

PLAN
Scale: 1:7500

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LISTING	NORTHING	EASTING	ELEV.	DESCRIPTION	LISTING	NORTHING	EASTING	ELEV.	DESCRIPTION	LISTING	NORTHING	EASTING	ELEV.	DESCRIPTION	LISTING	NORTHING	EASTING	ELEV.	DESCRIPTION
4861	5462518.55	403764.1228	63.055	SPIKE/4861	4883	5461782.365	406704.8342	36.108	SPIKE/4883	5091	5462635.961	403542.3875	60.388	NAIL/5091	5109	5461711.593	408159.5469	64.76	SPIKE/5109
4862	5462468.225	404173.5268	60.431	NAIL/4862	4884	5461772.6	406746.9838	30.948	SPIKE/4884	5092	5462704.322	403996.1191	59.225	NAIL/5092	5130	5461611.638	408155.071	61.26	SPIKE/5130
4863	5462194.378	405394.1142	48.791	NAIL/4863	4885	5461755.211	406754.1212	30.287	SPIKE/4885	5093	5462766.335	403268.3044	58.334	NAIL/5093	5131	5461673.801	408161.2813	64.141	SPIKE/5131
4864	5462213.789	405529.2839	46.786	NAIL/4864	4886	5461744.412	406772.502	26.531	SPIKE/4886	5094	5462831.901	403135.0963	57.254	NAIL/5094	5132	5461674.945	408108.5807	64.279	SPIKE/5132
4865	5462209.533	405670.8878	45.28	NAIL/4865	4887	5461745.39	406738.5432	36.072	NAIL/4887	5095	5462753.797	403337.6841	56.466	SPIKE/5095	5133	5461663.293	408030.8655	60.419	SPIKE/5133
4866	5462182.678	405809.0189	43.761	NAIL/4866	4888	5461724.887	406806.2439	25.204	SPIKE/4888	5096	5462863.768	403101.3536	59.307	SPIKE/5096	5134	5461683.512	407959.1171	54.512	SPIKE/5134
4867	5462148.355	405908.1072	42.629	NAIL/4867	4889	5461694.185	406814.8054	34.87	NAIL/4889	5097	5462910.117	403095.2651	56.467	SPIKE/5097	5135	5461666.893	407870.5324	46.846	SPIKE/5135
4868	5462094.853	406016.4968	42.016	NAIL/4868	4890	5461707.985	406852.4496	26.078	SPIKE/4890	5098	5462991.911	403088.2015	47.931	SPIKE/5098	5136	5461637.993	407791.3399	44.118	SPIKE/5136
4869	5462042.739	406123.0315	42.013	NAIL/4869	4891	5461683.078	406898.9682	27.008	SPIKE/4891	5099	5462245.316	405057.1413	51.969	NAIL/5099	5137	5461675.824	407759.0727	42.478	SPIKE/5137
4870	5461986.579	406238.6195	42.016	NAIL/4870	4892	5461658.873	406920.2055	33.418	NAIL/4892	5100	5462341.531	404831.7973	53.177	NAIL/5100	5138	5461887.747	408172.9698	50.537	SCRIBE/5138
4871	5461948.969	406328.8552	41.861	NAIL/4871	4893	5461674.468	406952.0795	24.659	SPIKE/4893	5101	5462408.139	404817.9139	55.6	NAIL/5101	5139	5461690.59	407729.1844	38.033	SPIKE/5139
4872	5461921.77	406438.1529	40.74	NAIL/4872	4894	5461671.706	407012.2761	20.902	SPIKE/4894	5102	5462448.467	404380.7158	58.204	NAIL/5102	5140	5461661.924	407691.2679	28.371	SPIKE/5140
4873	5461903.345	406529.54	39.63	NAIL/4873	4895	5461648.342	407059.7223	23.136	SPIKE/4895	5103	5463083.742	403145.3205	43.983	SPIKE/5103	5141	5461660.148	407644.6609	17.108	SPIKE/5141
4874	5461855.879	406620.7248	38.317	NAIL/4874	4896	5461624.977	407131.9524	24.608	SPIKE/4896	5104	5463018.704	403330.3222	46.195	SPIKE/5104	5142	5461630.619	407584.6595	15.928	SPIKE/5142
4875	5461807.031	406677.0119	37.199	NAIL/4875	4897	5461602.677	407165.6007	30.593	NAIL/4897	5105	5462986.912	403468.6412	47.858	NAIL/5105	5143	5461634.955	407487.8705	15.927	SPIKE/5143
4876	5461756.63	407177.6408	24.524	SPIKE/4876	4898	5461634.789	407177.6408	24.524	SPIKE/4898	5106	5461778.966	408210.5728	61.992	SPIKE/5106	5537	5461835.814	407655.846	29.494	SPIKE/5537
4877	5462228.084	405218.7563	46.321	SPIKE/4877	4899	5461616.844	407234.9544	30.129	NAIL/4899	5107	5461779.871	408241.0666	58.98	SPIKE/5107	5538	5461754.168	407505.393	29.736	SPIKE/5538
4878	5461832.296	406655.5642	37.114	SPIKE/4878	4900	5461649.421	407305.686	29.872	NAIL/4900	5108	5461741.822	408221.39	62.792	SPIKE/5108	5539	5461778.307	407661.007	28.498	SPIKE/5539

SURVEY CONTROL WAS ORIGINALLY ESTABLISHED IN UTM NAD 83 USING RTK GPS ON THE CITY OF NANAIMO CAN-NET SYSTEM. FURTHER RTK-GPS SURVEYS REQUIRE A SITE CALIBRATION TO AT LEAST 3 KNOWN KWL SURVEY CONTROLS.

PROJECT HAS BEEN SCALED FROM UTM GRID TO UTM GROUND ABOUT ORIGIN: VERTICAL DATUM HAS BEEN HELD TO MON-787-J LOCATED IN THE SOUTH SIDE OF WEST RAIL BRIDGE ABUTMENT OVER THE ENGLISHMAN RIVER - ELEV=29.820M.

PARAMETERS: TO GET FROM UTM GRID TO GROUND, SCALED ABOUT ORIGIN KWL 4600 BY 1.0002978918.

LOCAL GROUND COORDINATES:

LISTING	NORTHING	EASTING	ELEV.	DESCRIPTION
4465	5461901.875	406940.429	14.067	KWL/4465
4466	5461895.856	406856.72	14.258	KWL/4466
4504	5461927.047	407760.606	28.662	SPIKE/4504
787	5461632.809	407278.5224	29.82	MON-787J
1732	5462986.899	403794.0827	44.585	MON/80H1732

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enGLISHMAN RIVER WATER SERVICE
ENGLISHMAN RIVER WATER SERVICE INTAKE, TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL CIVIL
KERR WOOD LEIDL consulting engineers

SPRINGWOOD & INDUSTRIAL RESERVOIRS INTAKE AND SUPPLY WATERMAINS DRAWING KEY PLAN AND INDEX

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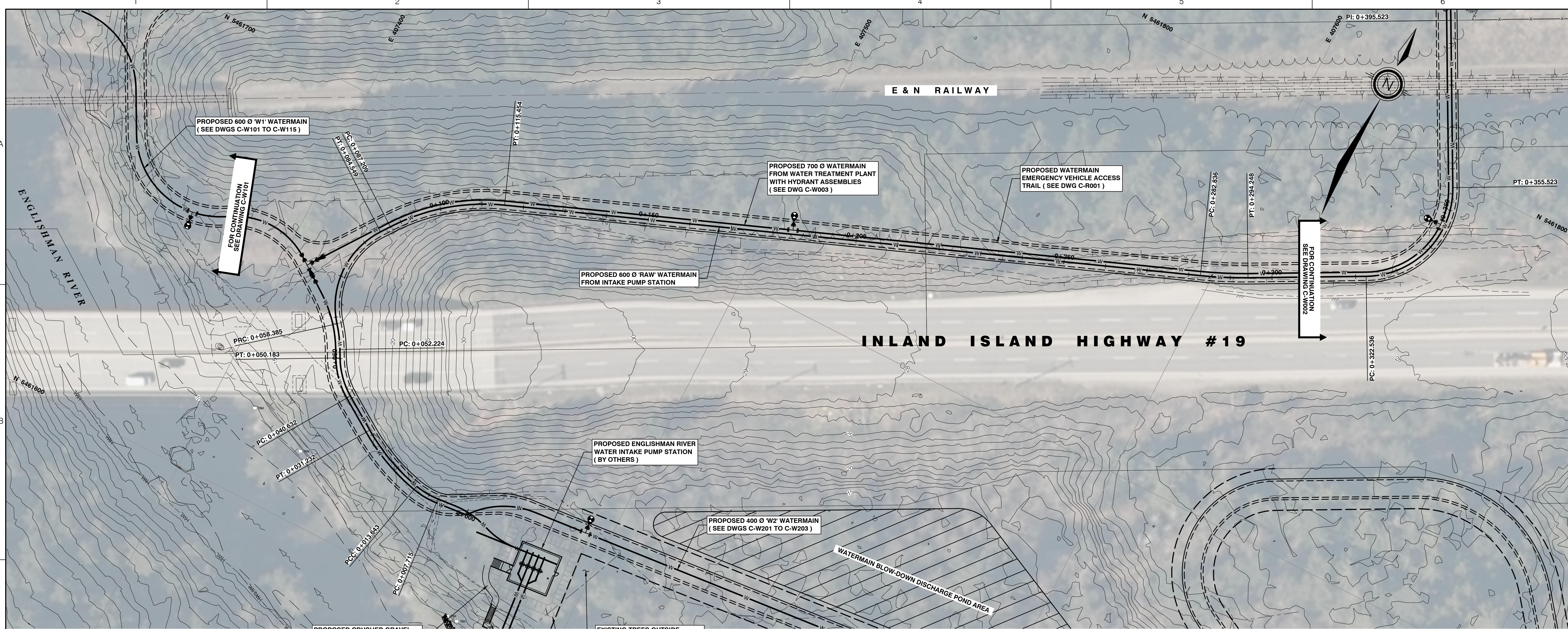
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DATE: -
PROJ: 468-013
DWG: C-G001
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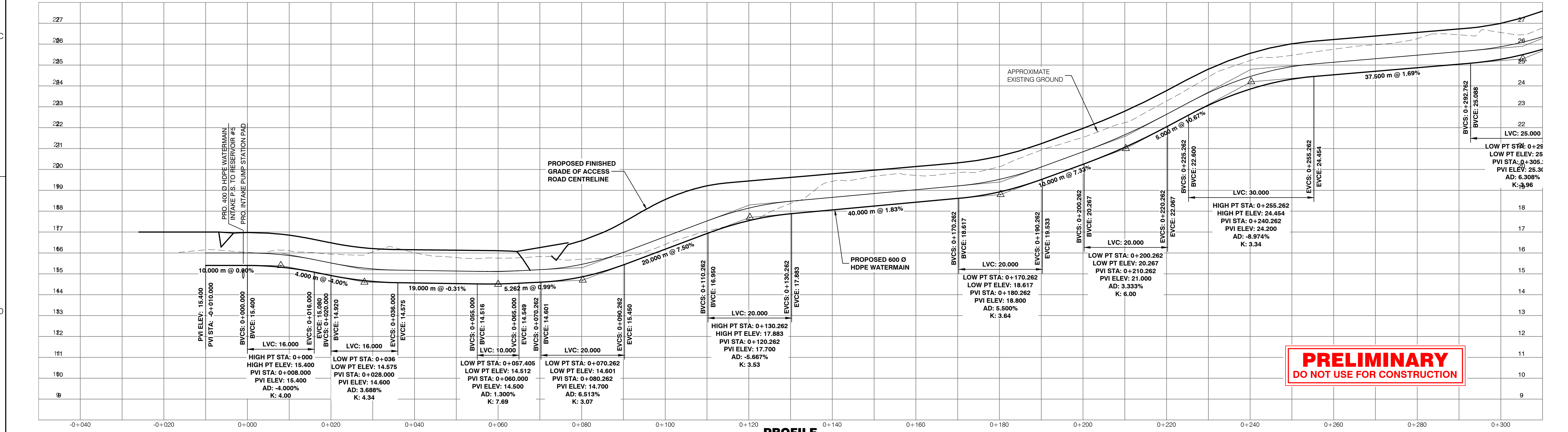
REVISION: SBOZZETTO, DR, SBOZZETTO, CHK, C.KRISTIANSEN, APVD

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PLAN
Scale: 1:500



PROFILE
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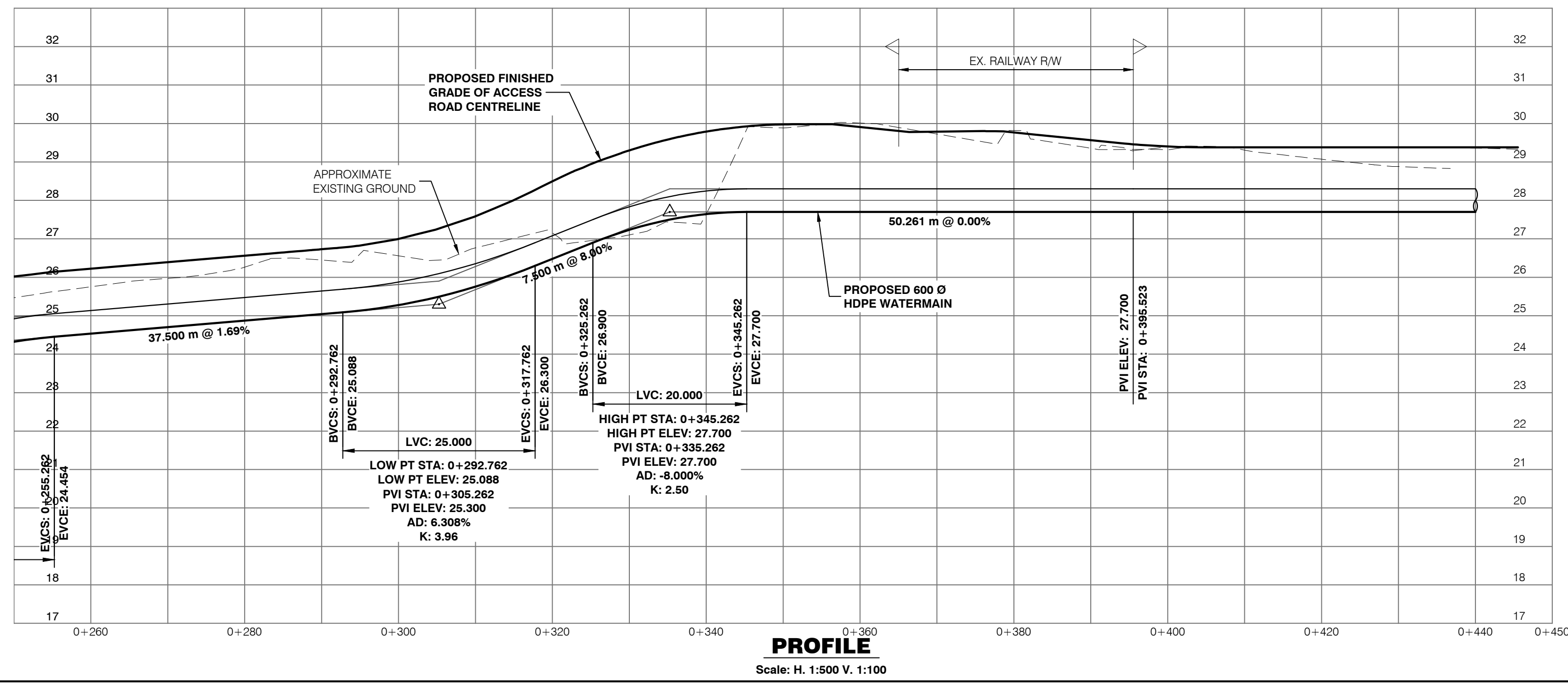
englishman river WATER SERVICE
ENGLISHMAN RIVER WATER SERVICE INTAKE, TREATMENT PLANT AND SUPPLY MAINS

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KERR WOOD LEIDL consulting engineers

600 DIA. 'RAW' WATERMAIN INTAKE P.S. TO WATER TREATMENT PLANT PLAN AND PROFILE - SHEET 1

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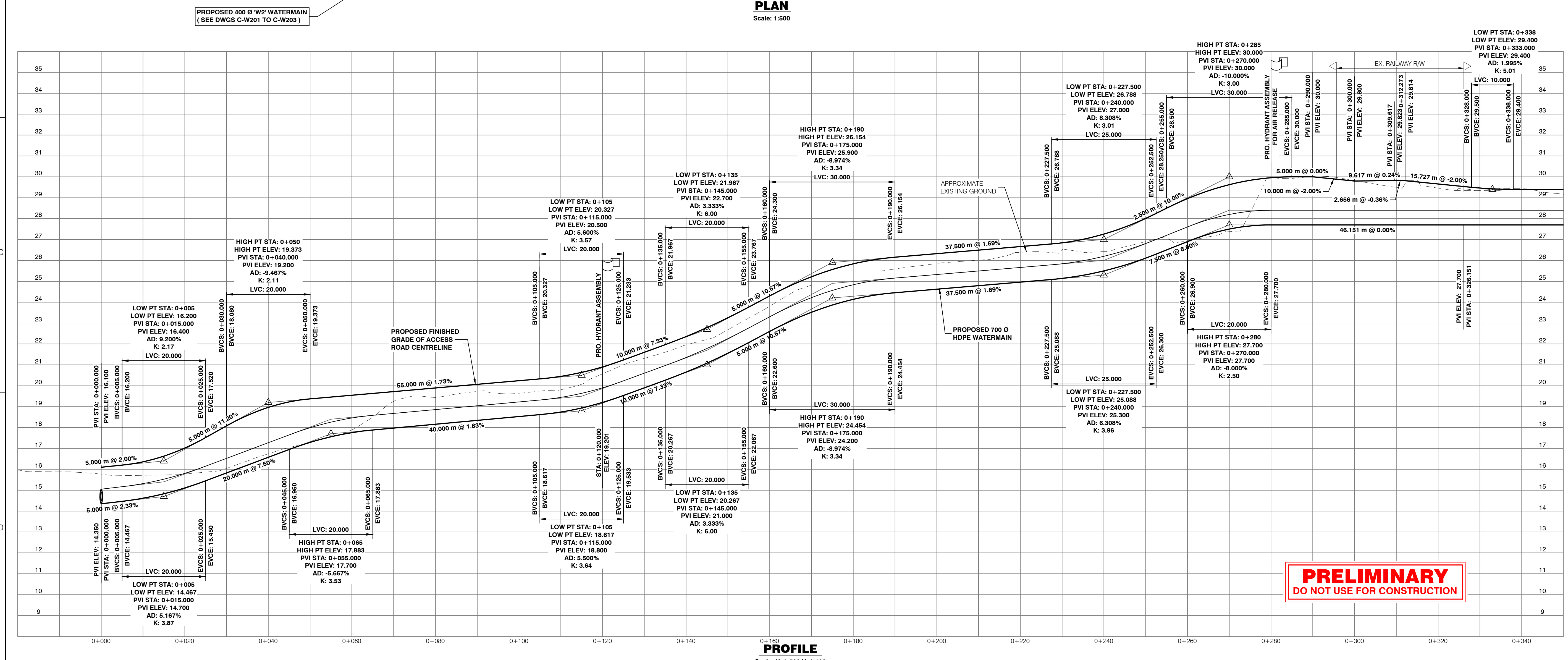
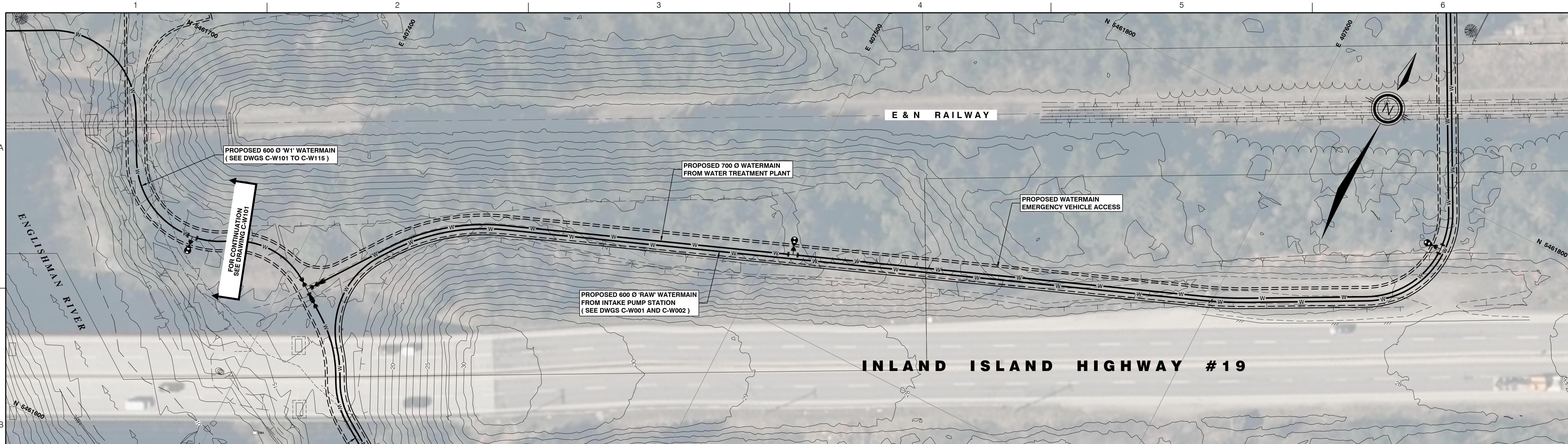


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KERR WOOD LEIDAL consulting engineers

600 DIA. 'RAW' WATERMAIN INTAKE P.S. TO WATER TREATMENT PLANT PLAN AND PROFILE - SHEET 2

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 ENGLISHMAN RIVER
 WATER SERVICE INTAKE,
 TREATMENT PLANT AND SUPPLY MAINS

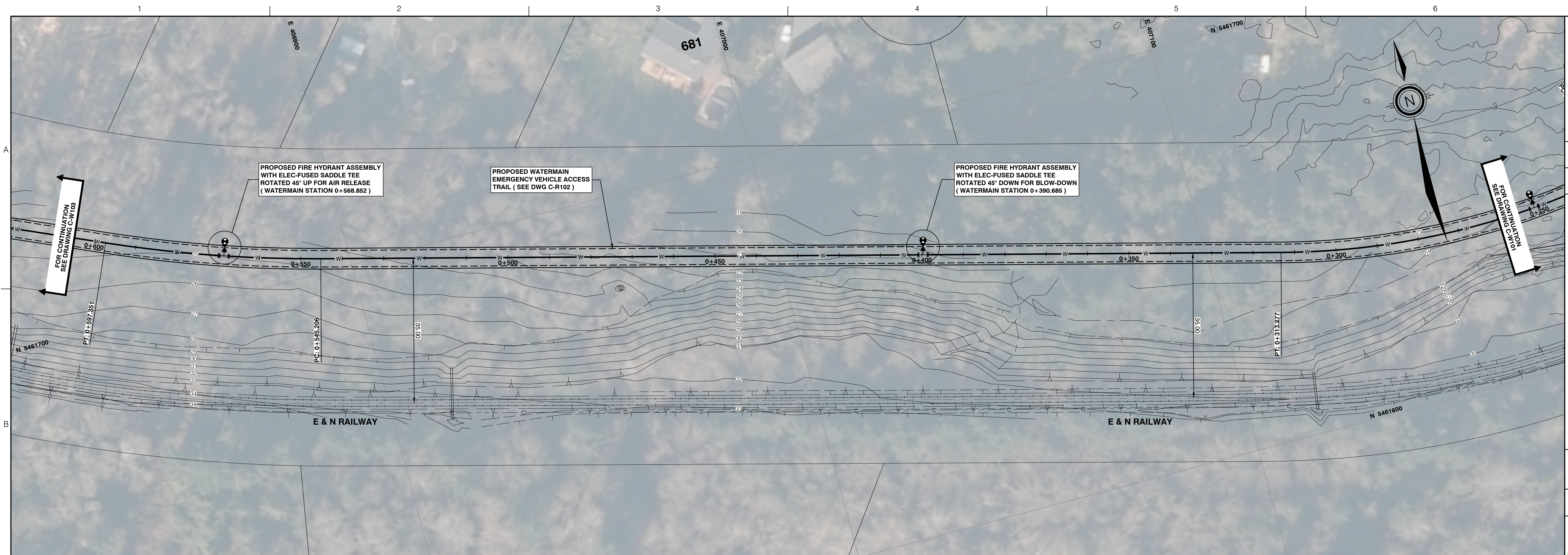
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 KERR WOOD LEIDAL consulting engineers

700 DIA. W.T.P. WATERMAIN WATER TREATMENT PLANT TO DIVERSION PLAN AND PROFILE - SHEET 1

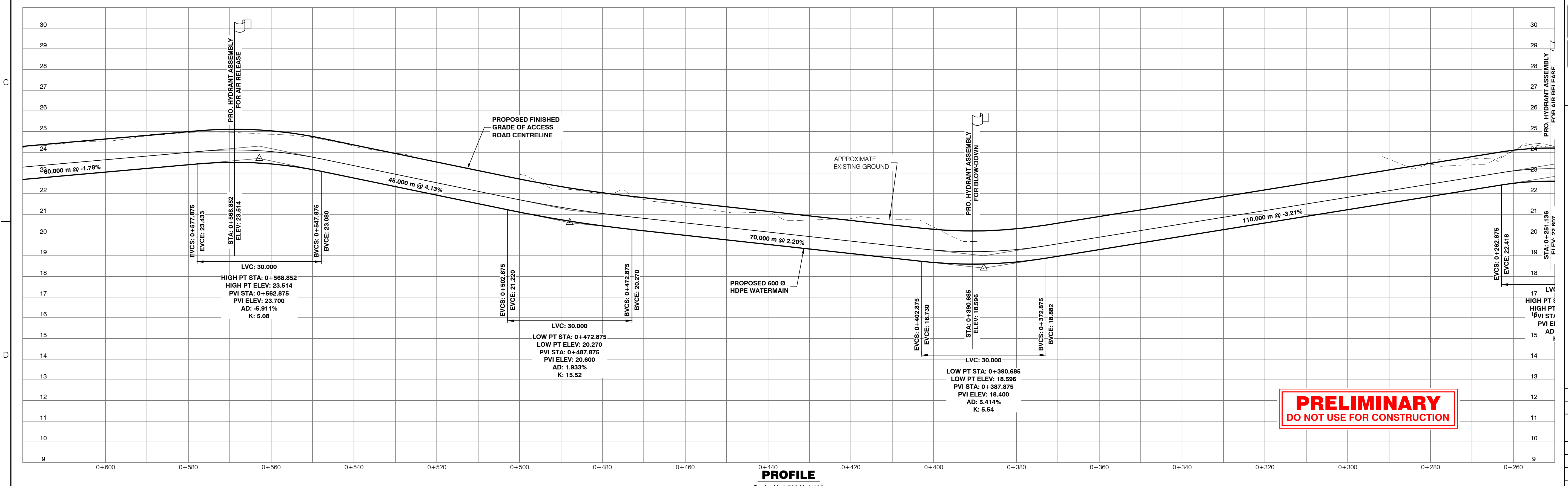
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PLAN
Scale: 1:500



PROFILE
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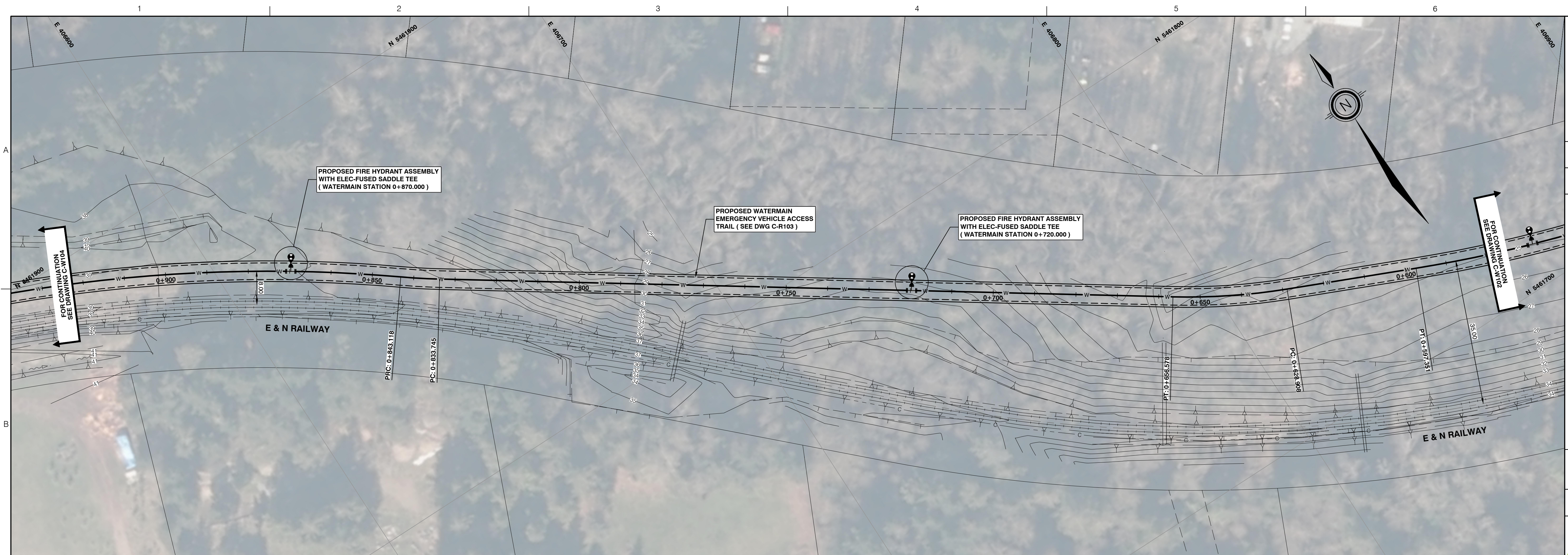
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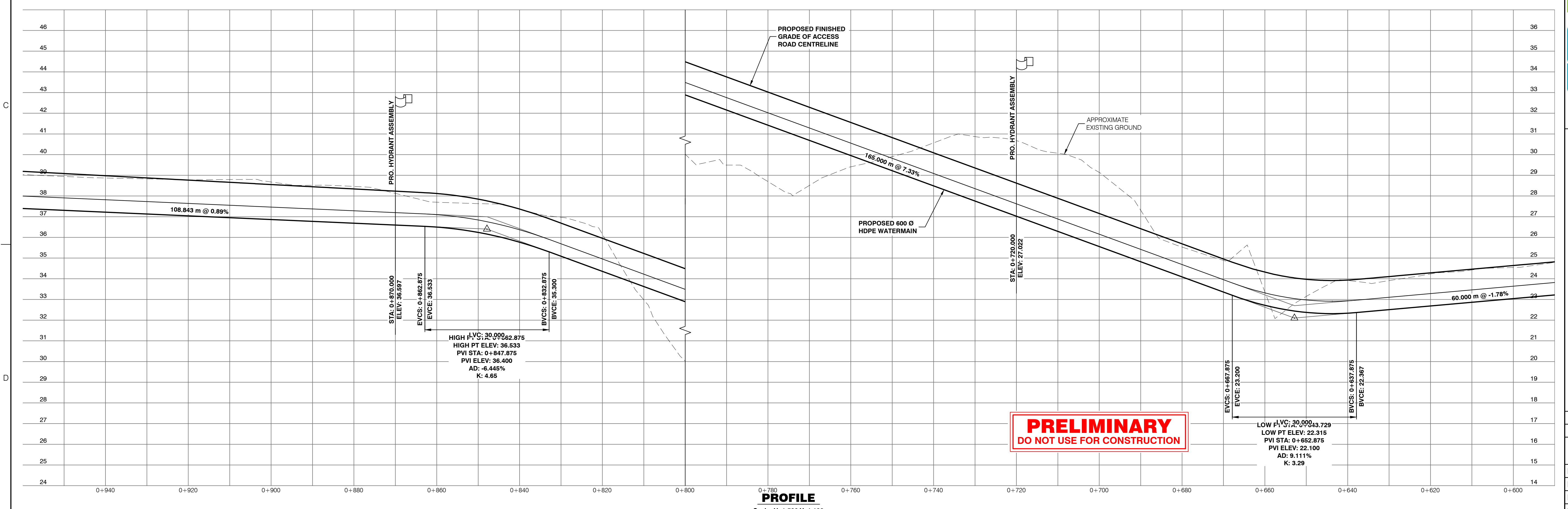
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600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4 PLAN AND PROFILE - SHEET 2

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PLAN
Scale: 1:500



PROFILE
Scale: H. 1:500 V. 1:100

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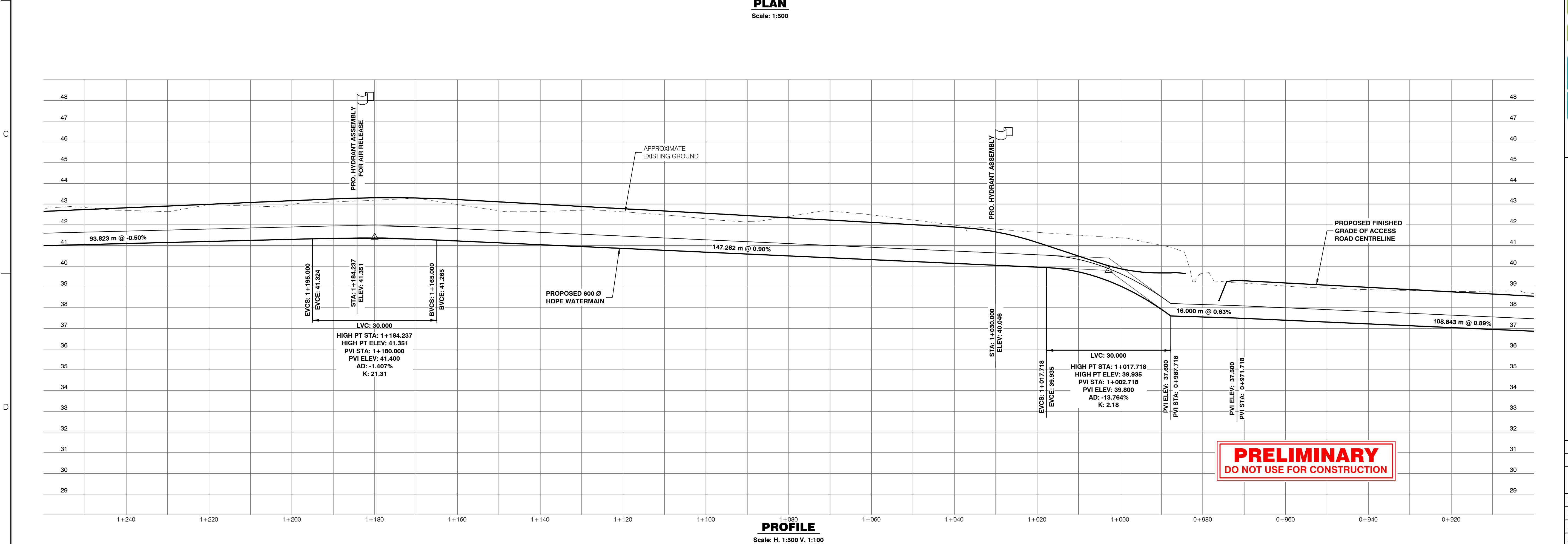
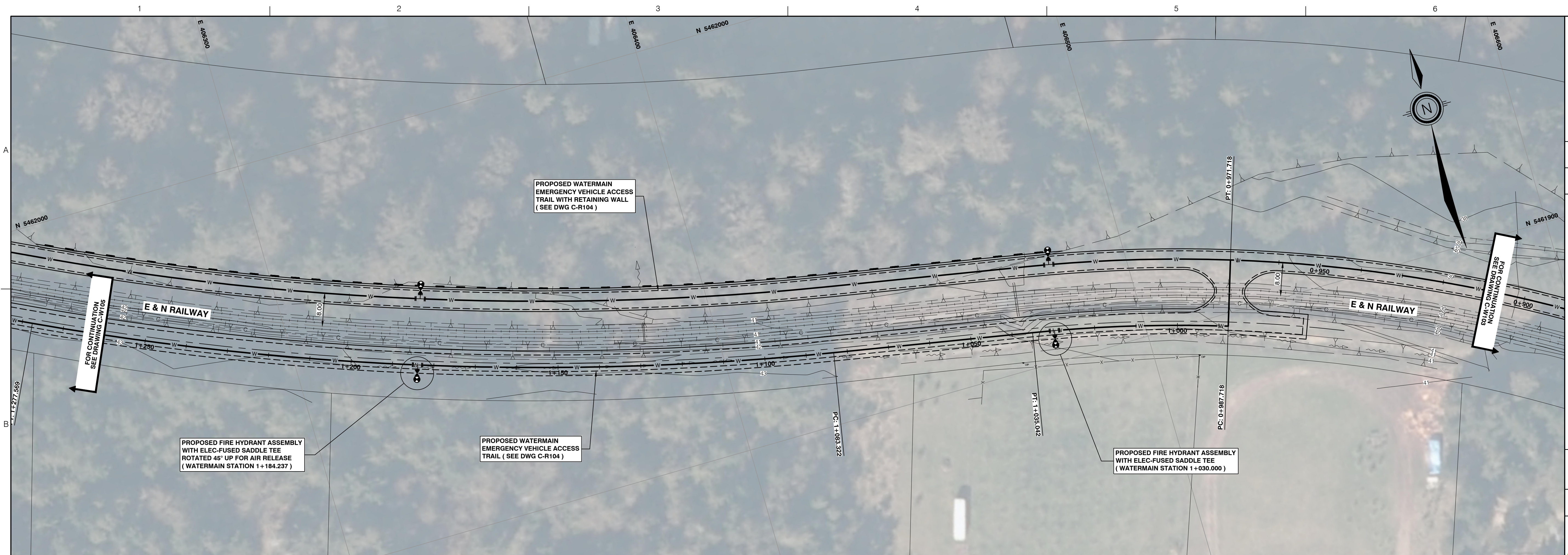
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600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 3

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600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 4

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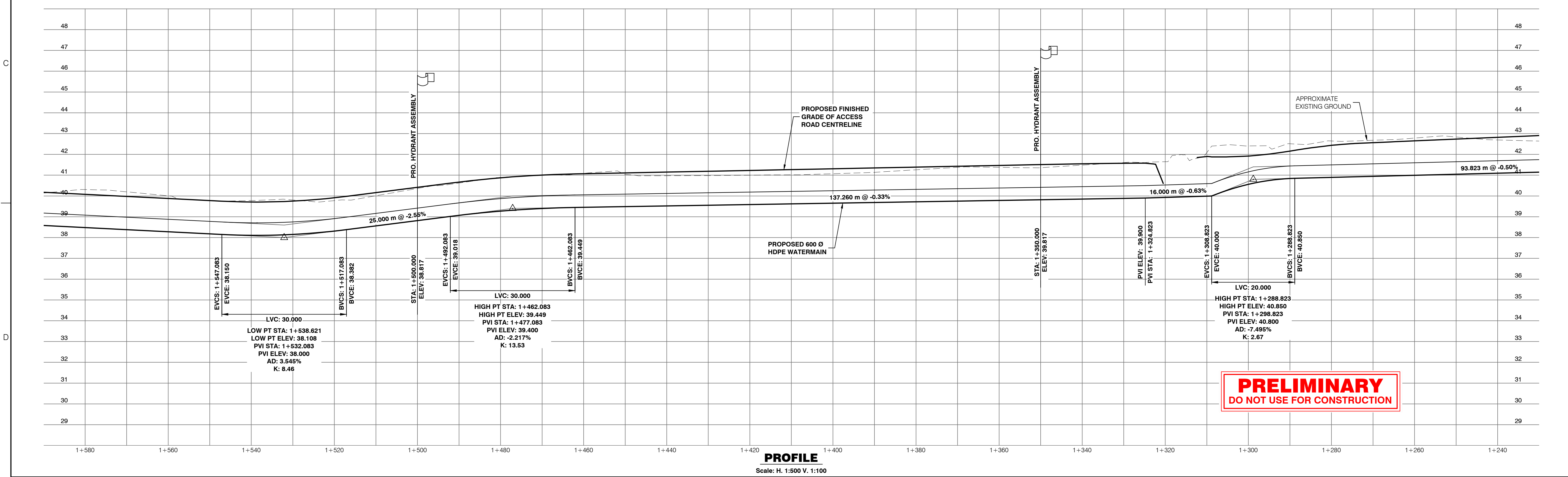
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PLAN
Scale: 1:500



PROFILE
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WATER SERVICE INTAKE,
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REVISION: SBOZZETTO
CHK: C.KRISTIANSEN
DR: SBOZZETTO
APVD: APVD

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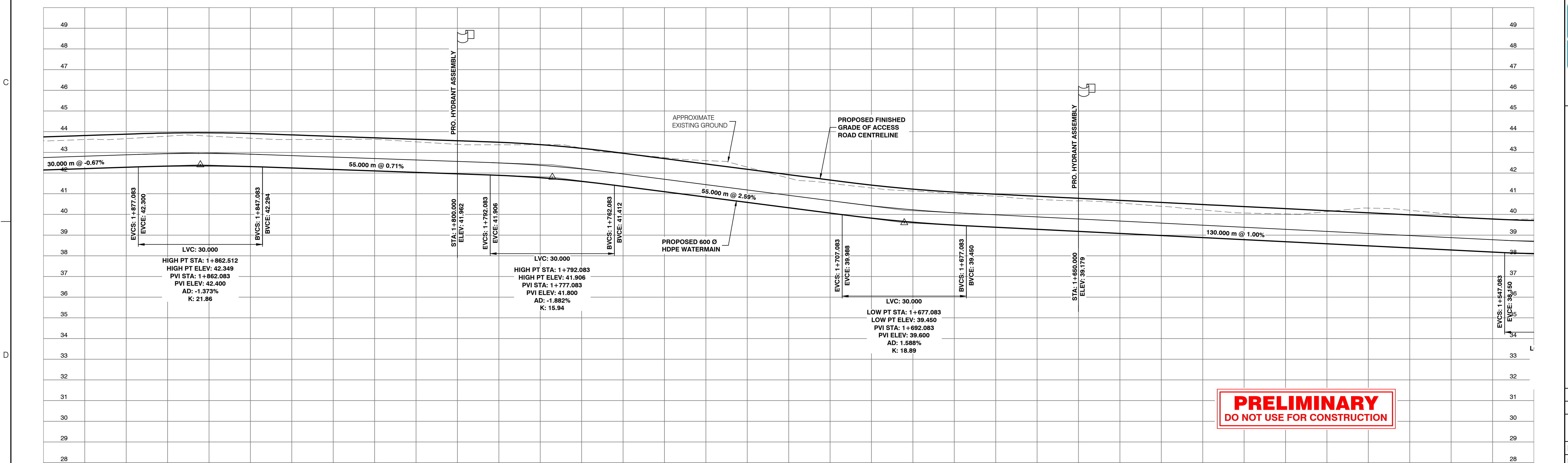
600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 5

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PLAN
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PROFILE
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WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

DR: S. BOZZETTO, C. KRISTIANSEN
CHK: S. BOZZETTO

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KERR WOOD LEIDAL
CONSULTING ENGINEERS

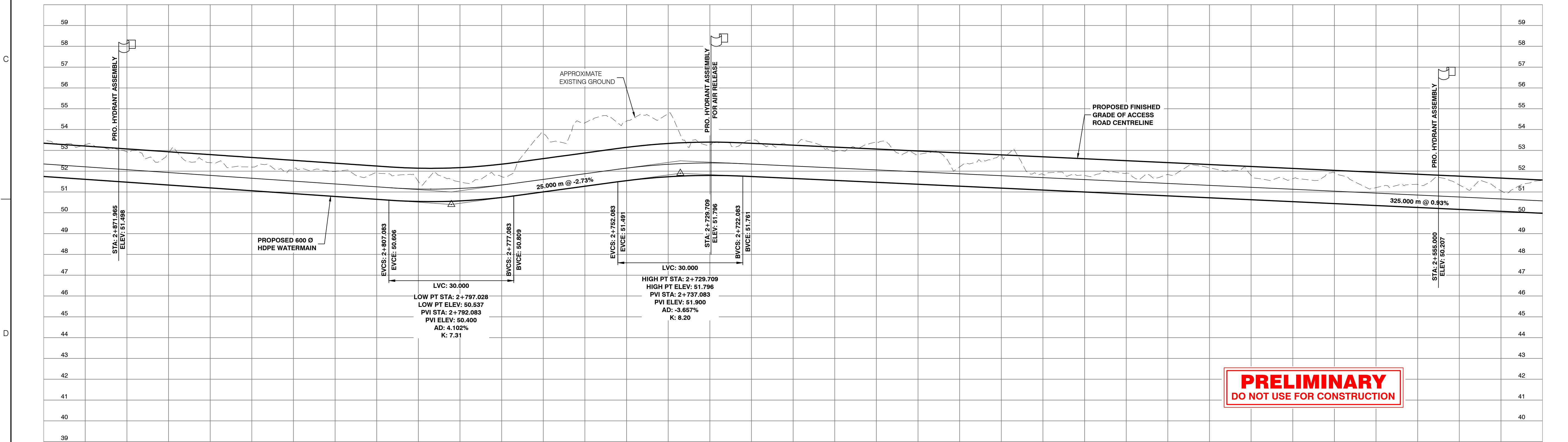
WATERMAIN FROM INTAKE P.S. AND RIVER CROSSING TO #4 RESERVOIR PLAN AND PROFILE - SHEET 6

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PLAN
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PROFILE
Scale: H: 1:500 V: 1:100

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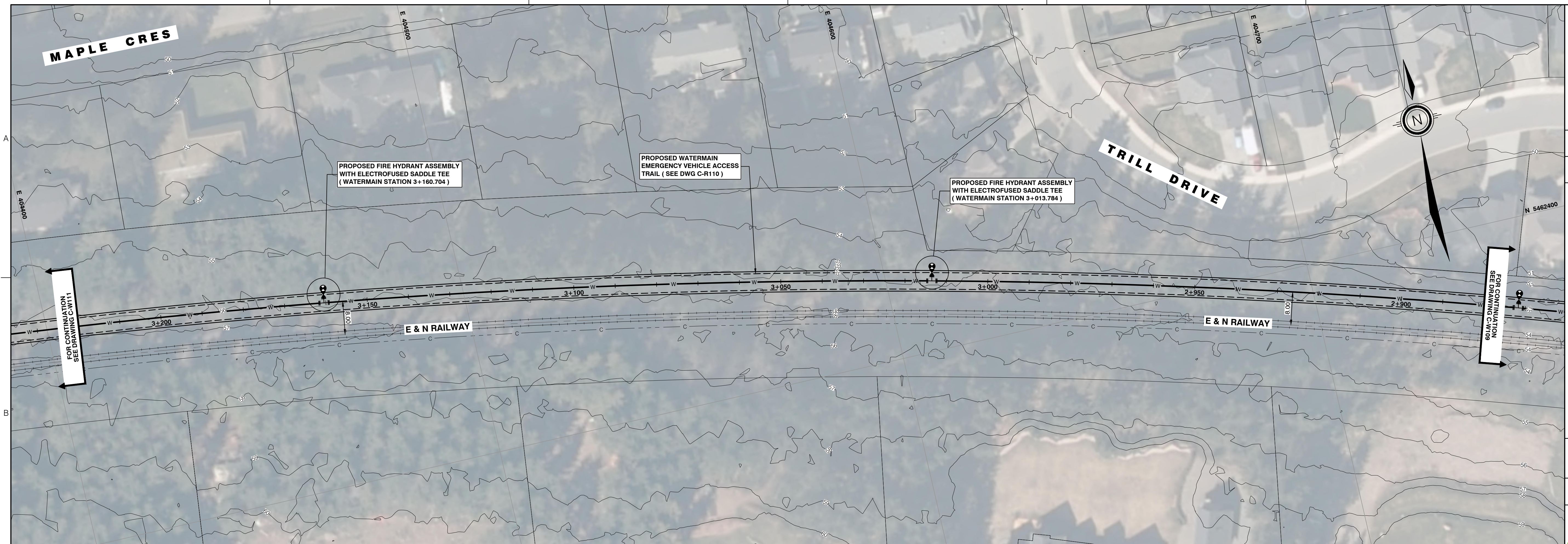
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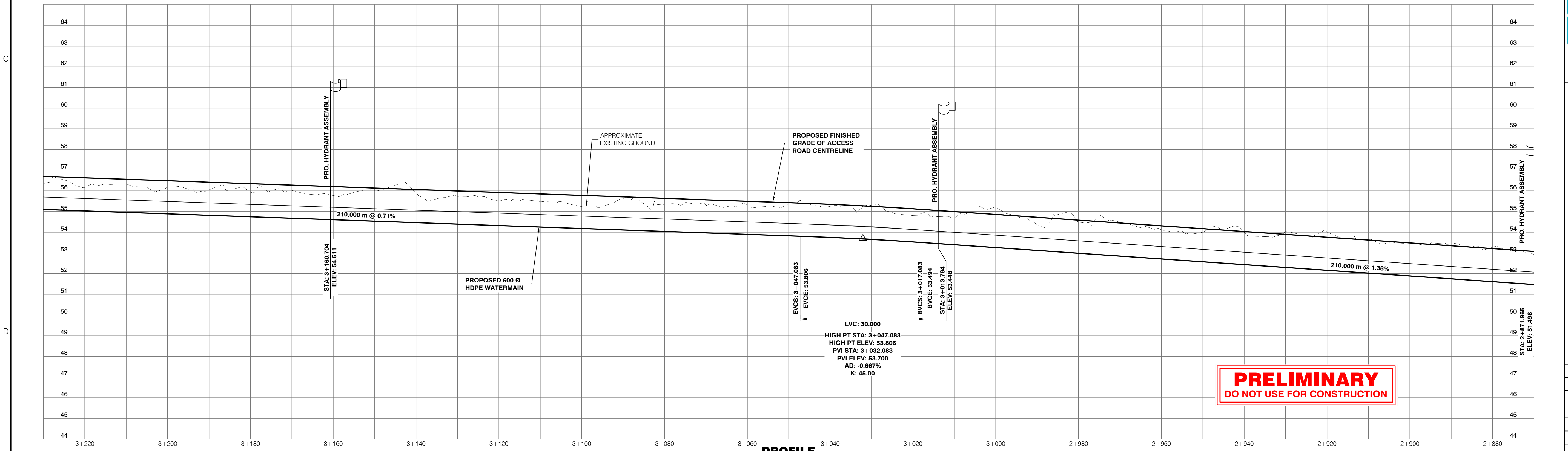
CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers
600 DIA. W1 WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4 PLAN AND PROFILE - SHEET 9

SCALE HOR:	1:500	VER:	1:100
VERIFY SCALE			
BAR IS ONE 25mm ON ORIGINAL DRAWING			
DATE	NOVEMBER, 2015		
PROJ	468-013		
DWG	C-W109		
SHEET	- of -		

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PLAN
Scale: 1:500



PROFILE
Scale: H: 1:500 V: 1:100

PRELIMINARY
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ISSUED FOR PRE-DESIGN REVIEW

- NOT FOR APPROVAL TENDER OR CONTRSTRUCTION

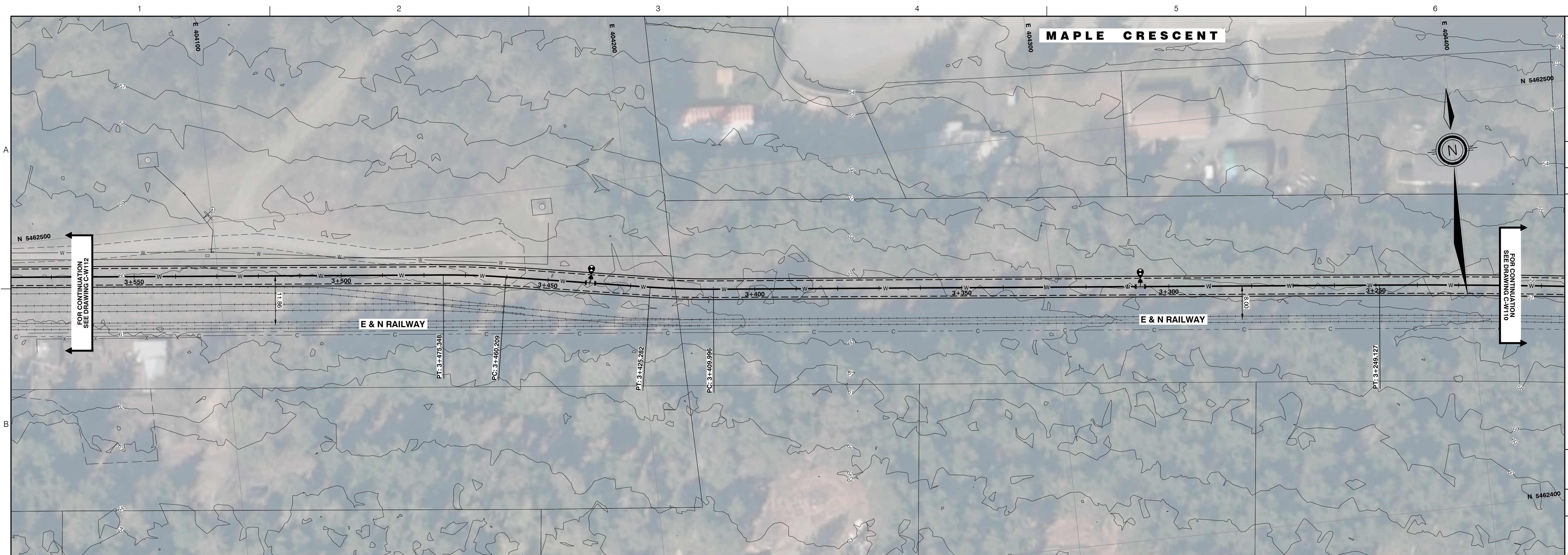
NO.	DATE	DSGN	DR	CHK	APVD
A	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SBOZZETTO	SBOZZETTO	C. KRISTIANSEN
					APVD
					BY
					SB
					CAK

CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers

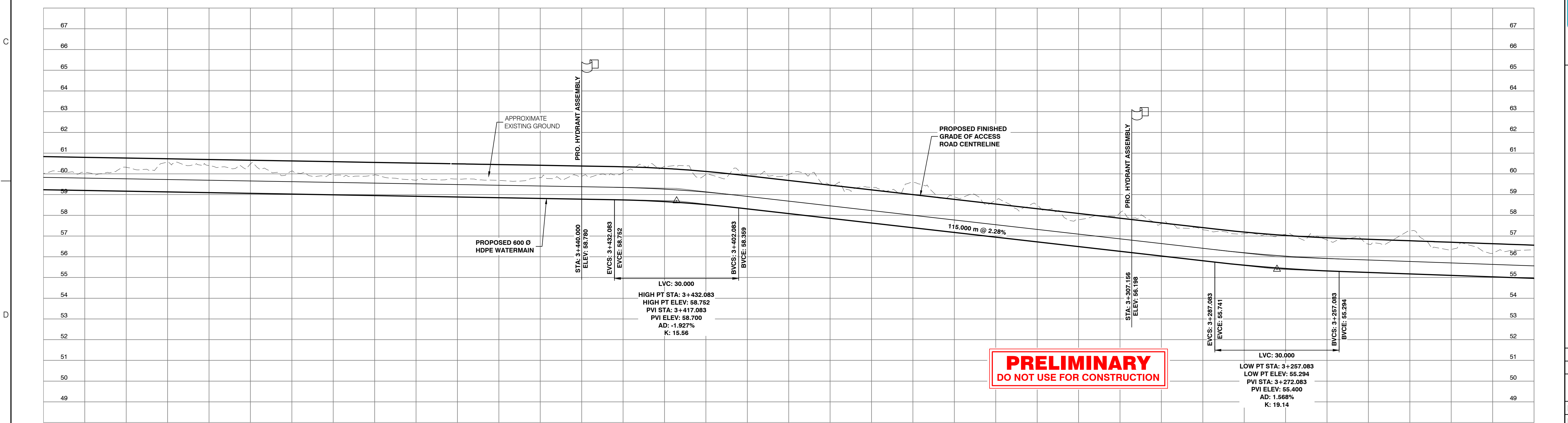
600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4 PLAN AND PROFILE - SHEET 10

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DATE: NOVEMBER, 2015
PROJ: 468-013
DWG: C-W110
SHEET: - of -

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PLAN
Scale: 1:500



PROFILE
Scale: H: 1:500 V: 1:100

ISSUED FOR PRE-DESIGN REVIEW
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- TENDER OR CONSTRUCTION

NO.	DATE	REVISION	CHK	APVD
A	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SB	CAK

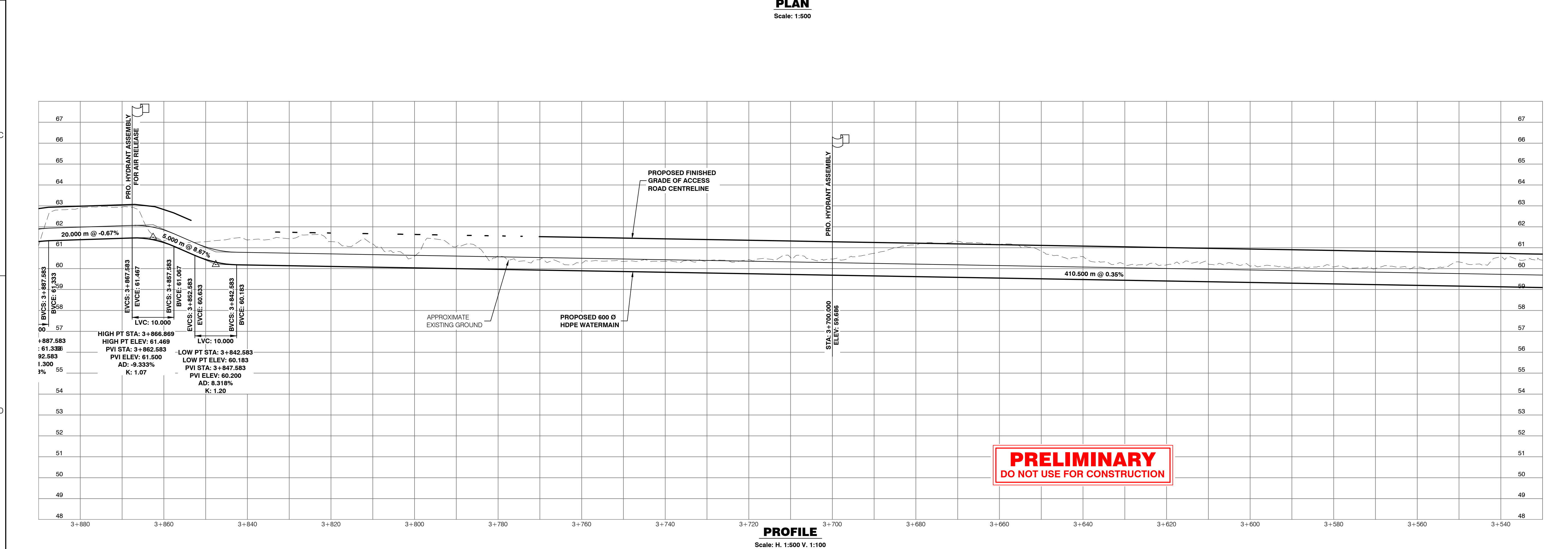
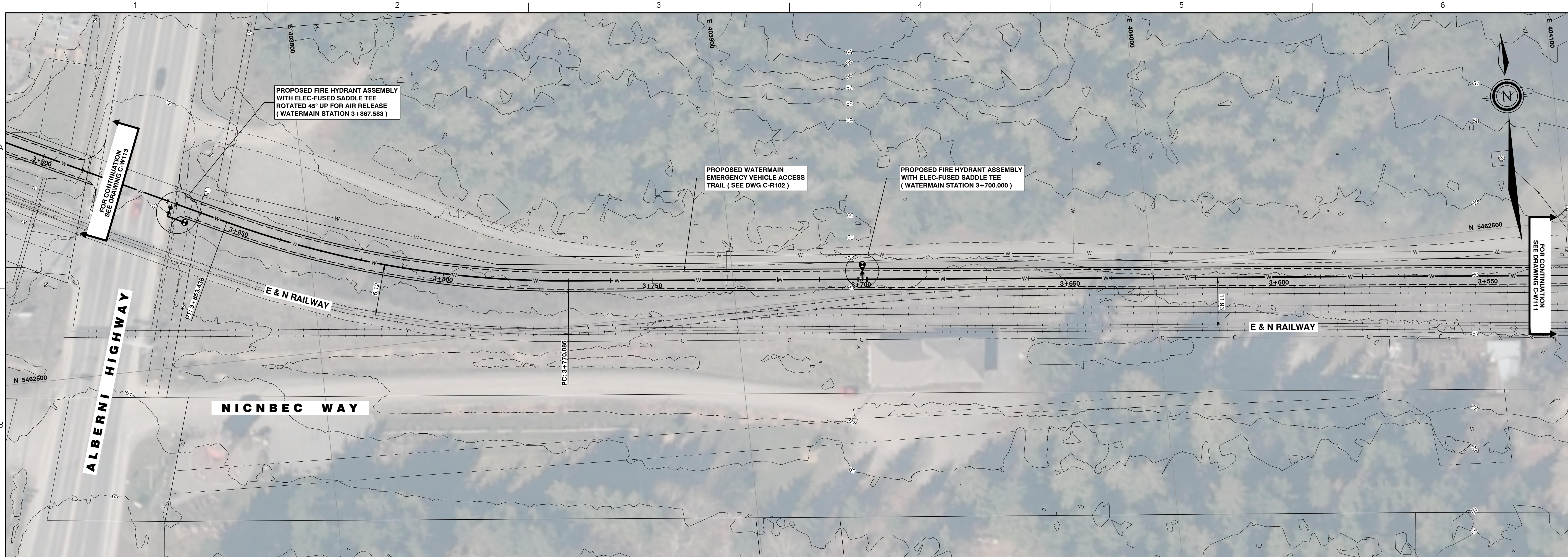
englishman river WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers

**600 DIA. 'W1' WATERMAIN
INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 11**

SCALE HOR: 1:500, VER: 1:100
VERIFY SCALE
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DATE: NOVEMBER, 2015
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NO.	DATE	REVISION	CHK	DR	APVD
A	2016-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SB	CAK	APVD

englishman river WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

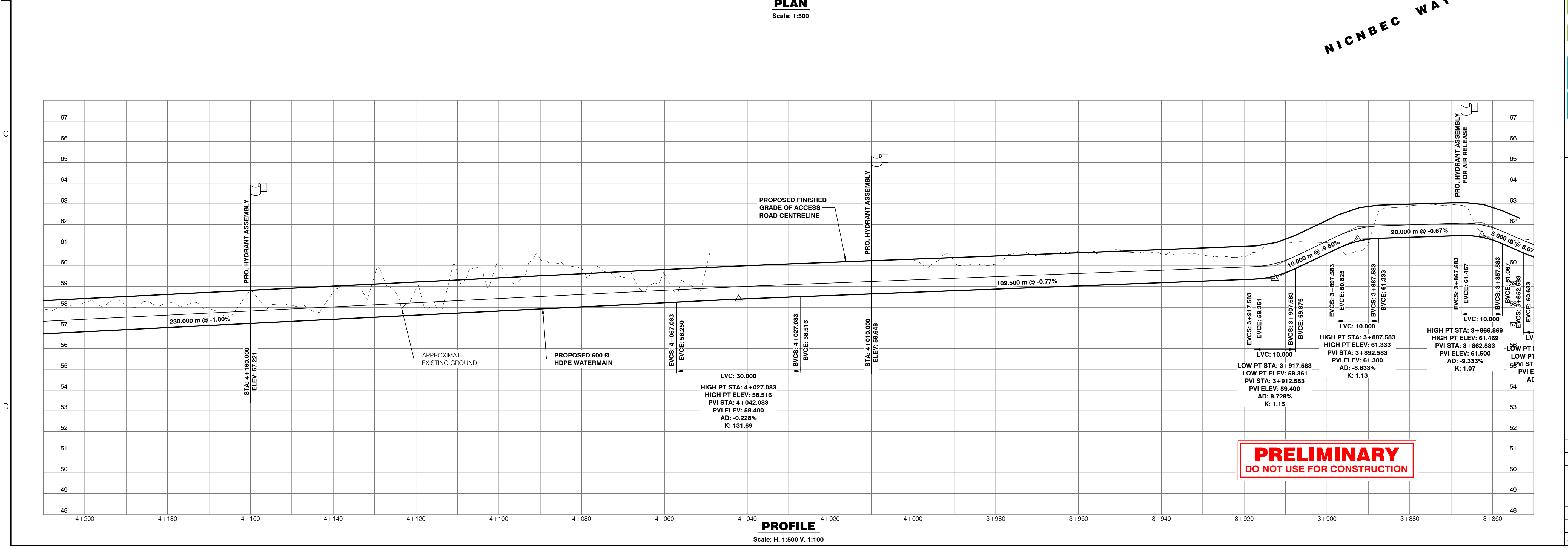
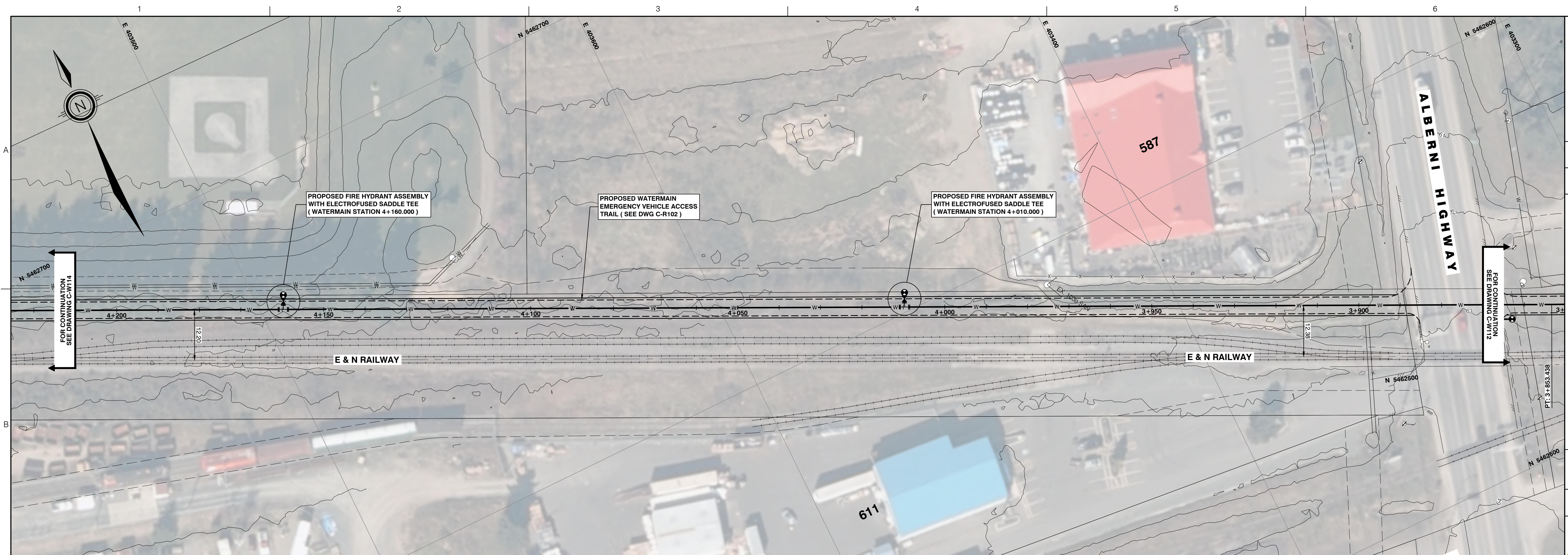
CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers

600 DIA. 'W1' WATERMAIN INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 12

SCALE HOR: 1:500, VER: 1:100
VERIFY SCALE
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NO.	DATE	REVISION	BY	APVD
A	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SB	CAK

DR: S. BOZZETTO, C. KRISTIANSEN
CHK: S. BOZZETTO, APVD: C. KRISTIANSEN

englishman river
WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
KERR WOOD LEIDAL
CONSULTING ENGINEERS

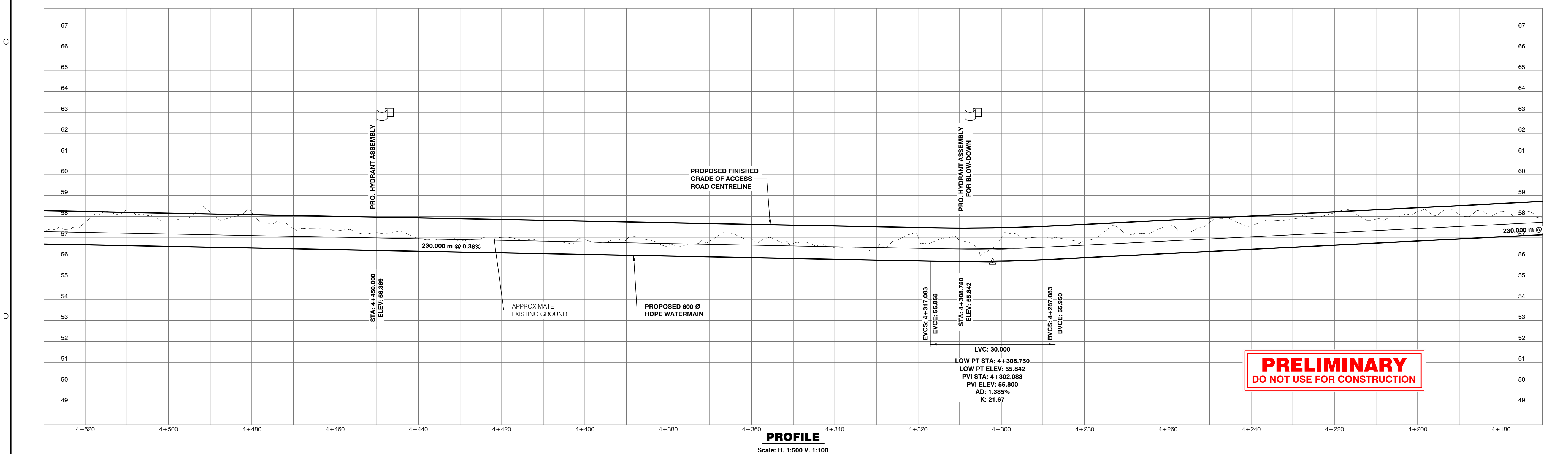
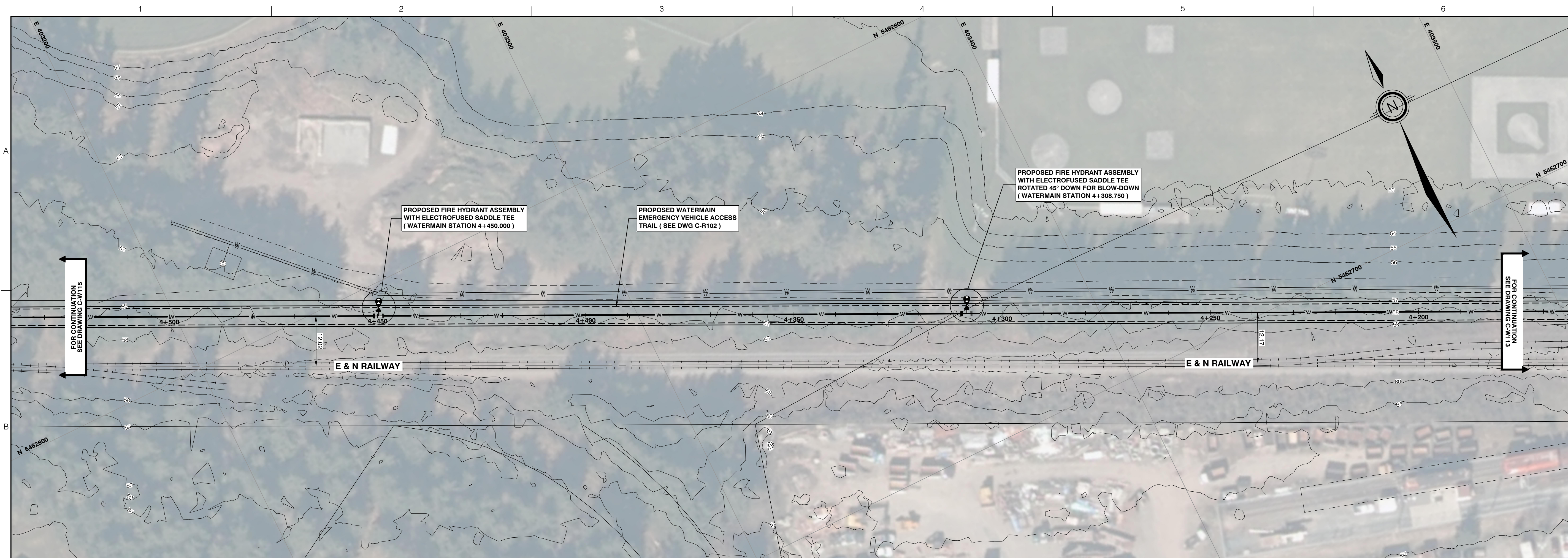
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INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
PLAN AND PROFILE - SHEET 13

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NO.	DATE	REVISION	BY	APVD
A	2016-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SB	CAK

englishman river WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

REVISION: SBOZZETTO
CHK: SBOZZETTO
DR: SBOZZETTO
C: KRISTIANSEN

CH2MHILL. CIVIL
KERR WOOD LEIDAL
CONSULTING ENGINEERS

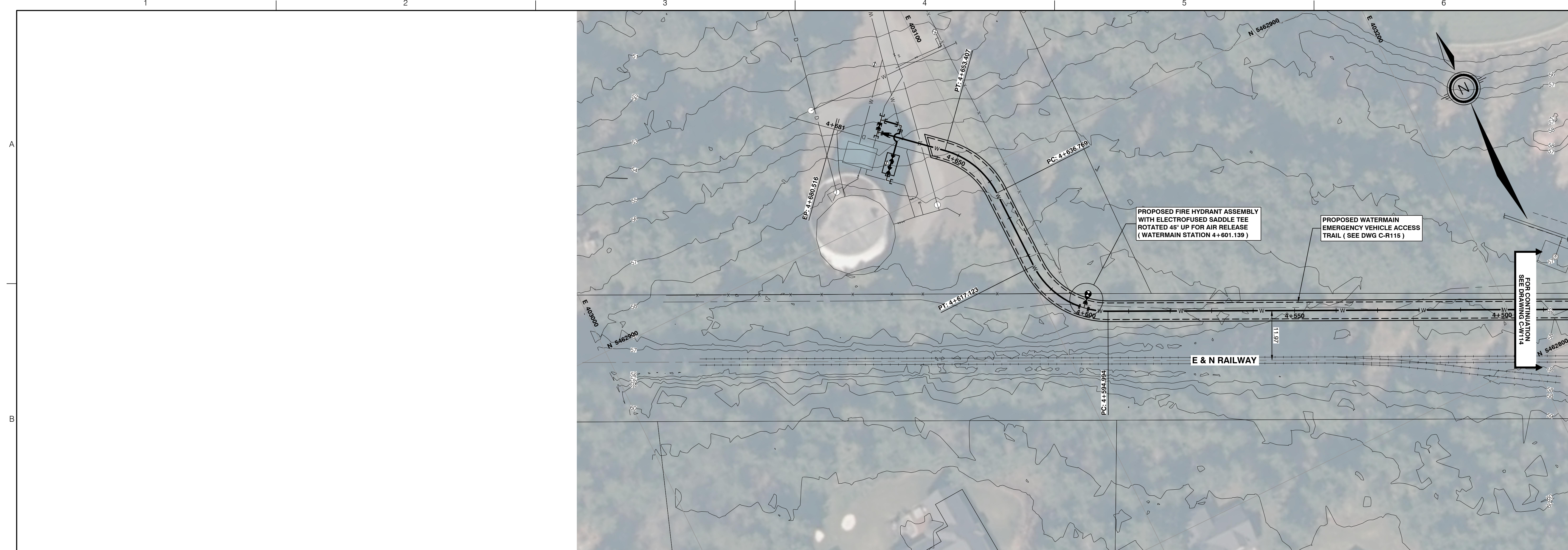
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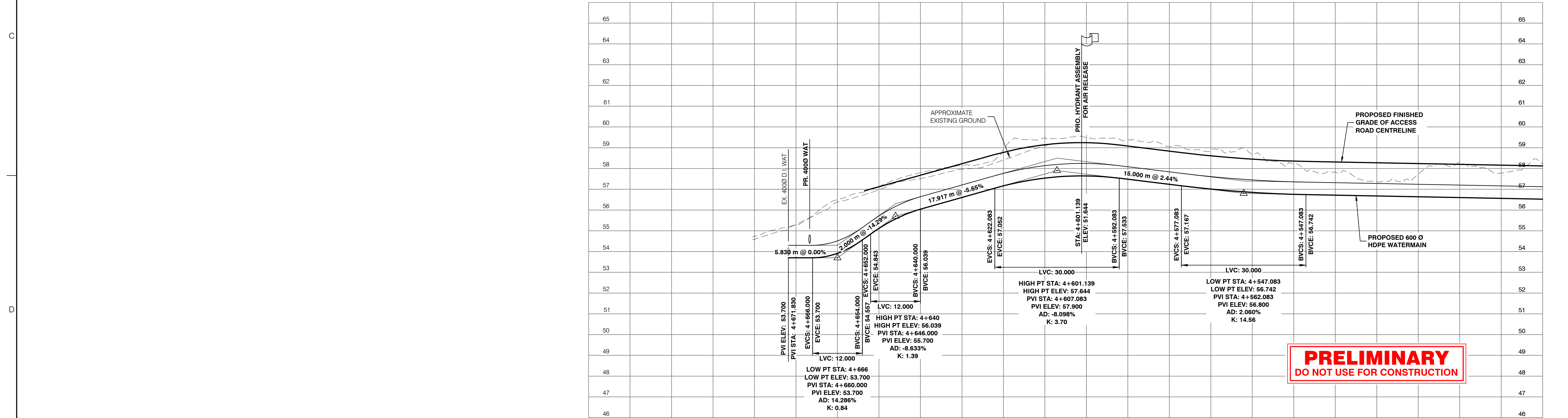
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PLAN
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PROFILE
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PRELIMINARY
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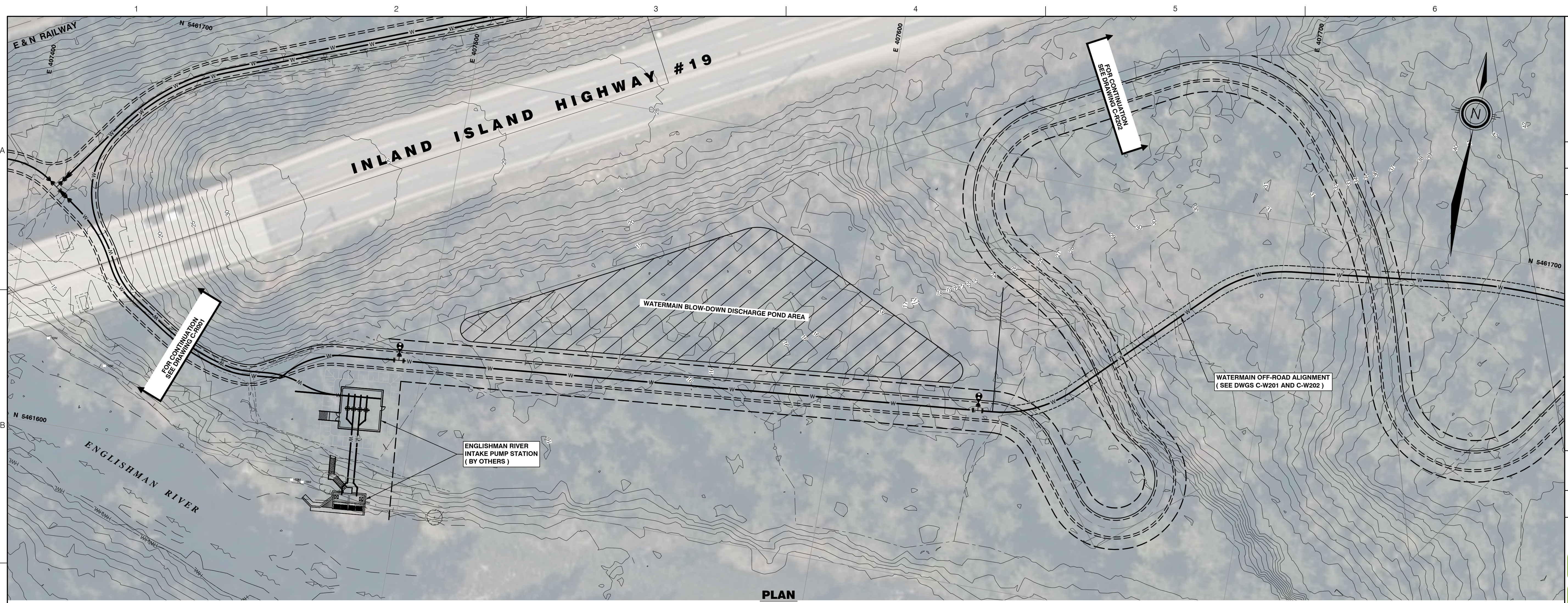
englishman river
WATER SERVICE
 ENGLISHMAN RIVER
 WATER SERVICE INTAKE,
 TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
 KERR WOOD LEIDAL
 consulting engineers

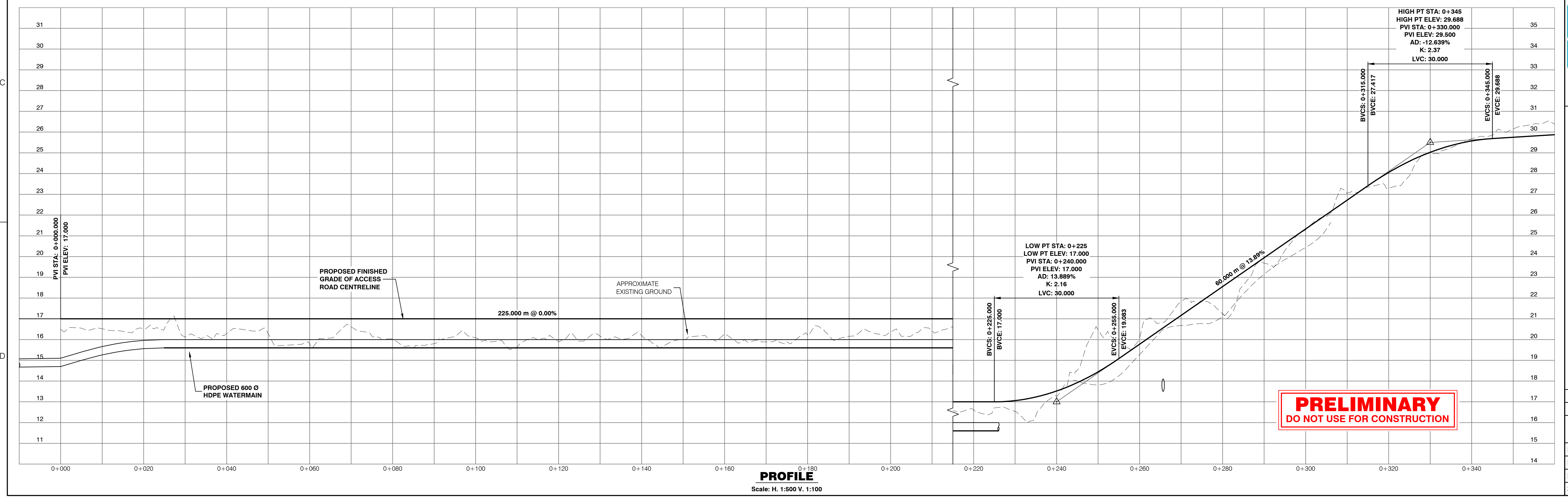
**600 DIA. 'W1' WATERMAIN
 INTAKE P.S. TO SPRINGWOOD RESERVOIR #4
 PLAN AND PROFILE - SHEET 15**

SCALE HOR. 1:500, VER. 1:100
VERIFY SCALE
BAR IS ONE 25mm ON ORIGINAL DRAWING
DATE NOVEMBER, 2015
PROJ 468-014
DWG C-W115
SHEET - of -

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NO.	DATE	REVISION	BY
A	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	CAK
DSGN		DR	APVD
SBOZZETTO	SBOZZETTO	CHK	APVD
			C. KRISTIANSEN



PLAN
Scale: 1:500



PROFILE
Scale: H: 1:500 V: 1:100

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD
D	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	CAK	
C	2015-10-30	PRELIMINARY ALIGNMENT FOR REVIEW	SB	
B	2015-07-10	PRELIMINARY ALIGNMENT FOR REVIEW		
A	2015-05-07	PRELIMINARY FOR REVIEW		

DSGN	CHK	APVD
S. BOZZETTO	S. BOZZETTO	C. KRISTIANSEN

CH2MHILL. **englishman river WATER SERVICE**
 CIVIL
 ACCESS ROAD FOR 'W2' WATERMAIN INTAKE P.S. TO INDUSTRIAL RESERVOIR #5
 PLAN AND PROFILE - SHEET 1

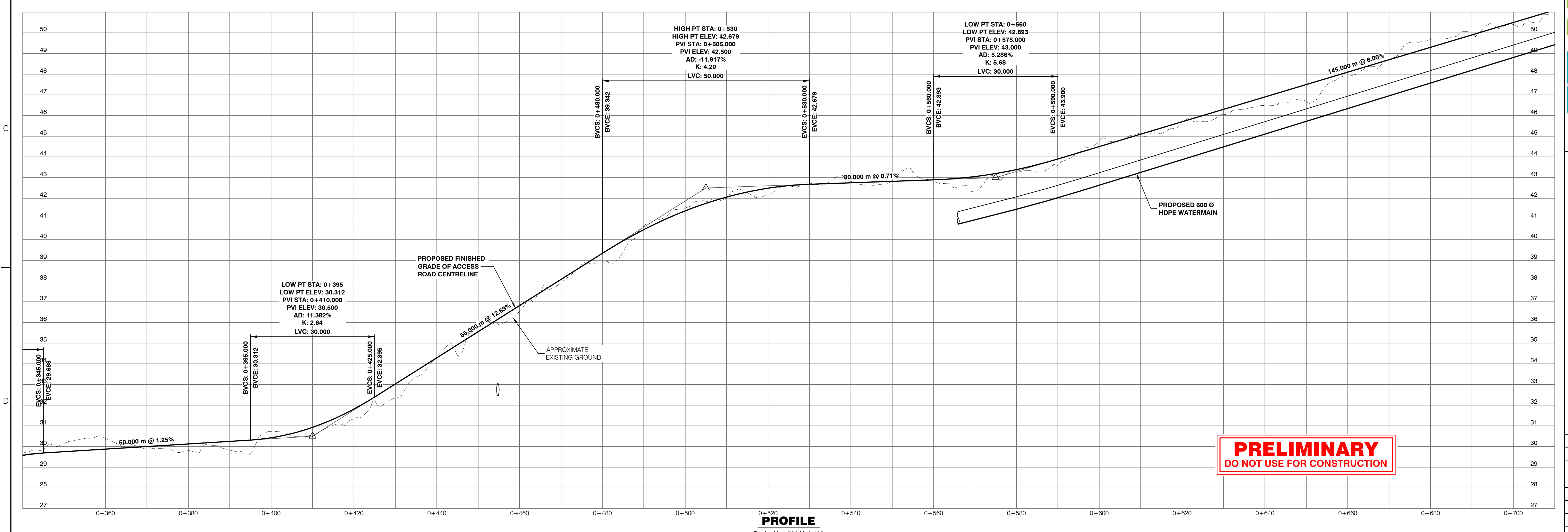
KERR WOOD LEIDAL consulting engineers

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 DATE: NOVEMBER, 2015
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PLAN
Scale: 1:500



PROFILE
Scale: H. 1:500 V. 1:100

ISSUED FOR PRE-DESIGN REVIEW		- NOT FOR APPROVAL TENDER OR CONTRSTRUCTION	
NO.	DATE	REVISION	BY
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C	2015-10-30	PRELIMINARY ALIGNMENT FOR REVIEW	SB
B	2015-07-10	PRELIMINARY ALIGNMENT FOR REVIEW	
A	2015-05-07	PRELIMINARY FOR REVIEW	
DSGN	NO.	DATE	REVISION
	DR	CHK	APVD
	SBOZZETTO	SBOZZETTO	C.KRISTIANSEN

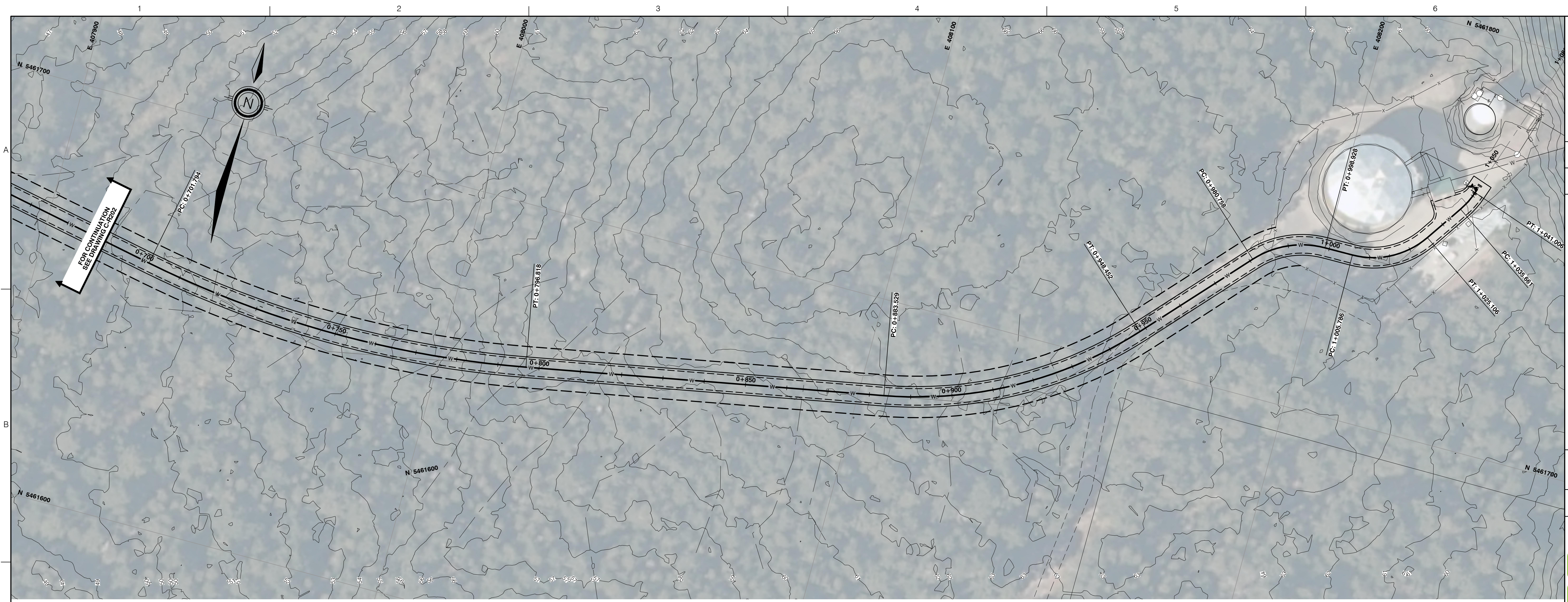
englishman river WATER SERVICE
ENGLISHMAN RIVER WATER SERVICE INTAKE, TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers

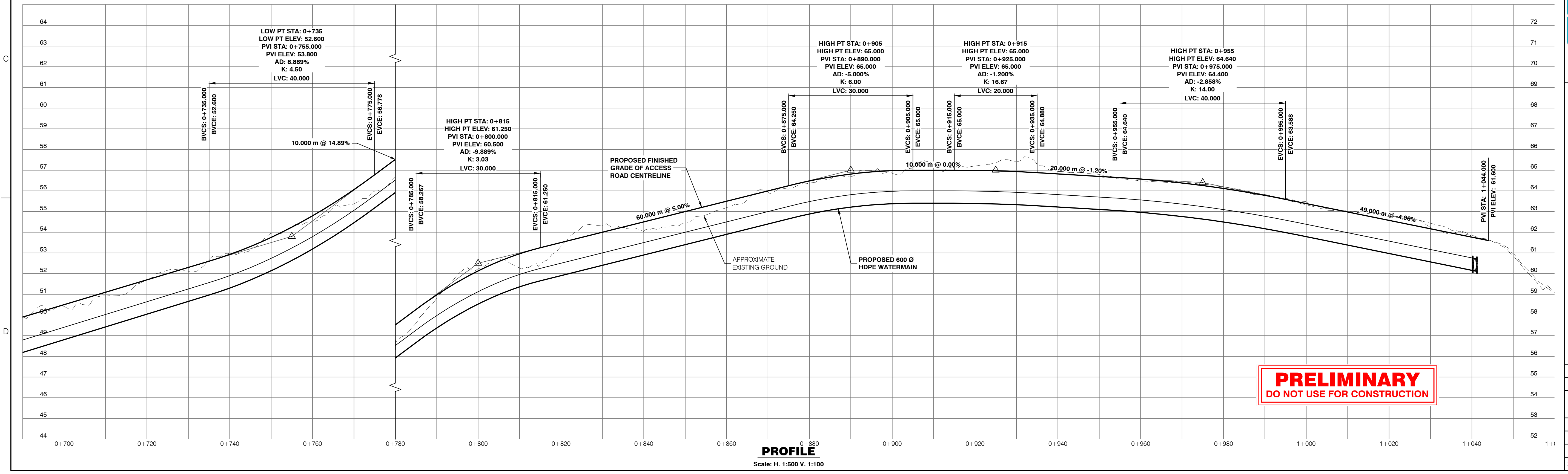
ACCESS ROAD FOR 'W2' WATERMAIN INTAKE P.S. TO INDUSTRIAL RESERVOIR #5 PLAN AND PROFILE - SHEET 2

SCALE HOR. 1:500, VER. 1:100
VERIFY SCALE
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DATE: -
PROJ: 468-013
DWG: C-R202
SHEET: - of -

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PLAN
Scale: 1:500



PROFILE
Scale: H: 1:500 V: 1:100

PRELIMINARY
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ISSUED FOR PRE-DESIGN REVIEW		- NOT FOR APPROVAL TENDER OR CONTRSTRUCTION	
NO.	DATE	REVISION	BY
D	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	CAK
C	2015-10-30	PRELIMINARY ALIGNMENT FOR REVIEW	SB
B	2015-07-10	PRELIMINARY ALIGNMENT FOR REVIEW	
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SBOZZETTO		DR	APVD
SBOZZETTO		C. KRISTIANSEN	

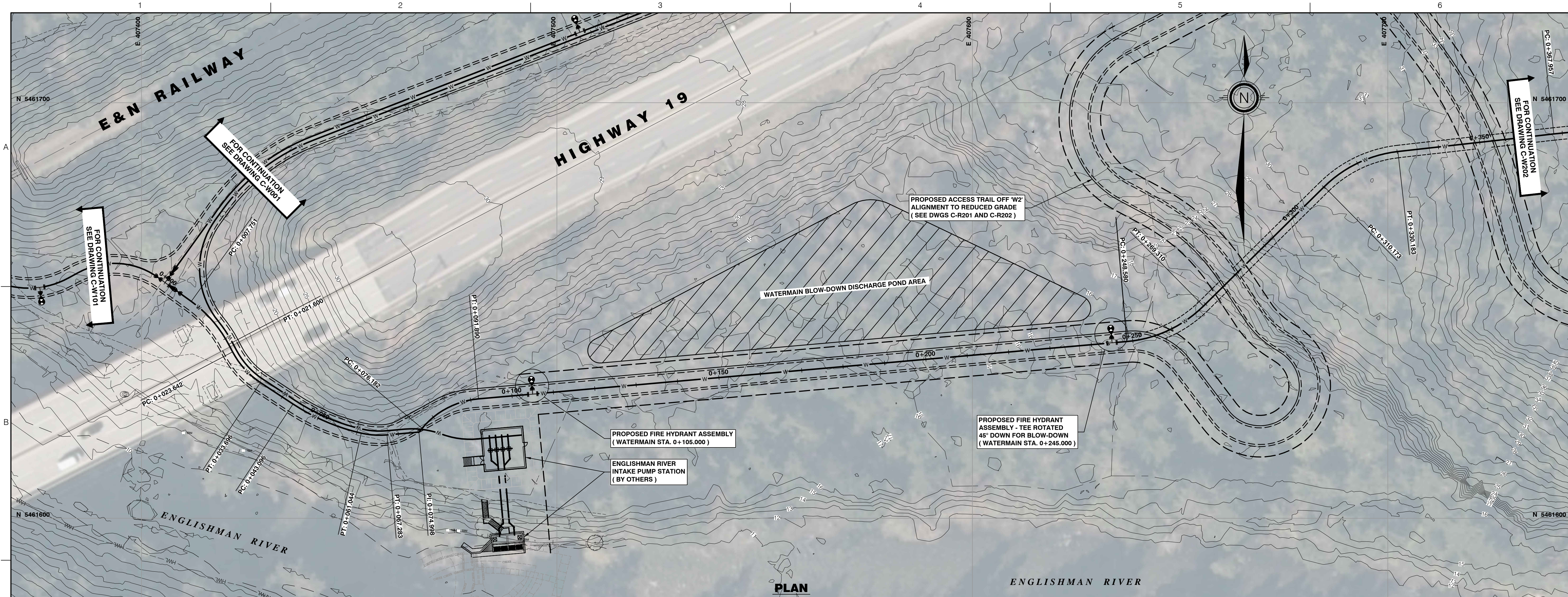
englishman river
WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. **KERR WOOD LEIDAL**
CONSULTING ENGINEERS

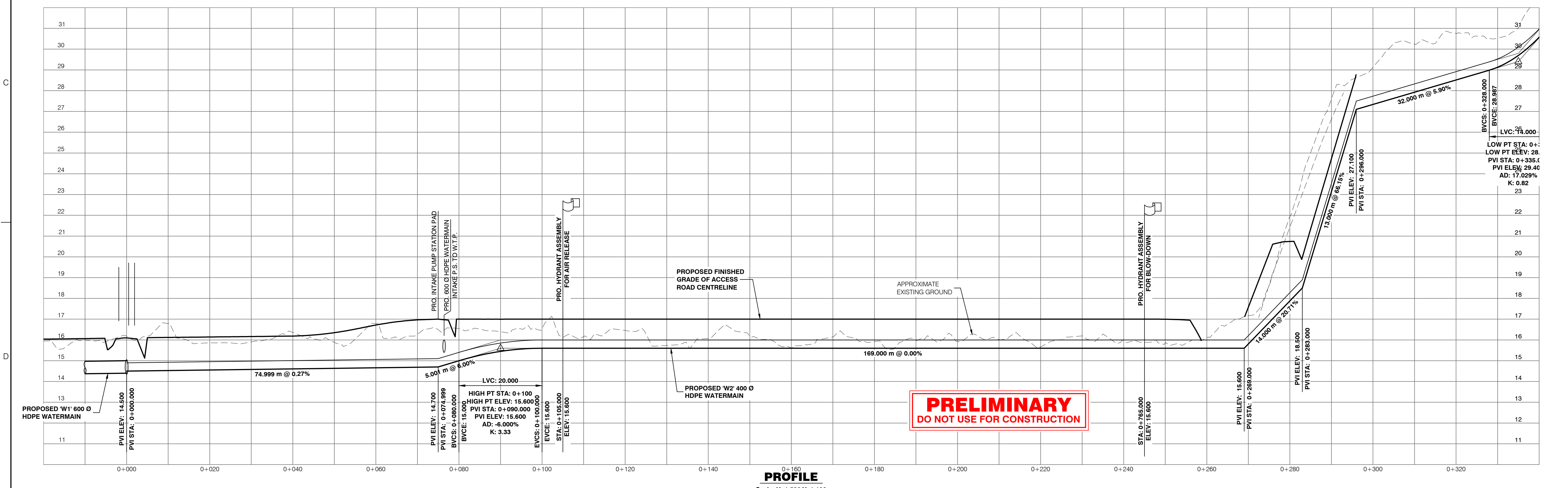
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ACCESS ROAD FOR 'W2' WATERMAIN INTAKE P.S. TO INDUSTRIAL RESERVOIR #5
PLAN AND PROFILE - SHEET 3

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DATE: NOVEMBER, 2015
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PLAN
Scale: 1:500



PROFILE
Scale: H: 1:500 V: 1:100

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- TENDER OR CONTRSTRUCTION

NO.	DATE	DR	CHK	REVISION
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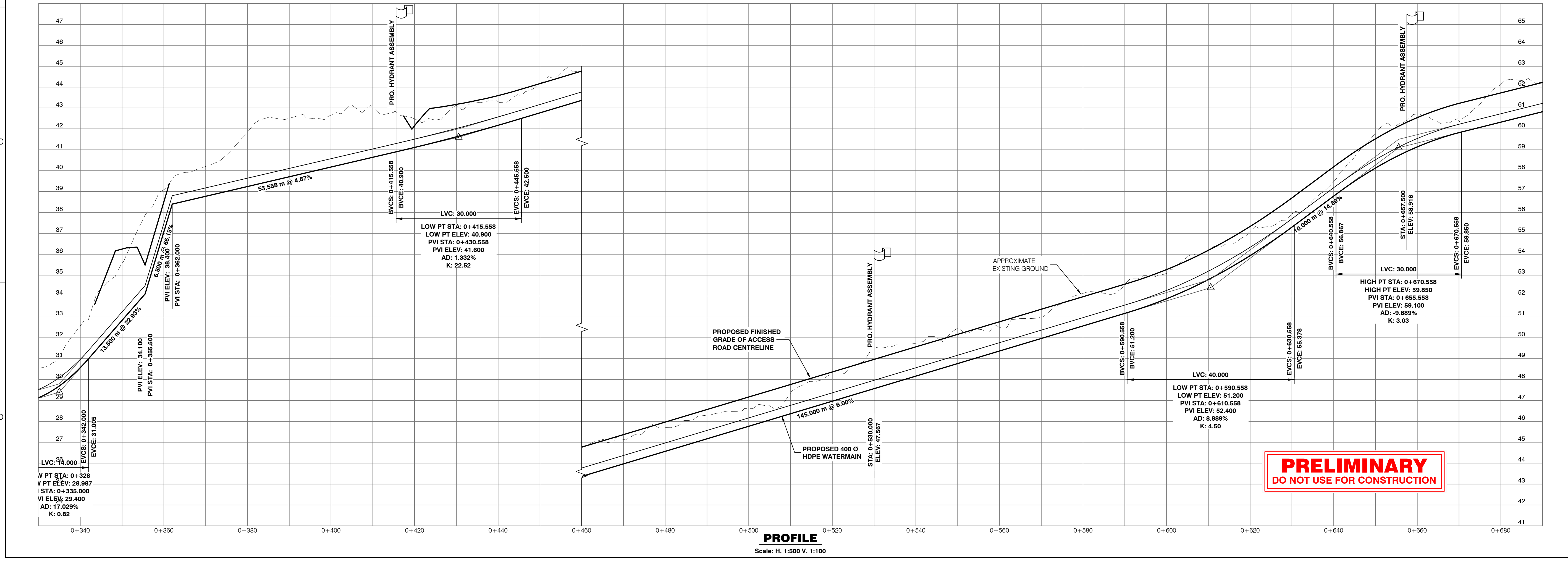
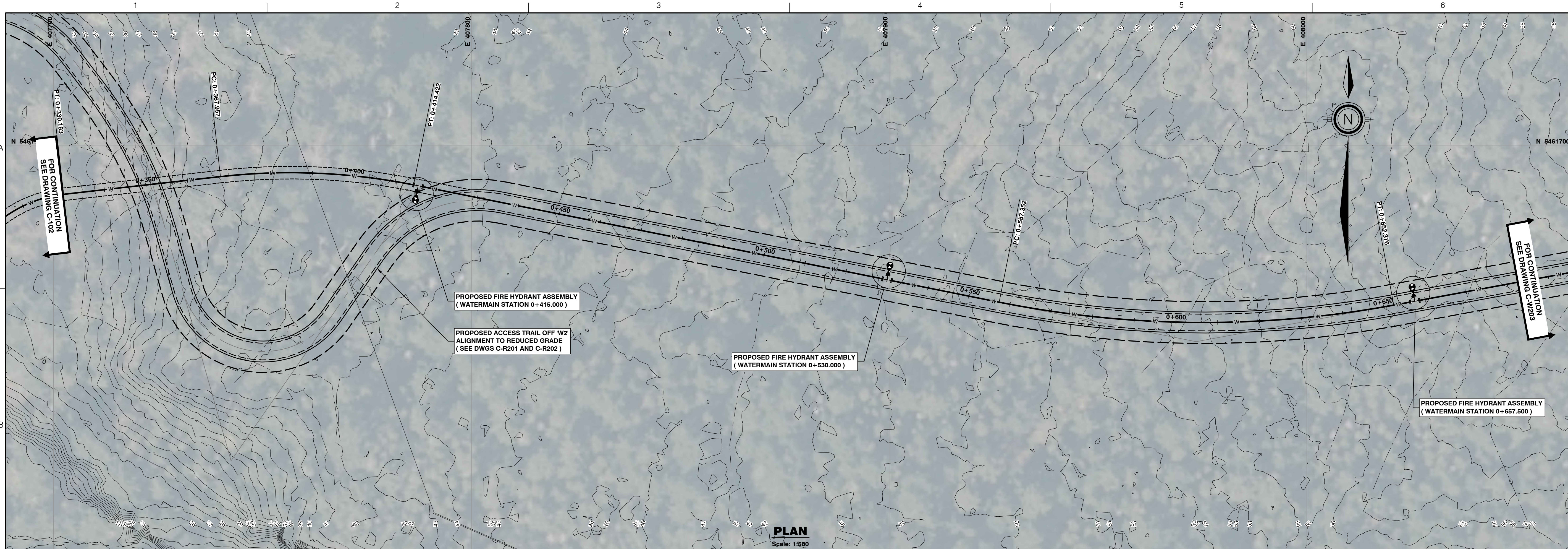
englishman river WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
KERR WOOD LEIDAL consulting engineers

400 DIA. W2 WATERMAIN INTAKE P.S. TO INDUSTRIAL RESERVOIR #5 PLAN AND PROFILE - SHEET 1

SCALE HOR: 1:500, VER: 1:100
VERIFY SCALE
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TENDER OR CONTRSTRUCTION

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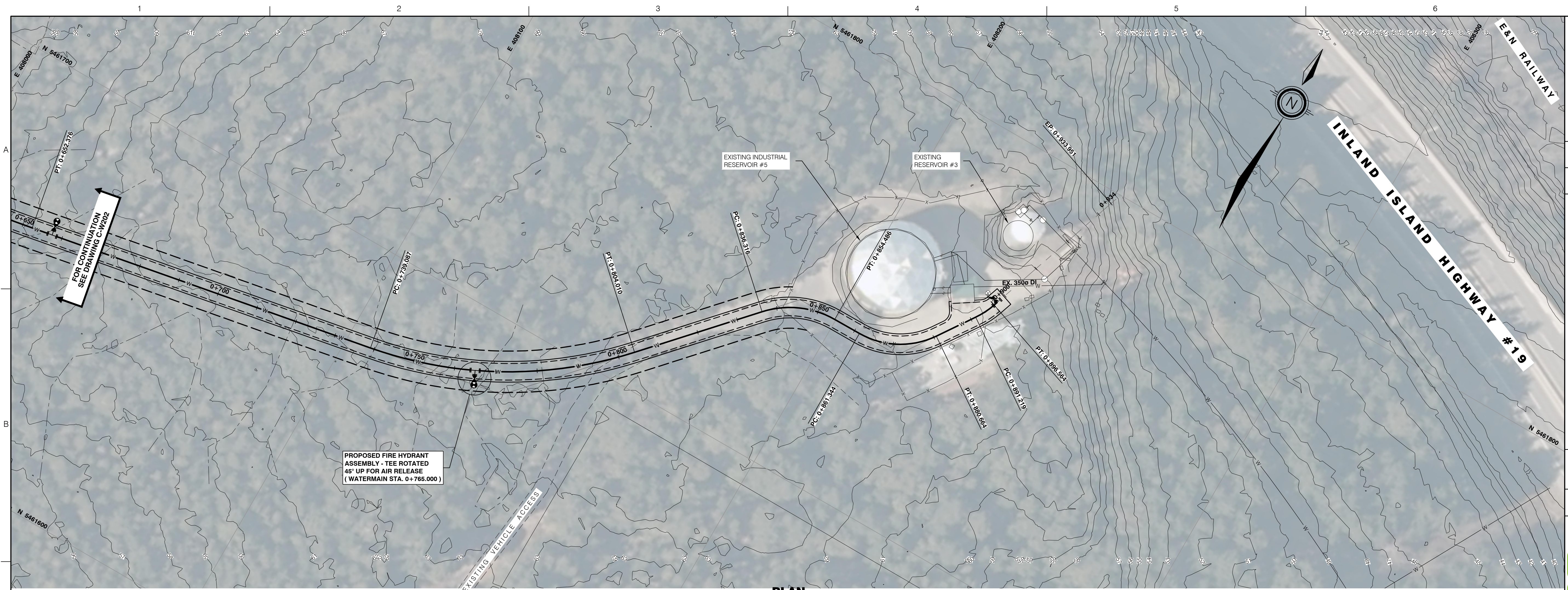
englishman river
WATER SERVICE
ENGLISHMAN RIVER
WATER SERVICE INTAKE,
TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL. CIVIL
KERR WOOD LEIDAL
CONSULTING ENGINEERS

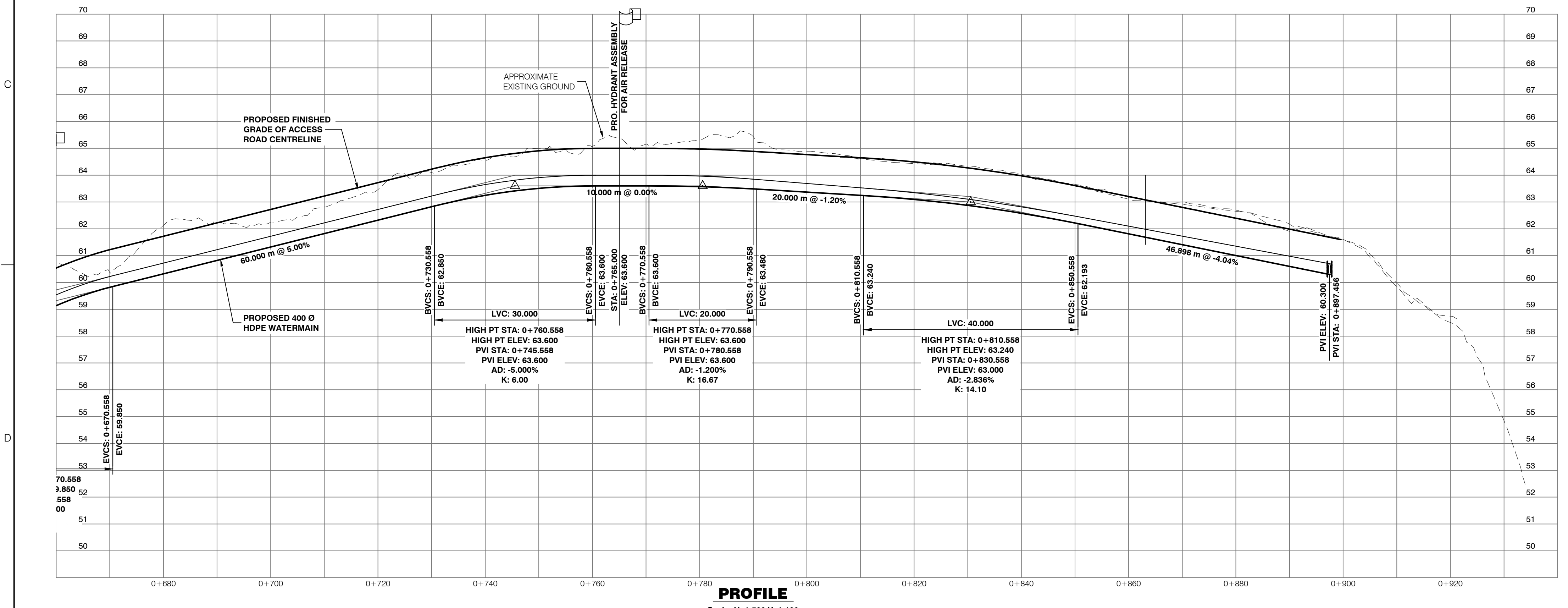
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INTAKE P.S. TO INDUSTRIAL RESERVOIR #5
PLAN AND PROFILE - SHEET 2**

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VERIFY SCALE
BAR IS ONE 25mm ON ORIGINAL DRAWING
DATE: NOVEMBER, 2015
PROJ: 468-013
DWG: C-W202
SHEET: - of -

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PLAN
Scale: 1:500



PROFILE
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- NOT FOR APPROVAL
- TENDER OR CONSTRUCTION

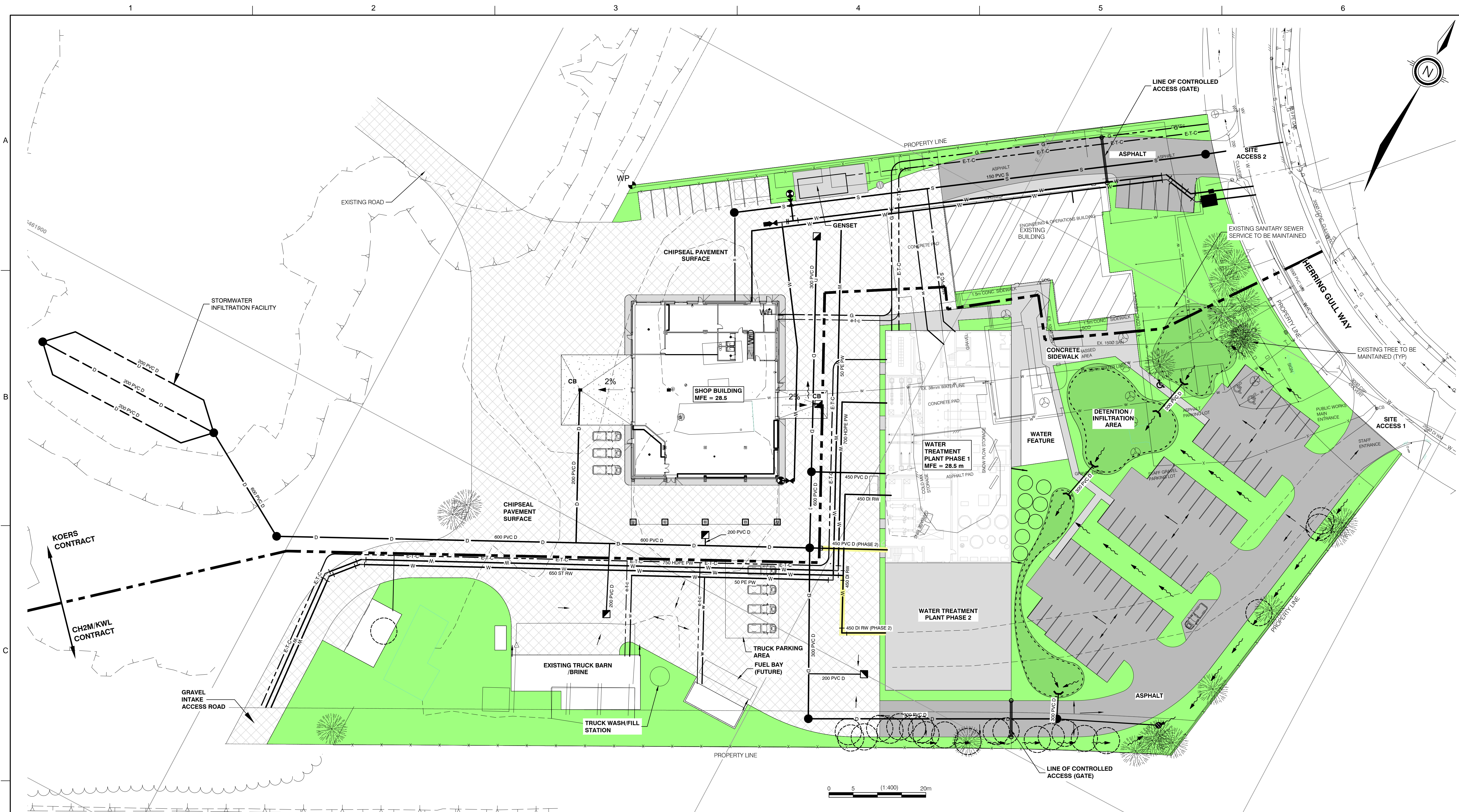
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A	2015-11-18	PRELIMINARY - ISSUED FOR APPROVAL	SB	CAK	APVD



CH2MHILL CIVIL
KERR WOOD LEIDAL
CONSULTING ENGINEERS
400 DIA. W2 WATERMAIN INTAKE P.S. TO INDUSTRIAL RESERVOIR #5 PLAN AND PROFILE - SHEET 3

SCALE HOR: 1:500, VER: 1:100
VERIFY SCALE
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PROJ: 468-013
DWG: C-W203
SHEET: - of -

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LEGEND

EXISTING	PROPOSED
UTILITIES	
--- E-T-C ---	--- E-T-C ---
--- e-t-c ---	--- e-t-c ---
--- G ---	--- G ---
--- g ---	--- g ---
⊠	■
HYDROLOGY	
~	~
~	~
~	~

EXISTING	PROPOSED
STORM	
---	---
---	---
---	---
⊙	⊙
⊙	⊙
⊙	⊙
VEGETATION	
⊙	⊙
⊙	⊙

EXISTING	PROPOSED
STRUCTURES	
▨	▨
WATER	
---	---
---	---
---	---
---	---
⊗	⊗
⊗	⊗
⊗	⊗
⊗	⊗

EXISTING	PROPOSED
SURFACE TREATMENTS	
▨	▨
▨	▨
▨	▨
▨	▨
SANITARY	
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⊙	⊙
⊙	⊙

ISSUED FOR PRE-DESIGN REVIEW
 - NOT FOR APPROVAL TENDER OR CONTRSTRUCTION

NO.	DATE	REVISION	CHK	AF	APVD
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A	2014/05/08	ISSUED FOR PRE-DESIGN REVIEW	EM		

englishman river WATER SERVICE
 ENGLISHMAN RIVER WATER SERVICE INTAKE, TREATMENT PLANT AND SUPPLY MAINS

CH2MHILL.km KERR WOOD LEIDAL consulting engineers
 CIVIL
FIGURE C-115 WATER TREATMENT PLANT SITE SERVICING PLAN
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 BAR IS ONE 25mm ON ORIGINAL DRAWING
 DATE: 2014/05/08
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 DWG: C-115
 SHEET: 5 of 27

PRE-DESIGN REVIEW