



## TENDER 19-07

### WATERFRONT SEWER UPGRADES PHASE II

#### ADDENDUM NO. 2

March 28<sup>th</sup>, 2019

**This addendum forms part of the Tender Documents** and shall be read, interpreted, and coordinated with all other parts. The costs of all elements contained herein shall be included in the submission. The following revisions, changes, corrections, additions, and or deletions supersede the information contained in the original Documents to the extent referenced and shall become part thereof.

#### **Addendum Item 1 - Questions and Answers**

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1. **Proponent Question:**

In this tender it mentions cold mixing the trenches. Would this be required for all the lineal trenches as well as the crossings or just the crossings? Would maintained 19mm- be acceptable for the lineal trench?

**Response:**

Cold mix is required to all trenches until the permanent paving work is completed as per Specification 3.6.6 and 3.6.7 and Supplemental Specification 31 23 01 3.6.6.3.

2. **Proponent Question:**

Is there a deadline to ask the City further questions?

**Response:**

All questions regarding this tender must be submitted to the City in writing at [purchasing@campbellriver.ca](mailto:purchasing@campbellriver.ca) **no later than 2:00pm (local time) on Wednesday April 3rd.** Any questions received after this date and time will not be responded to.

#### **Addendum Item 2 – Options for Alternatives**

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Add to the Instructions to Tenderers Part I the following:

**Options for Alternatives 4.13**

**Option 1** and **Option 2** in the *Optional Work* portion of the Schedule of Quantities and Prices are mutually exclusive. The *Work* will include one or the other but not both. Consequently, the *Owner* will include only the lower of the extended prices of the **Option 1** and **Option 2** items when

**CITY OF CAMPBELL RIVER  
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calculating the Tender total cost for making price comparisons between Tenders. In all other respects IT 17.2 shall apply.

The Tenderer shall determine the lower cumulative total for either **Option 1** or **Option 2** and include this lower cumulative total in calculating the total tender value.

**Addendum Item 3 – Updated Tender Documents**

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The tender documents have been updated as follows and are attached to this addendum:

1. The Schedule of Quantities and Prices have been revised, replace Appendix 1 with **Appendix 1A (issued 28Mar19)**, as attached. Updated items are highlighted in yellow.
2. Supplemental Specification 01 52 01 has been added and is attached to this addendum.
3. Project drawings have been revised as attached.

**Addendum Item 4 – Closing Date Revision**

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Change the Tender closing date from Wednesday April 10<sup>th</sup>, 2019 and replace with “**Friday April 12<sup>th</sup>, 2019**”.

**End of Addendum**

**Acknowledgement of this Addendum in your Tender submission is required.**

Clinton J. Crook, SCMP, CPSM  
Purchasing & Risk Management Officer

**Appendix 1A**

(issued 28 March 19)

**SCHEDULE OF QUANTITIES AND PRICES – GST EXCLUDED**

(See paragraph 5.3.1 of the Instructions to Tender – Part II)

(All prices and Quotations including the Contract Price shall include all Taxes, but shall not include GST, GST shall be shown separately)

Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<b>01 - GENERAL ITEMS</b>						
<b>01 01 01 Mobilization and Demobilization</b>						
1	1.1.1-1.1.5	Mobilization & Demobilization (maximum 10% of Tender Price)	LS	1		
<b>01 33 01 Project Record Documents</b>						
2	1.8.1	Project record documents	LS	1		
<b>01 52 01 Temporary Structures</b>						
3	1.6.1	Temporary structures	LS	1		
<b>01 53 01 Temporary Facilities</b>						
4	1.9.1	Sanitary facilities, site storage, loading and hoardings	LS	1		
4a	1.9.1	Mobilization & demobilization of well pointing de-watering and water treatment equipment ( <i>Optional Work</i> )	LS	1		
4b	1.9.1	Operation and maintenance of well pointing de-watering equipment ( <i>Optional Work</i> )	day	56		
4c	1.9.1	Operation and maintenance of water treatment equipment ( <i>Optional Work</i> )	day	56		
<b>01 55 00 Traffic Control, Vehicle Access and Parking</b>						
5	1.5.1	Traffic control, vehicle access and parking	LS	1		
<b>01 57 01 Environmental Protection</b>						
6	1.6.1	Temporary erosion and sediment control	LS	1		

Sub-Total Page 9: \$

Tenderer's Initial    Owner's Initial

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Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<b>31 - EARTHWORKS</b>						
<b><u>31 22 16.1 Reshaping Existing Subgrade</u></b>						
7	1.4.2	Remove unsuitable subgrade ( <i>Optional Work</i> )	m <sup>3</sup>	100		
<b><u>31 23 01 Excavating, Trenching and Backfilling</u></b>						
8	1.10.3	Over-excavation including backfilling ( <i>Optional Work</i> )	m <sup>3</sup>	150		
9	1.10.9	Pre-locate all the existing utilities	ea	63		
<b><u>31 23 17 Rock Removal</u></b>						
10	1.6.4/5	Boulders and rock fragments - blasting not permitted ( <i>Optional Work</i> )	m <sup>3</sup>	50		
<b><u>31 23 23 Controlled Density Fill</u></b>						
11	1.4.1	CDF (Pipe 200 mm diameter)	m	43		
<b><u>31 24 13 Roadway Excavation, Embankment and Compaction</u></b>						
11a	1.8.5	Common excavation, off-site disposal	m <sup>3</sup>	15		
<b>32 - ROADS AND SITE IMPROVEMENTS</b>						
<b><u>21 01 16 Cold Milling</u></b>						
12	1.5.1	Milling 200mm wide for permanent pavement restoration, 50mm depth	m	1 975		
<b><u>32 11 16.1 Granular Subbase</u></b>						
12a	1.4.2	Granular subbase	T	40		
13	1.4.2	Granular subbase ( <i>Optional Work</i> )	T	250		
<b><u>32 11 23 Granular Base</u></b>						
14	1.4.1	Granular base ( <i>Optional Work</i> )	T	150		
15	1.4.5	Gravel shoulder restoration 19 mm gravel; 100 mm thk	m <sup>2</sup>	900		
<b>Sub-Total Page 10:</b>						<b>\$</b>

Tenderer's Initial    Owner's Initial

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Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<b><u>32 12 16 Hot-Mix Asphalt Concrete Paving</u></b>						
16	1.5.7	Saw cut asphaltic or concrete pavements in preparation for permanent pavement restoration, all depths	m	2 000		
17	1.5.9	Coordination of Owner's Asphalt Contractor	LS	1		
<b><u>32 17 23 Painted Pavement Markings</u></b>						
18	1.5.2	Paint fog line on Hwy 19A	LS	1		
19	1.5.3	Thermoplastic zebra crosswalk	LS	1		
<b><u>32 91 21 Topsoil and Finish Grading</u></b>						
19a	1.4.1	Imported topsoil	m <sup>3</sup>	20		
<b><u>32 92 19 Hydraulic Seeding</u></b>						
19b	1.8.1	Hydraulic seeding; lawn mix	m <sup>2</sup>	200		
<b>33 - UTILITIES</b>						
<b><u>33 01 30.1 CCTV Inspection of Pipelines</u></b>						
20	1.6.2	CCTV pipeline inspection	m	2 367		
<b><u>33 11 01 Waterworks - Imported Backfill</u></b>						
21	1.8.1/2	Pipe - 200 mm diam. C900 DR18; all depths	m	6		
22	1.8.3	Bends - 200 mm diam.	ea	4		
23	1.8.5	Remove and replace service connection pipe across trench - 19 mm diam.	ea	14		
24	1.8.5	Remove and replace service connection pipe across trench - 25 mm diam.	ea	1		
25	1.8.5	Remove and replace service connection pipe across trench - 38 mm diam.	ea	1		
26	1.8.14	Tie-in - 200 mm to be performed by Contractor; STA 1+688	ea	1		
<b>Sub-Total Page 11:</b>						<b>\$</b>

Tenderer's Initial    Owner's Initial

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Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<b>33 30 01 Sanitary Sewers - Imported Backfill</b>						
27	1.6.1/2	Pipe - 200 mm diam. PVC DR35; 3m - 4m depth	m	7		
28	1.6.3	Remove and replace service connection pipe across trench - 100 mm diam.	ea	18		
29	1.6.7	Tie-in - 200 mm diam. pipe into existing 200 mm diam. CI pipe	ea	1		
<b>33 34 01 Sewage Force mains - Imported Backfill</b>						
30	1.8.1/1	Pipe - 150 mm diam. PVC at 3m - 4m depth	m	11		
<b>Option 1 - HDPE Sewage Force main</b>						
31	1.8.1/2	Pipe - 813 mm diam. HDPE DR21 at <2m depth	m	92		
32	1.8.1/2	Pipe - 813 mm diam. HDPE DR21 at 2m - 3m depth	m	1871		
<b>Option 2 - PVC Sewage Force main</b>						
31a	1.8.1/2	Pipe - 750 mm diam. PVC SDR-32.5 PC125 at <2m depth	m	92		
32a	1.8.1/2	Pipe - 750 mm diam. PVC SDR-32.5 PC125 at 2m - 3m depth	m	1871		
33	1.8.3	Gate valve - 100 mm, FL - FL	ea	3		
34	1.8.3	Gate valve - 150 mm, FL - H	ea	1		
35	1.8.3	Gate valve - 200 mm, FL - FL	ea	6		
36	1.8.5	Test point	ea	2		
<b>Option 1 - HDPE Sewage Force main</b>						
37	1.8.5	Air release valve chamber; HDPE tee	ea	3		
38	1.8.5	Blow-down chamber; HDPE tee	ea	3		
39	1.8.10	Tie-in - 813 mm diam. pipe into existing 750 mm diam. sewer	LS	1		
<b>Sub-Total Page 12:</b>						<b>\$</b>

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Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<b>Option 2 - PVC Sewage Forcemain</b>						
40a	1.8.5	Air release valve chamber; epoxy coated DI tee on PVC mainline	ea	3		
41a	1.8.5	Blow-down chamber; epoxy coated DI tee on PVC mainline	ea	3		
42a	1.8.10	Tie-in - 750 mm diam. pipe into existing 750 mm diam. forcemain	LS	1		
43	1.8.10	Tie-in - 750 mm diam. FL gate valve to 813 mm diam. pipe at STA 0+000	LS	1		
<b>Option 1 - HDPE Sewage Forcemain</b>						
44	1.8.11	Bend 813 mm HDPE DR21 - 22.50 degree	ea	2		
<b>Option 2 - PVC Sewage Forcemain</b>						
44a	1.8.11	Bend 750 mm epoxy coated DI - 22.50 degree	ea	2		
45	1.8.11	Romac STS 420 tapping sleeve; 813 mm O.D. to 150 mm	ea	1		
<b>Option 1 - HDPE Sewage Forcemain</b>						
46	1.8.11	Electrofusion couplings - 813 mm OD ( <i>Optional Work</i> )	ea	20		
47	1.8.12	EZ valve installation to isolate the Pinecrest drop	LS	1		
<b>33 40 01 Storm Sewers - Imported Backfill</b>						
48	1.6.1/2	Pipe - 600 mm diam. PVC ribbed; 1m - 2m depth	m	70		
49	1.6.1/2	Pipe - 900 mm diam. PVC ribbed; 1m - 2m depth	m	30		
50	1.6.9	Tie-in - 900 mm diam. pipe into new DMH	ea	2		
51	1.6.10	Precast concrete headwall incl trash rack; Langley Type II; 600 mm diam. pipe	ea	6		
<b>33 44 01 Manholes and Catchbasins</b>						
52	1.5.1.1	Manhole base, lid, slab, cover and frame - 1050 mm diam.	ea	1		
53	1.5.1.2	Manhole riser section - 1050 mm diam.	Vert. m	3		
54	1.5.5	Outside ramp manhole - 1050 mm diam.	ea	1		
<b>Sub-Total Page 13:</b>						\$

Tenderer's Initial    Owner's Initial

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**SUMMARY**

Sub-Total Page 9:	\$
Sub-Total Page 10:	\$
Sub- Total Page 11:	\$
Sub-Total Page 12:	\$
Sub-Total Page 13:	\$
<b>Sub-Total</b>	<b>\$</b>
GST (5%):	\$
<b>GRAND TOTAL:</b>	<b>\$</b>

The Tenderer shall determine the lower cumulative total for either **Option 1** or **Option 2** and include this lower cumulative total in calculating the total tender value.

Tenderer's Initial    Owner's Initial

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**1.3 DEWATERING**

**(Add)**

- .2 Treat water from dewatering operations before discharging to the environment so that the turbidity is less than 25 NTU at the outlet from the treatment facility.

**1.9 PAYMENT**

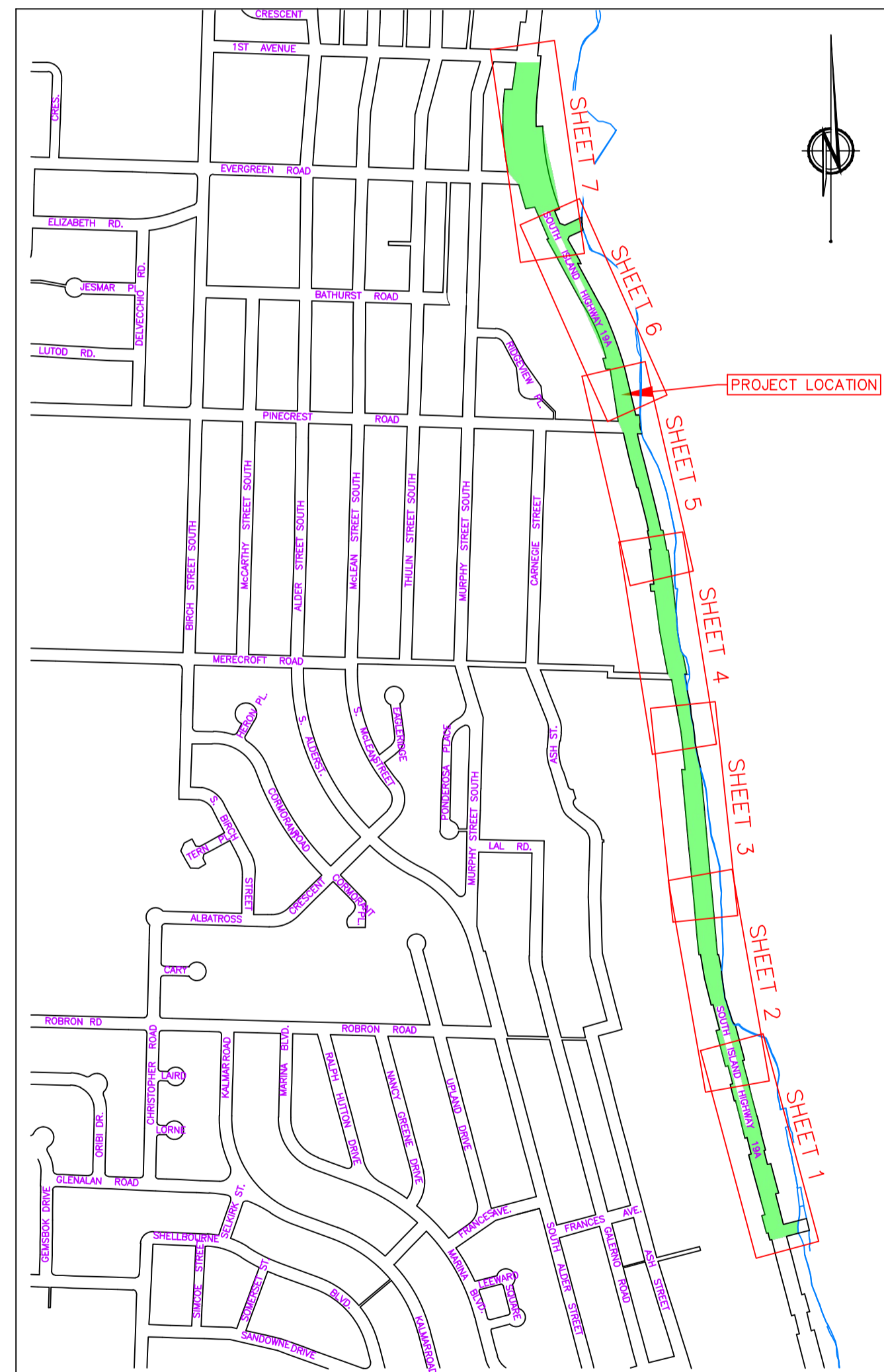
- .2 Payment for mobilization and demobilization of well pointing and water treatment equipment shall be made by lump sum. 50% payable upon mobilization and 50% payable upon demobilization.
- .3 Payment for operation and maintenance of well pointing and water treatment equipment shall be made per day, which shall include non-working days if it is necessary to keep the equipment operational.

**END OF SECTION 01 52 01**

# WATERFRONT SEWER SYSTEM UPGRADES - PHASE 2 FORCEMAIN FROM LIFT STATION No. 6 TO 1<sup>ST</sup> AVE



JANUARY 2019



KEY PLAN  
NTS

**GENERAL NOTES**

ALL ELEVATIONS ARE GEODETIC BASED ON INTEGRATED SURVEY MONUMENT 94H1249 (ELEV: 24.198 m) LOCATED ON HWY 19A AT 1ST AVE  
79H9072 (ELEV: 7.392 m) LOCATED ON HWY 19A ± 250 m SOUTH OF 1ST AVE  
79H9069 (ELEV: 3.826 m) LOCATED ON HWY 19A ± 215 m NORTH OF PUMP STATION #5  
79H9066 (ELEV: 3.780 m) LOCATED ON HWY 19A AT PUMP STATION #5  
79H9063 (ELEV: 4.206 m) LOCATED ON HWY 19A ± 50 m SOUTH OF MERECROFT RD  
79H9060 (ELEV: 4.022 m) LOCATED ON HWY 19A ± 470 m SOUTH OF MERECROFT RD  
79H9049 (ELEV: 3.809 m) LOCATED ON HWY 19A ± 930 m SOUTH OF MERECROFT RD

**SPECIFICATIONS, PERMITS AND SAFETY**  
ALL WORKS TO THE M.M.C.D. (2009) AND THE CITY OF CAMPBELL RIVER CONSTRUCTION SPECIFICATION (2010).  
THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY.

**EXISTING UTILITIES**  
LOCATIONS OF EXISTING UTILITIES SHOWN ARE DERIVED FROM FIELD SURVEY, AS CONSTRUCTED DRAWINGS AND THIRD PARTY SOURCES. THIS INFORMATION CANNOT BE GUARANTEED.  
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES AT THE START OF THE CONTRACT AND INFORM THE ENGINEER OF ANY DISCREPANCY.

**PIPE BEDDING AND BACKFILLING**  
ALL PIPE BEDDING AND BACKFILLING MATERIALS TO CONFORM TO MMCD SECTION 31 05 17 SUBSECTION 2.7 GRANULAR PIPE BEDDING AND SURROUND AND SUBSECTION 2.3 PIT RUN GRAVEL 100 mm MINUS.

**ACCESS**  
ENSURE CONTINUOUS AND SAFE ACCESS FOR VEHICLES AND PEDESTRIANS TO ALL LOTS DURING CONSTRUCTION AS PER THE CONTRACT SUPPLEMENTAL SPECIFICATIONS.

**SITE SPECIFIC NOTES AND INSTRUCTIONS**  
REFER TO DRAWINGS FOR SITE SPECIFIC NOTES AND INSTRUCTIONS.

**QUANTITIES AND TRENCH EXCAVATIONS**  
QUANTITIES FOR SURFACE RESTORATION ASSOCIATED WITH THE PIPELINE WORKS HAVE BEEN CALCULATED ASSUMING THE EXCAVATION LIMITS SHOWN ON THE UTILITY TRENCH DETAIL AND THAT SHOWN ON THE CONTRACT DRAWINGS. CONTRACTOR MAY ONLY EXCAVATE OUTSIDE OF THE LIMIT AS SHOWN WITH THE CONTRACT ADMINISTRATOR'S WRITTEN PERMISSION.  
CONTRACTOR TO PROVIDE ADEQUATE TRENCH SHORING TO ENSURE TRENCHING DOES NOT EXCEED THE LIMITS SHOWN. UNAUTHORIZED TRENCH EXCAVATION OUTSIDE THE APPROVED LIMITS RESULTING IN ADDITIONAL SURFACE RESTORATION WILL NOT BE COMPENSATED.

**CONSTRUCTION LAYOUT**  
THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT. HIGHLAND WILL PROVIDE A DIGITAL DRAWING FOR LAYOUT PURPOSES. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL LINES, GRADES AND ELEVATIONS PRIOR TO INSTALLATION OF THE WORKS.

**WATERWORKS**  
ALL NEW WATER WORKS SHALL BE INSTALLED, DISINFECTED, TESTED, FLUSHED AND BIOLOGICALLY APPROVED PRIOR TO CONNECTION TO THE CITY OF CAMPBELL RIVER WATER SYSTEM IN ACCORDANCE WITH THE M.M.C.D. (2009) SECTION 33 11 01 AND THE AWWA STANDARD C651-14 DISINFECTING WATER MAINS AND THE CITY OF CAMPBELL RIVER SUPPLEMENTAL SPECIFICATIONS.

THE CONTRACTOR SHALL NOTIFY THE CITY WATER OPERATOR (VIA THE C.A.) A MINIMUM OF 5 DAYS PRIOR TO ANY PLANNED DISCONNECTION / RECONNECTION OF LIVE WATER SERVICES AND IMMEDIATELY FOR ANY UNFORESEEN WATER SERVICE BREAKS.  
ANY DISCONNECTION / RECONNECTION OF LIVE WATER SERVICES SHALL BE WITNESSED BY THE CITY WATER OPERATOR.  
ACCEPTANCE OF THESE WORKS SHALL BE SUBJECT TO THE RESULTS OF THE WATER QUALITY TESTS CARRIED OUT.

PROVIDE 5 BUSINESS DAYS ADVANCE NOTICE TO THE CITY OF CAMPBELL RIVER FOR WATER MAIN ACTIVATION.

ALL BOLTS, NUTS AND WASHERS TO BE STAINLESS STEEL TYPE 304 OR APPROVED EQUIVALENT. THE USE OF CADMIUM PLATED REDI-ROD IS NOT PERMITTED.

THRUST BLOCKS OR APPROVED MECHANICAL RESTRAINTS REQUIRED AT ALL TEES, BENDS AND CROSSES. REFER TO TABLE (DETAIL SHEET) FOR RESTRAINED LENGTH. REFER TO THE C.C.R. STANDARD DRAWINGS CR-W1 & CR-WIG. MECHANICAL RESTRAINTS BY EBBA, UNIFLANGE OR APPROVED EQUIVALENT AS PER THE C.C.R. APPROVED PRODUCTS LIST. PRE-CAST CONCRETE BLOCKS ARE NOT PERMITTED.

MINIMUM VERTICAL SEPARATION BETWEEN A WATERMAIN AND ANY PIPE SHALL BE 0.15m, EXCEPT FOR  
WHERE WATERMAIN CROSSES OVER STORM/SANITARY WITH LESS THAN 0.50m VERTICAL SEPARATION WRAP ALL WATERMAIN JOINTS WITHIN 3.0m OF CROSSING.  
WHERE WATERMAIN CROSSES UNDER STORM / SANITARY WRAP ALL WATERMAIN, STORM AND SANITARY JOINTS INCLUDING TEES, BENDS, CROSSES, REDUCERS, VALVES ETC. WITHIN 6.0m OF CROSSING.  
WRAP ALL WATERMAIN JOINTS WITH LESS THAN 3.0m HORIZONTAL SEPARATION TO ANY PIPE.  
JOINT WRAP SHALL MEET OR EXCEED THE B.C. MINISTRY OF HEALTH REQUIREMENTS FOR WATERMAIN JOINT PROTECTION AND AWWA/ANSI STANDARD C209 (CANUS "JointWrap" COLD APPLIED PIPE JOINT SLEEVE, OR EQUAL).

**SANITARY SEWER AND STORM DRAIN**  
PROVIDE 5 BUSINESS DAYS ADVANCE NOTICE TO THE CITY OF CAMPBELL RIVER FOR ANY WORKS ON THE EXISTING LIVE SEWER SYSTEMS.

ALL FORCEMAIN PIPE TO BE SCLAIRPIPE 813 mm O.D. HDPE DR-21 PE 4710 I.P.S. OR APPROVED EQUAL.  
ALL WORKS SHALL BE SUPPLIED AND CONSTRUCTED IN ACCORDANCE WITH THE M.M.C.D. (2009) SPECIFICATIONS AND STANDARDS.  
ALL SANITARY AND STORM MANHOLES ARE TO BE 1200 mm IN DIAMETER EXCEPT WHERE NOTED.  
ALL PIPE TYPES AND SIZES ARE AS SHOWN ON THE DRAWINGS.  
THERE SHALL BE NO SUBSTITUTIONS WITHOUT THE WRITTEN CONSENT OF THE CONTRACT ADMINISTRATOR.  
GASKETED MOLDED FITTINGS SHALL BE USED AT ALL TEES, BENDS AND TERMINAL ENDS.

THERE WILL BE NO PAYMENT FOR THRUST BLOCKS AND LOCALIZED CONCRETE REQUIRED FOR THE INSTALLATION OF THE NEW FORCEMAIN, OR FOR ANY TEMPORARY BLOCKS THAT MAY BE REQUIRED DURING THE FORCEMAIN CONSTRUCTION. PAYMENT FOR THESE BLOCKS WILL BE INCLUDED IN THE PRICE FOR FORCEMAIN INSTALLATIONS AND THE VARIOUS FITTINGS

ALL STAINLESS STEEL TO BE TYPE 304 OR APPROVED EQUIVALENT.

**SANITARY FORCEMAIN HYDROTESTING**

HYDROTESTING THE FORCEMAIN: MAXIMUM FILL VELOCITY SHALL NOT EXCEED 1.8 ms<sup>-1</sup>. TEST TO 816 kPa (120 psi). CLEAN PIPELINE BY PIGGING PRIOR TO HYDROTESTING AND PRIOR TO COMPLETING THE TIE-IN AT STN 0+000. TEST THE FORCEMAIN IN TWO (2) SECTIONS: STN 1+097 - 1+989 AND 0+000 TO 1+097. THE TEST SECTION INCLUDES THE ±28 m LONG SECTION OF #750 PVC DR25 PC165 PIPE INSTALLED IN THE PHASE 1 CONTRACT.

**THIRD PARTY UTILITIES**

THE OVERHEAD BC HYDRO, TELUS AND SHAW CABLESYSTEMS WIRES ARE SHOWN ON THE CONTRACT DRAWINGS FOR INFORMATION ONLY. THE CONTRACTOR SHALL MAKE THEMSELVES AWARE OF THE LOCATIONS OF AND CLEARANCE FROM THESE WIRING SYSTEMS AND SHALL MAKE ALLOWANCE IN THEIR PROCEDURES FOR CONSTRUCTION OF THE WORKS UNDER OR NEAR THEM IN ACCORDANCE WITH WORKSAFE BC RULES AND GOOD WORK PRACTICES.

SUPPORT OF ALL UTILITY POLES BY THE CONTRACTOR SHALL BE CARRIED OUT BY A BC HYDRO CERTIFIED POWER LINE INSTALLER. THE COST OF THIS WORK IS CONSIDERED INCIDENTAL TO THE WORKS AND SERVICES INSTALLED FOR THIS CONTRACT.

THE CONTRACTOR WORKING IN THE VICINITY OF THE NATURAL GAS LINE SHALL BE RESPONSIBLE TO EXCAVATE AND BACKFILL THE AREA IN ACCORDANCE WITH THE CONSTRUCTION STANDARDS OF FORTIS BC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MEET WITH A REPRESENTATIVE OF FORTIS BC AND TO RECEIVE INSTRUCTION ON MANAGING THEIR WORK IN THE VICINITY OF THE NATURAL GAS LINE TO THE SATISFACTION OF FORTIS BC.

**ENVIRONMENTAL NOTES**

COMPLY WITH THE CITY OF CAMPBELL RIVER EROSION AND SEDIMENTATION CONTROL BYLAW AND MMCD PLATINUM SPECIFICATIONS FOR ENVIRONMENTAL PROTECTION DURING CONSTRUCTION.

DRAWING SET STATUS		ISSUED FOR TENDER	
SHEET #	DESCRIPTION	ISSUE	DATE
0	COVER, GENERAL NOTES	C	19/03/28
1	STA 0+000 TO 0+280	C	
2	STA 0+280 TO 0+560	C	
3	STA 0+560 TO 0+840	C	
4	STA 0+840 TO 1+120	C	
5	STA 1+120 TO 1+400	C	
6	STA 1+400 TO 1+680	C	
7	STA 1+680 TO 1+961	C	
8	DETAILS SHEET	C	

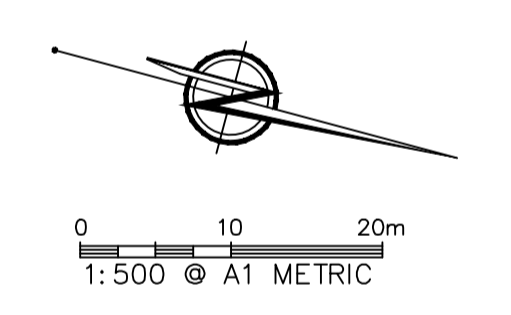
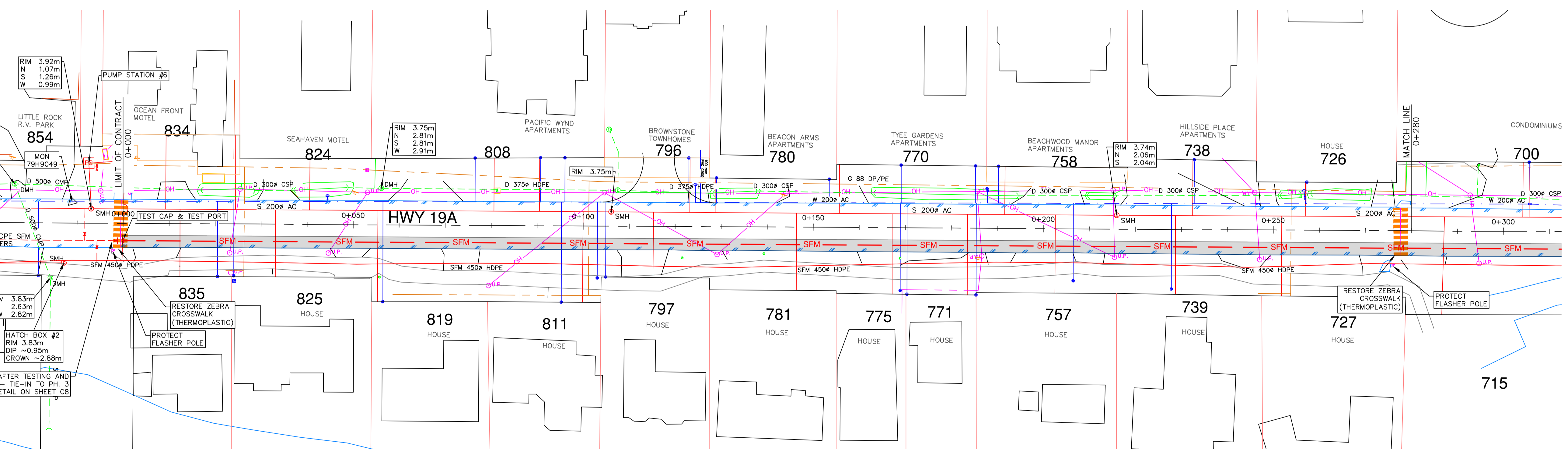
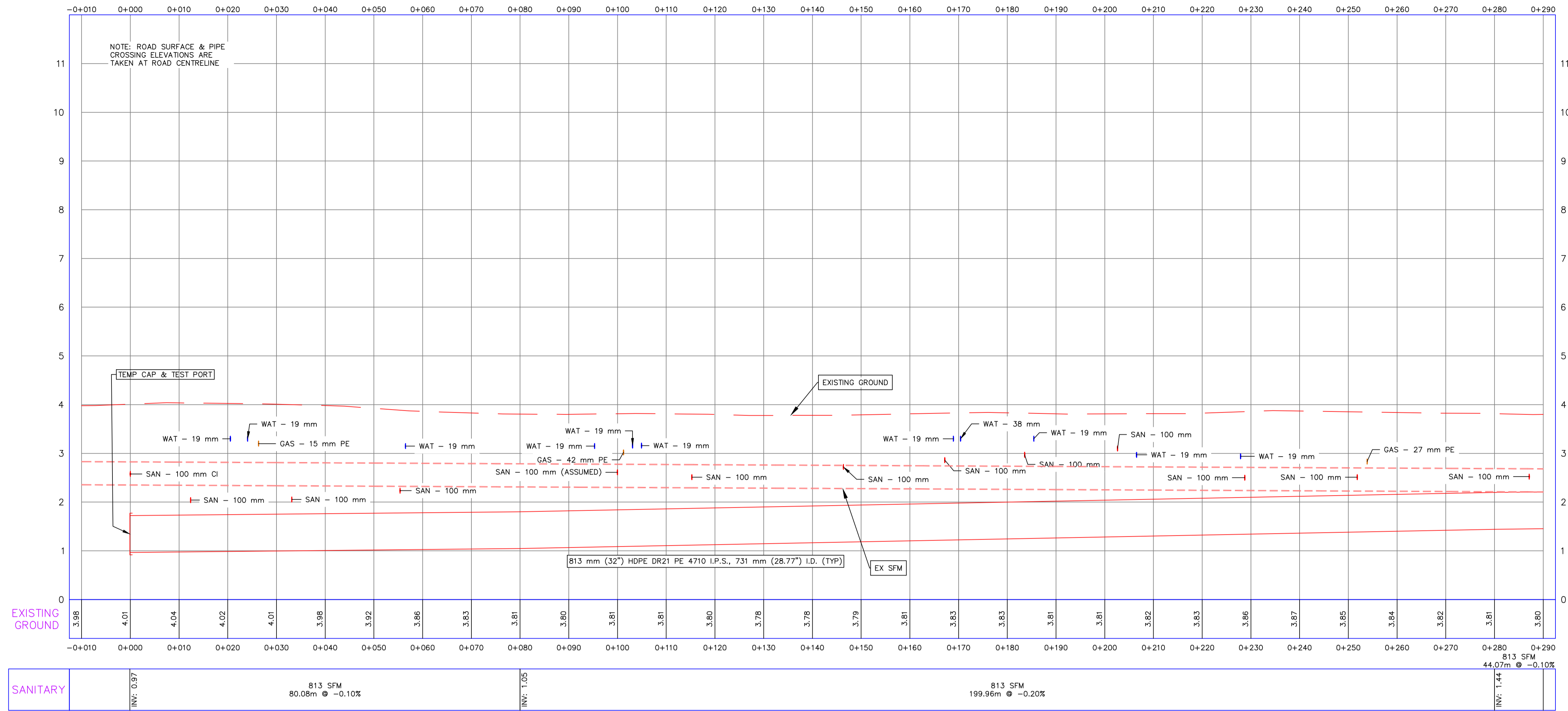


#104-950 Alder Street,  
Campbell River, B.C., V9W 2P8

(250) 287-2825  
highland@highland-eng.ca  
www.highland-eng.ca

Project: 4075-02  
CCR FILE: 11-04-02B  
CCR DWG No.: 19-507

HWY 19A PROFILE



**EXISTING UTILITIES**  
 LOCATIONS OF EXISTING UTILITIES SHOWN ARE DERIVED FROM FIELD SURVEY, AS CONSTRUCTED DRAWINGS AND THIRD PARTY SOURCES. THIS INFORMATION CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES AT THE START OF THE CONTRACT AND INFORM THE ENGINEER OF ANY DISCREPANCY. NOT ALL UTILITY SERVICES SHOWN ON PROFILE VIEWS.

CALL BEFORE YOU DIG!  
 1-800-474-6886  
 or by CELLULAR \*6886  
CALL AT LEAST 3 FULL WORKING DAYS BEFORE START OF WORK

ISSUED FOR TENDER

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NO.	ISSUE	BY	YY/MM/DD	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	
C	EX & PR SFM ELEVATIONS ADJUSTED	FG	19/03/28																
B	CHANGED PH3 TIE-IN NOTE	FG	19/03/20																
A	ISSUED FOR TENDER	FG	19/03/12																

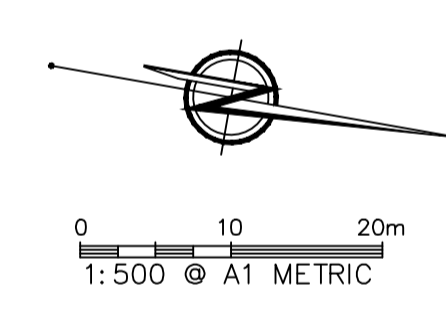
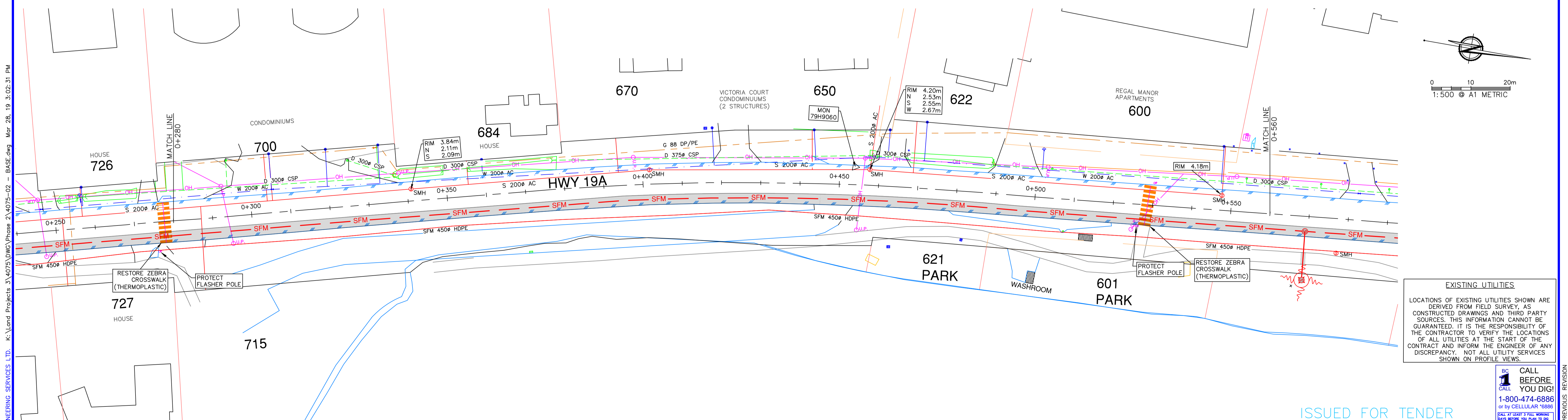
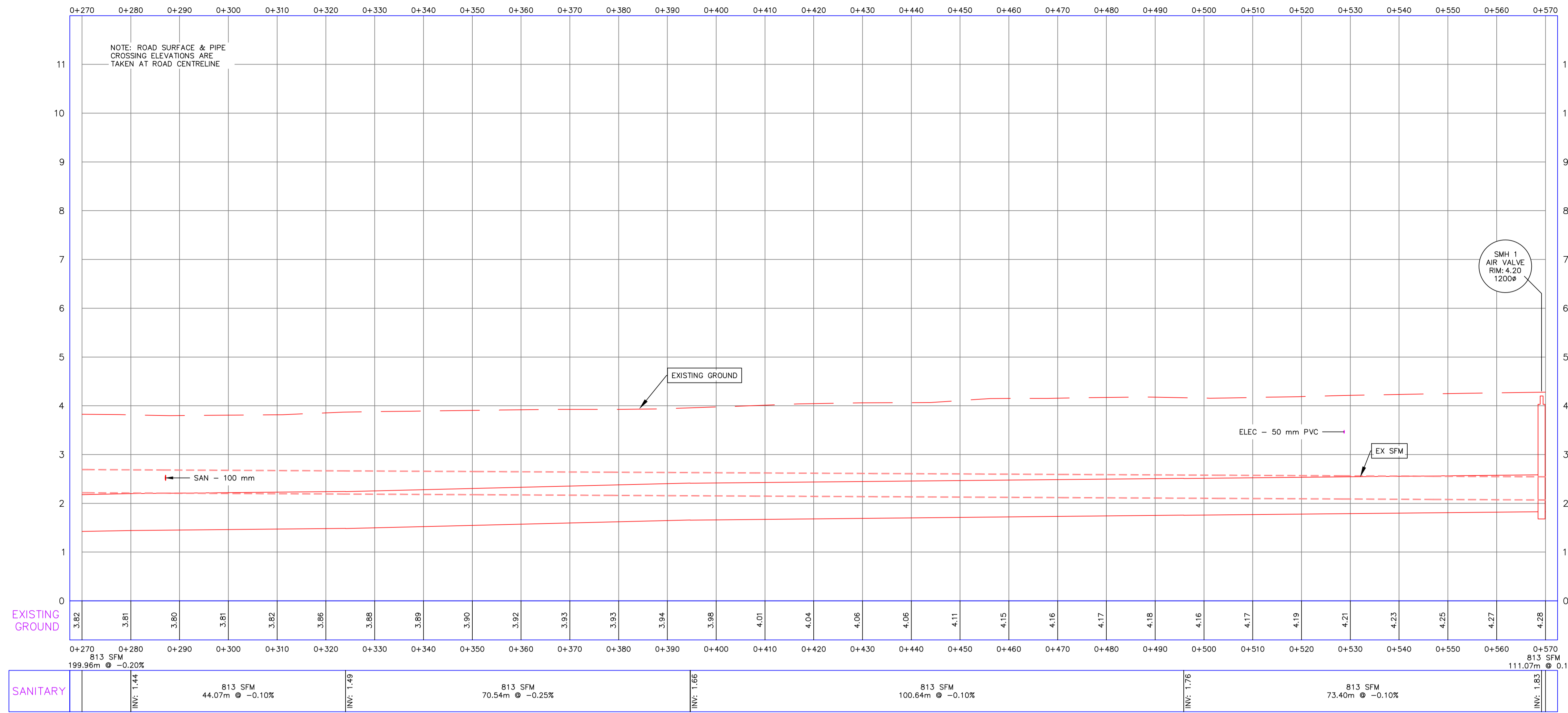
**HIGHLAND**  
 Engineering Services Ltd.  
 #104-950 Alder Street,  
 Campbell River, B.C.  
 V9W 2P8  
 (250) 287-2825  
 highland@highland-eng.ca  
 www.highland-eng.ca

TITLE:  
**CITY OF CAMPBELL RIVER**  
 WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
 CAMPBELL RIVER, BC  
 HWY 19A  
 STA 0+000 TO 0+280

CITY DWG #  
 19-507-C1  
 PROJECT:  
 4075-02  
 SHEET 1 OF 8  
 ISSUE C

DESTROY PRINTS OF PREVIOUS REVISION

HWY 19A PROFILE



**EXISTING UTILITIES**  
 LOCATIONS OF EXISTING UTILITIES SHOWN ARE DERIVED FROM FIELD SURVEY, AS CONSTRUCTED DRAWINGS AND THIRD PARTY SOURCES. THIS INFORMATION CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES AT THE START OF THE CONTRACT AND INFORM THE ENGINEER OF ANY DISCREPANCY. NOT ALL UTILITY SERVICES SHOWN ON PROFILE VIEWS.

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CALL AT LEAST 3 FULL WORKING DAYS BEFORE START OF WORK

NO.	ISSUE	BY	YY/MM/DD	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN
C	EX & PR SFM ELEVATIONS ADJUSTED	FG	19/03/28																					
B	CHANGED PIPE SIZE LABEL	FG	19/03/20																					
A	ISSUED FOR TENDER	FG	19/03/12																					

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 highland@highland-eng.ca  
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ISSUED FOR TENDER

TITLE:  
**CITY OF CAMPBELL RIVER**  
 WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
 CAMPBELL RIVER, BC  
 HWY 19A  
 STA 0+280 TO 0+560

CITY DWG #  
 19-507-C2

PROJECT:  
 4075-02

SHEET 2 OF 8

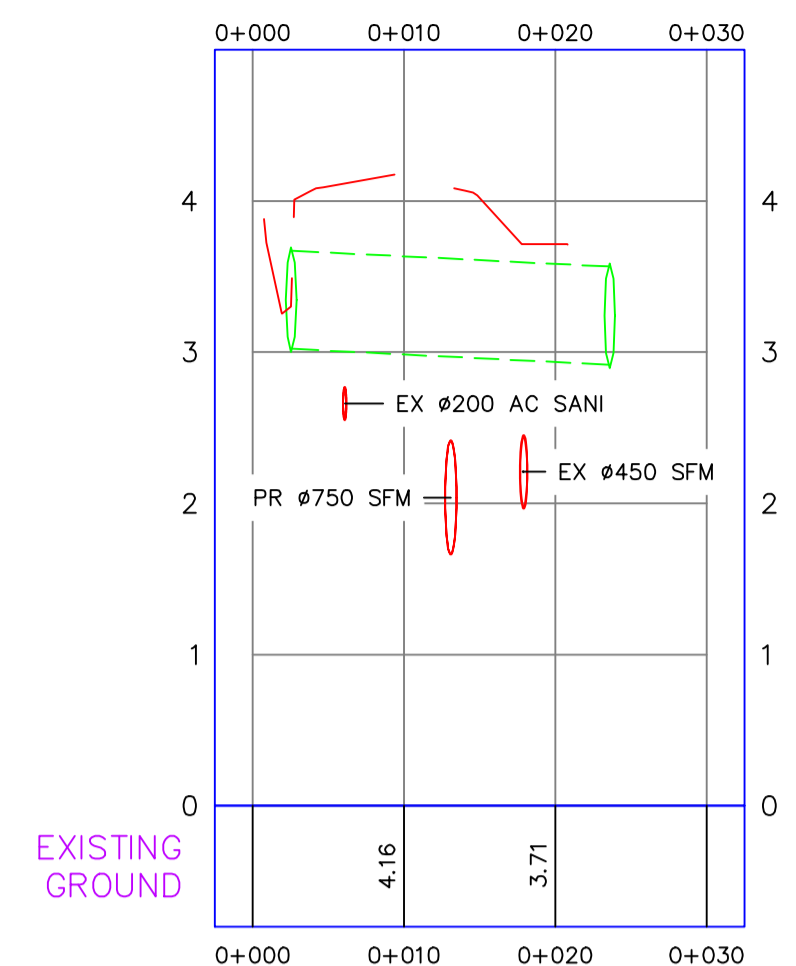
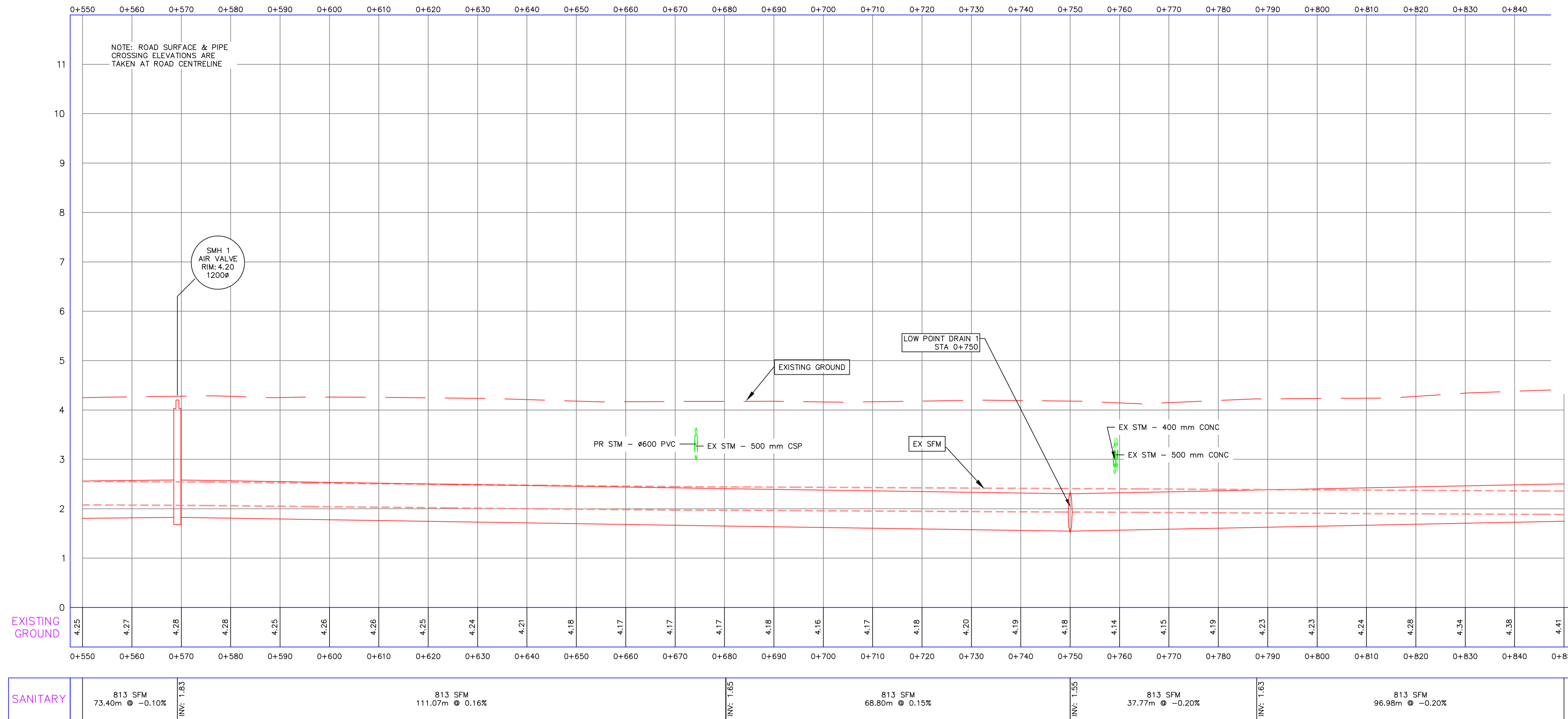
ISSUE C

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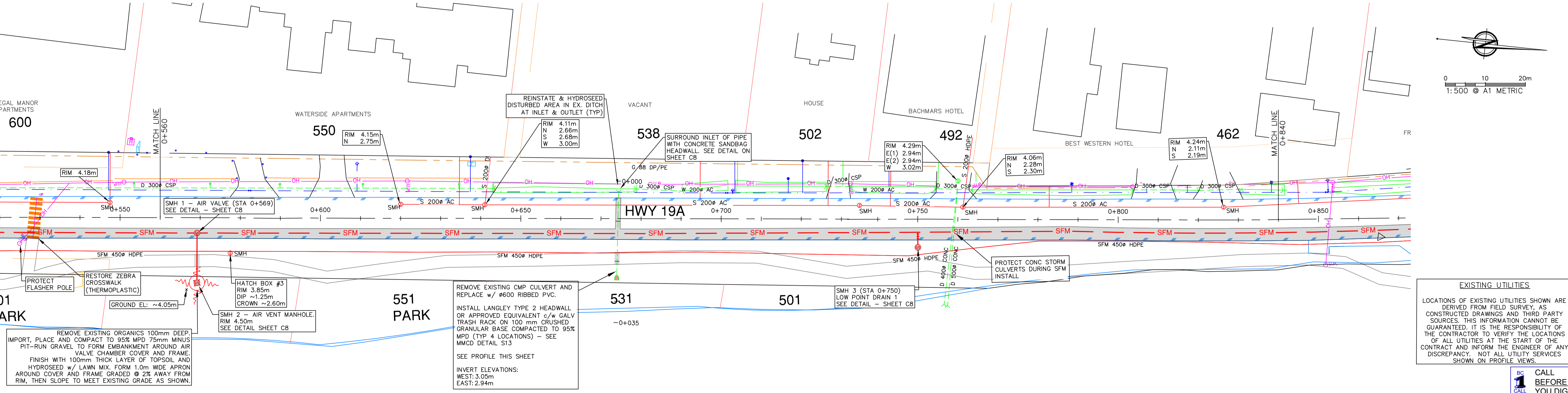
DESTROY PRINTS OF PREVIOUS REVISION

# HWY 19A PROFILE

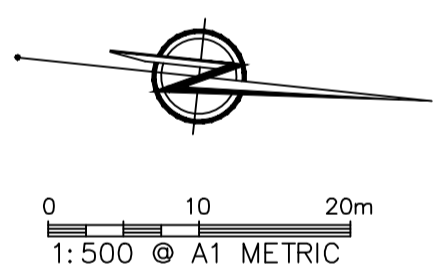
# STM CROSSING 0+673 PROFILE



STATION	DIAMETER	SLOPE	INVERT
0+000 - 0+010	21.06m	0.50%	3.05
0+010 - 0+020	PR STM - #600 PVC		
0+020 - 0+030	21.94m		2.94



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NO.	ISSUE	BY	DATE	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN
C	EX & PR SFM ELEVATIONS ADJUSTED	FG	19/03/28															
B	CHANGED PIPE SIZE LABEL	FG	19/03/20															
A	ISSUED FOR TENDER	FG	19/03/12															

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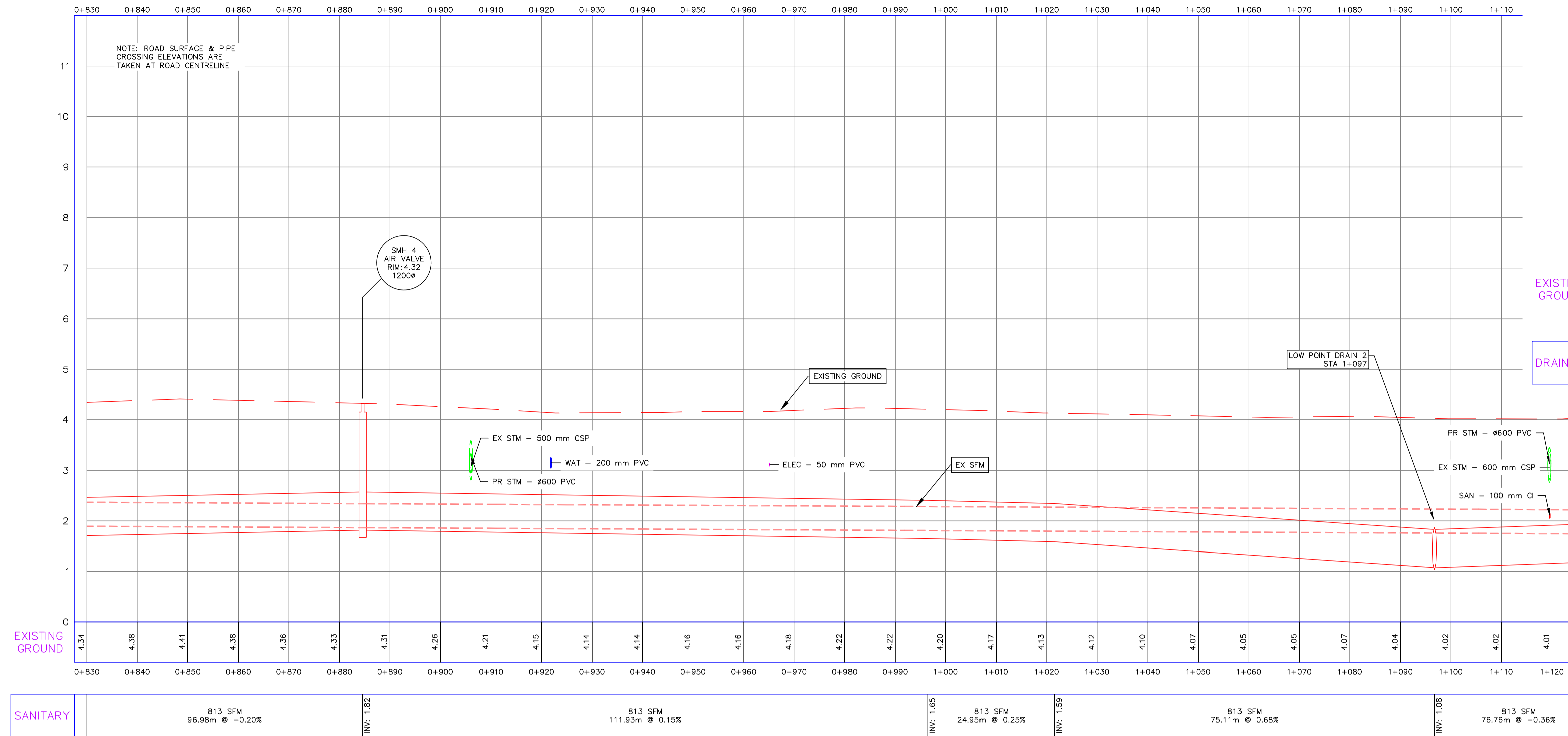
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CITY OF CAMPBELL RIVER  
 WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
 CAMPBELL RIVER, BC  
 HWY 19A  
 STA 0+560 TO 0+840

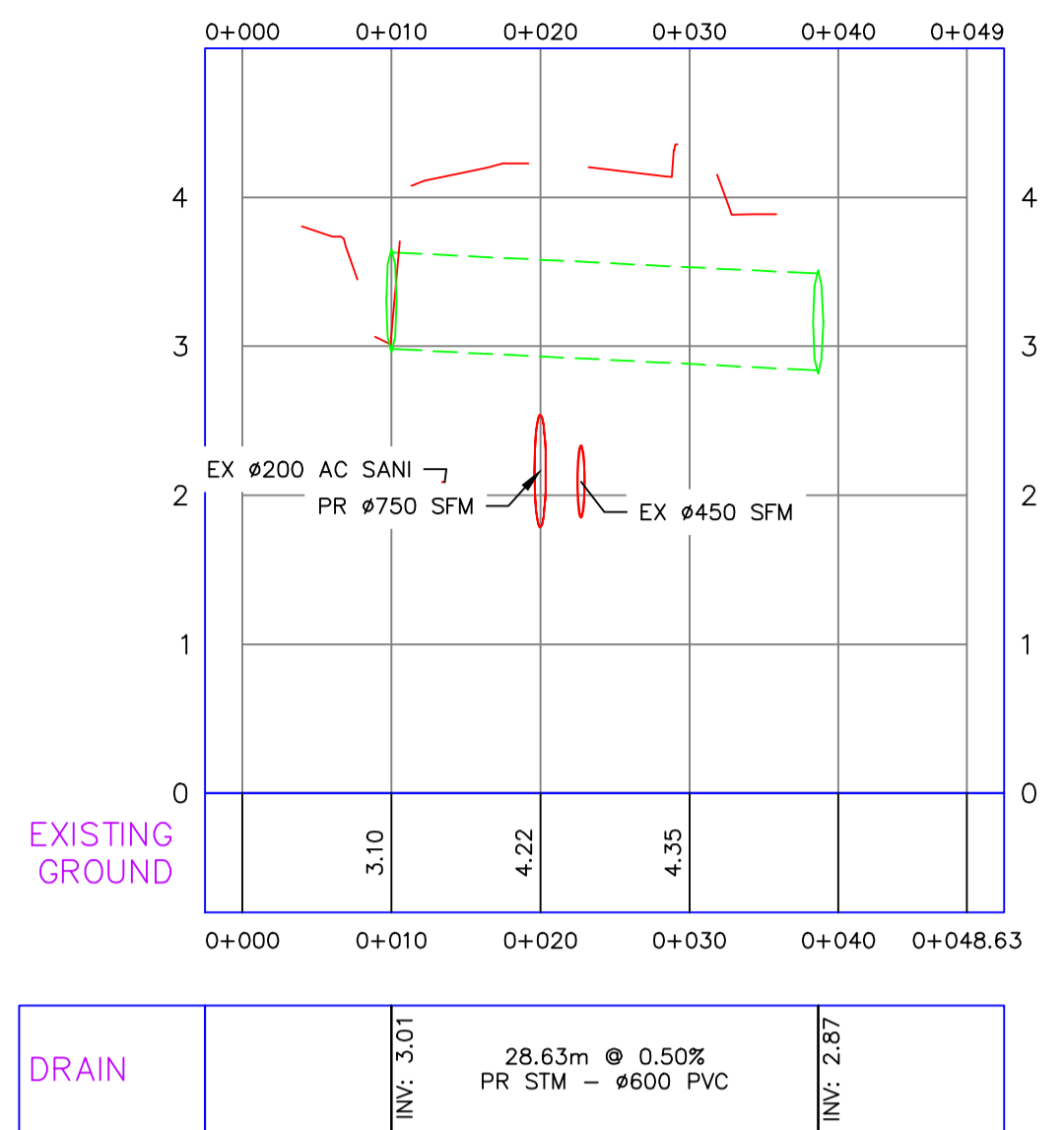
CITY DWG #	19-507-C3
PROJECT	4075-02
SHEET	3 OF 8
ISSUE	C

HWY 19A PROFILE

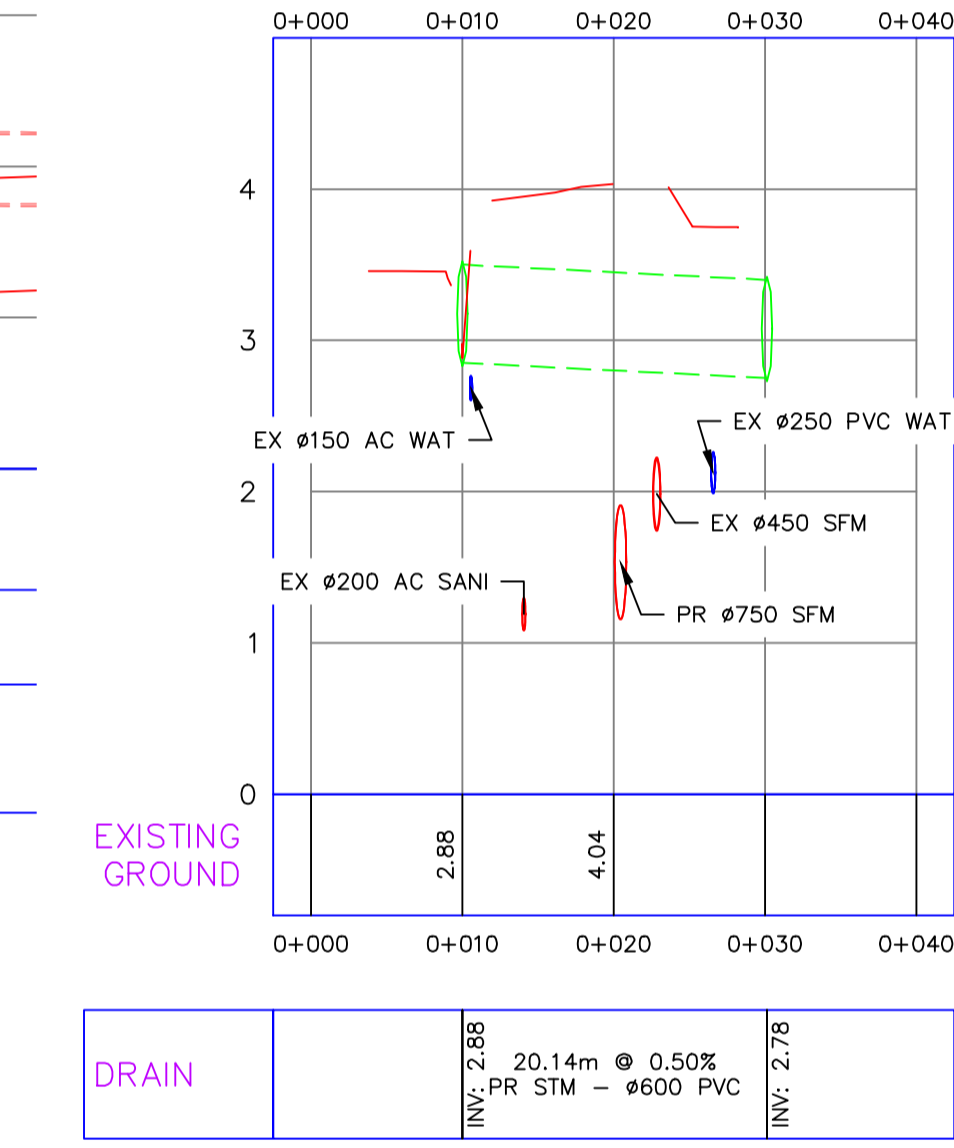


SANITARY	813 SFM 96.98m @ -0.20%	INV: 1.82	813 SFM 111.93m @ 0.15%	INV: 1.85	813 SFM 24.95m @ 0.25%	INV: 1.59	813 SFM 75.11m @ 0.68%	INV: 1.08	813 SFM 76.76m @ -0.36%
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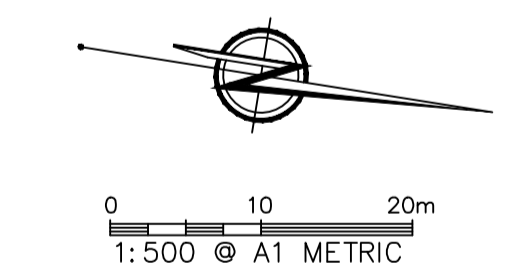
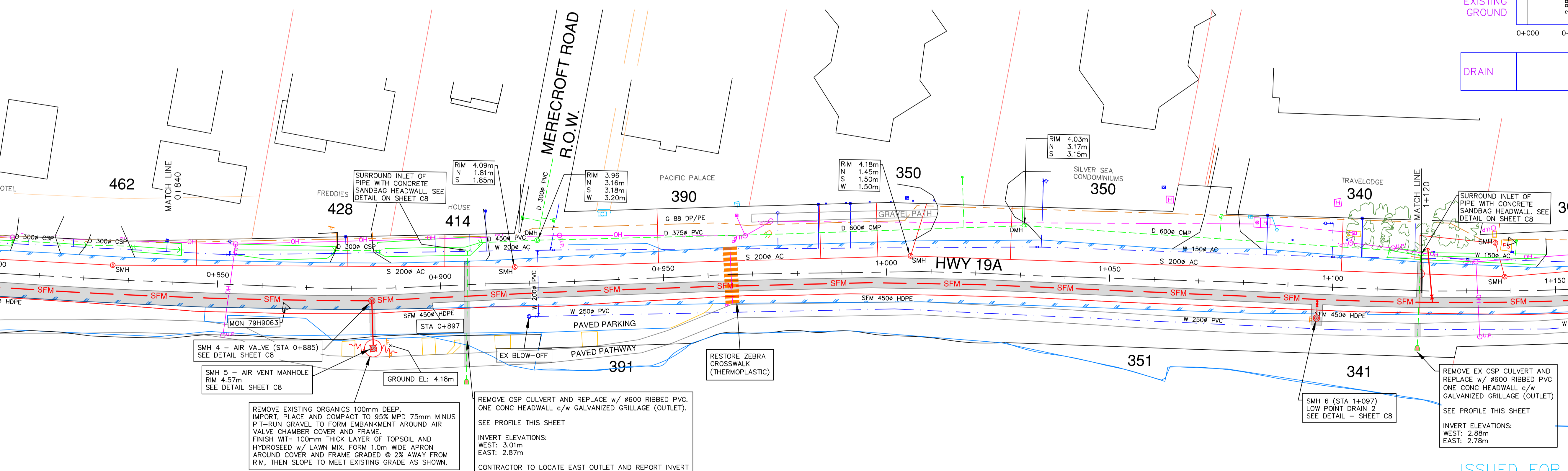
STM CROSSING 0+905 PROFILE



STM CROSSING 1+119 PROFILE



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SMH 4 - AIR VALVE (STA 0+885) SEE DETAIL SHEET C8  
 SMH 5 - AIR VENT MANHOLE RIM 4.57m SEE DETAIL SHEET C8  
 REMOVE EXISTING ORGANICS 100mm DEEP. IMPORT, PLACE AND COMPACT TO 95% MPD 75mm MINUS PIT-RUN GRAVEL TO FORM EMBANKMENT AROUND AIR VALVE CHAMBER COVER AND FRAME. FINISH WITH 100mm THICK LAYER OF TOPSOIL AND HYDROSEED w/ LAWN MIX. FORM 1.0m WIDE APRON AROUND COVER AND FRAME GRADED @ 2% AWAY FROM RIM, THEN SLOPE TO MEET EXISTING GRADE AS SHOWN.  
 REMOVE CSP CULVERT AND REPLACE w/ #600 RIBBED PVC. ONE CONC HEADWALL c/w GALVANIZED GRILLAGE (OUTLET). SEE PROFILE THIS SHEET  
 INVERT ELEVATIONS:  
 WEST: 3.01m  
 EAST: 2.87m  
 CONTRACTOR TO LOCATE EAST OUTLET AND REPORT INVERT TO C.A.

SMH 6 (STA 1+097) LOW POINT DRAIN 2 SEE DETAIL - SHEET C8  
 REMOVE EX CSP CULVERT AND REPLACE w/ #600 RIBBED PVC ONE CONC HEADWALL c/w GALVANIZED GRILLAGE (OUTLET)  
 INVERT ELEVATIONS:  
 WEST: 2.88m  
 EAST: 2.78m

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 or by CELLULAR \*6886  
CALL AT LEAST 3 FULL WORKING HOURS BEFORE YOU START TO DIG

T	U/G TELEPHONE	T	S	SANITARY SEWER	S	O.D.	OPEN DITCH	S	O.D.	OPEN DITCH	DESIGNED:	SCALE:
H	U/G HYDRO	H	D	STORM DRAIN	S	SMH	SANITARY MANHOLE	S	SMH	SANITARY MANHOLE	GB	AS SHOWN
G	NATURAL GAS	G	W	WATER MAIN	D	DMH	STORM MANHOLE	D	DMH	STORM MANHOLE	DRAWN:	DATE:
P	PERMEABLE PAVING	P	P	PAVEMENT	C	DMH	CATCH BASIN	C	DMH	CATCH BASIN	FG	JAN 2019
C	EX & PR SFM ELEVATIONS ADJUSTED	C	C	CURB & GUTTER	P	HYD.	FIRE HYDRANT	P	HYD.	FIRE HYDRANT	CHECKED:	DATE:
B	CHANGED PIPE SIZE LABEL	B	S	SIDEWALK	W.V.	W.V.	WATER VALVE	W.V.	W.V.	WATER VALVE	GB	MAR 2019
A	ISSUED FOR TENDER	A	I	INFILTRATION SWALE	U.P.	U.P.	UTILITY POLE	U.P.	U.P.	UTILITY POLE	APPROVED:	DATE:
NO.	ISSUE	BY	YY/MM/DD	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	RKS	MAR 28, 2019

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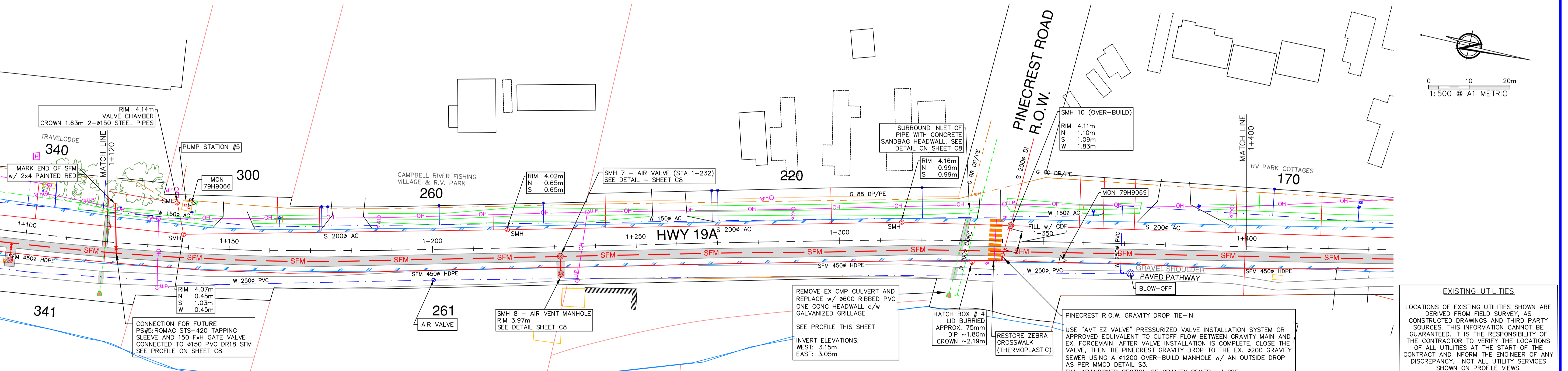
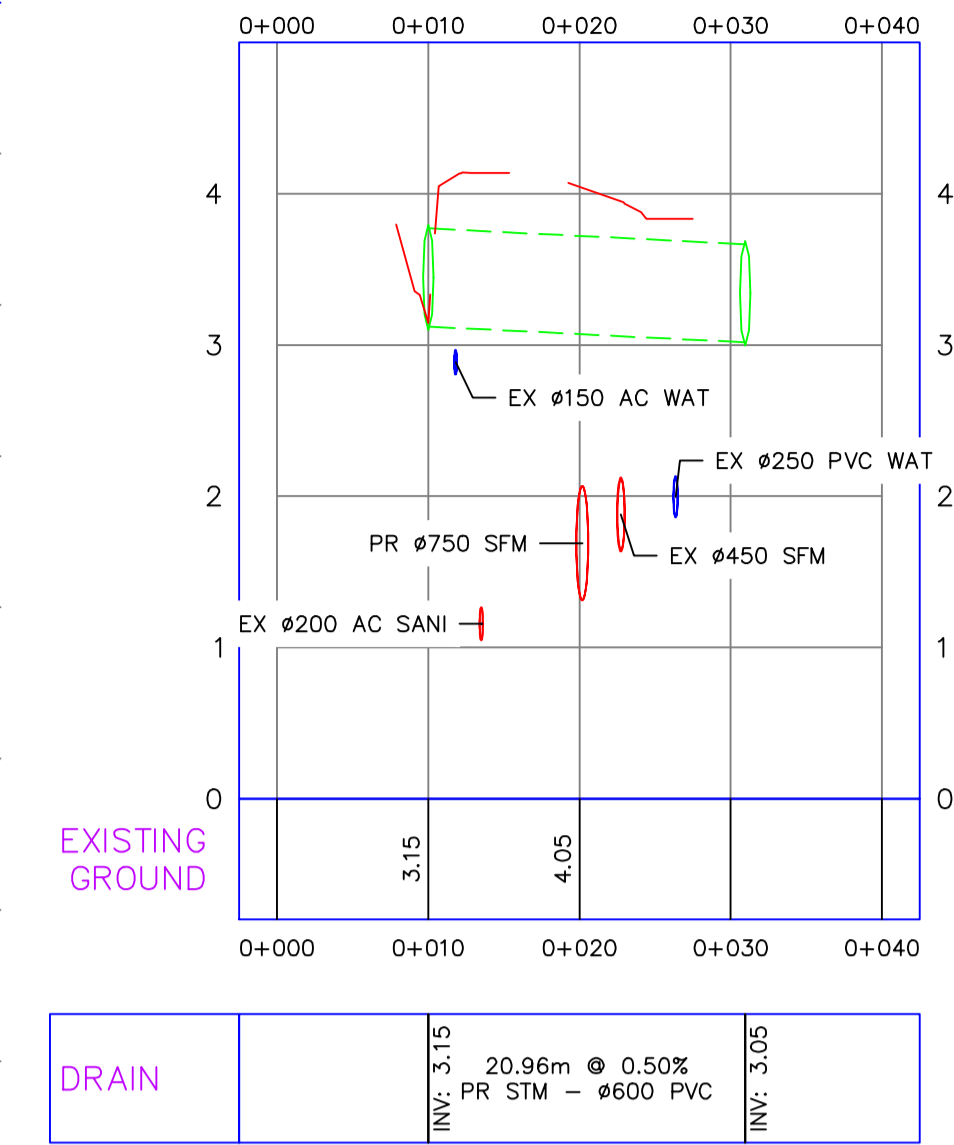
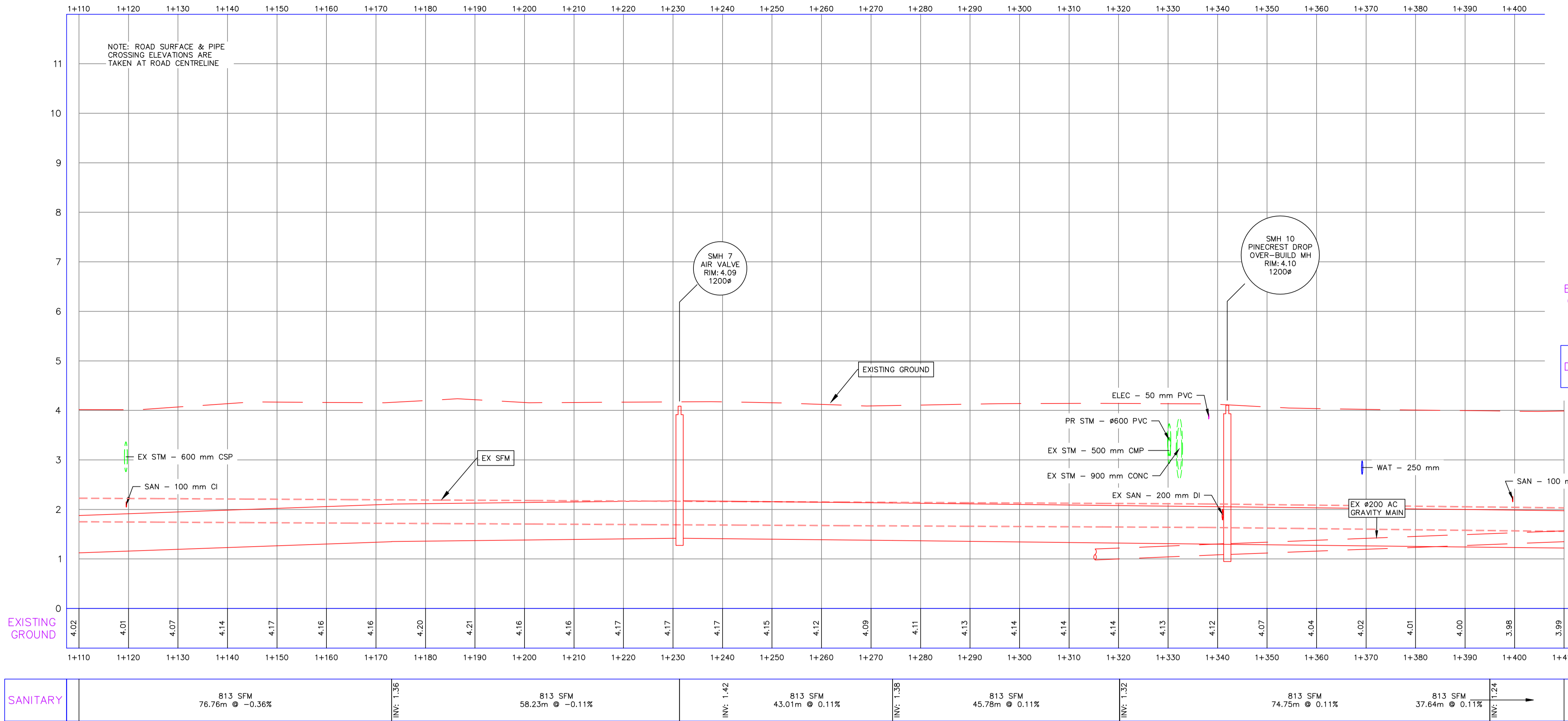
TITLE:  
**CITY OF CAMPBELL RIVER**  
 WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
 CAMPBELL RIVER, BC  
 HWY 19A  
 STA 0+840 TO 1+120

CITY DWG #	19-507-C4
PROJECT:	4075-02
SHEET 4 OF 8	
ISSUE C	

DESTROY PRINTS OF PREVIOUS REVISION

HWY 19A PROFILE

STM CROSSING 1+330 PROFILE



<p>REMOVE EX CMP CULVERT AND REPLACE w/ #600 RIBBED PVC ONE CONC HEADWALL c/w GALVANIZED GRILLAGE SEE PROFILE THIS SHEET INVERT ELEVATIONS: WEST: 3.15m EAST: 3.05m</p>	<p>HATCH BOX # 4 LID BURIED APPROX. 75mm DIP ~1.80m CROWN ~2.19m</p>	<p>PINECREST R.O.W. GRAVITY DROP TIE-IN: USE "AVT E2 VALVE" PRESSURIZED VALVE INSTALLATION SYSTEM OR APPROVED EQUIVALENT TO CUTOFF FLOW BETWEEN GRAVITY MAIN AND EX. FORCEMAIN. AFTER VALVE INSTALLATION IS COMPLETE, CLOSE THE VALVE, THEN TIE PINECREST GRAVITY DROP TO THE EX. #200 GRAVITY SEWER USING A #1200 OVER-BUILD MANHOLE w/ AN OUTSIDE DROP AS PER MMCD DETAIL S3. FILL ABANDONED SECTION OF GRAVITY SEWER w/ CDF SEE SHEET C8 FOR DETAIL</p>	<p>EXISTING UTILITIES LOCATIONS OF EXISTING UTILITIES SHOWN ARE DERIVED FROM FIELD SURVEY, AS CONSTRUCTED DRAWINGS AND THIRD PARTY SOURCES. THIS INFORMATION CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES AT THE START OF THE CONTRACT AND INFORM THE ENGINEER OF ANY DISCREPANCY. NOT ALL UTILITY SERVICES SHOWN ON PROFILE VIEWS.</p>
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DESIGNED: GB SCALE: AS SHOWN

DRAWN: FG DATE: JAN 2019

CHECKED: GB DATE: MAR 2019

APPROVED: RKS DATE: MAR 28, 2019

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TITLE: CITY OF CAMPBELL RIVER  
WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
CAMPBELL RIVER, BC  
HWY 19A  
STA 1+120 TO 1+400

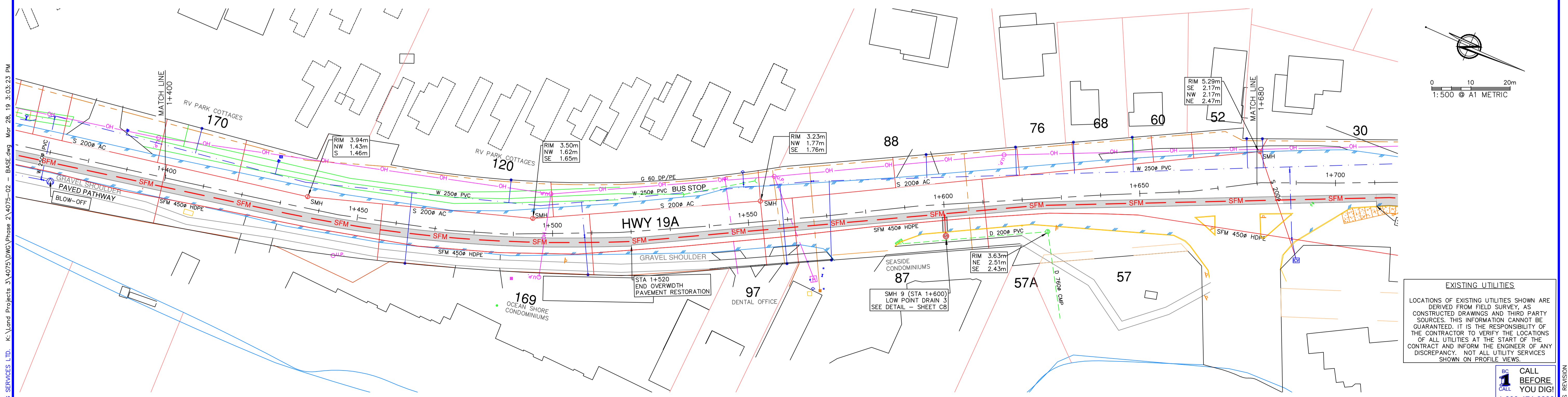
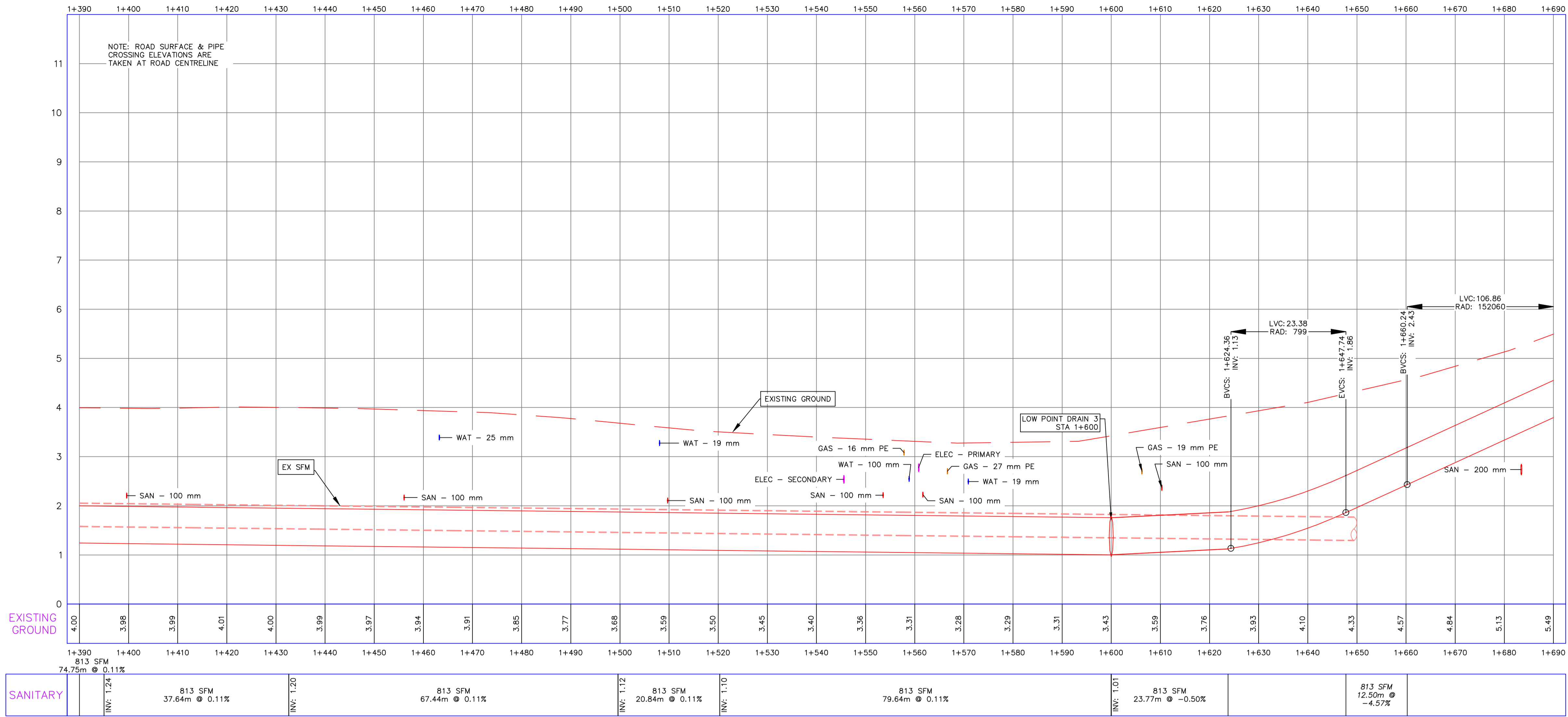
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CITY DWG # 19-507-C5  
PROJECT: 4075-02  
SHEET 5 OF 8  
ISSUE C

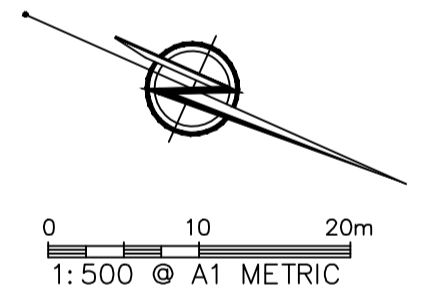
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# HWY 19A PROFILE



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C	EX SFM ELEVATION ADJUSTED	FG	19/03/28																
B	CHANGED PIPE SIZE LABEL	FG	19/03/20																
A	ISSUED FOR TENDER	FG	19/03/12																

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**ISSUED FOR TENDER**

**CITY OF CAMPBELL RIVER**  
WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
CAMPBELL RIVER, BC  
HWY 19A  
STA 1+400 TO 1+680

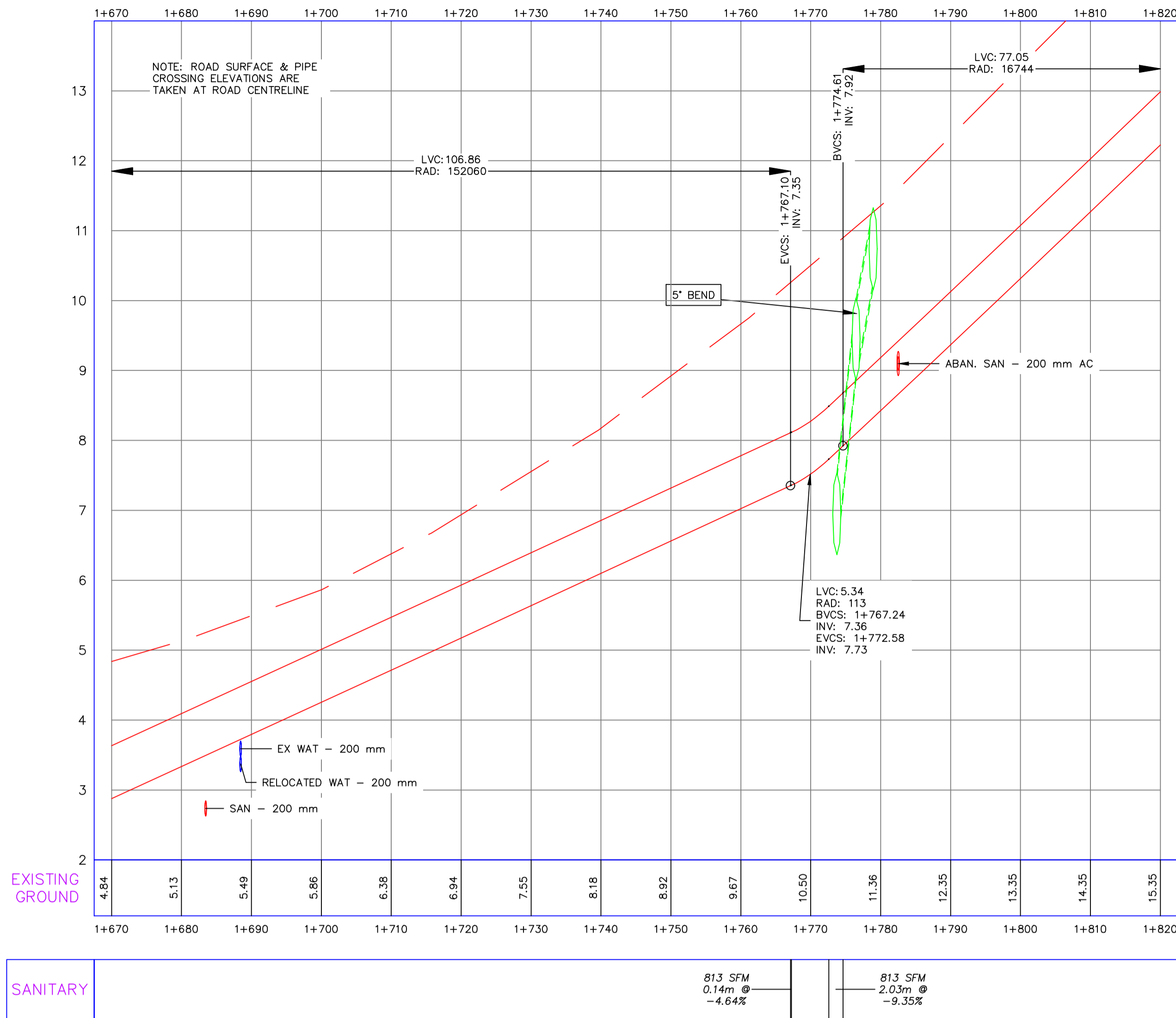
CITY DWG # 19-507-C6	PROJECT: 4075-02
SHEET 6 OF 8	ISSUE C

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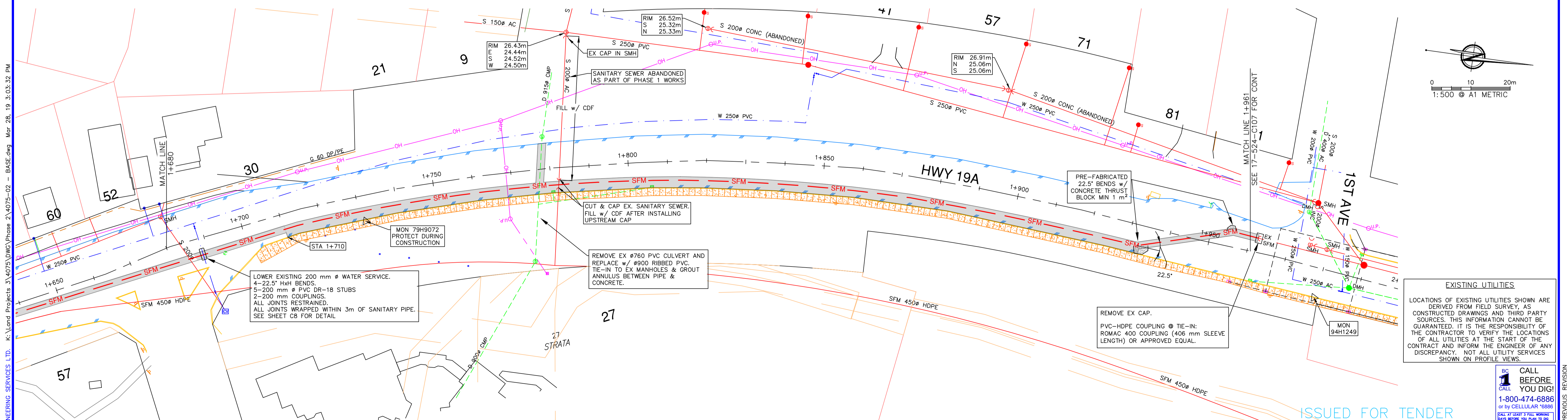
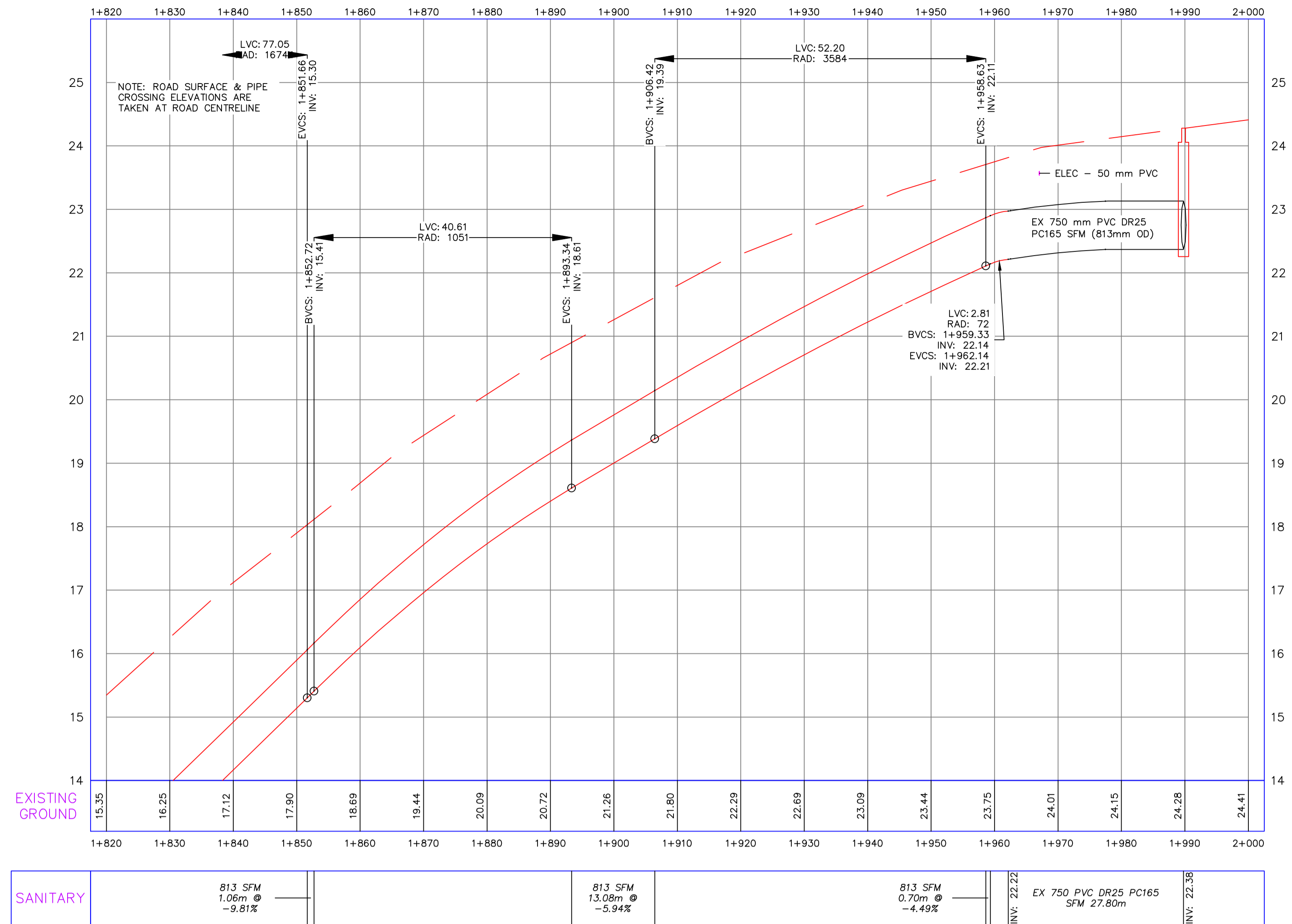
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HWY 19A PROFILE



HWY 19A PROFILE



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B	ADDED MISSING VALVES	FG	19/03/20															
A	ISSUED FOR TENDER	FG	19/03/12															

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TITLE: **CITY OF CAMPBELL RIVER**  
WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
CAMPBELL RIVER, BC  
HWY 19A  
STA 1+680 TO 1+961

CITY DWG #  
19-507-C7

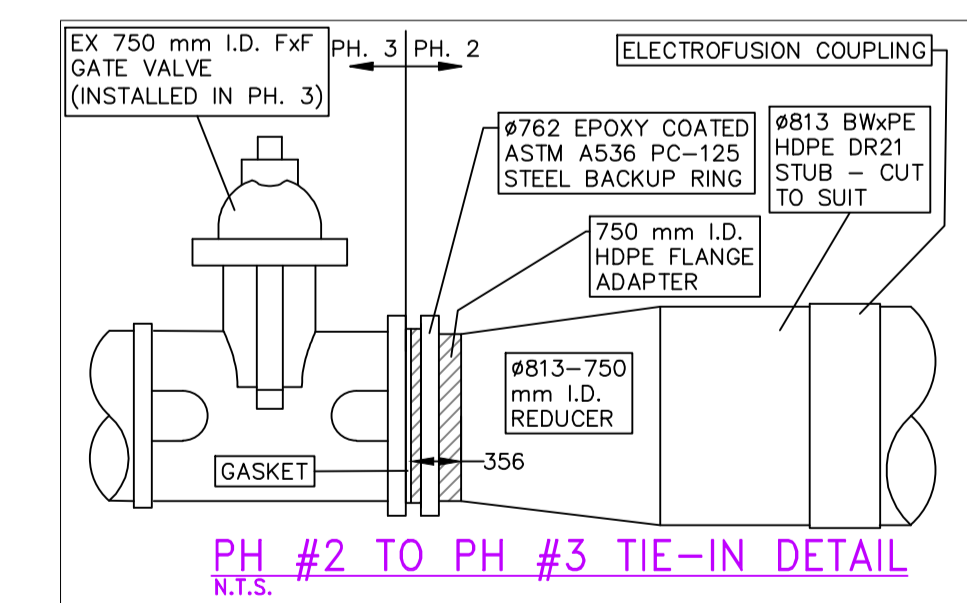
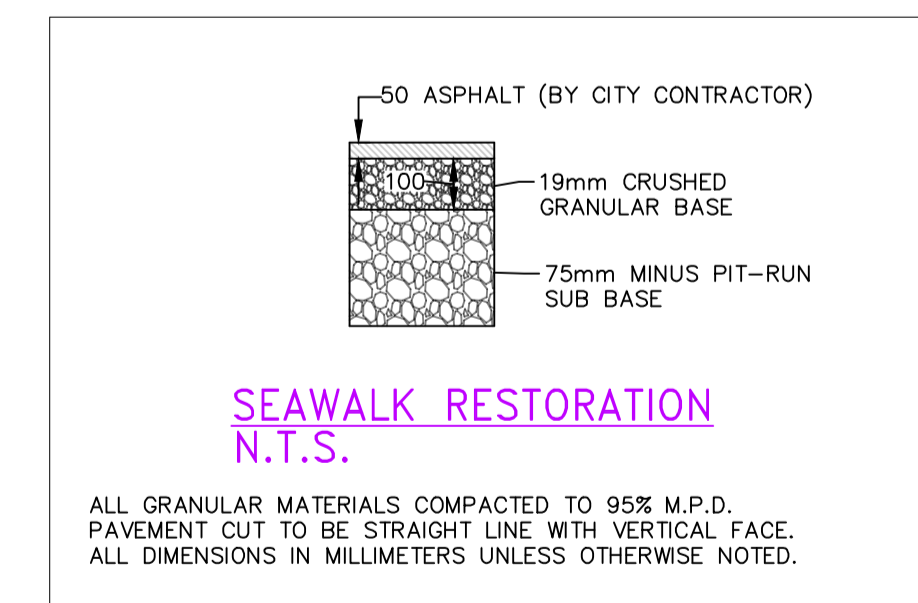
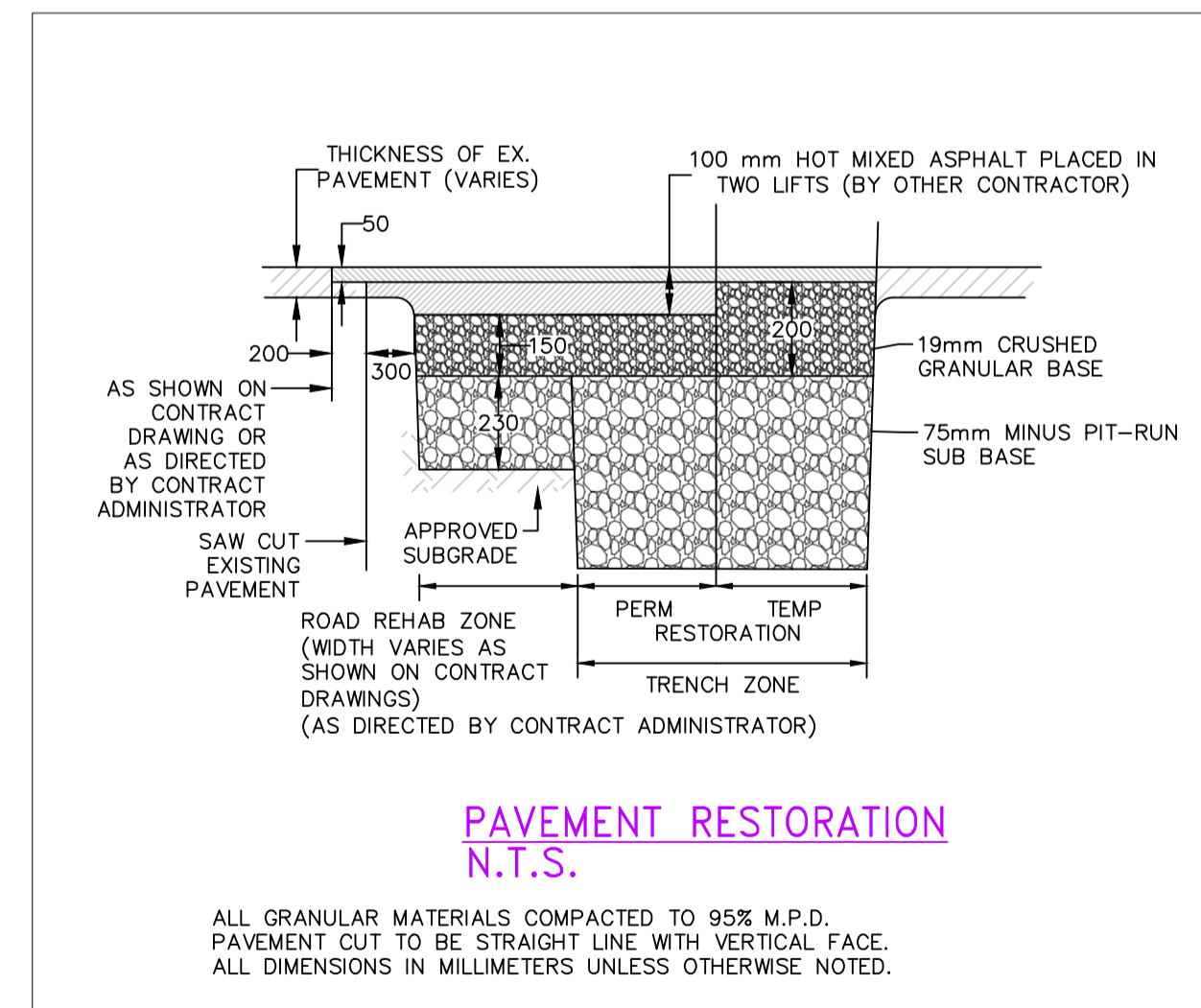
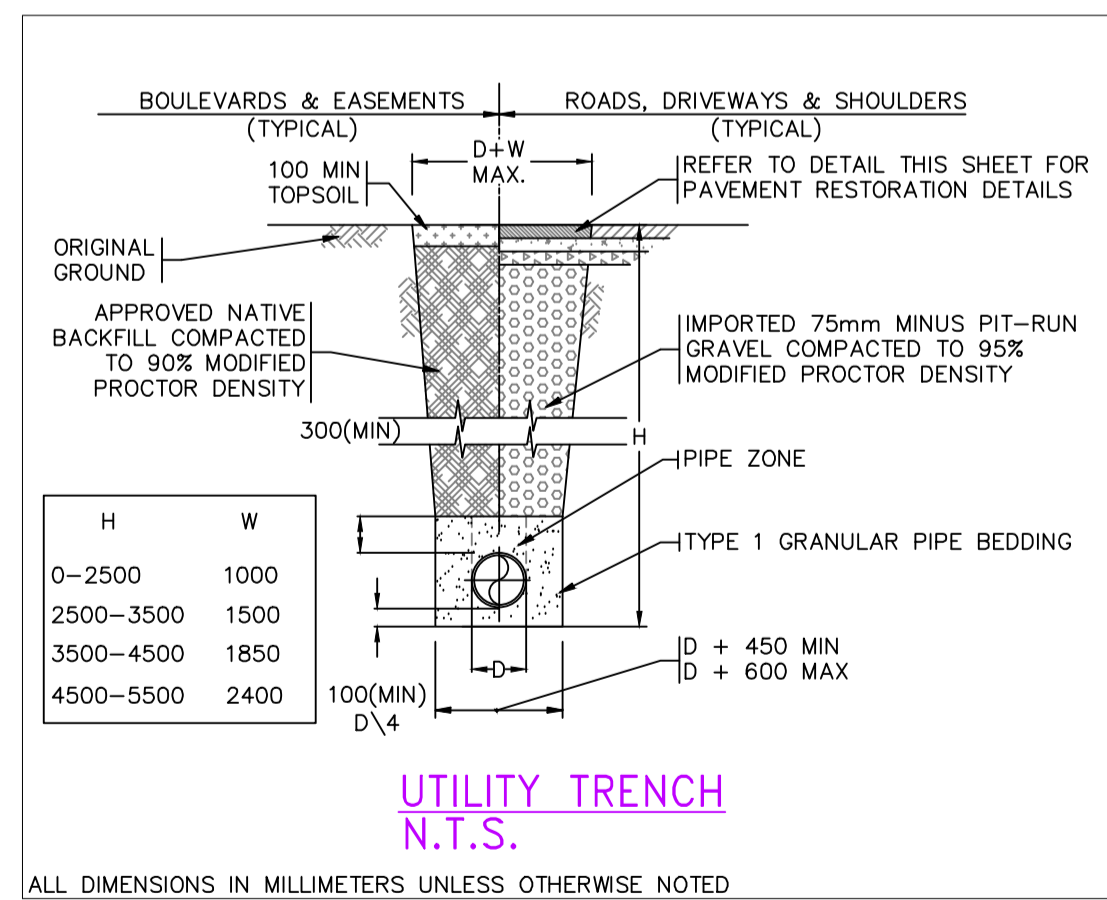
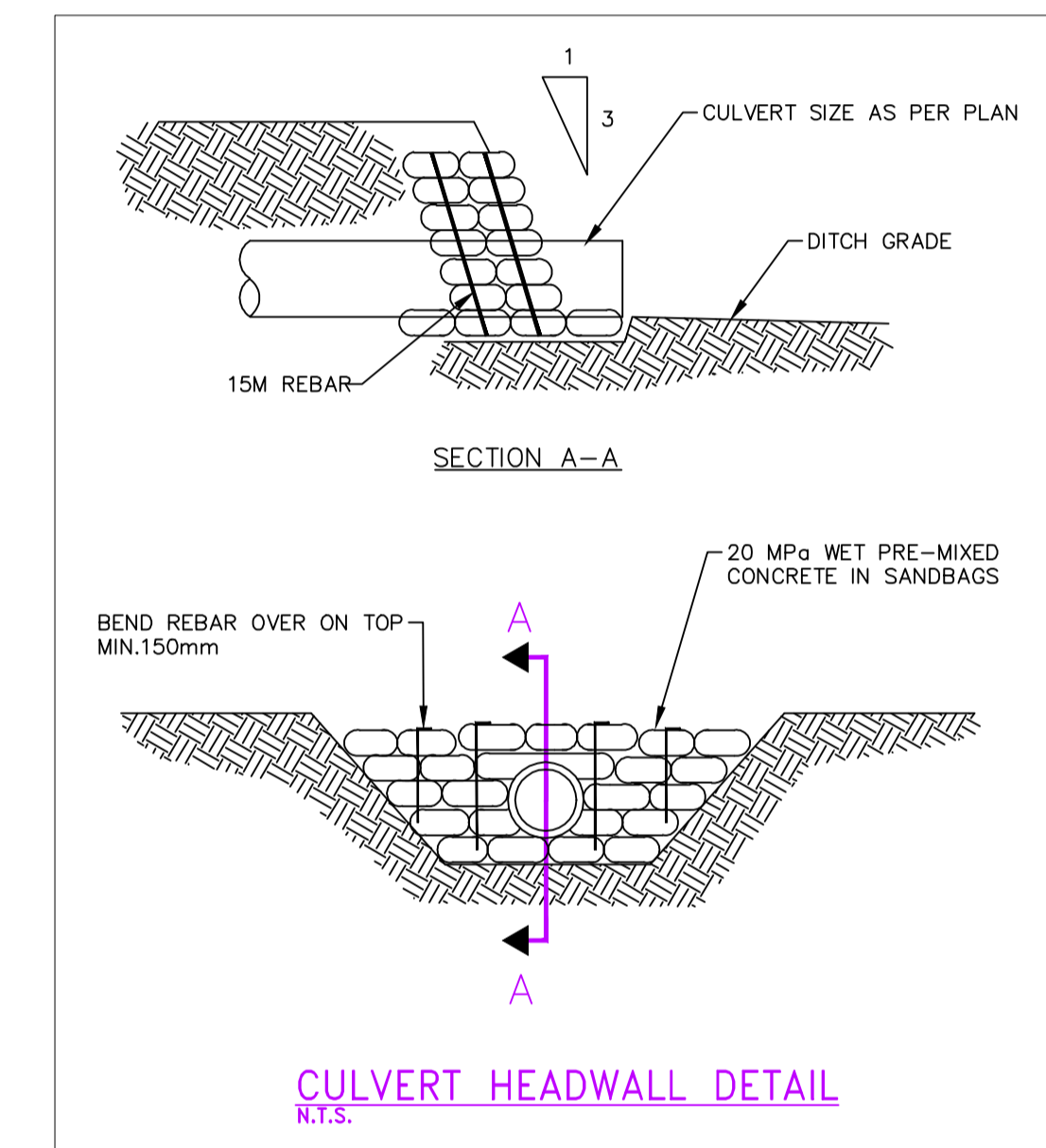
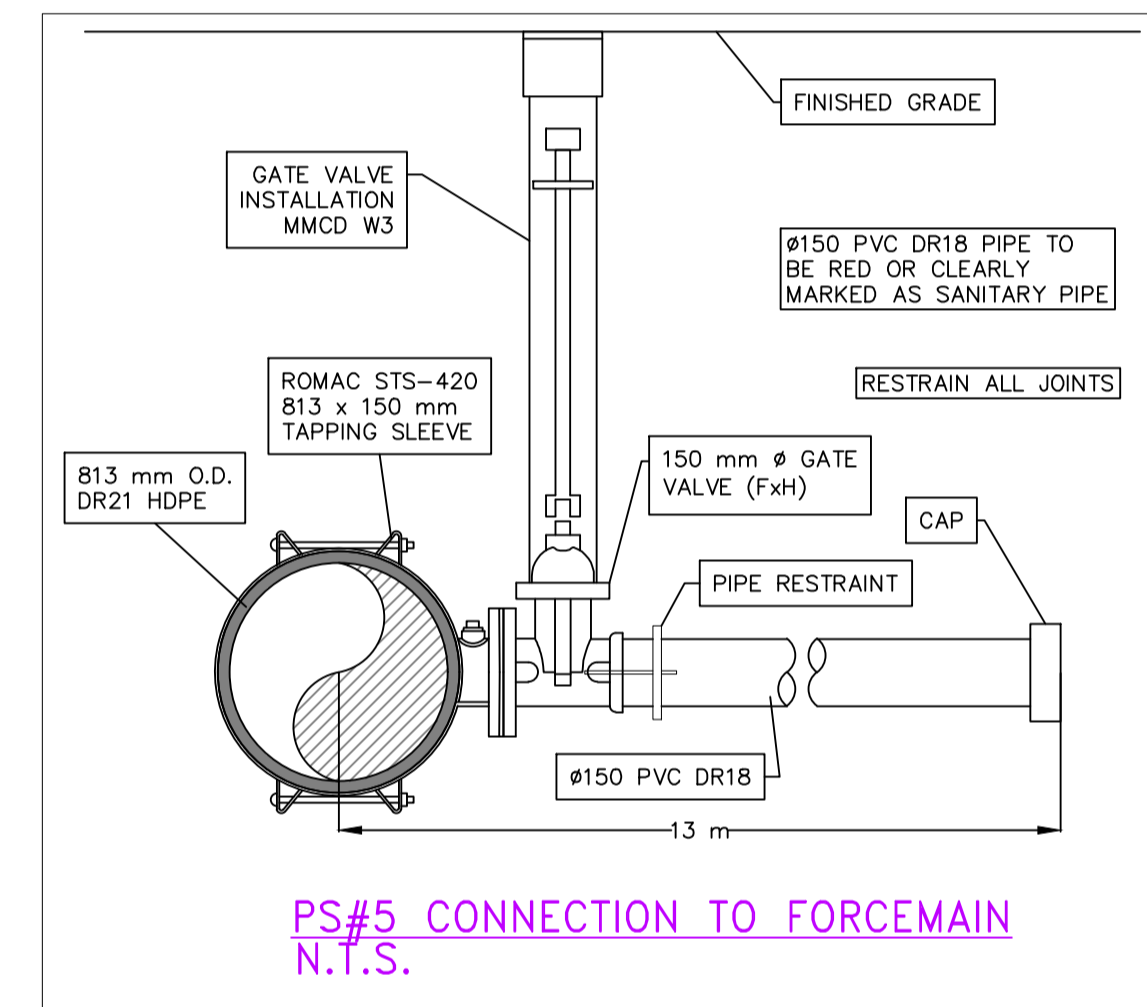
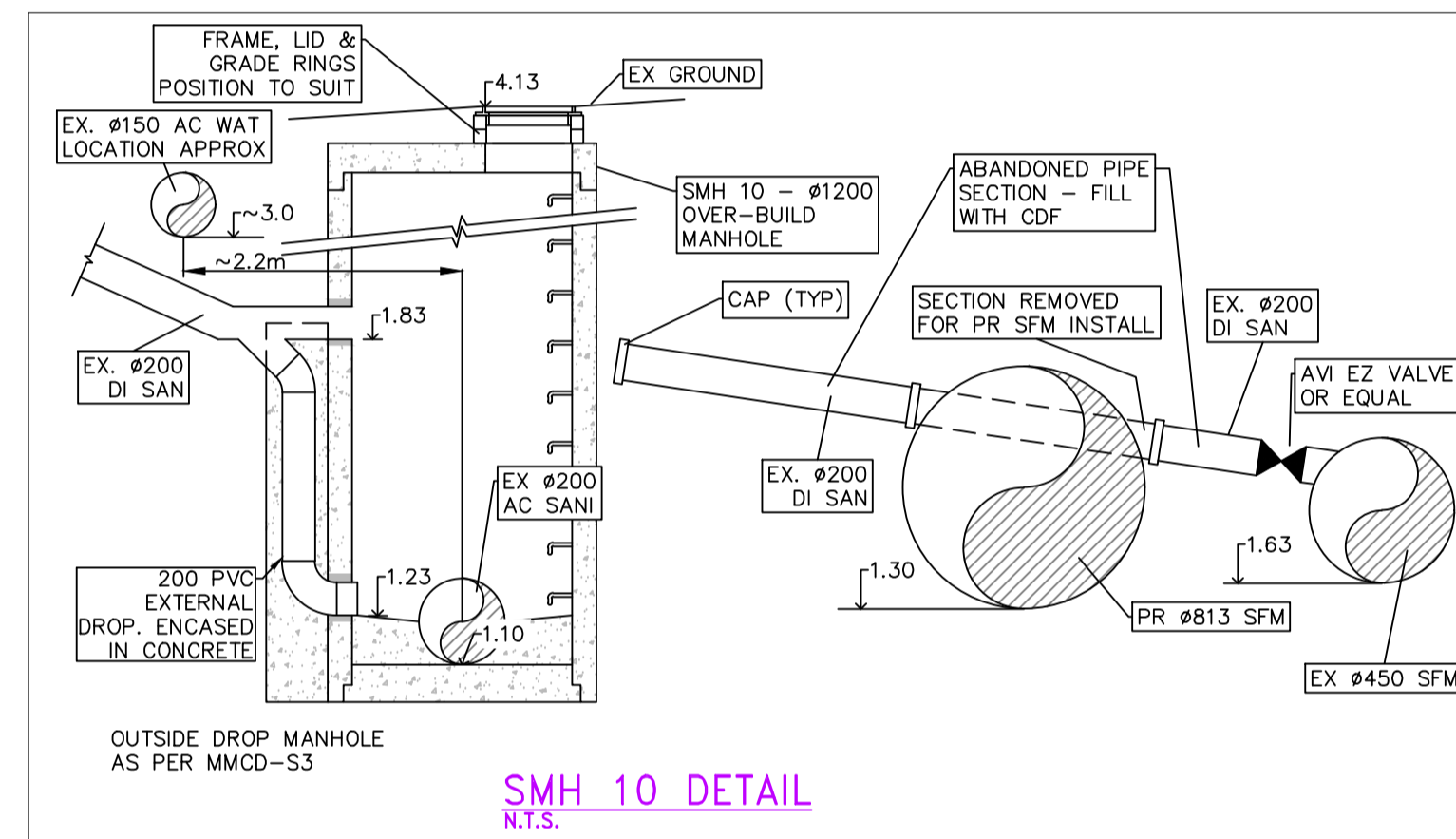
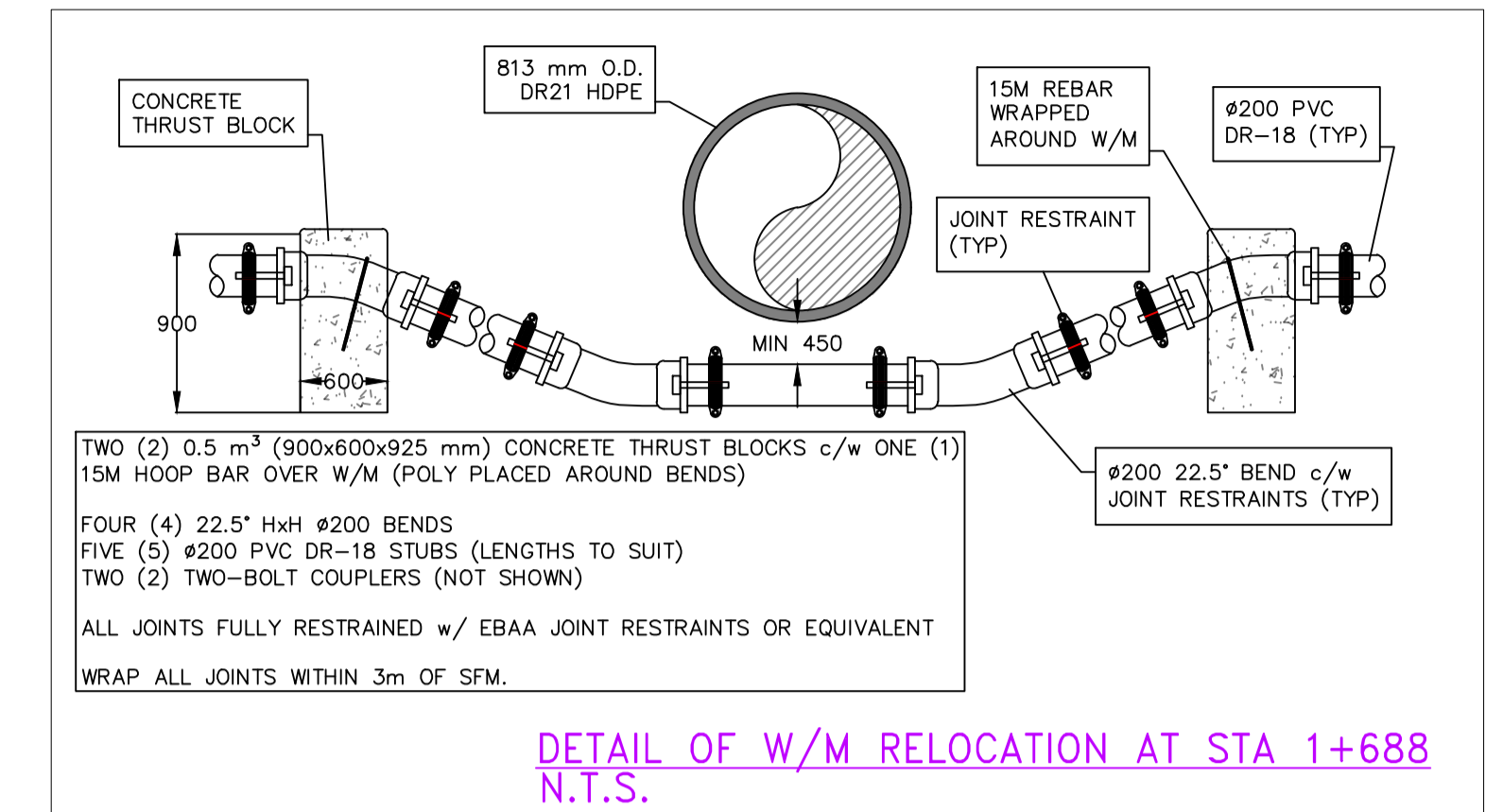
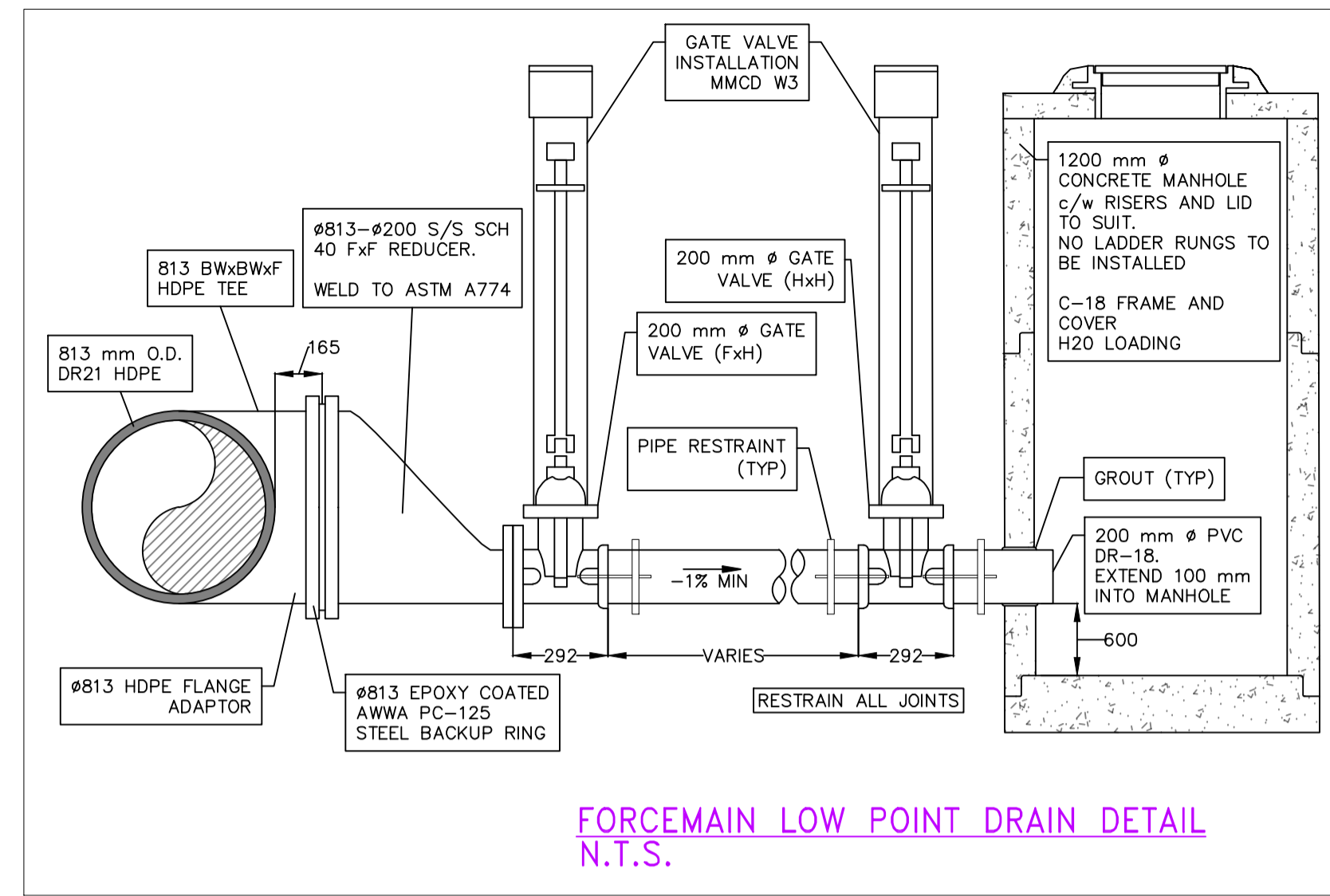
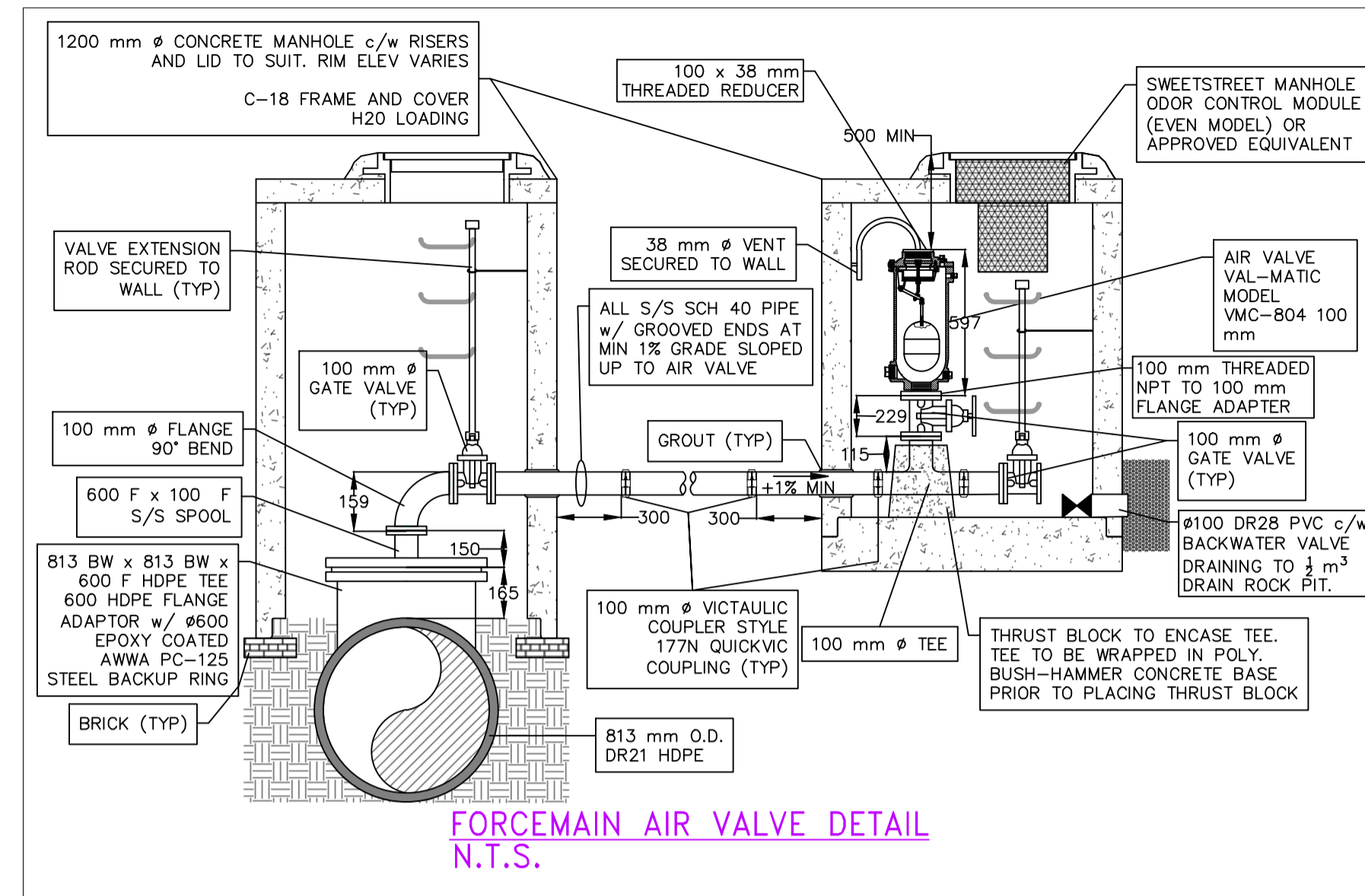
PROJECT:  
4075-02

SHEET 7 OF 8

ISSUE C

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---	---	---	H	U/G HYDRO	---	H	D	STORM DRAIN	---	SMH	SANITARY MANHOLE	---	SMH	GB	AS SHOWN
---	---	---	G	NATURAL GAS	---	G	W	WATER MAIN	---	DMH	STORM MANHOLE	---	DMH	DRAWN:	DATE:
---	---	---	P	PERMEABLE PAVING	---	P	P	PAVEMENT	---	TOP INLET	CATCH BASIN	---	TOP INLET	FG	JAN 2019
C	DETAILS CHANGED	FG	19/03/28		---	C	C	CURB & GUTTER	---	HYD.	FIRE HYDRANT	---	HYD.	CHECKED:	DATE:
B	DETAIL ADDED	FG	19/09/20		---	W.V.	W.V.	WATER VALVE	---	W.V.	WATER VALVE	---	W.V.	GB	MAR 2019
A	ISSUED FOR TENDER	FG	19/03/12		---	U.P.	U.P.	UTILITY POLE	---	U.P.	UTILITY POLE	---	U.P.	APPROVED:	DATE:
NO.	ISSUE	BY	YY/MM/DD	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	RKS	MAR 28, 2019

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V9W 2P8

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ISSUED FOR TENDER

TITLE:  
**CITY OF CAMPBELL RIVER  
WATERFRONT SEWER SYSTEM UPGRADES - PH 2  
CAMPBELL RIVER, BC  
HWY 19A  
DETAILS SHEET**

CITY DWG #  
19-507-C8

PROJECT:  
4075-02

SHEET 8 OF 8

ISSUE C

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