDELINES FOR IDENTIFICATION REQUIREMENTS.

IDENTIFY PIPING WITH LABELS AND FLOW ARROWS. PROVIDE IDENTIFICATION AT 15M (50FT) MAXIMUM INTERVALS, BEFORE AND AFTER PIPES PASSING THROUGH WALLS, AT ALL SIDES OF TEES, BEHIND ACCESS DOORS. USE BRADY B-500 VINYL CLOTH LABELS FOR NON INSULATED PIPES AND B-350 FOR INSULATED PIPES.

PROVIDE 20MM (3/4") DIAMETER BRASS TAGS, SECURE TO VALVE STEMS WITH KEY CHAIN. PROVIDE A VALVE DIRECTORY AT ALL MECHANICAL ROOMS, IN THE O&M MANUALS AND A DIGITAL COPY CROSS REFERENCED WITH ANY ASSOCIATED CONTROLS NOMENCLATURE.

EACH PIECE OF EQUIPMENT SHALL BE IDENTIFIED WITH ITS EQUIPMENT SCHEDULE IDENTIFICATION, E.G. SUPPLY FAN SF-1, COOLING COIL CC-1, PUMP P-1 WITH LAMACOID PLATES HAVING 6MM (1/4") MINIMUM LETTER SIZE.

ACCEPTABLE MANUFACTURERS: BRADY

2.5 SEISMIC CABLE RESTRAINTS

GALVANIZED STEEL AIRCRAFT CABLES SIZED TO RESIST SEISMIC LOADS WITH A MINIMUM SAFETY FACTOR OF TWO AND ARRANGED TO PROVIDE ALL-DIRECTIONAL RESTRAINT.

CABLES MUST BE PRE-STRETCHED TO ACHIEVE A CERTIFIED MINIMUM MODULUS OF ELASTICITY. CABLE END CONNECTIONS SHALL BE STEEL ASSEMBLIES THAT SWIVEL TO FINAL INSTALLATION ANGLE AND UTILIZE TWO CLAMPING BOLTS TO PROVIDE PROPER CABLE ENGAGEMENT.

2.6 VIBRATION ISOLATION

NEOPRENE WASHER/BUSHING: A ONE PIECE MOLDED BRIDGE BEARING NEOPRENE WASHER/BUSHING. THE BUSHING SHALL SURROUND THE ANCHOR BOLT AND HAVE A FLAT WASHER FACE TO AVOID METAL TO METAL CONTACT. USE WASHER/BUSHING ONLY ON LIGHT-WEIGHT EQUIPMENT.

ACCEPTABLE MANUFACTURER: MASON HG HEMI GROMMET OR EQUAL

NEOPRENE PAD ISOLATORS: NEOPRENE OR NEOPRENE / STEEL / NEOPRENE PAD ISOLATORS. MINIMUM STATIC DEFLECTION 2.5 MM (0.1") OR GREATER.

ACCEPTABLE MANUFACTURER: MASON WMSW OR EQUAL

RUBBER FLOOR MOUNTS: BRIDGE BEARING NEOPRENE MOUNTINGS. MINIMUM STATIC DEFLECTION OF 5MM (0.2") OR GREATER AND ALL DIRECTIONAL SEISMIC CAPABILITY.

ACCEPTABLE MANUFACTURER: MASON RAA OR ND OR EQUAL

SPRING FLOOR MOUNTS: SPRING ISOLATORS BUILT INTO A DUCTILE IRON OR STEEL HOUSING TO PROVIDE ALL DIRECTIONAL SEISMIC SNUBBING. THE SNUBBER SHALL BE ADJUSTABLE VERTICALLY AND ALLOW A MAXIMUM OF 6MM (1/4") TRAVEL IN ALL DIRECTIONS BEFORE CONTACTING THE RESILIENT SNUBBING COLLARS. MOLDED NEOPRENE CUP OR 1/4" (6MM) NEOPRENE ACOUSTICAL FRICTION PAD BETWEEN THE BASEPLATE AND THE SUPPORT. SPRING DIAMETERS SHALL BE NO LESS THAN 0.8 OF THE COMPRESSED HEIGHT OF THE SPRING AT RATED LOAD. SPRINGS SHALL HAVE A MINIMUM ADDITIONAL TRAVEL TO SOLID EQUAL TO 50% OF THE RATED DEFLEC

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1.0 GENERAL NOTES

1.1 STATIONS AND ELEVATIONS ARE PROVIDED IN METERS. ALL DIMENSIONS ARE PROVIDED IN MILLIMETERS.
1.2 THE CONTRACTOR SHALL VERIFY AND EXAMINE ALL EXISTING SITE CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE COMMENCING WORK. DISCREPANCIES, IF ANY, SHALL BE REPORTED TO THE ENGINEER.
1.3 THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS AS WELL AS ALL APPLICABLE SHOP DRAWINGS.
1.4 ALL REFERENCES TO BUILDING CODES, MATERIAL AND PERFORMANCE SPECIFICATIONS, ARE TO LATEST EDITIONS OF THE PUBLICATION.
1.5 LOCATION AND SIZE OF ANY BLOCKOUTS TO BE CONFIRMED BY CONTRACTOR. IF SIZE NEEDS TO INCREASE OR EDGE DISTANCE DECREASES, CONTRACTOR TO ADVISE THE ENGINEER.
1.6 GEOTECHNICAL ENGINEERING CONDUCTED BY GEOWEST ENGINEERING LTD.

2.0 DESIGN

2.1 DESIGN IS IN ACCORDANCE WITH NATIONAL BUILDING CODE OF CANADA (NBCC) 2020 AND BC BUILDING CODE (BCBC) 2024.
2.2 CRITERIA USED FOR INDIVIDUAL FOUNDATION DESIGNS ARE SHOWN ON SPECIFIC DRAWINGS.
2.3 DIESEL TANK FOUNDATION, STORAGE RACK FOUNDATION, AND CNG STATION FOUNDATION HAVE BEEN DESIGNED TO RESIST 2% IN 50 YR EARTHQUAKE FORCES.

3.0 CONCRETE

3.1 UNLESS NOTED OTHERWISE ALL CONCRETE SHALL BE EXPOSURE CLASS C-1 AND SHALL CONFORM TO CSA A23.1M AND A23.2M. CONCRETE SHALL HAVE A MINIMUM 28 DAYS STRENGTH OF 35 MPa.
3.2 CHAMFER ALL EXPOSED EDGES 20, TYPICAL.
3.3 CONCRETE SHALL ATTAIN MINIMUM STRENGTH OF 30 MPa PRIOR TO INSTALLATION OF STRUCTURE.
3.4 ALL CONCRETE FOUNDATIONS TO HAVE CONTROL JOINTS CUT A MAXIMUM SPACING OF 4500 mm. JOINTS TO BE 12 mm WIDE, 40 mm DEEP, AND FILLED WITH SIKAFLEX 1A SEALING COMPOUND OR APPROVED EQUIVALENT.
3.5 CONTROL JOINTS SHALL BE FORMED BY WET DIAMOND BLADE SAWING, WHICH SHALL COMMENCE APPROXIMATELY 8 TO 24 HOURS AFTER CONCRETE PLACEMENT, AS SOON AS THE CONCRETE SURFACE HAS HARDENED SUFFICIENTLY TO RESIST RAVELING WHILE CUTTING. ALTERNATIVE METHODS SHALL BE APPROVED BY CONTRACT ADMINISTRATOR.

4.0 REINFORCING STEEL

4.1 REINFORCING STEEL SHALL CONFORM TO CSA G30.18M, GRADE 400W, AND BE DETAILED, FABRICATED, PLACED AND SUPPORTED ACCORDING TO ACI-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES".
4.2 UNLESS NOTED OTHERWISE CONCRETE COVER TO REINFORCING SHALL BE:
- CAST AGAINST & PERMANENTLY EXPOSED TO EARTH: 75 mm
- EXPOSED TO EARTH OR WEATHER: 60 mm

4.3 SPLICE LENGTHS SHALL BE AS FOLLOWS:
- 15M BARS IN TOP MAT OF DIESEL TANK FOUNDATION: 600 mm
- 15M BARS OTHERWISE: 460 mm

5.0 EXCAVATION

5.1 STRIPPED SURFACES TO BE REVIEWED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STRUCTURAL FILL.
5.2 PRIOR TO CASTING FOOTING, A GEOTECHNICAL ENGINEER MUST VERIFY PROPER SURFACE PREPARATIONS AND CONFIRM ALLOWANCE BEARING RESISTANCE OF 100 kPa IS ACHIEVED.

STRUCTURAL DRAWING LIST	
DWG No.	TITLE
S100	STRUCTURAL GENERAL NOTES
S101	BULK MATERIALS STORAGE FOUNDATION DETAILS
S102	MECHANICAL ROOM, EMERGENCY EYE WASH AND PESTICIDE SHED FOUNDATION DETAILS
S103	WEIGH SCALE FOUNDATION DETAILS
S104	DIESEL TANK FOUNDATION DETAILS
S105	CNG STATION FOUNDATION DETAILS

Rev	Date	Description	Drawn	Design	App'd
B	2025-08-22	ISSUED FOR 90% CONSTRUCTION DESIGN	YW	SVL	FP
A	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	YW	SVL	FP

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THE UNIVERSITY OF BRITISH COLUMBIA

ORIGINAL DWG SIZE: ANSI D (22" x 34")

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UBC SOUTH CAMPUS WORKS YARD BULK MATERIALS STORAGE STRUCTURAL GENERAL NOTES

Drawing No.
S100

Project Number
2121-01293-00

Rev.
B

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DESTROY ALL PRINTS BEARING PREVIOUS REVISION

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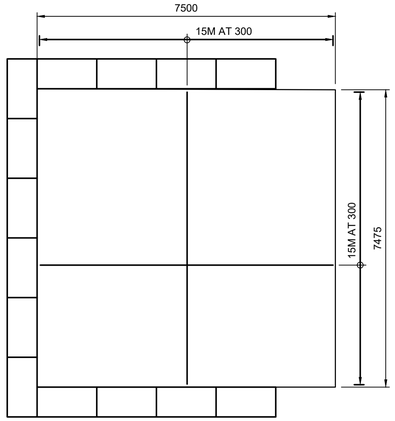

BMS CONCRETE FOUNDATION No. 1
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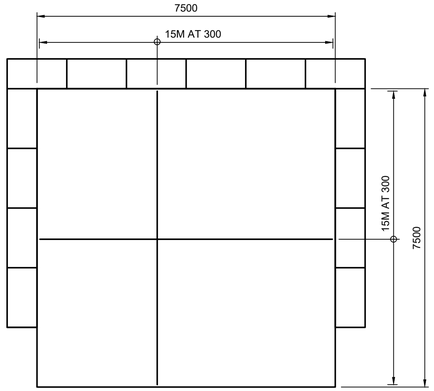

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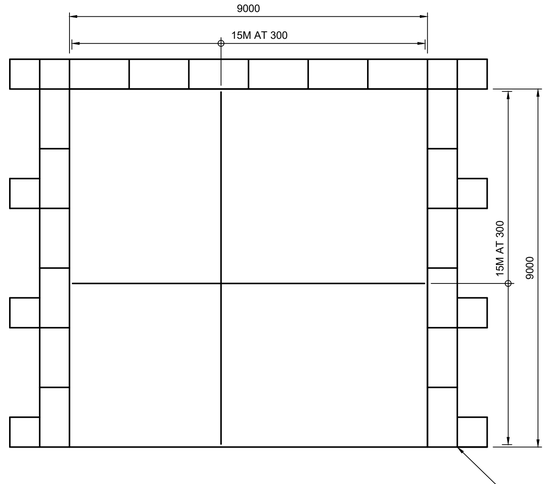

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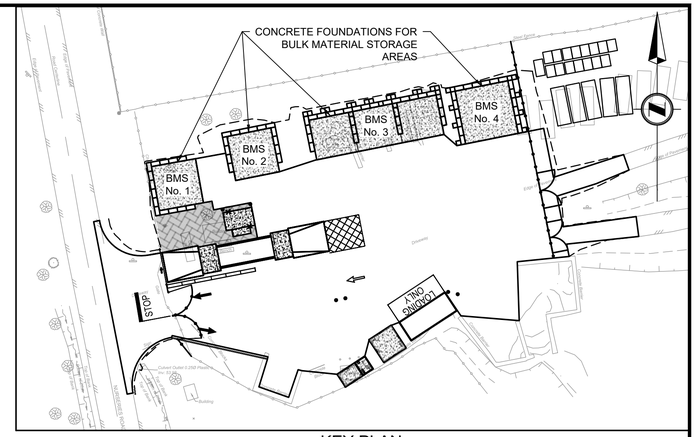

KEY PLAN
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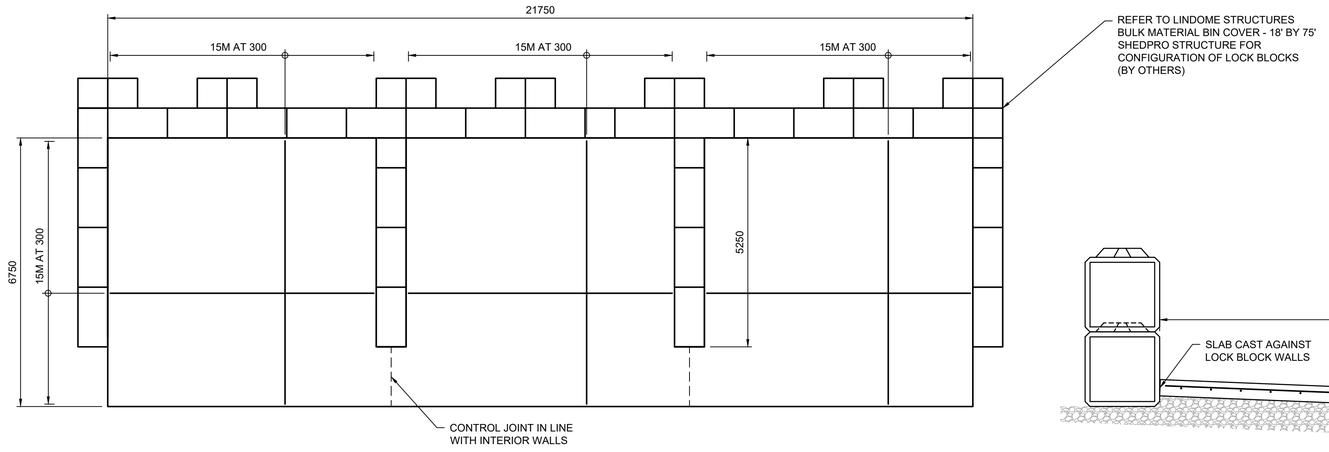

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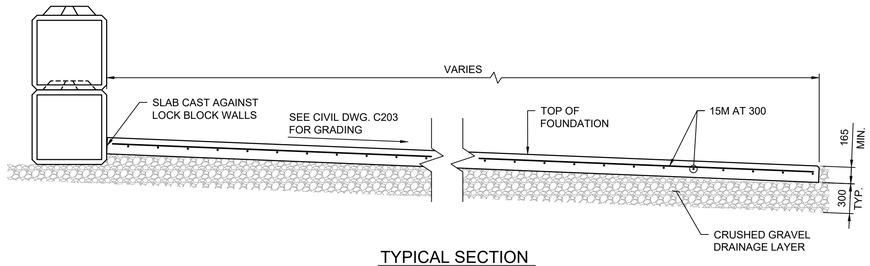

TYPICAL SECTION
SCALE 1: 30

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S100.
2. SLABS DESIGNED FOR MAXIMUM SOIL HEIGHT OF 3.0 m WITH UNIFORM OR TRIANGULAR LOADING AND CL-625 LOADING PER CSA S6:19.
3. ROW ONE OF LOCK BLOCKS SHOWN. OFFSET SECOND ROW BY HALF BLOCK AS POSSIBLE.
4. SLABS TO BE GRADED ACCORDING TO CIVIL DRAWINGS, ACHIEVED THROUGH GROUND WORKS, WITH A CONSTANT THICKNESS OF 165 mm.
5. DESIGN OF FOOTINGS FOR PROPRIETARY STRUCTURES IS CONDUCTED BY NEL ENGINEERING LTD.

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-22	ISSUED FOR 90% CONSTRUCTION DESIGN	YW	SVL	FP
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	YW	SVL	FP
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MD	WM	FP
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MD	WM	FP

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UBC SOUTH CAMPUS WORKS YARD BULK MATERIALS STORAGE FOUNDATION DETAILS

Drawing No. S101

Project Number 2121-01293-00

Rev. D

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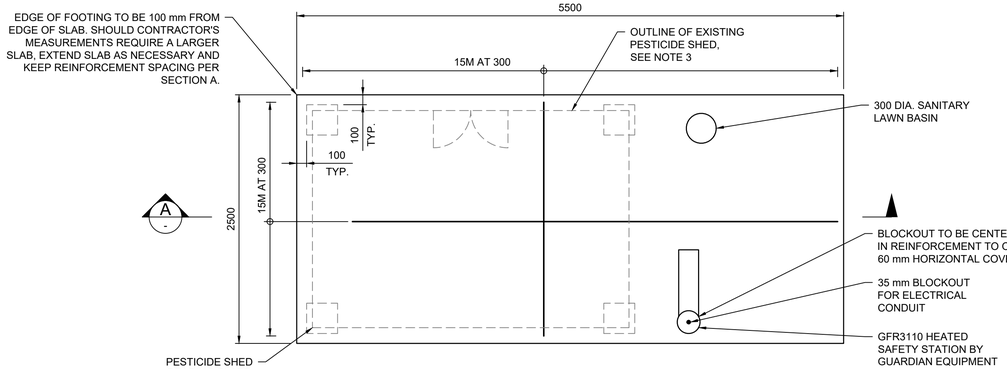

PESTICIDE SHED AND EYE WASH STATION CONCRETE FOUNDATION
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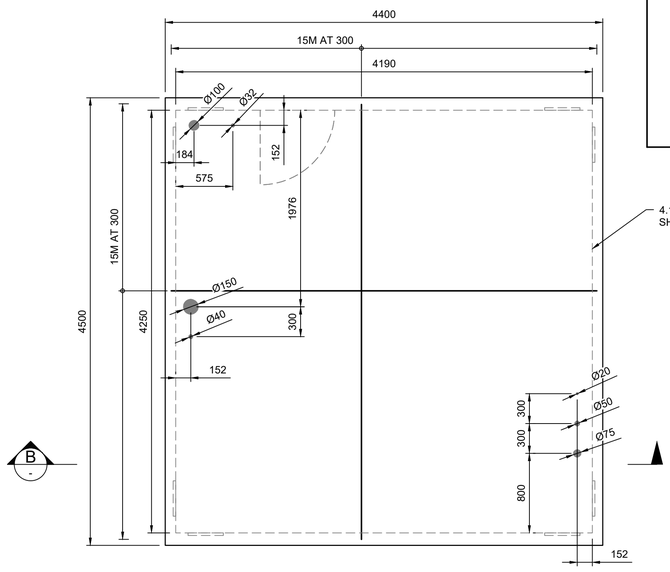
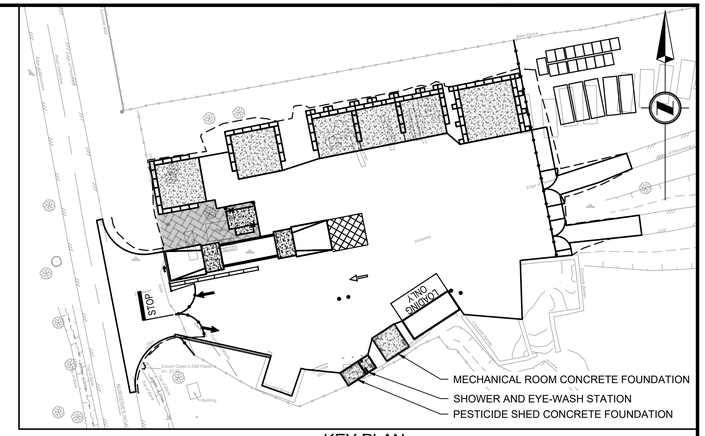
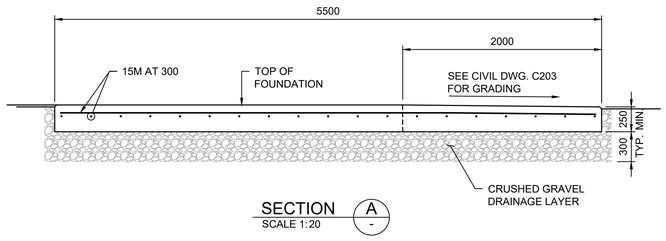


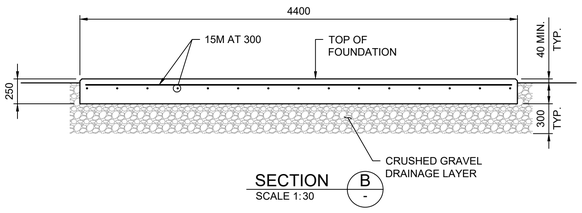
NEW MECHANICAL ROOM CONCRETE FOUNDATION
SCALE 1:30



KEY PLAN
SCALE 1:500



SECTION A
SCALE 1:20



SECTION B
SCALE 1:30

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S100.
2. CONTRACTOR TO CONFIRM MEASUREMENTS OF EXISTING PESTICIDE SHED PRIOR TO CASTING FOUNDATION.
3. 7" x 1/2" ANCHORS FOR SHEDS TO BE EPOXY GROUTED INTO FOUNDATION. DRILL HOLES TO 3/4" DIAMETER.
4. EYE-WASH STATION TO BE ANCHORED TO FOUNDATION FOLLOWING MANUFACTURER'S REQUIREMENTS.
5. MECHANICAL SHED FOUNDATION IS DESIGNED FOR 10' x 8' - 6' ROUND-FRAME PORTABLE METAL CARPORT BY JAW PORTABLE BUILDINGS.
6. CONNECTION DESIGN TO MECHANICAL SHED FOUNDATION IS BY JAW PORTABLE BUILDINGS.

Rev	Date	Description	Drawn	Design	App'd
D	2025-08-22	ISSUED FOR 90% CONSTRUCTION DESIGN	YW	SVL	FP
C	2025-07-04	ISSUED FOR 50% CONSTRUCTION DESIGN	YW	SVL	FP
B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MD	WM	FP
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MD	WM	FP

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THE UNIVERSITY OF BRITISH COLUMBIA

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UBC SOUTH CAMPUS WORKS YARD MECHANICAL ROOM, EMERGENCY EYE WASH AND PESTICIDE SHED FOUNDATION DETAILS

Drawing No.
S102

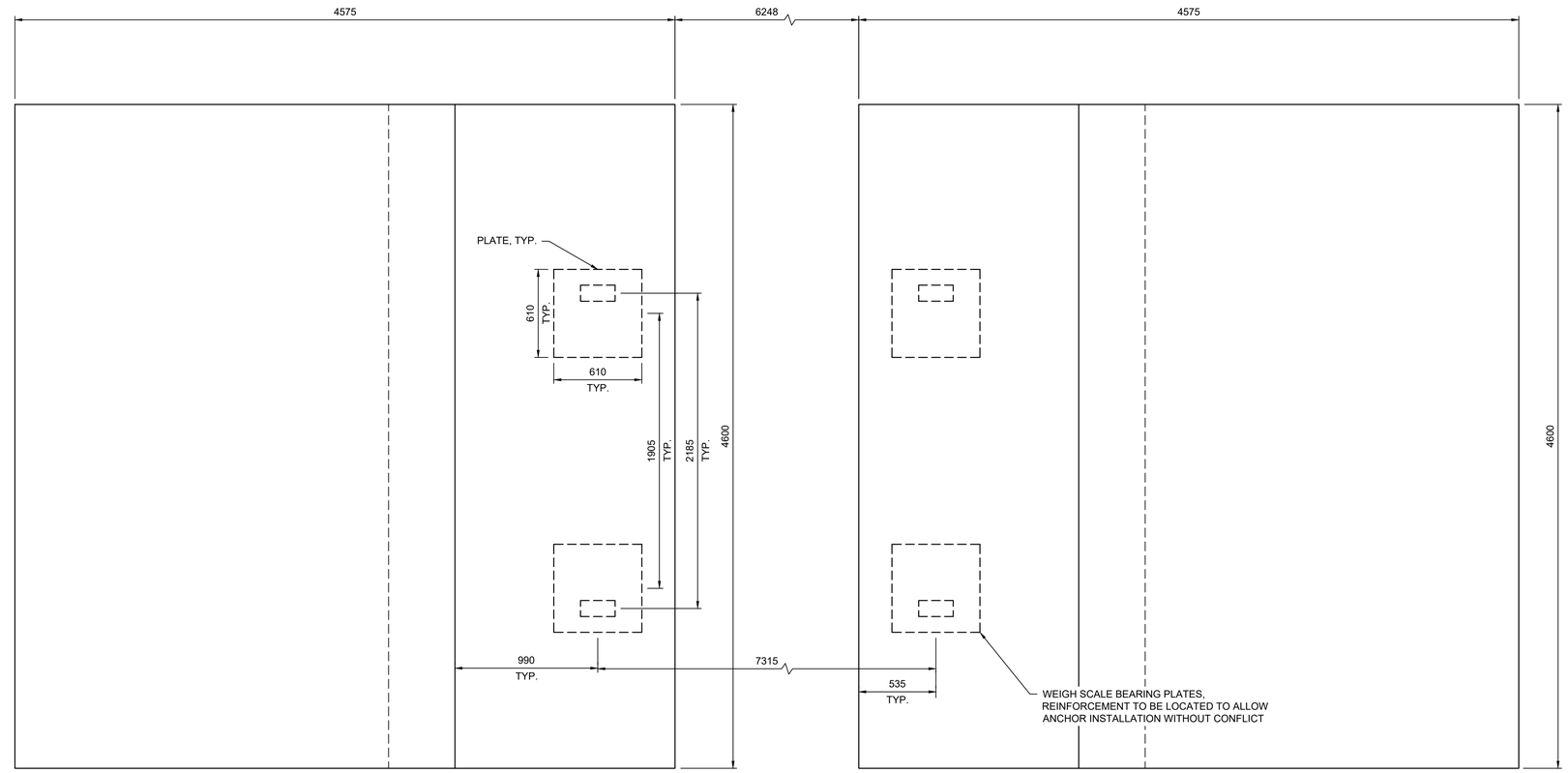
Project Number
2121-01293-00

Rev.
D

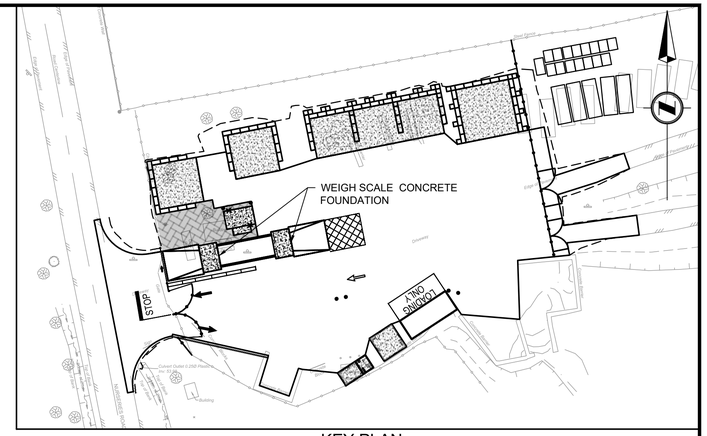
SAVED BY: YWu DATE: 2025-08-20, 14:40 FILE: X:\2121\Projects\21210\29300.UBC South Campus Work Yard\07_DRAWINGS\01 Sheets\01293-S0x-100.dwg

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

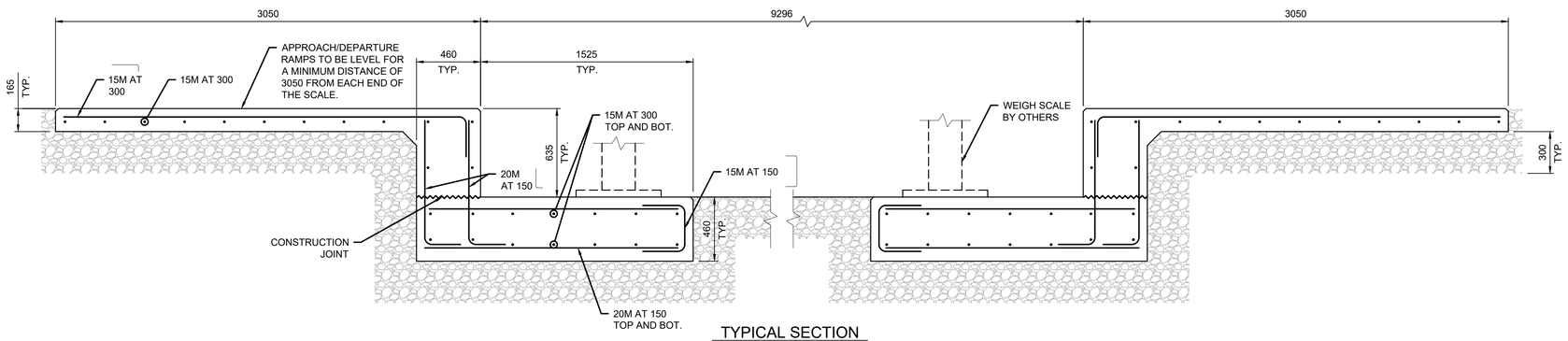
McElhanney ANSI D - 2021-09-14



WEIGH SCALE CONCRETE FOUNDATION
SCALE 1: 20



KEY PLAN
SCALE 1:500



TYPICAL SECTION
SCALE 1: 20

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S100.
2. WEIGH SCALE BEARING PLATES ARE SHOWN FOR REFERENCE ONLY. REFER TO MANUFACTURERS DRAWINGS FOR EXACT DIMENSIONS AND CONNECTION REQUIREMENTS.
3. FOUNDATION DESIGNED TO SUPPORT 30' x 11' 50 TO TONNE, 2 SECTION ELIMINATOR TRUCK SCALE WITH 6" LOW PROFILE CONCRETE DECK BY WESTERN SCALE COMPANY LIMITED.
4. FOUNDATION DESIGNED FOR CL-625 LOADING PER CSA S6:19.

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B	2025-06-13	ISSUED FOR DEVELOPMENT PERMIT	MD	WM	FP
A	2025-05-16	ISSUED FOR 100% DEVELOPMENT DESIGN	MD	WM	FP

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UBC SOUTH CAMPUS WORKS YARD
WEIGH SCALE
FOUNDATION DETAILS

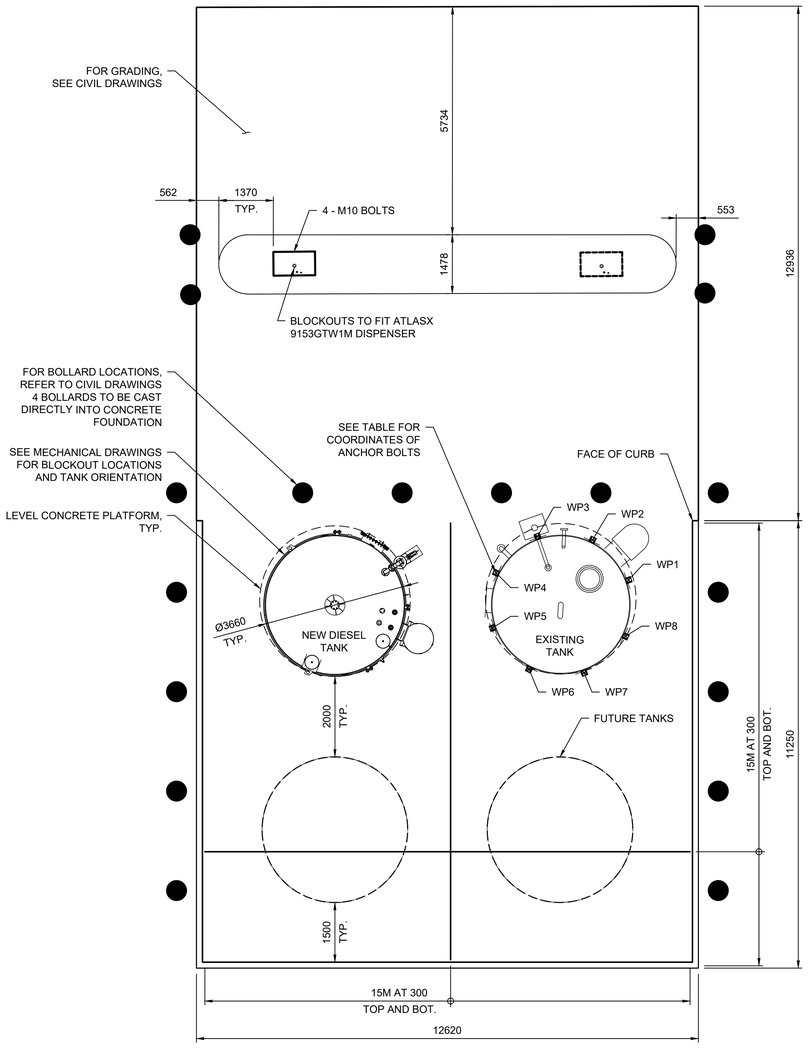
Drawing No.
S103

Project Number
2121-01293-00

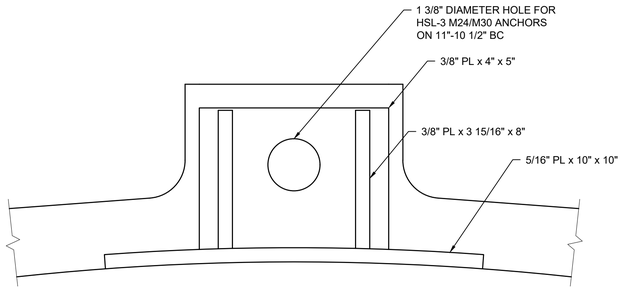
Rev.
D

DESTROY ALL PRINTS BEARING PREVIOUS REVISION

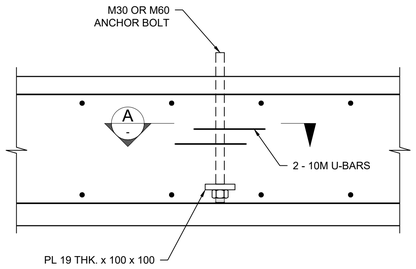
SAVED BY: YWu DATE: 2025-08-29, 14:42 FILE: X:\21\Projects\21\01\28300 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-S0-100.dwg



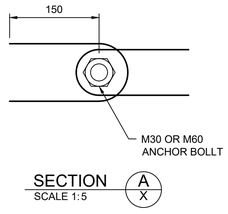
DIESEL TANK CONCRETE FOUNDATION
SCALE 1: 75



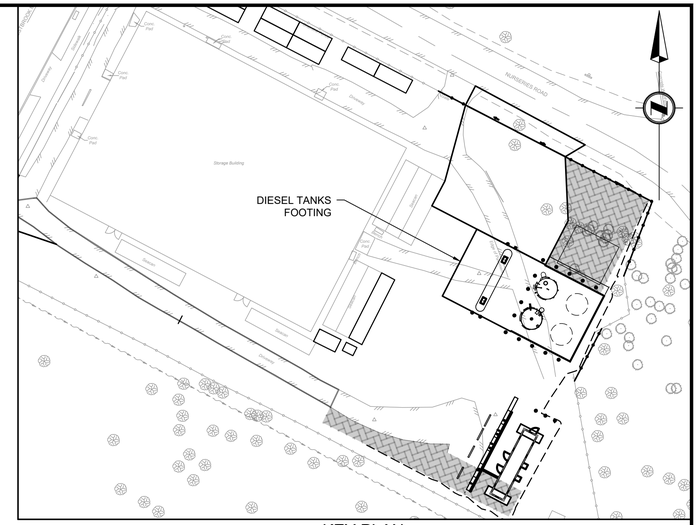
CONNECTION FOR EXISTING DIESEL TANK
SCALE 1: 2



ANCHOR BOLT
SCALE 1: 10



SCALE 1:5



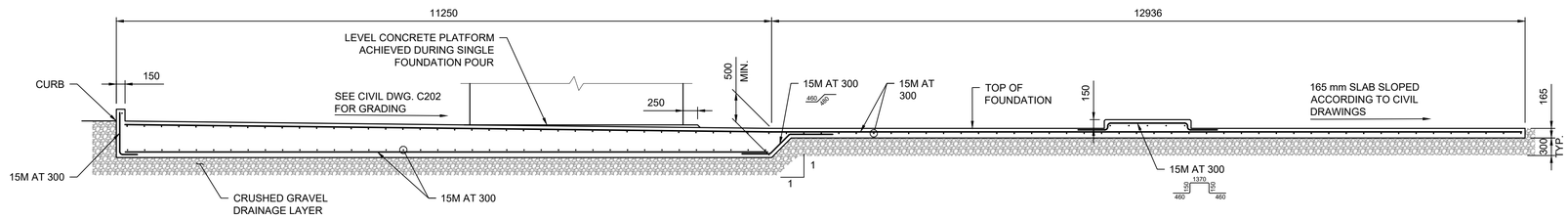
KEY PLAN
SCALE 1: 500

EXISTING DIESEL TANK ANCHOR BOLT LOCATIONS

WP	NORTHING	EASTING
WP1	54839.416	33178.189
WP2	54839.077	33176.876
WP3	54837.889	33176.163
WP4	54836.545	33176.498
WP5	54835.832	33177.685
WP6	54836.167	33179.029
WP7	54837.355	33179.742
WP8	54838.699	33179.407

NEW DIESEL TANK ANCHOR BOLT LOCATIONS

WP	NORTHING	EASTING
	TO COME	*TO COME*



TYPICAL SECTION
SCALE 1: 50

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S100.
2. FOUNDATION DESIGNED FOR CUSTOM VERTICAL 42 000 DW S601 TANK BY AGI WESTEEL AND EXISTING 42 000 L TANK BY REGAL TANKS LTD.
3. FOUNDATION TO BE GRADED ACCORDING TO CIVIL DRAWINGS. FOUNDATION SURFACE DIRECTLY SUPPORTING THE DIESEL TANKS TO BE LEVEL, WHERE THE LEVEL SURFACE IS CAST WITH A SINGULAR FOUNDATION POUR.
4. EXACT DIMENSIONS OF EXISTING AND FUTURE TANKS TO BE SURVEYED PRIOR TO PLACING ANCHORS. ANCHORS MUST BE SURVEYED ON SITE PRIOR TO POURING DIESEL TANK FOUNDATION.
5. ANCHORAGE FOR EXISTING DIESEL TANK IS CONSISTENT WITH "42 000 L TANK BY REGAL TANKS LTD" DRAWINGS, DATED 2014. THE EXISTING DIESEL TANK AND ITS ANCHORAGE DO NOT FOLLOW THE LATEST CODE'S DESIGN, SEISMIC AND/OR OTHERWISE.
6. FUTURE DIESEL TANK(S) ASIDE FROM CUSTOM VERTICAL 42 000 DW S601 TANK BY AGI WESTEEL MUST HAVE ENGINEERED SEISMIC RESISTANT ANCHORAGE TO THE FOUNDATION.

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UBC SOUTH CAMPUS WORKS YARD DIESEL TANK FOUNDATION DETAILS

Drawing No. S104

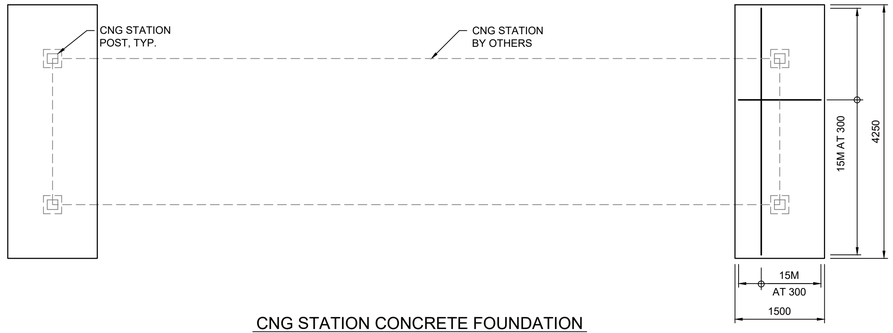
Project Number 2121-01293-00

Rev. D

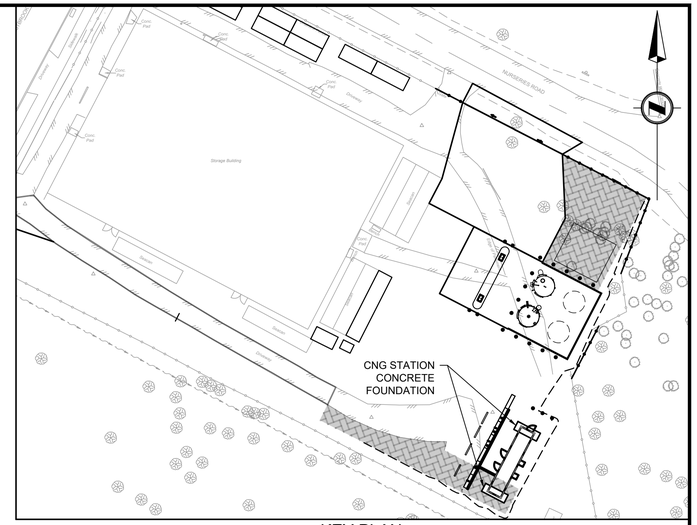
DESTROY ALL PRINTS BEARING PREVIOUS REVISION

SAVED BY: YWu DATE: 2025-08-29, 14:49 FILE: X:\2121\Projects\2121012930\0 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-S0-100.dwg

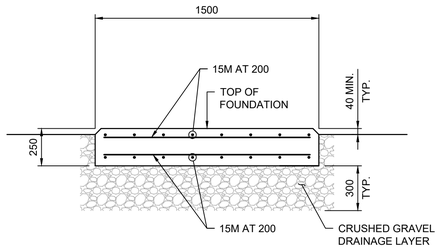
McElhanney ANSI D - 2021-09-14



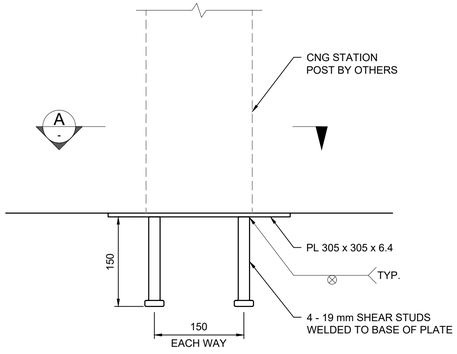
CNG STATION CONCRETE FOUNDATION
SCALE 1: 50



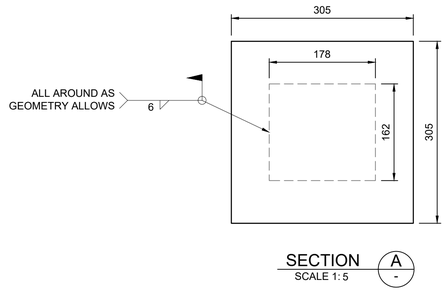
KEY PLAN
SCALE 1:500



TYPICAL SECTION
SCALE 1: 20



CNG STATION POST
SCALE 1: 5



SECTION A
SCALE 1: 5

NOTES:

1. FOR GENERAL NOTES, SEE DWG. S100.
2. FOUNDATION DESIGNED FOR JORDAIR DUPLEX GPK-152-44-3ED FUELING STATION SYSTEM.

Rev	Date	Description	Drawn	Design	App'd
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UBC SOUTH CAMPUS WORKS YARD CNG STATION FOUNDATION DETAILS

Drawing No.
S105

Project Number
2121-01293-00

Rev.
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SAVED BY: YWu DATE: 2025-08-29, 14:51 FILE: X:\21\Projects\21\01\293000 UBC South Campus Work Yard\07_DRAWINGS\01_Sheets\01293-S0-100.dwg

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