

# CREUS Engineering

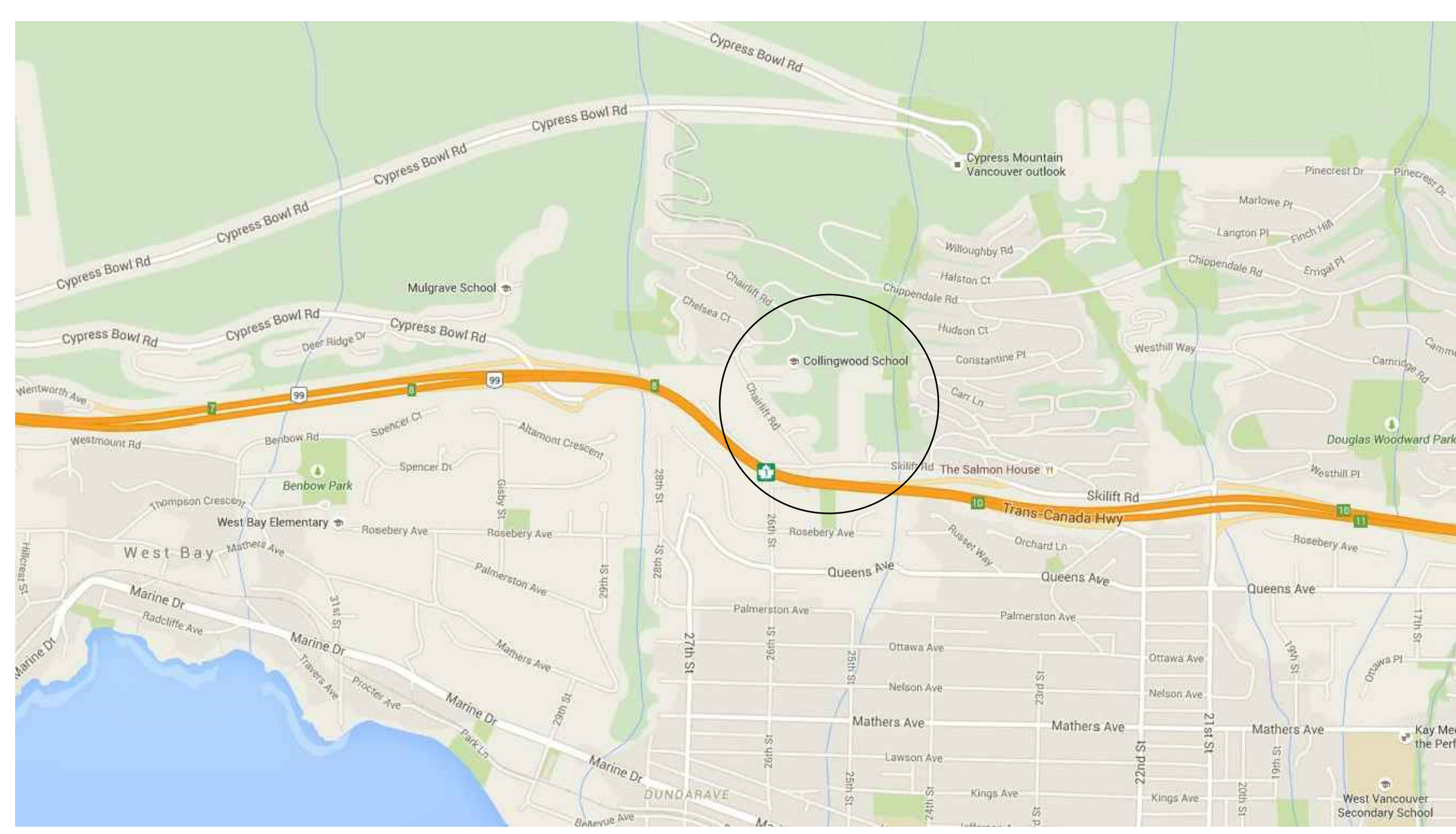
Civil Engineers & Project Managers  
SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P1R2  
PH: 604-987-9070 WEBSITE: www.creus.ca

PROJECT:

## WENTWORTH COLLINGWOOD WEST VANCOUVER, BC

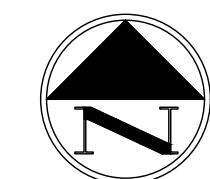
CLIENT:

## EVERVAN



DRAWING LIST			
DWG NO.	KEY		
KEY-1	KEY		
KEY-2	KEY		SLOPE ANALYSIS
KEY-3	KEY		LOT LAYOUT
C-1	SERVICING		
SMP	STORMWATER		MANAGEMENT PLAN
R-1	ROADWORKS		WENTWORTH AVENUE
R-2	ROADWORKS		WENTWORTH AVENUE DETAILS
R-2A	ROADWORKS		WENTWORTH AVENUE WALLS
R-3	ROADWORKS		ROAD A
R-4	ROADWORKS		ROAD A (STA. 0+200 - 0+430)
R-5	ROADWORKS		WENTWORTH AVENUE STAIRS
R-6	ROADWORKS		CHAIRLIFT ROAD
R-TYP-1	ROADWORKS		TYPICAL SECTIONS
SECT-1	SITE SECTIONS		ROAD A
SECT-2	SITE SECTIONS		WENTWORTH SCHOOL
XS-1	CROSS SECTIONS		WENTWORTH AVENUE
XS-2	CROSS SECTIONS		WENTWORTH AVENUE
XS-3	CROSS SECTIONS		ROAD A
XS-4	CROSS SECTIONS		ROAD A
XS-5	CROSS SECTIONS		ROAD A
XS-6	CROSS SECTIONS		CHAIRLIFT ROAD
DET-1	STANDARD DETAILS		
DET-2	STANDARD DETAILS		
DET-3	STANDARD DETAILS		
DET-4	STANDARD DETAILS		
BC HYDRO	WENTWORTH QUOTE	SCHEDULE B	UNDERGROUND DUCT AND STRUCTURES FOR WENTWORTH COLLINGWOOD WEST VANCOUVER

**2017-04-11**  
**RE-ISSUED FOR DEVELOPMENT PERMIT**



SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINTING NOTES

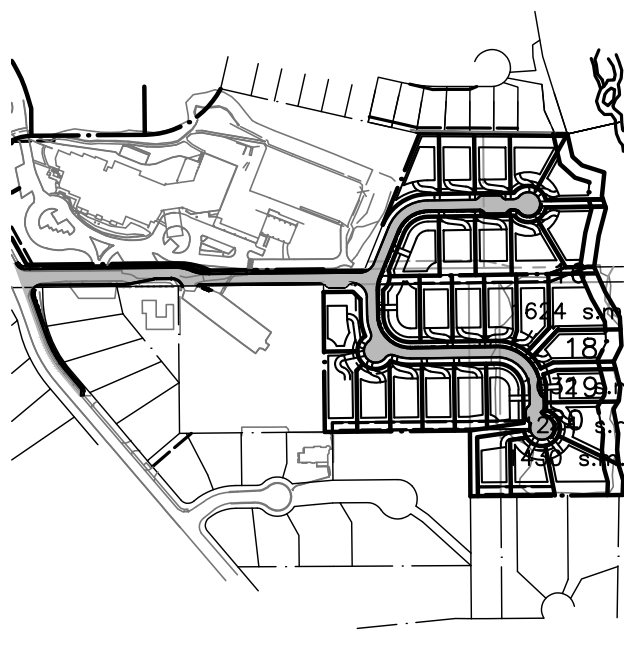
**GENERAL NOTES**

- ALL CONSTRUCTION MUST CONFORM TO THE DISTRICT OF WEST VANCOUVER & MCD SPECIFICATIONS AND MUST PASS THE ENGINEER'S INSPECTION UPON COMPLETION OF EACH STAGE OF CONSTRUCTION.
- ALL CONSTRUCTION WITHIN THE PROPERTY MUST CONFORM TO THE MUNICIPAL STANDARDS, MASTER MUNICIPAL SPECIFICATIONS, CURRENT B.C. BUILDING CODE, & B.C. PLUMBING CODE.
- THE CONTRACTOR MUST NOTIFY ENGINEER THEN THE DISTRICT OF WEST VANCOUVER, 48 HOURS PRIOR TO STARTING CONSTRUCTION TO ESTABLISH AN INSPECTION SCHEDULE.
- THE CONTRACTOR SHALL ENSURE THAT ALL APPROVALS REQUIRED FOR THE PROPOSED WORK HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
- A PRE-CONSTRUCTION MEETING BETWEEN ENGINEER, THE CONTRACTOR, AND DISTRICT OF WEST VANCOUVER IS REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR TO PROVIDE EMERGENCY CONTACT LIST, INSURANCE AND SURETY DOCUMENTATION AND PROPOSED SCHEDULE OF WORK PRIOR TO PROCEEDING WITH WORKS.
- A PORTION OF THE CONTRACT DOCUMENTS IS INCLUDED BY REFERENCE. COPIES OF THESE DOCUMENTS HAVE BEEN REFERENCED TO THE DRAWING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT CURRENT RELEVANT COPIES OF ALL DRAWINGS AND CONTRACT DOCUMENTS ARE FORWARDED TO SURVEYORS, TESTING AGENCIES, SUBCONTRACTORS, SUPERINTENDENTS, ESTIMATORS, PROJECT MANAGERS, SITE STAFF AND ANY OTHER RELEVANT PARTIES. CONTRACTOR CONFIRMS THEY HAVE REVIEWED SAME PRIOR TO SUBMITTING TENDER.
- THE CONTRACTOR WILL CONSTRUCT ALL WORKS TO THE SATISFACTION OF THE INSPECTORS FROM THE ENGINEER AND THE REGULATORY AUTHORITY. IF APPLICABLE ADDITIONALLY, THE TELUS WORKS UNDER THE DIRECTION AND TO THE SATISFACTION OF THE TELUS INSPECTOR, HYDRO WORKS TO SATISFACTION OF THE BC HYDRO INSPECTOR, TERASEN WORKS TO SATISFACTION OF THE TERASEN INSPECTOR, SHAW WORKS TO SATISFACTION OF THE SHAW INSPECTOR. THE CONTRACTOR WILL FORWARD TO THE ENGINEER CERTIFICATION OF ACCEPTANCE OR APPROVAL FROM THE ABOVE NOTED INSPECTORS ON COMPLETION OF THE WORK. ELECTRICAL WORKS, IF APPLICABLE TO ALSO BE UNDER PERMIT WITH BC ELECTRICAL SAFETY BRANCH WITH A COPY OF PERMIT AND SIGN OFF TO BE FORWARDED TO THE ENGINEER. CONTRACTOR TO GIVE TIMELY NOTICE TO RELEVANT INSPECTOR TO ALLOW FOR INSPECTION ON WORKS AND UPDATE ENGINEER ON SAME.
- THE CONTRACTOR WILL PERFORM AT HIS OWN COST ALL TESTING REQUIRED BY THE REGULATORY AUTHORITY (MCD AND THE ENGINEER). TESTING SHALL BE DONE BY AN INDEPENDENT SPECIALTY TESTING FIRM. CONTRACTOR TO GIVE ENGINEER NOTICE ON ALL TESTING. COPIES OF TESTS TO BE FORWARDED DIRECTLY BY THE TESTING FIRM TO ENGINEER AND GEOTECHNICAL ENGINEER BY EMAIL.
- SUB-CONTRACTORS SHALL NOT COMMUNICATE WITH THE ENGINEERS OR OWNER DIRECTLY ON ANY CONTRACTUAL OR TECHNICAL ISSUE. THEY SHALL DIRECT THEIR ISSUES TO THE CONTRACTOR DIRECTLY WHOSE RESPONSIBILITY IT IS TO DEAL WITH THESE ISSUES ON THEIR BEHALF WITH THE ENGINEER. REVIEW AND APPROVAL OF ANY CONTRACTUAL MATTER INCLUDING PROGRESS PAYMENT, CHANGE ORDER, PAYMENT OF HOLDBACK, FINAL PAYMENT, INSURANCE AND WARRANTY, ETC. SHALL DIRECTED TO THE ENGINEER. CONTRACTOR MUST ONLY TAKE DIRECTION FROM THE ENGINEER IN REGARDS TO CHANGES TO DESIGN OR EXTRA WORKS.
- UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS OR NOTIFIED TO THE CONTRARY BY THE ENGINEER, THE CONTRACTOR IS THE "PRIME CONTRACTOR" FOR THE PURPOSE OF ALL APPLICABLE LAWS RELATIVE TO OCCUPATIONAL HEALTH AND SAFETY, INCLUDING THE DISCHARGE OF ALL DUTIES OF THE "PRIME CONTRACTOR" UNDER THE WORKERS COMPENSATION ACT (BRITISH COLUMBIA). NOTWITHSTANDING THAT THE ENGINEER, THE OWNER OR AN OTHER CONTRACTOR MAY PROVIDE FROM TIME TO TIME SOME OF THE SERVICES NORMALLY PROVIDED BY SUCH "PRIME CONTRACTOR". IN THIS SECTION "PRIME CONTRACTOR" MEANS THE CONTRACTOR SO DEFINED UNDER THE WORKERS COMPENSATION ACT (BRITISH COLUMBIA).
- LOCATIONS OF EXISTING UNDERGROUND SERVICES HAVE BEEN DETERMINED FROM UTILITY AS-CONSTRUCTED DRAWINGS. CONTRACTOR TO CONTACT BC ONE CALL AND PROVIDE COPIES TO ENGINEER AND VERIFY THE LOCATION OF ALL EXISTING SERVICES AND TO NOTIFY ENGINEER OF ANY DISCREPANCIES, CONFLICTS OR OMISSIONS PRIOR TO BEGINNING OF CONSTRUCTION.
- THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR EXISTING SERVICES AND ANY SERVICES DISTURBED ARE TO BE REPLACED TO THE SATISFACTION OF M.O.T. & S.L.R.D., THE ENGINEER AND/OR APPROPRIATE UTILITY CORPORATION.
- THE CONTRACTOR'S SURVEYOR WILL RECORD AND CERTIFY ALL INFORMATION REQUIRED FOR THE ENGINEER TO PROVIDE A COMPLETE SET OF AS-CONSTRUCTED DRAWINGS INCLUDING CENTERLINE, FOG LINE, EDGE OF ASPHALT, SIGNS, AND ALL APPURTENANCES. SEE SUPPLEMENTAL SPECIFICATION FOR DETAILS.
- WHEN NO IMPROVEMENTS ARE PROPOSED UNDER THIS CONTRACT, THE EXISTING SECTION(S) OF ROADWAY SHALL BE KEPT CLEAN AND CLEAR FOR THE DURATION OF CONSTRUCTION AND LEFT IN SAME CONDITION AS PRIOR TO CONSTRUCTION.
- TRAFFIC CONTROL PER THE MINISTRY OF TRANSPORTATION "TRAFFIC MANUAL FOR WORK ON ROADWAYS" AND AS PER THE TRANSPORTATION ASSOCIATION OF CANADA "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" TO CONTRACTOR TO SUBMIT PLAN FOR TRAFFIC MANAGEMENT FOR APPROVAL AND RECEIVE SAME PRIOR TO PROCEEDING WITH WORKS.
- VEHICULAR ACCESS TO EXISTING DWELLINGS TO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE CONTRACT.
- PEDESTRIANS SHALL BE PROTECTED AT ALL TIMES. ANY CLOSURES OF THE SIDEWALK OR LANES TO BE COORDINATED WITH AND APPROVED BY THE ENGINEER AND A PERMIT FROM REGULATORY AUTHORITY OBTAINED AND FORWARDED TO ENGINEER. CONTRACTOR TO PROVIDE REQUIRED NOTICES.
- RESIDENTS DIRECTLY AFFECTED BY CONSTRUCTION OF THIS PROJECT SHALL BE GIVEN 48 HOURS WRITTEN NOTICE OF THE PROPOSED START OF CONSTRUCTION. IF CONSTRUCTION ENTERS ONTO PRIVATE PROPERTY, THE CONTRACTOR OR DEVELOPER'S AGENT WILL REQUIRE WRITTEN AUTHORIZATION FROM THE PRIVATE PROPERTY OWNER.
- RETAINING DESIGNATED TREES IS OF PRIME IMPORTANCE. WHEN WORKING IN PROXIMITY TO A DESIGNATED TREE OR WHEN ROOTS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONSULT A CERTIFIED ARBORIST BEFORE PROCEEDING TO PREVENT DAMAGE TO TREES.
- THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THAT NO SILT IS DISCHARGED TO THE STORM DRAINAGE SYSTEM, ROADWAYS OR ADJACENT PROPERTIES DURING THE COURSE OF CONSTRUCTION IN ACCORDANCE WITH DFO/MOELP'S "LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT".
- FOR BC HYDRO, TELUS, AND TERASEN INSTALLATION, SEE APPROPRIATE UTILITY COMPANY DRAWINGS AND SPECIFICATIONS.
- UPON COMPLETION OF WORKS, OWNER MUST CONDUCT CCTV TEST TO ENSURE NO CROSS CONNECTIONS & CONDITION OF PIPES. A COPY OF THE REPORT IS TO BE FORWARDED TO THE DISTRICT OF WEST VANCOUVER UTILITIES.
- SEE LANDSCAPE DRAWINGS FOR PLANTING DETAILS.
- SEE ELECTRICAL DRAWINGS FOR STREETLIGHTING PLANS.

CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION

# CREUS Engineering

Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST. WEST, NORTH VANCOUVER BC, V7P1R2  
 PH: 604-987-9070 WEBSITE: www.creus.ca



SITE MAP

**DRAWING LEGEND**

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
ESSENTIAL WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---

approved	
client	EVERVAN
project	WENTWORTH COLLINGWOOD WEST VANCOUVER, BC
title	KEY

no.	(y/m/d)	revision	chk'd
17	17-04-11	RE-ISSUED FOR DP	AGC
16	17-03-29	REVISED HYDRO	AGC
15	17-03-15	REVISED PER DWV COMMENTS	AGC
14	17-02-09	REVISED PER DWV COMMENTS	AGC
13	17-01-26	REVISED PER DWV COMMENTS	AGC
12	17-01-18	REVISED LOTS	AGC
11	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
10	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

current rev. # 17

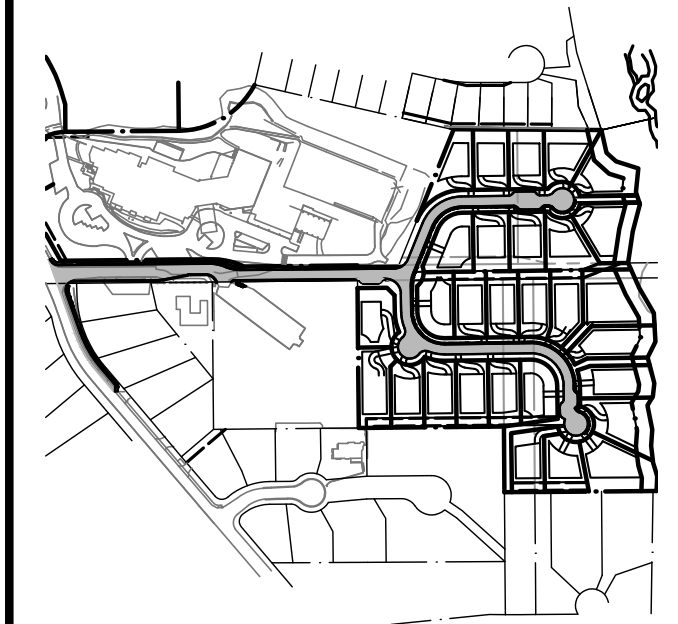
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engineer of record	KBH	scales	hor: 1:750	vert: -
designed by	KBH	file no.	15171	
drawn by	AGC	drawing no.	KEY-1	
date	2016-09-26			

NOT FOR CONSTRUCTION

SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINTING NOTES

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SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
ESSENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREET LIGHT	---	---	---

approved

client

EVERVAN

project

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

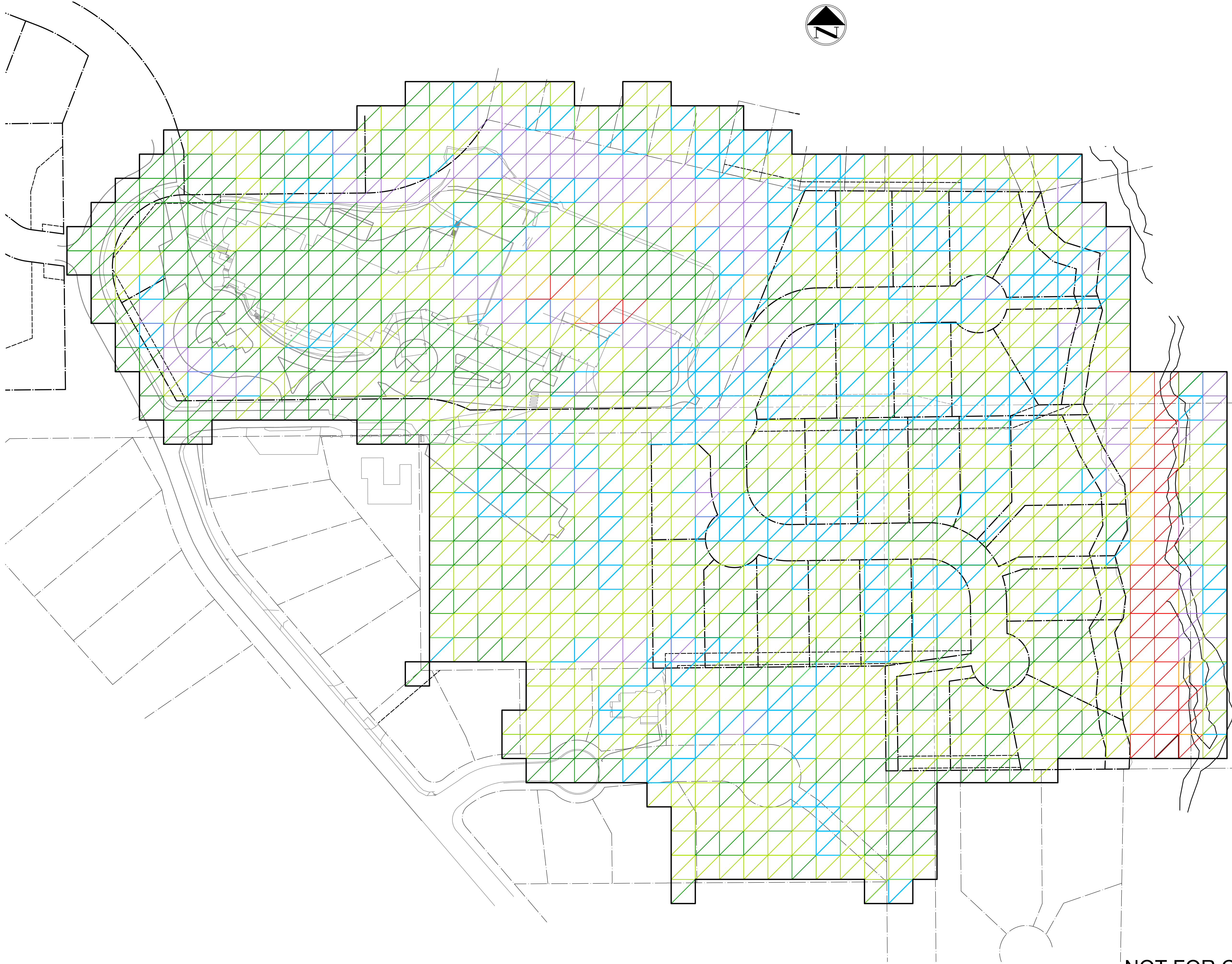
title

KEY  
 SLOPE ANALYSIS

no.	(y/m/d)	revision	chk'd
15	17-04-11	RE-ISSUED FOR DP	AGC
14	17-03-29	REVISED PER DWV COMMENTS	AGC
13	17-03-15	REVISED PER DWV COMMENTS	AGC
12	17-02-09	REVISED PER DWV COMMENTS	AGC
11	17-01-26	REVISED PER DWV COMMENTS	AGC
10	17-01-18	REVISED LOTS	AGC
9	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
8	16-12-12	REVISED LOTS	AGC

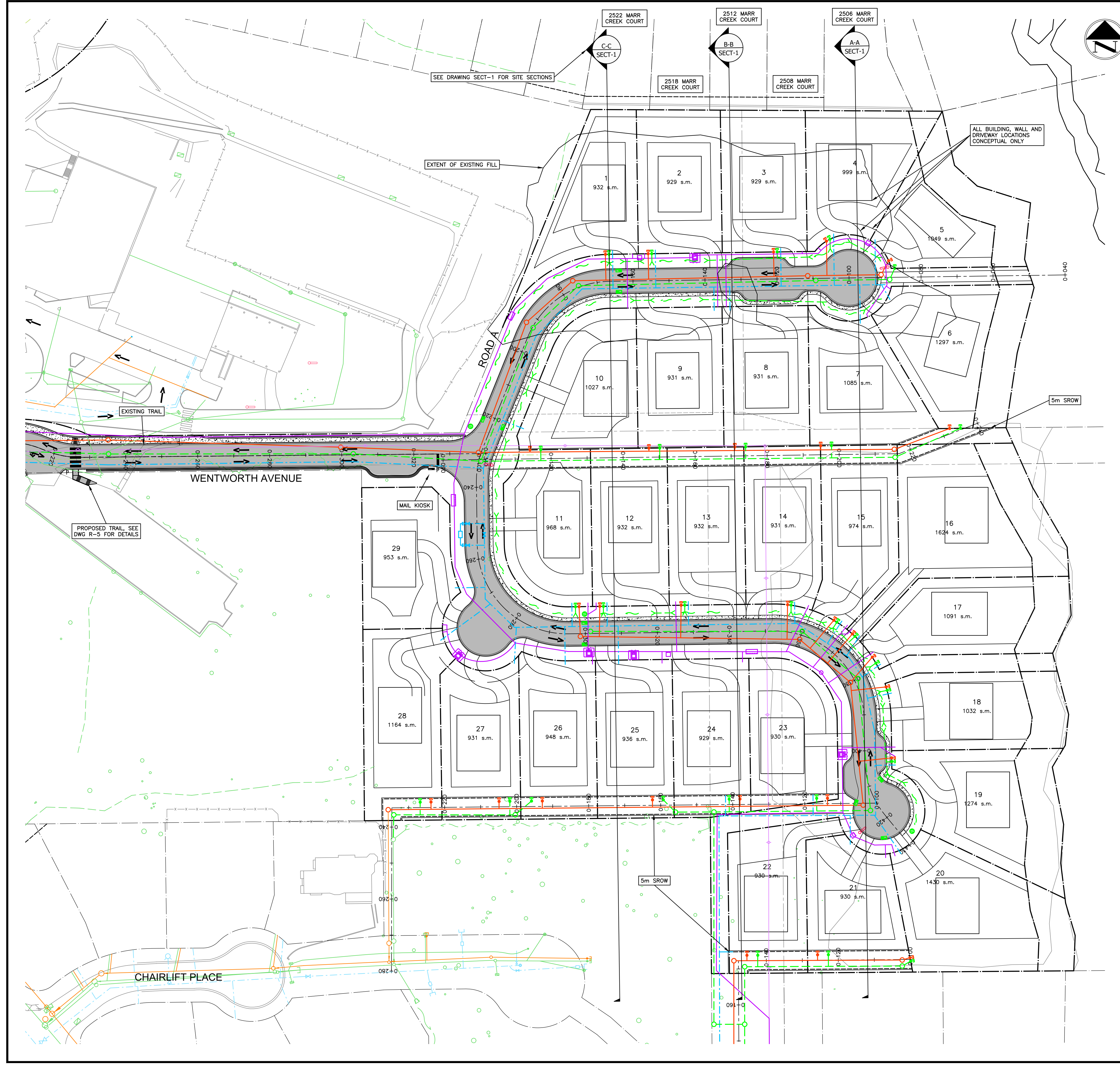
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KBH	15171	15
designed by	file no.	
KBH	15171	
drawn by	drawing no.	
AAP	KEY-2	
date		
2016-09-26		



0.0% - 15.0%
16.0% - 25.0%
26.0% - 35.0%
36.0% - 45.0%
46.0% - 55.0%
56.0%+

NOT FOR CONSTRUCTION

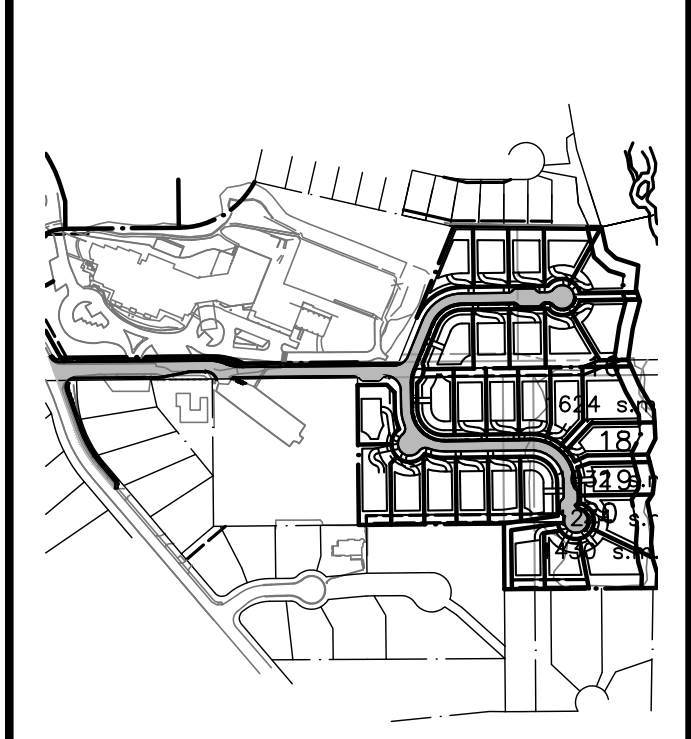


SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION

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Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P1R2  
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SITE MAP

### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASEMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	○	○	○
GATE VALVE	○	○	○
AIR VALVE	○	○	○
REDUCER	○	○	○
INSPECTION CHAMBER	○	○	○
CATCHBASIN (STD/SI)	○	○	○
GAP	○	○	○
MANHOLE	○	○	○
POWER POLE	○	○	○
STREETLIGHT	○	○	○

approved

client  
**EVERVAN**

project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title

### KEY LOT LAYOUT

no.	date	revision	chk'd
17	17-04-11	RE-ISSUED FOR DP	AGC
16	17-03-29	REVISED HYDRO	AGC
15	17-03-15	REVISED PER DWV COMMENTS	AGC
14	17-02-09	REVISED PER DWV COMMENTS	AGC
13	17-01-26	REVISED PER DWV COMMENTS	AGC
12	17-01-18	REVISED LOTS	AGC
11	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
10	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

PER ZONING BYLAW No. 4662,2010 – DWV RS7 – SINGLE FAMILY DWELLING ZONE 7 & ZONING BYLAW PART 2, BYLAW 2200, ITEM 21-127.

MIN PARCEL AREA: 929m<sup>2</sup>  
 MIN WIDTH OF FRONTAGE: 21.30m  
 MIN WIDTH OF FRONTAGE FLANKING LOT: 24.3m  
 MAX DEPTH TO FRONTAGE: 3 TIMES THE WIDTH

MIN BUILDING FOOTPRINT: 186m<sup>2</sup>  
 MIN BUILDING FOOTPRINT WIDTH: 9.15m

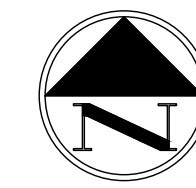
(FRONTAGE MEASURED AT BUILDING SETBACK LINE)

LOT #	AREA (m <sup>2</sup> )	WIDTH (m)	LENGTH (m)
1	932	25.33	41.60
2	929	23.32	39.83
3	929	23.59	39.38
4	999	22.77	35.95
5	1049	21.42	33.74
6	1297	21.43	41.30
7	1085	22.76	36.13
8	931	23.86	39.00
9	931	23.86	39.00
10	1027	22.27	39.69
11	968	32.70	27.09
12	932	21.30	43.74
13	932	21.30	43.74
14	931	21.62	44.44
15	974	15.52	56.27
16	1624	10.19	67.52
17	1091	13.34	35.95
18	1032	21.72	48.06
19	1274	26.18	41.15
20	1430	21.29	44.27
21	930	32.80	29.26
22	930	21.74	40.47
23	930	32.70	27.11
24	929	21.30	43.94
25	936	21.30	43.93
26	948	21.30	43.01
27	931	23.71	34.45
28	1164	28.09	24.99
29*	953	25.88	31.08

NOTE: \* BESIDE LOT NUMBER = FLANKING LOT

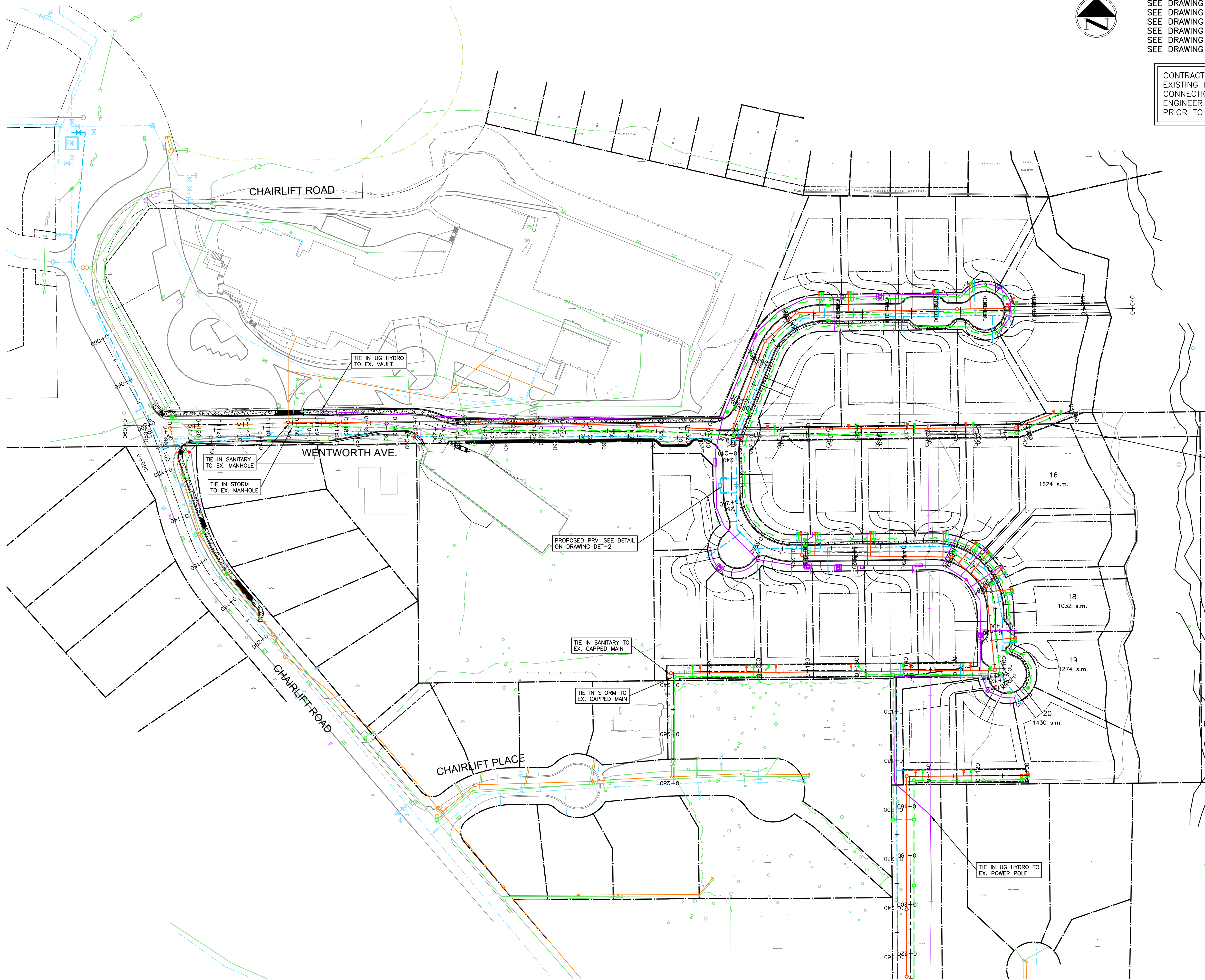
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designed by	KBH	15171
drawn by	AGC	KEY-3
date	2016-09-26	



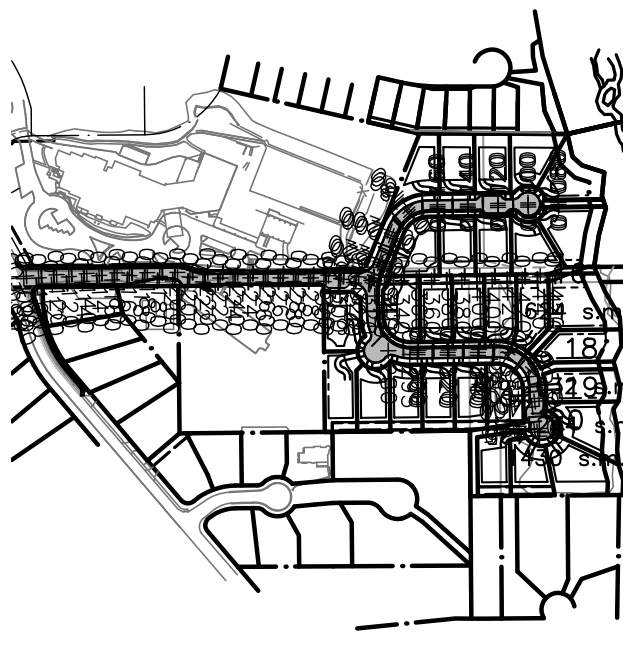
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CONTRACTOR TO VERIFY & LOCATE  
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SITE MAP

## DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---

	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/ISI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---

SERVICING ROAD FINISHED GRADE  
 TREATMENT TO BE GRASS OR SMALL,  
 LOW LYING VEGETATION WITHOUT  
 EXTENSIVE ROOT SYSTEMS. ACCESS  
 TO SROW TO BE MAINTAINED. (TYP)

approved  
 client  
**EVERVAN**  
 project  
**WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC**

title  
**SERVICING**

no.	date	revision	CHK'D
6	17-04-11	RE-ISSUED FOR DP	AGC
5	17-03-29	REVISED HYDRO	AGC
4	17-03-15	REVISED PER DWV COMMENTS	AGC
3	17-02-09	REVISED PER DWV COMMENTS	AGC
2	17-02-01	REISSUED FOR DP	KBH
1	16-03-23	REISSUED FOR DP	KBH

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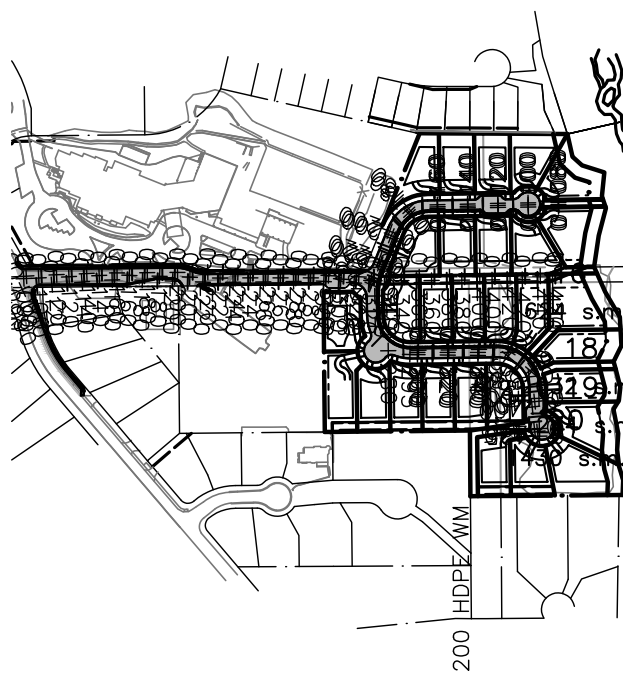
engineer of record	KBH	scales	hor: 1:750	vert: -
designed by	KBH	file no.	15171	
drawn by	AGC	drawing no.	C-1	
date	2016-09-26			

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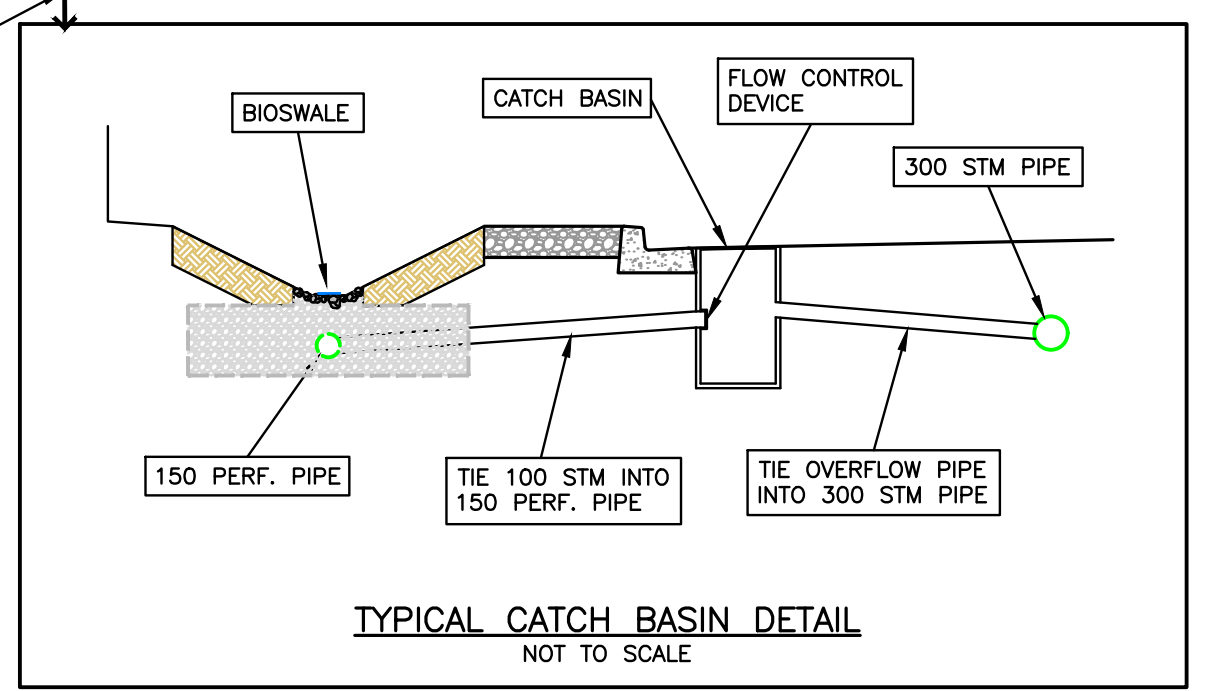
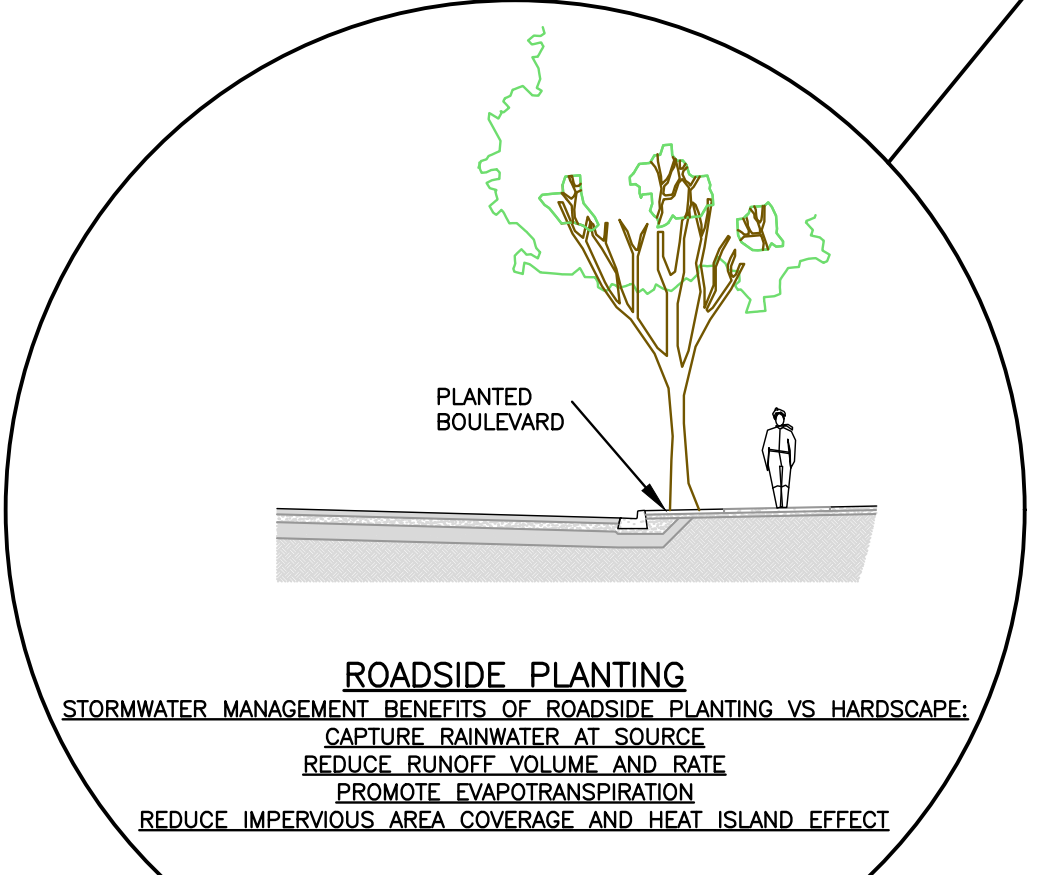
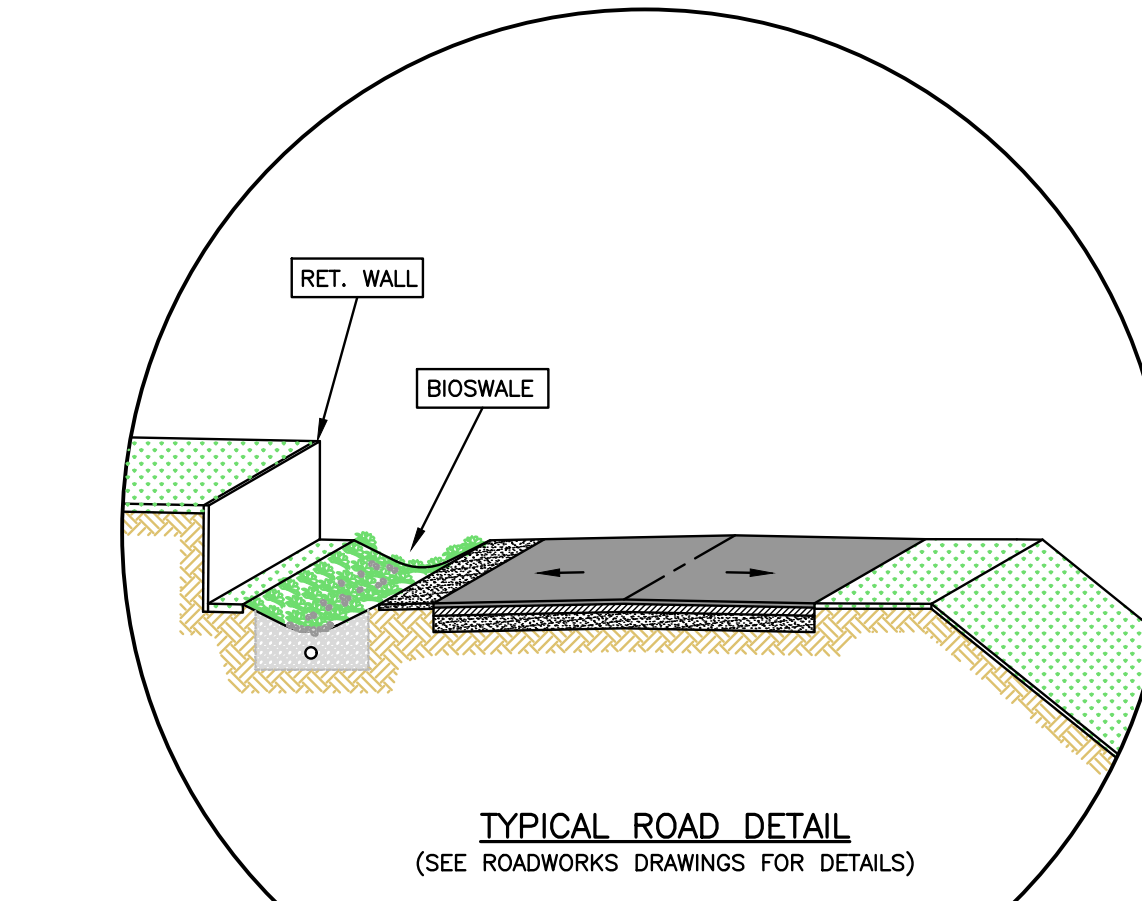
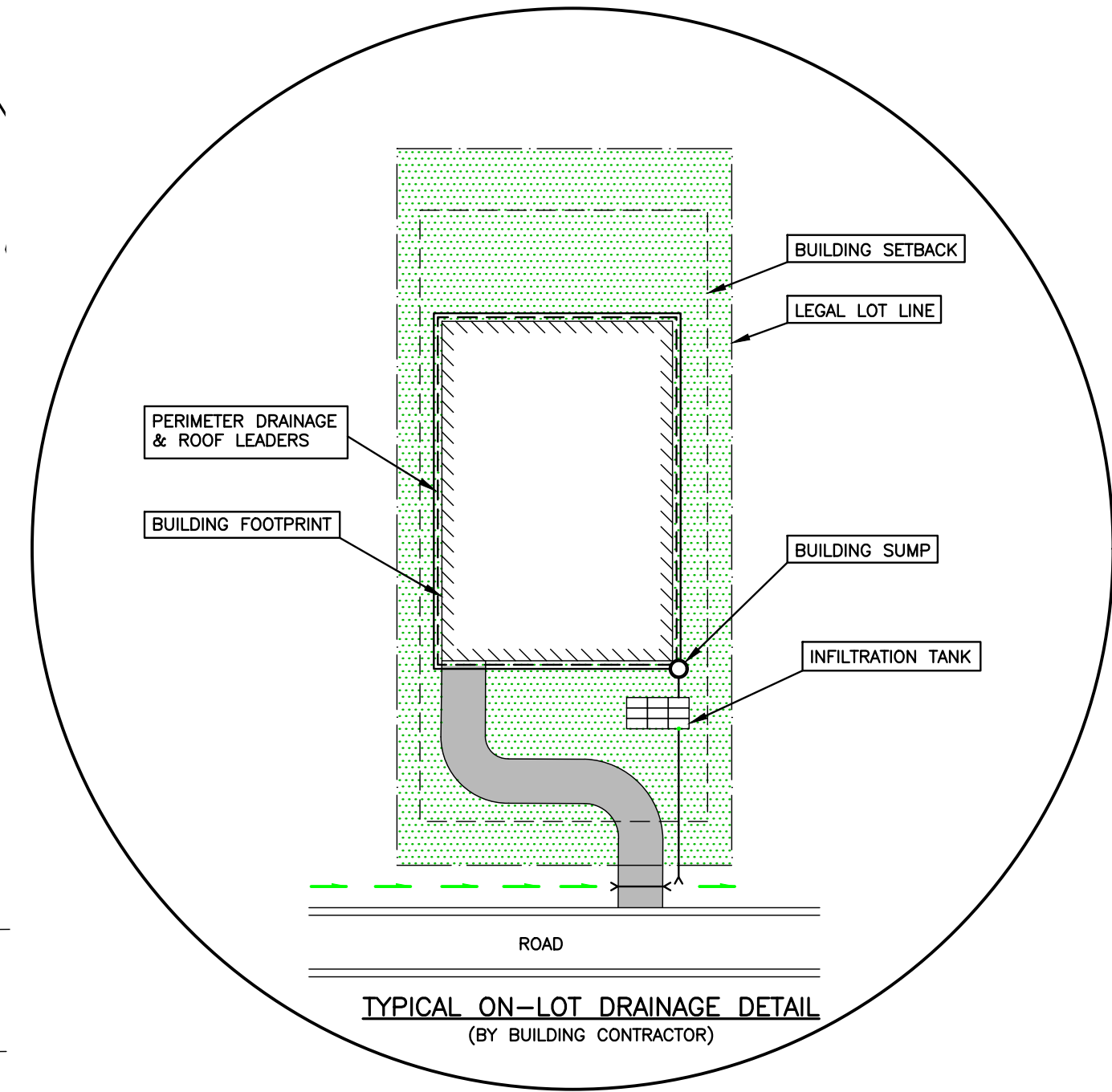
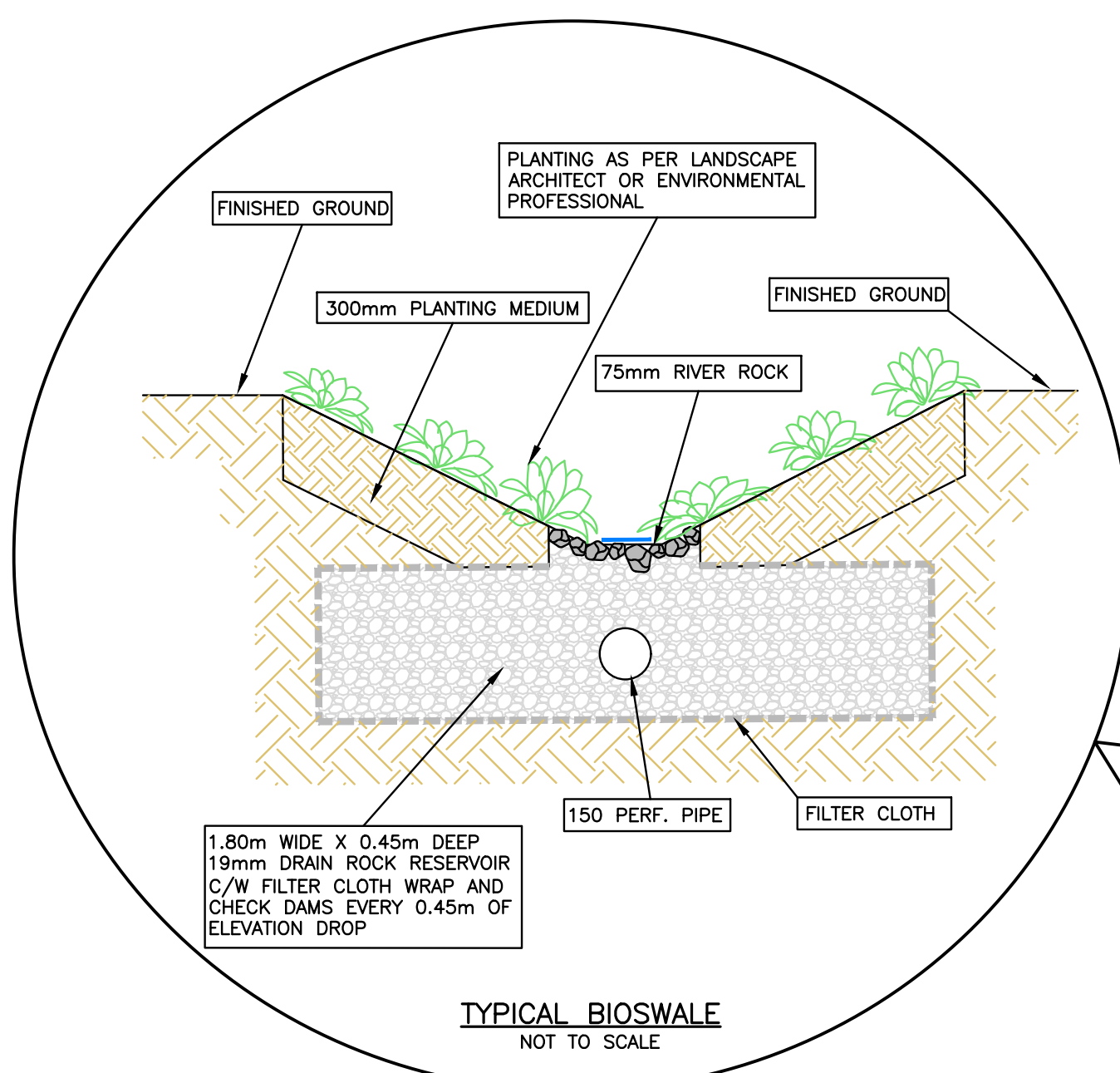
CONTRACTOR TO VERIFY & LOCATE  
 EXISTING MAINS & SERVICE  
 CONNECTIONS & NOTIFY THE  
 ENGINEER OF ANY DISCREPANCIES  
 PRIOR TO BEGINNING CONSTRUCTION

Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P1R2  
 PH: 604-987-9070 WEBSITE: www.creus.ca



### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
T&E	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---



### CREUS Engineering Ltd

### Calculations

Project: Wentworth Collingwood File: 15171  
 Subject: Stormwater Management Plan - Subdivision Road Date: 23-Mar-16  
 Section: SMP Source Control Calculations By: AAP

AREAS		PRE-DEVELOPMENT	POST-DEVELOPMENT	OBJECTIVE: LIMIT RUNOFF FROM THE 10-YR EVENT	
Pre-Development Catchment Area	Post-Development Catchment Area				
Paved Area (Impervious)	8661 m <sup>2</sup>	834 m <sup>2</sup>			
Gravel Area	273 m <sup>2</sup>				
Woodlands (Porous)	4532 m <sup>2</sup>				
Grasslands (Porous)	3022 m <sup>2</sup>				
<b>Post-Development Percent Impervious</b>	<b>67%</b>				
PRE-DEVELOPMENT PEAK FLOW		POST-DEVELOPMENT PEAK FLOW			
Weighted Average From Impervious And Porous Areas		Peak Rainfall Intensity (i)	20 min		
Paved Area Runoff Coefficient	0.95 for 834 m <sup>2</sup>	Post-Development TOC	28 mm/hr		
Gravel Area Runoff Coefficient	0.10 for 273 m <sup>2</sup>	From West Vancouver IDF Curve	10y Rainfall Intensity		
Woodlands Runoff Coefficient	0.10 for 4532 m <sup>2</sup>				
Grasslands Runoff Coefficient (C)	0.20 for 3022 m <sup>2</sup>				
<b>Pre-Development Runoff Coefficient (C)</b>	<b>= 0.45 for 4129 m<sup>2</sup></b>				
Rainfall Intensity (i)					
Pre-Development TOC	20 min				
From West Vancouver IDF Curve	28 mm/hr				
10y Rainfall Intensity					
<b>Pre-Development Peak Flow (Q<sub>PCIA</sub>)</b>	<b>= 14.5 l/s</b>				
Pre-Development Peak Flow		Post-Development Peak Flow			
Rainfall Intensity (i)		Peak Rainfall Intensity (i)	20 min		
Post-Development TOC	28 mm/hr	Post-Development TOC	28 mm/hr		
From West Vancouver IDF Curve	10y Rainfall Intensity				
Weighted Average From Hardscape & Landscape Areas					
Paved Area Runoff Coefficient	0.95 for 5248 m <sup>2</sup>				
Gravel Area Runoff Coefficient	0.10 for 543 m <sup>2</sup>				
Landscape Area Runoff Coefficient	0.30 for 2870 m <sup>2</sup>				
<b>Post-Development Runoff Coefficient (C)</b>	<b>= 0.68 for 8661 m<sup>2</sup></b>				
<b>Post-Development Peak Flow</b>	<b>= 45.6 l/s</b>				
<b>Determine the Postdevelopment storm event and Release at Predevelopment Levels</b>					
Duration (min)	Intensity (mm/hr)	Peak Flow (l/s)	Release (l/s)	Difference (l/s)	Volume (m <sup>3</sup> )
5	49	81.0	14.5	66.5	12.8
10	37	60.8	14.5	46.3	21.1
20	28	45.8	14.5	31.1	31.4
30	23	38.5	14.5	24.0	37.8
60	18	28.9	14.5	14.4	47.5
90	15	24.4	14.5	9.9	50.0
120	13	21.7	14.5	7.2	48.7
<b>Peak Storage Requirement</b>		<b>Storage Provided</b>			
= 81.4		= 50.0			
		OKAY			
<b>Rain Garden Capture</b>					
Length of Bioswale	= 335 m				
Depth of Bioswale	= 0.45 m				
Width of Bioswale	= 1.80 m				
Soil Porosity	= 30%				
Storage Depth	= 81.4 m <sup>3</sup>	(Storage Volume)			
<b>Storage Required</b>		<b>Storage Provided</b>			
= 50.0 m <sup>3</sup>		= 81.4 m <sup>3</sup>			

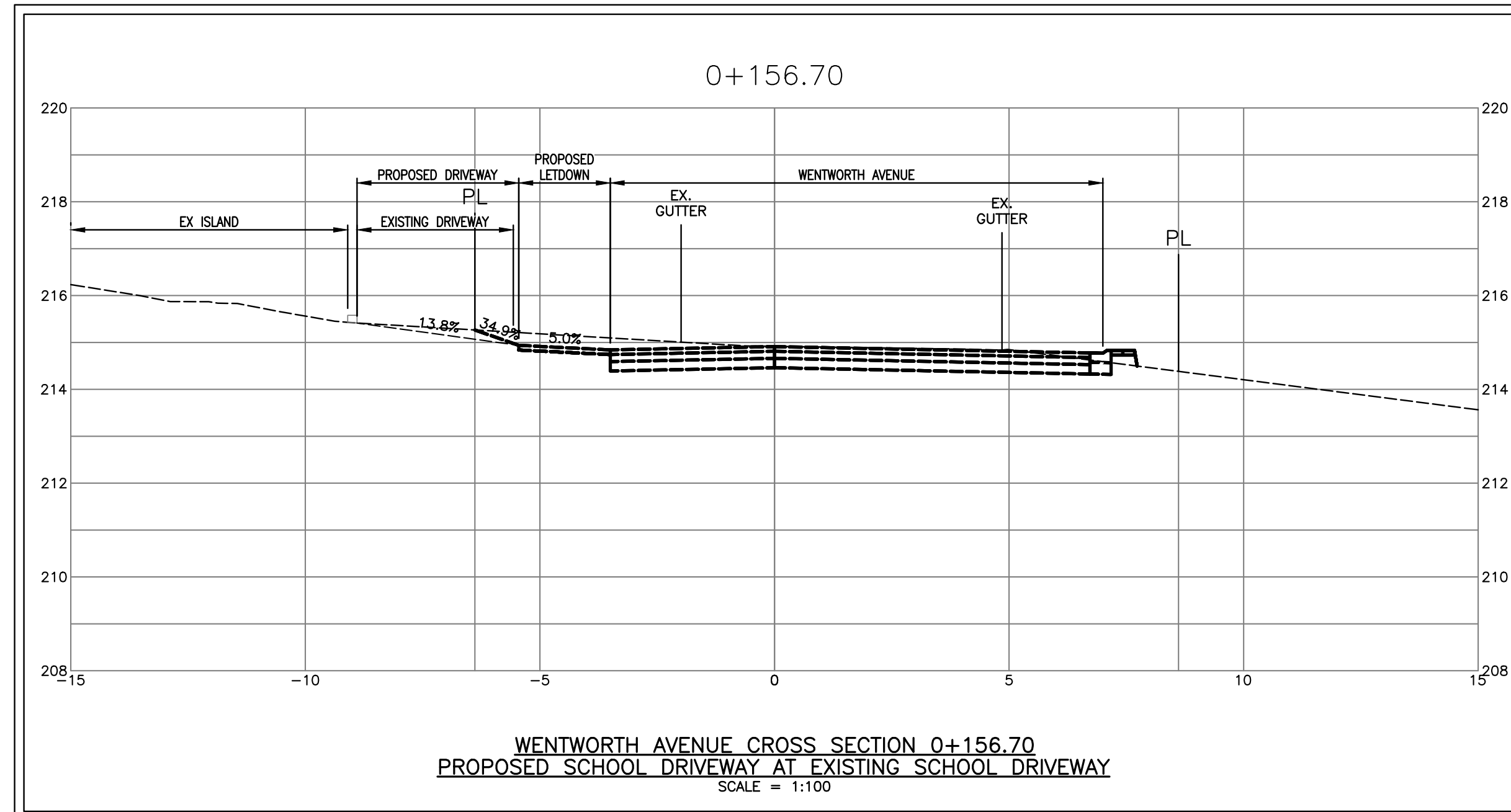
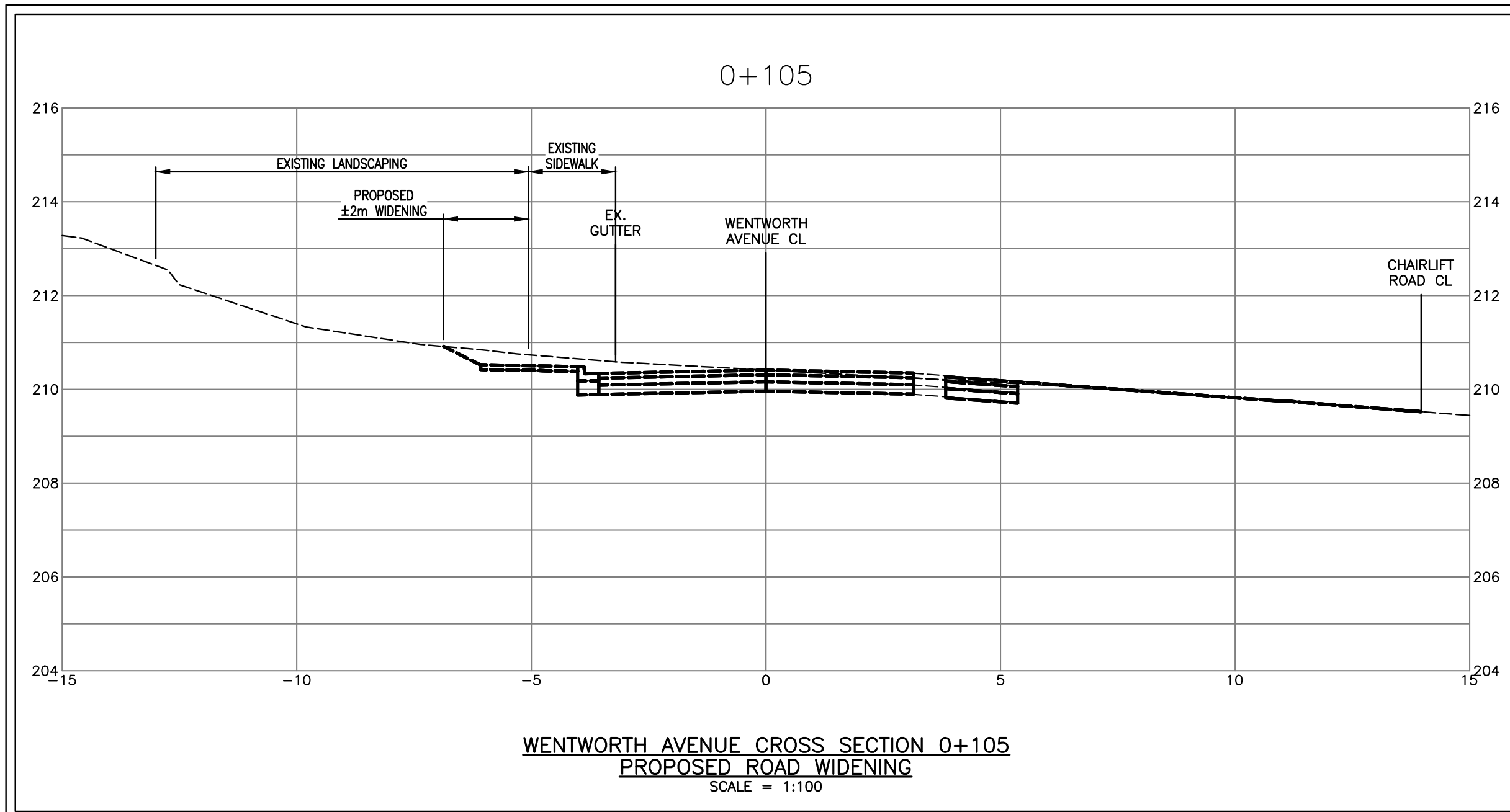
client: EVERVAN

project: WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC

### STORMWATER MANAGEMENT PLAN

no.	(y/m/d)	revision	chk'd
6	17-04-11	RE-ISSUED FOR DP	AGC
5	17-03-29	REVISED PER DWV COMMENTS	AGC
4	17-03-15	REVISED PER DWV COMMENTS	AGC
3	17-02-09	REVISED PER DWV COMMENTS	AGC
2	17-02-01	REISSUED FOR DP	KBH
1	16-03-23	REISSUED FOR DP	KBH
no.	(y/m/d)	revision	chk'd
			6
engineer of record	KBH	scales	hor: 1:500 vert: -
designed by	KBH	file no.	15171
drawn by	AGC	drawing no.	SMP
date	2016-09-26		

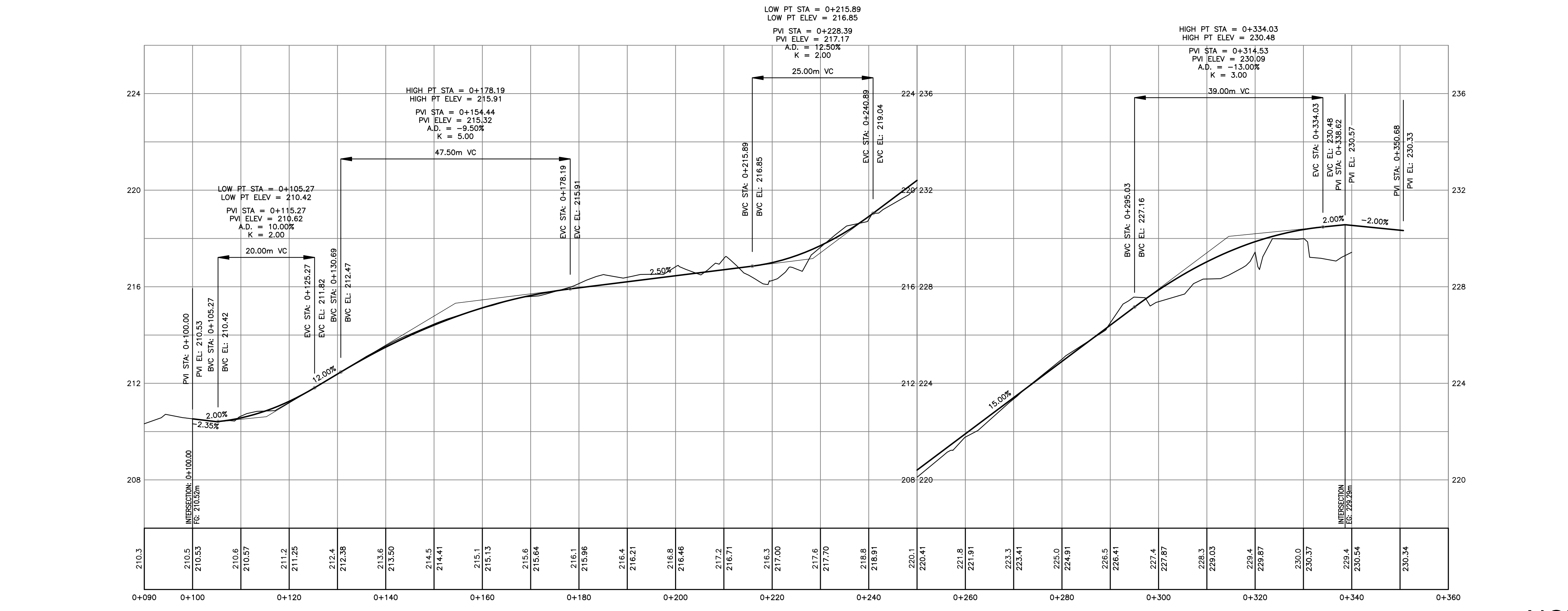
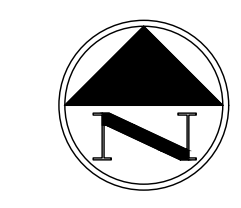
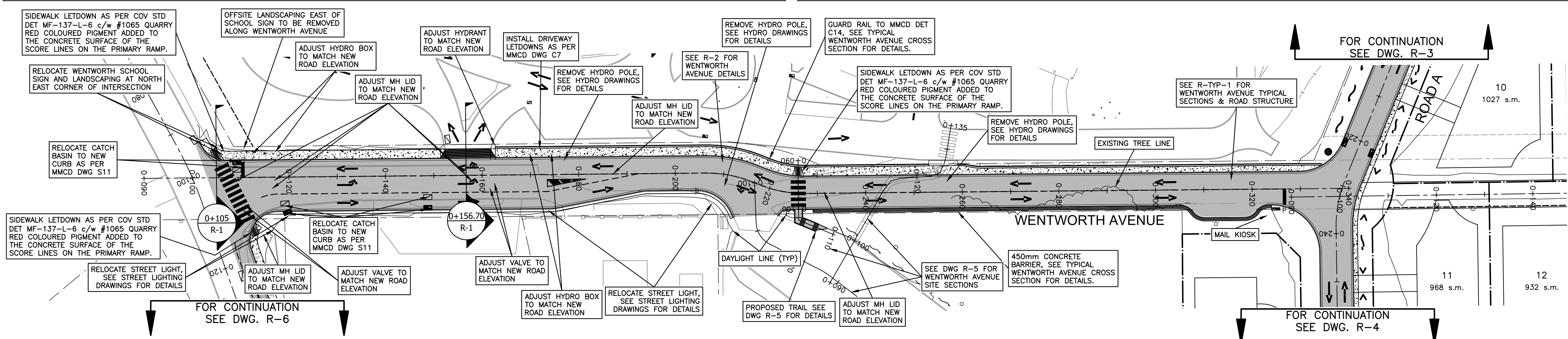
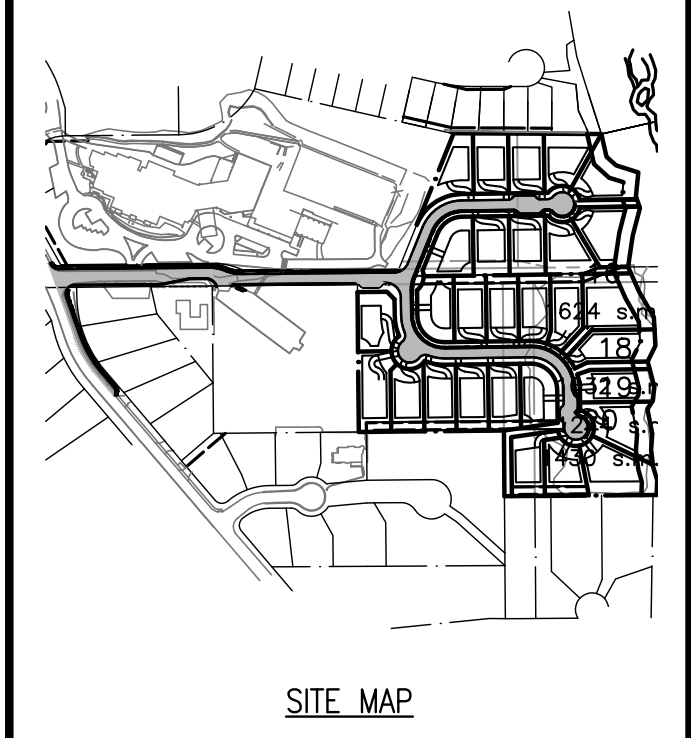
NOT FOR CONSTRUCTION



SEE DRAWING KEY-1 FOR GENERAL NOTES  
SEE DRAWING S-1 FOR SANITARY NOTES  
SEE DRAWING D-1 FOR STORM NOTES  
SEE DRAWING W-1 FOR WATERWORKS NOTES  
SEE DRAWING R-3 FOR ROADWORKS NOTES  
SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

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DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/SI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---

approved

client  
**EVERVAN**

project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title  
**ROADWORKS  
WENTWORTH AVENUE  
(STA. 0+090 - 0+360)**

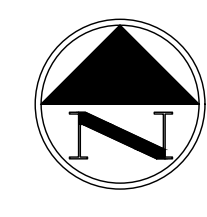
no.	(y/m/d)	revision	chk'd
10	17-04-11	RE-ISSUED FOR DP	AGC
9	17-03-15	REVISED PER DWV COMMENTS	AGC
8	17-02-09	REVISED PER DWV COMMENTS	AGC
7	17-01-26	REVISED PER DWV COMMENTS	AGC
6	17-01-18	REVISED LOTS	AGC
5	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
4	16-12-14	CHAIRLIFT ROAD & CORNER	AGC
3	16-12-13	ROAD A	AGC

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designed by	KBH	file no.	15171
drawn by	AGC	drawing no.	R-1
date	2016-09-26		

NOT FOR CONSTRUCTION

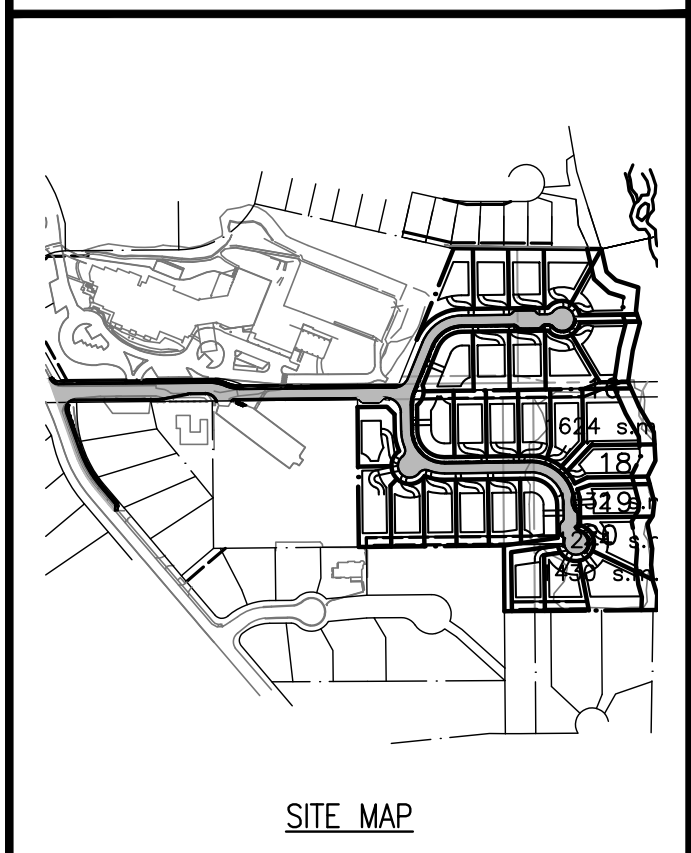
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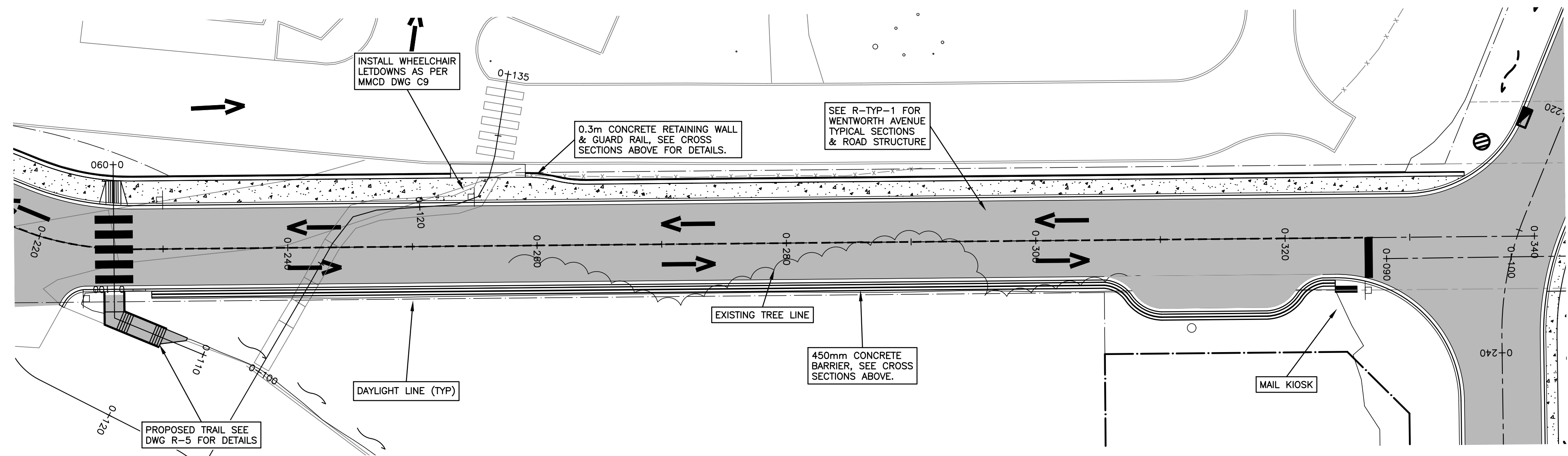
SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

# CREUS Engineering

Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P 1R2  
 PH: 604-987-9070 WEBSITE: www.creus.ca



SITE MAP



FOR WENTWORTH AVENUE NORTH AND SOUTH WALL PROFILES SEE DWG R-2A

### DRAWING LEGEND

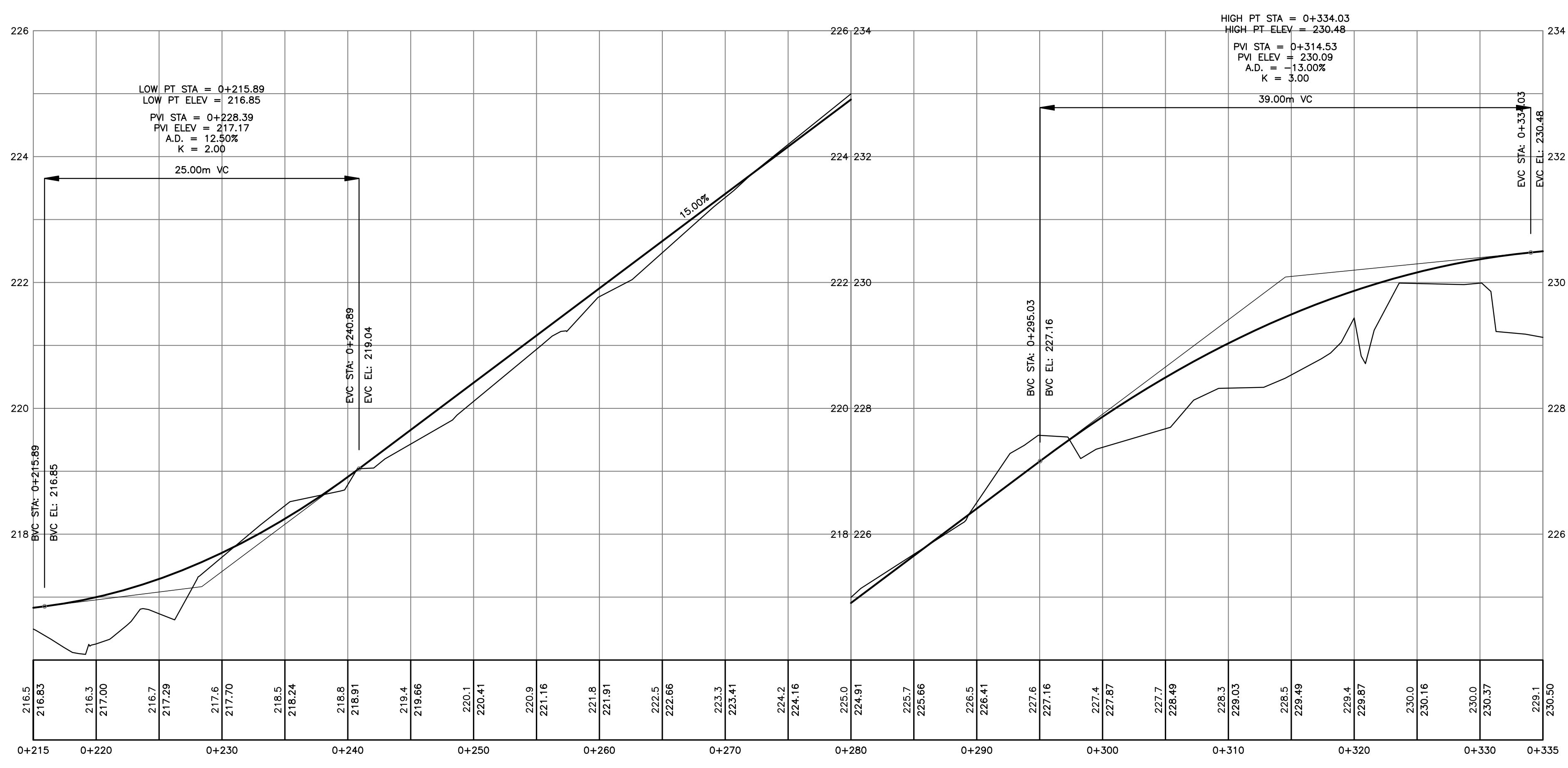
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EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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client  
**EVERVAN**

project  
**WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC**

title  
**ROADWORKS  
 WENTWORTH AVENUE DETAILS**



**NOT FOR CONSTRUCTION**

no.	(y/m/d)	revision	chk'd
4	17-04-11	RE-ISSUED FOR DP	AGC
3	17-03-29	REVISED PER DWV COMMENTS	AGC
2	17-03-15	REVISED PER DWV COMMENTS	AGC
1	17-02-09	REVISED PER DWV COMMENTS	AGC

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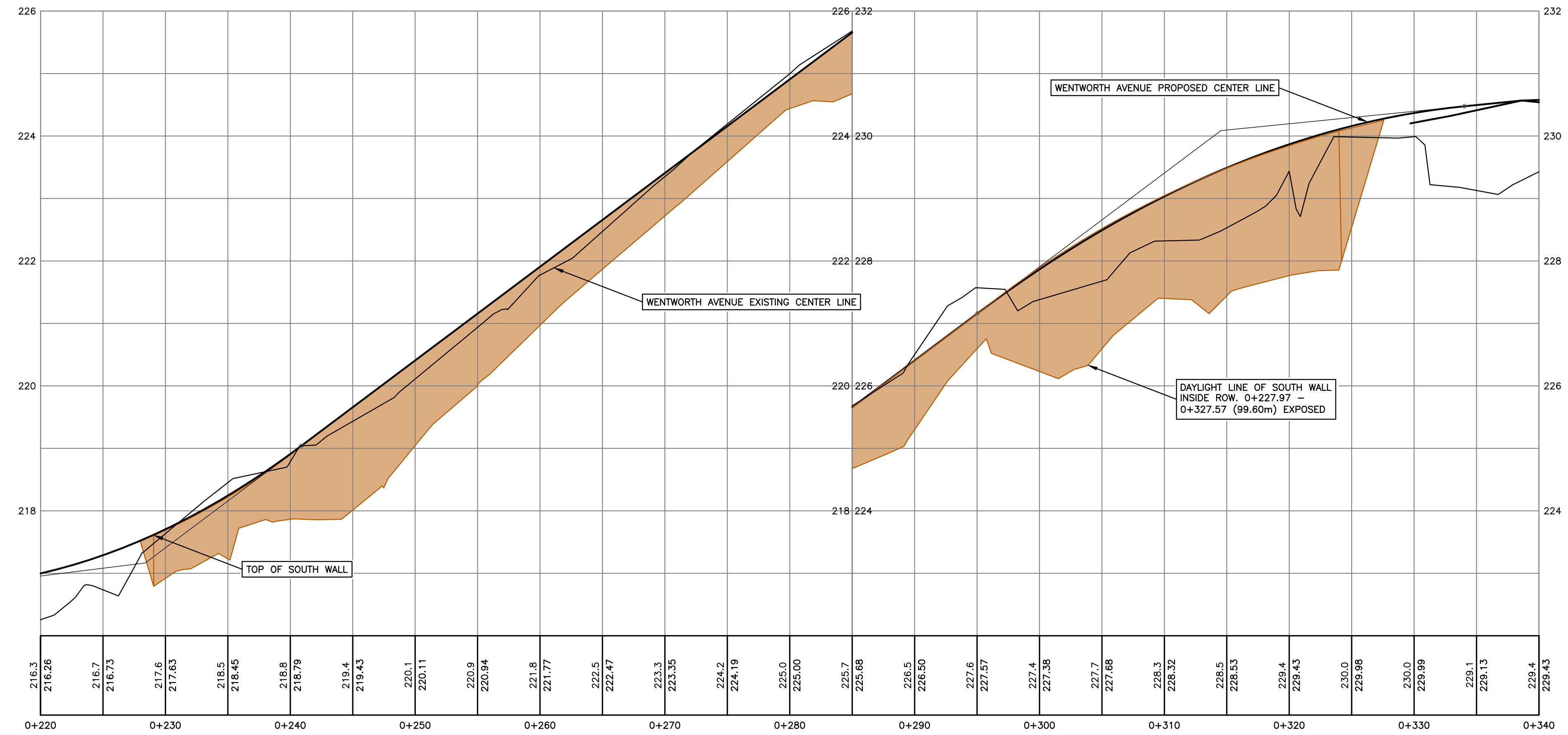
current rev. # **4**

engineer of record	KBH	scales	hor: 1:250 vert: 1:50
designed by	KBH	file no.	<b>15171</b>
drawn by	AGC	drawing no.	<b>R-2</b>
date	2016-09-26		



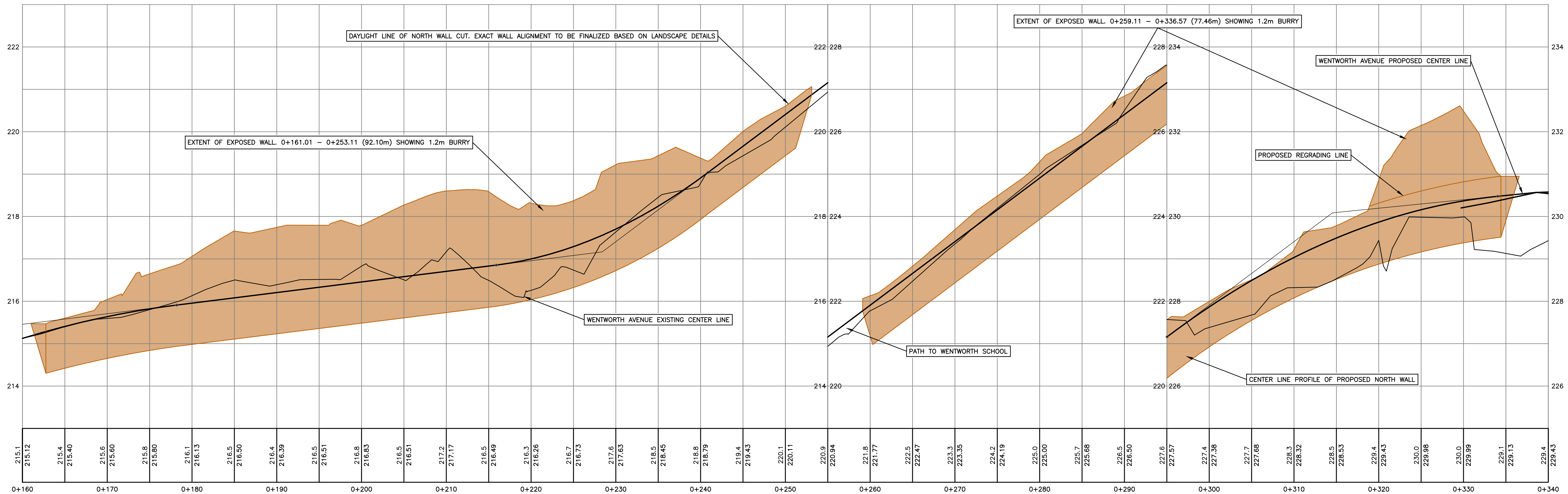
CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION

SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

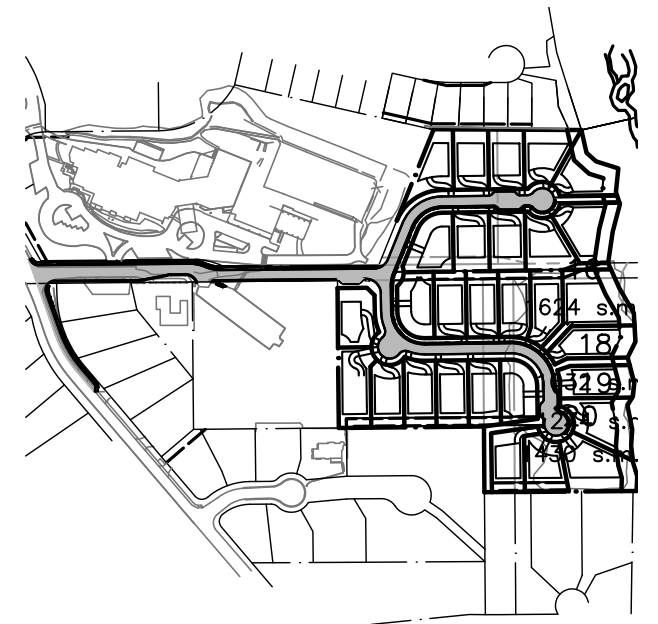


FOR WENTWORTH AVENUE DETAILS SEE DWG R-1 & R-2

FOR WENTWORTH AVENUE DETAILS SEE DWG R-1 & R-2



NOT FOR CONSTRUCTION



SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/ISI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

approved

client

EVERVAN

project

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

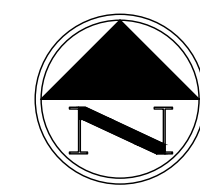
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ROADWORKS  
 WENTWORTH AVENUE WALLS

no.	(y/m/d)	revision	CHK'D
3	17-04-11	RE-ISSUED FOR DP	AGC
2	17-03-29	REVISED PER DWV COMMENTS	AGC
1	17-03-15	REVISED PER DWV COMMENTS	AGC

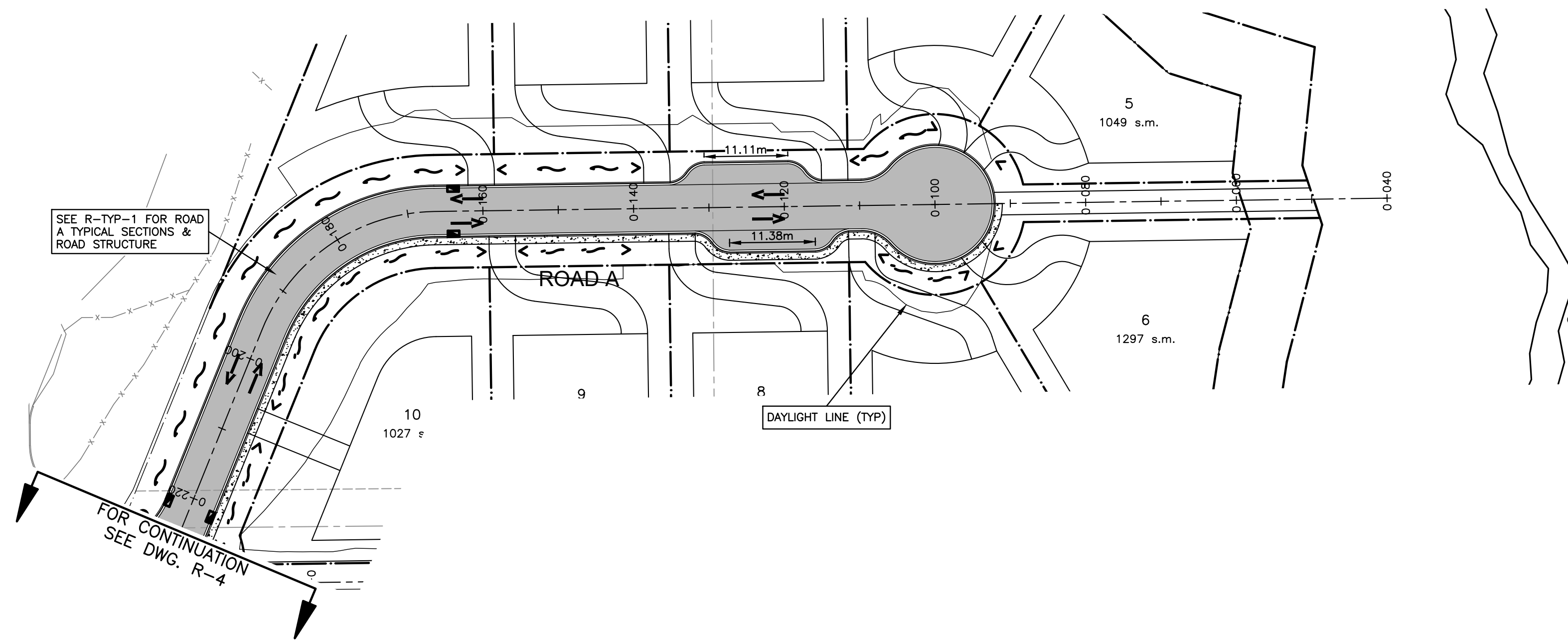
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designed by	KBH	file no.	15171
drawn by	AGC	drawing no.	R-2A
date	2016-09-26		



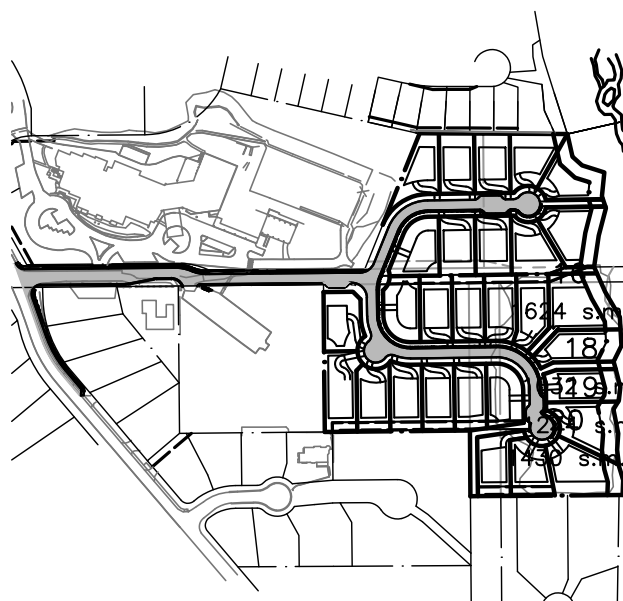
SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES

CONTRACTOR TO VERIFY & LOCATE  
 EXISTING MAINS & SERVICE  
 CONNECTIONS & NOTIFY THE  
 ENGINEER OF ANY DISCREPANCIES  
 PRIOR TO BEGINNING CONSTRUCTION



**ROADWORKS NOTES**

- ALL ROADWORKS CONSTRUCTION AND METHODS MUST BE IN ACCORDANCE WITH MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD).
- PAVING CAN ONLY PROCEED IN THE PRESENCE OF THE ENGINEER OR DESIGNATED INSPECTORS.
- CONTRACTOR TO SUBMIT SEIVE TEST AND SOURCE DATA FOR AGGREGATES AND MIX DESIGN FOR ASPHALT AT BEGINNING OF CONTRACT FOR REVIEW AND APPROVAL.
- ALL LOOSE AND ORGANIC MATERIAL TO BE EXCAVATED FROM ROADWAY, ALL SUBGRADES TO BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY. SUBGRADE TO BE INSPECTED BY ENGINEER PRIOR TO PLACEMENT OF GRAVEL SUBBASE. ANY WATER SOFTENED SUBGRADE SOIL SHALL BE OVEREXCAVATED AND THE GRADE RESTORED WITH GRANULAR SOILS COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
- THE BASE AND SUBBASE MATERIALS SHALL BE PROPERLY PLACED AND COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR DRY DENSITY (ASTM D1557).
- THE CONTRACTOR WILL GIVE ENGINEER THEN D.W.V. 48 HOURS NOTICE PRIOR TO SUBGRADE PROOF ROLL, BASE COMPACTION AND PAVING.
- THE CONTRACTOR MUST NOTIFY ENGINEER 48 HOURS PRIOR TO STARTING CONSTRUCTION TO ESTABLISH AN INSPECTION SCHEDULE.
- A PORTION OF THE CONTRACT DOCUMENTS IS INCLUDED BY REFERENCE. COPIES OF THESE DOCUMENTS HAVE BEEN REFERENCED IN THE TENDER PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT CURRENT RELEVANT COPIES OF ALL DRAWINGS AND CONTRACT DOCUMENTS ARE FORWARDED TO SURVEYORS, TESTING AGENCIES, SUBCONTRACTORS, SUPERINTENDENTS, ESTIMATORS, PROJECT MANAGERS, SITE STAFF AND ANY OTHER RELEVANT PARTIES. CONTRACTOR CONFIRMS THEY HAVE REVIEWED SAME PRIOR TO SUBMITTING TENDER.
- ALL CUTS IN EXISTING ASPHALT REQUIRED FOR CONSTRUCTION SHALL BE VERTICAL, FULL DEPTH, WITH A DIAMOND SAW AND REPLACED TO FULL / DESIGN DEPTH WITH MINIMUM 80mm ASPHALT CONCRETE FOR MAIN ROADS AND 65mm ASPHALT CONCRETE FOR LANES. AFTER BACKFILL AND COMPACTION. ALL PAVEMENTS, BOULEVARDS, DRIVEWAYS, FENCES, ETC. ARE TO BE RESTORED TO THE SATISFACTION AND APPROVAL OF THE CITY WHEN NO IMPROVEMENT IS PROPOSED UNDER THIS CONTRACT.
- TOP LIFT OF ASPHALT TO BE MINIMUM 40 mm OR AS NOTED.
- ALL PAVEMENTS, BOULEVARDS, DRIVEWAYS, FENCES, ETC. ARE TO BE RESTORED TO ORIGINAL CONDITION WHEN NO IMPROVEMENT IS PROPOSED UNDER THIS CONTRACT. CONTRACTOR TO ROUGHGRADE THE BOULEVARDS AT THE SAME TIME AS ROAD GRADING.
- CHANGES IN GRADE TO BE FORMED WITH SMOOTH CURVES.
- COVERS FOR INSPECTION CHAMBERS AND VALVE RISERS IN DRIVEWAYS SHALL BE SUITABLE FOR TRAVELED AREAS
- ALL MANHOLE LIDS, VALVE COVERS, CATCHBASIN RIMS AND LIDS OF OTHER STRUCTURES TO BE SET AT FIRST LIFT ROAD ELEVATIONS AND RAISED WHEN FINAL LIFT INSTALLED.
- ENSURE ALL NEW PAVEMENT WORKS ARE KEYED INTO EXISTING ASPHALT AS PER MMCD STANDARD.



SITE MAP

**DRAWING LEGEND**

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASEMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL.	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

approved

client

EVERVAN

project

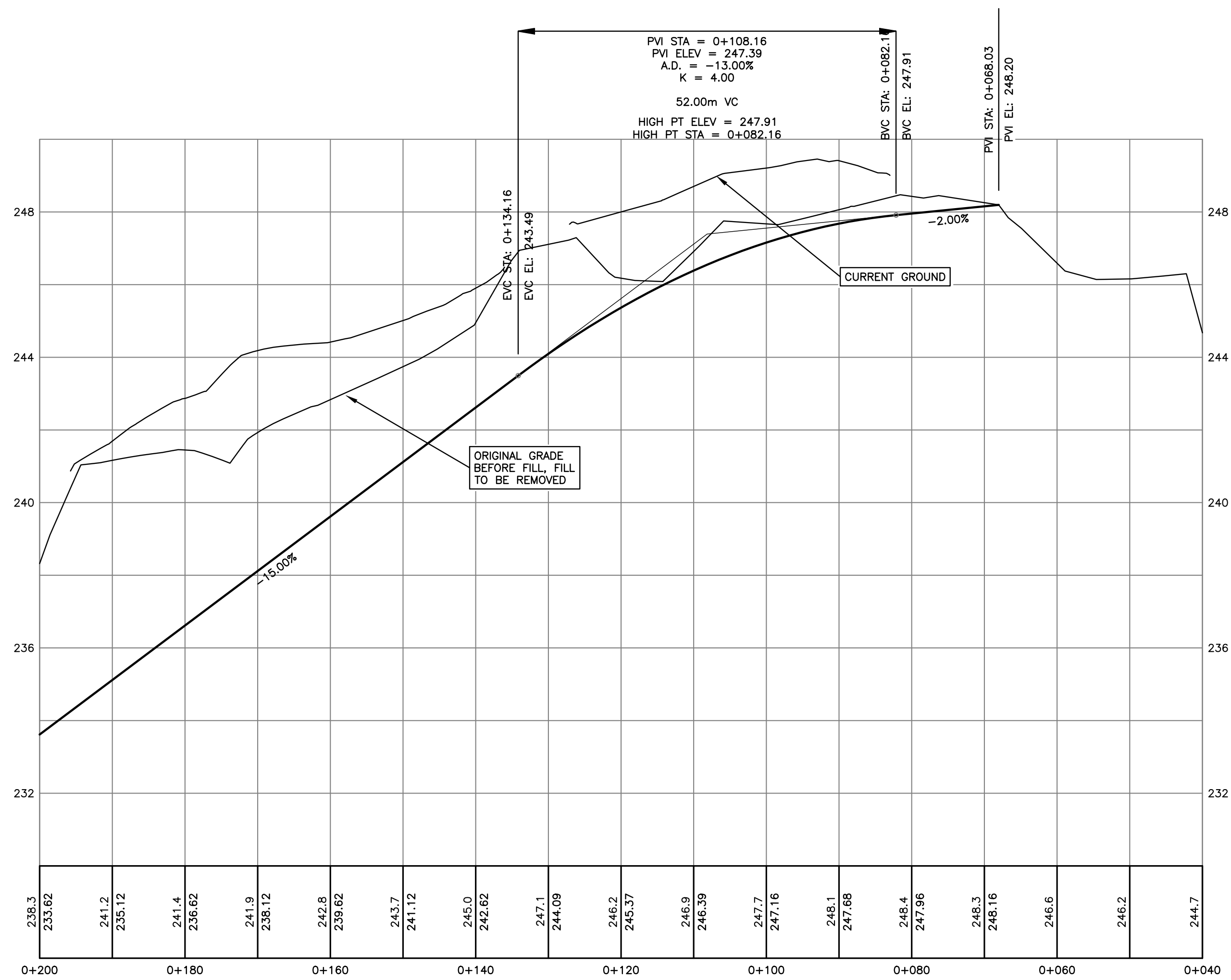
WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC

title

ROADWORKS  
ROAD A  
(STA. 0+040 - 0+200)

no.	(y/m/d)	revision	chk'd
11	17-04-11	RE-ISSUED FOR DP	AGC
10	17-03-29	REVISED PER DWV COMMENTS	AGC
9	17-03-15	REVISED PER DWV COMMENTS	AGC
8	17-02-09	REVISED PER DWV COMMENTS	AGC
7	17-01-26	REVISED PER DWV COMMENTS	AGC
6	17-01-18	REVISED LOTS	AGC
5	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
4	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

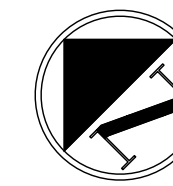
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engineer of record	KBH	11
designed by	KBH	file no.
drawn by	AGC	15171
date	2016-09-26	drawing no.
		R-3



**SIGNAGE & LINEPAINTING**

- ALL SIGNING AND PAVEMENT MARKINGS ARE TO BE AS PER MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION), AND THE BRITISH COLUMBIA MINISTRY OF TRANSPORTATION PAVEMENT MARKINGS MANUAL AND MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS.
- ALL PAVEMENT MARKINGS TO BE THERMOPLASTIC EXCEPT FOR LONG LINES OR WHERE INDICATED OTHERWISE
- TEMPORARY LINE PAINTING TO BE PAINT.
- UNLESS NOTED OTHERWISE, ALL LINE TYPES ARE 100mm WIDE.
- ALL NEW SIGNS TO BE MANUFACTURED WITH HIGH INTENSITY REFLECTIVITY & VETTED WITH MINISTRY OF TRANSPORTATION SIGNAGE DEPARTMENT TO ENSURE CONFORMANCE PRIOR TO ORDERING.
- ALL ROADSIDE SIGNS TO BE PLACED PER PER MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (LATEST EDITION) AND BE DAVIT TYPE SIGNS ADJACENT TO HIGHWAY.
- SIGN COLOURS, TEXT SIZE & FONTS TO CONFORM WITH T.A.C. AND DWV STANDARDS.
- SIGN POSTS TO BE ROUND. BOTTOM OF SIGNS TO BE 2.0m - 3.0m ABOVE GROUND.
- BASES TO BE 36KG CONCRETE TRAPEZOIDAL WITH SLEEVES BY VALLEY SIGNS OR APPROVED EQUAL IN BOULEVARD. SLEEVES TO BE USED IN SIDEWALKS/CONCRETE AREAS.
- BASES TO BE BURRED TO 25mm FROM THE TOP AND BASE TO BE SECURE IN GROUND.
- ALL SIGNS TO BE INSTALLED VERTICALLY, TOLERANCE 2'.
- CONTRACTOR TO ERADICATE ALL EXISTING LINE PAINTING THAT DOES NOT COINCIDE WITH PROPOSED. ERADICATION BY PAINTING IS NOT ALLOWED UNLESS OTHERWISE INDICATED
- ALL PERMANENT SIGNAGE TO BE SUPPLIED AND INSTALLED BY THE DISTRICT OF WEST VANCOUVER AT THE DEVELOPER'S COST.

NOT FOR CONSTRUCTION

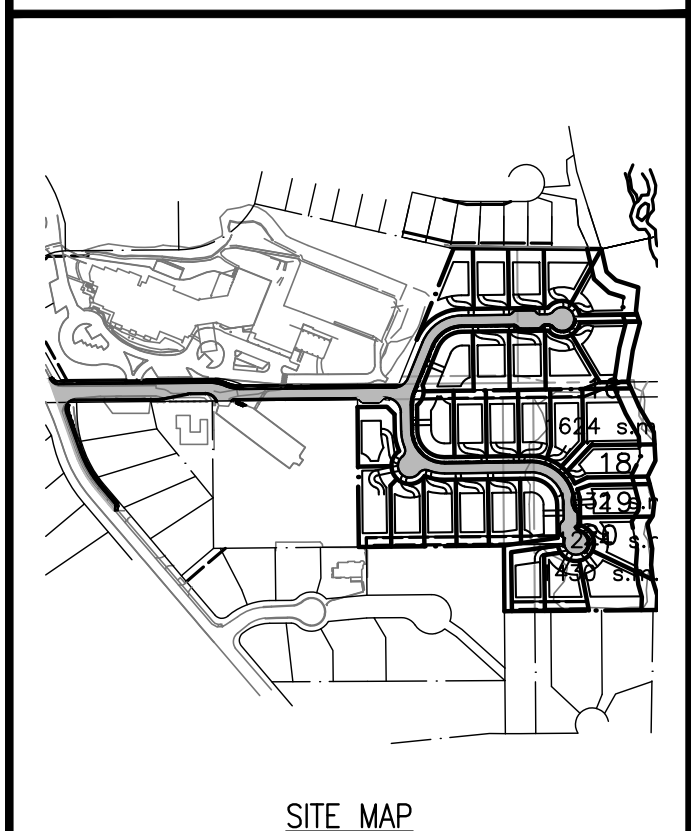


SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

CONTRACTOR TO VERIFY & LOCATE  
 EXISTING MAINS & SERVICE  
 CONNECTIONS & NOTIFY THE  
 ENGINEER OF ANY DISCREPANCIES  
 PRIOR TO BEGINNING CONSTRUCTION

# CREUS Engineering

Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P1R2  
 PH: 604-987-9070 WEBSITE: www.creus.ca



SITE MAP

### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/ISI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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client  
**EVERVAN**

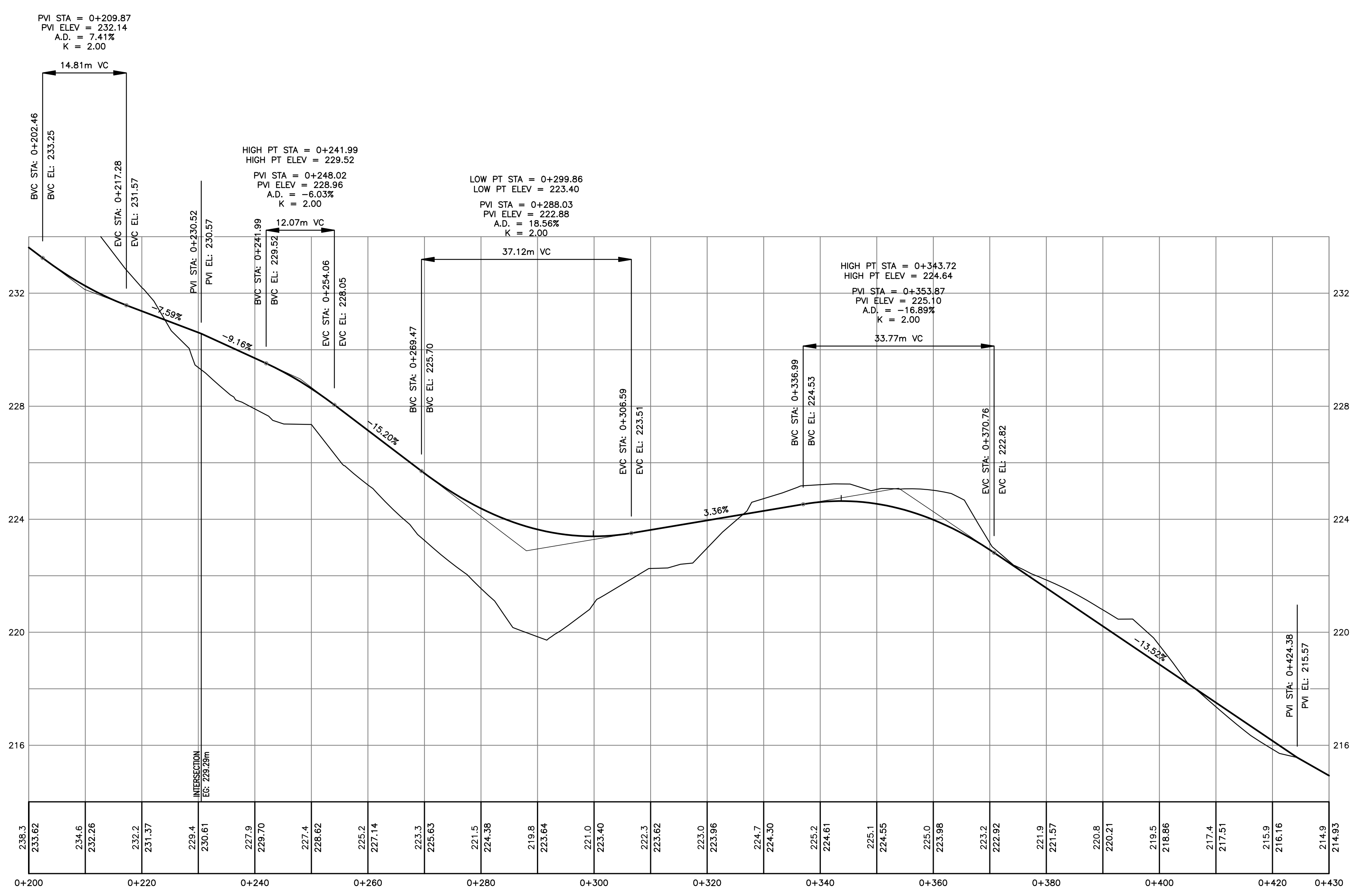
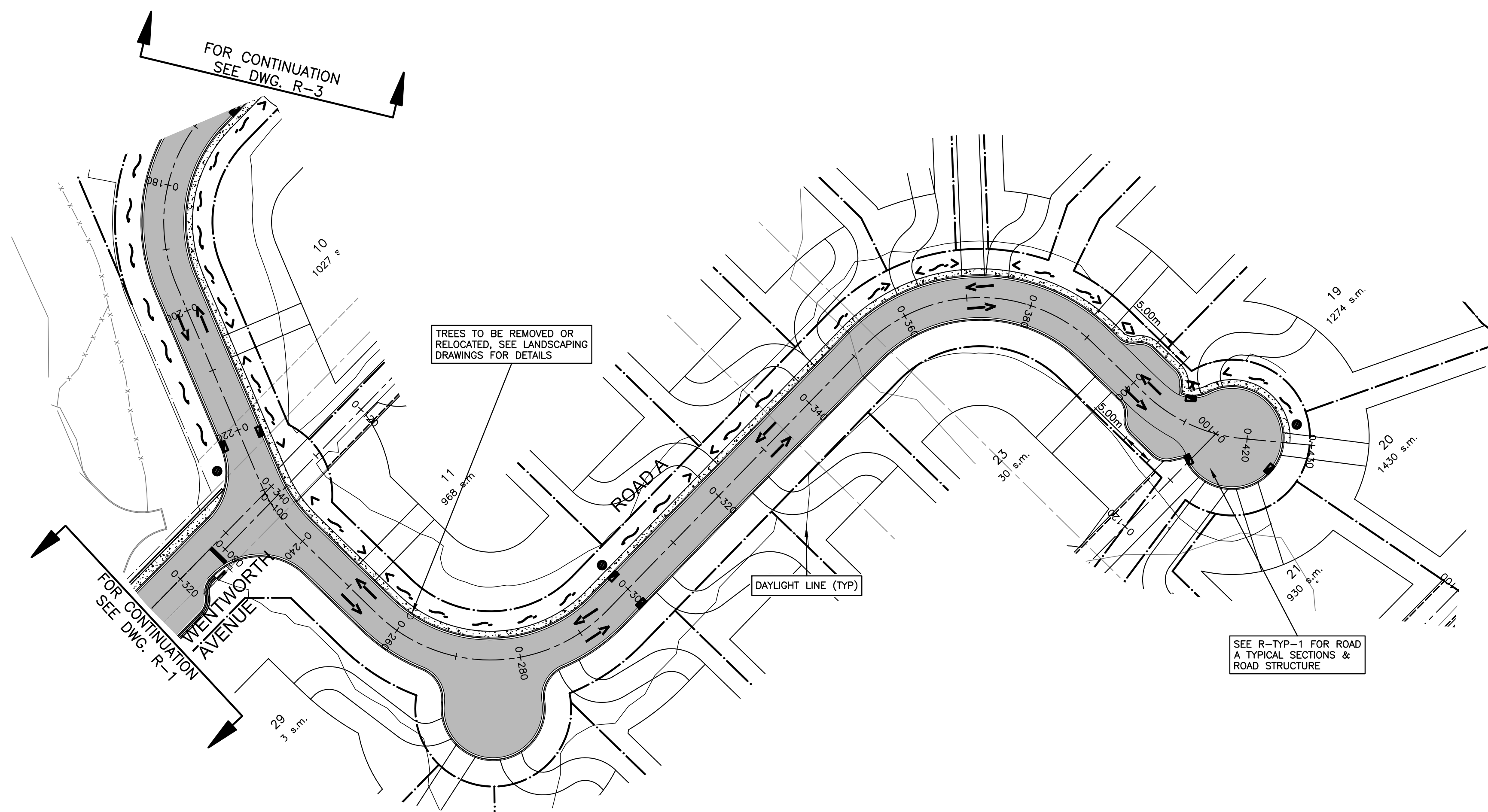
project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title  
**ROADWORKS  
ROAD A (STA. 0+200 - 0+430)**

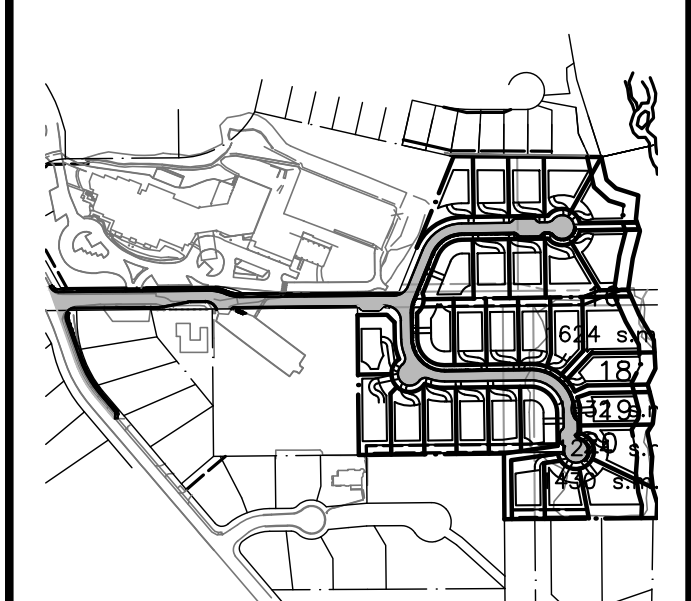
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11	17-03-29	REVISED PER DWV COMMENTS	AGC
10	17-03-15	REVISED PER DWV COMMENTS	AGC
9	17-03-15	REVISED PER DWV COMMENTS	AGC
8	17-02-09	REVISED PER DWV COMMENTS	AGC
7	17-01-27	REVISED PER DWV COMMENTS	AGC
6	17-01-18	REVISED LOTS	AGC
5	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC

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engineer of record	KBH	scales	hor: 1:500	vert: 1:100
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drawn by	AGC	drawing no.	R-4	
date	2016-09-26			



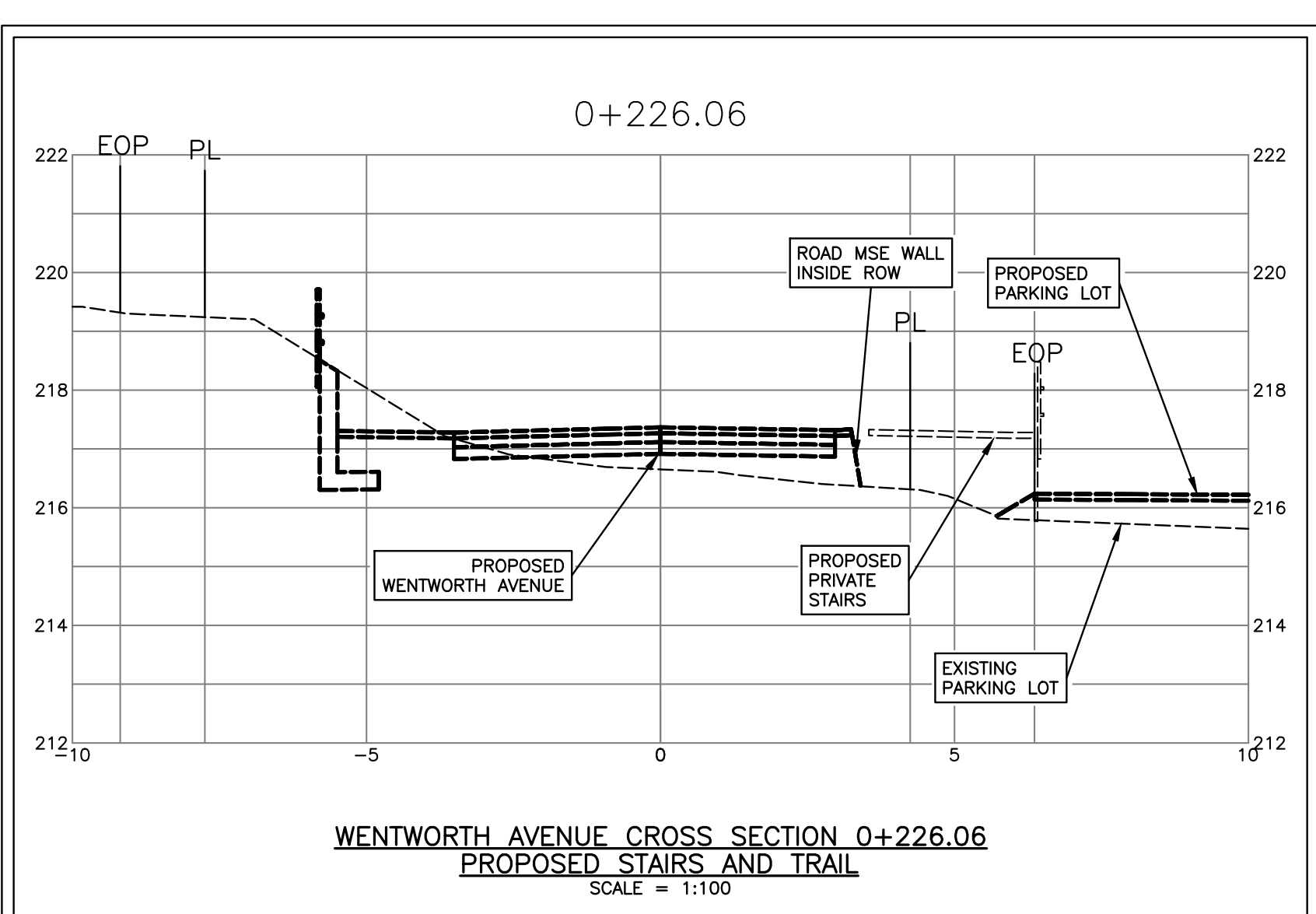
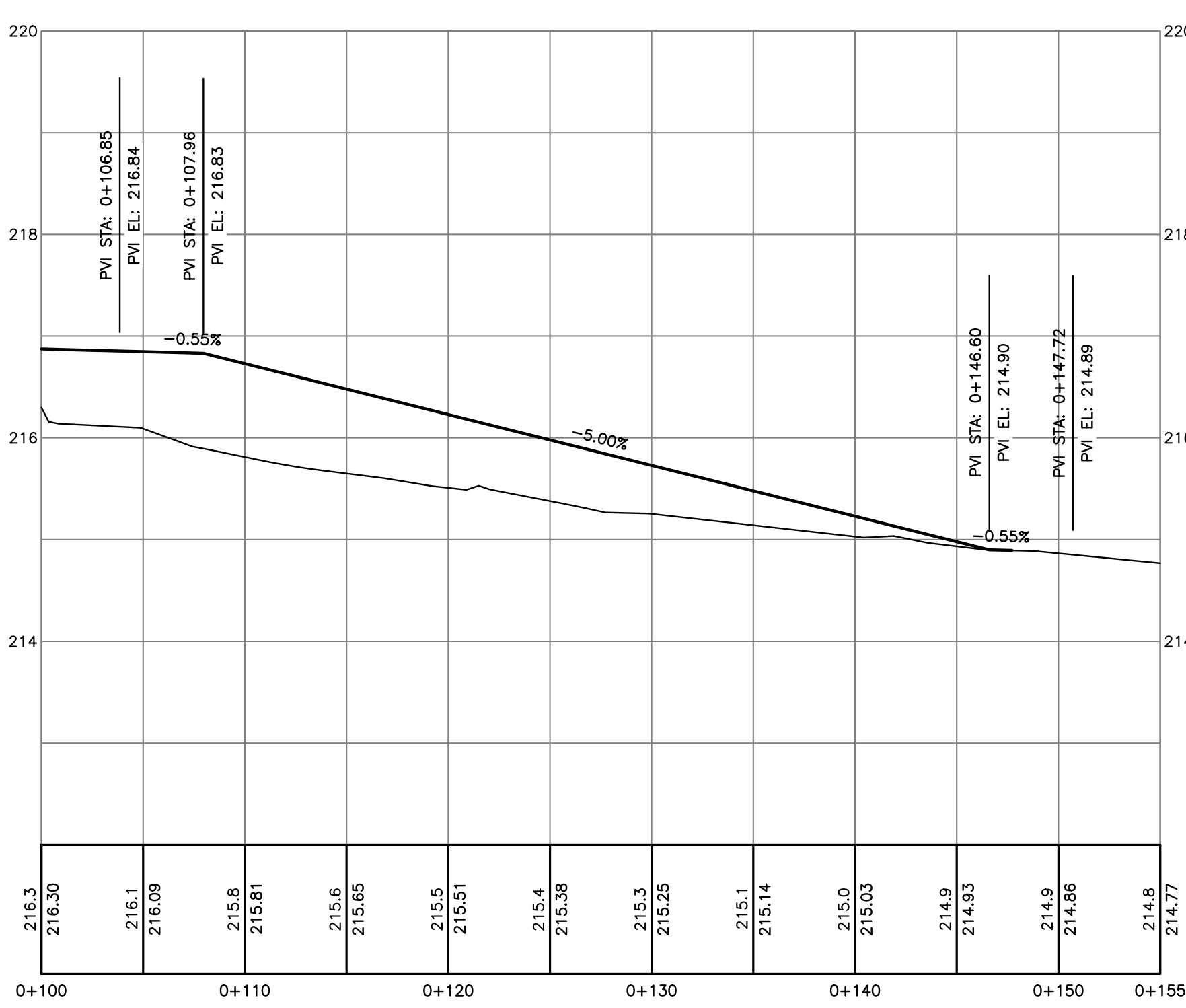
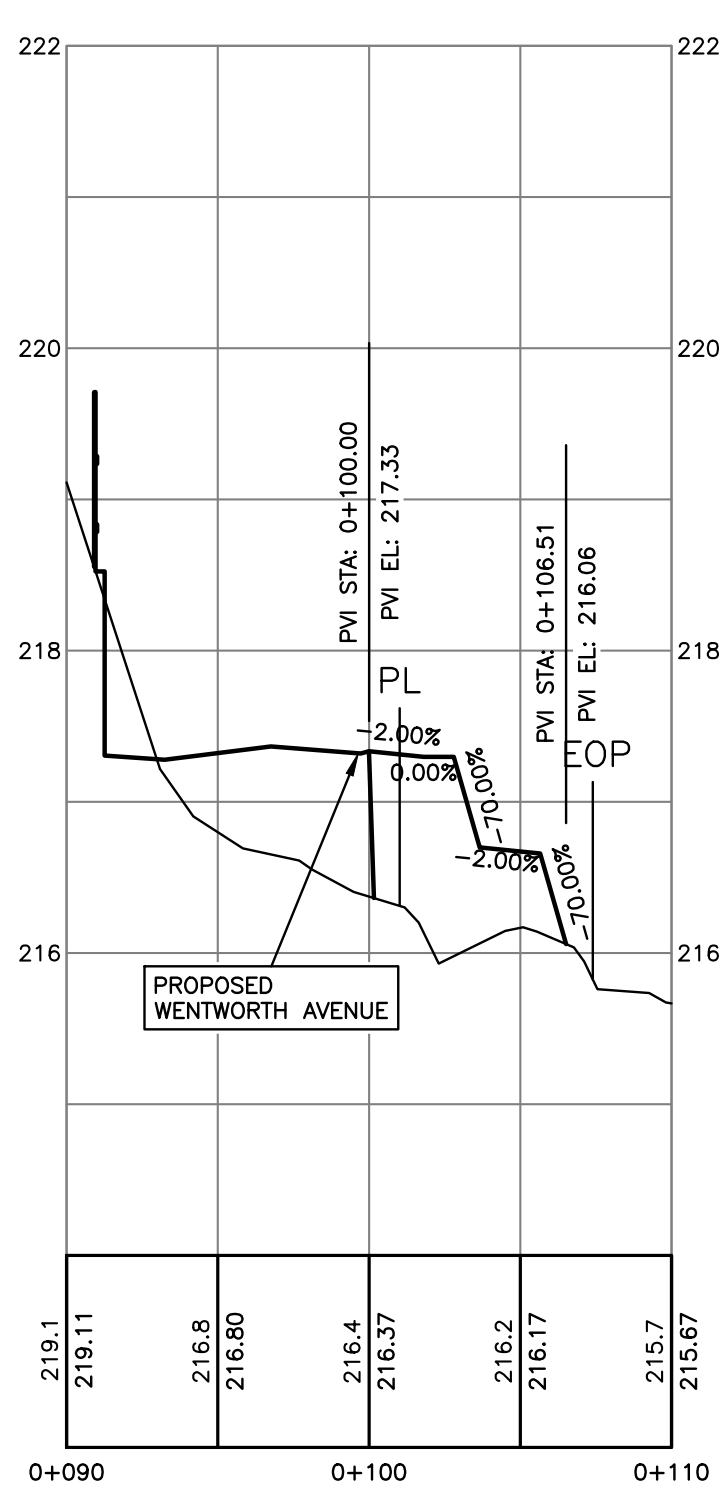
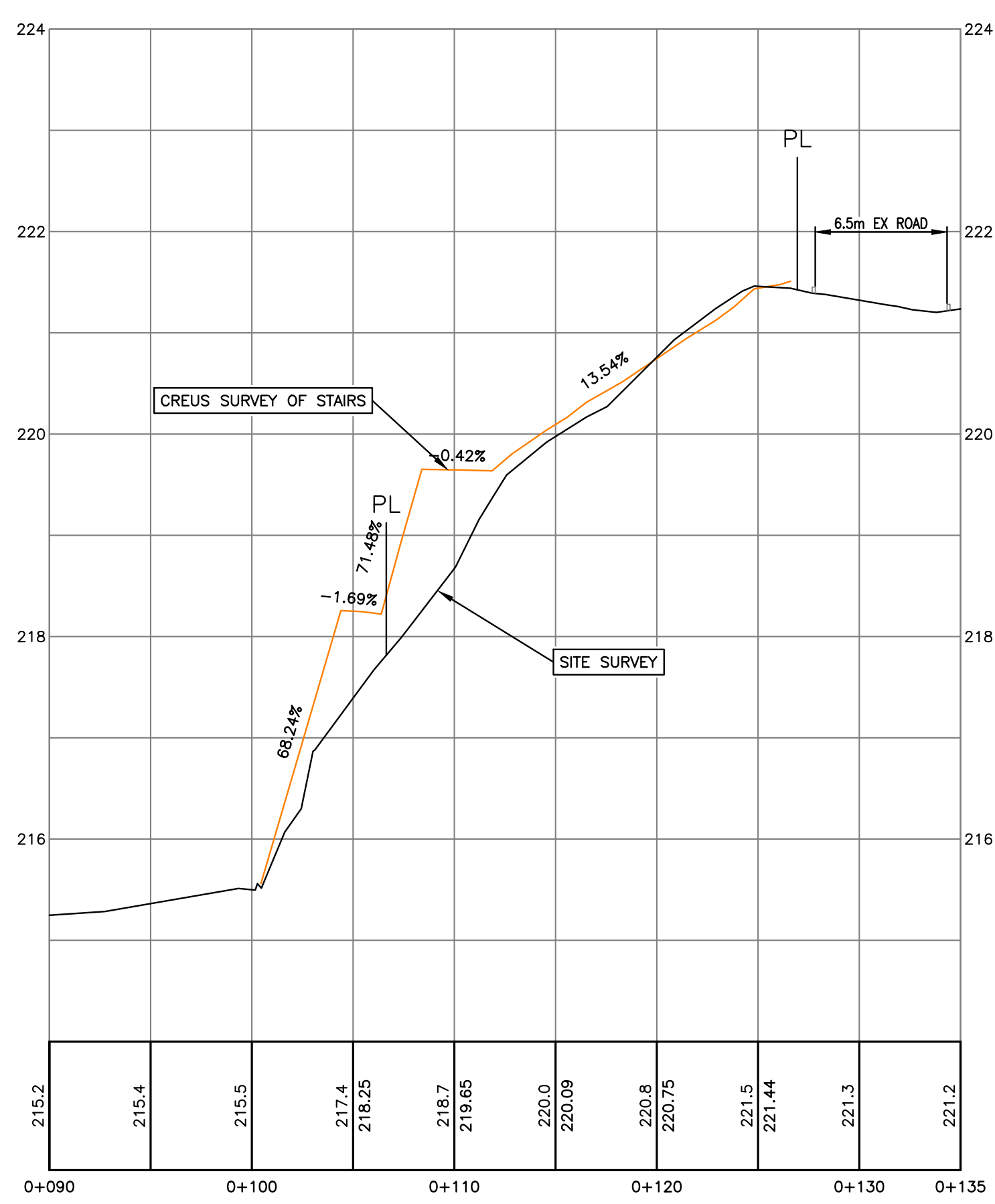
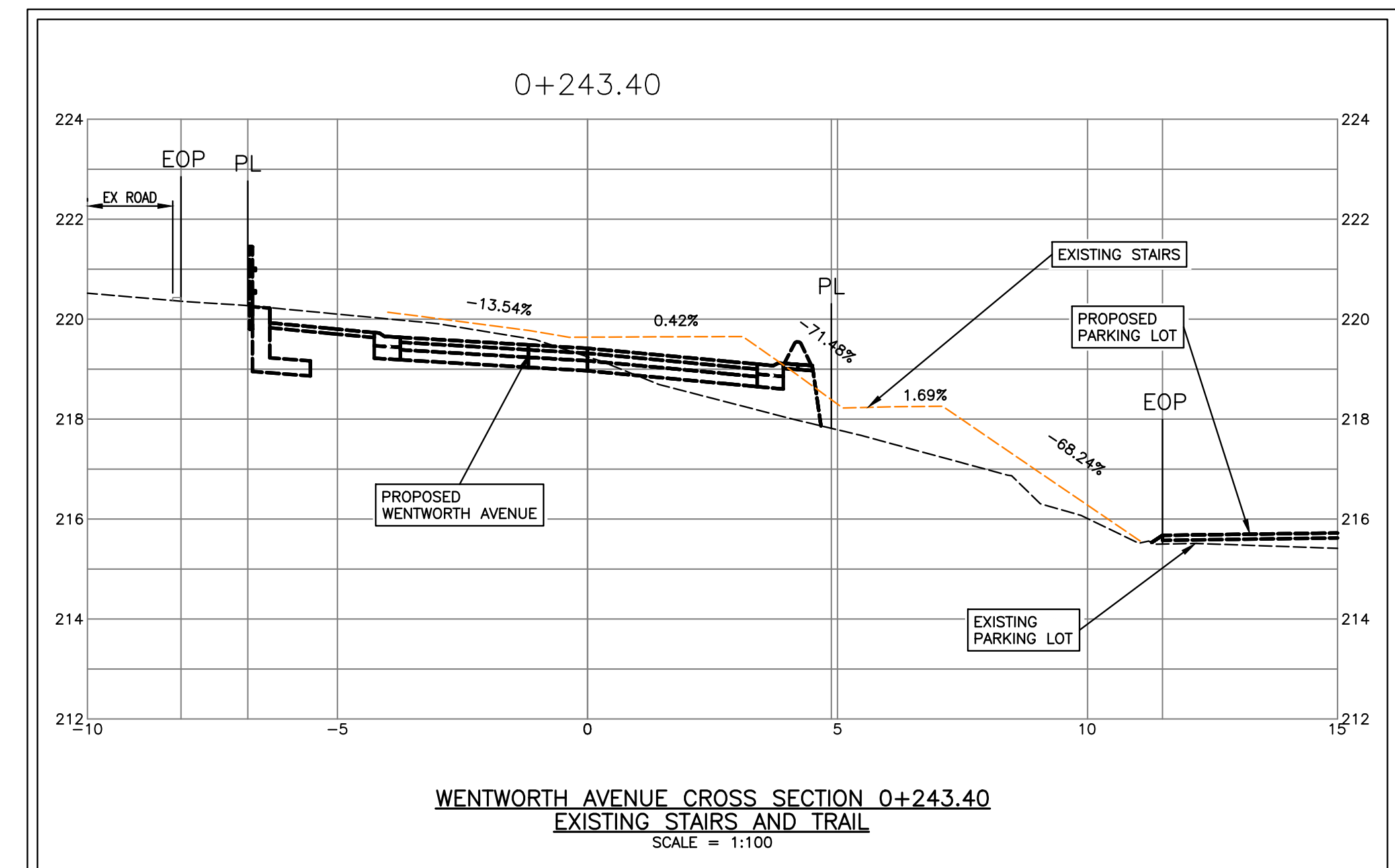
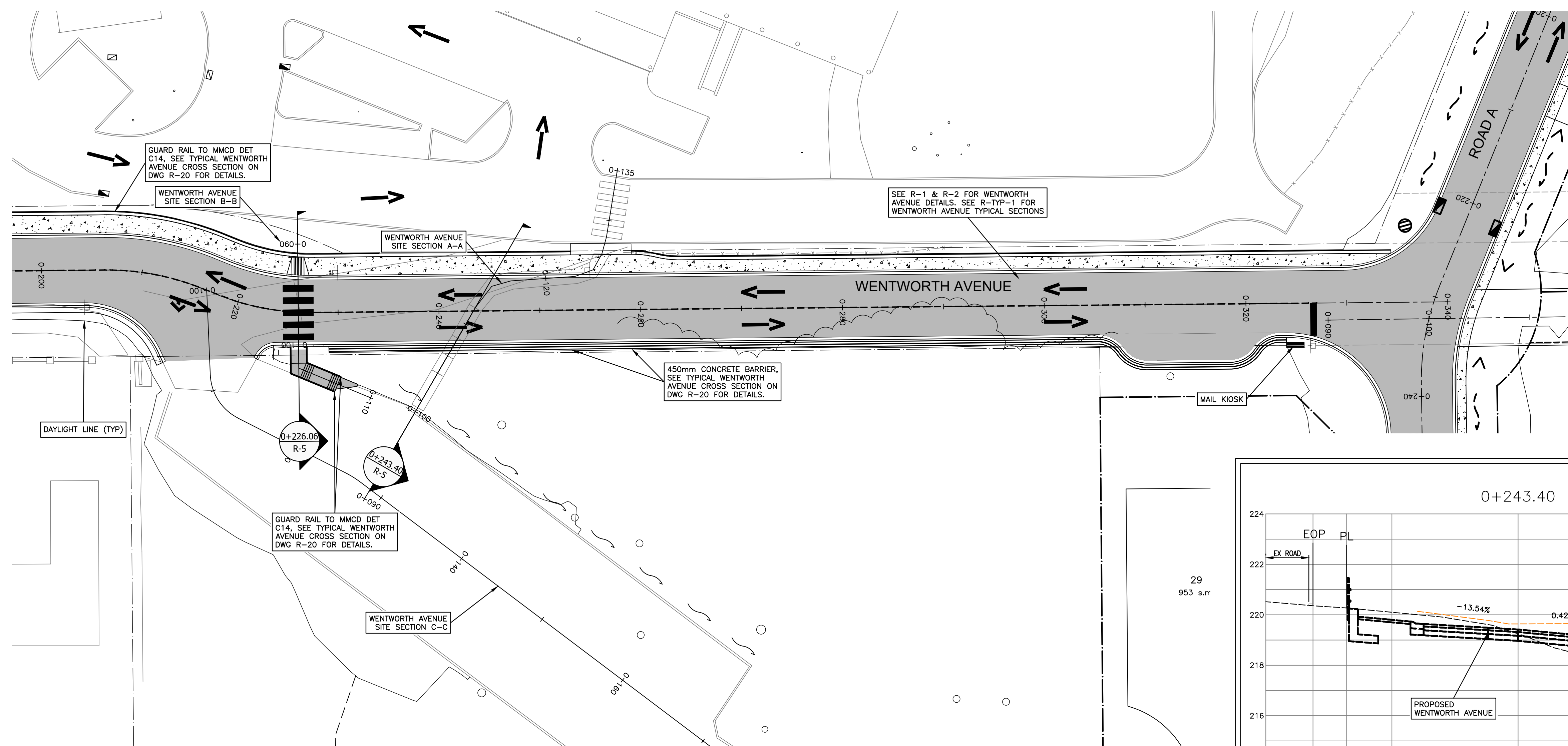
**NOT FOR CONSTRUCTION**



SITE MAP

SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION



DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/ISI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

approved

client

EVERVAN

project

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

title

ROADWORKS  
 WENTWORTH AVENUE STAIRS

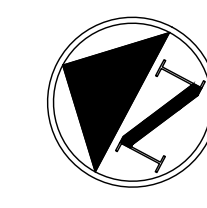
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10	17-03-29	REVISED PER DWV COMMENTS	AGC
9	17-03-15	REVISED PER DWV COMMENTS	AGC
8	17-02-09	REVISED PER DWV COMMENTS	AGC
7	17-01-26	REVISED PER DWV COMMENTS	AGC
6	17-01-18	REVISED LOTS	AGC
5	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
4	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

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engineer of record	scales	hor.	vert.
KBH		1:250	1:50
designed by	file no.	15171	
KBH			
drawn by	drawing no.	R-5	
AGC			
date		2016-09-26	

NOT FOR CONSTRUCTION

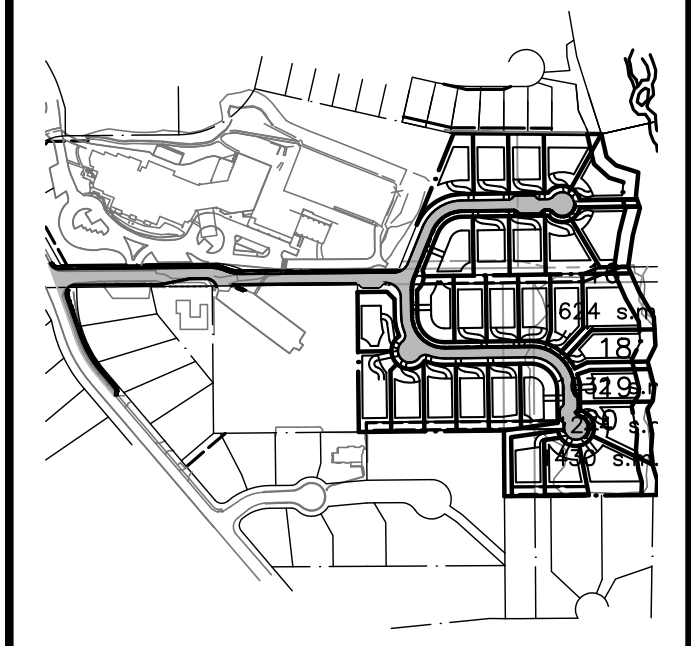
CONTRACTOR TO VERIFY & LOCATE EXISTING MAINS & SERVICE CONNECTIONS & NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION



SEE DRAWING KEY-1 FOR GENERAL NOTES  
 SEE DRAWING S-1 FOR SANITARY NOTES  
 SEE DRAWING D-1 FOR STORM NOTES  
 SEE DRAWING W-1 FOR WATERWORKS NOTES  
 SEE DRAWING R-3 FOR ROADWORKS NOTES  
 SEE DRAWING R-3 FOR SIGNAGE & LINEPAINT NOTES

# CREUS Engineering

Civil Engineers & Project Managers  
 SUITE 200-901 16TH ST WEST, NORTH VANCOUVER BC, V7P1R2  
 PH: 604-987-9070 WEBSITE: www.creus.ca



SITE MAP

### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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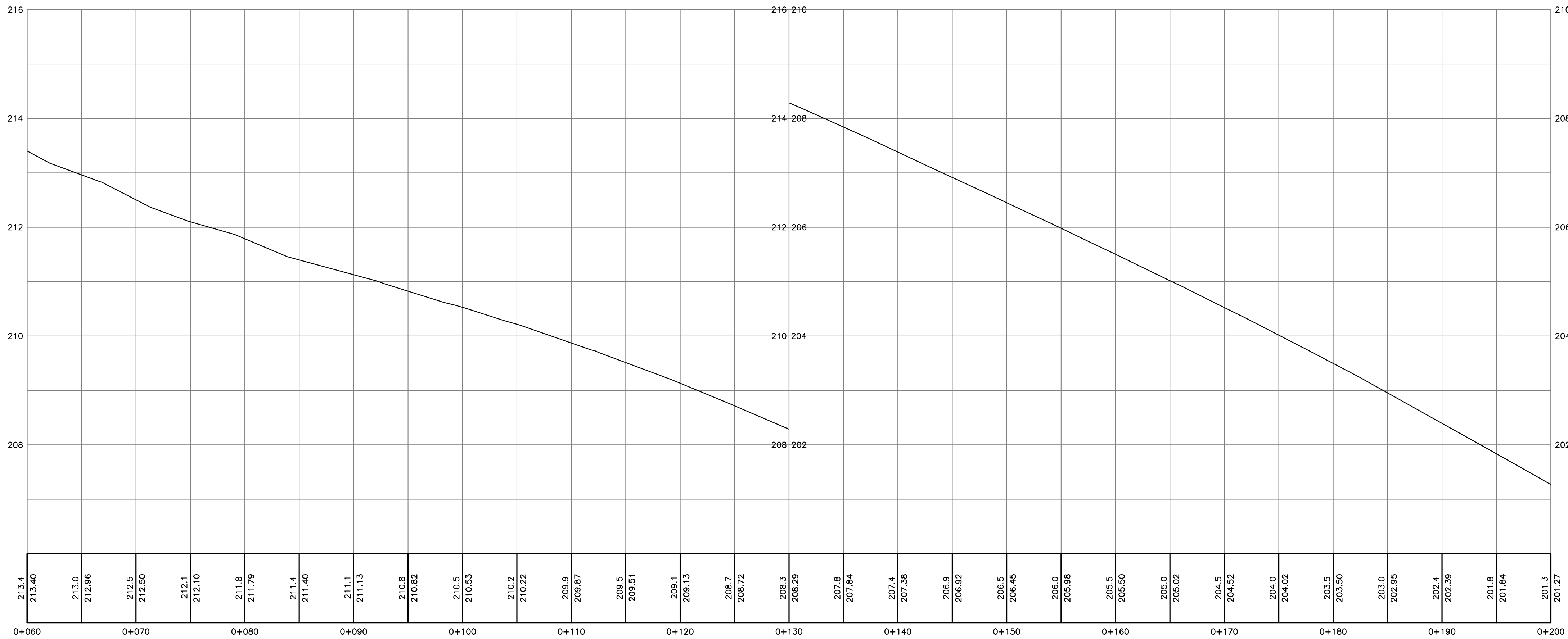
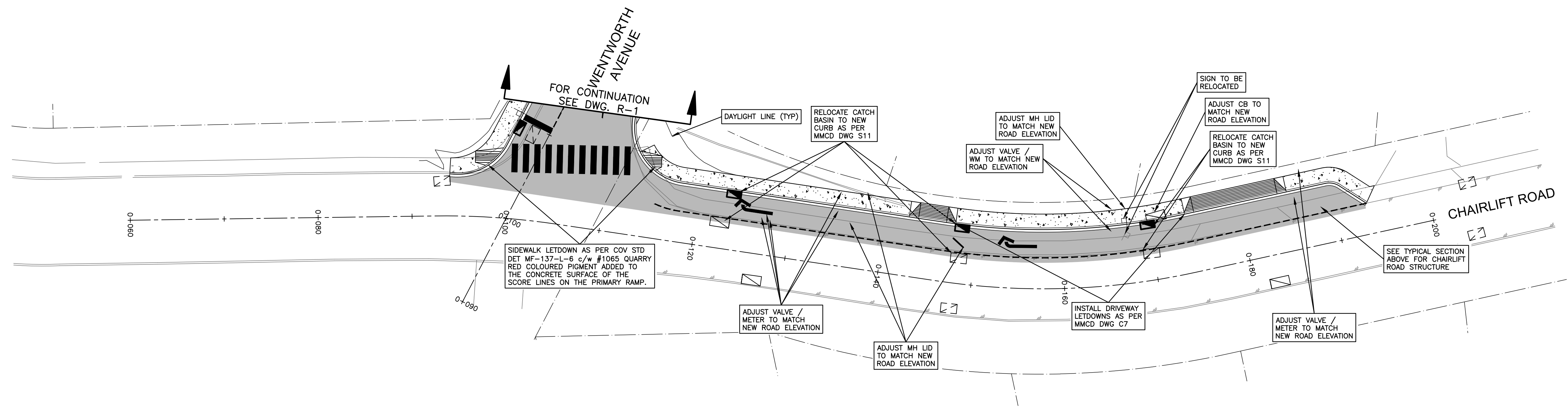
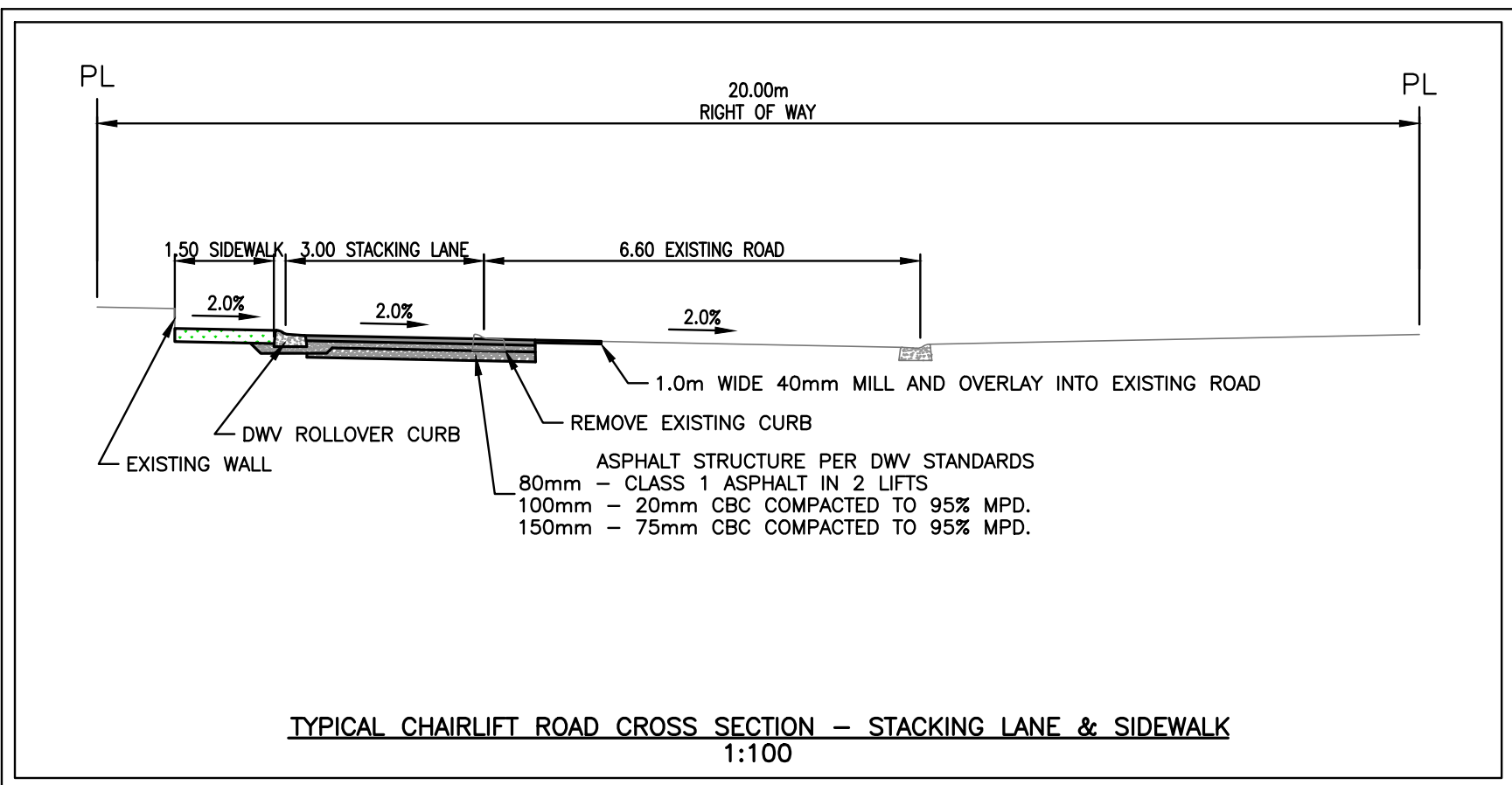
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**WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC**

title  
**ROADWORKS  
 CHAIRLIFT ROAD**

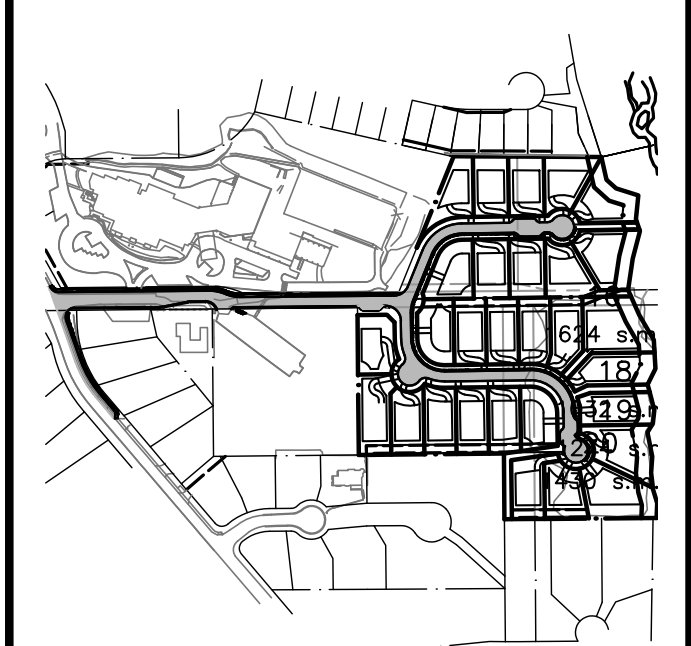
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4	17-02-09	REVISED PER DWV COMMENTS	AGC
3	17-01-26	REVISED PER DWV COMMENTS	AGC
2	17-01-18	REVISED LOTS	AGC
1	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC

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engineer of record	file no.
KBH	15171
designed by	drawn no.
KBH	R-6
drawn by	date
AGC	2016-09-26



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SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊕	⊕	⊕
AIR VALVE	⊙	⊙	⊙
REDUCER	⊘	⊘	⊘
INSPECTION CHAMBER	⊠	⊠	⊠
CATCHBASIN (STD/ISI)	⊡	⊡	⊡
GAP	---	---	---
MANHOLE	⊙	⊙	⊙
POWER POLE	⊕	⊕	⊕
STREETLIGHT	⊙	⊙	⊙

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client

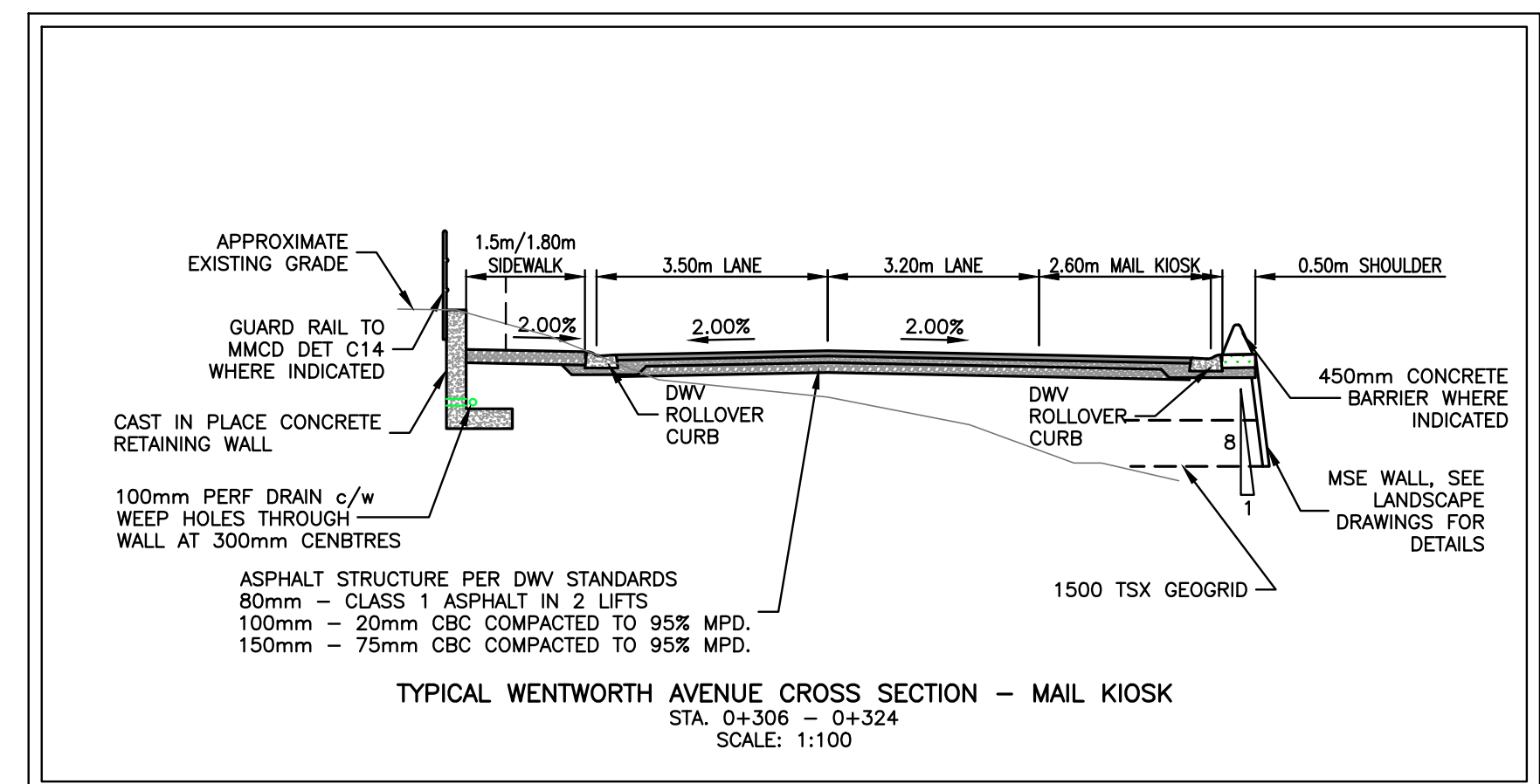
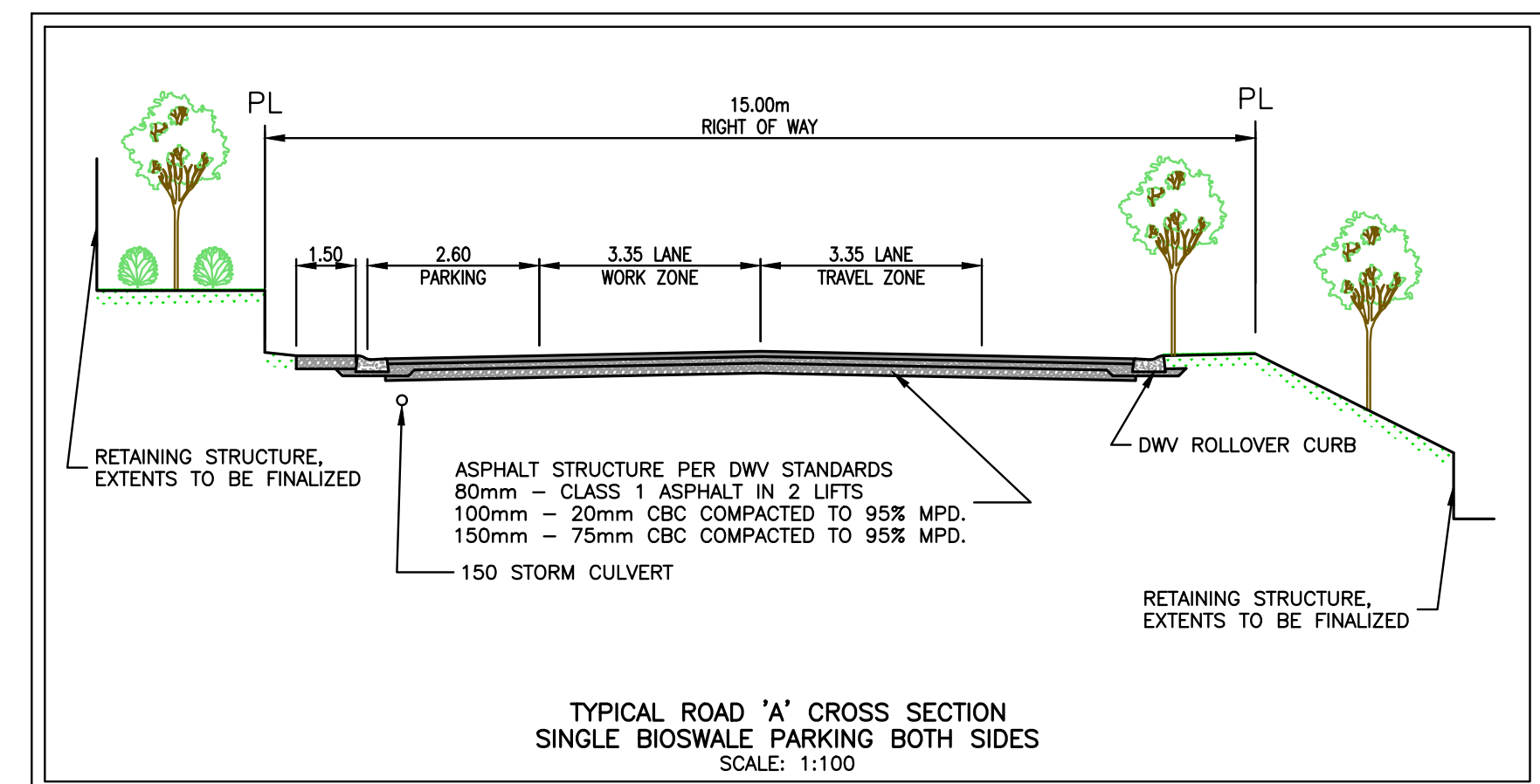
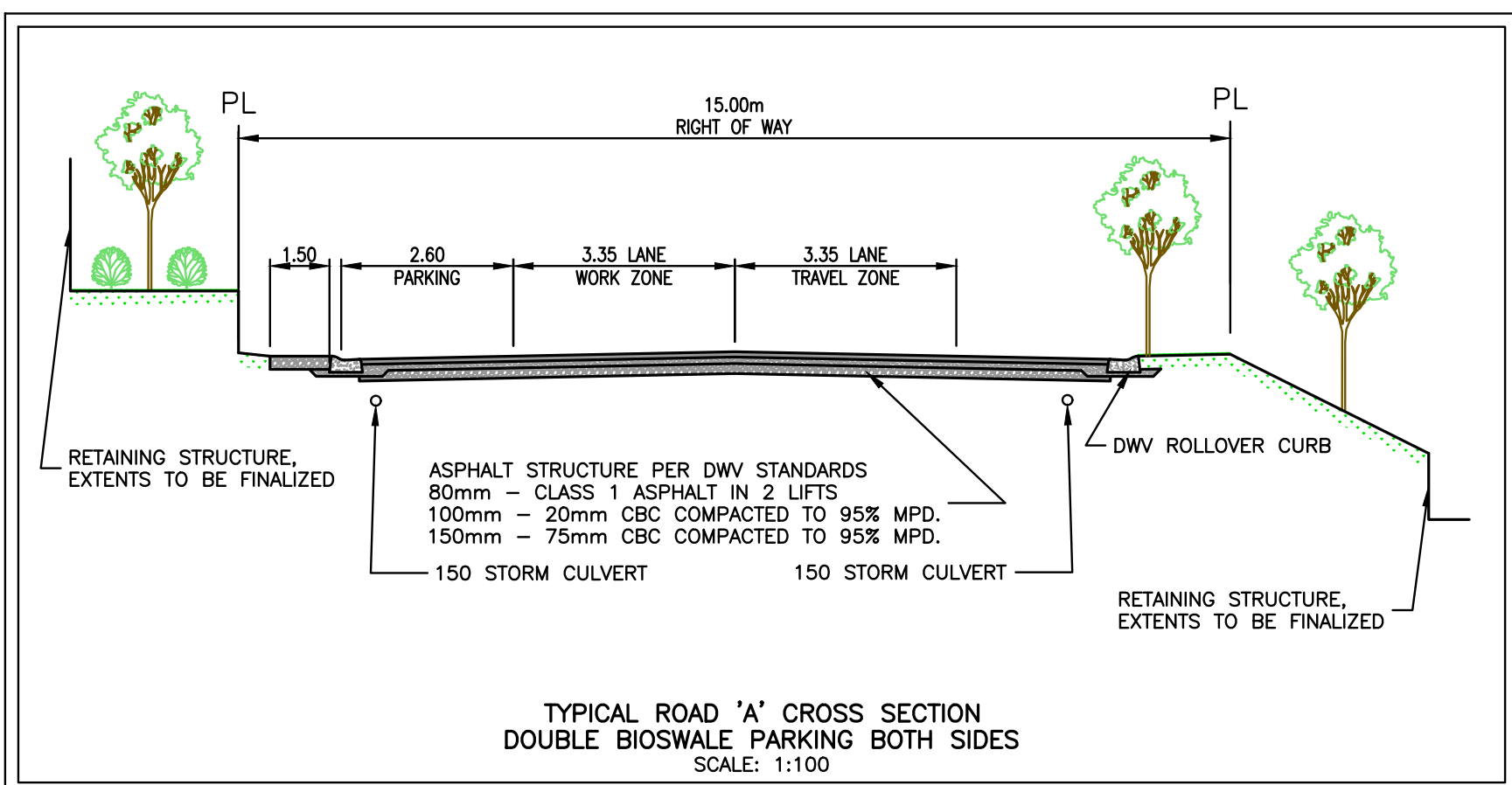
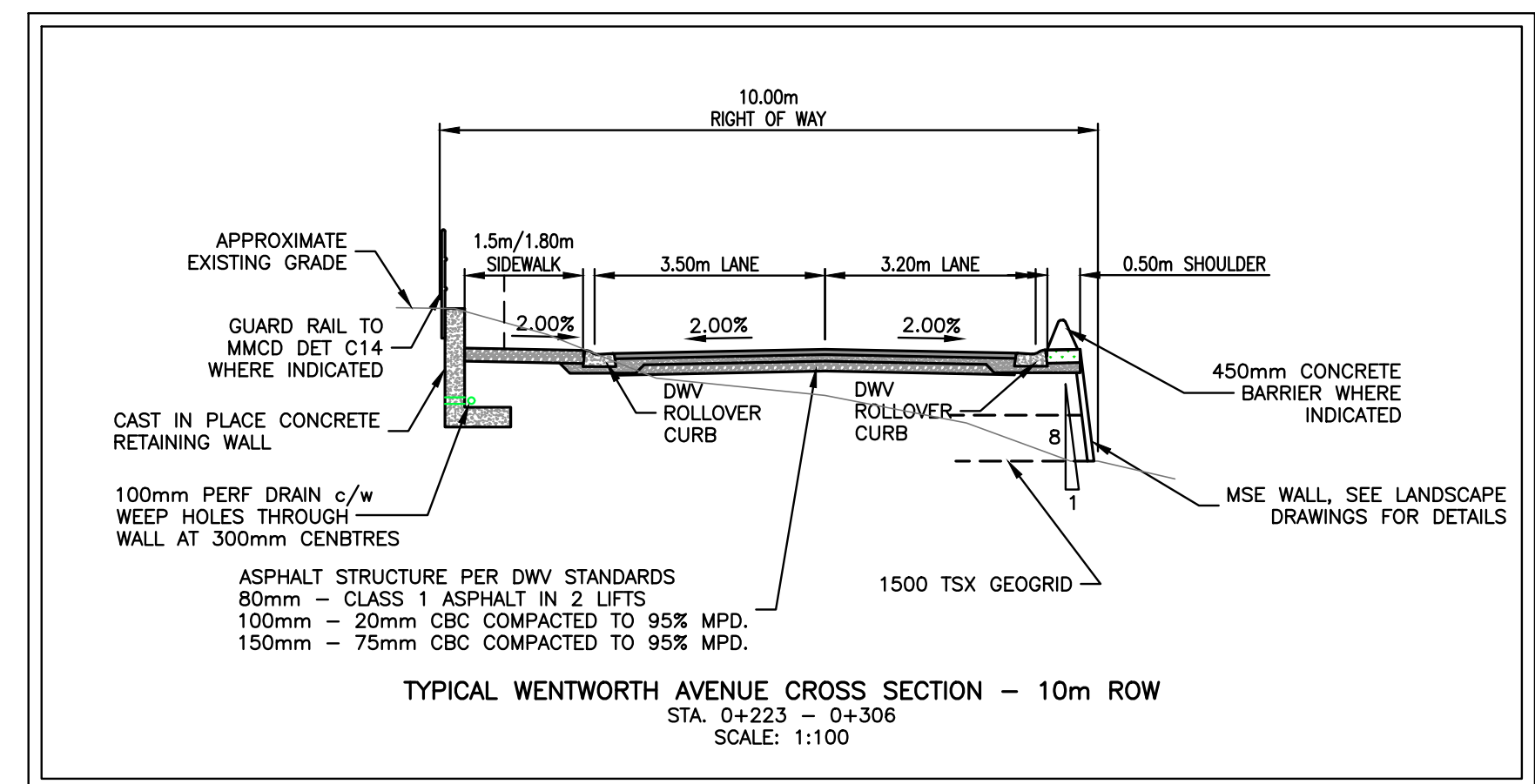
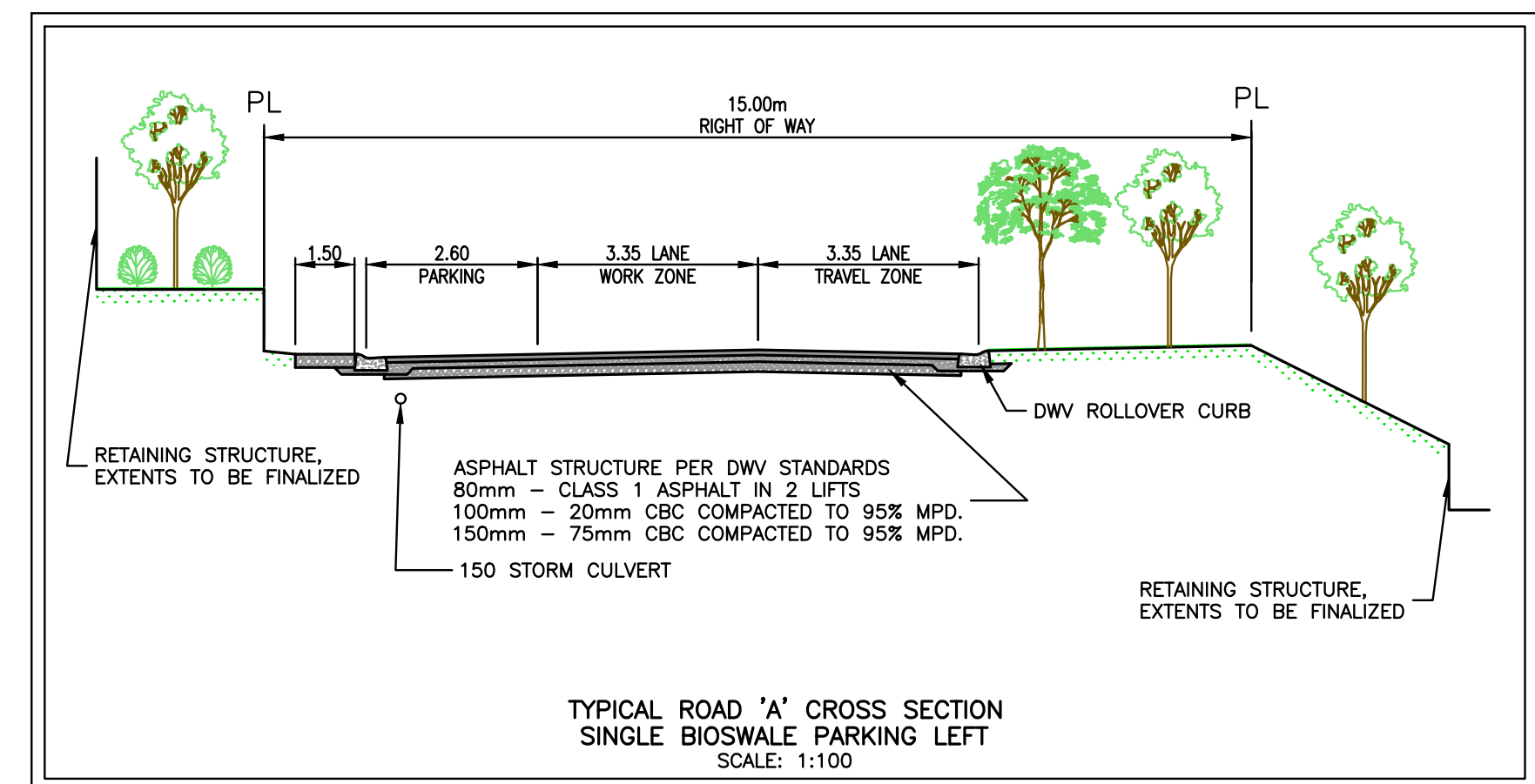
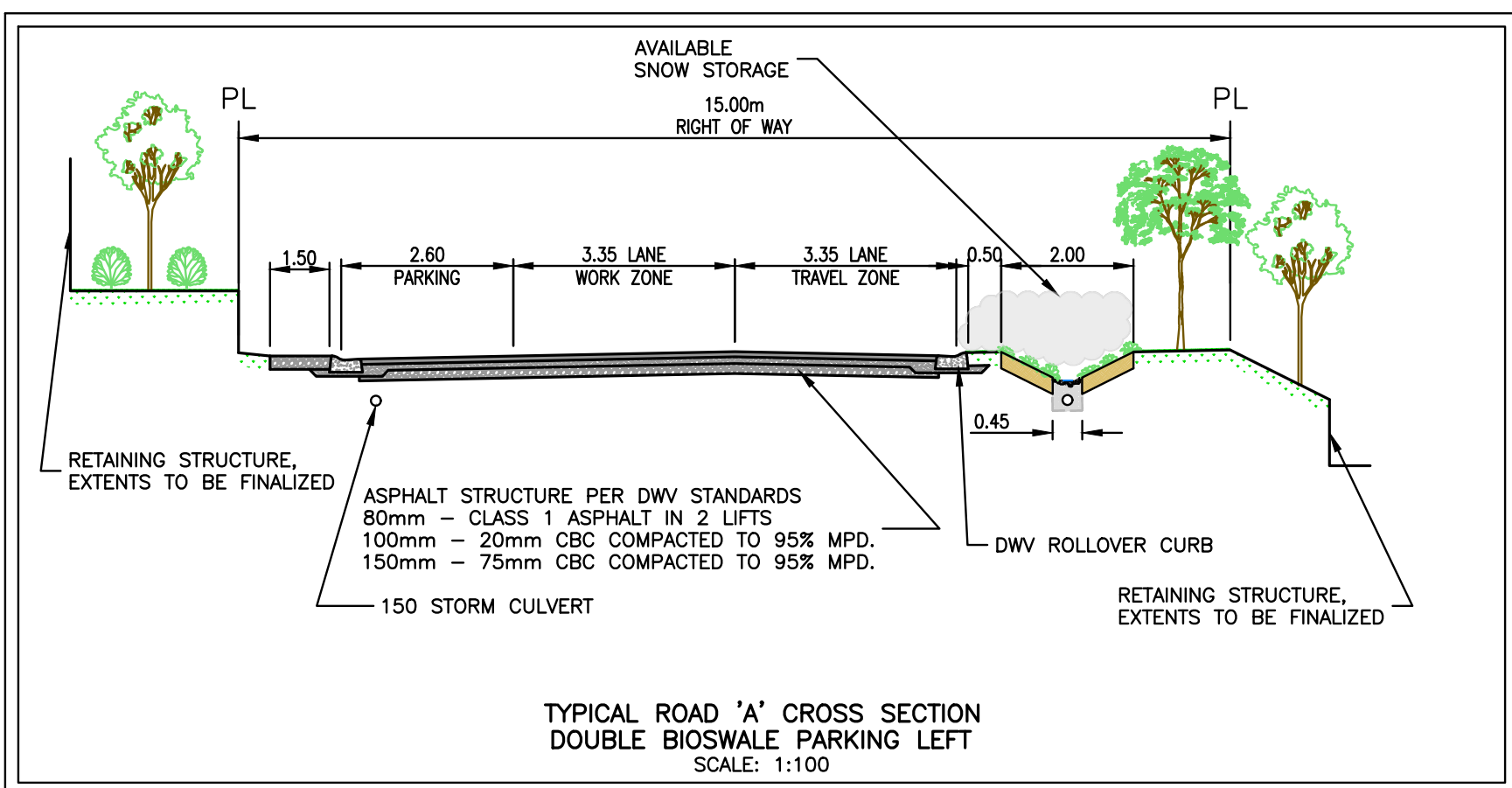
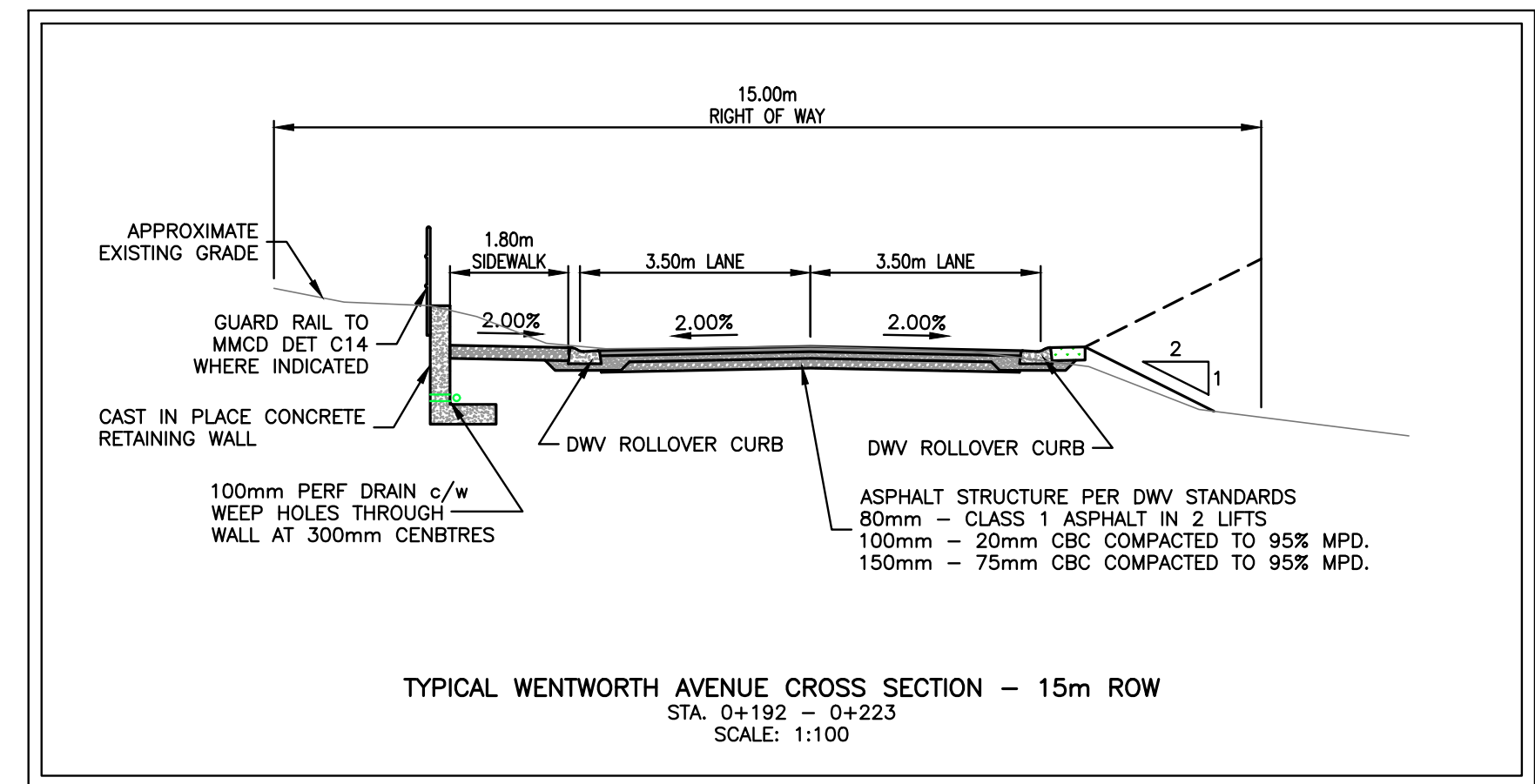
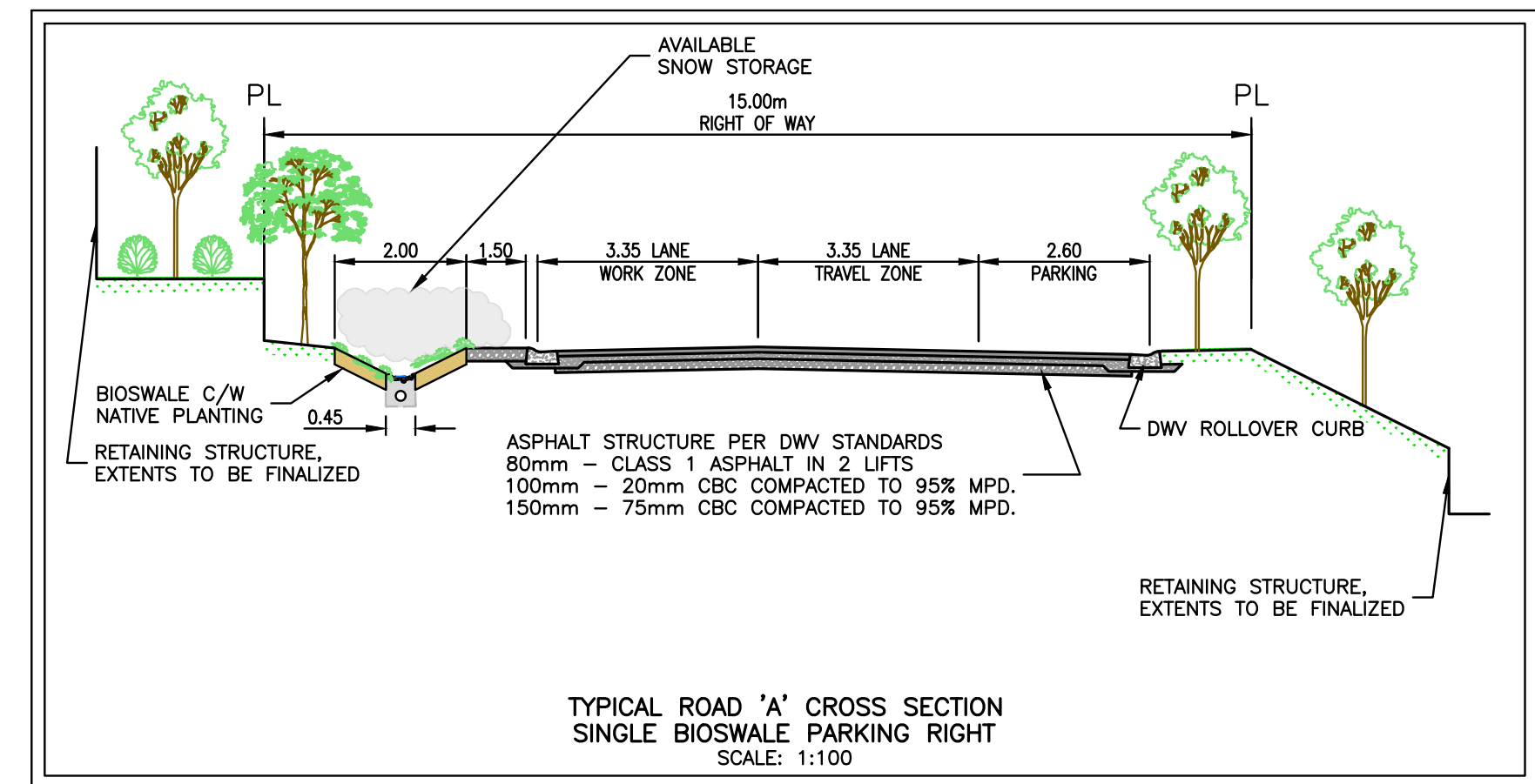
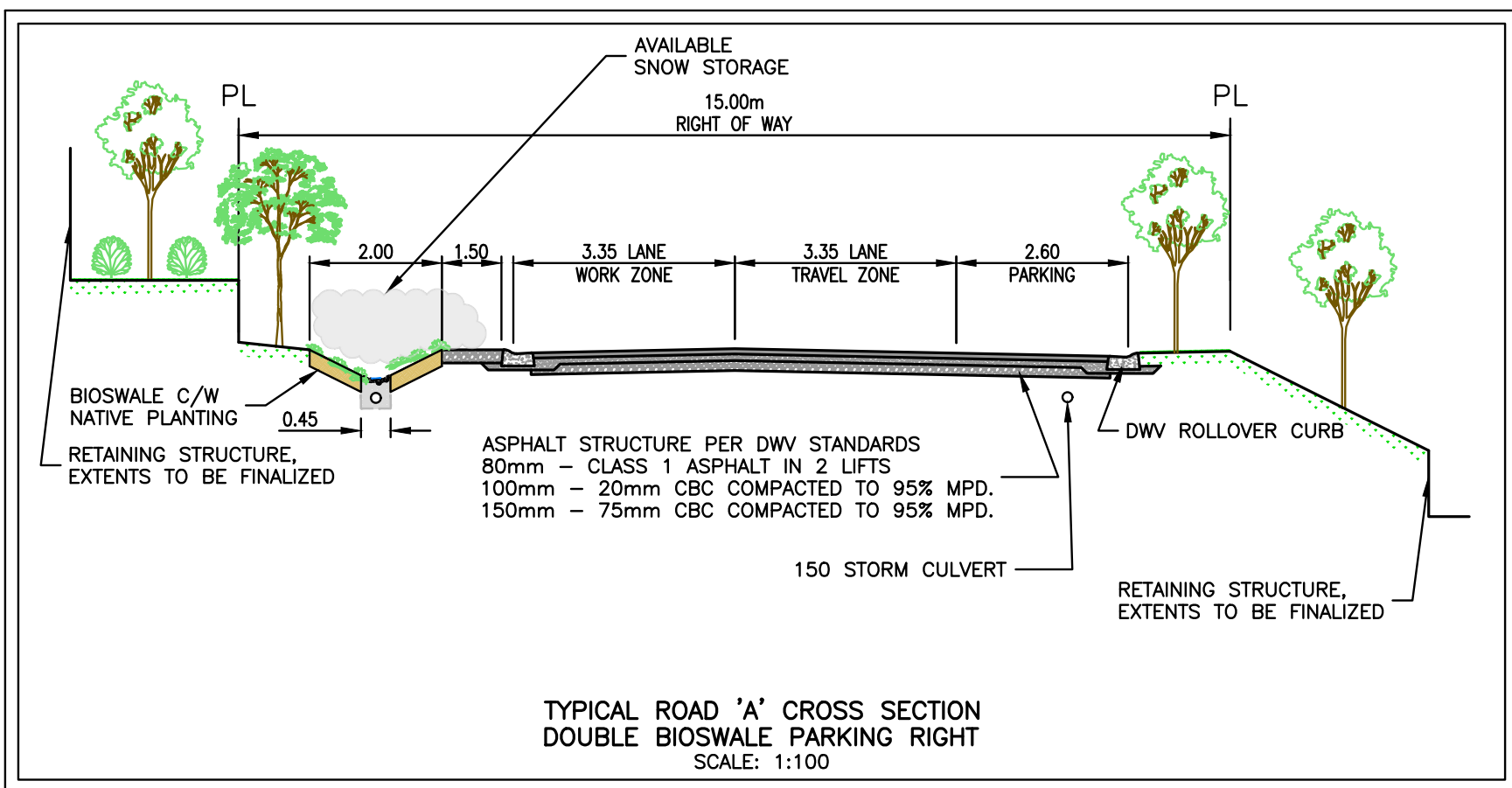
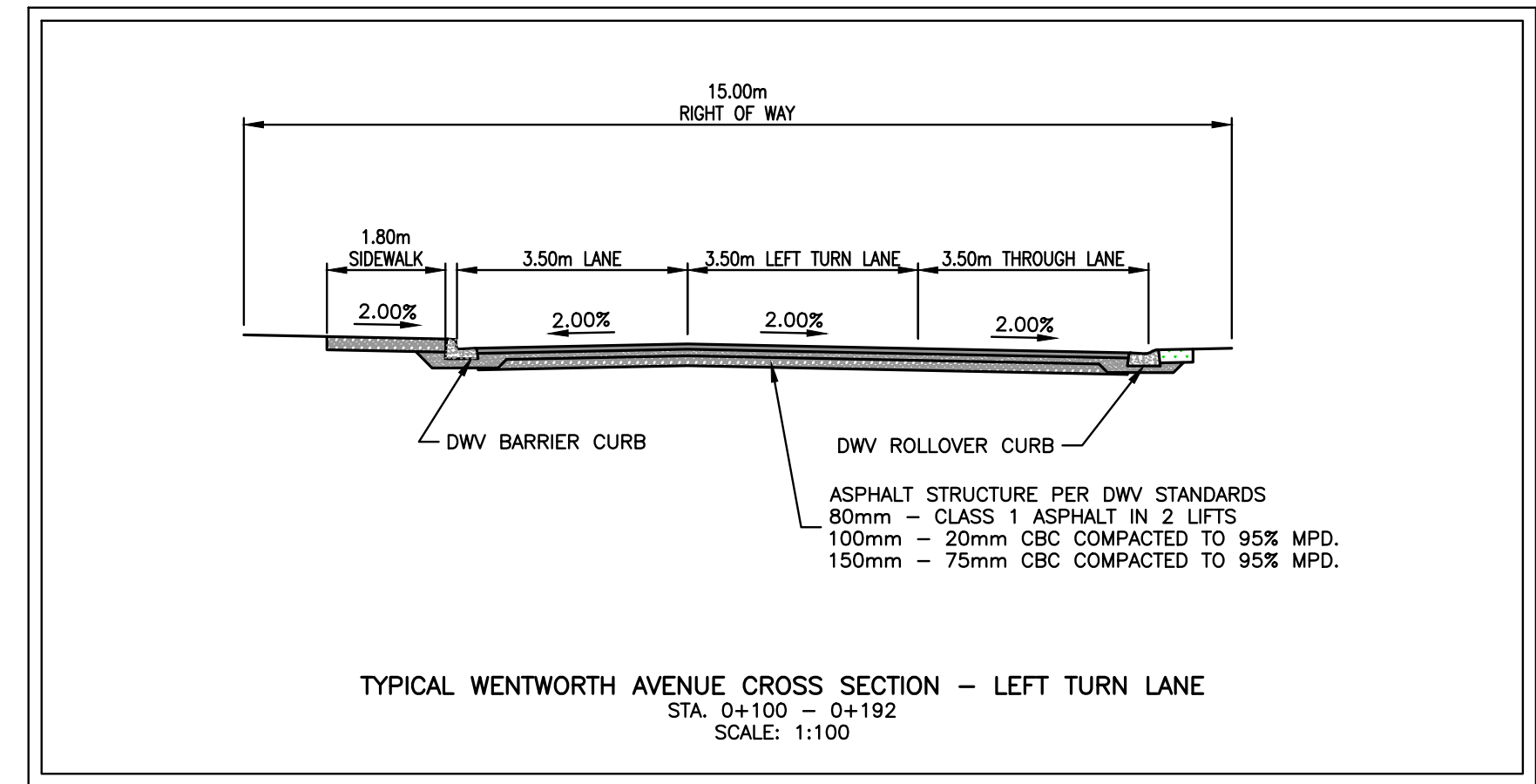
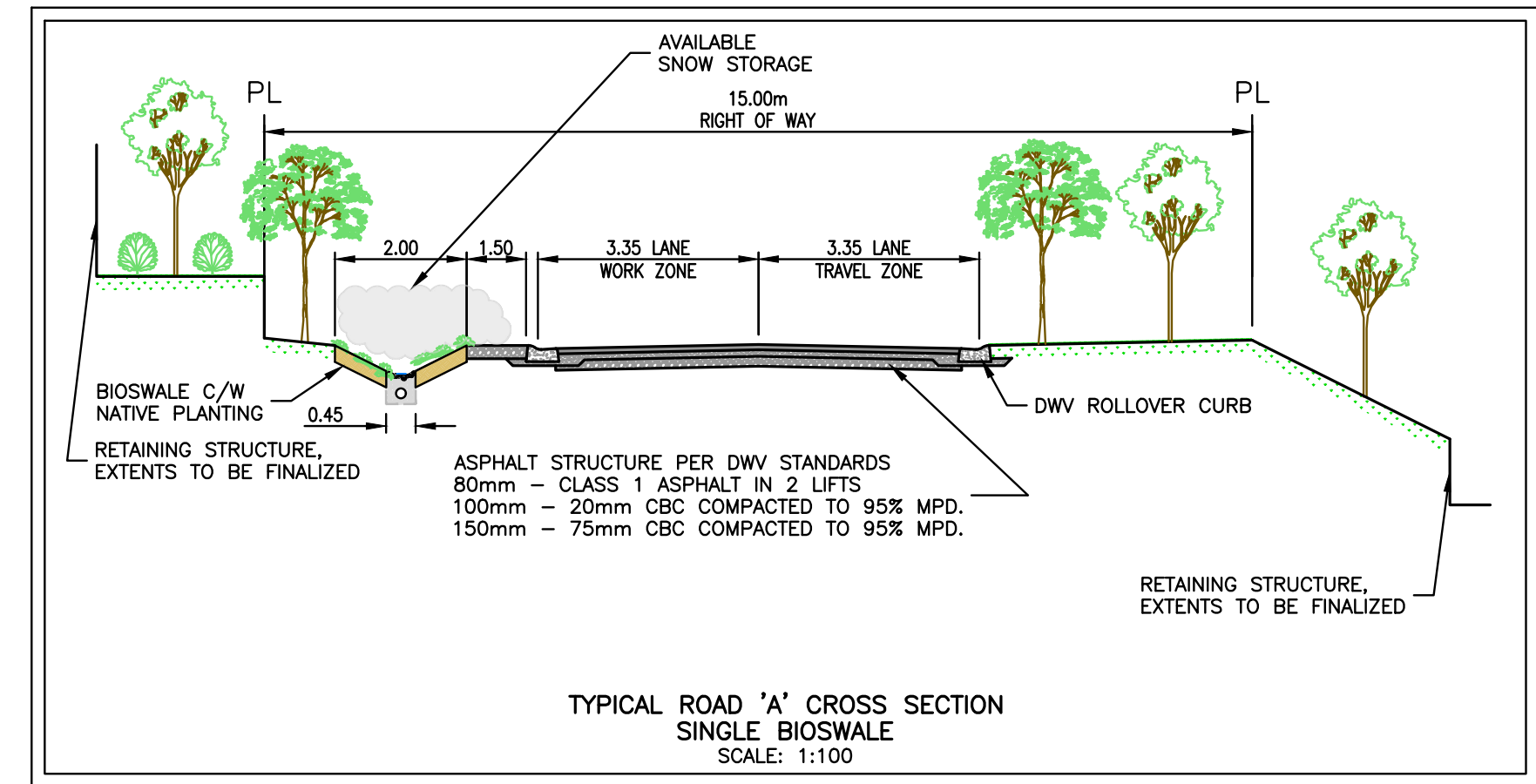
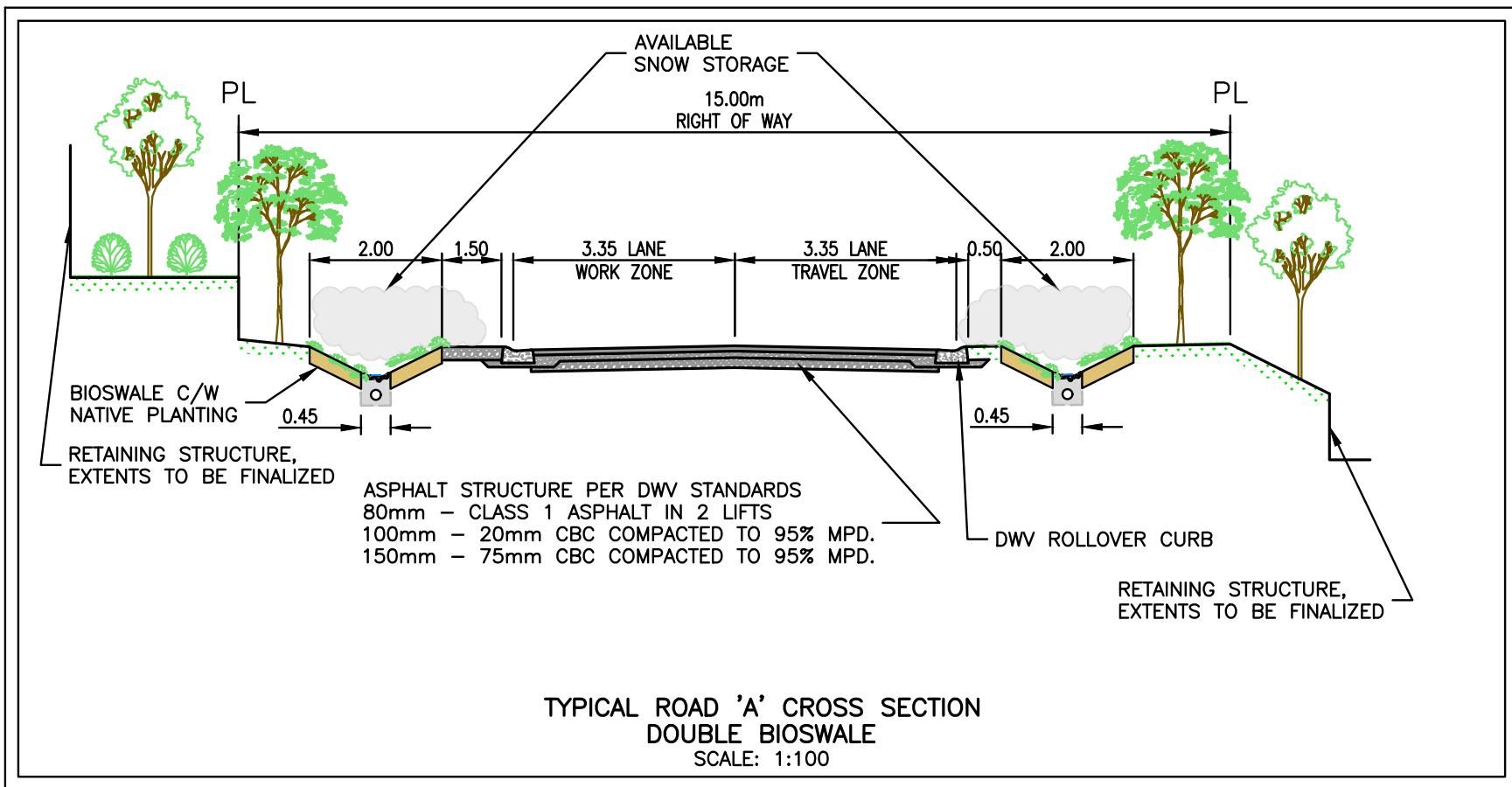
EVERVAN

project

WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC

title

ROADWORKS  
TYPICAL SECTIONS



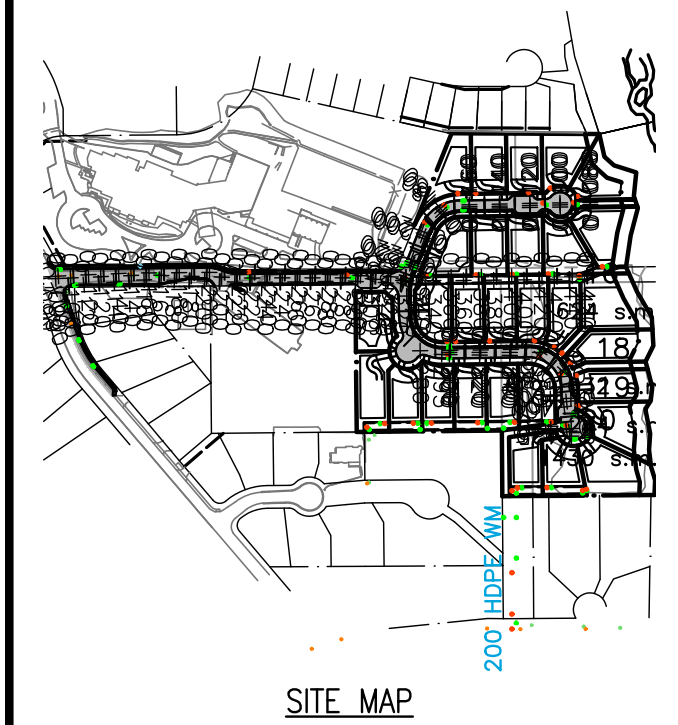
ROAD A DOUBLE BIOSWALE

ROAD A SINGLE BIOSWALE

WENTWORTH AVENUE

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no.	(y/m/d)	revision	CHK'd
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engineer of record	KBH	scales	hor: - vert: -
designed by	KBH	file no.	15171
drawn by	AGC	drawing no.	R-TYP-1
date	2016-09-26		



DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASIMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREET LIGHT	⊗	⊗	⊗

approved

client  
**EVERVAN**

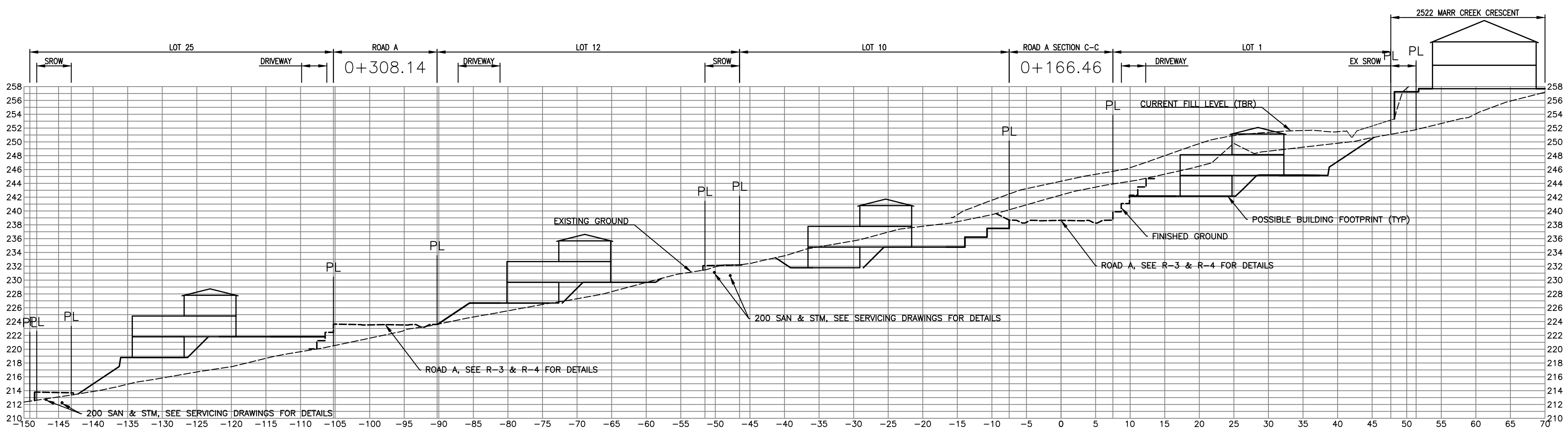
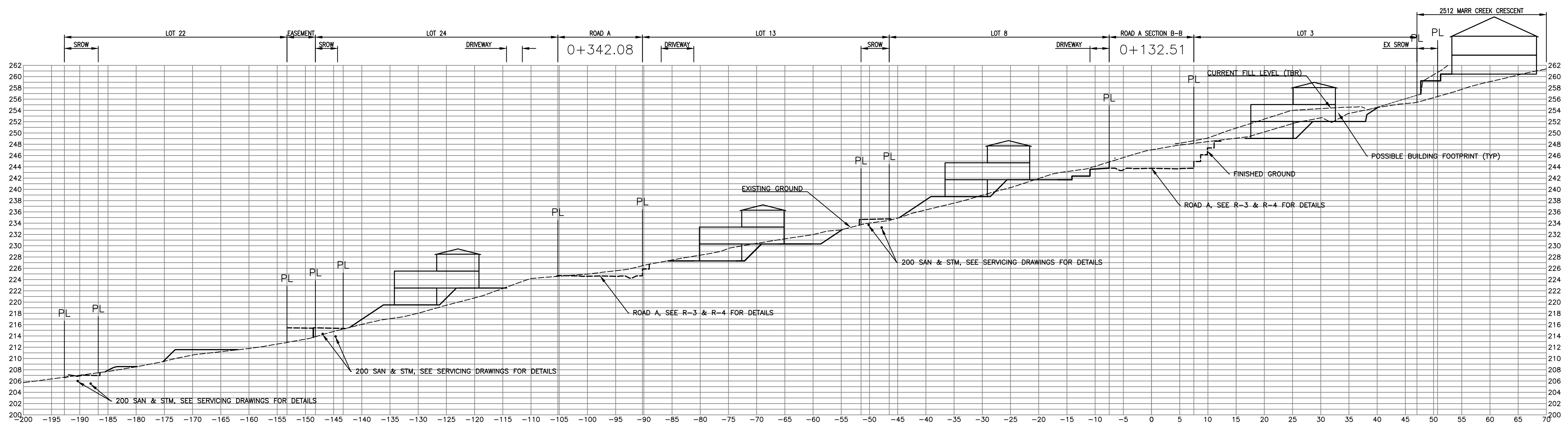
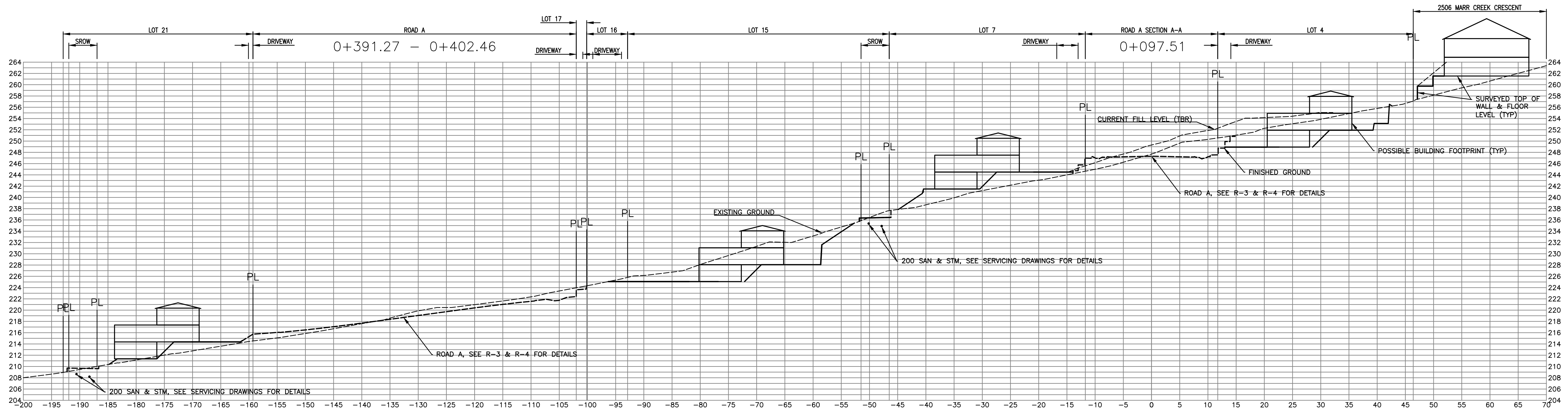
project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

SITE SECTIONS  
ROAD A

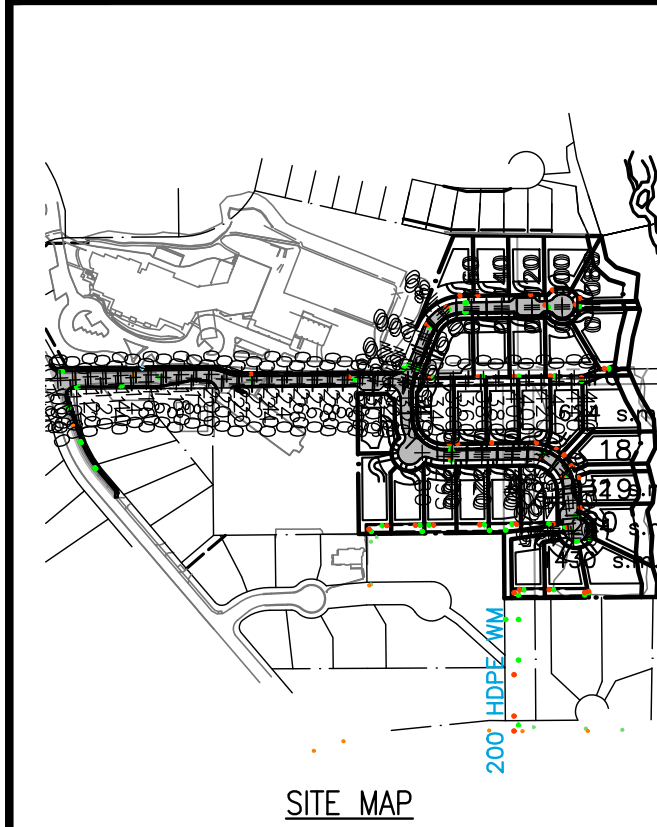
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6	17-04-10	REVISED PER BENNET SURVEY	AGC
5	17-03-29	REVISED PER DWV COMMENTS	AGC
4	17-03-15	REVISED PER DWV COMMENTS	AGC
3	17-02-09	REVISED PER DWV COMMENTS	AGC
2	17-01-26	REVISED PER DWV COMMENTS	AGC
1	17-01-18	REVISED LOTS	AGC

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designed by	KBH	file no.	15171
drawn by	AGC	drawing no.	SECT-1
date	2016-09-26		



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DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREET LIGHT	⊗	⊗	⊗

approved

client  
**EVERVAN**

project  
**WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC**

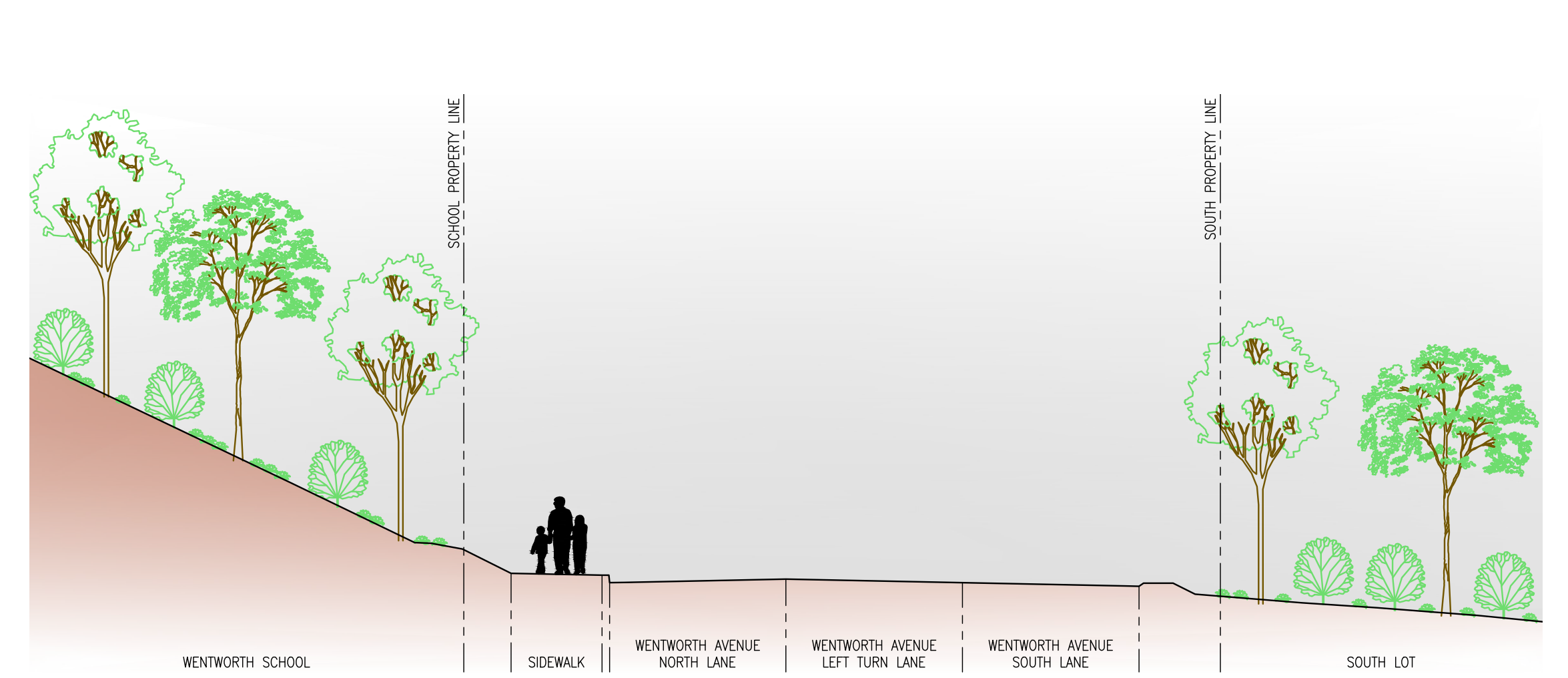
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 WENTWORTH SCHOOL**

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2	17-03-15	REVISED PER DWV COMMENTS	AGC
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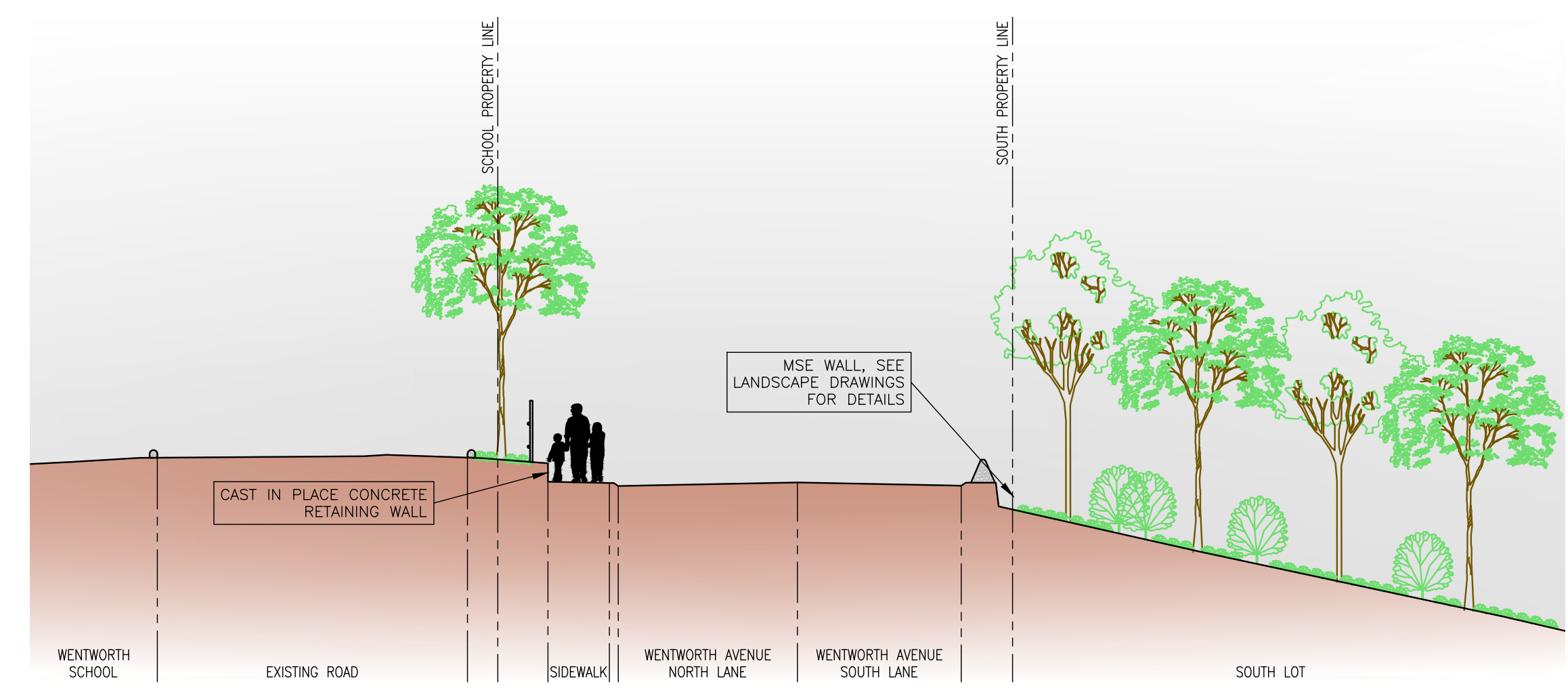
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engineer of record	KBH	scales	hor: 1:100	vert: 1:100
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drawn by	AGC	drawing no.	SECT-2	
date	2016-09-26			

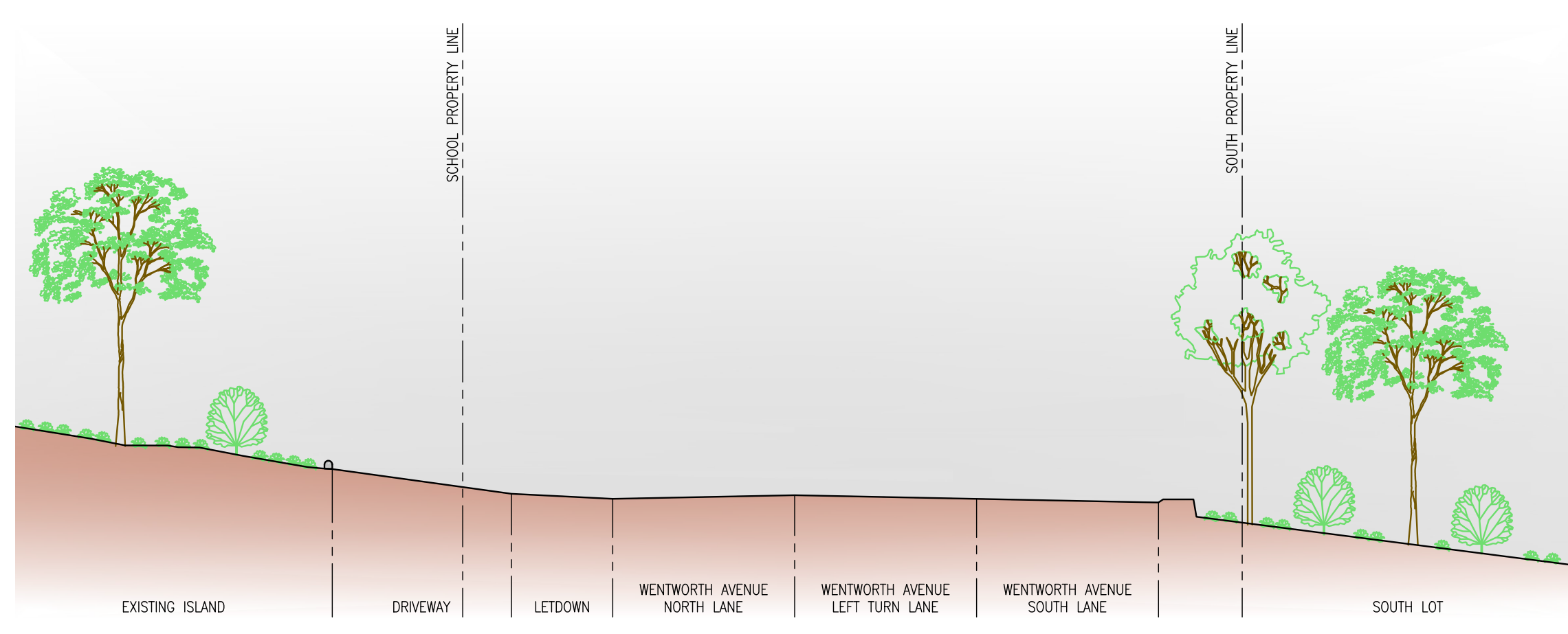
SEE R-1 & R-2 FOR WENTWORTH AVENUE DETAILS



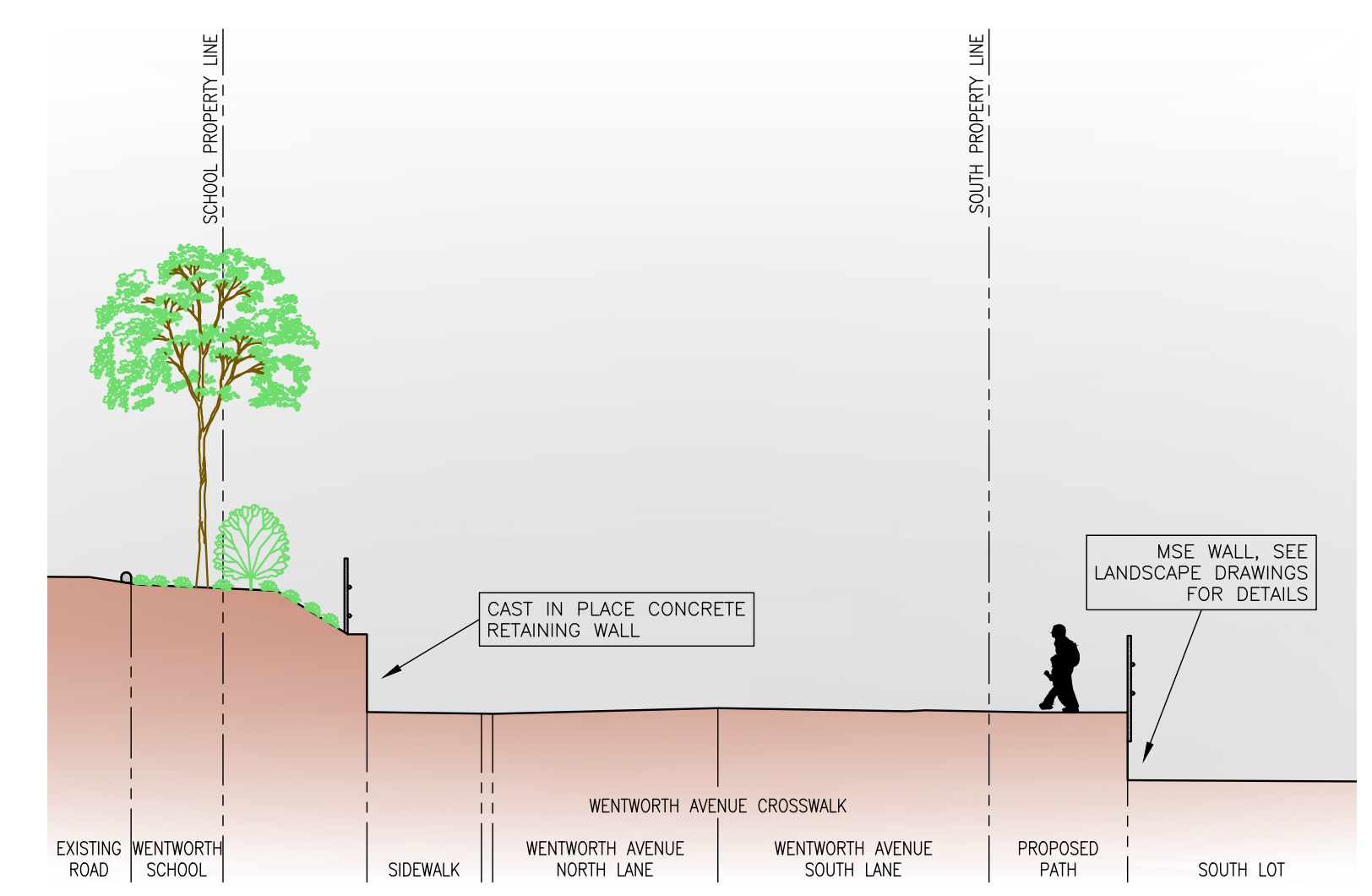
WENTWORTH AVENUE STA. 0+130.00  
 PROPOSED 15m ROAD RIGHT OF WAY



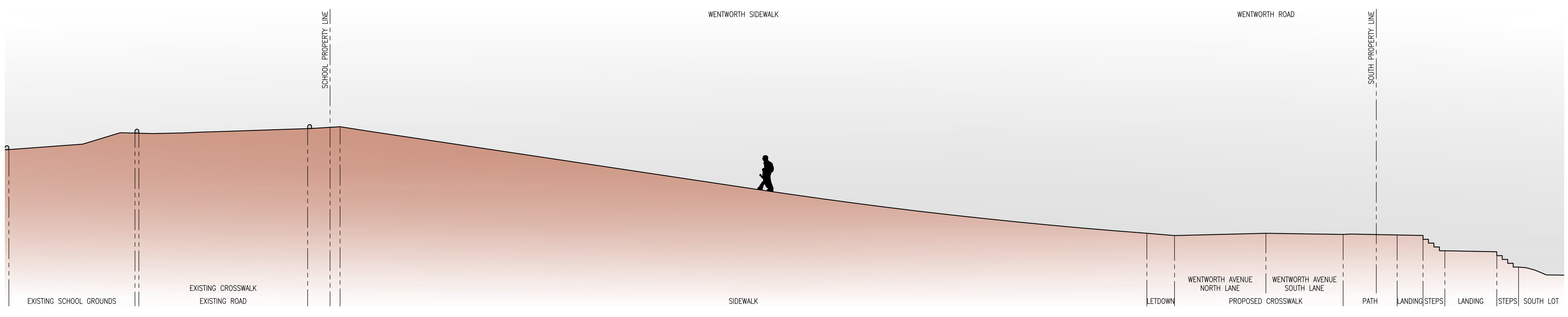
WENTWORTH AVENUE STA. 0+280.00  
 PROPOSED 10m ROAD RIGHT OF WAY



WENTWORTH AVENUE STA. 0+156.70  
 PROPOSED WENTWORTH SCHOOL DRIVEWAY



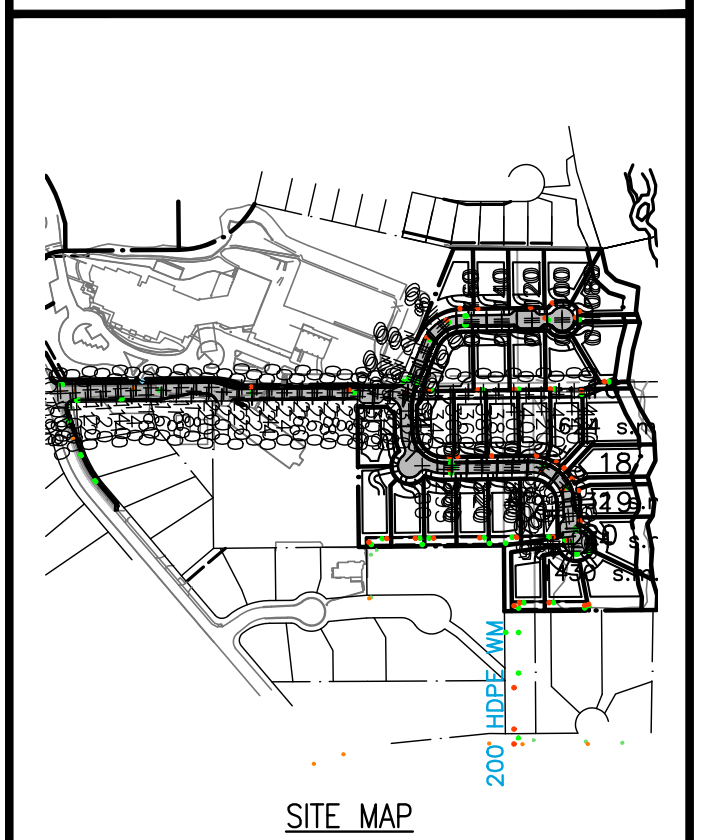
WENTWORTH AVENUE STA. 0+226.06  
 CROSSWALK TO PROPOSED STAIRS TO LOWER PARKING LOT



WENTWORTH AVENUE  
 PROPOSED PRIVATE PATH AND STAIRS TO LOWER PARKING LOT

NOT FOR CONSTRUCTION





### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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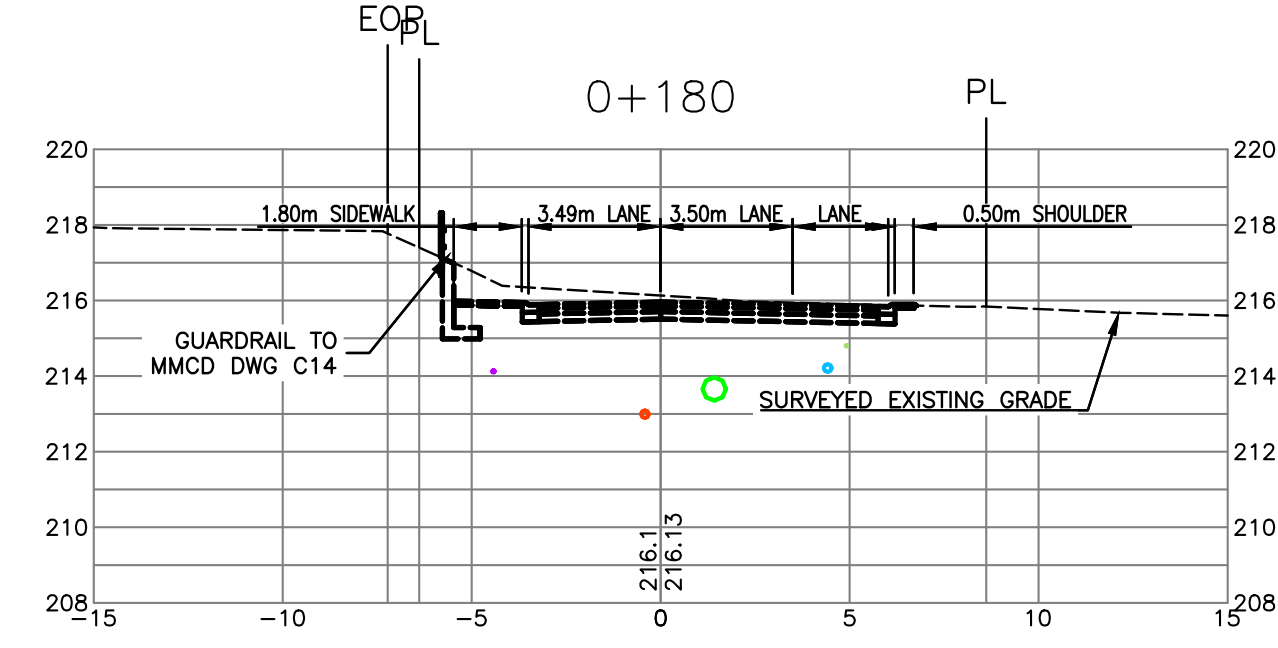
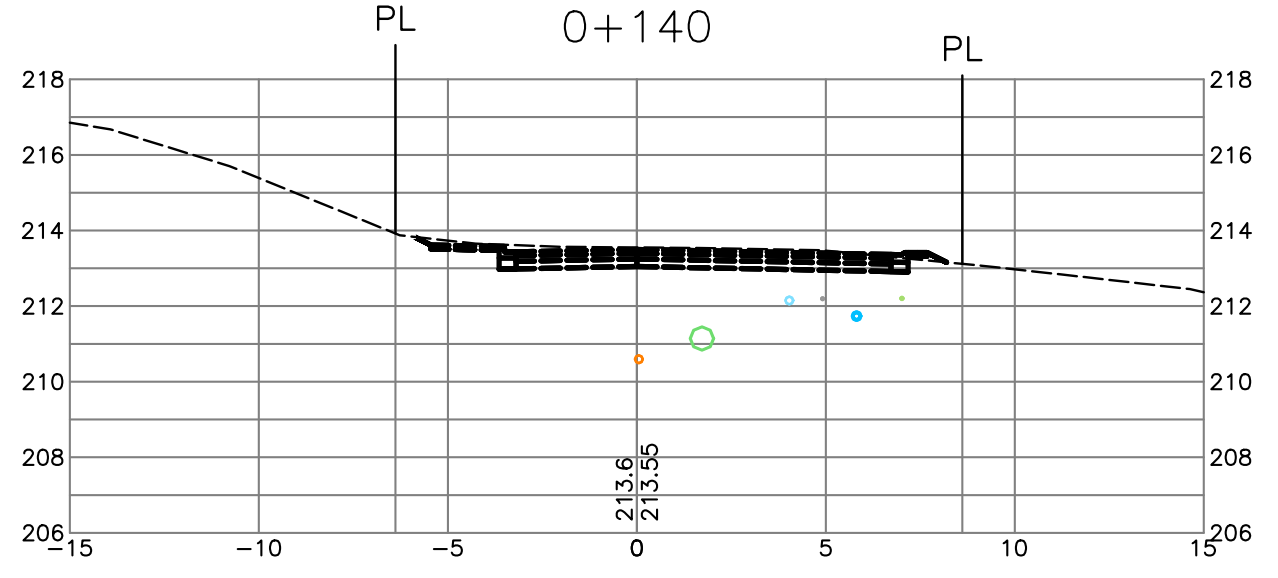
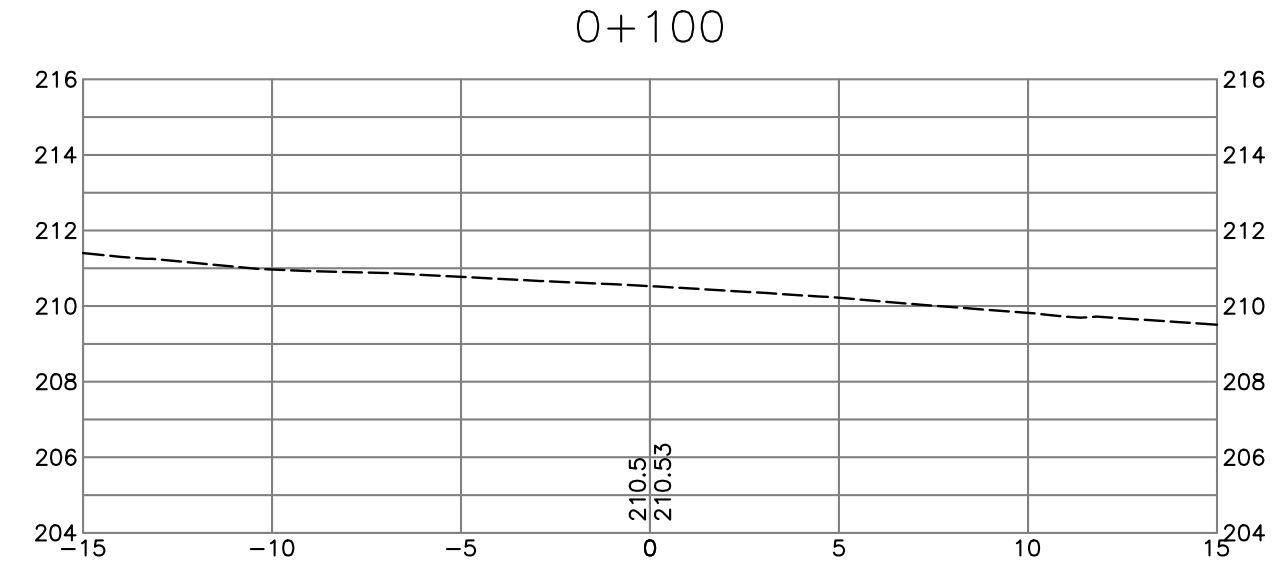
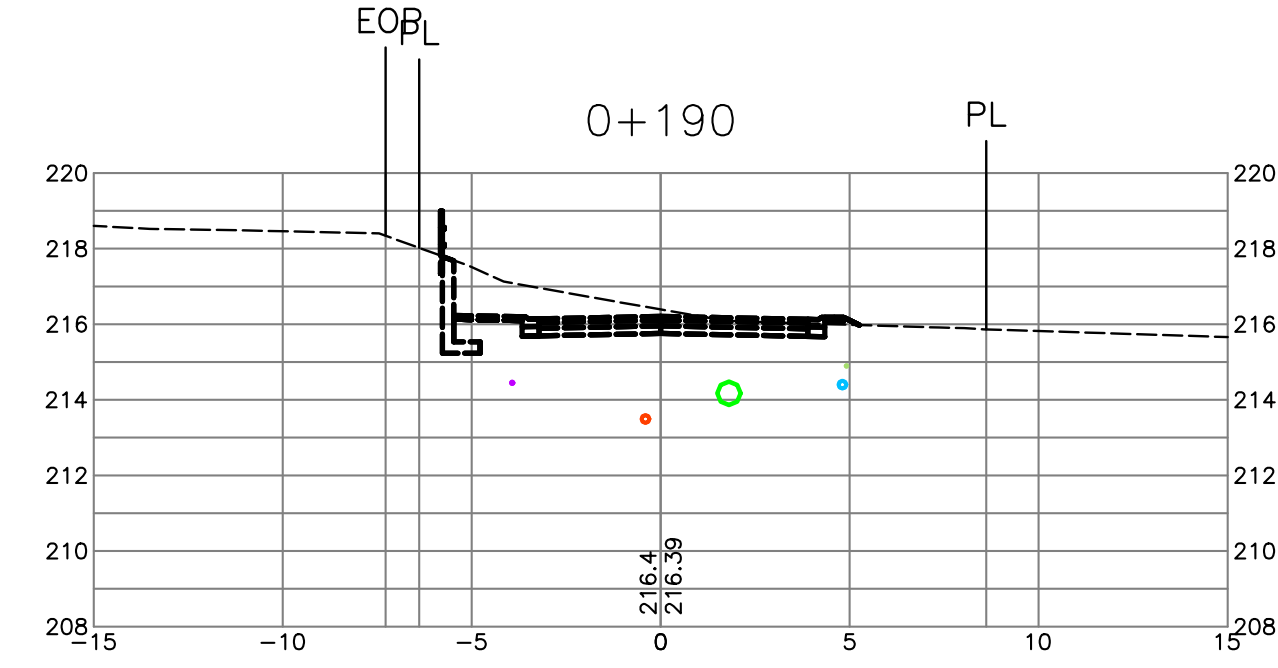
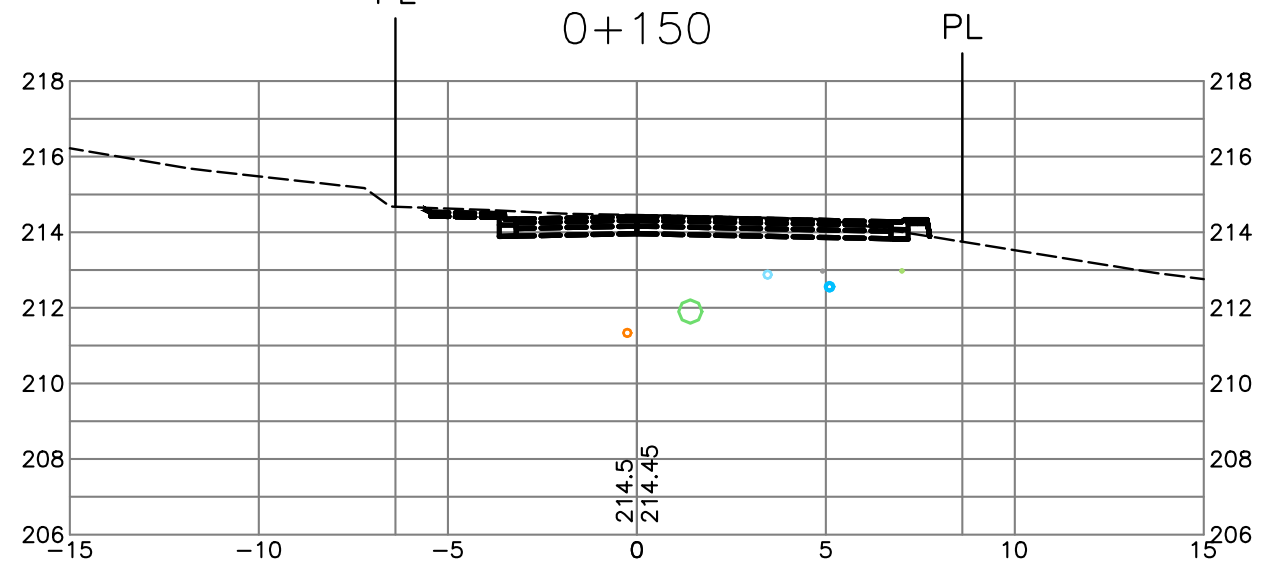
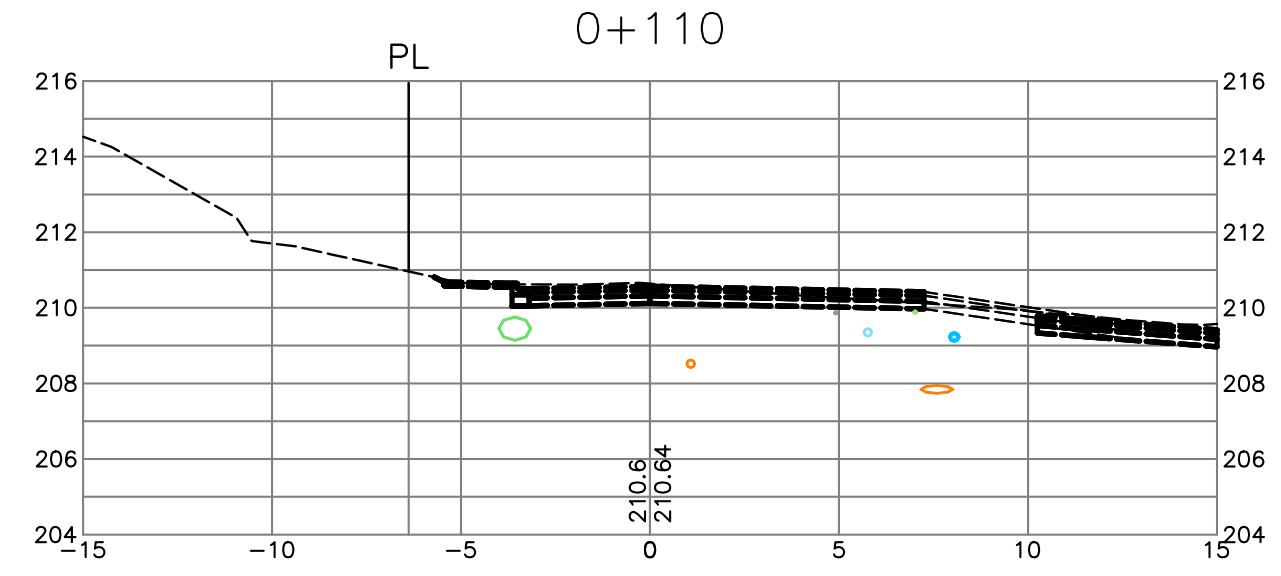
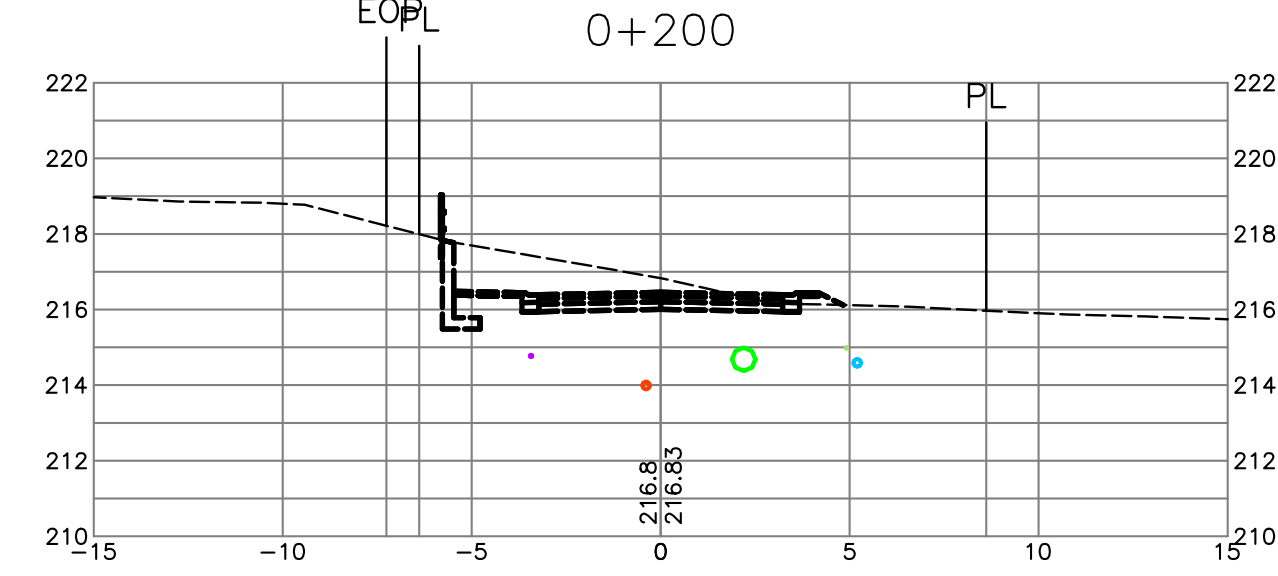
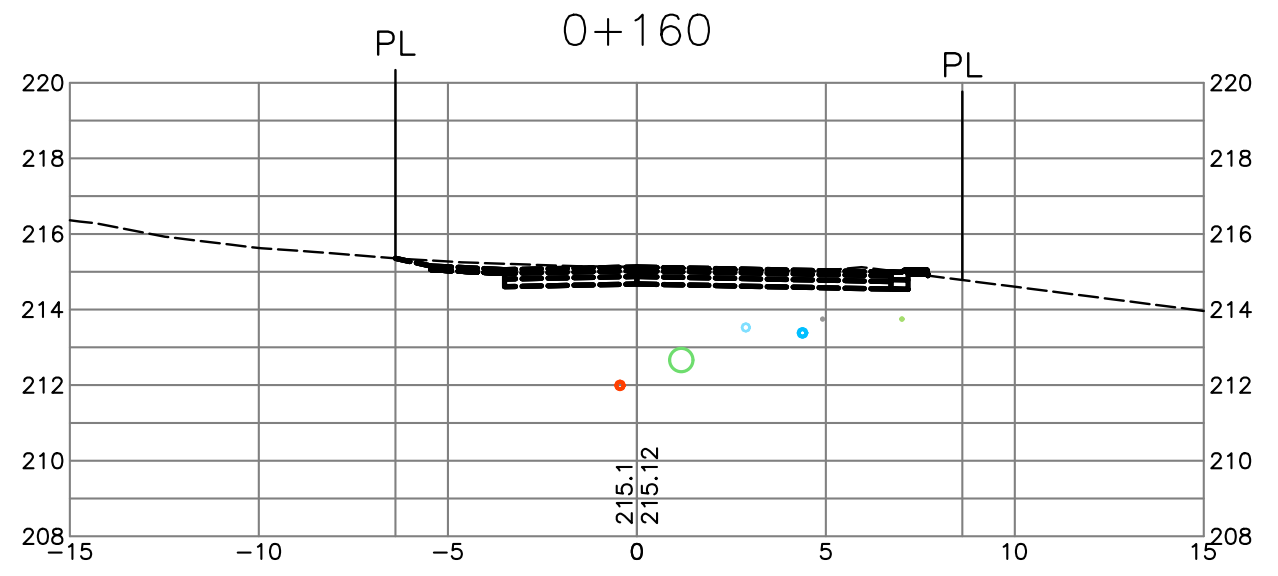
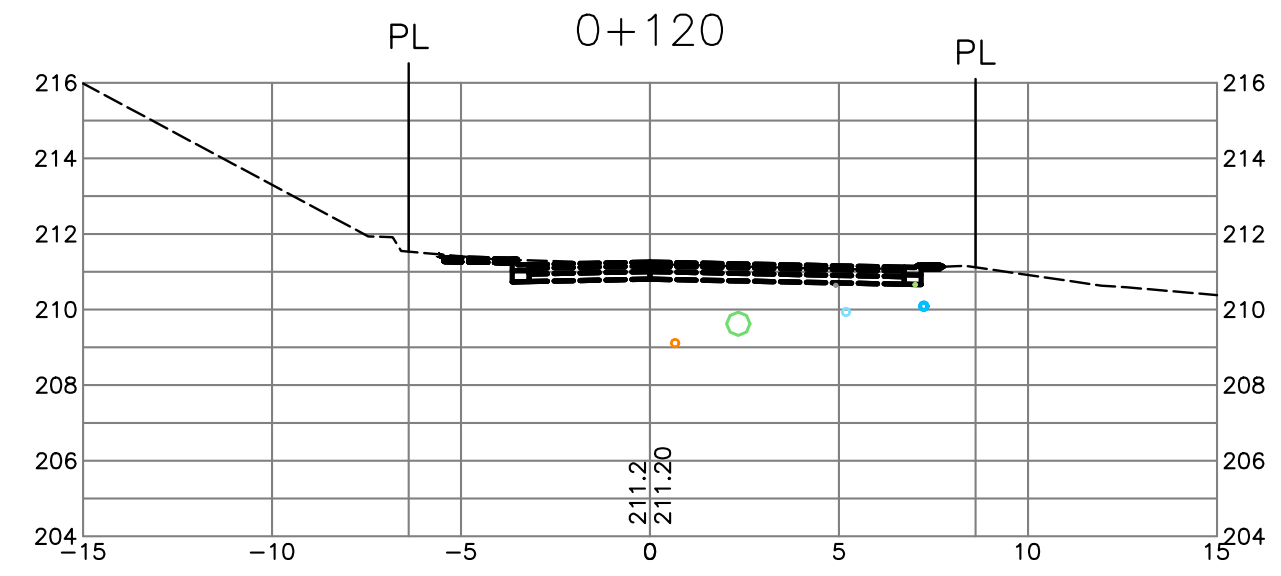
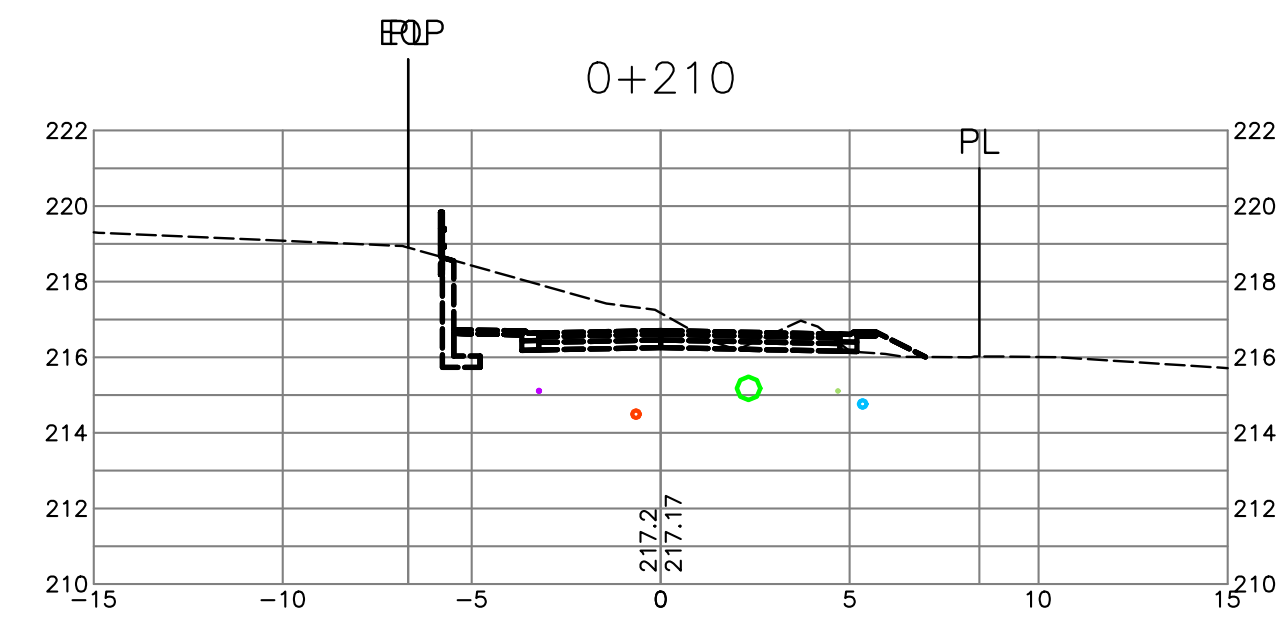
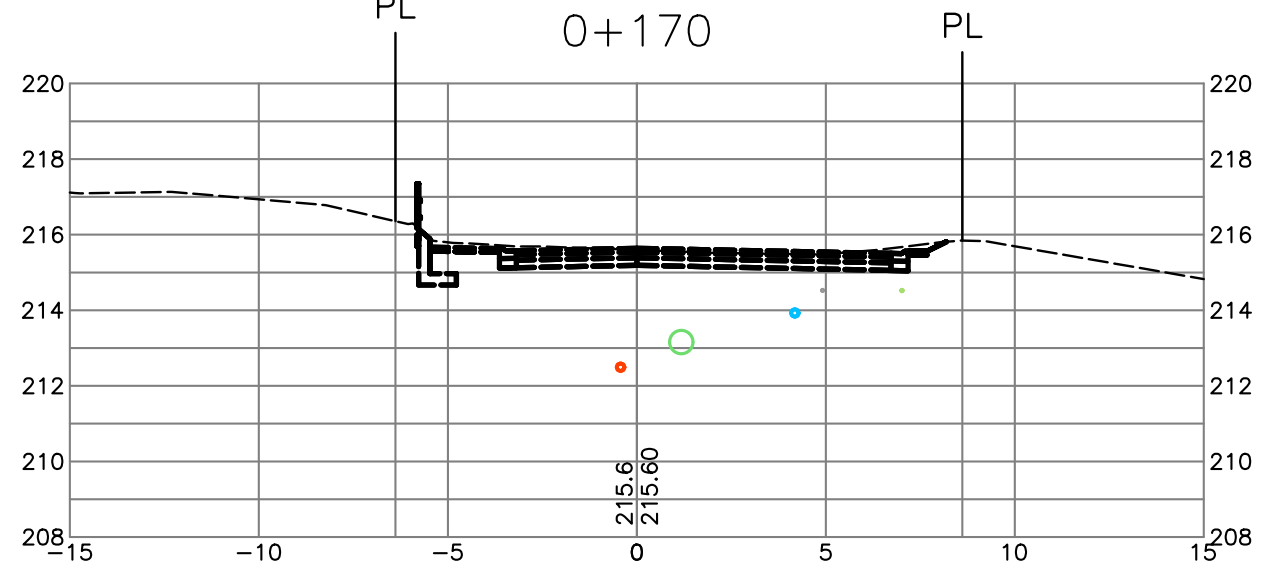
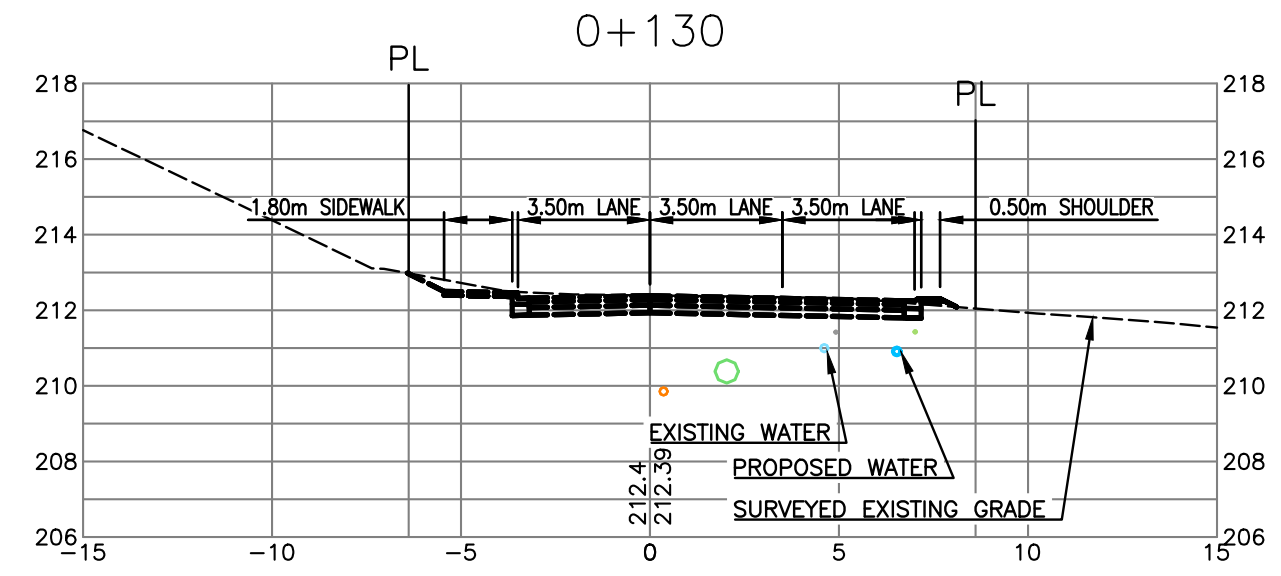
WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

title

CROSS SECTIONS  
 WENTWORTH AVENUE  
 (STA. 0+100 - 0+210)

no.	(y/m/d)	revision	chk'd
12	17-04-11	RE-ISSUED FOR DP	AGC
11	17-03-29	REVISED PER DWV COMMENTS	AGC
10	17-03-15	REVISED PER DWV COMMENTS	AGC
9	17-02-09	REVISED PER DWV COMMENTS	AGC
8	17-01-26	REVISED PER DWV COMMENTS	AGC
7	17-01-18	REVISED LOTS	AGC
6	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
5	16-12-14	CHAIRLIFT ROAD & CORNER	AGC
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engineer of record	KBH	scales	hor: 1:200	vert: 1:200
designed by	KBH <td>file no.</td> <td colspan="2">15171</td>	file no.	15171	
drawn by	AAP <td>drawing no.</td> <td colspan="2">XS-1</td>	drawing no.	XS-1	
date	2016-09-26			



NOT FOR CONSTRUCTION



DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
ESSENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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project

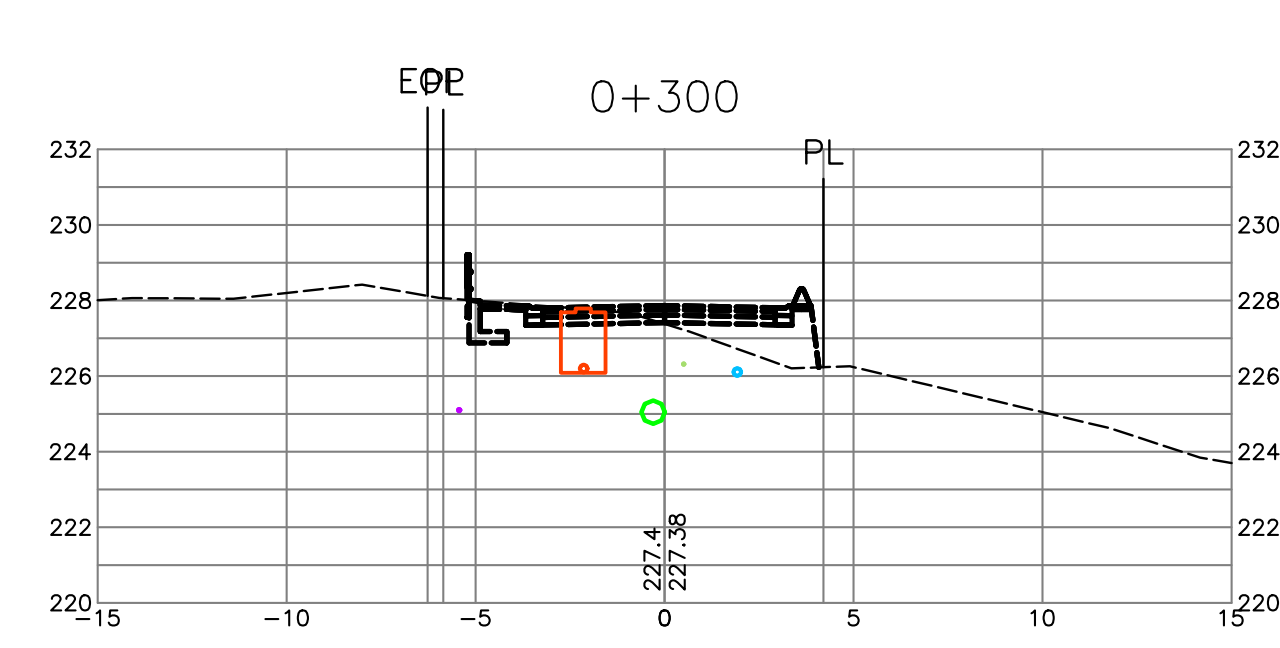
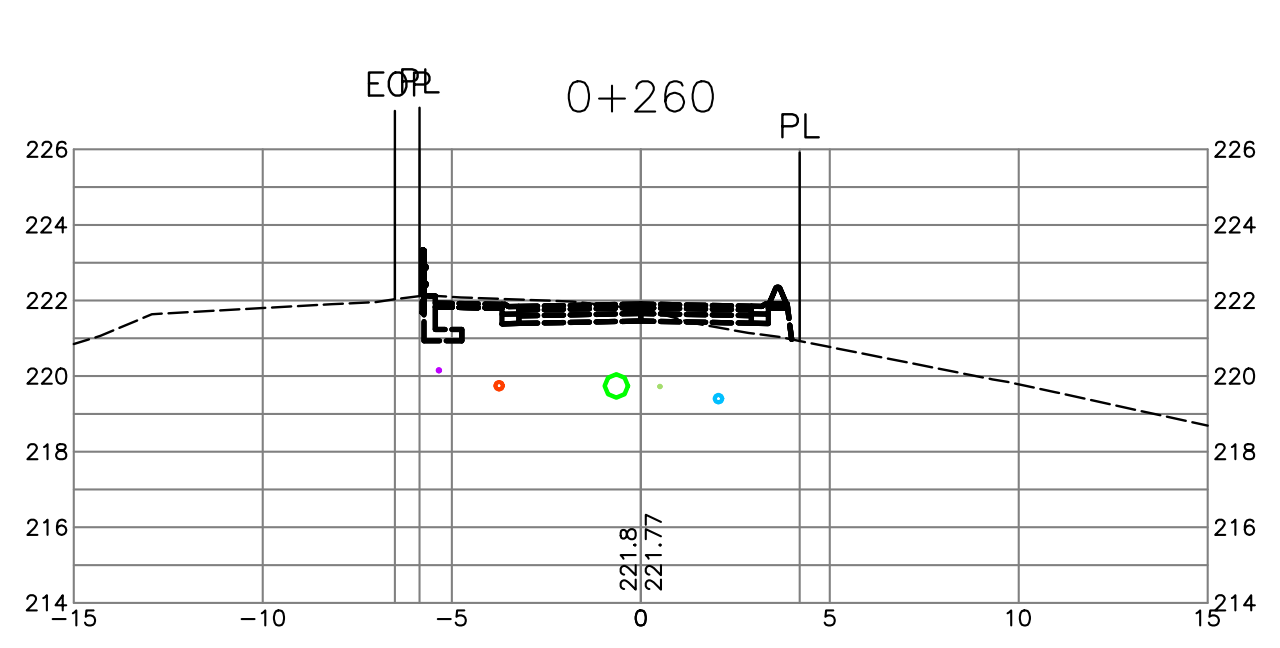
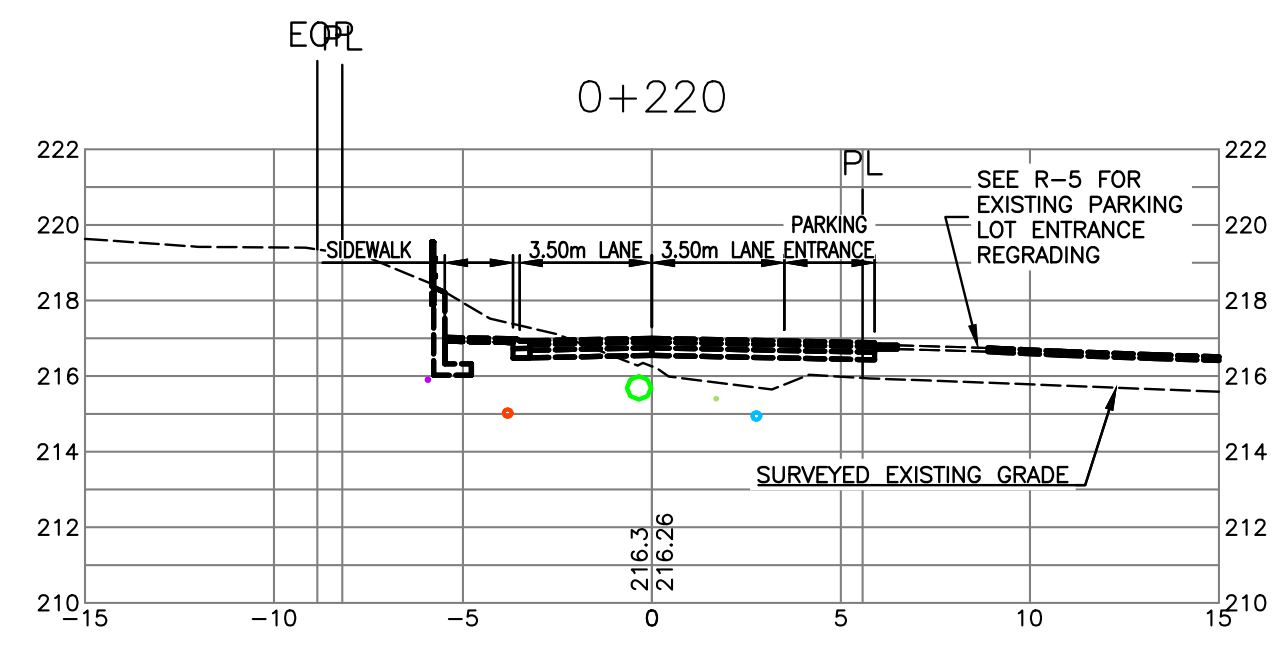
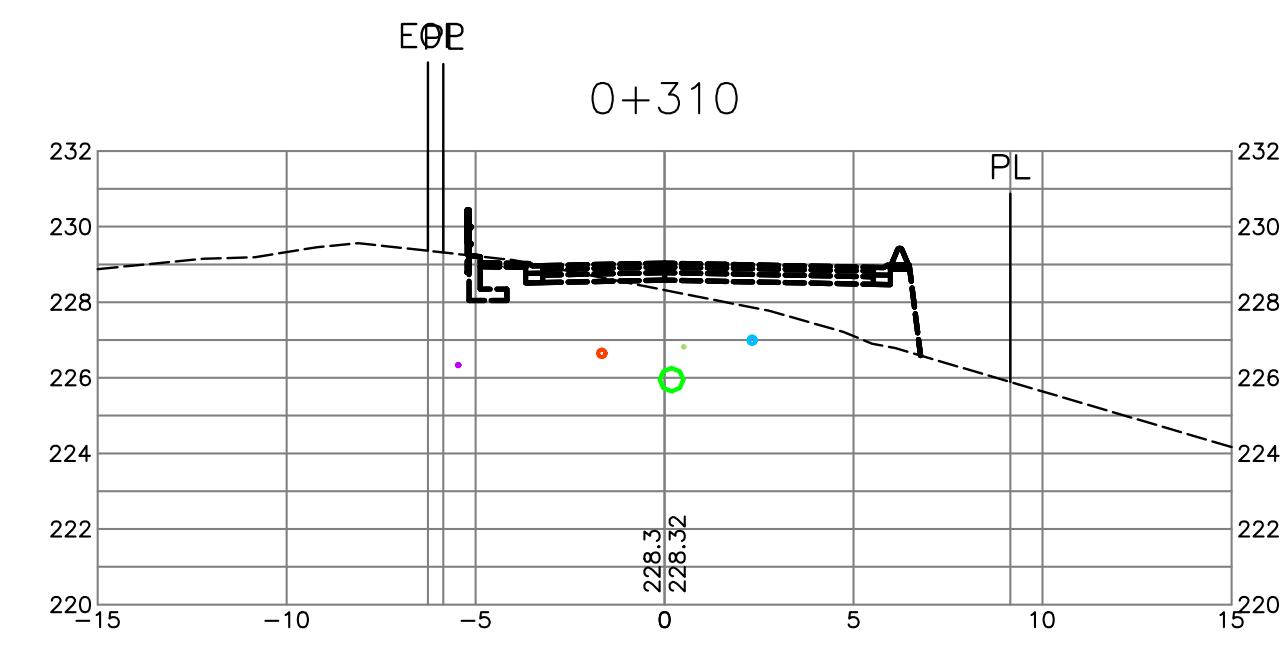
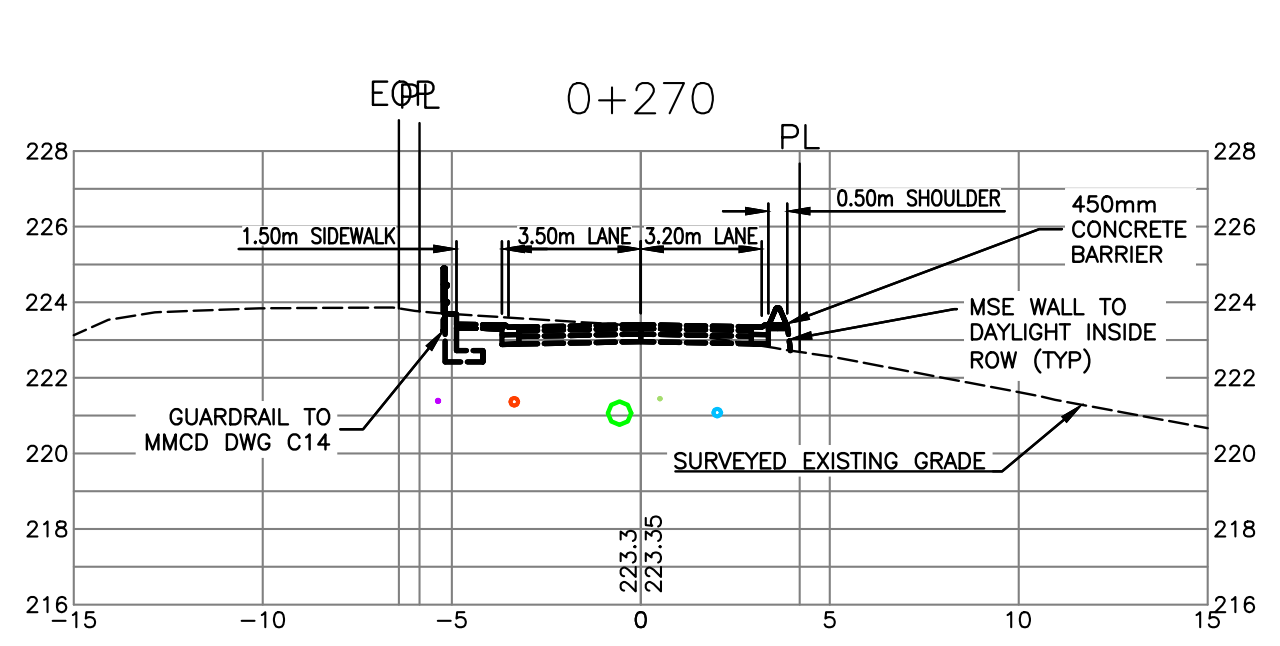
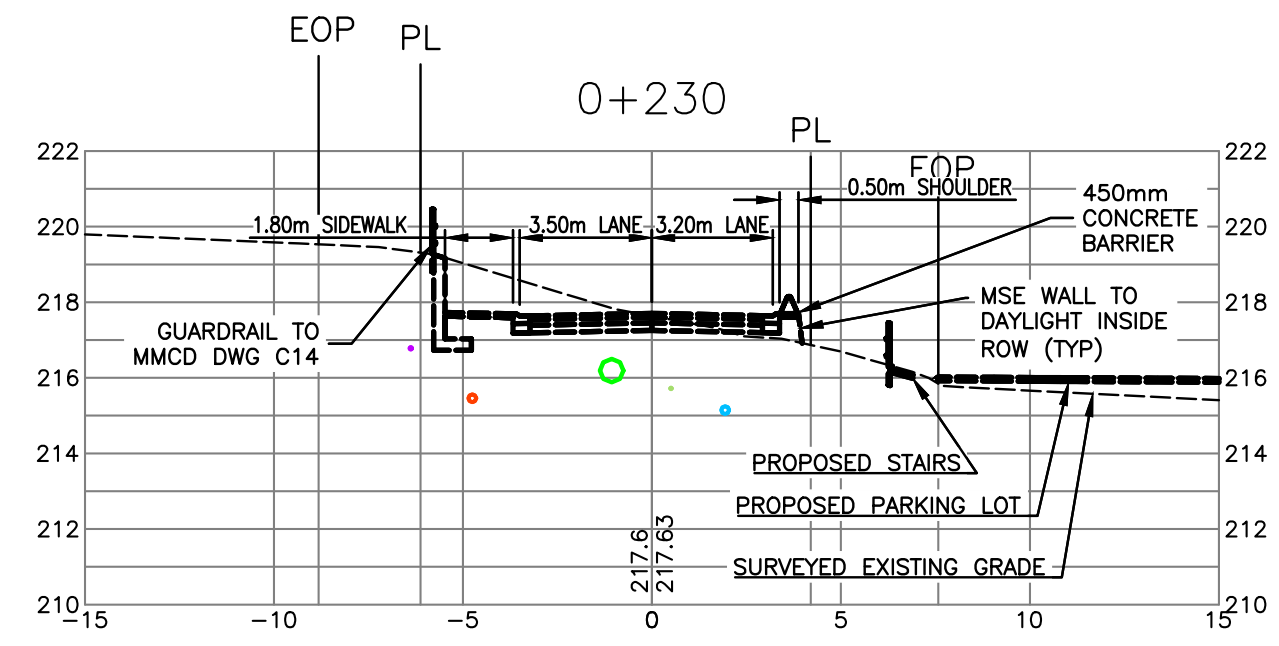
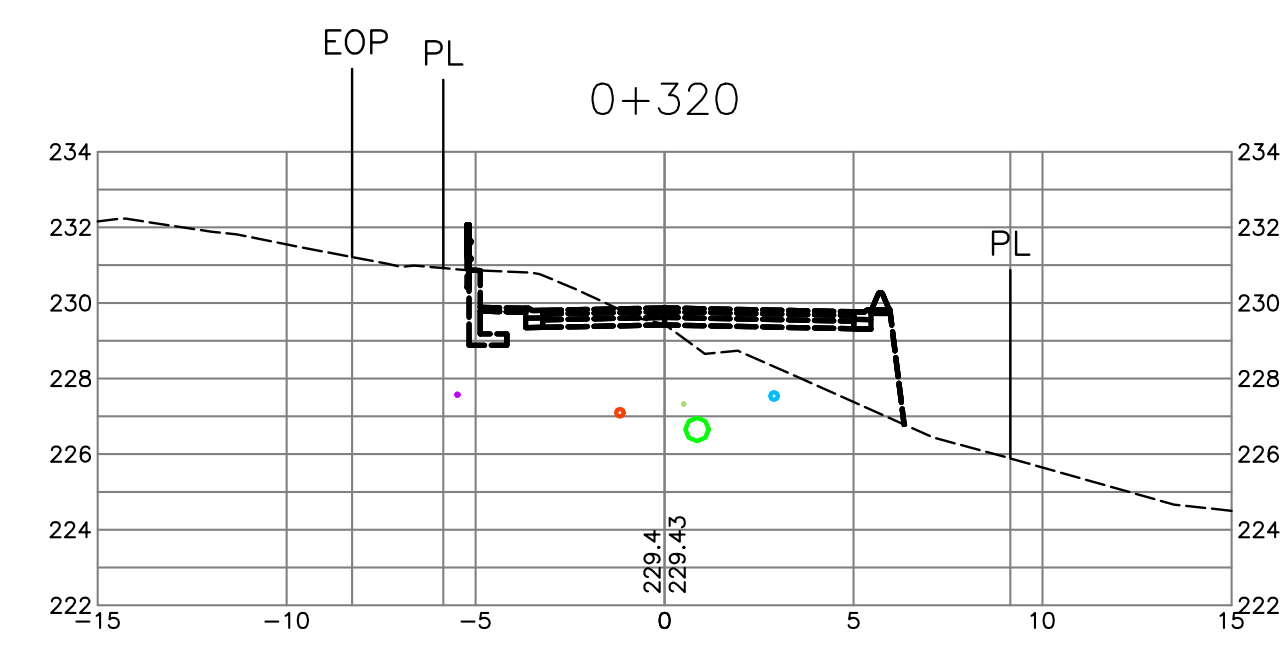
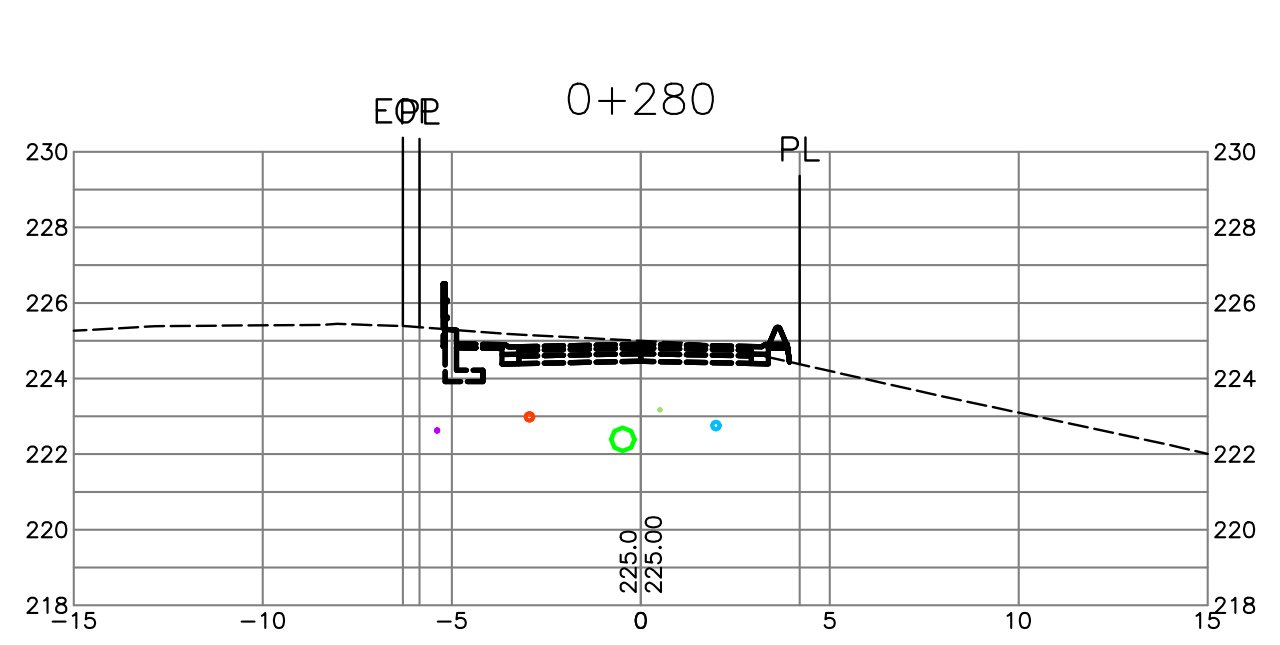
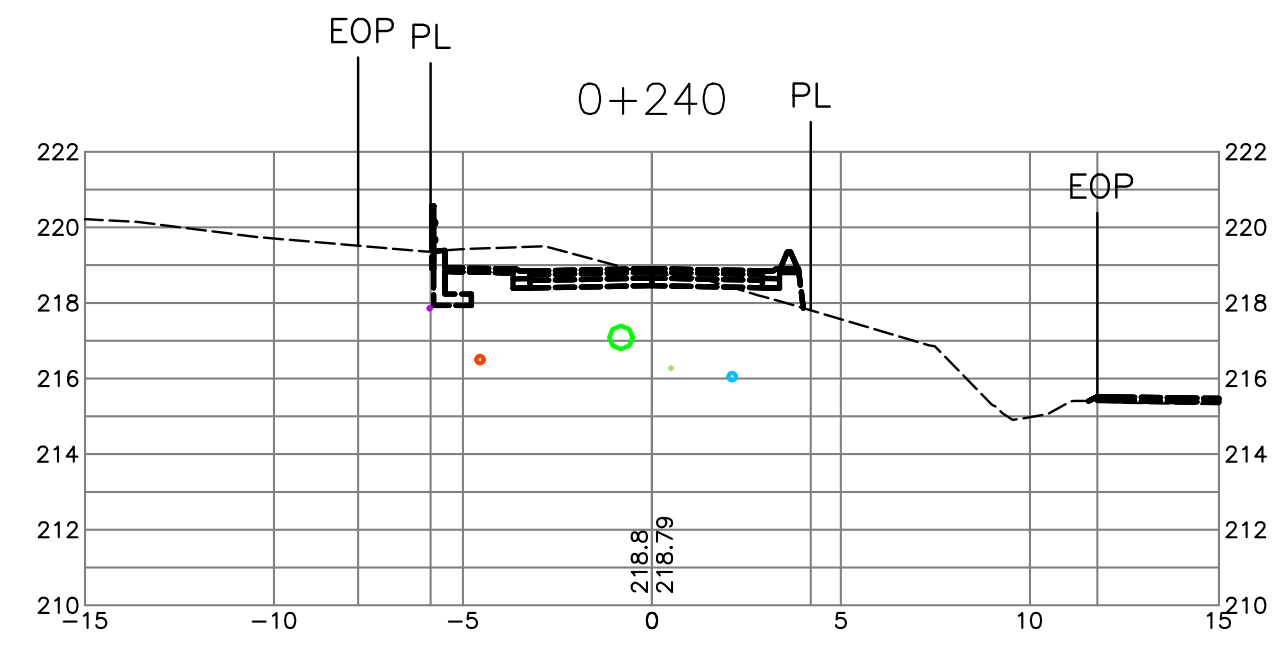
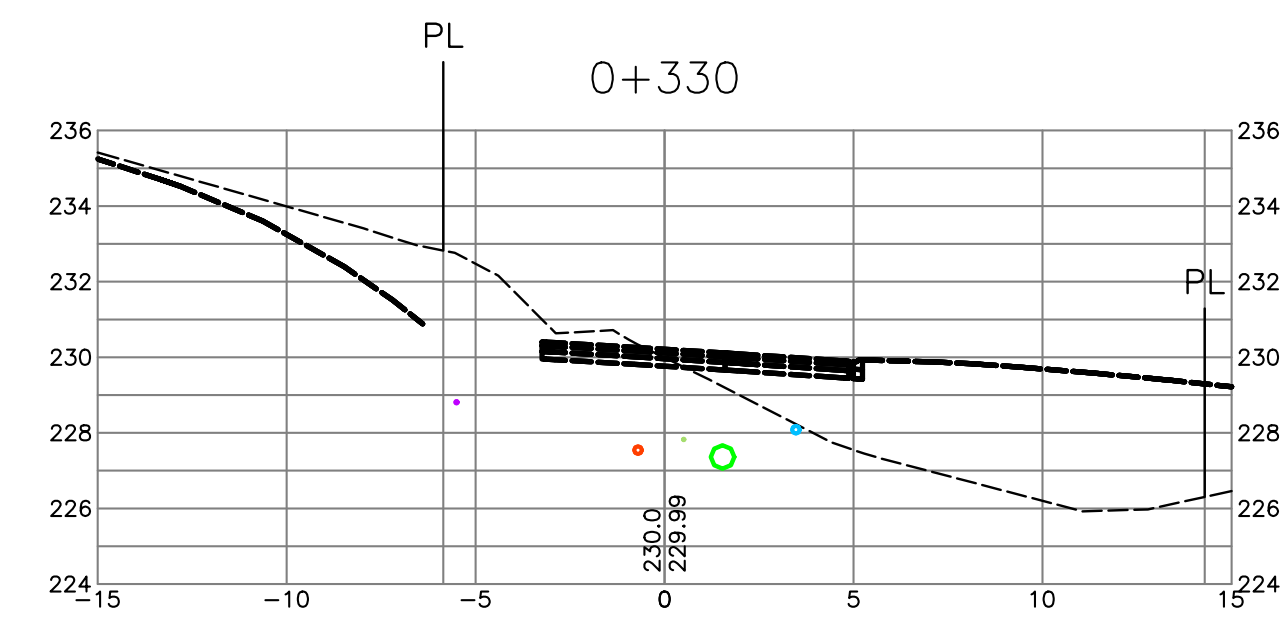
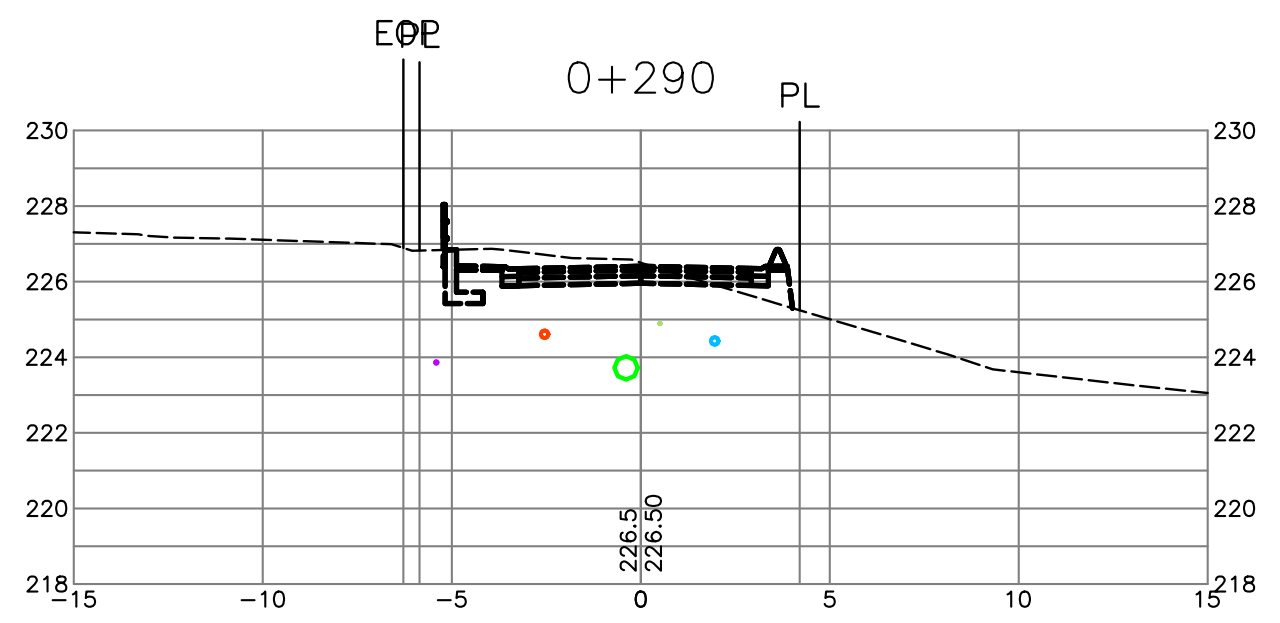
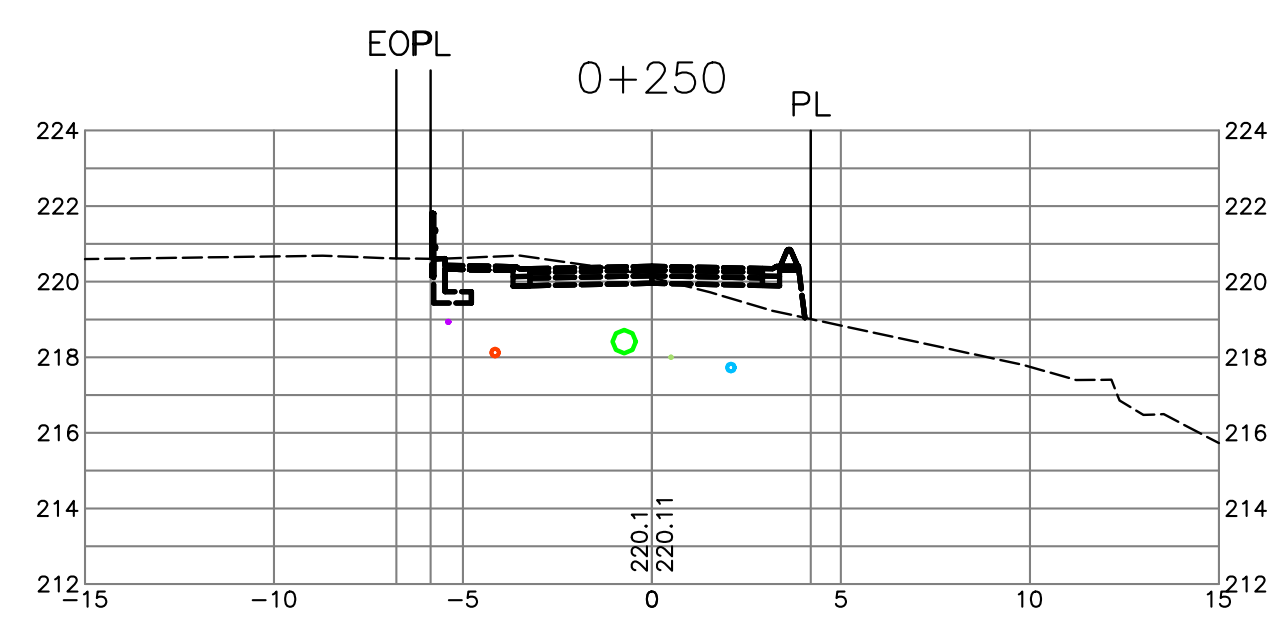
WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

title

CROSS SECTIONS  
 WENTWORTH AVENUE  
 (STA. 0+220 - 0+330)

no.	(y/m/d)	revision	chk'd
12	17-04-11	RE-ISSUED FOR DP	AGC
11	17-03-29	REVISED PER DWV COMMENTS	AGC
10	17-03-15	REVISED PER DWV COMMENTS	AGC
9	17-02-09	REVISED PER DWV COMMENTS	AGC
8	17-01-26	REVISED PER DWV COMMENTS	AGC
7	17-01-18	REVISED LOTS	AGC
6	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
5	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

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engineer of record KBH	scales hor: 1:200 vert: 1:200	
designed by KBH	file no. <b>15171</b>	
drawn by AAP	drawing no.	
date 2016-09-26	XS-2	



NOT FOR CONSTRUCTION



DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
ESSENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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client  
**EVERVAN**

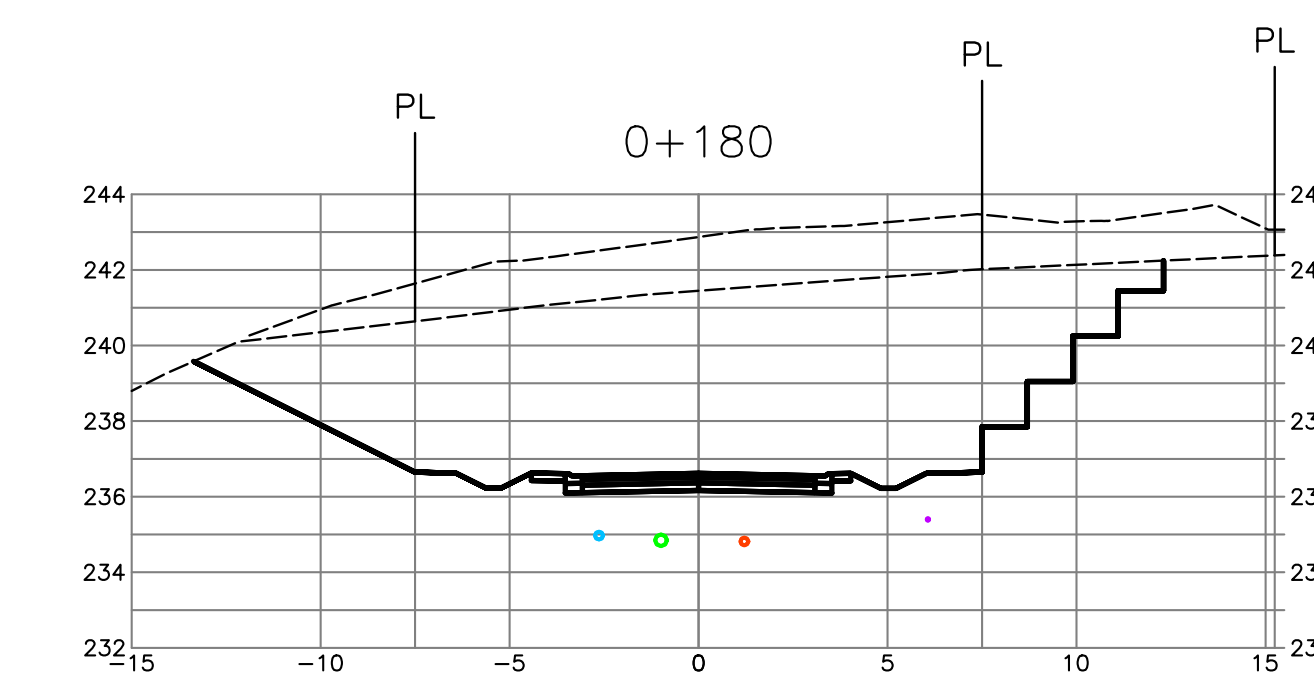
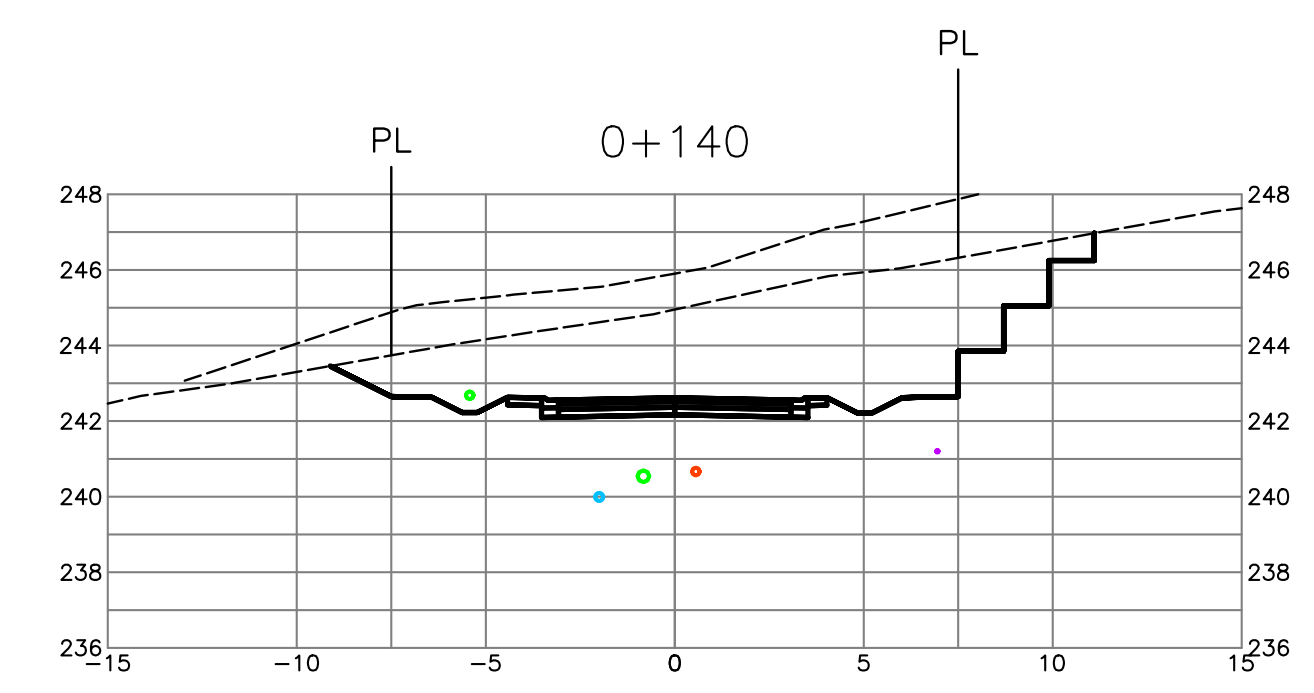
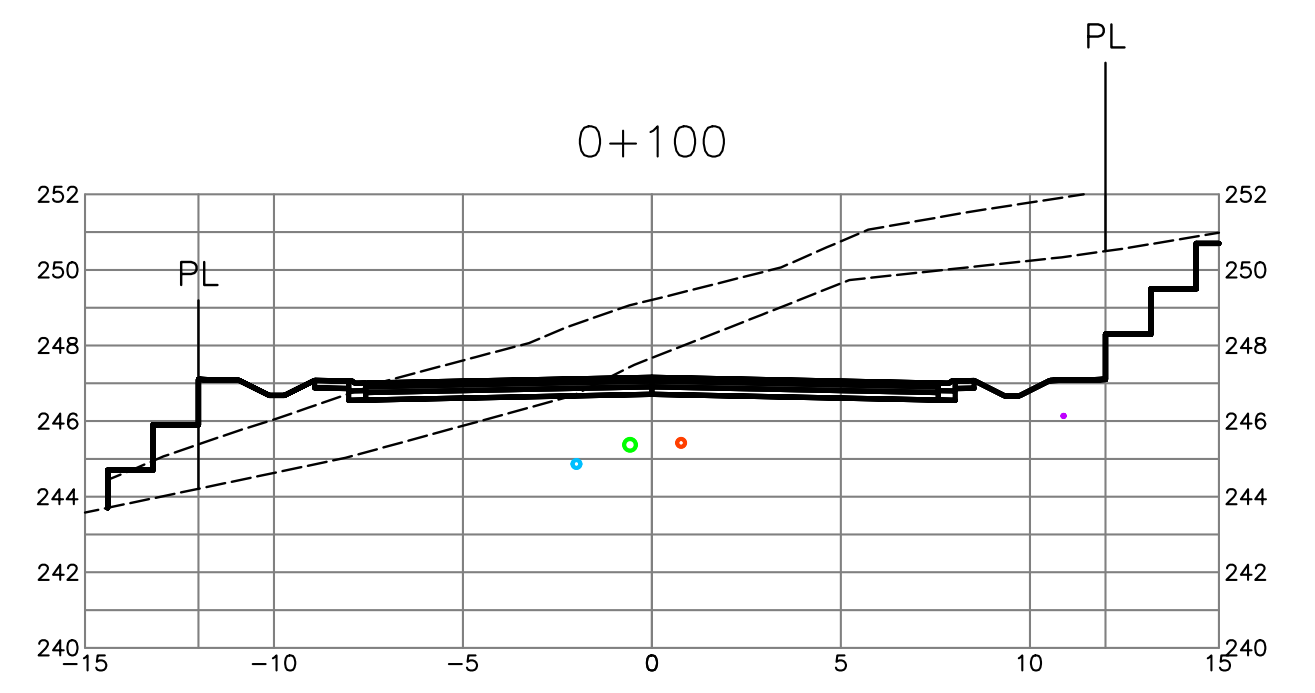
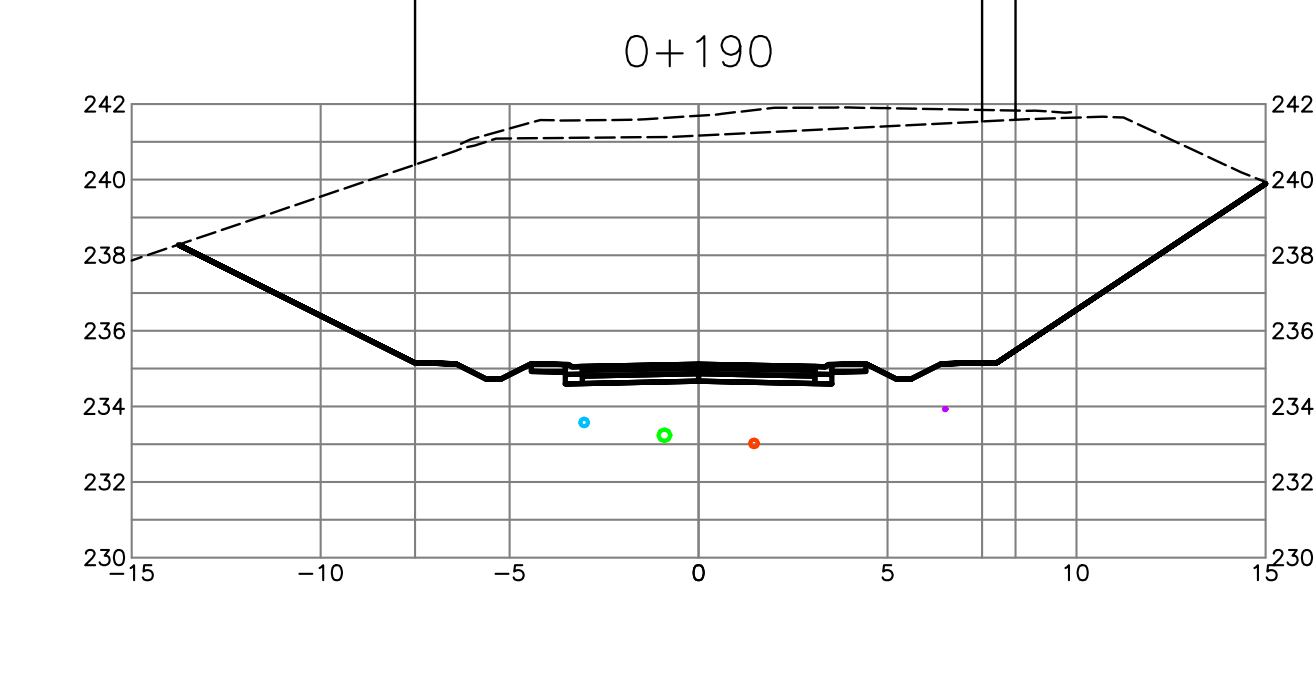
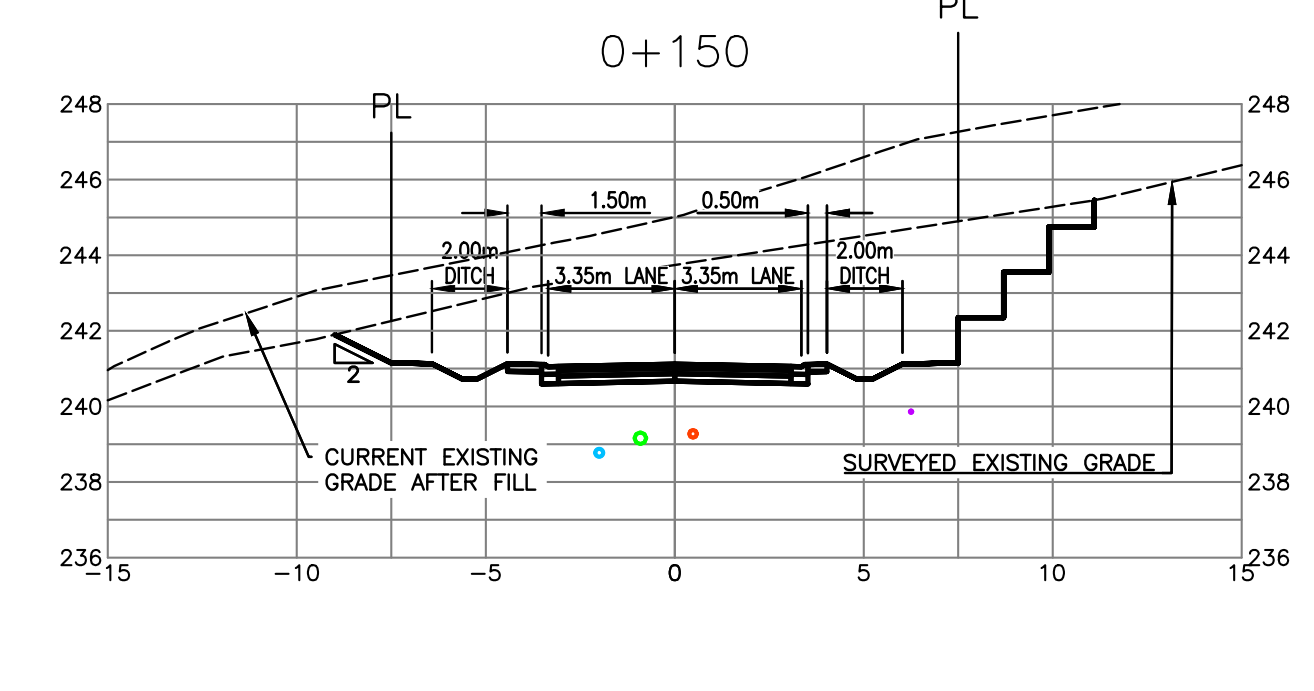
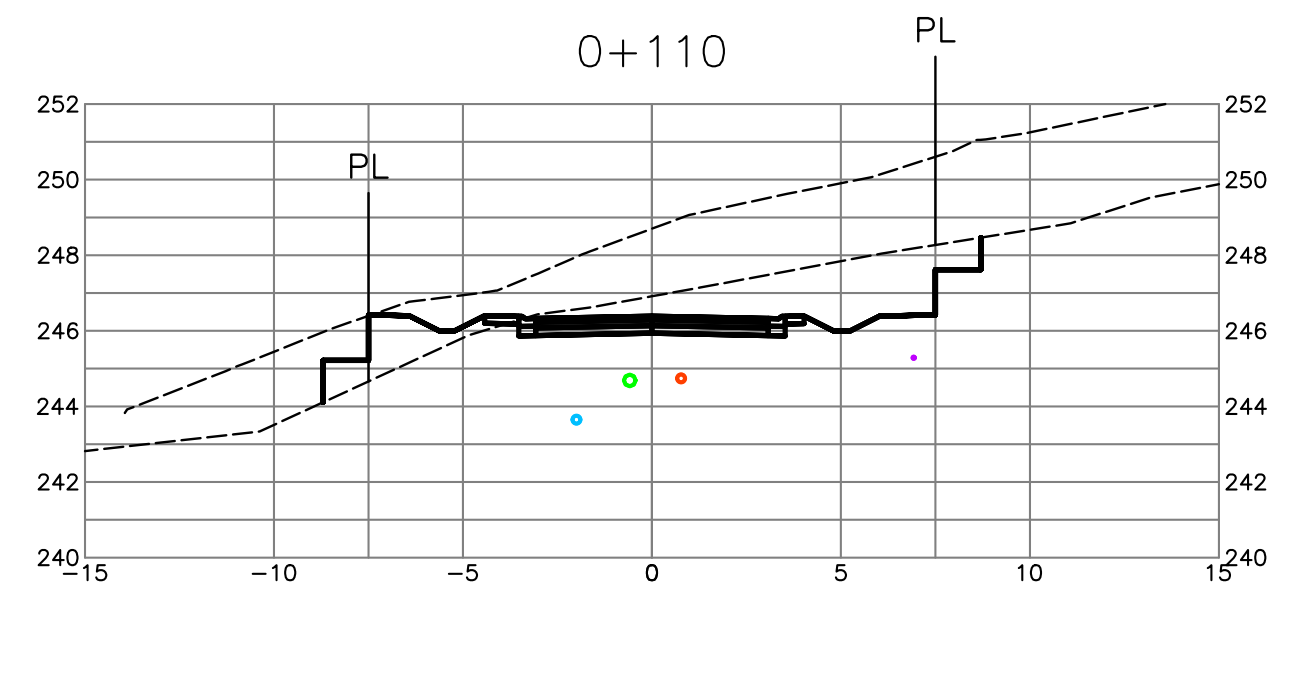
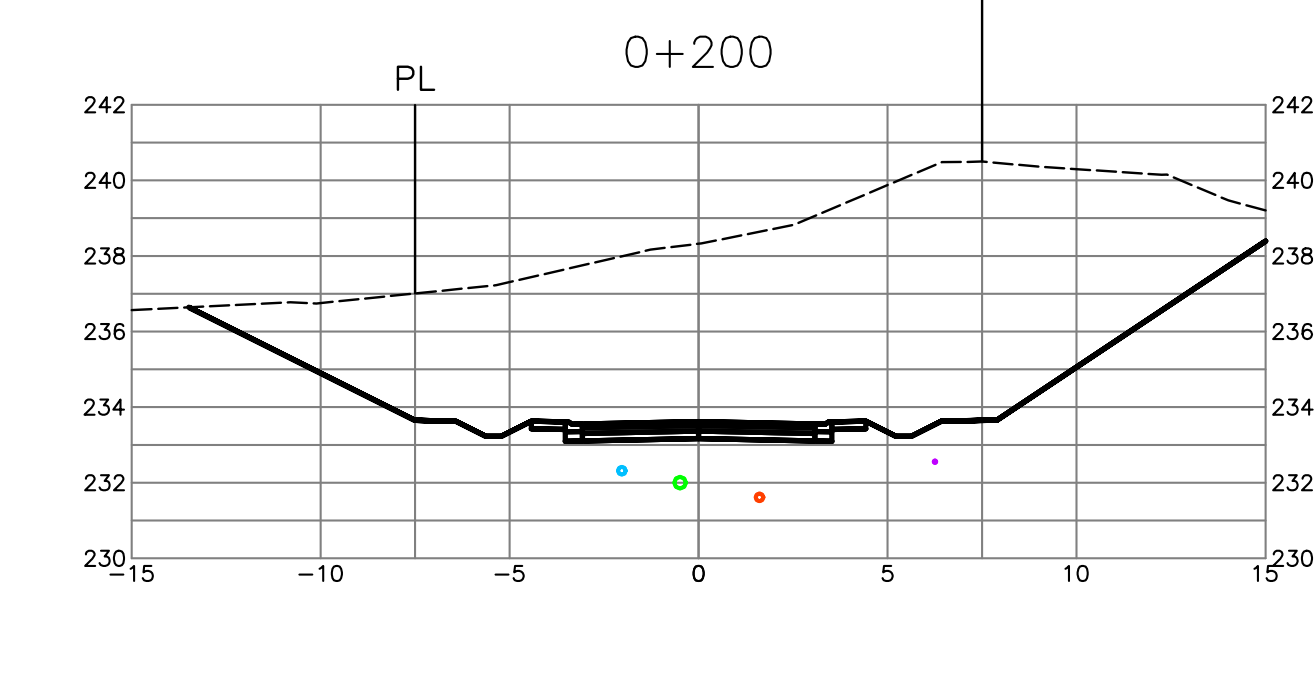
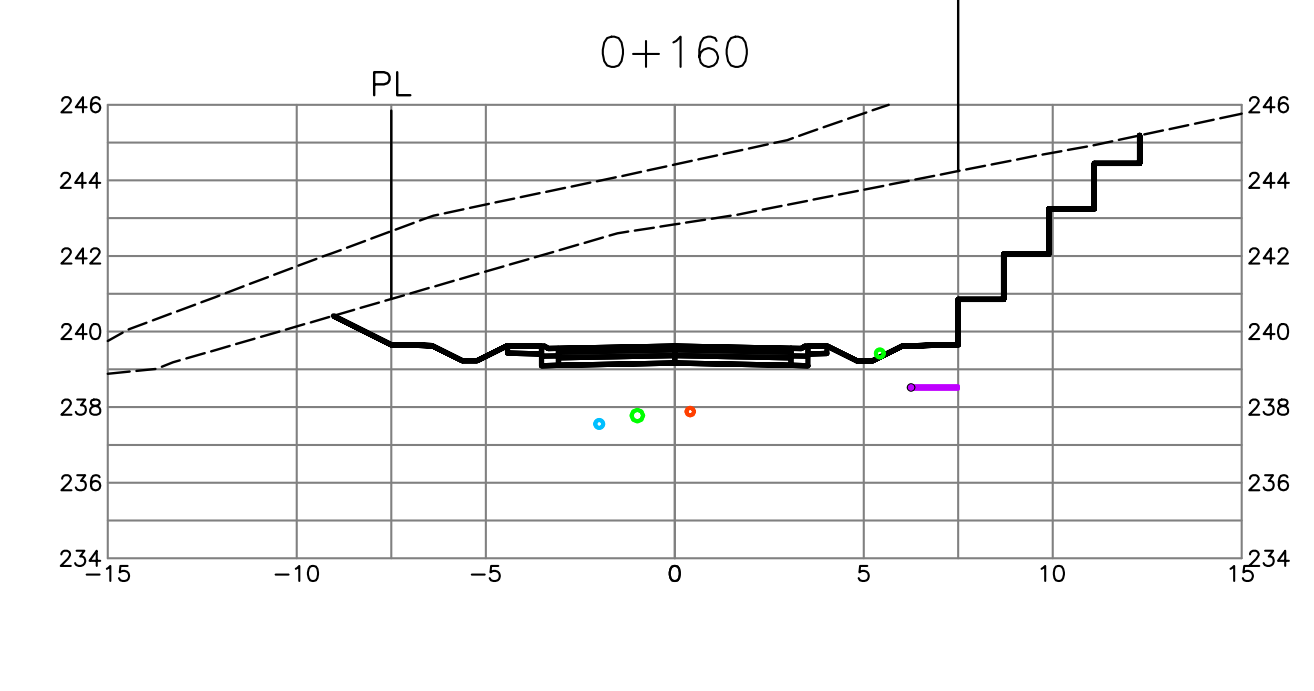
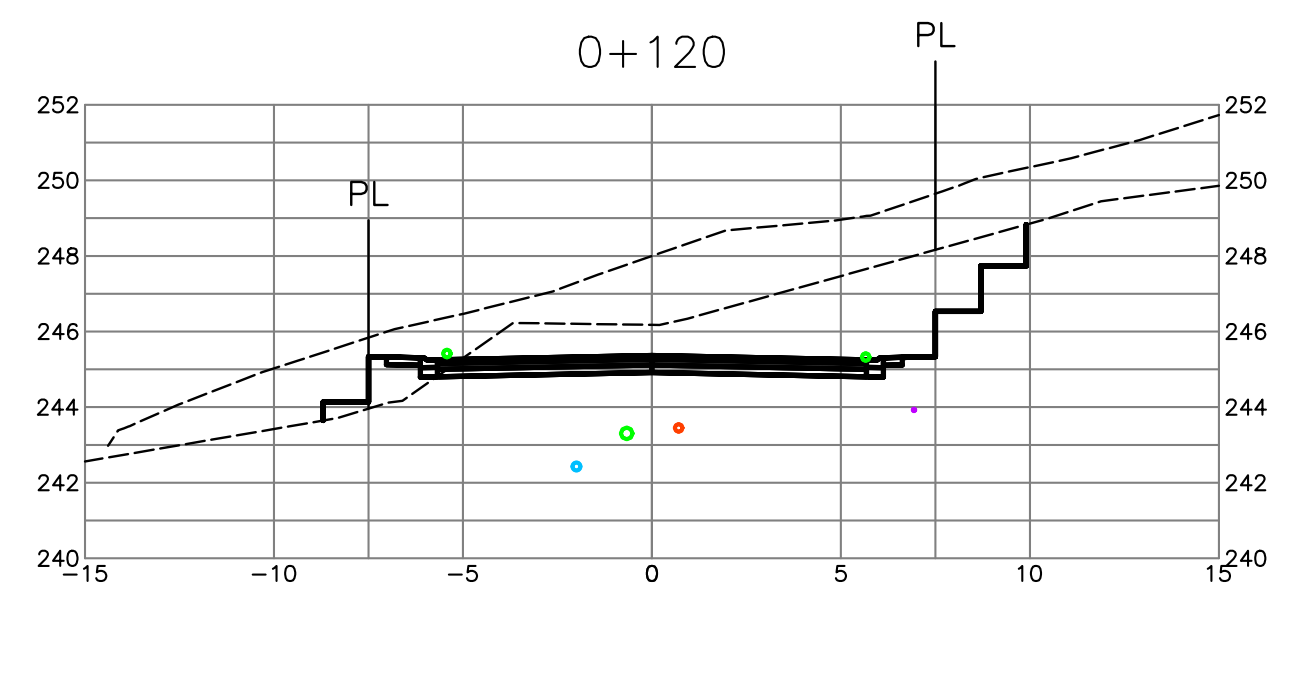
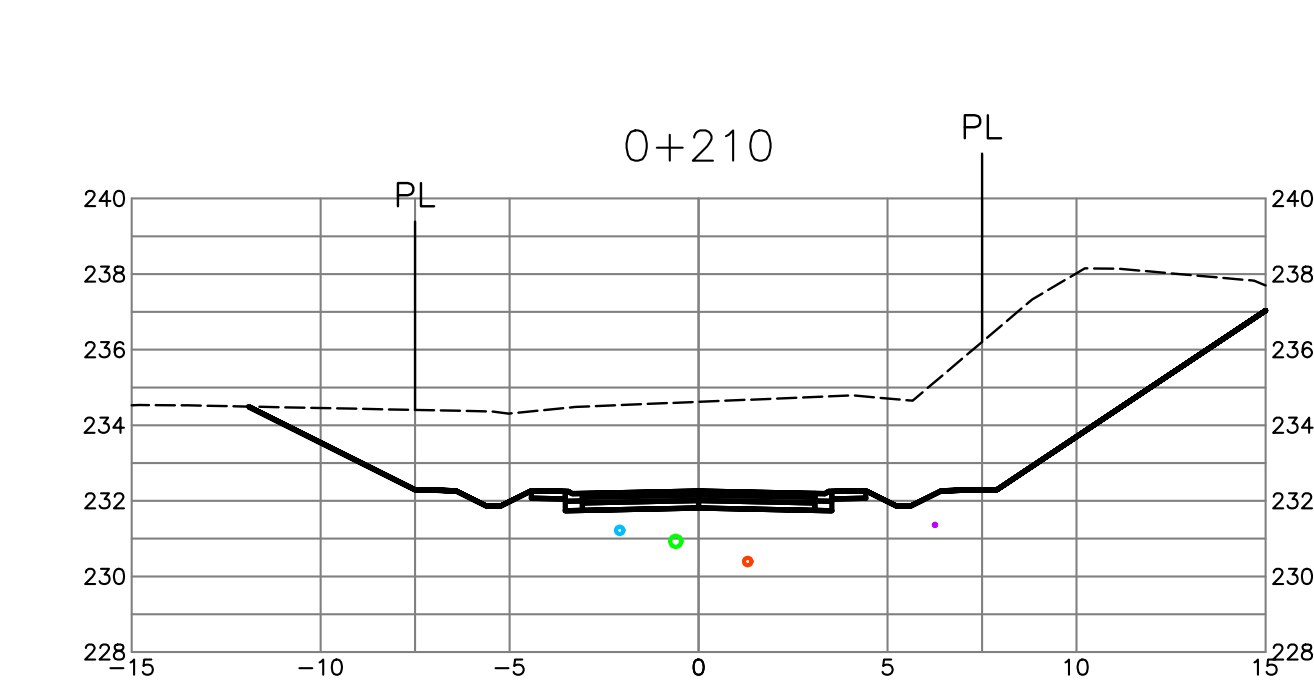
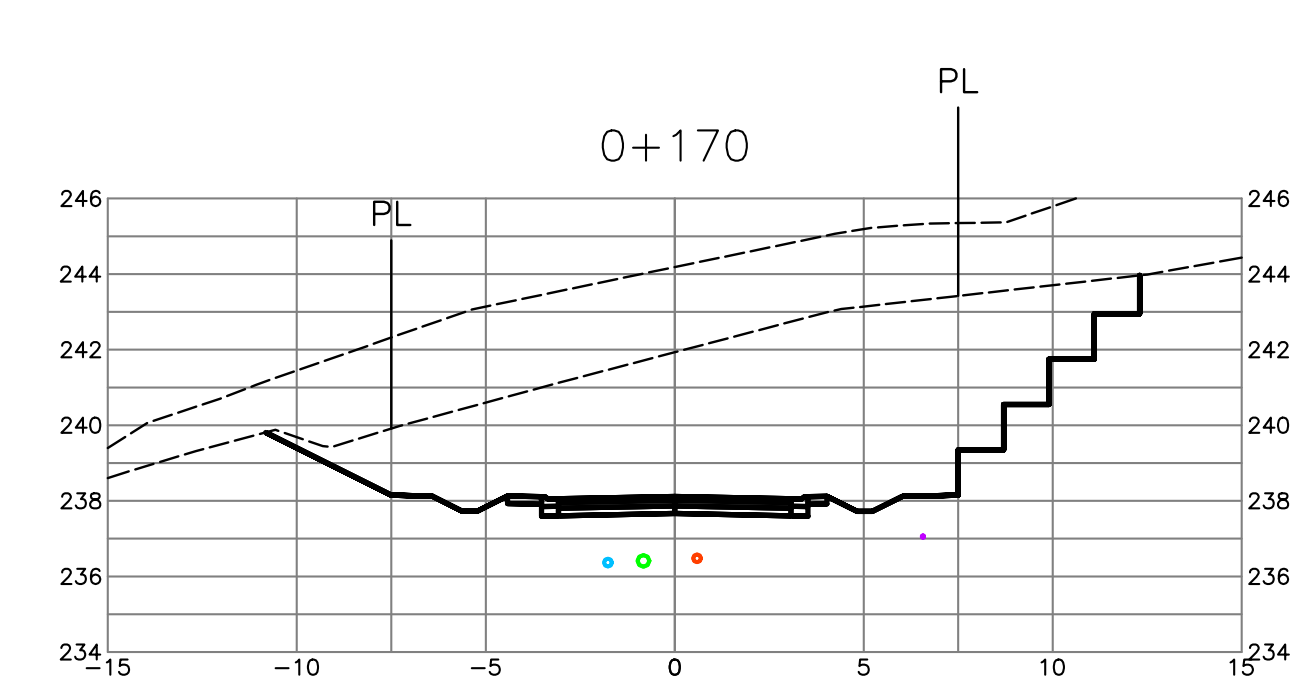
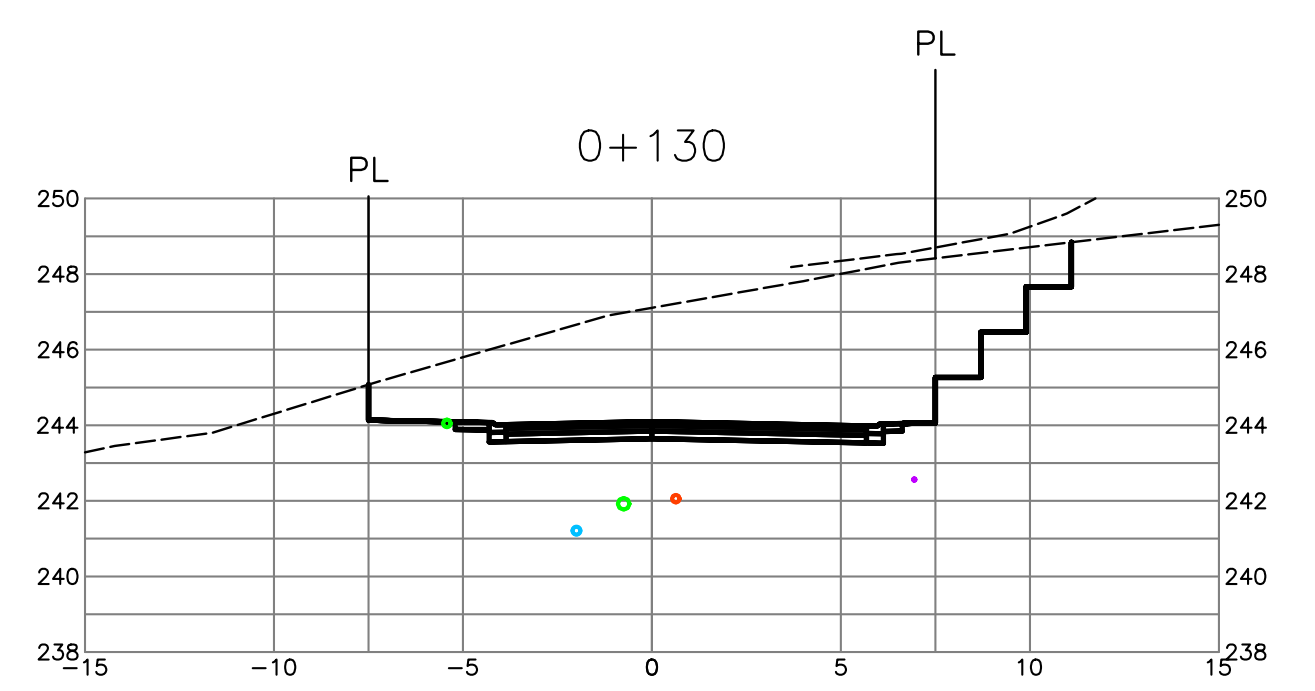
project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title  
**CROSS SECTIONS  
ROAD A  
(STA. 0+100 - 0+170)**

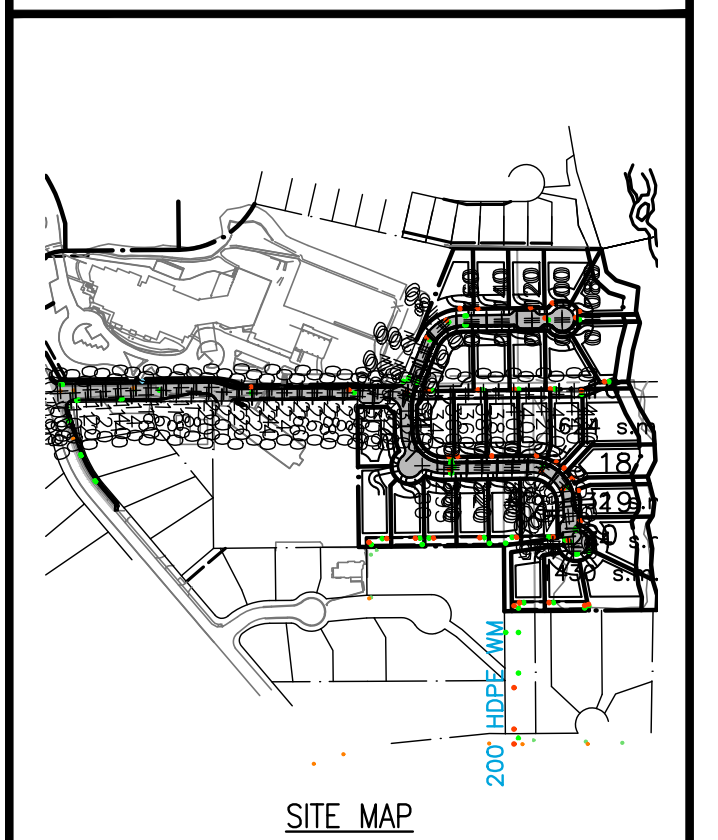
no.	(y/m/d)	revision	chk'd
10	17-04-11	RE-ISSUED FOR DP	AGC
9	17-03-29	REVISED PER DWV COMMENTS	AGC
8	17-03-15	REVISED PER DWV COMMENTS	AGC
7	17-02-09	REVISED PER DWV COMMENTS	AGC
6	17-01-26	REVISED PER DWV COMMENTS	AGC
5	17-01-18	REVISED LOTS	AGC
4	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
3	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

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engineer of record	KBH	scales	hor: 1:200	vert: 1:200
designed by	KBH <td>file no.</td> <td colspan="2">15171</td>	file no.	15171	
drawn by	AGC	drawing no.	XS-3	
date	2016-09-26	current rev. #	10	



**NOT FOR CONSTRUCTION**



SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
ESSENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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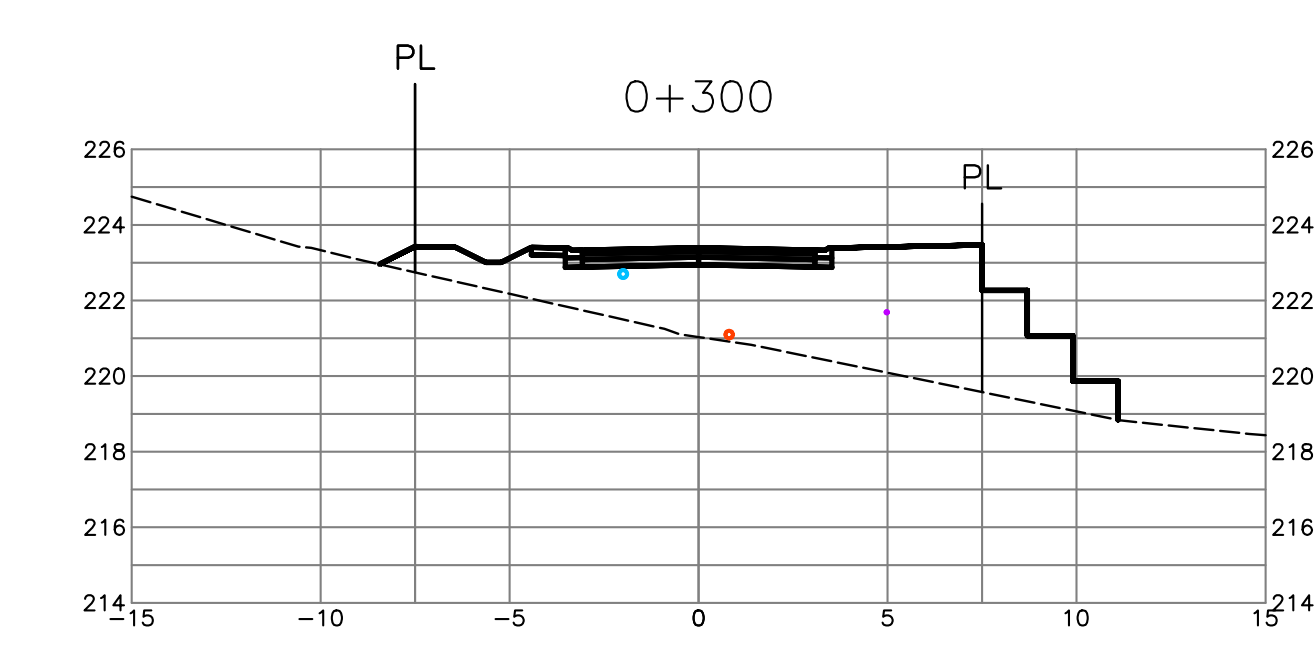
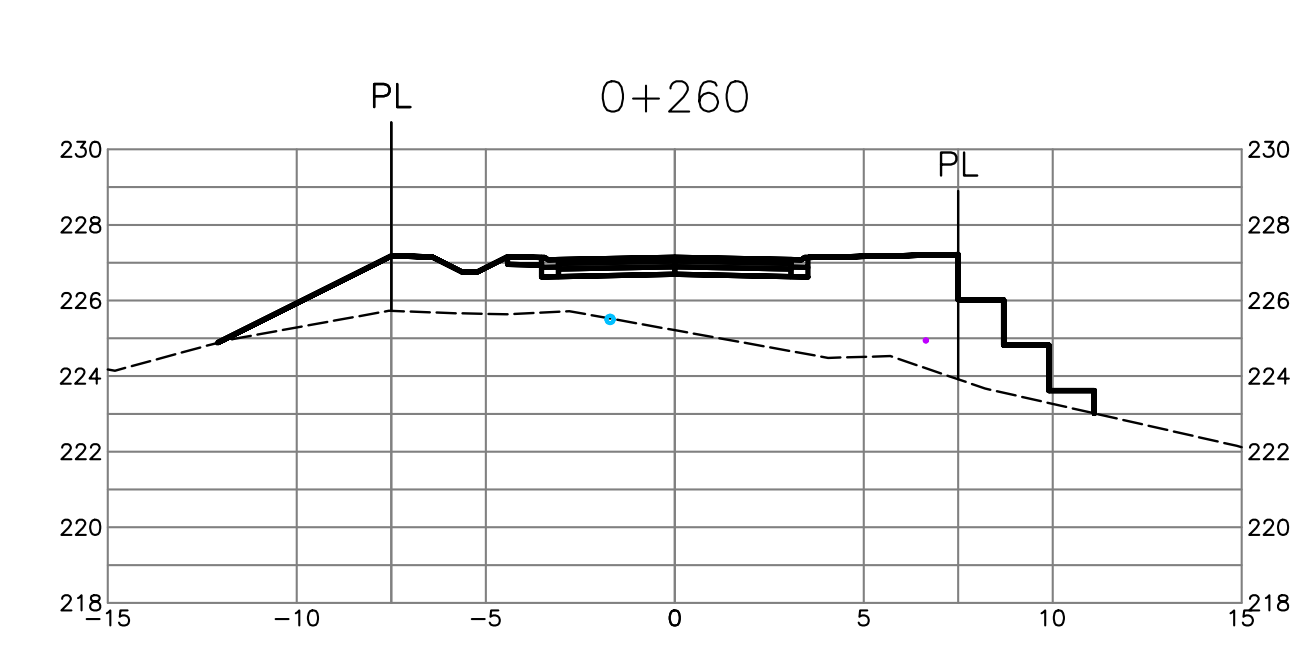
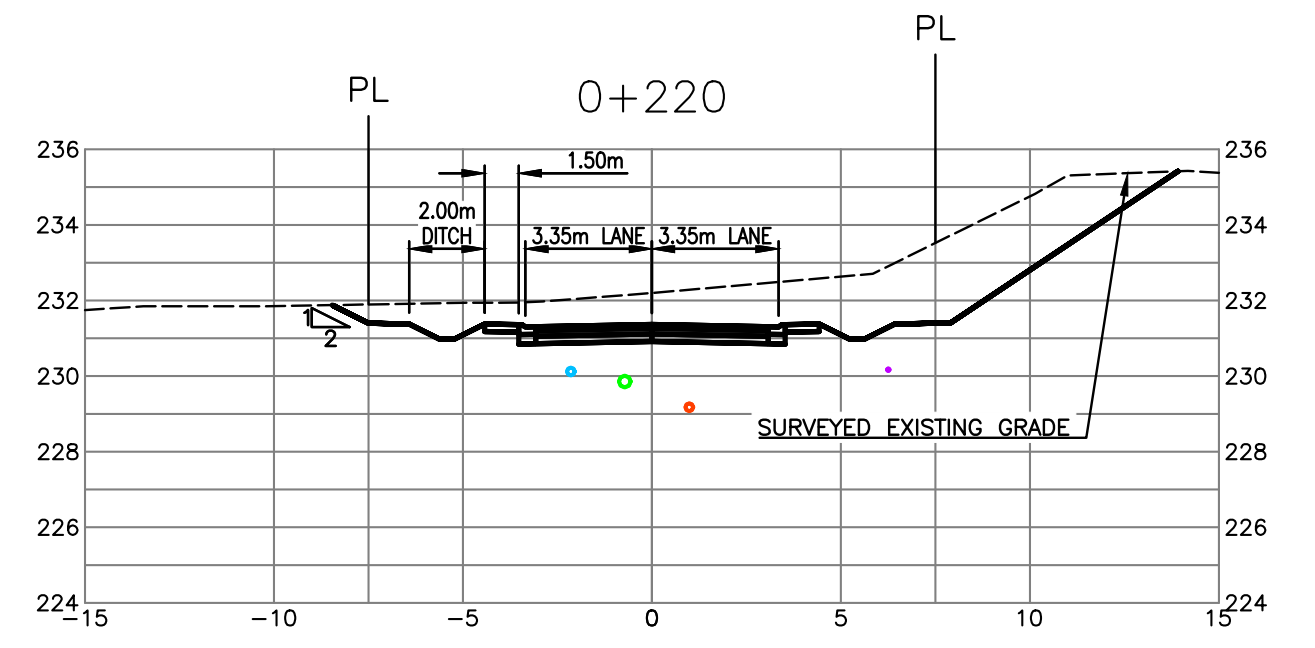
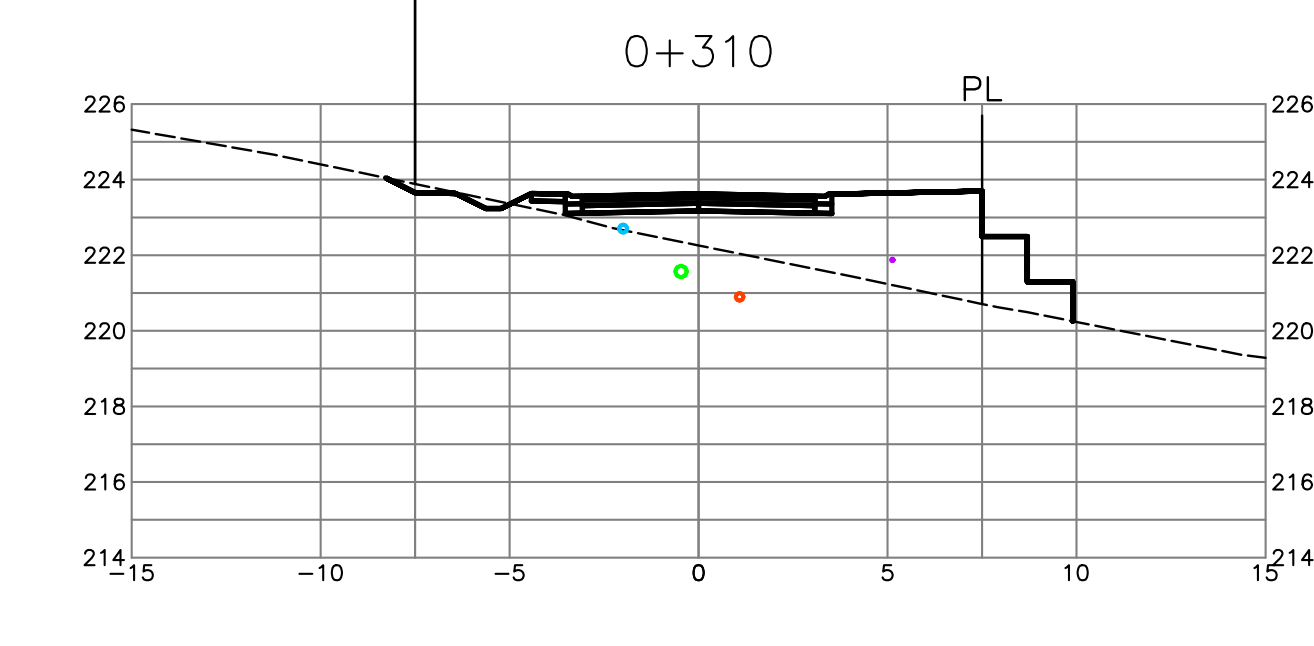
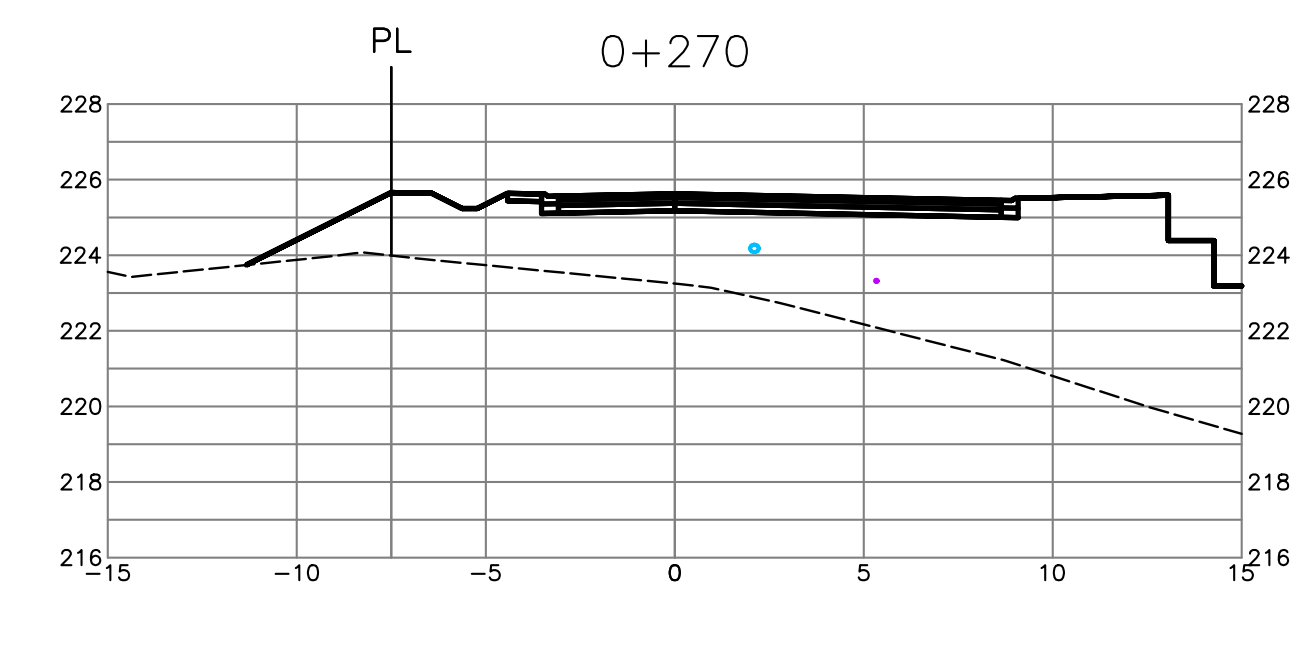
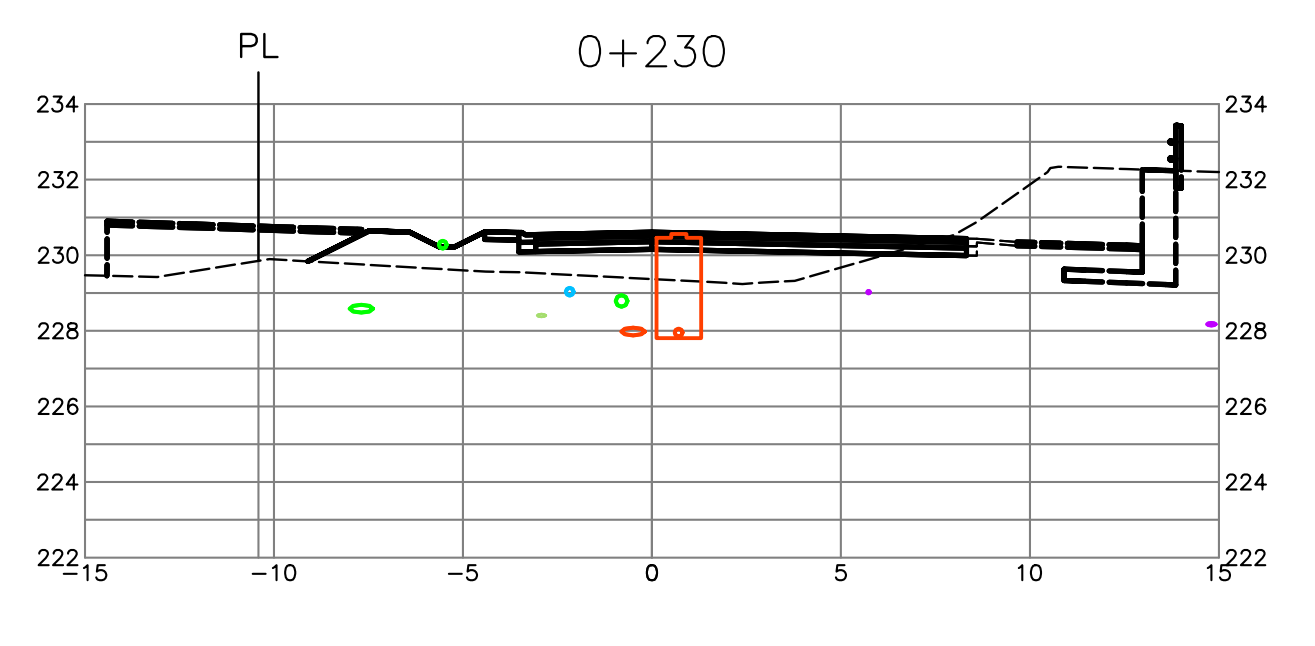
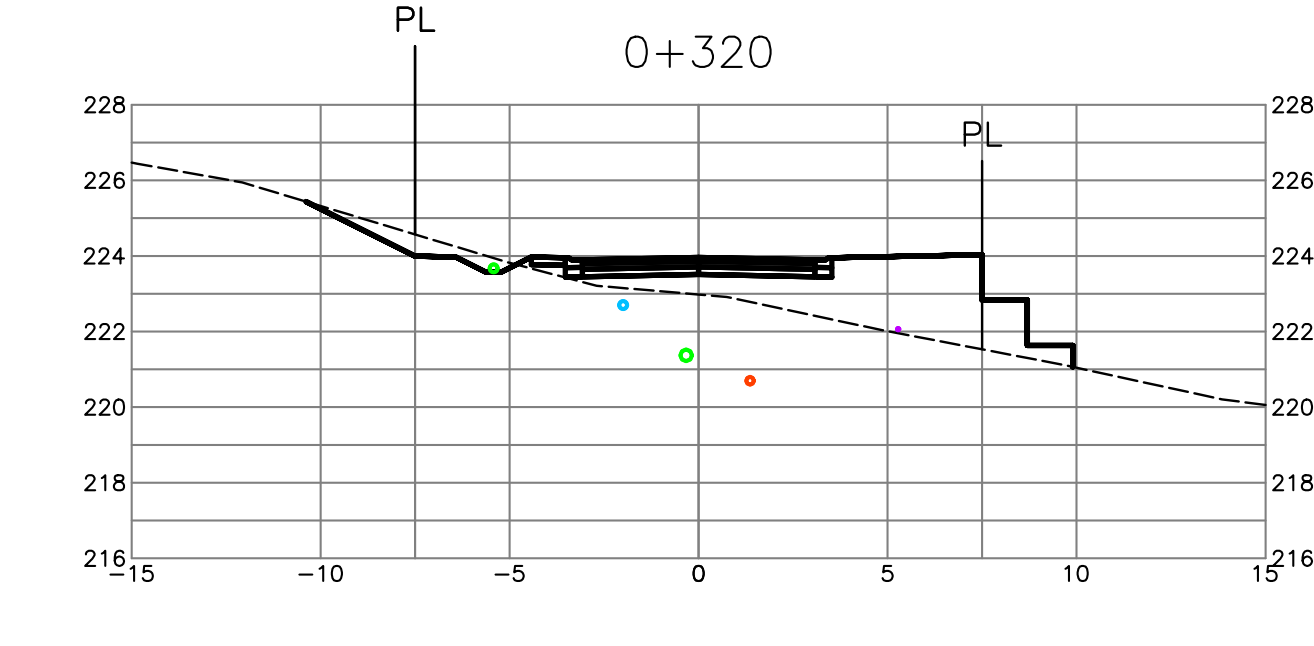
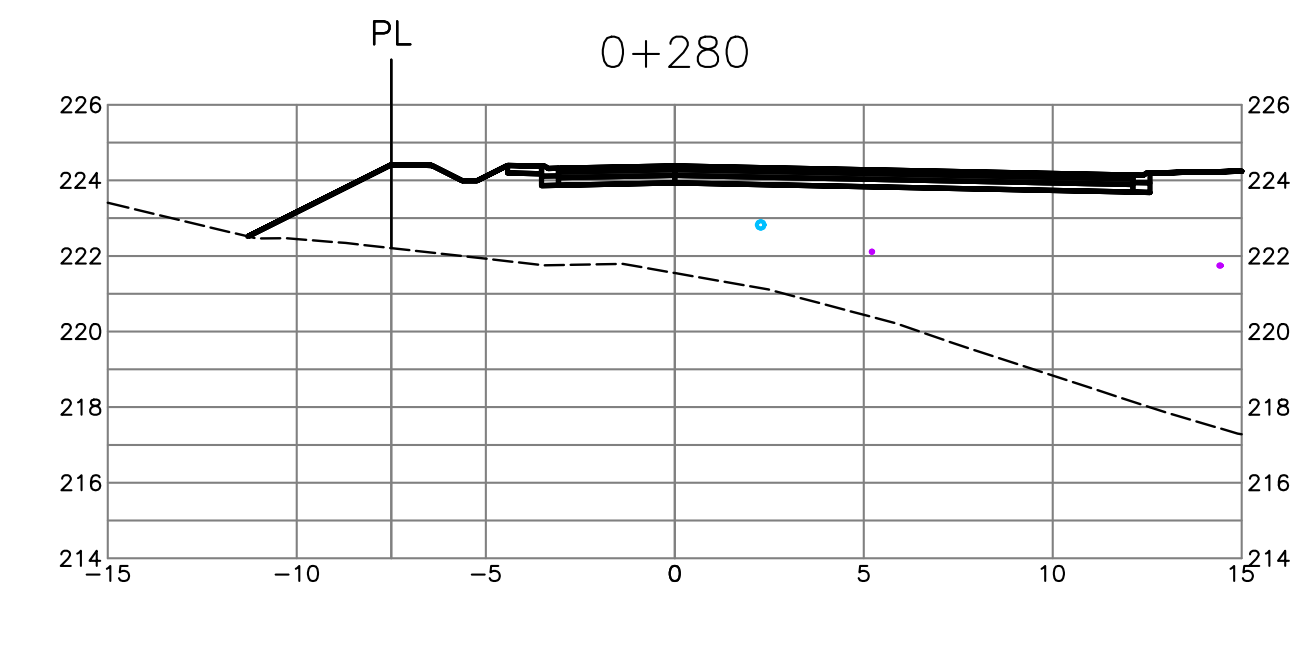
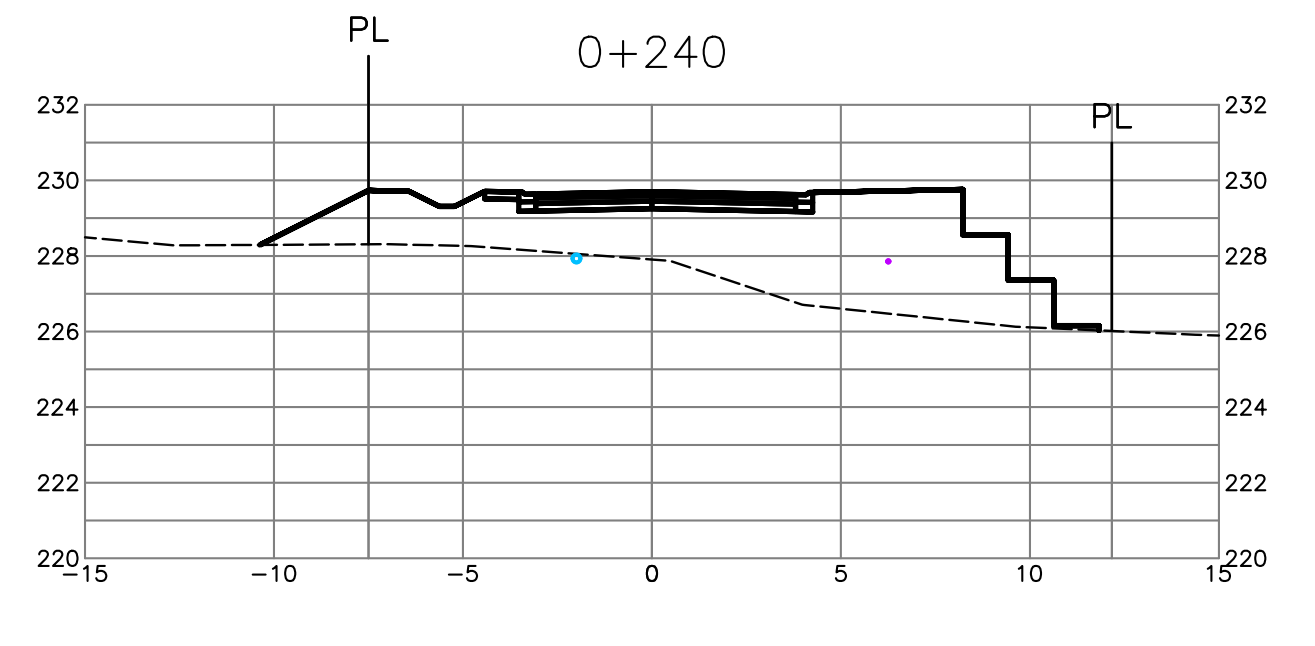
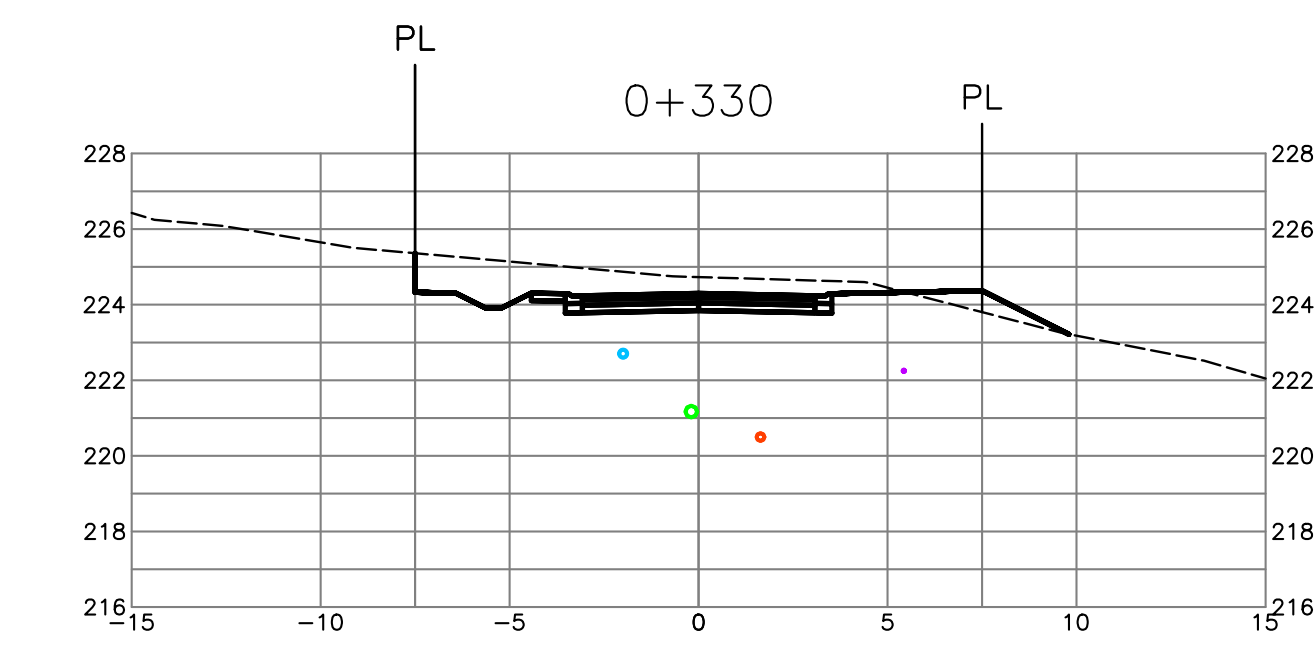
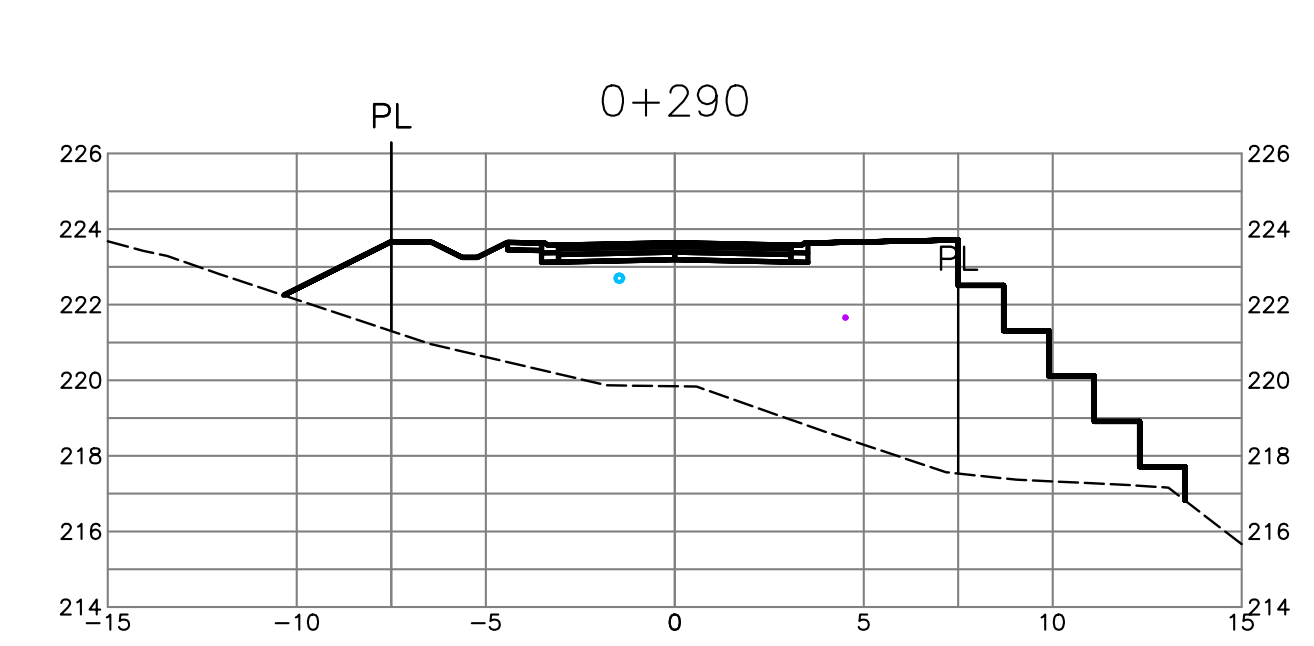
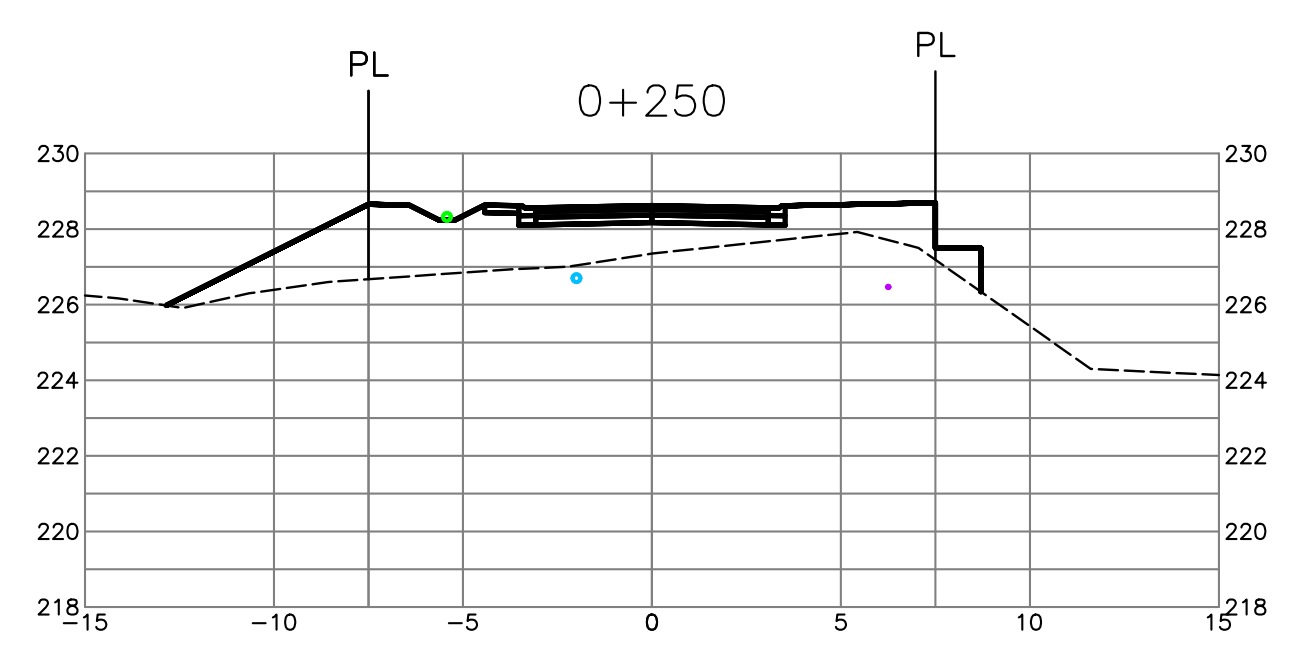
project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title  
**CROSS SECTIONS  
ROAD A  
(STA. 0+210 - 0+320)**

no.	date (y/m/d)	revision	chk'd
10	17-04-11	RE-ISSUED FOR DP	AGC
9	17-03-29	REVISED PER DWV COMMENTS	AGC
8	17-03-15	REVISED PER DWV COMMENTS	AGC
7	17-02-09	REVISED PER DWV COMMENTS	AGC
6	17-01-26	REVISED PER DWV COMMENTS	AGC
5	17-01-18	REVISED LOTS	AGC
4	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
3	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

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engineer of record	KBH	scales	hor: 1:200	vert: 1:200
designed by <td>KBH <td>file no.</td> <td colspan="2">15171</td> </td>	KBH <td>file no.</td> <td colspan="2">15171</td>	file no.	15171	
drawn by <td>AGC <td>drawing no.</td> <td colspan="2">XS-4</td> </td>	AGC <td>drawing no.</td> <td colspan="2">XS-4</td>	drawing no.	XS-4	
date	2016-09-26	current rev. #	9	



**NOT FOR CONSTRUCTION**



SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---

	EXISTING	PROP.	TO BE REMOVED
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/ISI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREETLIGHT	⊗	⊗	⊗

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client  
**EVERVAN**

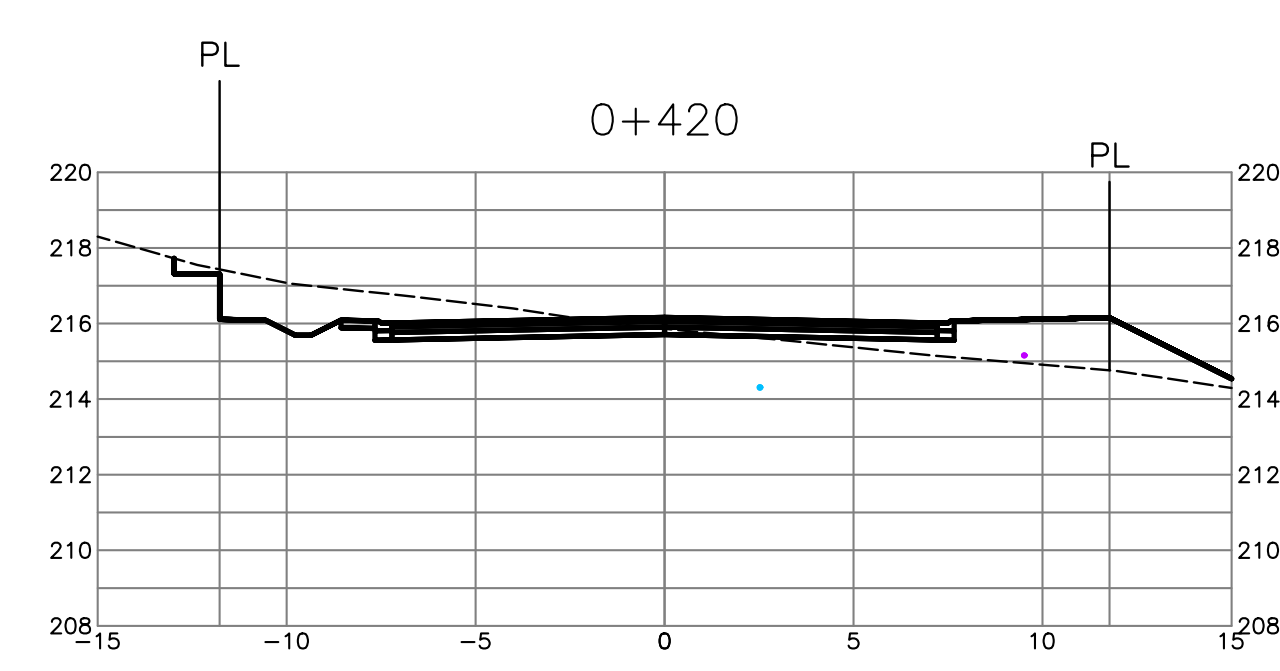
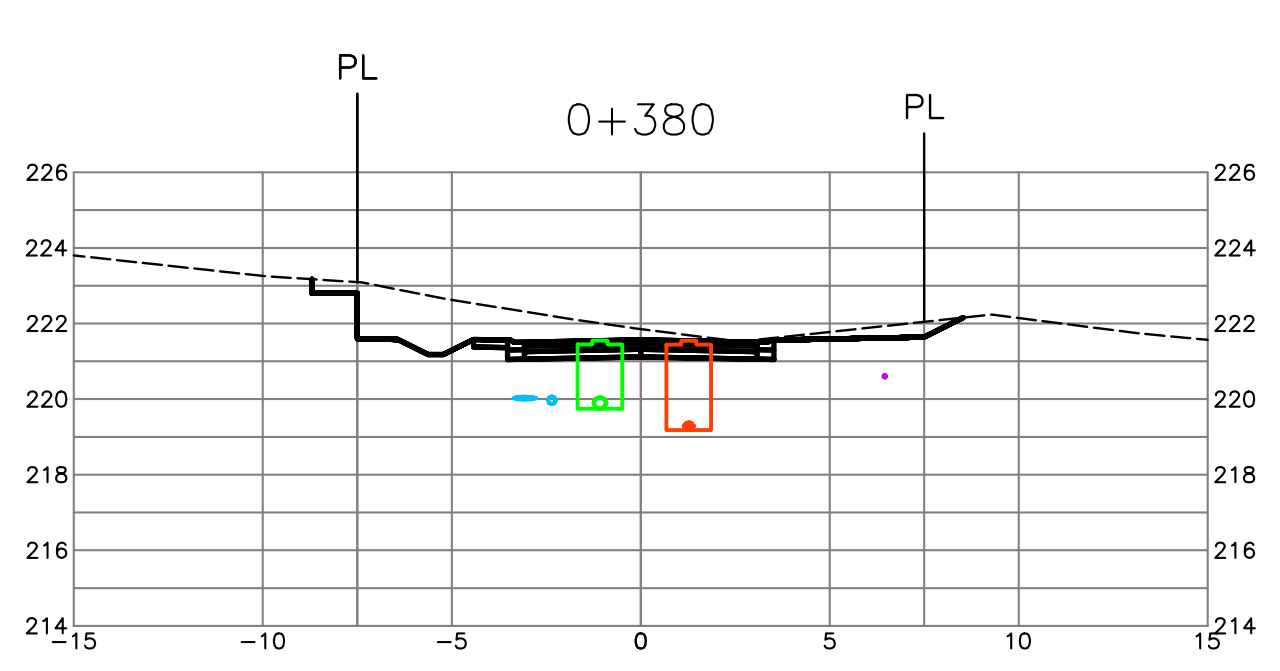
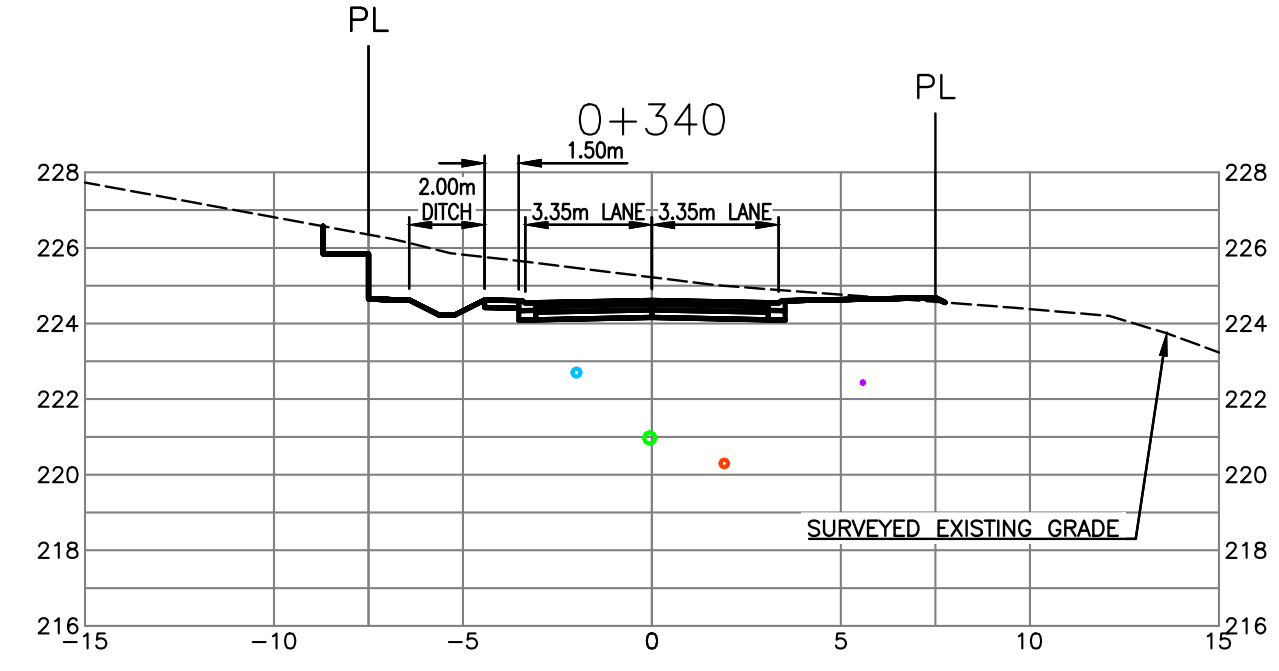
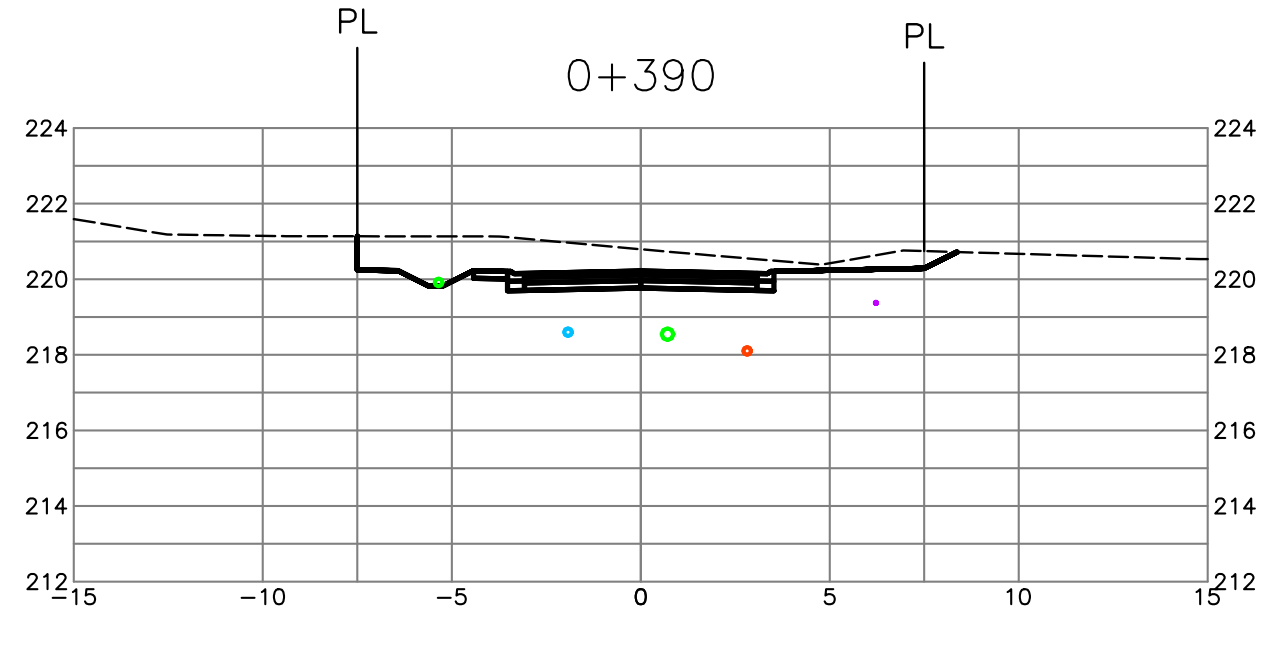
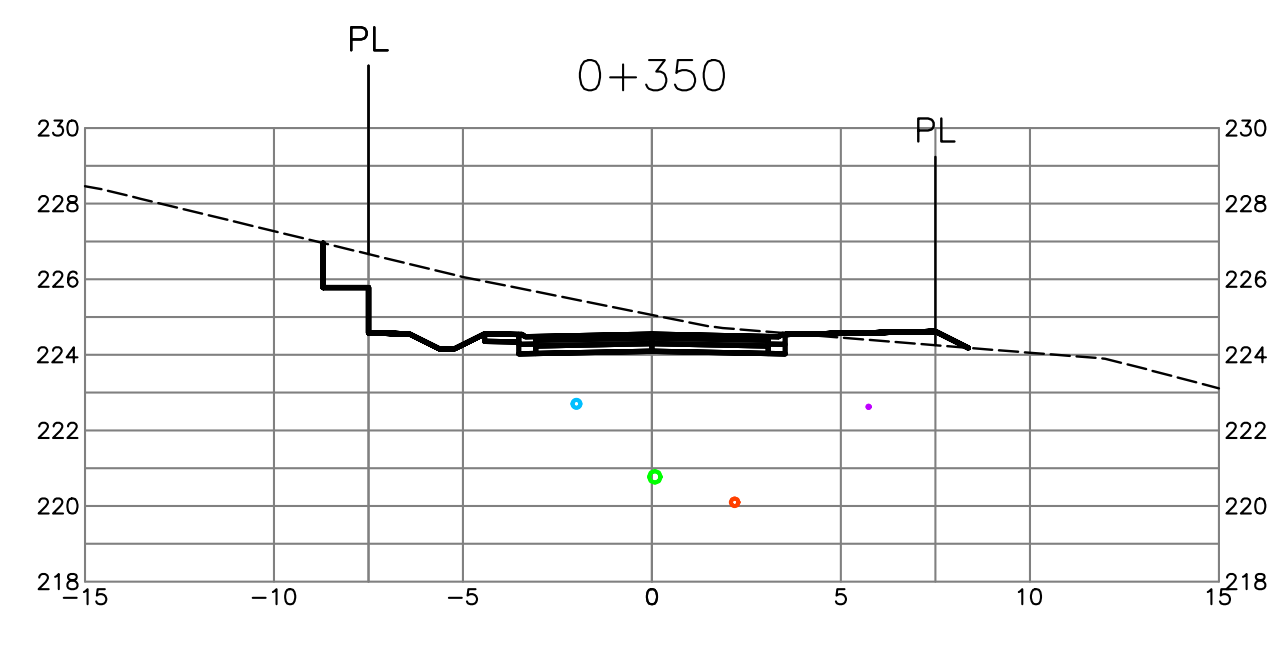
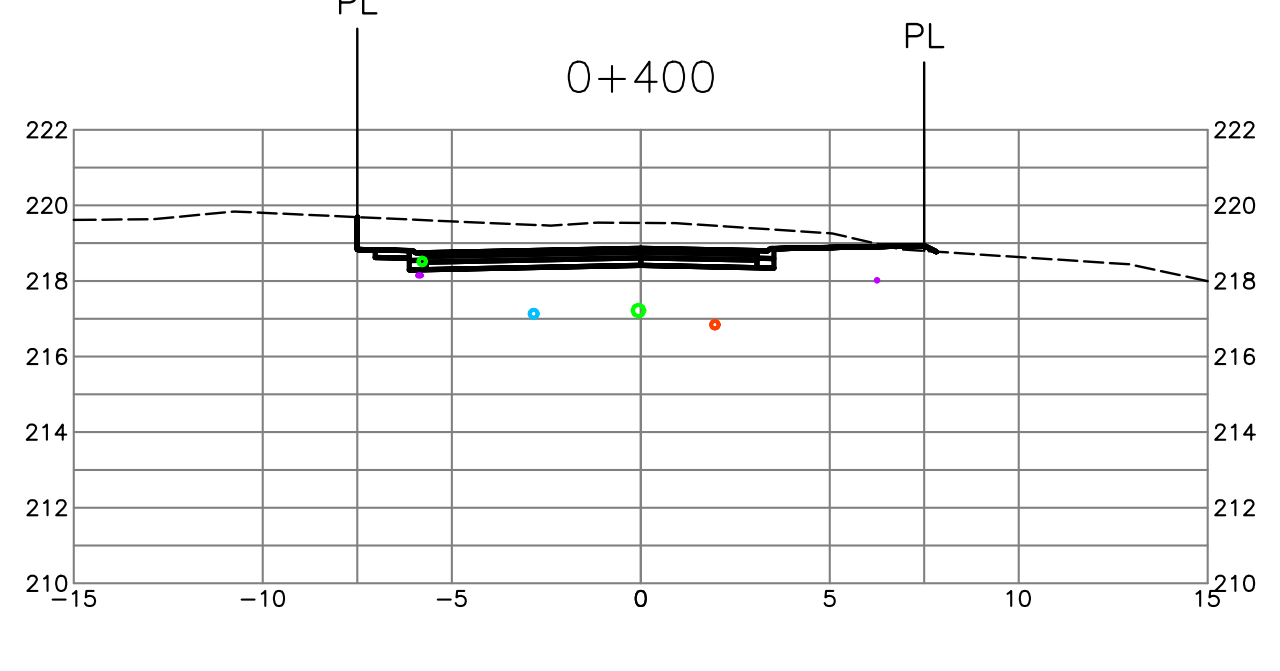
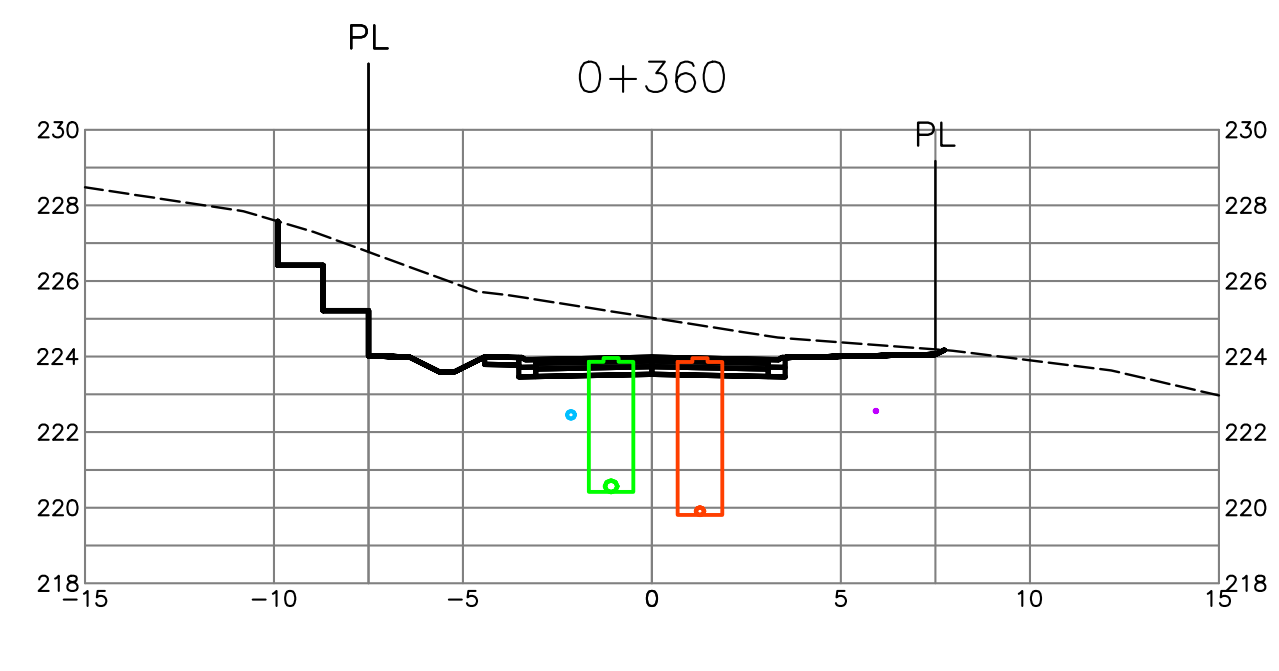
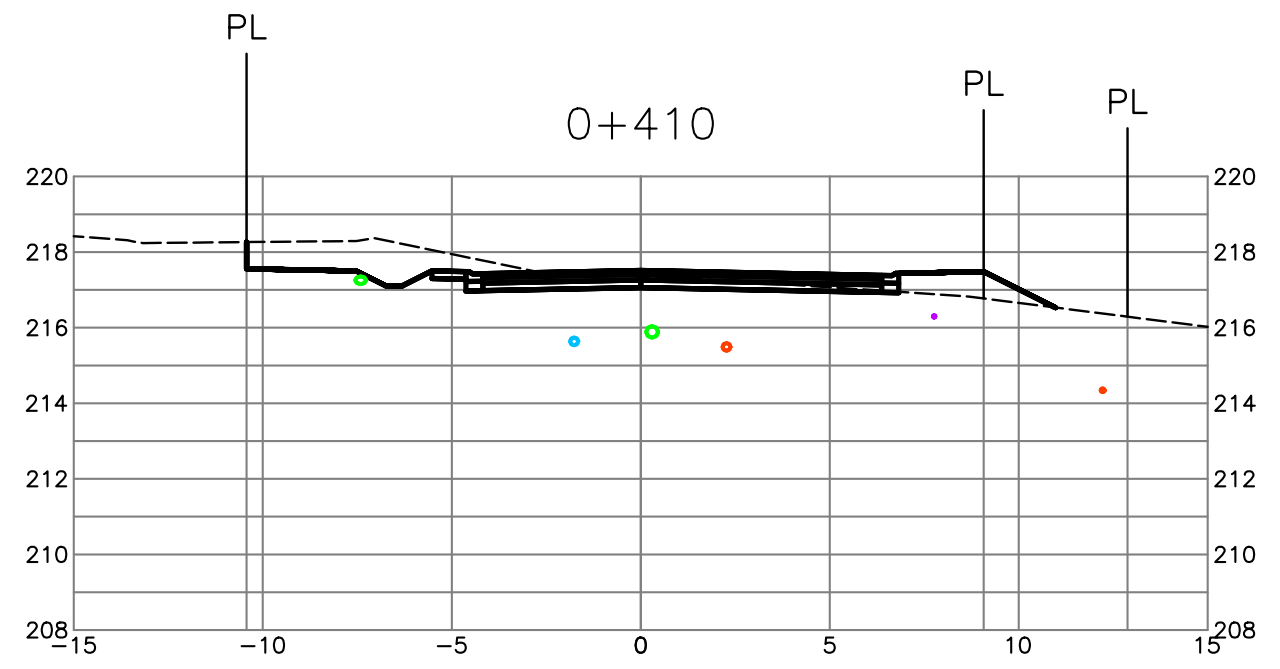
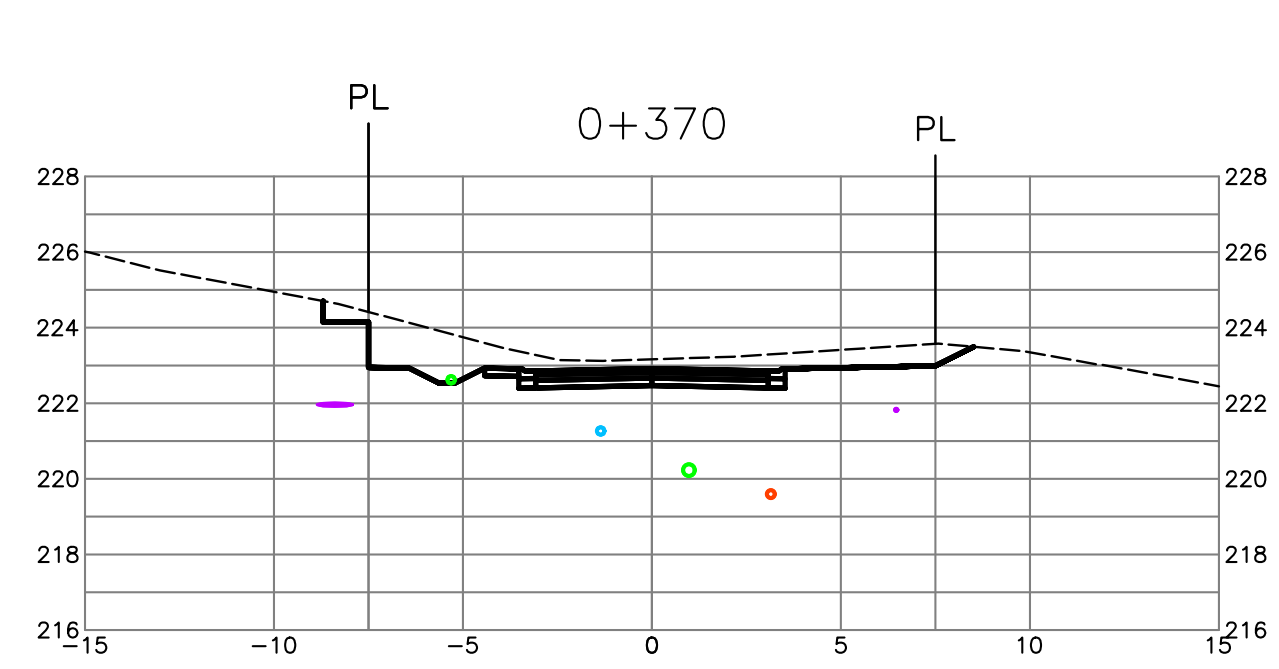
project  
**WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC**

title  
**CROSS SECTIONS  
 ROAD A  
 (STA. 0+330 - 0+420)**

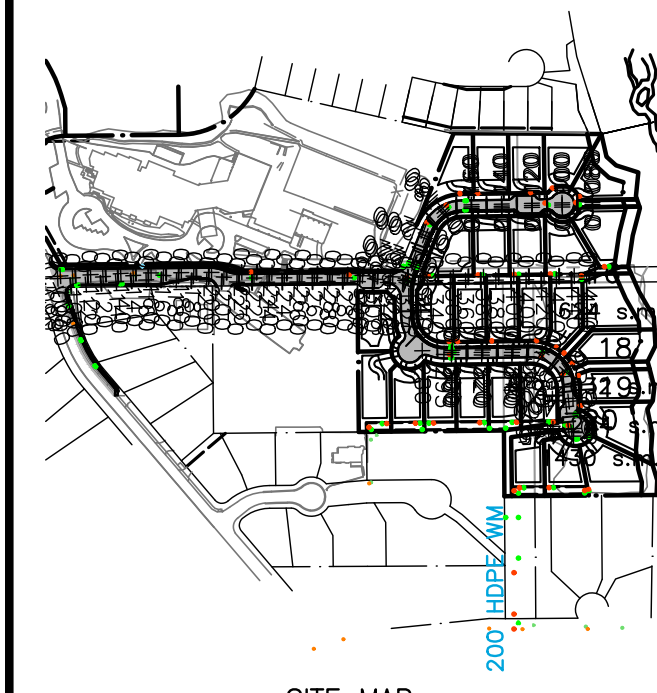
no.	(y/m/d)	revision	chk'd
10	18-04-11	RE-ISSUED FOR DP	AGC
9	17-03-29	REVISED PER DWV COMMENTS	AGC
8	17-03-15	REVISED PER DWV COMMENTS	AGC
7	17-02-09	REVISED PER DWV COMMENTS	AGC
6	17-01-26	REVISED PER DWV COMMENTS	AGC
5	17-01-18	REVISED LOTS	AGC
4	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
3	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

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engineer of record	KBH	file no.	15171
designed by	KBH	drawing no.	XS-5
drawn by	AGC	date	2016-09-26



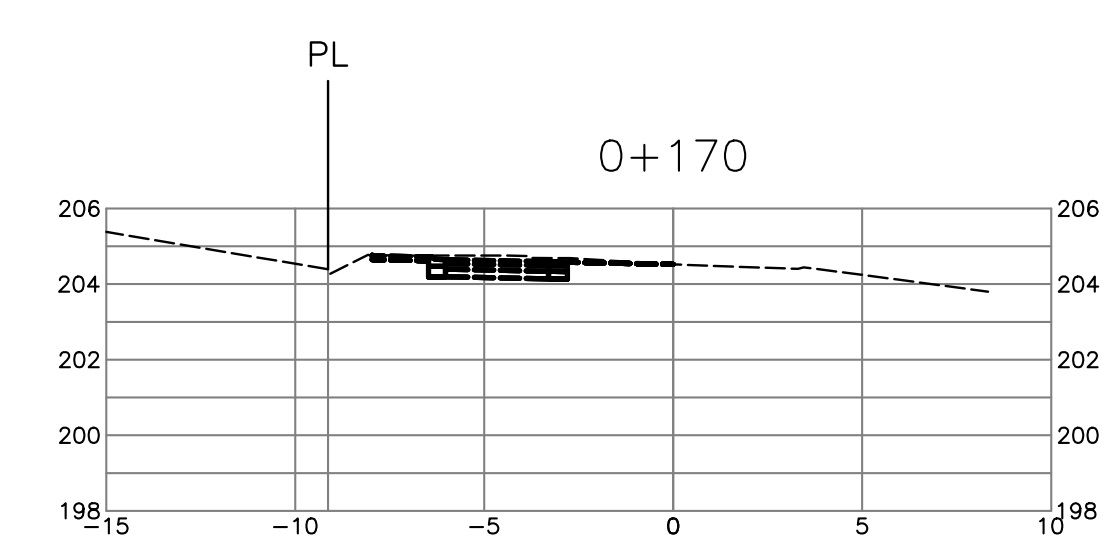
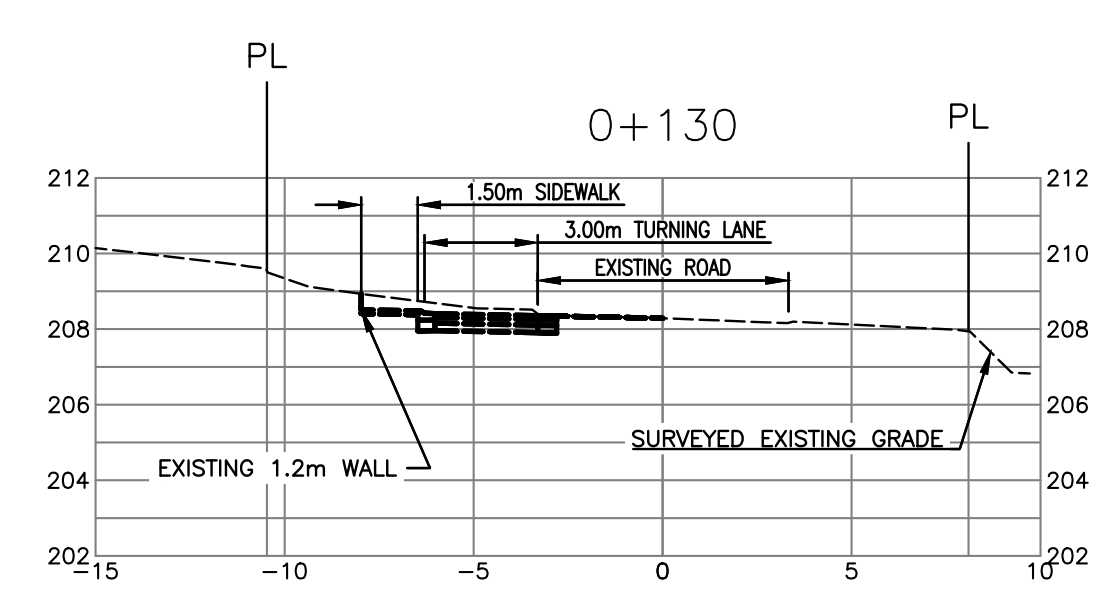
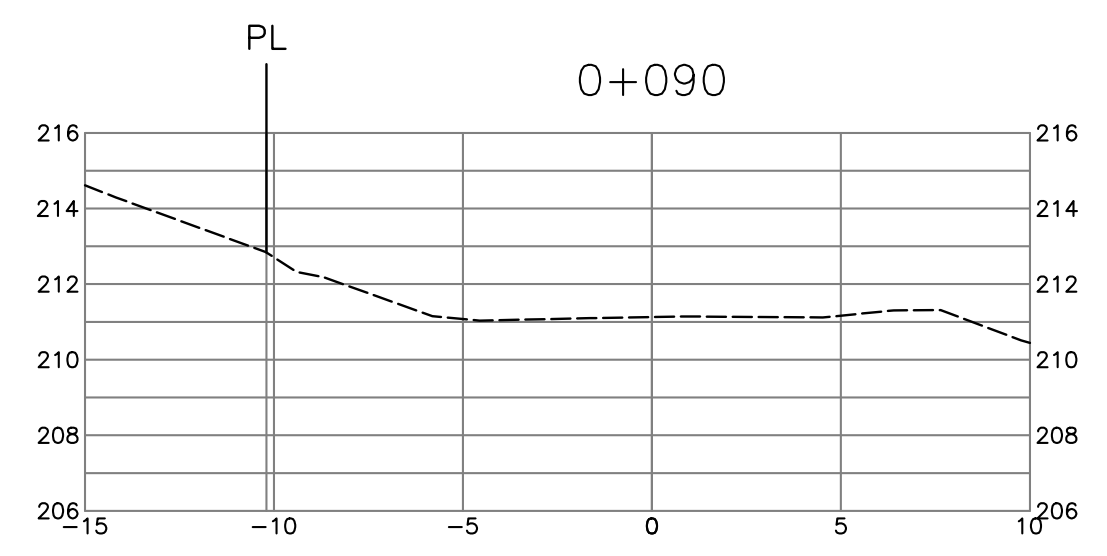
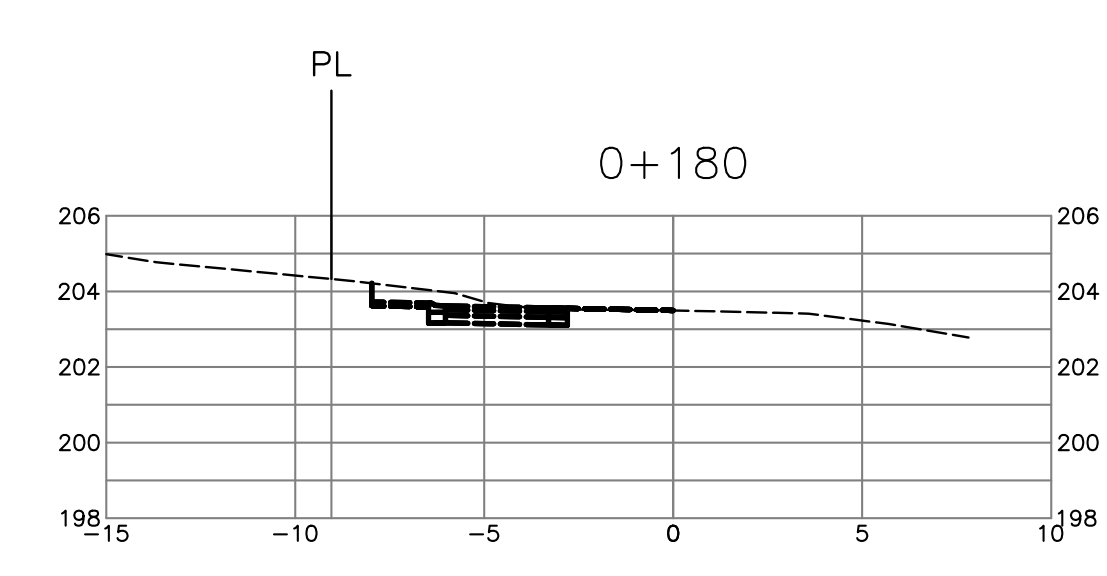
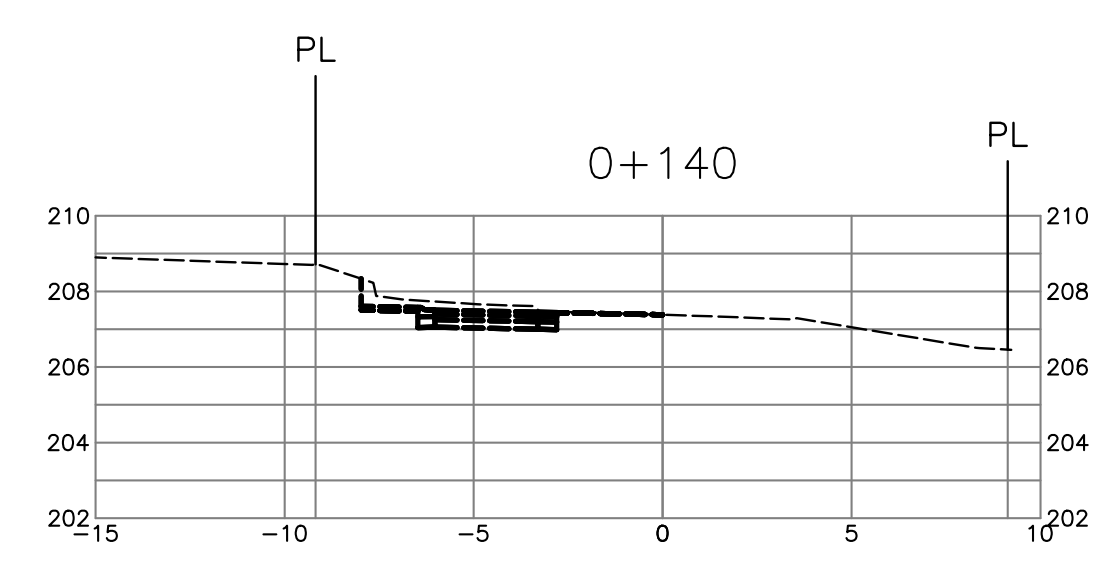
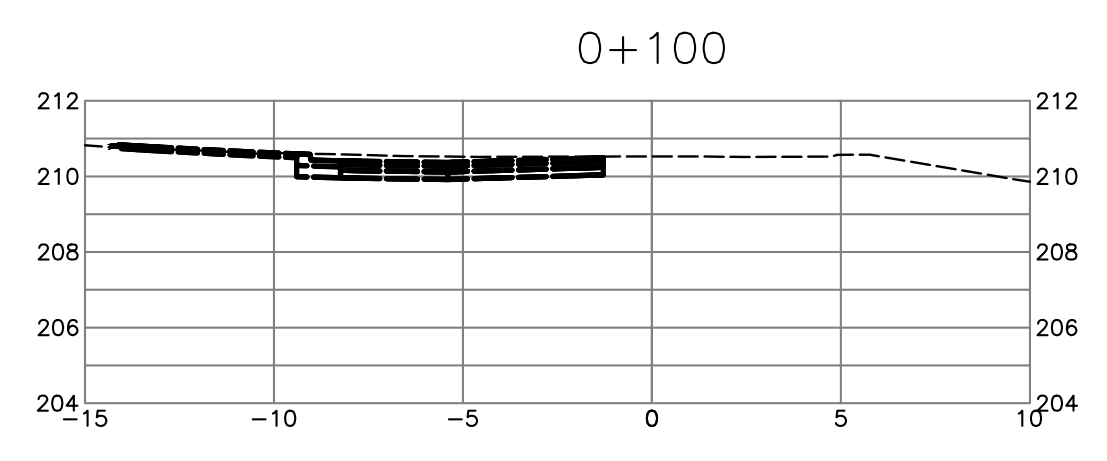
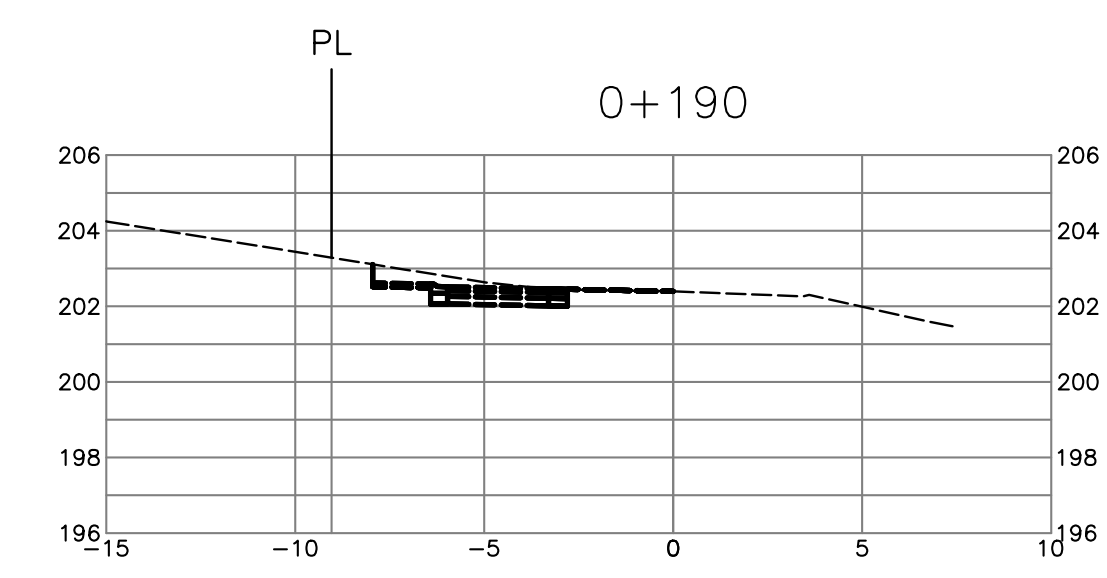
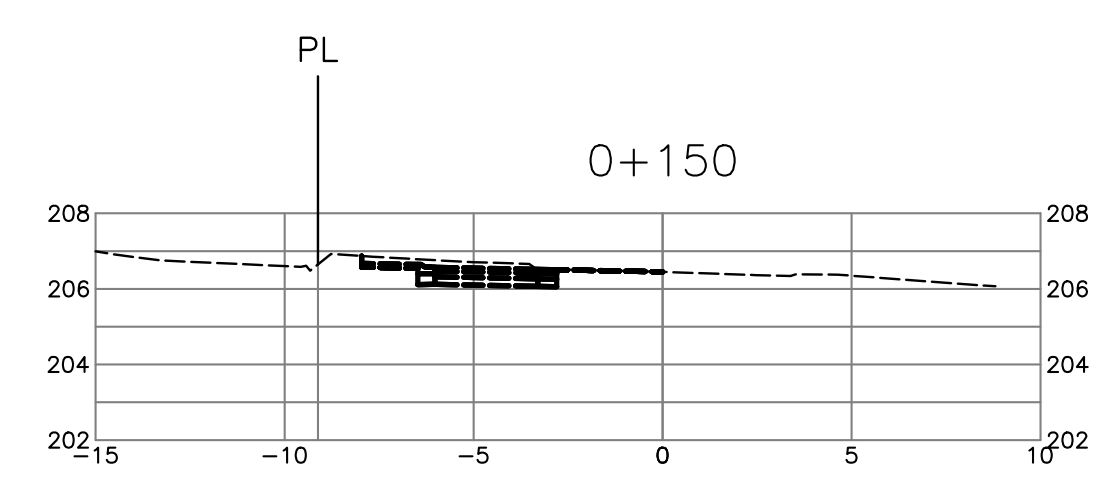
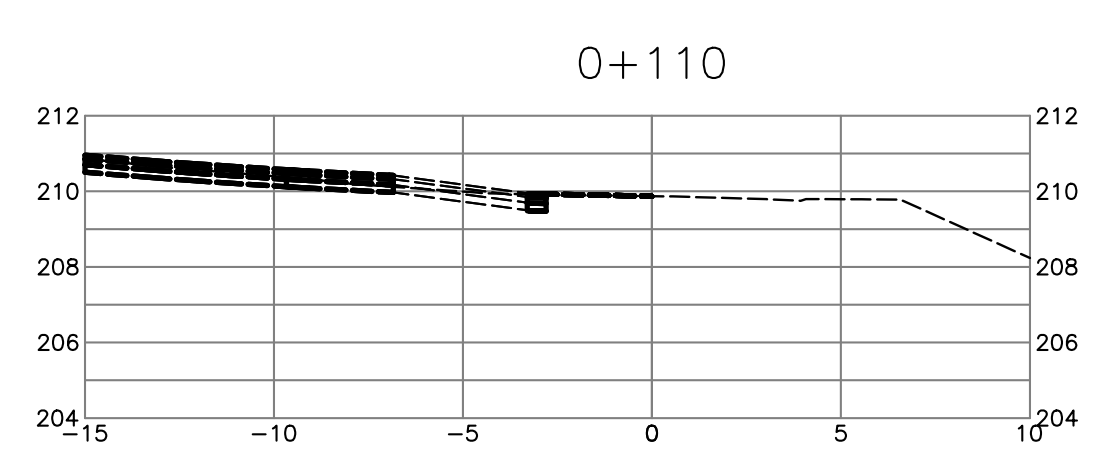
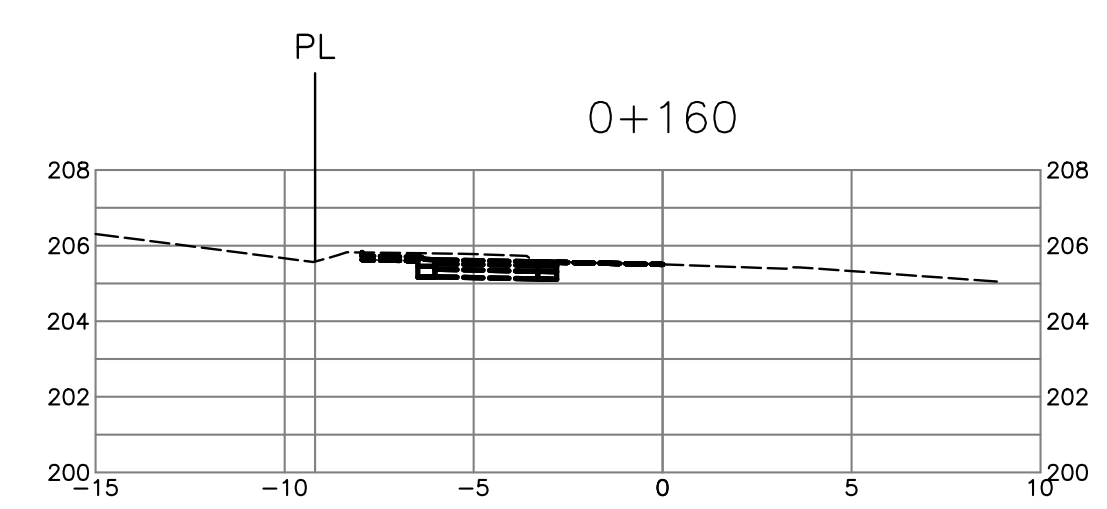
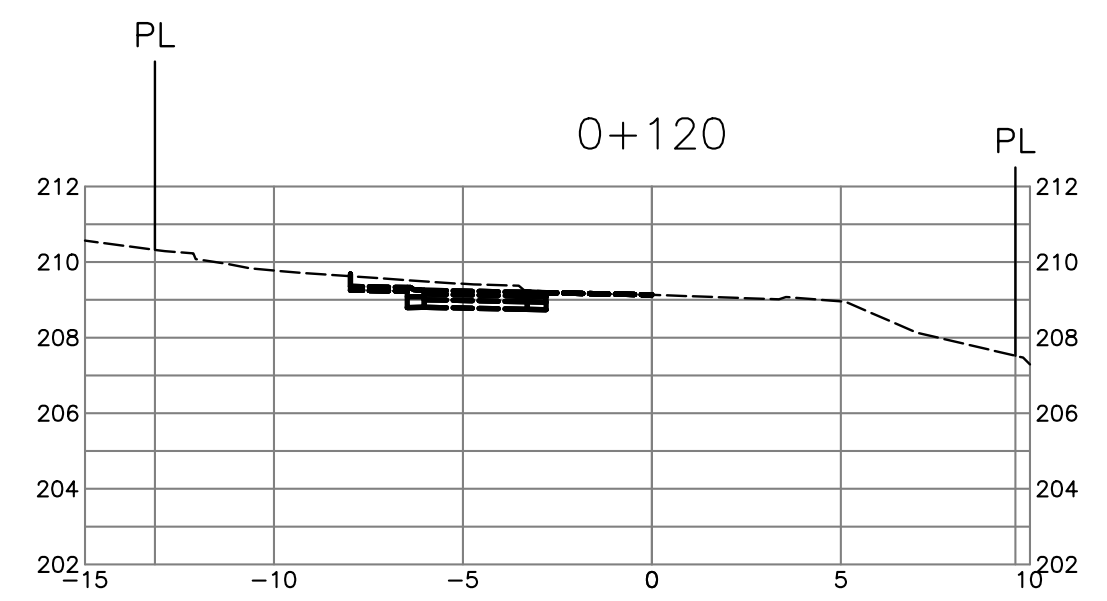
**NOT FOR CONSTRUCTION**



SITE MAP

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/SI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREET LIGHT	⊗	⊗	⊗



approved

client  
**EVERVAN**

project  
**WENTWORTH COLLINGWOOD  
WEST VANCOUVER, BC**

title  
**CROSS SECTIONS  
CHAIRLIFT ROAD  
(STA. 0+090 - 0+190)**

no.	(y/m/d)	revision	chk'd
10	17-04-11	RE-ISSUED FOR DP	AGC
9	17-03-29	REVISED PER DWV COMMENTS	AGC
8	17-03-15	REVISED PER DWV COMMENTS	AGC
7	17-02-09	REVISED PER DWV COMMENTS	AGC
6	17-01-26	REVISED PER DWV COMMENTS	AGC
5	17-01-18	REVISED LOTS	AGC
4	17-01-12	CHAIRLIFT ROAD & STAIRS	AGC
3	16-12-14	CHAIRLIFT ROAD & CORNER	AGC

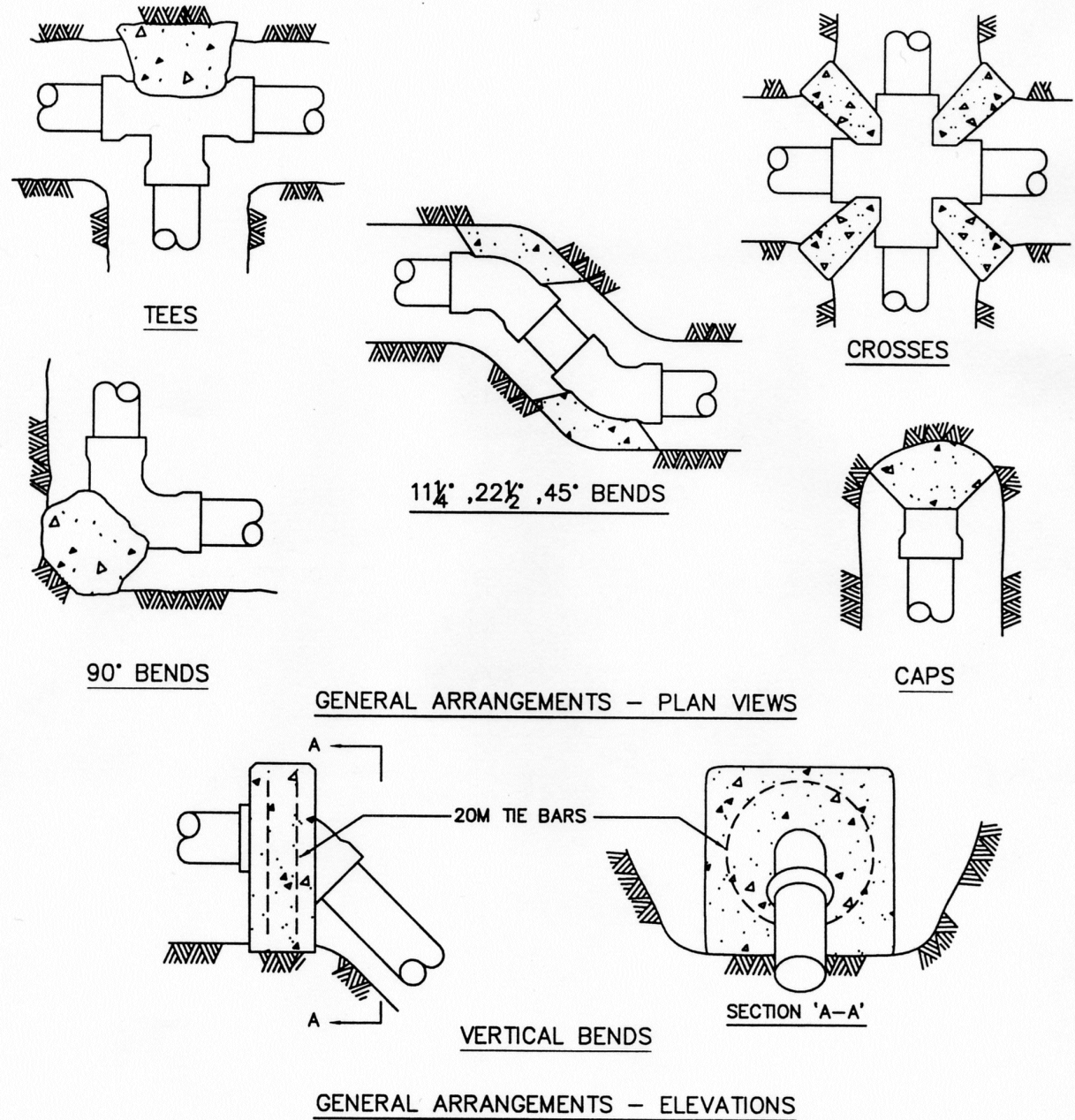
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engineer of record	KBH	scales	hor: 1:200	vert: 1:200
designed by	KBH	file no.	15171	
drawn by	AGC	drawing no.	XS-6	
date	2016-09-26	current rev. #	10	

**NOT FOR CONSTRUCTION**



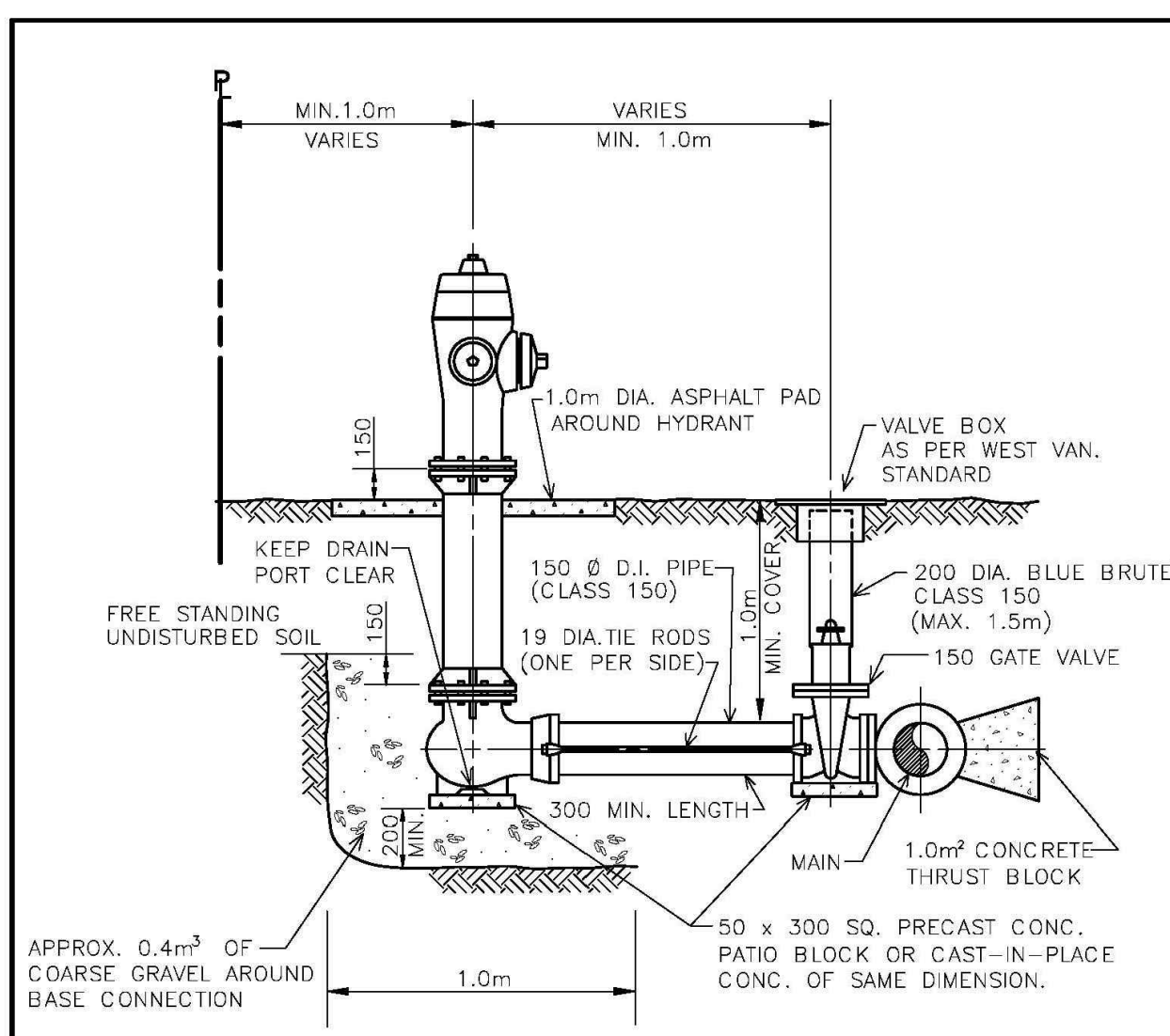
**MMCD** STANDARD DETAIL DRAWINGS



- 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 AND SECTIONS, 02666 AND 03300 FOR DETAILED SPECIFICATIONS.

TYPICAL THRUST BLOCK ARRANGEMENTS

DRAWING NUMBER: **W1**

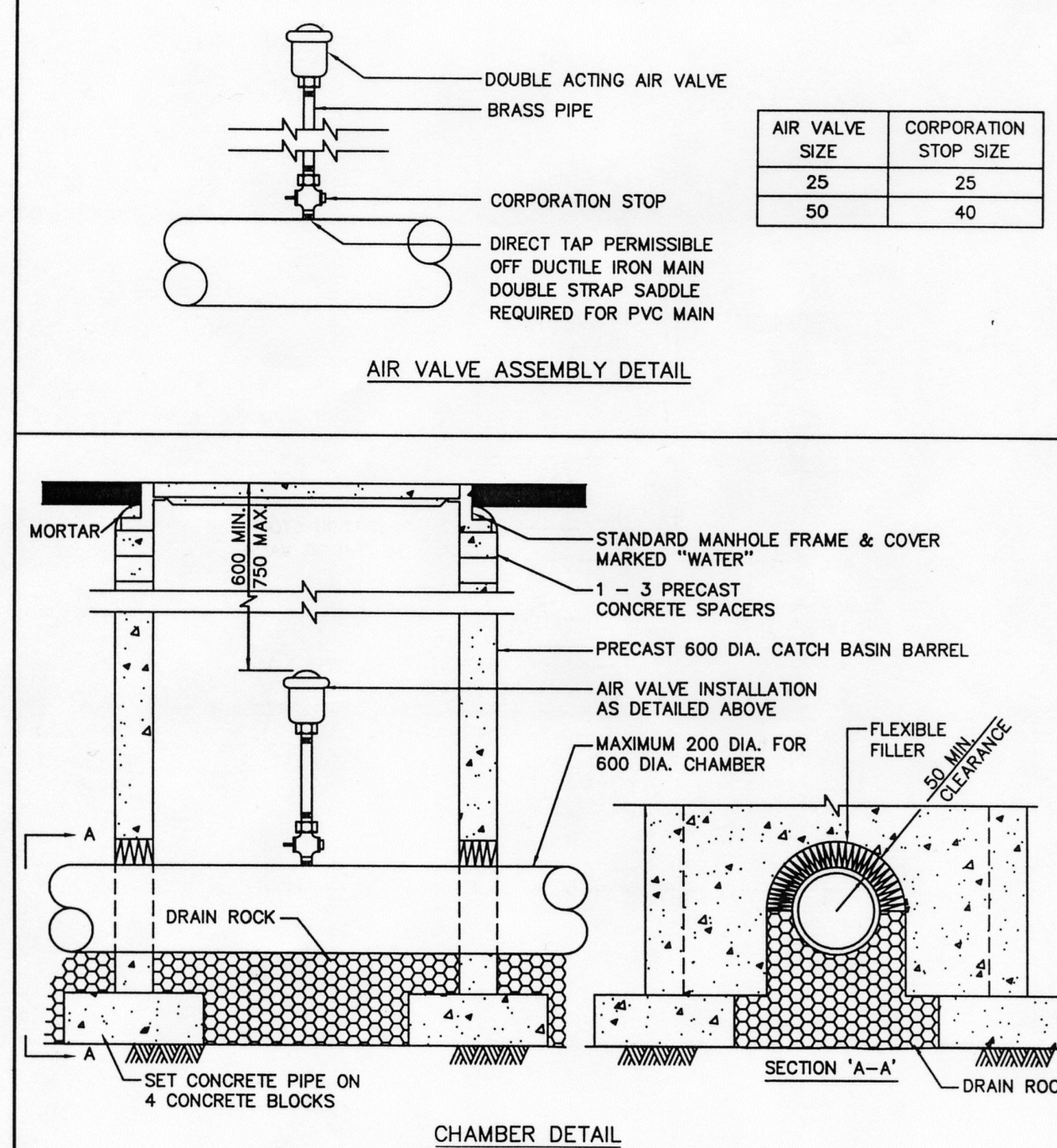


- NOTES:  
 1.) PUMPER PORT TO BE FLAGGED WITH 300 x 300 x 6 PLYWOOD SQUARE.  
 2.) MUNICIPAL HYDRANTS TO BE TERMINAL CITY No. 20P PAINTED RED.  
 3.) HYDRANT DRAIN TO BE CLEAR OF CONCRETE.  
 4.) HYDRANT TO BE INSTALLED VERTICALLY WITH MAXIMUM TOLERANCE OF 3".  
 5.) THE RODS TO BE INSTALLED WITH CADMIUM PLATED REDY-ROD AND GRADE 5 CADMIUM PLATED NUTS.  
 6.) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

TITLE: FIRE HYDRANT ASSEMBLY  
 DISTRICT OF WEST VANCOUVER

DATE: MAY/11 REV: 1  
 APPR: G.W. DWG. NO.  
 DRAWN: H.J.B.  
 SCALE: N.T.S. **W-1**

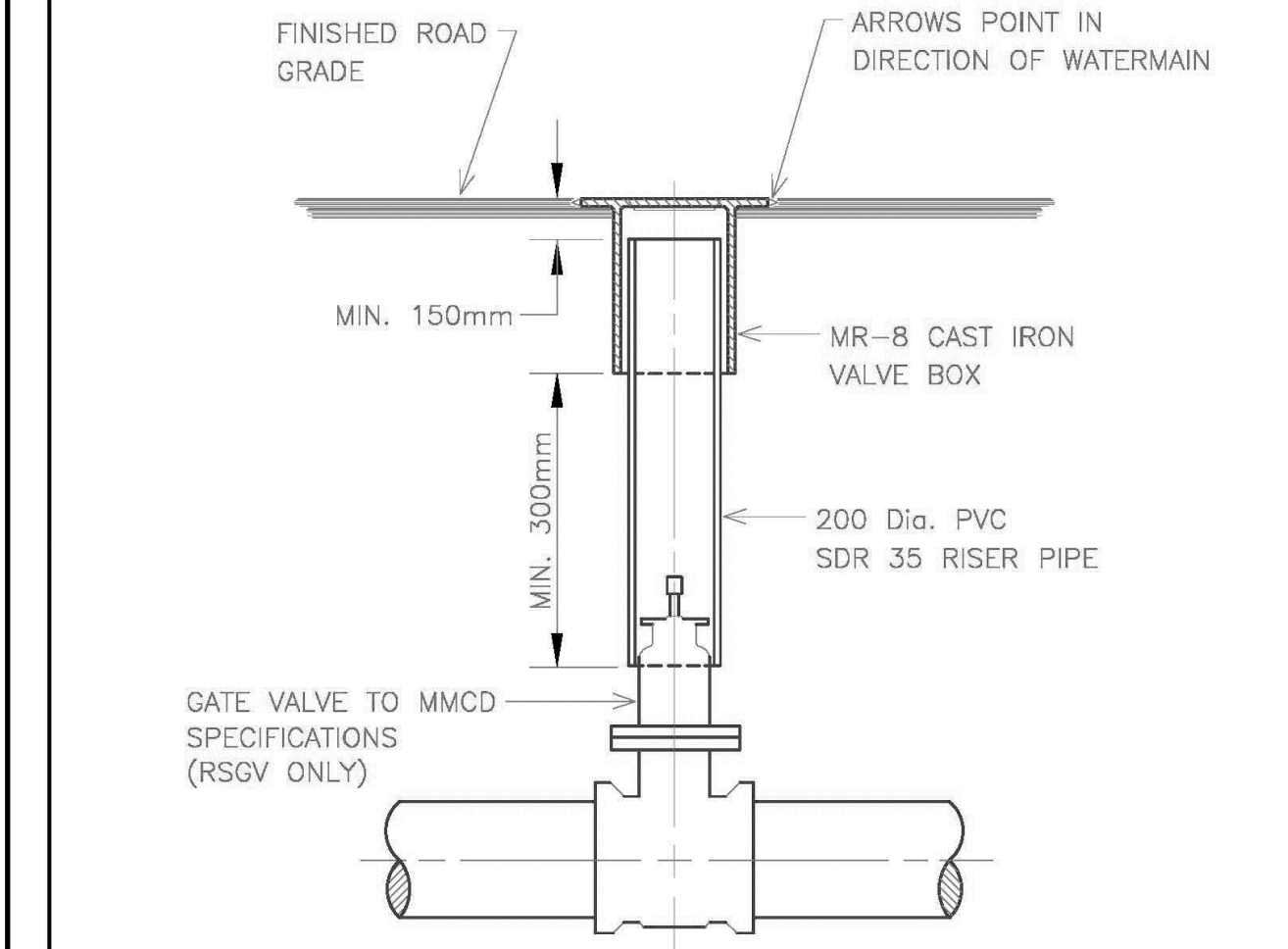
**MMCD** STANDARD DETAIL DRAWINGS



- NOTE: 1. FOR 25mm AND 50mm AIR VALVES  
 2. REFER TO CONTRACT DRAWINGS AND SECTION 02666 FOR DETAILED SPECIFICATIONS

AIR VALVE ASSEMBLY - 25 AND 50mm VALVES

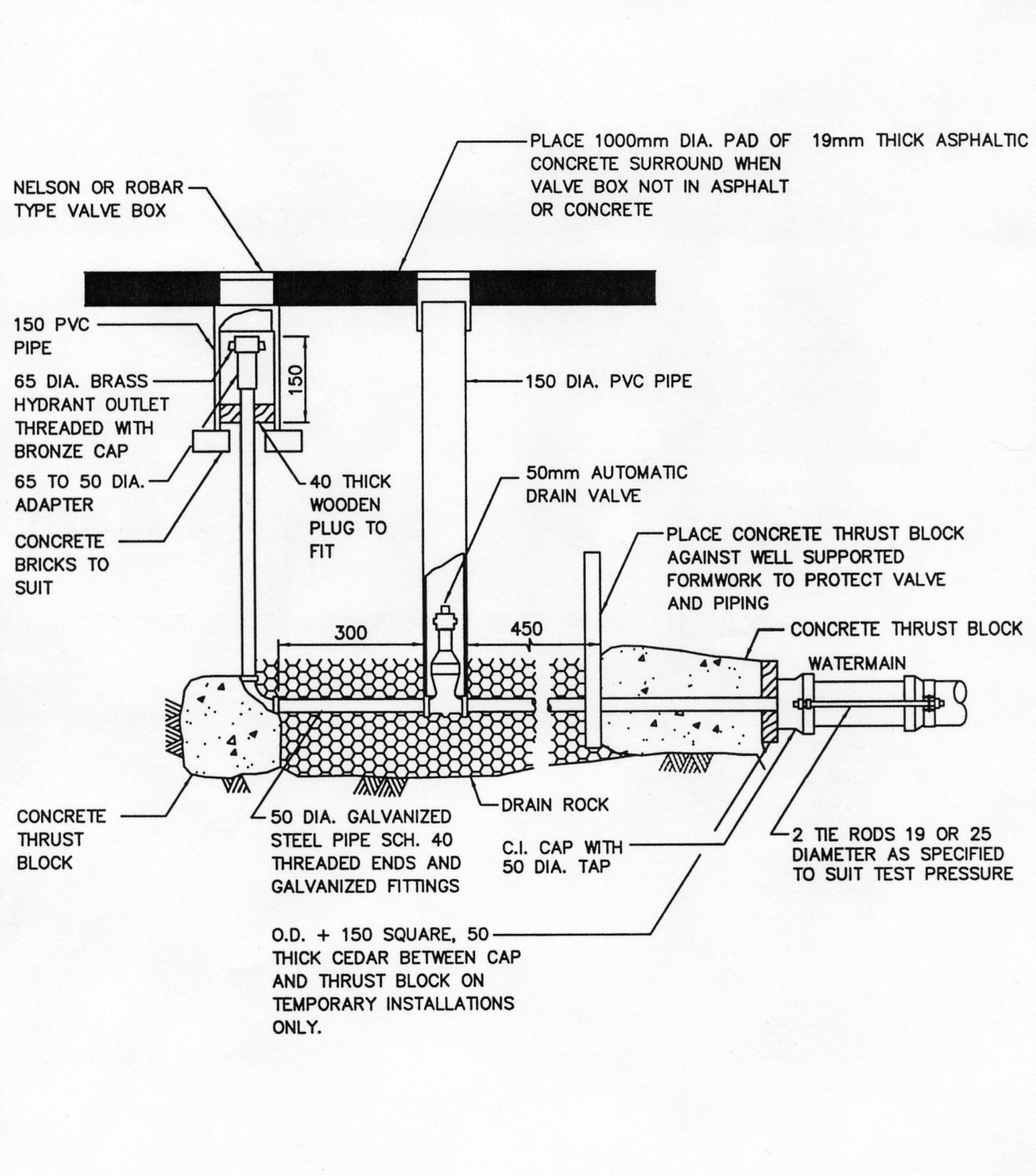
DRAWING NUMBER: **W6**



TITLE: WATERMAIN VALVE BOX DETAIL  
 DISTRICT OF WEST VANCOUVER

DATE: JAN/07 REV: 1  
 APPR: G.W. DWG. NO.  
 DRAWN: J.L.B.  
 SCALE: N.T.S. **WWV-8**

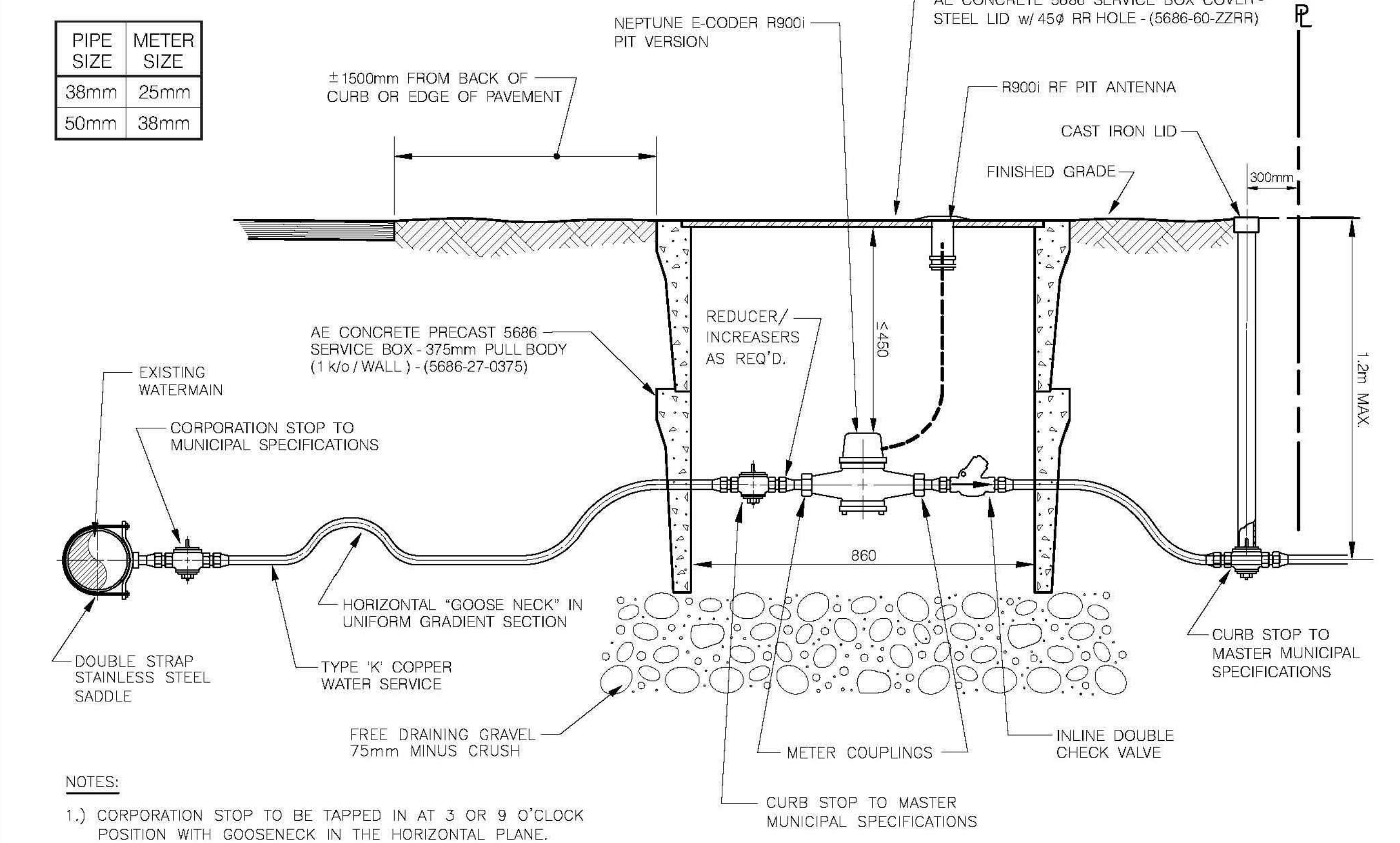
**MMCD** STANDARD DETAIL DRAWINGS



- NOTE: 1. 20 MPa CONCRETE.  
 2. REFER TO CONTRACT DRAWINGS AND SECTION 02666 FOR DETAILED SPECIFICATIONS.

BLOW-OFF FOR WATERMAIN

DRAWING NUMBER: **W8**



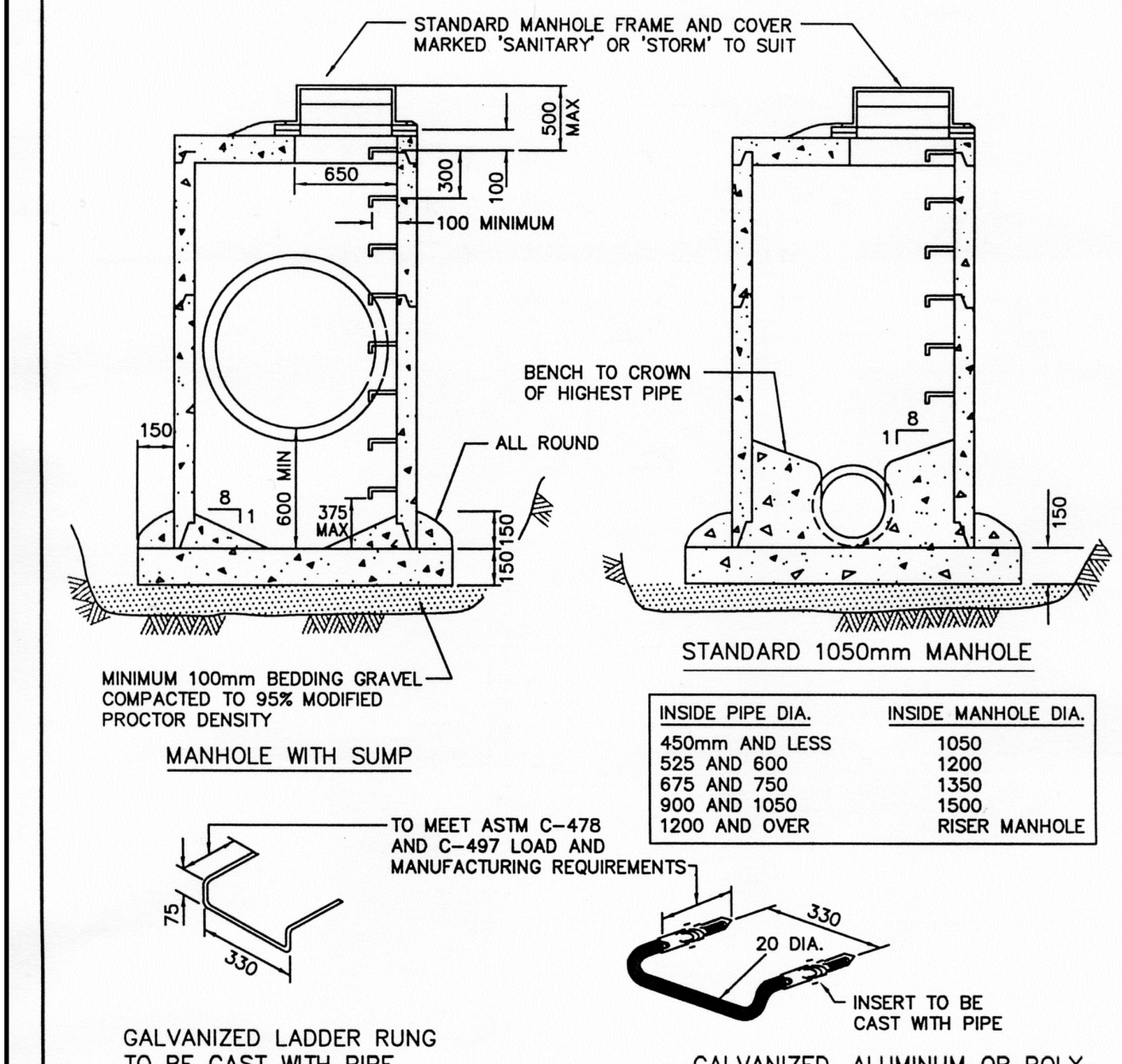
- NOTES:  
 1.) CORPORATION STOP TO BE TAPPED IN AT 3 OR 9 O'CLOCK POSITION WITH GOOSENECK IN THE HORIZONTAL PLANE.

TITLE: TYPICAL WATER SERVICE WITH METER FOR REPLACING EXISTING SERVICES

**DISTRICT OF WEST VANCOUVER**

DATE: Nov/11 REV: 3  
 DRAWN: H.B. DWG. NO.  
 SCALE: N.T.S. **WWV-2A**

**MMCD** STANDARD DETAIL DRAWINGS



- 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 860mm.  
 3. FOR MANHOLES OVER 1200mm DIA. BASE THICKNESS TO BE 200mm.  
 4. REFER TO DRAWING S2 FOR CONNECTION DETAILS.  
 5. REFER TO CONTRACT DRAWINGS AND SECTION 02725 FOR DETAILED SPECIFICATIONS.

STANDARD AND SUMP MANHOLES

DRAWING NUMBER: **S1**

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	○	○	○
GATE VALVE	○	○	○
AIR VALVE	○	○	○
REDUCER	○	○	○
INSPECTION CHAMBER	○	○	○
CATCHBASIN (STD/ISI)	○	○	○
GAP	○	○	○
MANHOLE	○	○	○
POWER POLE	○	○	○
STREETLIGHT	○	○	○

approved

client

EVERVAN

project

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

title

STANDARD DETAILS

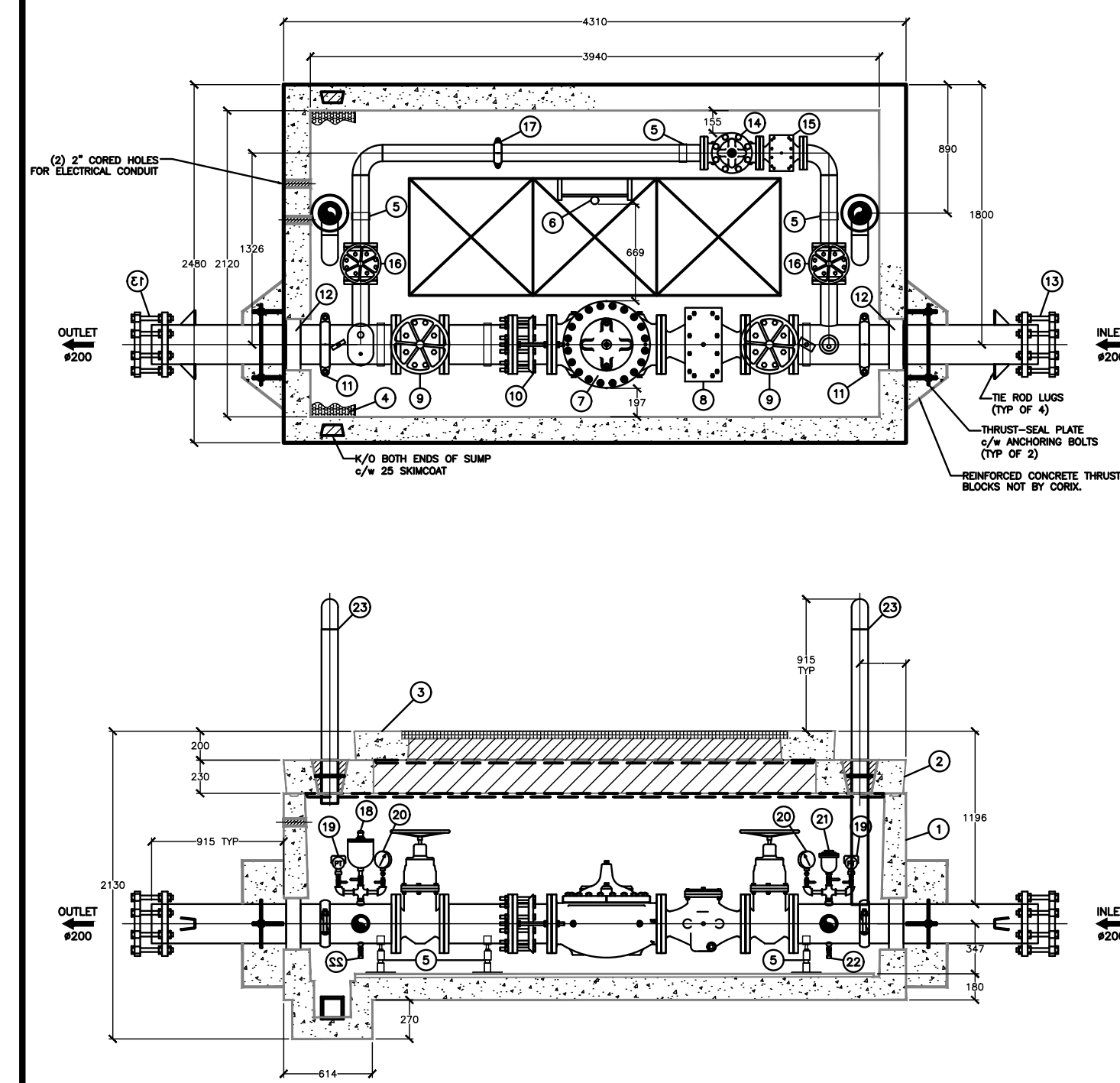
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3	17-03-29	REVISED PER DWV COMMENTS	AGC
2	17-03-15	REVISED PER DWV COMMENTS	AGC
1	17-02-09	REVISED PER DWV COMMENTS	AGC

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engineer of record	KBH	scales	hor.	vert.
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drawn by <td>AGC <td>drawing no. <td colspan="2">DET-2</td> </td></td>	AGC <td>drawing no. <td colspan="2">DET-2</td> </td>	drawing no. <td colspan="2">DET-2</td>	DET-2	
date <td>2016-09-26 <td></td> <td colspan="2"></td> </td>	2016-09-26 <td></td> <td colspan="2"></td>			

NOT FOR CONSTRUCTION



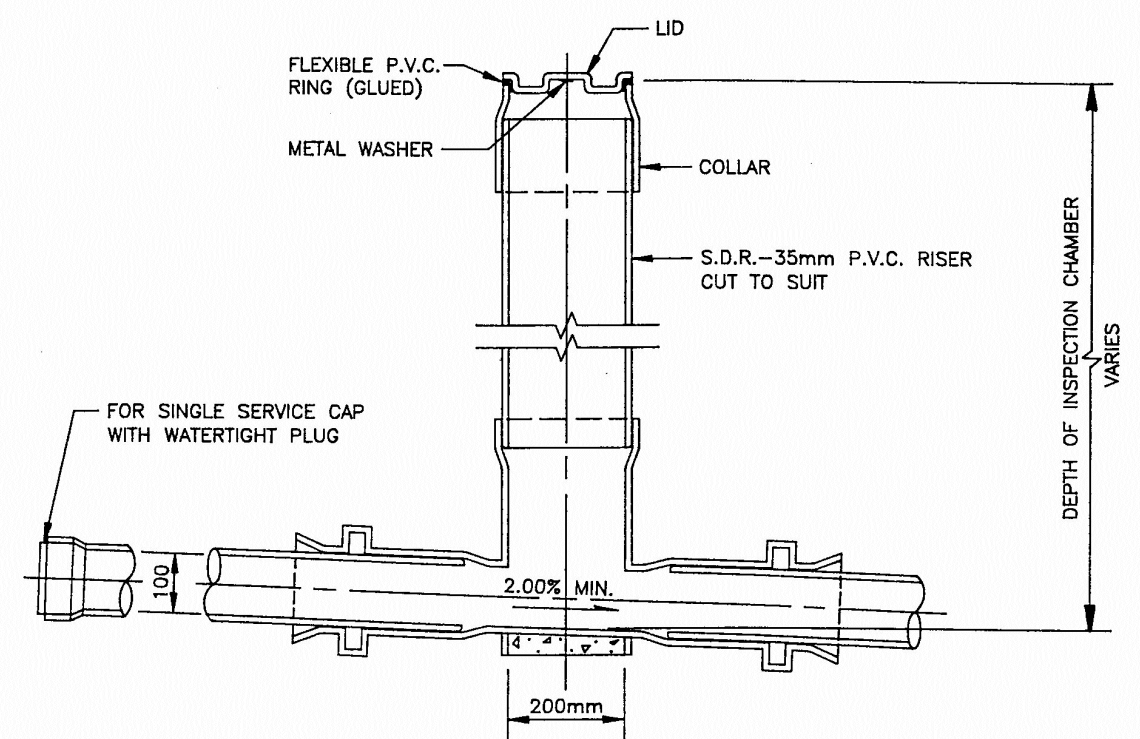


BILL OF MATERIALS	
1	1 ANTI-SUCK PRESSURE REDUCING VALVE C/W WIRE MESH & BACK EXHAUST SEALANT
2	1 ANTI-SUCK PRESSURE REDUCING VALVE C/W WIRE MESH & BACK EXHAUST SEALANT
3	1 ANTI-SUCK PRESSURE REDUCING VALVE C/W WIRE MESH & BACK EXHAUST SEALANT
4	1 ALUMINUM SWAP GASKET, ACROSS WIDTH OF CHAMBER
5	1 ADJUSTABLE GALVANIZED STEEL SPOKE PIPE SUPPORTS
6	1 ALUMINUM LIVERY BY SAFETY FOOT (DIPPER) COVER
7	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
8	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
9	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
10	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
11	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
12	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
13	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
14	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
15	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
16	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
17	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
18	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
19	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
20	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
21	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
22	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
23	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)
24	1 100 DIA. 1/2" PRESSURE REDUCING VALVE, 1/2" OR 1/4" (SEE NOTE)

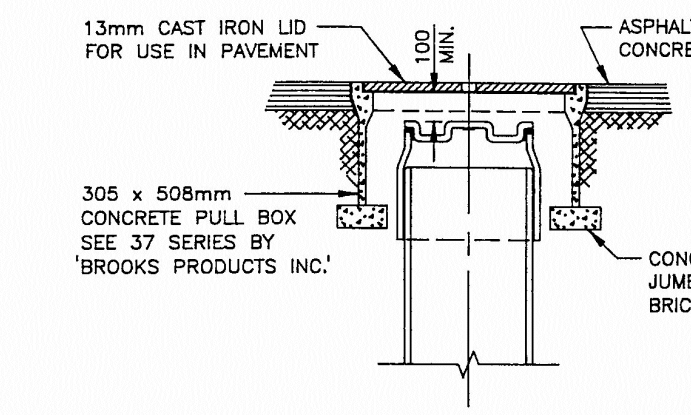
NOTES:  
 1. FABRICATED STEEL PIPE & FITTINGS TO BE SCHEDULE NO. 40 STEEL PIPE FOR SIZES TO 12" AND 3/4" WALL FOR 12" AND LARGER. FLANGES ARE AISC 152/150.  
 2. ALL 2" AND SMALLER PIPE TO BE THREADED STAINLESS STEEL, COMPARE WITH LOCAL SPECIFICATIONS. ALL 2" AND LARGER PIPE, INSIDE WELDED SURFACES TO BE INDENTED FROM POINTS JOINED AND COATED WITH AN EPOXY-BASED SPECIFICATION. PRIMER COATING WILL BE BLUE DANIEL.  
 3. LOADING: OFF-ROADWAY = 100 STATIC LOAD RATED ESTIMATED TOTAL WEIGHT 24,000 kg ESTIMATED HEAVIEST LIFT 12,000 kg  
 4. DIMENSIONS IN MILLIMETER UNLESS SPECIFIED OTHERWISE.  
 5. CONTRACTOR TO COORDINATE SHUTDOWN WITH V&B STAFF, SHUT DOWN TO BE MAX 48 HRS  
 6. CONTRACTOR TO INSTALL FLOW DIVISION  
 7. CONTRACTOR TO PROVIDE SWAP GASKETS FOR REVIEW PRIOR TO ORDERING AS PER CONTRACT DOCUMENTS

PRV DETAIL

scale NTS  
drawing no.



DETAIL A



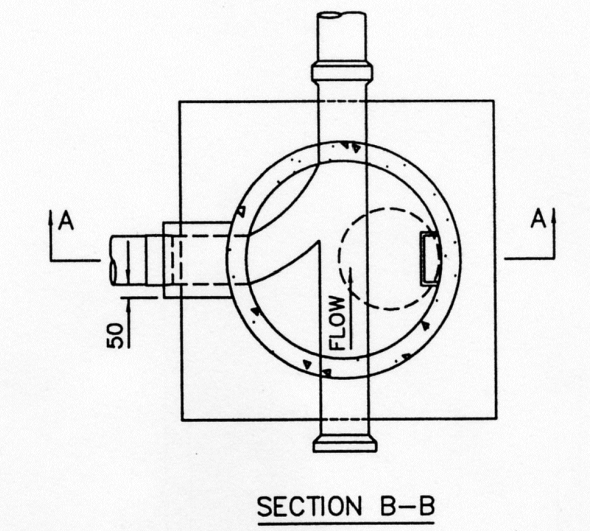
INSTALLATION OF INSPECTION CHAMBER IN DRIVEWAY

- NOTES:  
 1.) PAINT LID RED  
 2.) 200mm Ø P.V.C. PIPE: OR EQUAL  
 3.) CHAMBER & LID BY 'COROBAN' OR 'LE-RON PLASTICS' OR APPROVED  
 4.) 100mm Ø PIPE FOR SANITARY SEWER  
 5.) CONTRACTOR/DEVELOPER TO LEAVE TOP 500mm ABOVE FINAL GRADE  
 6.) BUILDING CONTRACTOR OR OWNER TO SET TOP OF CHAMBER TO FINAL GRADE

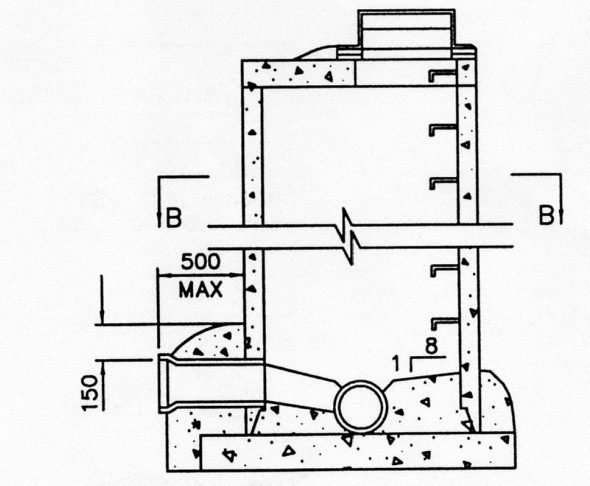
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED

TITLE:	INSPECTION CHAMBER FOR 100mm SANITARY SEWER CONNECTION	DATE: MAR./90	REV: 0
APPR:	D.W.	DWG. NO.	S-1
DRAWN:	H.J.B.	SCALE:	N.T.S.

DISTRICT OF WEST VANCOUVER



SECTION B-B



SECTION A-A

NOTE: 1. THIS DRAWING SHOWS CONNECTION DETAILS ONLY, REFER TO DRAWING S1 FOR ALL OTHER DETAILS PERTAINING TO MANHOLE REQUIREMENTS AND INSTALLATION  
 2. REFER TO CONTRACT DRAWINGS AND SECTION 02725 FOR DETAILED SPECIFICATIONS.

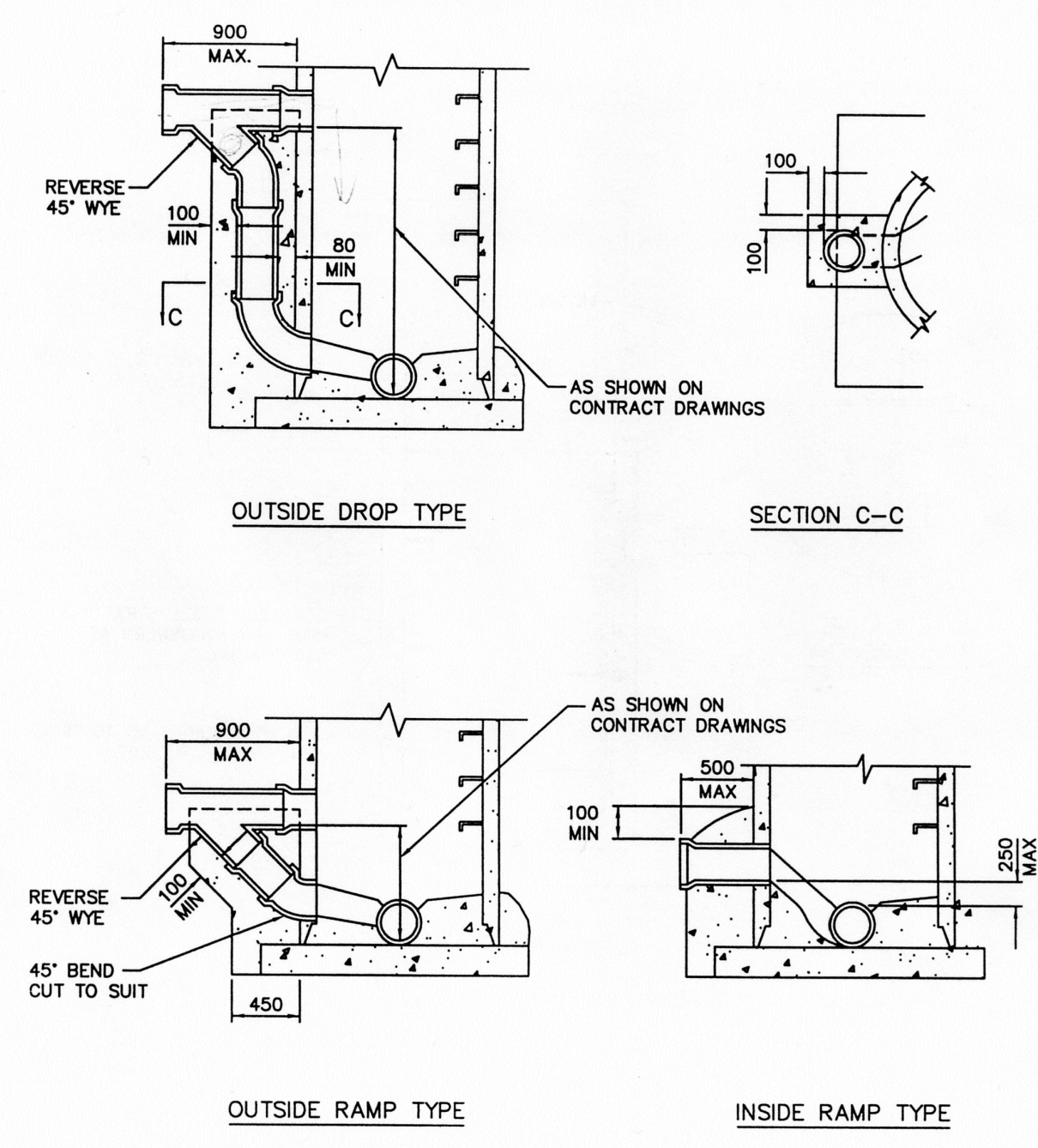
STANDARD MANHOLE CONNECTION DETAILS

DRAWING NUMBER: S2

Civil Engineers & Project Managers  
 4610 EAST TOWER - 221 ESPLANADE WEST, NORTH VANCOUVER BC, V7M1J3  
 PH: 604-987-9070 WEBSITE: www.creus.ca

DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO TEL	---	---	---
STREETLIGHT GAS	---	---	---
FIRE HYDRANT	---	---	---
GATE VALVE	---	---	---
AIR VALVE	---	---	---
REDUCER	---	---	---
INSPECTION CHAMBER	---	---	---
CATCHBASIN (STD/ISI)	---	---	---
GAP	---	---	---
MANHOLE	---	---	---
POWER POLE	---	---	---
STREETLIGHT	---	---	---



OUTSIDE DROP TYPE

SECTION C-C

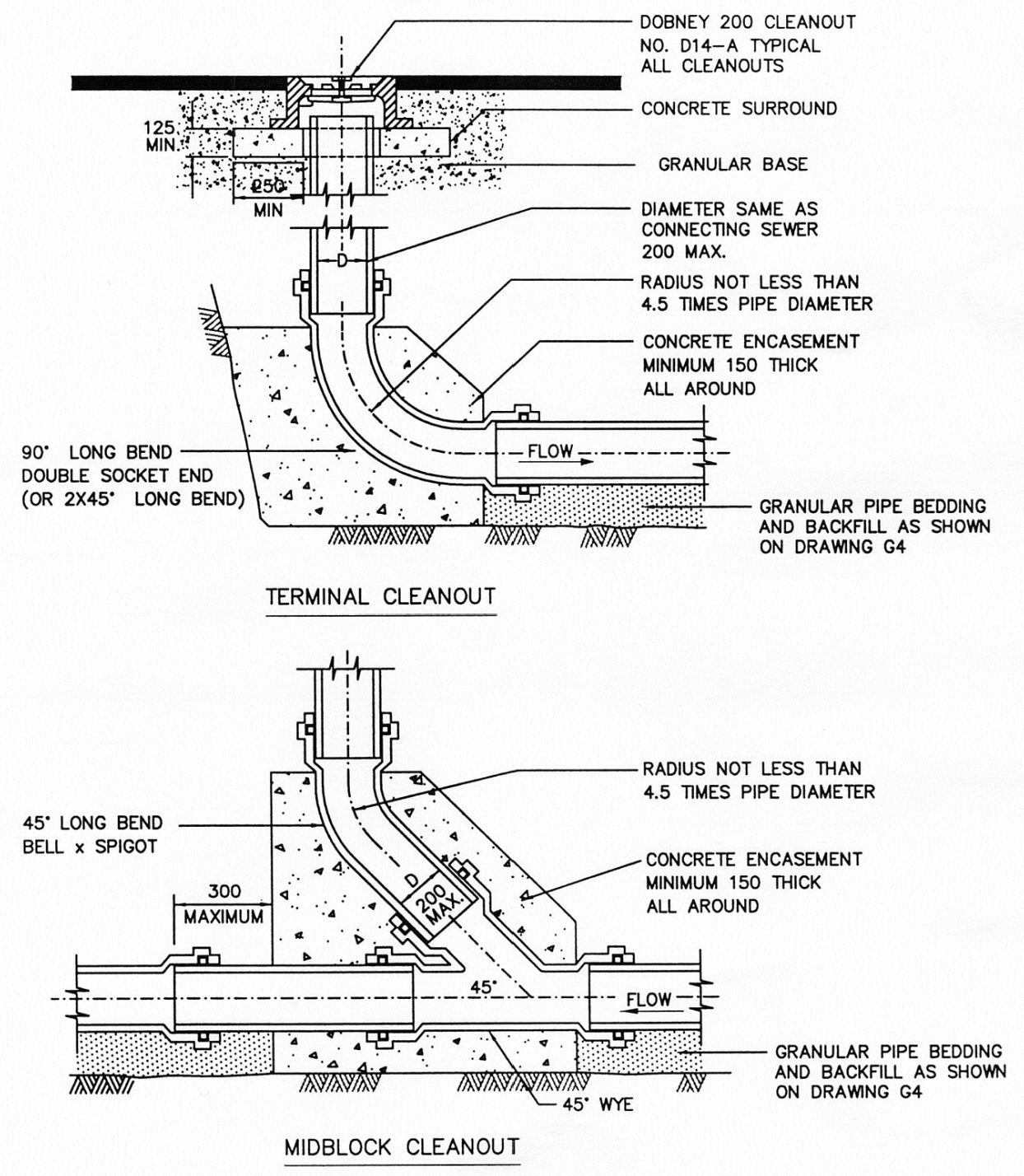
OUTSIDE RAMP TYPE

INSIDE RAMP TYPE

NOTE: 1. THIS DRAWING SHOWS CONNECTION DETAILS ONLY, REFER TO DRAWING S1 FOR ALL OTHER DETAILS PERTAINING TO MANHOLE REQUIREMENTS AND INSTALLATION.  
 2. REFER TO CONTRACT DRAWINGS AND SECTION 02725 FOR DETAILED SPECIFICATIONS.

MANHOLE CONNECTION DETAILS - DROP AND RAMP TYPE

DRAWING NUMBER: S3



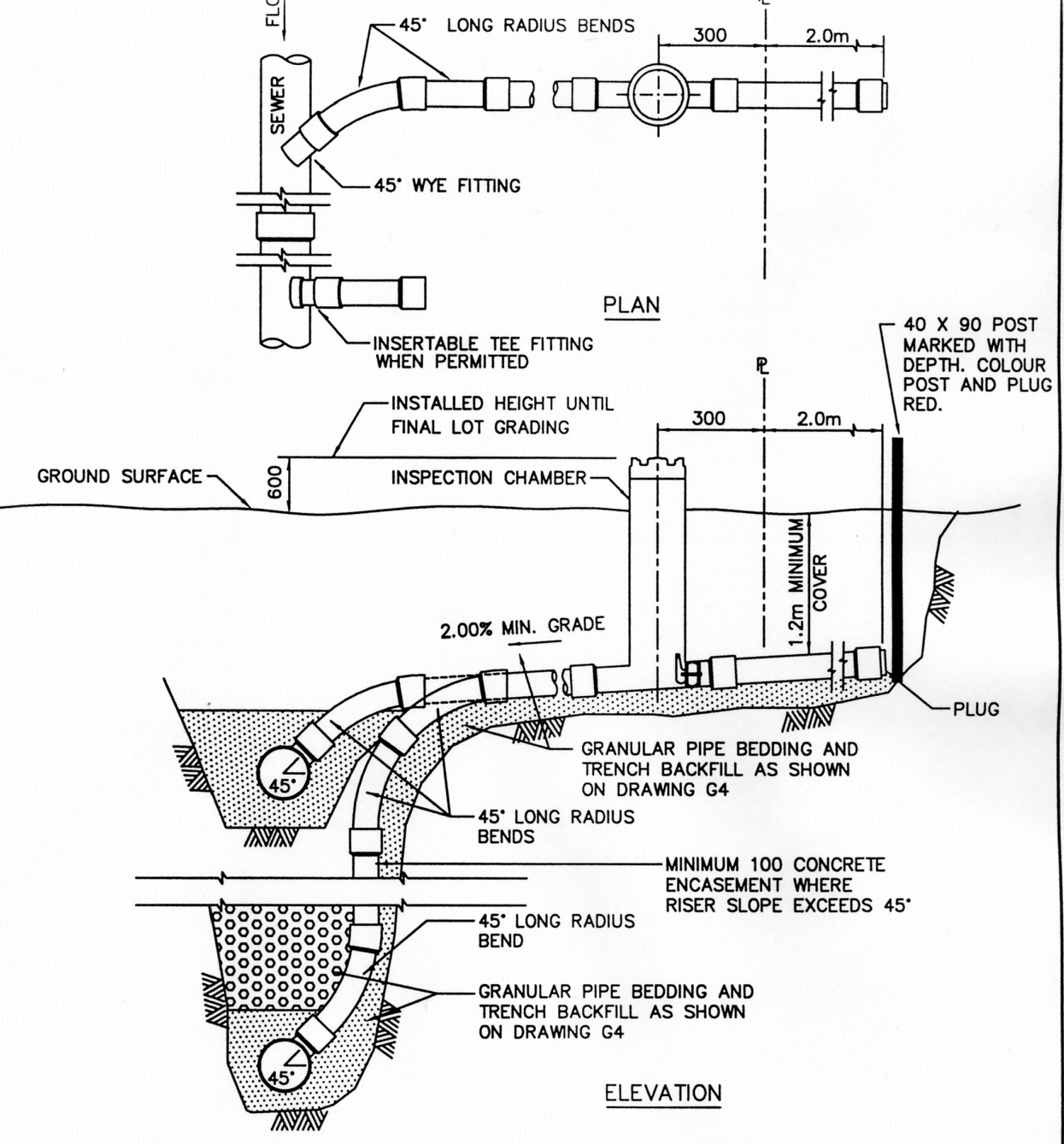
TERMINAL CLEANOUT

MIDBLOCK CLEANOUT

NOTE: 1. ALL PIPE FITTINGS PVC DR28 c/w GASKETS

SEWER CLEANOUT

DRAWING NUMBER: S6

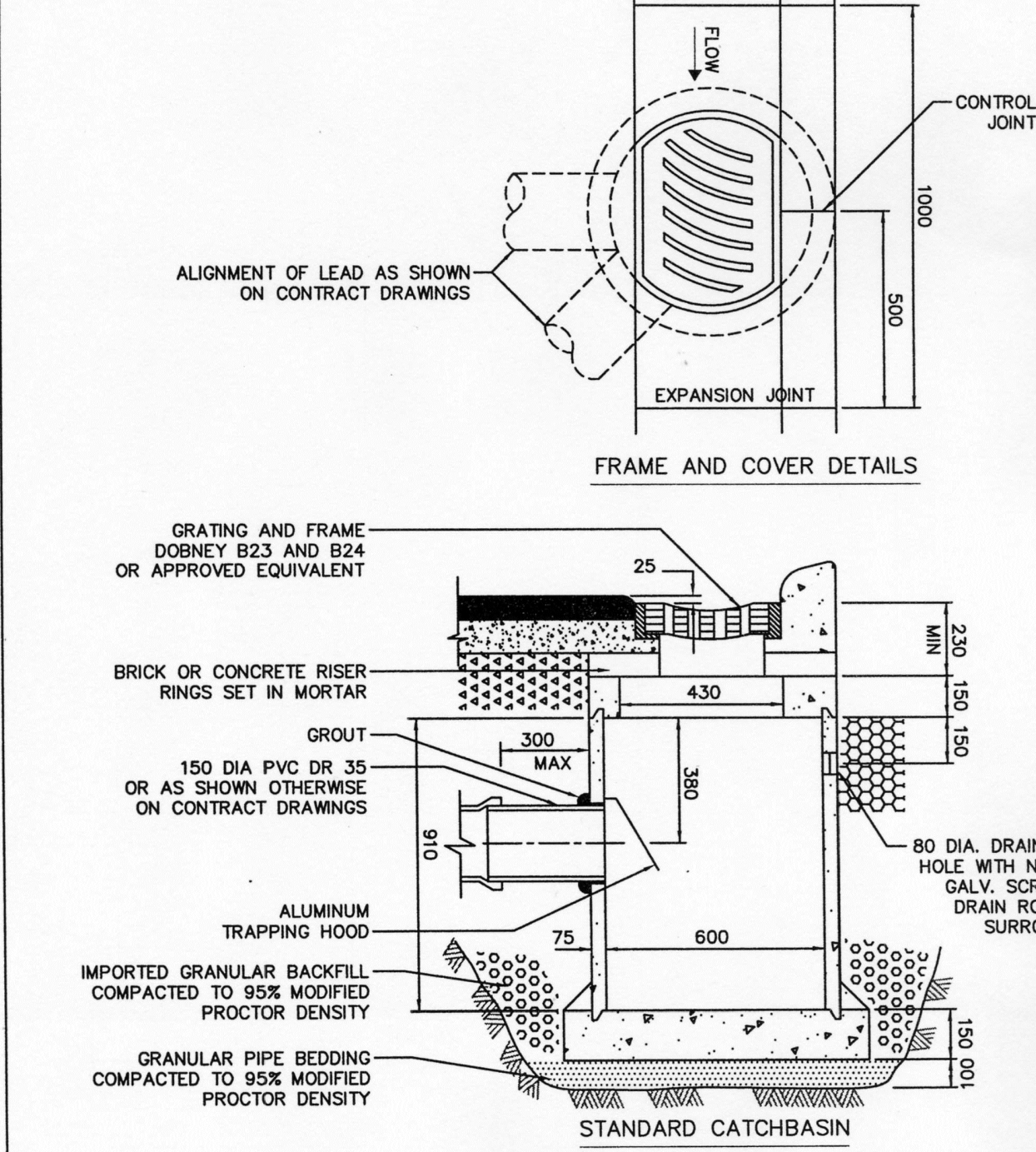


ELEVATION

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.

SANITARY SEWER SERVICE CONNECTION

DRAWING NUMBER: S7



FRAME AND COVER DETAILS

STANDARD CATCHBASIN

NOTE: 1. PRECAST UNITS c/w BASE, APPROVED BY CONTRACT ADMINISTRATOR, ARE ACCEPTABLE.  
 2. REFER TO CONTRACT DRAWINGS AND SECTION 02725 FOR DETAILED SPECIFICATIONS.

TOP INLET CATCHBASIN

DRAWING NUMBER: S11

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

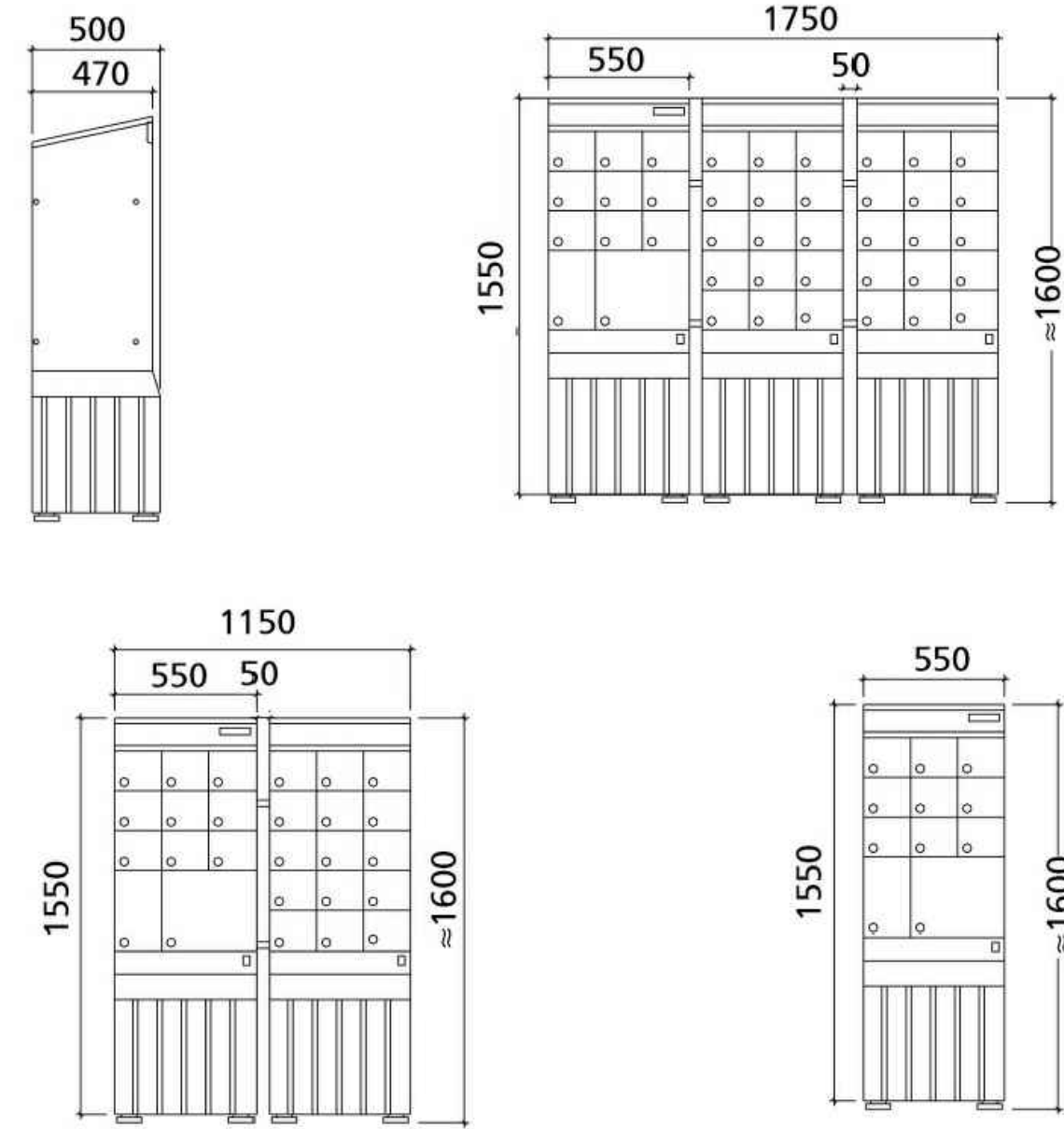
STANDARD DETAILS

no.	(y/m/d)	revision	CHK'D
4	17-04-11	RE-ISSUED FOR DP	AGC
3	17-03-29	REVISED PER DWV COMMENTS	AGC
2	17-03-15	REVISED PER DWV COMMENTS	AGC
1	17-02-09	REVISED PER DWV COMMENTS	AGC

engineer of record	KBH	scales	hor. -	vert. -
designed by	KBH	file no.	15171	
drawn by	AGC	drawing no.	DET-3	
date	2016-09-26			

## CREUS Engineering Ltd

### DIMENSIONS COMMUNITY MAIL BOX ON PLASTIC BASE BOÎTES POSTALES COMMUNAUTAIRES SUR SOCLE



SUPER MAILBOX DETAIL

scale NTS  
 drawing no. -

## CREUS Engineering Ltd



SKETCH - FILL LOCATION

scale NTS  
 drawing no. -

### DRAWING LEGEND

	EXISTING	PROP.	TO BE REMOVED
LEGAL LINE	---	---	---
EASMENT	---	---	---
WATERMAIN	---	---	---
SANITARY	---	---	---
STORM	---	---	---
HYDRO	---	---	---
TEL	---	---	---
STREETLIGHT	---	---	---
GAS	---	---	---
FIRE HYDRANT	⊗	⊗	⊗
GATE VALVE	⊗	⊗	⊗
AIR VALVE	⊗	⊗	⊗
REDUCER	⊗	⊗	⊗
INSPECTION CHAMBER	⊗	⊗	⊗
CATCHBASIN (STD/ISI)	⊗	⊗	⊗
GAP	⊗	⊗	⊗
MANHOLE	⊗	⊗	⊗
POWER POLE	⊗	⊗	⊗
STREET LIGHT	⊗	⊗	⊗

approved

client

EVERVAN

project

WENTWORTH COLLINGWOOD  
 WEST VANCOUVER, BC

title

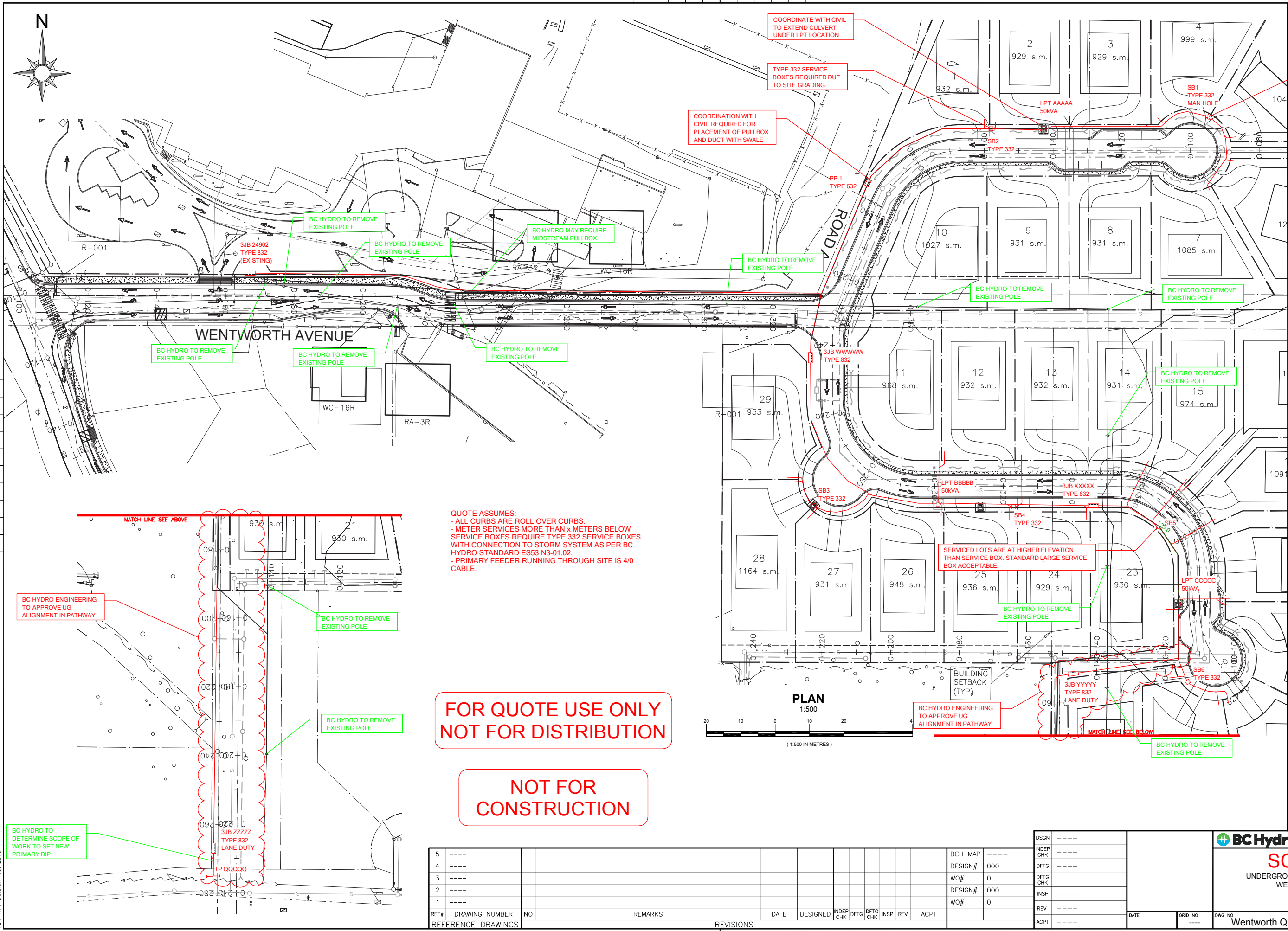
STANDARD DETAILS

no.	(y/m/d)	revision	CHK'd
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engineer of record	KBH	file no.	15171
designed by	KBH	drawing no.	DET-4
drawn by	AGC	date	2016-09-26
current rev. #	4	hor.	-
		vert.	-

NOT FOR CONSTRUCTION



**WORK LOCATION N.T.S.**

**BC ONE CALL**  
 CALL BEFORE YOU DIG  
 1-800-474-6886  
 CALL AT LEAST 3 FULL WORKING DAYS BEFORE YOU PLAN TO DIG

- CIVIL NOTES:**
- BC HYDRO UNDERGROUND CIVIL INSPECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION.
  - ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CLASS OF WORK SPECIFICATION 1323 AND BC HYDRO UNDERGROUND DISTRIBUTION ENGINEERING STANDARDS SERIES ES53 AND ES54.
  - ANY CHANGES NEED TO HAVE PRIOR APPROVAL OF BC HYDRO CIVIL INSPECTOR.
  - ALL CONDUIT INSTALLATION FOR BC HYDRO ON PUBLIC OR PRIVATE PROPERTY SHOULD HAVE 0.9m COVER AND ANY FACTORY BEND MUST HAVE A MINIMUM RADIUS OF 0.9m.
  - ALL UTILITIES (EXCEPT TELUS) MUST MAINTAIN A 0.9m HORIZONTAL AND 0.3m VERTICAL SEPARATION FROM BC HYDRO DUCT UNLESS DIRECTED OTHERWISE BY BC HYDRO CIVIL INSPECTOR.
  - TRANSFORMER MUST BE A MINIMUM OF 1.5m BEHIND NON-MOUNTABLE CURB OR PROTECTED. FINAL NUMBER AND LOCATION OF PROTECTION POSTS TO BE DETERMINED IN THE FIELD BY BC HYDRO CIVIL INSPECTOR.
  - OTHER UTILITIES SHOWN ON THE CIVIL DRAWING ARE FOR REFERENCE ONLY. PROVE LOCATION OF ALL UTILITIES IN THE WORK AREA BEFORE CONSTRUCTION. FOR CURRENT INFORMATION CONTACT BC ONE CALL.
  - FOR TRANSFORMER PAD COUNTERPOISE CLEARANCES TO OTHER UTILITIES AND UNDERGROUND CONDUCTIVE SURFACES, SEE ES54.
  - ALL OFFSETS INDICATE CENTERLINE OF BC HYDRO PLANT.
  - MINIMUM OFFSET FOR BC HYDRO DUCTS, IN JOINT TRENCH, FROM PROPERTY LINE IS 1.2m, UNLESS OTHERWISE NOTED.
  - STUB SERVICE DUCT 1.0m FROM PROPERTY CORNER AND 1.0m INTO THE LOT.
  - METRES EXPRESSED IN DECIMALS, MILLIMETRES IN WHOLE NUMBERS.

- CUSTOM NOTES HERE IF REQUIRED**
- PRIMARY REDLINE DESIGN
  - DENOTES OFF-SITE WORK NOT INCLUDED IN QUOTE
  - DENOTES BC HYDRO REQUIREMENT

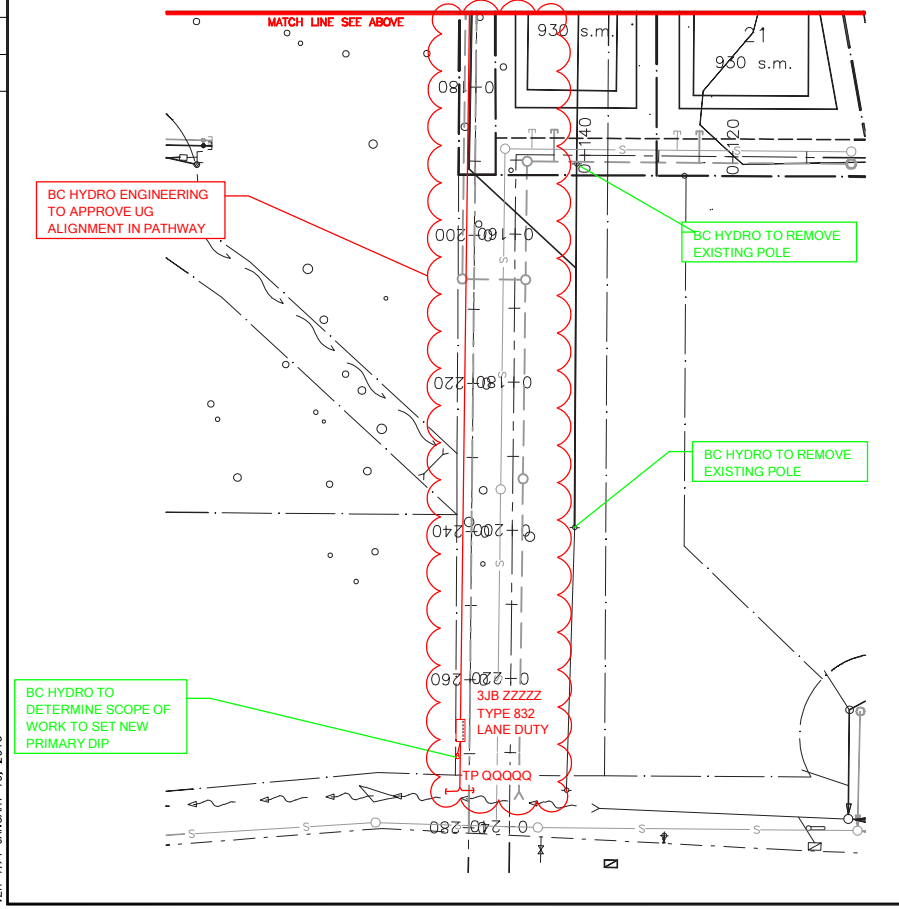
- CIVIL PLAN LEGEND:**
- PROPOSED DUCT
  - EXISTING DUCT
  - FIELD COMPLETED DUCT
  - TERMINAL POLE
  - LOW PROFILE TRANSFORMER (LPT-TRAMID PAD)
  - LOW PROFILE TRANSFORMER (LPT)
  - PAD MOUNT TRANSFORMER (PMT)
  - 5# & 1# JUNCTION & PULL BOXES (332, 632, 832 & 1232)
  - PRECAST MANHOLE
  - VISTA SWITCH SUBMERSIBLE (VSWB)
  - VISTA SWITCH ABOVE GROUND (VSWA)
- REFER TO ES53 AND ES54 UNDERGROUND STANDARDS**
- CSA S250 ACCURACY NAD 83 - 10 UTM  
 BASE ACCURACY LEVEL: 4 +/- 1000 mm  
 ASB ACCURACY LEVEL: 4 +/- 1000 mm

**QUOTE ASSUMES:**

- ALL CURBS ARE ROLL OVER CURBS.
- METER SERVICES MORE THAN X METERS BELOW SERVICE BOXES REQUIRE TYPE 332 SERVICE BOXES WITH CONNECTION TO STORM SYSTEM AS PER BC HYDRO STANDARD ES53 N3-01.02.
- PRIMARY FEEDER RUNNING THROUGH SITE IS 4/0 CABLE.

**FOR QUOTE USE ONLY  
NOT FOR DISTRIBUTION**

**NOT FOR CONSTRUCTION**



REF#	DRAWING NUMBER	NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
5	----										
4	----										
3	----										
2	----										
1	----										

DSGN	----	INDEP	----
CHK	----	CHK	----
DESIGN#	000	DFTG	----
WO#	0	DFTG	----
DESIGN#	000	INSP	----
WO#	0	REV	----
ACPT	----	ACPT	----

**BC Hydro T&D ENGINEERING & DESIGN**

**SCHEDULE B**  
 UNDERGROUND DUCT AND STRUCTURES FOR  
 WENTWORTH COLLINGWOOD  
 WEST VANCOUVER

DATE: \_\_\_\_\_ GRID NO: \_\_\_\_\_ DWG NO: **Wentworth Quote** SHEET 1 OF 1 SIZE: D 0.A

NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF BC HYDRO

VER 1.71 JANUARY 10, 2016