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REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY PUMP STATION No. 6 UPGRADE AND SANITARY FORCEMAIN REPLACEMENT

ISSUE FOR TENDER
26JUL23

GENERAL NOTES:

1. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY AND ARE NOT NECESSARILY SHOWN. ACTUAL LOCATIONS SHOULD BE CONFIRMED BY MANUAL EXCAVATION. EXISTING AND PROPOSED SERVICES MAY REQUIRE ADJUSTMENT WHERE A CONFLICT OCCURS. THE ENGINEER SHALL BE NOTIFIED OF ANY CONFLICTS.
2. ALL STRUCTURES ARE NOT NECESSARILY SHOWN.
3. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH MMCD ENGINEERING STANDARDS AND SPECIFICATIONS AND MoTI STANDARDS, UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING SURFACE AND UNDERGROUND UTILITIES THAT MAY AFFECT THE WORK.
5. CONTRACTOR SHALL REINSTATE DISTURBED OR DAMAGED LANDSCAPING TO ORIGINAL OR BETTER CONDITION.
6. CONTRACTOR SHALL REPAIR, AT HIS EXPENSE, ALL BROKEN OR DISTURBED PIPES, CONDUITS AND STRUCTURES THAT ARE DAMAGED DURING CONSTRUCTION.
7. CONTRACTOR SHALL RESTORE ALL DISTURBED PAVEMENT TO ORIGINAL OR BETTER CONDITION TO MOTI SPECIFICATIONS.
8. ALL OFFSETS SHOWN ARE TO PIPE CENTRELINE UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL SUBMIT A EROSION AND SEDIMENT CONTROL PLAN FOR THE WORK AREA TO THE ENGINEER FOR APPROVAL AT THE PRE-CONSTRUCTION MEETING.
10. CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL AT THE PRE-CONSTRUCTION MEETING.
11. CONTRACTOR SHALL HYDROSEED ALL DISTURBED AREAS OF THE SITE UPON COMPLETION OF THE PROJECT.
12. ALL DRAINAGE FEATURES SHALL BE REINSTATED TO PRE-CONSTRUCTION CONDITIONS OR BETTER.
13. ELEVATIONS ARE TO METRIC GEODETIC DATUM.
14. THE CONTRACTOR SHALL ARRANGE FOR ALL UTILITY COMPANIES TO LOCATE AND MARK UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH ANY EXCAVATION WORK.
15. THE CONTRACTOR SHALL ENSURE EXISTING PIPING AND STRUCTURES ARE PROTECTED AT ALL TIMES.
16. DRAINAGE FROM THIS PROJECT FLOWS TO FISH BEARING WATERS. THE CONTRACTOR SHALL ENSURE SEDIMENT FROM THIS PROJECT DOES NOT ENTER FISH HABITAT. PRIOR TO COMMENCING WORK ON THIS PROJECT, THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL STRUCTURES ARE IN PLACE AS REQUIRED.
17. CONTRACTOR TO LOCATE AND EXPOSE ALL TIE-IN POINTS FOR VERIFICATION BY THE ENGINEER PRIOR TO COMMENCING WITH THE WORK. ALL TIE-INS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIRED TIE-IN SEQUENCE AND FINAL COMMISSIONING INSTRUCTIONS PROVIDED IN THE SPECIFICATIONS.
18. STATION WILL BE OPERATIONAL AND ACCESSIBLE TO RDN OPERATORS AT ALL TIMES.
19. PIPE CURVATURE SHALL NOT EXCEED MANUFACTURERS MINIMUM BENDING RADIUS.
20. THE CONTRACTOR SHALL FOLLOW WORKSAFEBC REGULATIONS FOR WORK IN CONFINED SPACES AND SANITARY SEWER WET WELLS.
21. TEMPORARY BYPASS MEASURES SHALL BE CONSTRUCTED AND MAINTAINED AS SPECIFIED IN THE CONTRACT DOCUMENTS.
22. ALL WORK INSIDE WET WELL TO BE COORDINATED WITH THE REGIONAL DISTRICT OF NANAIMO.
23. SUSPEND SAFETY TARPS UNDER WORK TO PREVENT DEBRIS FROM FALLING INTO WET WELL.
24. RESIDENCES DIRECTLY AFFECTED BY CONSTRUCTION, EMERGENCY SERVICES (E.G. FIRE, AMBULANCE), AND OTHER AFFECTED SERVICES (E.E. PUBLIC TRANSIT, POSTAL SERVICE, ETC.) SHALL BE GIVEN AT LEAST 2 DAYS NOTICE PRIOR TO THE START OF CONSTRUCTION.
25. ALL OPEN CUT EXCAVATION SHALL BE BACKFILLED BY THE END OF THE WORKING DAY UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
26. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION SIGNAGE, BARRIERS, FLASHING INDICATORS, ETC. AT ALL TIMES TO ENSURE THE SAFETY OF THE PUBLIC. TRAFFIC CONTROL WILL BE REQUIRED FOR ALL CONSTRUCTION WORKS WITHIN THE TRAVELED PORTION OF THE ROAD. NO ROAD OR DRIVEWAY SHALL BE CLOSED WITHOUT THE WRITTEN CONSENT OT THE REGIONAL DISTRICT OF NANAIMO.
27. ALL PUBLIC ROADWAYS AFFECTED BY THE WORKS SHALL BE KEPT IN A CLEAN STATE AT ALL TIMES. DUST CONTROL MEASURES SHALL ALSO BE EMPLOYED DURING THE COURSE OF THE WORK.
28. WORKING HOURS FOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REGIONAL DISTRICT OF NANAIMO BYLAW No. 1054, UNLESS APPROVAL IS OBTAINED FROM THE DISTRICT, WITH NO WORK PERFORMED ON SUNDAY; NO WORK SHALL TAKE PLACE ON ANY STATUTORY HOLIDAY.
29. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT FOR UTILITY POLES IN ACCORDANCE WITH CURRENT BC HYDRO REGULATIONS DURING CONSTRUCTION.
30. ALL WASTE MATERIAL TO BE REMOVED FROM THE PROJECT AREA AND DISPOSED AT A SITE SECURED BY THE CONTRACTOR. NO ONSITE DUMPING WILL BE PERMITTED.
31. CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE FLOWS DURING CONSTRUCTION. WATER WILL NOT BE PERMITTED TO BACK UP ONTO PRIVATE PROPERTY.
32. CONTRACTOR SHALL EXCERCISE CAUTION WHEN WORKING ADJACENT TO THE EXISTING WATERMAIN, GAS, AND HYDRO.
33. TRAVELLED SURFACE TO BE REINSTATED WITHIN THREE WEEKS OF THE COMPLETION OF TRENCH BACKFILL.

SANITARY SEWER NOTES

1. ALL SANITARY SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS.
2. ALL PIPE SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS. ALL BACKFILL WILL BE IMPORTED GRANULAR MATERIAL. BEDDING AND BACKFILL MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR UNLESS OTHERWISE SPECIFIED ON THE APPROVED ENGINEERING DRAWINGS.
3. ALL BEDDING AND BACKFILL SHALL BE SPOT TESTED FOR COMPACTION WITH A NUCLEAR DENSOMETER. FREQUENCY OF TESTING SHALL BE AS DETERMINED BY THE ENGINEER.
4. ALL SANITARY SEWER SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER SHALL BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO WITNESS TESTING.

ROADWORKS NOTES

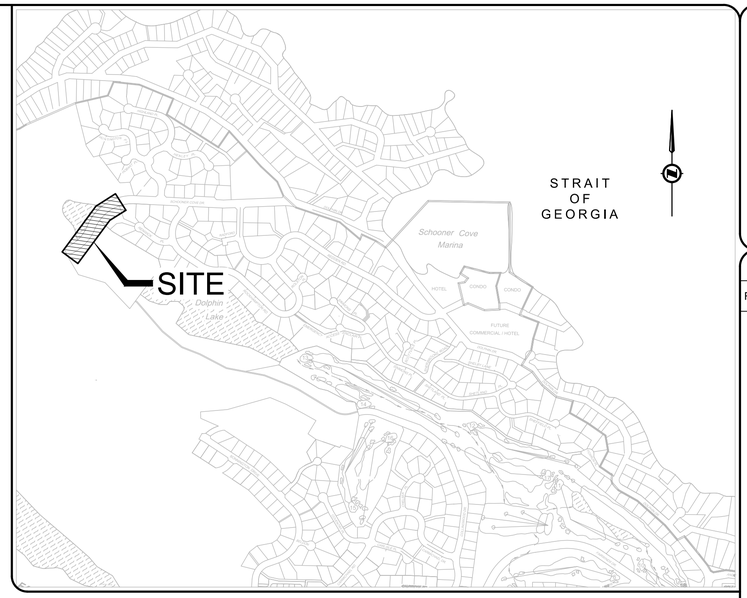
1. A GEOTECHNICAL ENGINEER RETAINED BY THE OWNER MAY CONDUCT INTERMITTENT TESTING AND QUALITY CONTROL DURING THE PREPARATION OF SUBGRADE AND CONSTRUCTION OF THE DESIGN ROAD STRUCTURE. FREQUENCY OF TESTING SHALL BE AS DETERMINED BY THE ENGINEER.
2. ALL ROAD SUBGRADE, SUBBASE, AND BASE STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR DENSITY. COMPACTION FOR EACH LAYER OF SUBGRADE, SUBBASE AND BASE COURSE SHALL BE SPOT TESTED WITH A NUCLEAR DENSOMETER AND A FINAL PROOF ROLL SHALL BE PERFORMED WITH A CONTRACTORS SUPPLIED LOADED SINGLE AXLE TRUCK PRIOR TO THE PLACEMENT OF ASPHALT. THE ENGINEER SHALL BE GIVEN AT LEAST 24 HOURS NOTICE IN ADVANCE TO WITNESS A PROOF ROLL TEST.
3. ASPHALT PAVING OF THE ROAD BASE SHALL NOT BE COMPLETED UNTIL ALL UNDERGROUND WORKS HAVE BEEN COMPLETED AND ACCEPTED BY THE ENGINEER. FREQUENCY AND TESTING OF HOT MIX ASPHALT CORES SHALL BE AS DIRECTED BY THE ENGINEER.
4. ALL ROAD CUTS ON ASPHALT ROADWAYS SHALL BE TEMPORARILY PATCHED WITHIN 24 HOURS OF COMPLETION OF EXCAVATION, UNLESS OTHERWISE APPROVED BY THE ENGINEER. COLD-MIX TO BE USED FOR CUTS PERPENDICULAR TO THE ROAD.
5. CRACK SEALING OF ALL PAVEMENT JOINTS IS TO BE COMPLETED TO ALL CUT PAVEMENT EDGES, BEFORE THE FINAL ACCEPTANCE AND AGAIN PRIOR TO THE EXPIRY OF THE MAINTENANCE PERIOD.

EROSION AND SEDIMENT CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL FOR THIS PROJECT WILL BE AS OUTLINED IN THE FISHERIES AND OCEANS CANADA AND MINISTRY OF ENVIRONMENT HANDBOOK ENTITLED "LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT, MAY 1992". IT IS INCUMBENT UPON THE CONTRACTOR TO ACQUIRE THESE GUIDELINES AND BECOME FAMILIAR WITH THE REQUIREMENTS THEREIN.
2. TO PROTECT THE SOIL, WATER, AND VEGETATIVE RESOURCES OF THE DEVELOPMENT, ONLY THOSE AREAS NECESSARY TO CONSTRUCT THE WORKS AND SERVICES CONTAINED IN THE ENGINEERING DRAWINGS ARE TO BE DISTURBED.
3. PRIOR TO AND DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR CONTROLLING EROSION AND SEDIMENT TRANSFER BY UTILIZING SUCH MEASURES AS CONSTRUCTION OF INTERCEPTOR DITCHES, SILT FENCES, HAY BALE STRUCTURES, SEDIMENT CONTROL PONDS, SEDIMENT TRAPS, STAGED GRAVEL FILTERS, OR OTHER METHODS HE MAY DEEM NECESSARY TO PREVENT DISCHARGE OF SEDIMENT INTO WATER COURSES.
4. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR DAMAGES RESULTING FROM IMPROPER EROSION AND SEDIMENT CONTROL MEASURES UNDERTAKEN BY THE CONTRACTOR.
5. CONTRACTOR TO COMPLY WITH ALL APPLICABLE MINISTRY OF ENVIRONMENT AND MINISTRY OF FISHERIES AND OCEANS CANADA REQUIREMENTS AT ALL TIMES DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL EXERCISE CAUTION TO ENSURE THAT SILTY WATER FROM CONSTRUCTION DOES NOT ENTER THE DOWNSTREAM DRAINAGE CHANNEL.

LEGEND

	EXISTING	DESCRIPTION	PROPOSED
WATERMAIN	W 200Ø PVC	WATERMAIN (SIZE NOTED)	
		WATER SERVICE & METER	
		FLUSH OUT	
		AIR VALVE	
		FIRE HYDRANT	
SANITARY	S 200Ø PVC	SANITARY SEWER (SIZE NOTED)	S 200Ø PVC
		SANITARY INSPECTION CHAMBER	
		SANITARY CLEANOUT	
		SANITARY MANHOLE	
	SFM 200 PVC	SANITARY FORCEMAIN (SIZE NOTED)	SFM 200Ø HDPE
STORM	D 200Ø PVC	STORM DRAIN (SIZE NOTED)	
		STORM INSPECTION CHAMBER	
		STORM CLEANOUT	
		STORM DRAIN MANHOLE	
		CATCH BASIN	
		CATCH BASIN - TYPE 2	
		DITCH/SWALE	
3rd PARTY UTILITIES	GAS 60Ø PE	GAS	
	UG HYDRO	U/G HYDRO ELECTRIC CONDUIT	
	U/G TEL	U/G TELEPHONE CONDUIT	
		TRAFFIC LIGHT	
		ELECT. JUNCTION BOX	
		UTILITY POLE	
ROAD AND SIDEWALK		STREET LIGHT	
		SIGN	
		EDGE OF PAVEMENT	
	ECC	EXTRUDED CONCRETE CURB	
	NMC	NON-MOUNTABLE CURB	
	MC	MOUNTABLE CURB	
		CONCRETE SIDEWALK	
LANDSCAPING / SURFACE TREATMENT		TOP OF BERM	
		TOE OF BERM	
	X	FENCE	
		TREE/TREELINE	



LOCATION PLAN

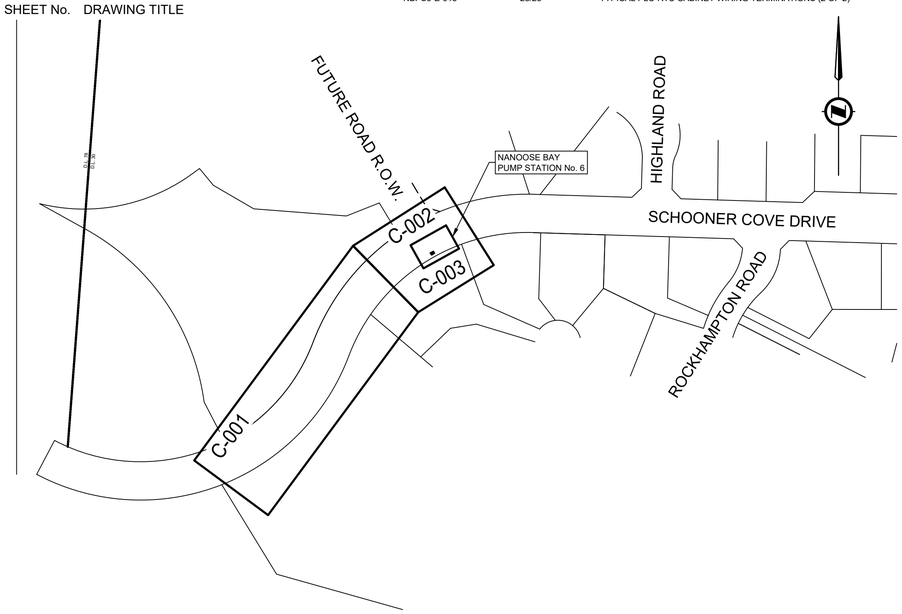
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DRAWING LIST

DWG. No.	SHEET No.	DRAWING TITLE
NBPS6-G-001	1/28	KEY PLAN LOCATION PLAN, DRAWING LIST, LEGEND, AND GENERAL NOTES
NBPS6-C-001	2/28	SANITARY FORCEMAIN - PLAN AND PROFILE STA. 1+000 TO 1+160
NBPS6-C-002	3/28	SANITARY SEWER AND FORCEMAIN - PLAN AND PROFILES STA. 1+160 TO 1+220 / STA. 1+300 TO 1+360
NBPS6-C-003	4/28	SANITARY PUMP STATION - SITE PLANS AND SECTIONS
NBPS6-C-004	5/28	MISCELLANEOUS DETAILS
NBPS6-M-001	6/28	MECHANICAL PLAN, COMPONENT LIST, SECTION AND DETAILS
NBPS6-M-002	7/28	MECHANICAL SECTIONS
NBPS6-S-001	8/28	STRUCTURAL GENERAL NOTES
NBPS6-S-002	9/28	STRUCTURAL GENERAL NOTES
NBPS6-S-003	10/28	STRUCTURAL PLAN AND SECTIONS

DWG. No.	SHEET No.	DRAWING TITLE
NBPS6-E-001	11/28	LEGEND AND GENERAL NOTES
NBPS6-E-002	12/28	SITE PLAN
NBPS6-E-003	13/28	DETAILS
NBPS6-E-004	14/28	KIOSK (1 OF 3)
NBPS6-E-005	15/28	KIOSK (2 OF 3)
NBPS6-E-006	16/28	KIOSK (3 OF 3)
NBPS6-E-007	17/28	POWER DISTRIBUTION - SINGLE LINE DIAGRAM
NBPS6-E-008	18/28	COMMUNICATION AND INSTRUMENTATION BLOCK DIAGRAM
NBPS6-E-009	19/28	CONTROLS (1 OF 7)
NBPS6-E-010	20/28	CONTROLS (2 OF 7)
NBPS6-E-011	21/28	CONTROLS (3 OF 7)
NBPS6-E-012	22/28	CONTROLS (4 OF 7)
NBPS6-E-013	23/28	CONTROLS (5 OF 7)
NBPS6-E-014	24/28	CONTROLS (6 OF 7)
NBPS6-E-015	25/28	CONTROLS (7 OF 7)
NBPS6-E-016	26/28	RTU IO
NBPS6-E-017	27/28	TYPICAL PLC-RTU CABINET WIRING TERMINATIONS (1 OF 2)
NBPS6-E-018	28/28	TYPICAL PLC-RTU CABINET WIRING TERMINATIONS (2 OF 2)

DWG. No.	SHEET No.	DRAWING TITLE



KEY PLAN

SCALE 1:2000

1:2,000 0 40 120m

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RECORD OF REVISIONS

REV	DATE	BY	ENG	DESCRIPTION

NOT FOR CONSTRUCTION

B	26JUL23	CACH	CJM	TENDER
A	27MAR23	CACH	CJM	75% DESIGN REVIEW

ISS	DATE	BY	ENG	DESCRIPTION

RECORD OF ISSUE

SEAL

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — C. J. MORRIS # 57052 — ENGINEERING

PERMIT TO PRACTICE No. 1001658

PROJECT NO.	2231
DRAWN	CACH
DESIGNED	CJM
CHECKED	CJM / MB
APPROVED	CD
DATE	DECEMBER 2022
SCALE	AS NOTED

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY PUMP STATION No. 6 UPGRADE AND SANITARY FORCEMAIN REPLACEMENT

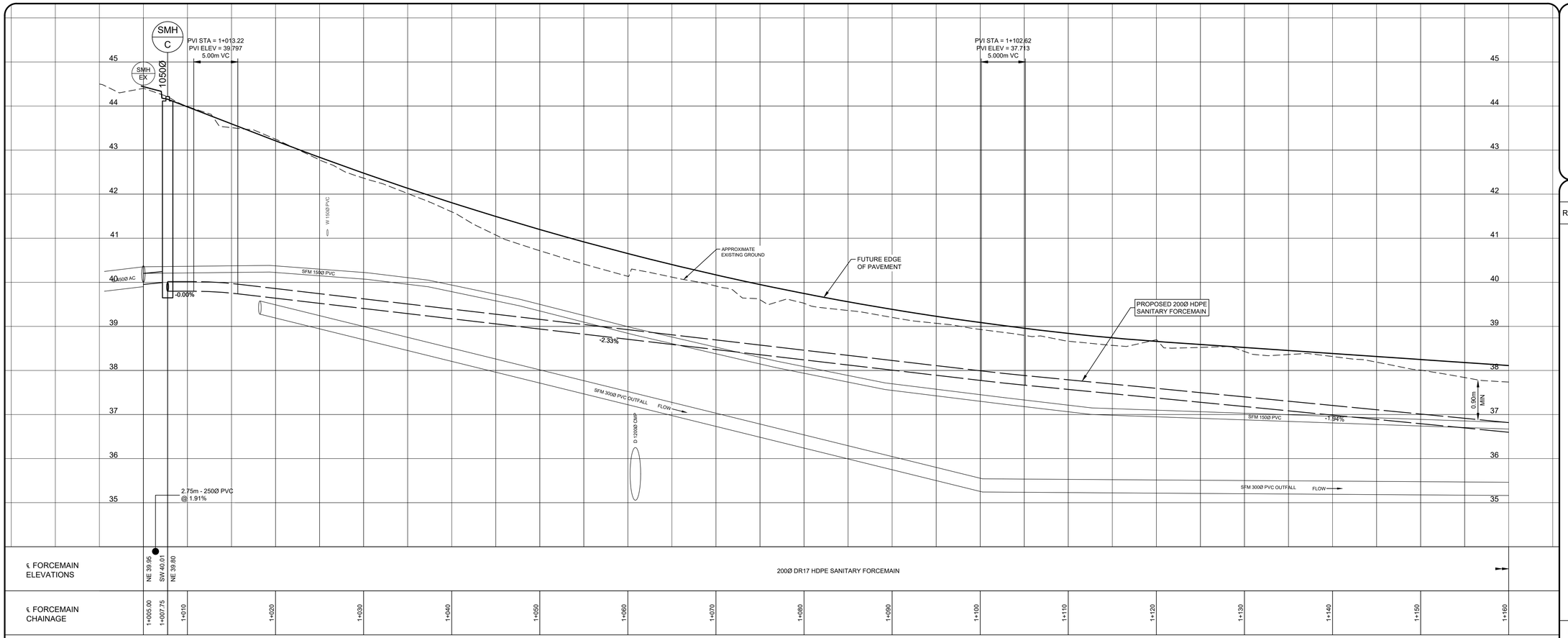
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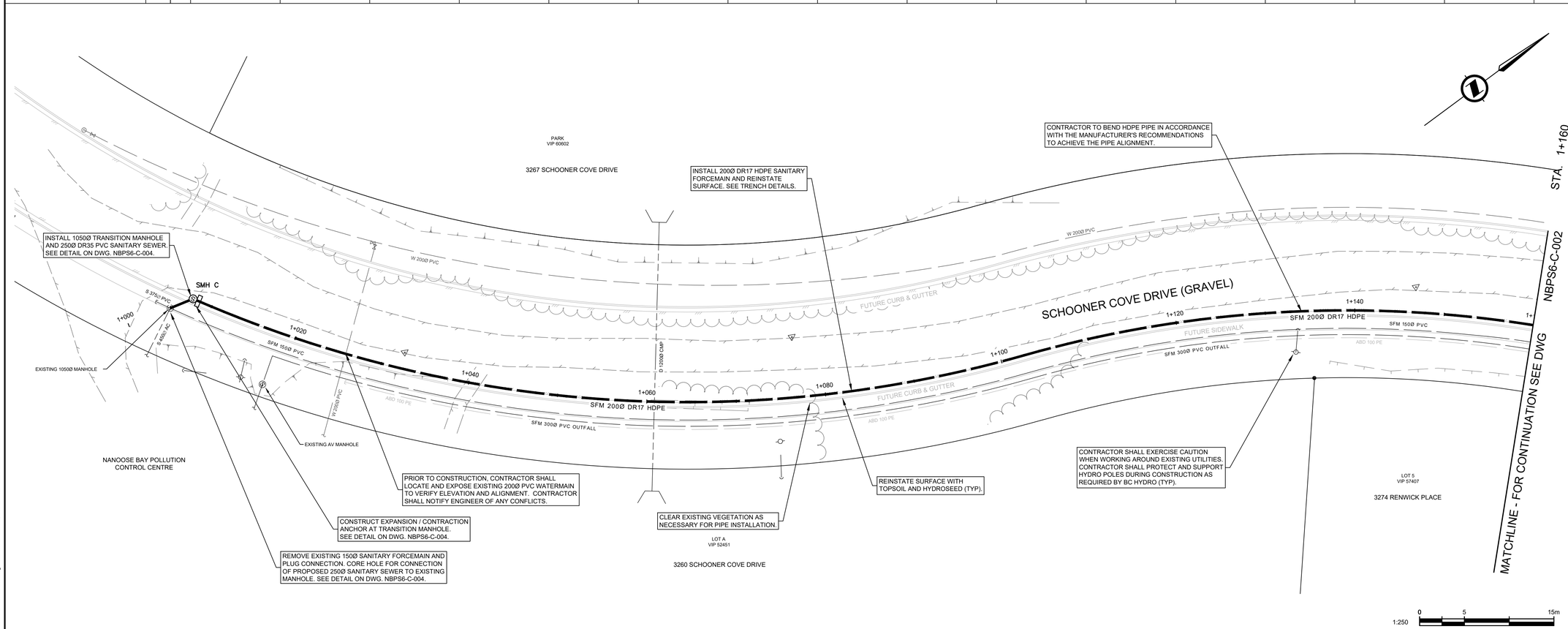
KEY PLAN, LOCATION PLAN, DRAWING LIST, LEGEND, AND GENERAL NOTES

KOERS DWG. No. 2231-01

DRAWING No.	REV.	SHEET
NBPS6-G-001	B	1 /28

File: 2231-01 to 05.dwg Plot Time: Jul 26, 2023 - 10:24am User: chearn





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RECORD OF ISSUE

SEAL

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. MORRIS # 57052 SURVEYOR OF LAND ENGINEER

PERMIT TO PRACTICE No. 1001658

PROJECT NO.	2231
DRAWN	CACH
DESIGNED	CJM
CHECKED	CJM / MB
APPROVED	CD
DATE	DECEMBER 2022
SCALE	1:250 H / 1:50 V

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY
PUMP STATION No. 6
UPGRADE AND
SANITARY FORCEMAIN
REPLACEMENT

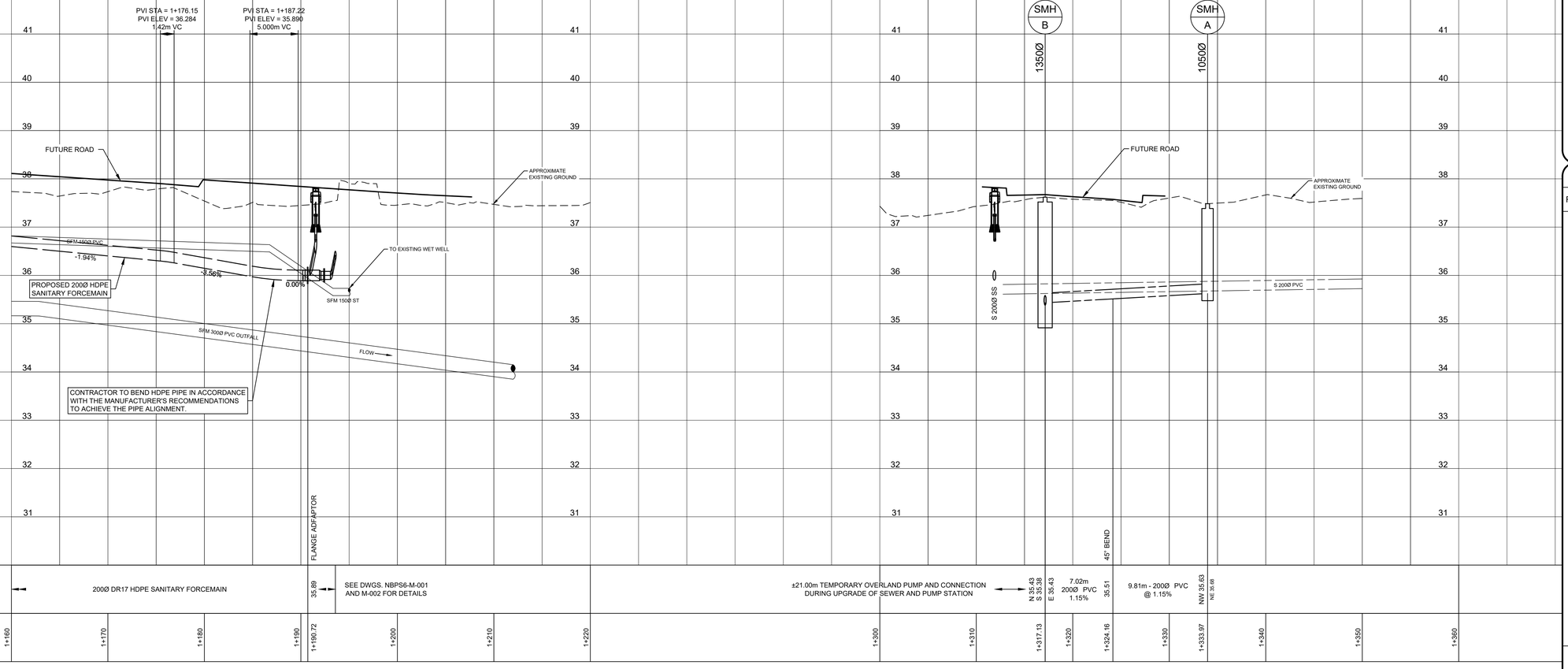
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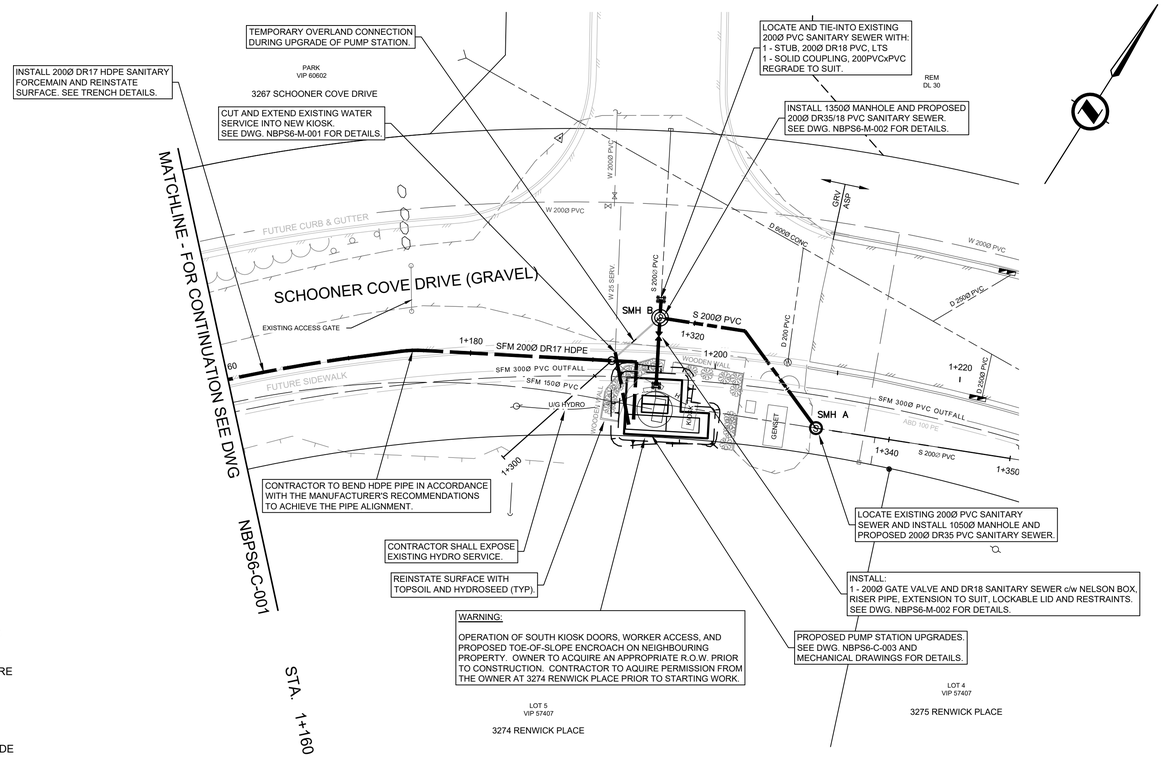
SANITARY FORCEMAIN
PLAN & PROFILE
STA. 1+000 TO 1+160

KOERS DWG. No. 2231-02

DRAWING No.	REV.	SHEET
NBPS6-C-001	B	2/28

File: 2231-01 to 05.dwg Plot Time: Jul 26, 2023 - 10:26am User: chearn





NOTES:

1. CONTRACTOR SHALL DEVELOP AND IMPLEMENT PROPER WORK SEQUENCING TO MINIMIZE THE TIME PUMP STATION No. 6 IS OPERATING UNDER THE BYPASS PUMPING AND SEQUENCING PLAN.
2. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL PUMP DOWN THE WET WELL, AND CO-ORDINATE WITH THE RDN TO VERIFY PUMP MOUNTING CONFIGURATIONS. THE CONTRACTOR SHALL WORK WITH THE PUMP SUPPLIER AND SUBMIT A PLAN SHOWING ANCHOR BOLTS. SEE SPECIFICATIONS FOR DETAILS.
3. ALL HDPE FITTINGS SHALL BE MANUFACTURED TO HAVE THE SAME MINIMUM PRESSURE RATING AS THE PIPE IT IS FUSED TO.
4. CONTRACTOR TO MAINTAIN ACCESS FOR RDN STAFF TO PUMP STATION FOR THE DURATION OF CONSTRUCTION.
5. ALL MANHOLES AND VALVE BOXES LOCATED OUTSIDE OF PAVED AREAS SHALL INCLUDE 1.5m WIDE ASPHALT SURROUND.

1:250 0 5 15m

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B	26JUL23	CACH	CJM	TENDER
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RECORD OF ISSUE

SEAL

PROFESSIONAL ENGINEER — C. J. MORRIS # 57052 — PROVINCE OF BRITISH COLUMBIA — ENGINEER

PERMIT TO PRACTICE No. 1001658

PROJECT NO.	2231
DRAWN	CACH
DESIGNED	CJM
CHECKED	CJM / MB
APPROVED	CD
DATE	DECEMBER 2022
SCALE	1:250 H / 1:50 V

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

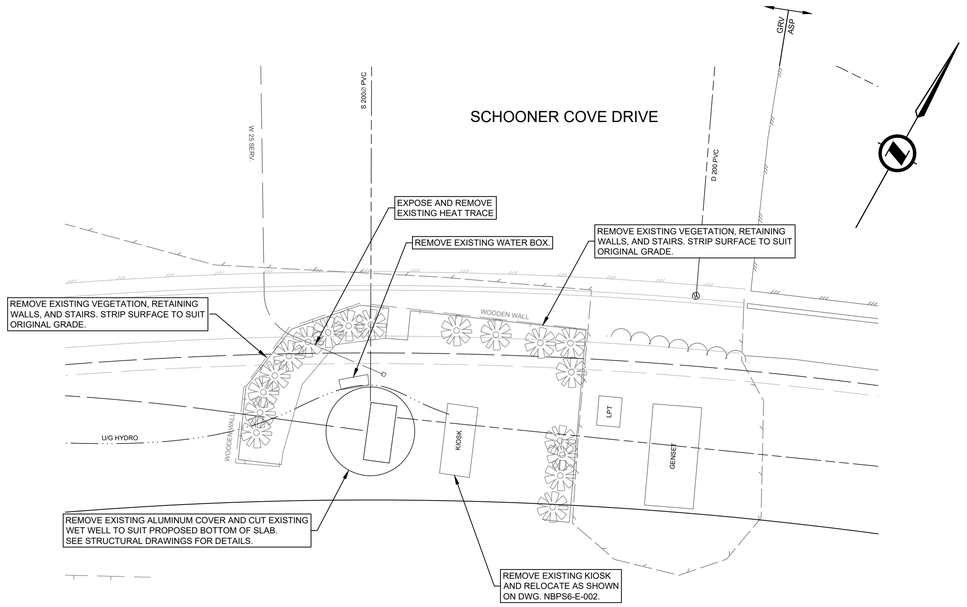
NANOOSE BAY
PUMP STATION No. 6
UPGRADE AND
SANITARY FORCEMAIN
REPLACEMENT

TITLE

SANITARY SEWER
AND FORCEMAIN
PLAN & PROFILES
STA. 1+160 TO 1+220
STA. 1+300 TO 1+360
KOERS DWG. No. 2231-03

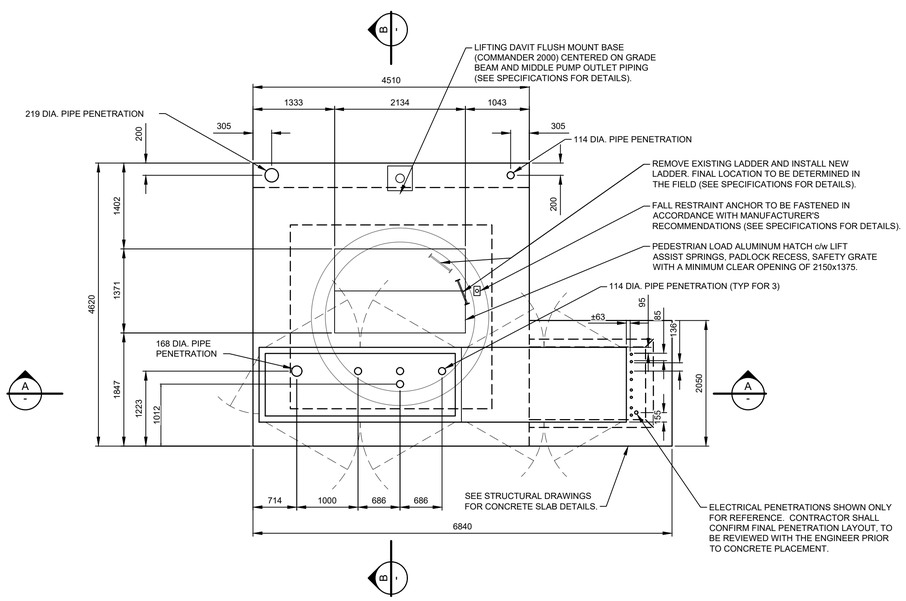
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NBPS6-C-002	B	3/28

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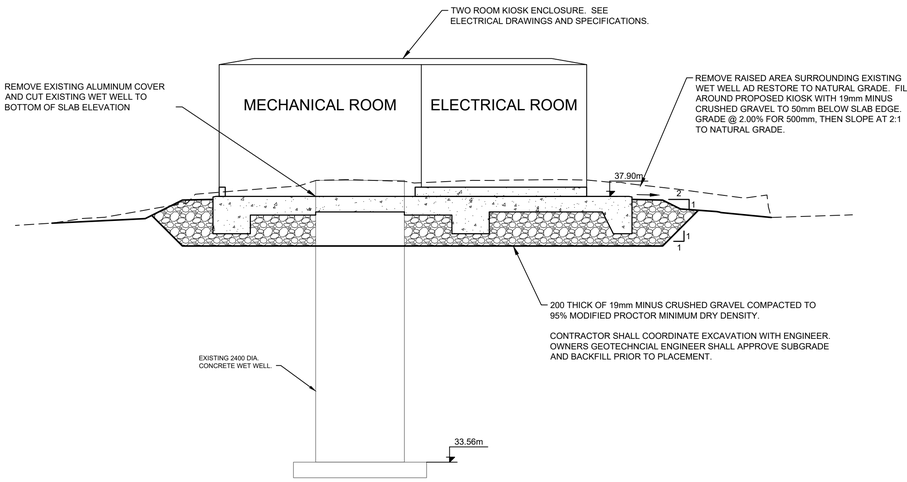
EXISTING REMOVALS PLAN

SCALE 1:100



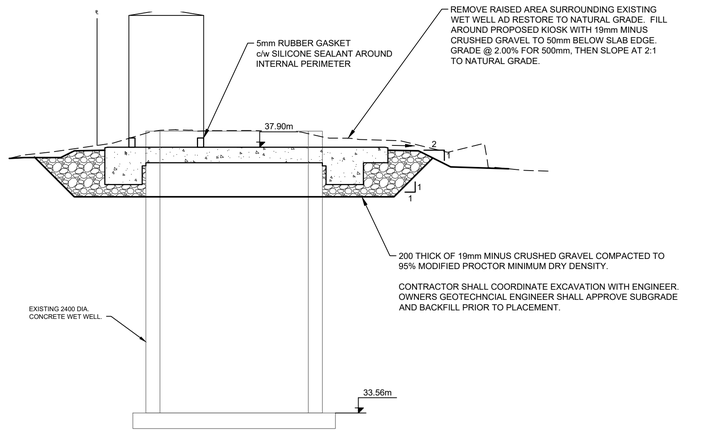
PROPOSED SLAB PLAN

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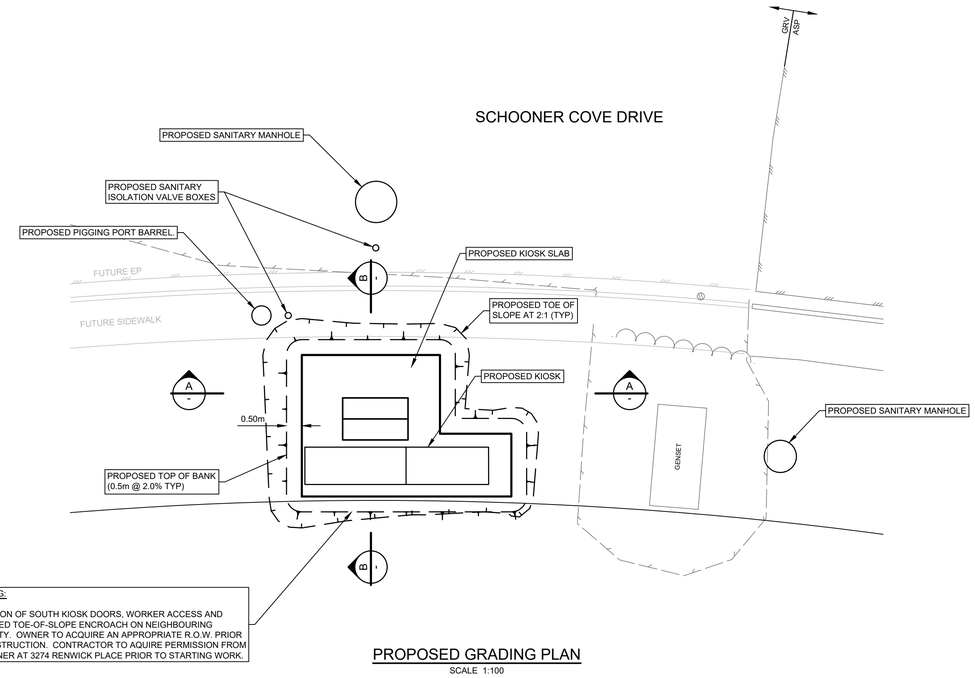
A SECTION

SCALE 1:50



B SECTION

SCALE 1:50



PROPOSED GRADING PLAN

SCALE 1:100

1:100 0 2 6m

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. MORRIS # 57052 ENGINEER

PERMIT TO PRACTICE No. 1001658

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DATE	DECEMBER 2022
SCALE	AS NOTED

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY
PUMP STATION No. 6
UPGRADE AND
SANITARY FORCEMAIN
REPLACEMENT

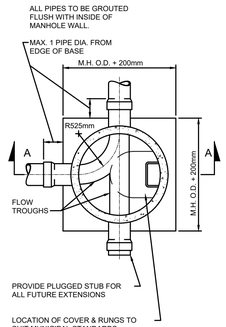
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SANITARY PUMP STATION
SITE PLANS
AND SECTIONS

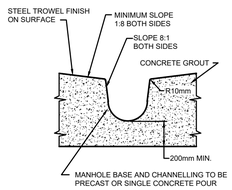
KOERS DWG. No. 2231-04

DRAWING No.	REV.	SHEET
NBPS6-C-003	B	4 /28

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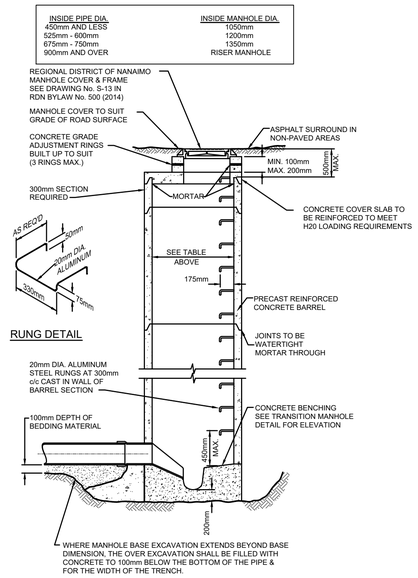


PLAN



INVERT CHANNELLING IN MANHOLE

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



RUNG DETAIL

SECTION A-A
TYPICAL MANHOLE

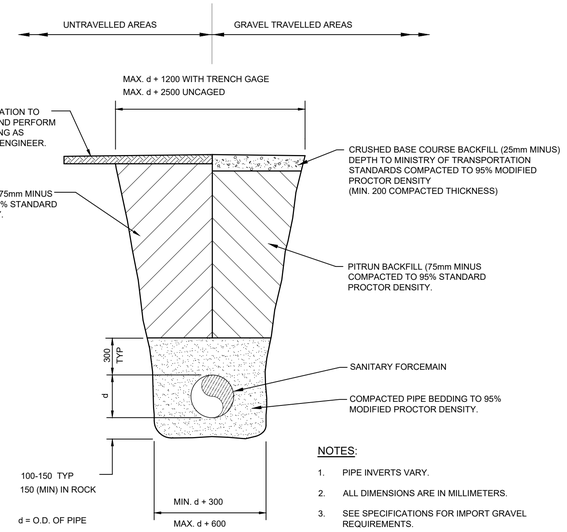
PRECAST REINFORCED CONCRETE BARREL TO ASTM C-478

NOTE:

WHERE EXISTING SANITARY SEWER MANHOLES ARE BEING REMOVED, REMOVE EXISTING BASE AND CONCRETE SURROUND AND PLACE CONTROL DENSITY FILL BELOW SPRING LINE 1.0m UPSTREAM AND DOWNSTREAM OF REMOVED STRUCTURE.

STANDARD PRECAST MANHOLE

N.T.S.

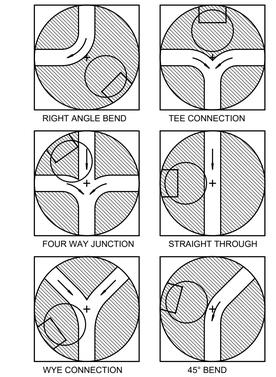


NOTES:

1. PIPE INVERTS VARY.
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. SEE SPECIFICATIONS FOR IMPORT GRAVEL REQUIREMENTS.
4. ALL BACKFILL AND TRENCH RESTORATION SHALL BE IN ACCORDANCE WITH MoTI STANDARDS.

SANITARY SEWER TRENCH SECTION

N.T.S.

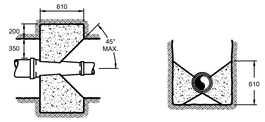


NOTES

1. ALL CHANNELS SHALL BE FINISHED WITH A STEEL TROWEL. BENCHING (SHADED AREAS) SHALL BE BROOM FINISHED.
2. MANHOLE RUNG LOCATIONS SHALL BE AS SHOWN UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.

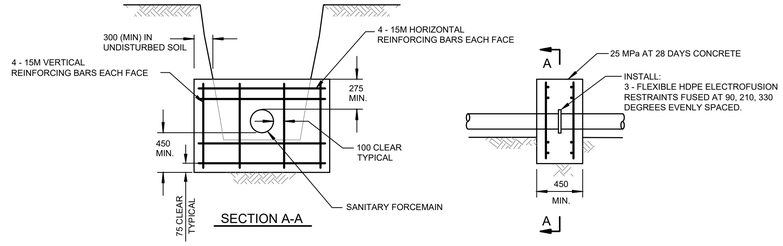
TYPICAL MANHOLE LAYOUT

N.T.S.



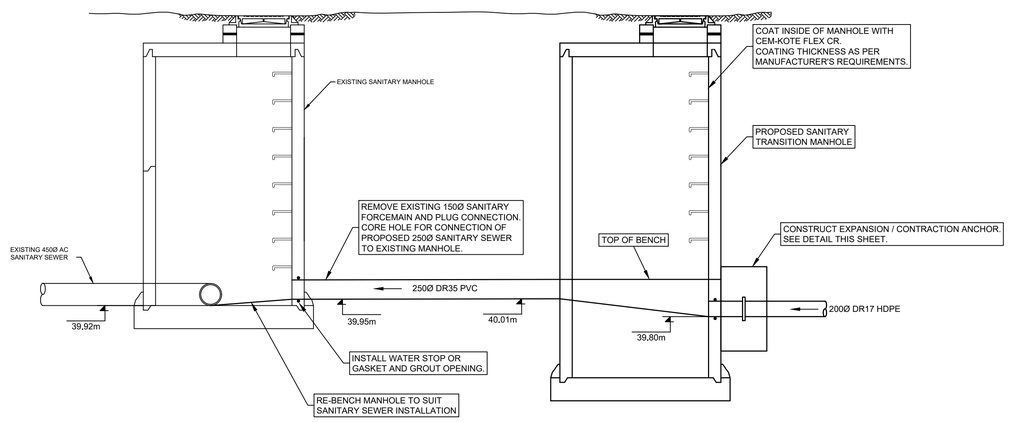
THRUST BLOCK DETAILS

MINIMUM THRUST AREAS FOR FITTINGS AT 1030kN/m² PRESSURE AND FOR SOILS WITH A MINIMUM BEARING OF 96kN/m²



EXPANSION / CONTRACTION ANCHOR DETAIL

N.T.S.



TRANSITION MANHOLE DETAIL

N.T.S.

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RECORD OF REVISIONS

REV	DATE	BY	ENG	DESCRIPTION

NOT FOR CONSTRUCTION

ISS	DATE	BY	ENG	DESCRIPTION
B	26JUL23	CACH	CJM	TENDER
A	27MAR23	CACH	CJM	75% DESIGN REVIEW

RECORD OF ISSUE

SEAL

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. MORRIS # 57052 ENGINEER

PERMIT TO PRACTICE No. 1001658

PROJECT NO.	2231
DRAWN	CACH
DESIGNED	CJM
CHECKED	CJM / MB
APPROVED	CD
DATE	DECEMBER 2022
SCALE	AS NOTED

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY PUMP STATION No. 6 UPGRADE AND SANITARY FORCEMAIN REPLACEMENT

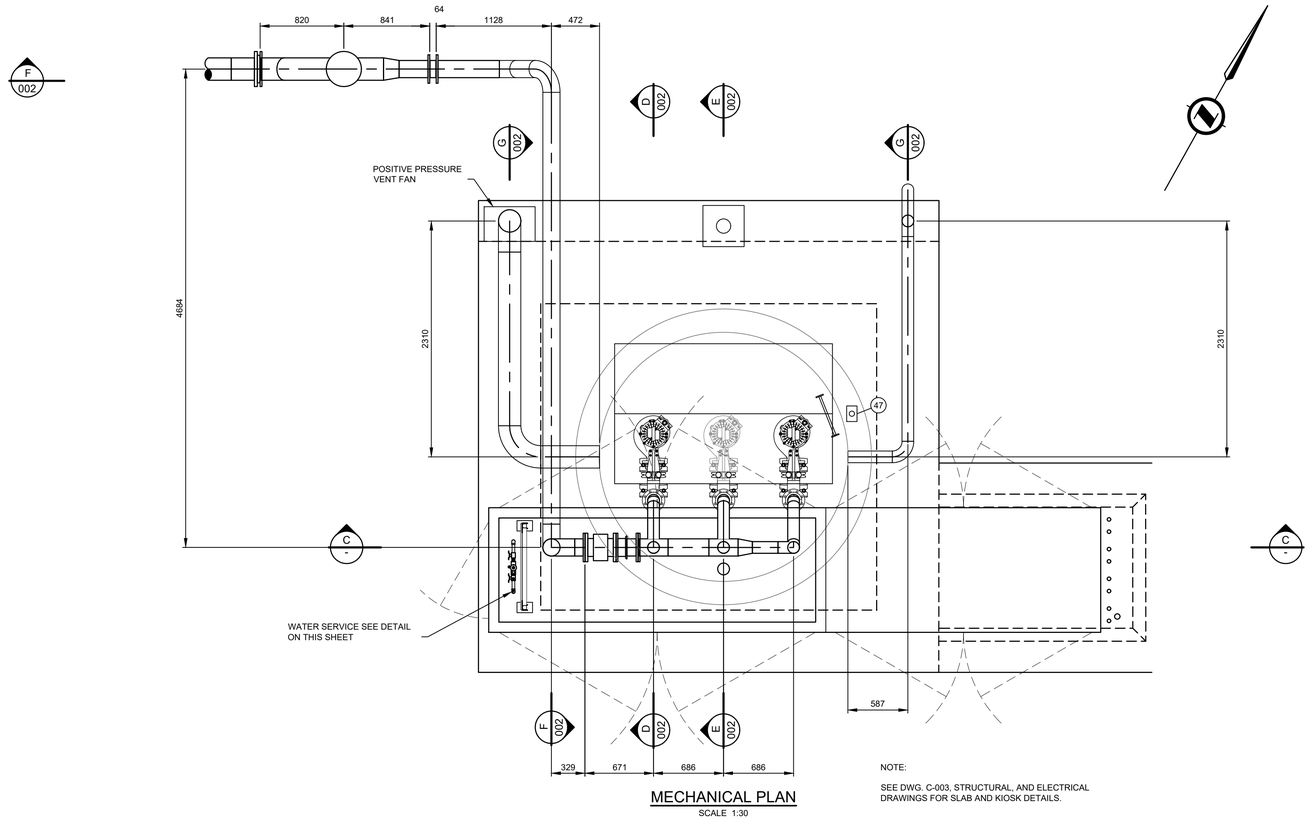
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MISCELLANEOUS DETAILS

KOERS DWG. No. 2231-05

DRAWING No.	REV.	SHEET
NBPS6-C-004	B	5 /28

File: 2231-01 to 05.dwg Plot Time: Jul 26, 2023 - 10:30am User: chearn



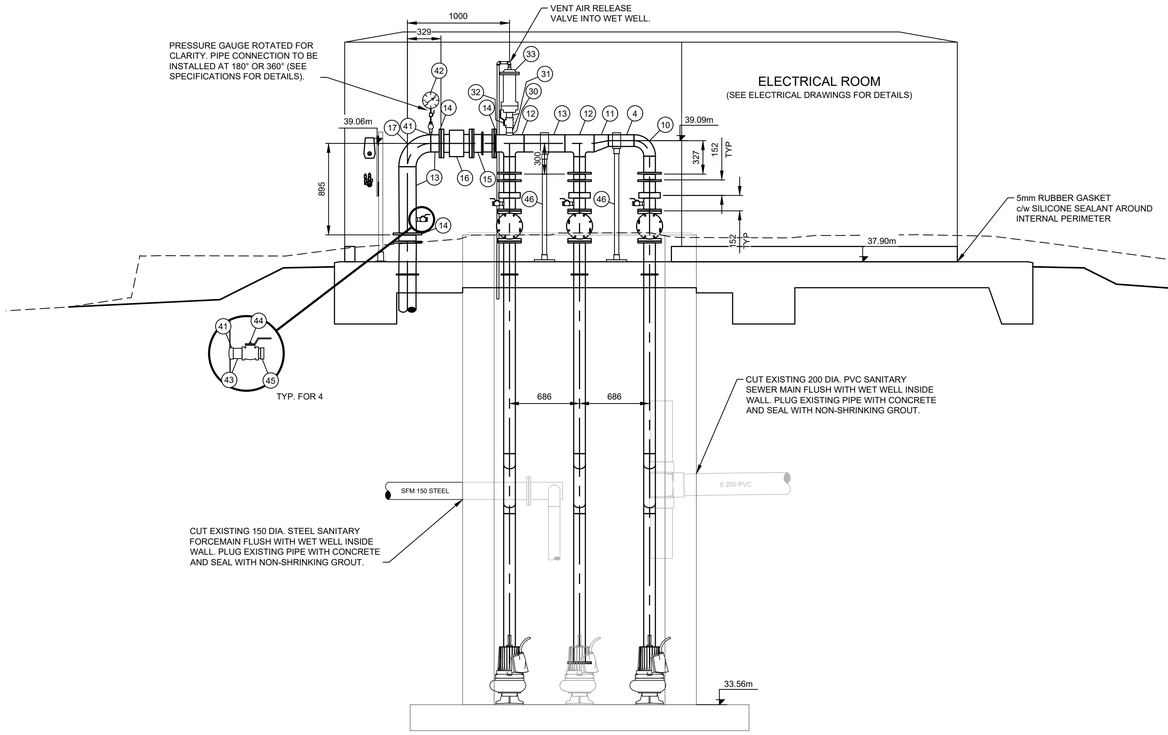
MECHANICAL PLAN
SCALE 1:30

NOTE:

SEE DWG. C-003, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR SLAB AND KIOSK DETAILS.

COMPONENT LIST

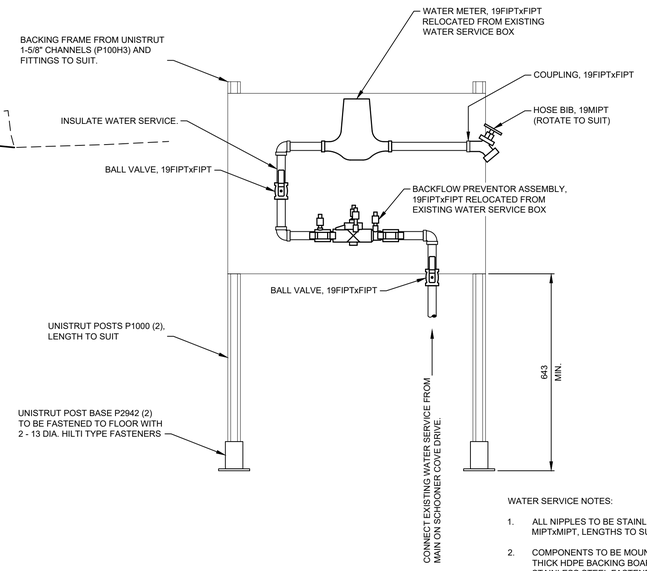
ITEM No.	DESCRIPTION	QUANTITY
1	SEWAGE LIFT PUMP (RE-USE EXISTING, SEE SPECIFICATIONS)	OWNER SUPPLIED
2	DISCHARGE CONNECTION, 100F c/w LIFTING CHAIN, CHAIN CONNECTOR, GUIDE BARS, AND UPPER GUIDE BAR HOLDER (SEE SPECIFICATIONS)	3
3	SLIP-ON RING FLANGE, 100 DIA. AWWA C228 CLASS SD STAINLESS STEEL	16
4	PIPE, 100 DIA. SCH 40 STAINLESS STEEL 316L	TO SUIT
5	LONG RADIUS 45° BEND, 100 DIA. SCH 40 STAINLESS STEEL 316L	6
6	THRUST RING, 25 WIDE x 10 THICK, STAINLESS STEEL	4
7	CHECK VALVE, 100FxF (APCO CVS SERIES 250, SEE SPECIFICATIONS)	3
8	COUPLING, 100GxG (VICTAULIC MODEL 489 SHOWN, SEE SPECIFICATIONS)	3
9	KNIFE GATE VALVE, 100 DIA. WAFER STYLE (PMP MONO, SEE SPECIFICATIONS)	3
10	LONG RADIUS 90° BEND, 100 DIA. SCH 40 STAINLESS STEEL 316L	1
11	ECCENTRIC REDUCER, 150x100 SCH 40 STAINLESS STEEL 316L (COMMON CROWN)	1
12	REDUCING TEE, 150x100 SCH 40 STAINLESS STEEL 316L	2
13	PIPE, 150 DIA. SCH 40 STAINLESS STEEL 316L	TO SUIT
14	SLIP-ON RING FLANGE, 150 DIA. AWWA C228 CLASS SD STAINLESS STEEL	6
15	DISMANTLING JOINT, 150FxF (ROMAC INDUSTRIES DJ400 SHOWN)	1
16	ELECTROMAGNETIC FLOWMETER, 150FxF (SEE SPECIFICATIONS)	1
17	LONG RADIUS 90° BEND, 150 DIA. SCH 40 STAINLESS STEEL 316L	3
18	KNIFE GATE VALVE, 150 DIA. WAFER (PMP MONO, SEE SPECIFICATIONS)	2
19	LONG RADIUS 45° BEND, 150 DIA. SCH 40 STAINLESS STEEL 316L	1
20	NELSON BOX c/w RISER PIPE, EXTENSION TO SUIT, AND LOCKABLE LID	1
21	CONCENTRIC REDUCER, 200x150 SCH 40 STAINLESS STEEL 316L	1
22	FABRICATED WYE, 200 DIA. SCH40 STAINLESS STEEL 316L	1
23	SLIP-ON RING FLANGE, 200 DIA. AWWA C228 CLASS SD STAINLESS STEEL	2
24	LONG RADIUS 45° BEND, 200 DIA. SCH 40 STAINLESS STEEL 316L	1
25	PIPE, 200 DIA SCH 40 STAINLESS STEEL 316L	TO SUIT
26	BLIND FLANGE, 200 DIA. AWWA C228 CLASS SD STAINLESS STEEL DRILLED AND TAPPED TO 50FIPT	1
27	NIPPLE, 50MIPTxMIPT STAINLESS STEEL	TO SUIT
28	LOCKABLE BALL VALVE, 50FIPTxFIPT STAINLESS STEEL	1
29	PLUG, 50MIPT STAINLESS STEEL	1
30	THREADOLET, 50FIPT STAINLESS STEEL	1
31	NIPPLE, 50MIPTxG STAINLESS STEEL	TO SUIT
32	LOCKABLE BALL VALVE, 50GxG STAINLESS STEEL	1
33	AIR VALVE ASSEMBLY, 50FIPT (APCO S-400) c/w STAINLESS STEEL DISCHARGE PIPING AND VALVES (SEE SPECIFICATIONS)	1
34	PIPE, 100 DIA. SCH 10 STAINLESS STEEL 316L	TO SUIT
35	LONG RADIUS 90° BEND, 100 DIA. SCH 10 STAINLESS STEEL 316L	2
36	LONG RADIUS 180° RETURN, 100 DIA. SCH 10 STAINLESS STEEL 316L	1
37	ODOR CONTROL VALVE, 100F CONTINENTAL CARBON GROUP (WAGER MODEL 4-1800 INVERTED VENT SHOWN, SEE SPECIFICATIONS)	1
38	PIPE, 200 DIA SCH 10 STAINLESS STEEL 316L	TO SUIT
39	LONG RADIUS 90° BEND, 200 DIA. SCH 10 STAINLESS STEEL 316L	2
40	POSITIVE PRESSURE VENT FAN (SEE SPECIFICATIONS)	1
41	THREADLOET, 25FIPT STAINLESS STEEL 316L	5
42	FLUID FILLED PRESSURE GAUGE, 25MIPT c/w 25MIPTxFIPT ROOT VALVE (SEE SPECIFICATIONS)	1
43	NIPPLE, 25MIPTxMIPT STAINLESS STEEL	TO SUIT
44	LOCKABLE BALL VALVE, 25FIPTxFIPT STAINLESS STEEL	4
45	PLUG, 25MIPT STAINLESS STEEL	4
46	ADJUSTABLE PIPE SUPPORT (STANDON MODEL C92 CLAMP STYLE)	2
47	FALL ARREST ANCHOR (DBI SALA FLOORMOUNT SLEEVE 8518347)	1
48	FLOOR DRAIN, 100 DIA. FIPT STAINLESS STEEL c/w PVC STUB AND MECHANICAL PLUG	1



NOTE:

ALL BURIED STAINLESS STEEL PIPE, FLANGES, AND FITTINGS TO BE WRAPPED IN DENSO TAPE.

C - SECTION
SCALE 1:30



WATER SERVICE NOTES:

1. ALL NIPPLES TO BE STAINLESS STEEL, MIPTxMIPT, LENGTHS TO SUIT.
2. COMPONENTS TO BE MOUNTED ON 10mm THICK HDPE BACKING BOARD USING STAINLESS STEEL FASTENERS AND SUPPORTS.

1 - WATER SERVICE DETAIL
SCALE 1:10

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RECORD OF REVISIONS

REV	DATE	BY	ENG	DESCRIPTION
B	26JUL23	CACH	CJM	TENDER
A	27MAR23	CACH	CJM	75% DESIGN REVIEW

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA C. J. MORRIS # 57052 ENGINEERING

PERMIT TO PRACTICE No. 1001658

PROJECT NO.	2231
DRAWN	CACH
DESIGNED	CJM
CHECKED	CJM / MB
APPROVED	CD
DATE	DECEMBER 2022
SCALE	AS NOTED

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY PUMP STATION No. 6 UPGRADE AND SANITARY FORCEMAIN REPLACEMENT

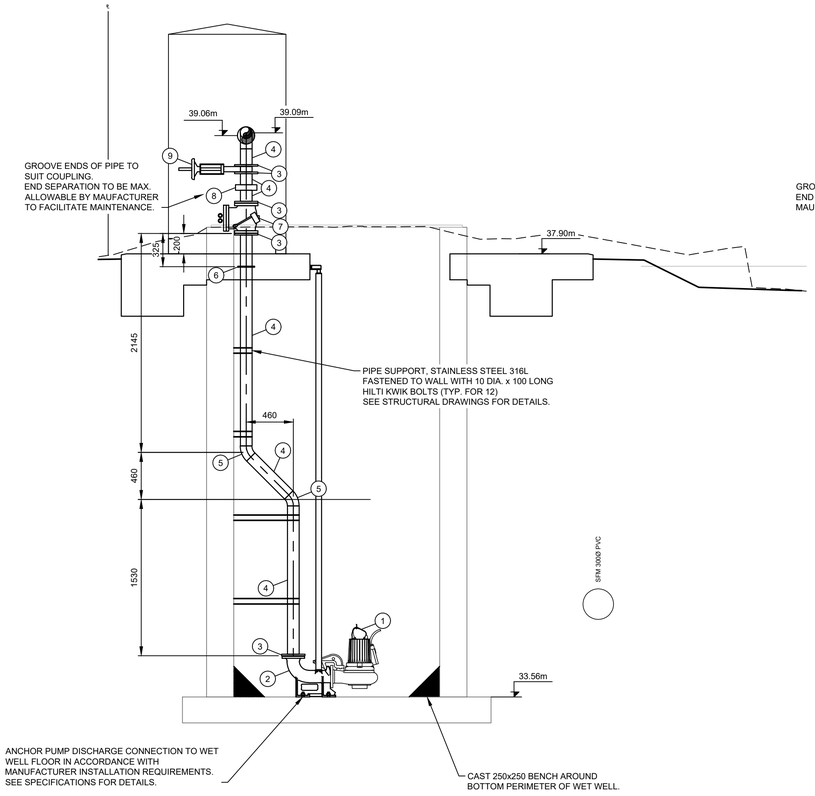
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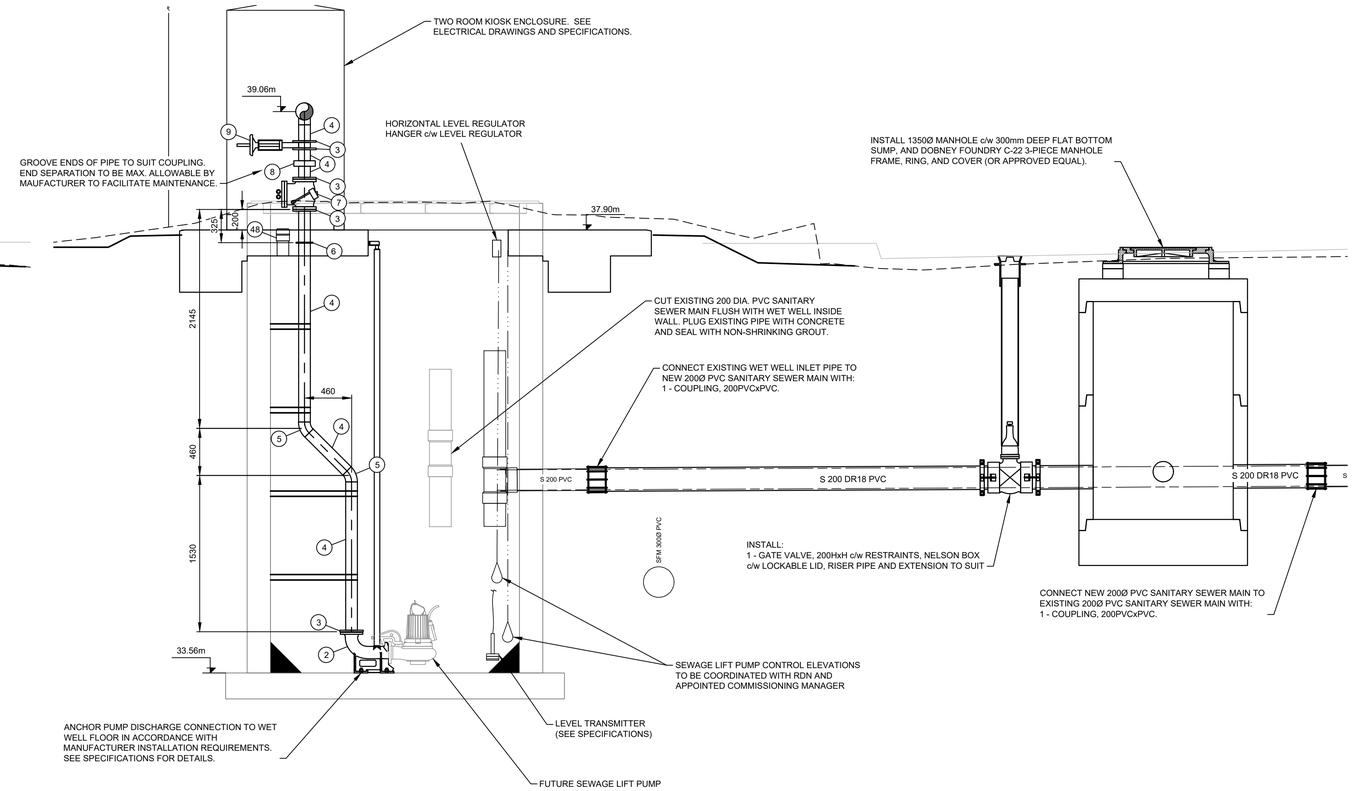
MECHANICAL PLAN, COMPONENT LIST, SECTION AND DETAILS

KOERS DWG. No. 2231-101

DRAWING No.	REV.	SHEET
NBPS6-M-001	B	6 /28

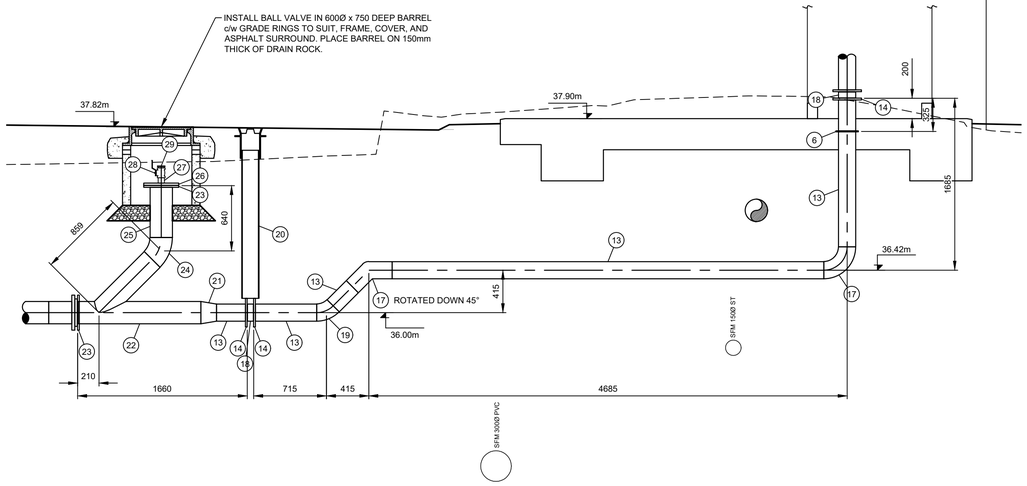
File: 2231-101 to 102.dwg Plot Time: Jul 26, 2023 - 10:33am User: chearn

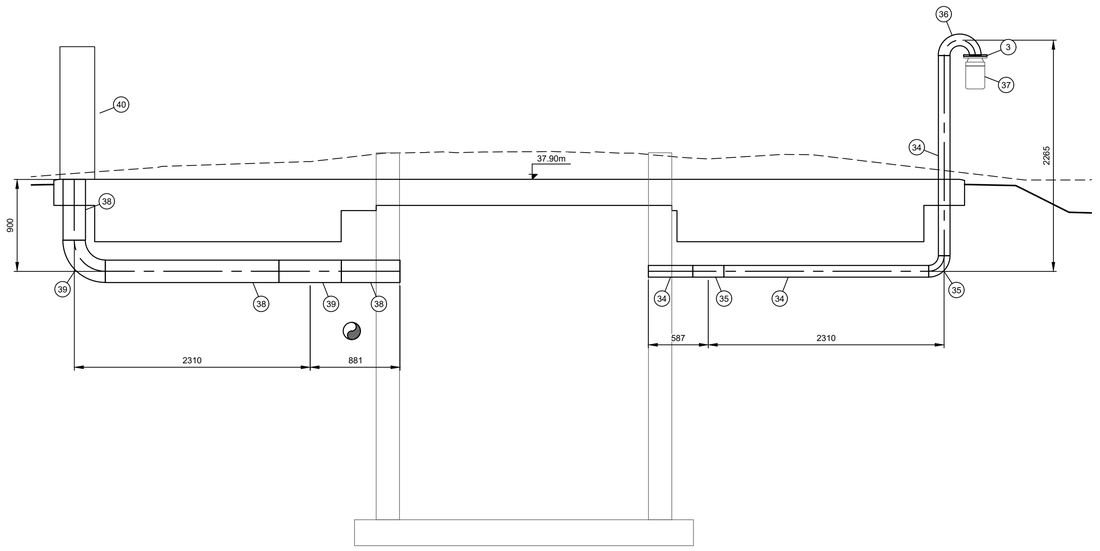




D 001 SECTION (TYP. FOR 2)
SCALE 1:30

E 001 SECTION
SCALE 1:30





F 001 SECTION
SCALE 1:30

G 001 SECTION
SCALE 1:30

NOTE:

ALL BURIED STAINLESS STEEL PIPE, FLANGES, AND FITTINGS TO BE WRAPPED IN DENSO TAPE.

File: 2231-101 to 102.dwg Plot Time: Jul 26, 2023 - 10:45am User: chearn

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PROFESSIONAL ENGINEER PROVINCE OF BC C. J. MORRIS # 57052 SPECIALIZED IN MECHANICAL ENGINEERING

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REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY PUMP STATION No. 6 UPGRADE AND SANITARY FORCEMAIN REPLACEMENT

TITLE

MECHANICAL SECTIONS

KOERS DWG. No. 2231-102

DRAWING No.	REV.	SHEET
NBPS6-M-002	B	7 /28