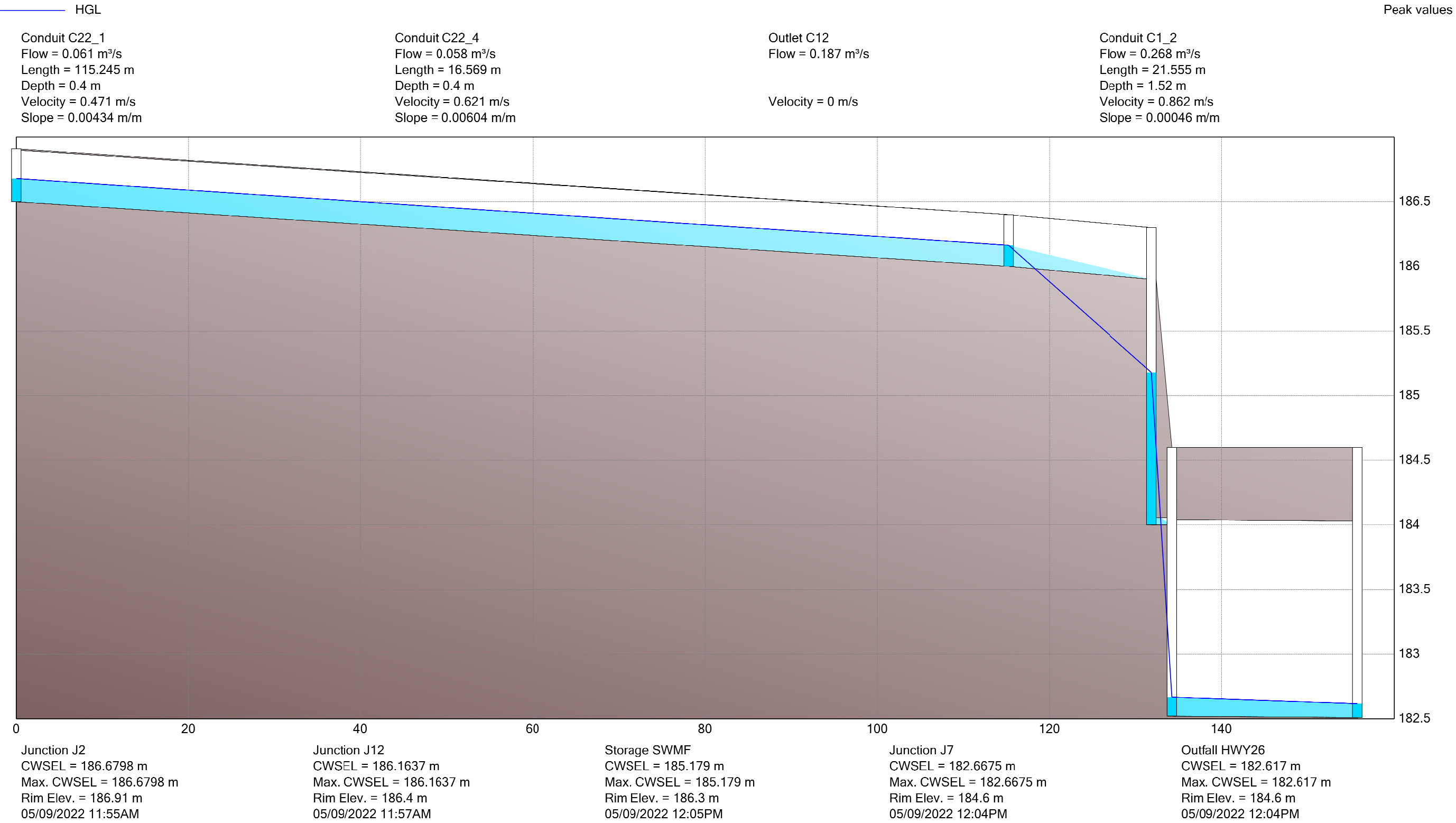
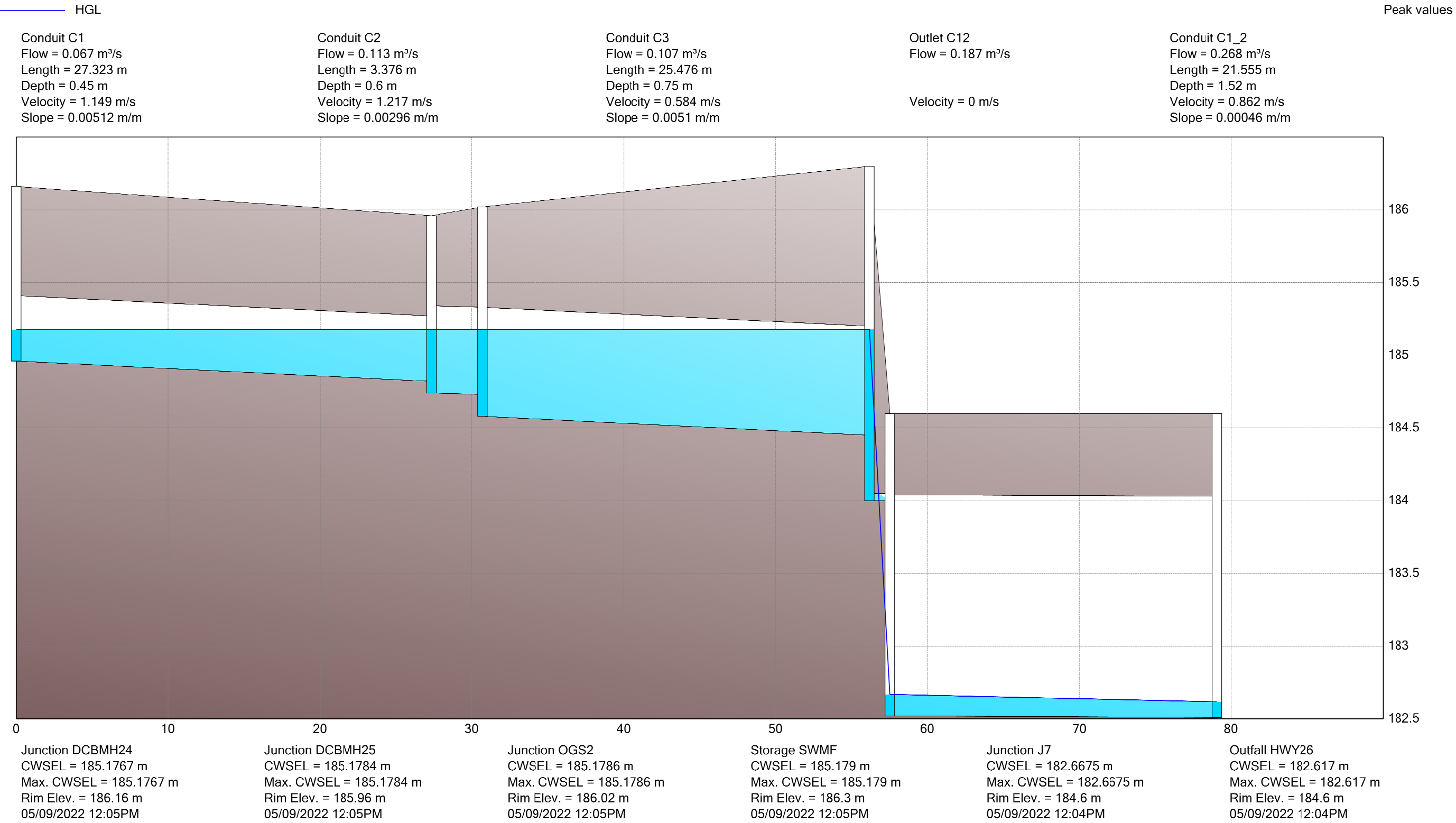


Profile 4 Swale to Hwy 26 Outlet
5yr SCS Storm



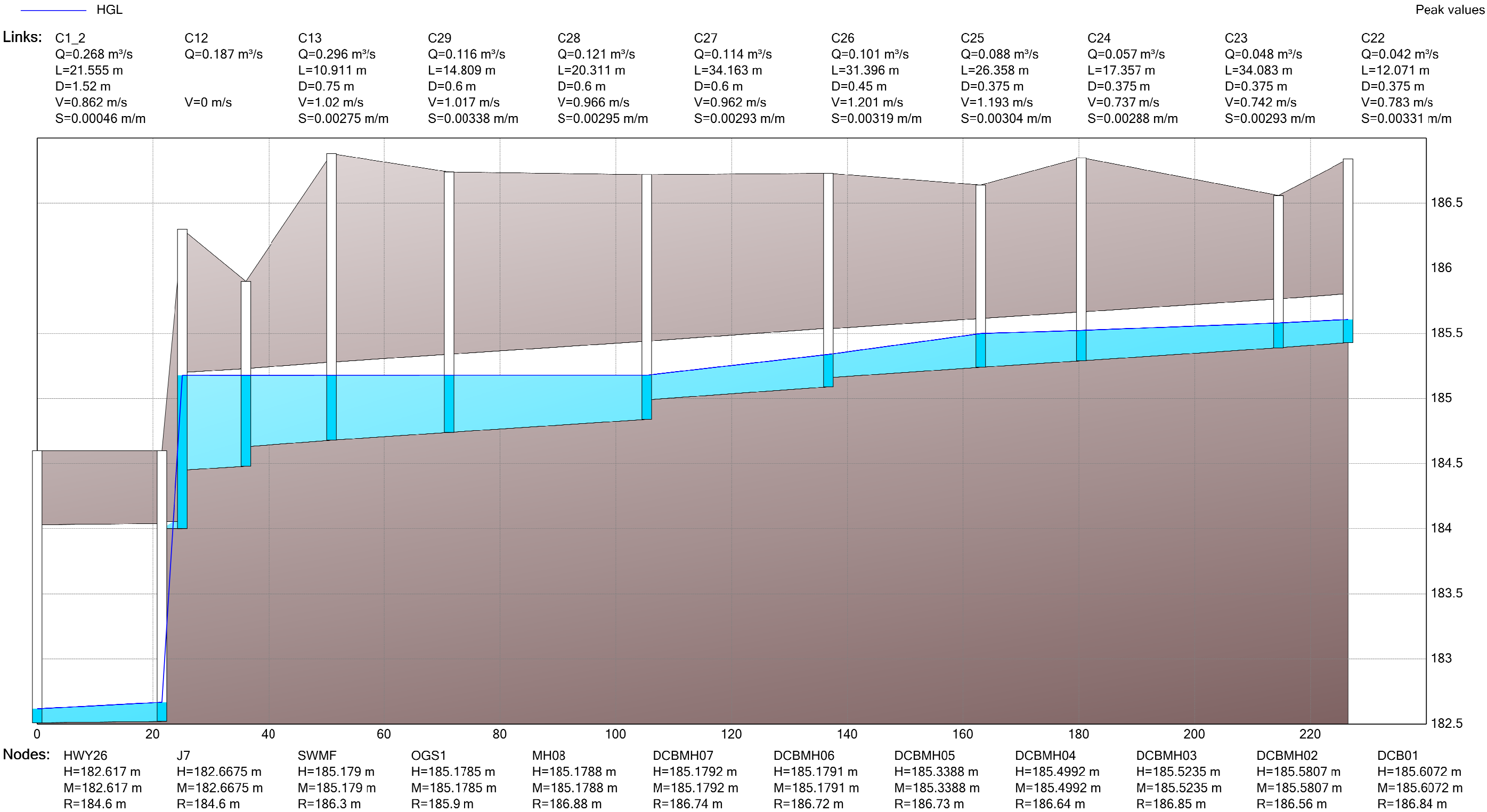
Profile 5 DCBMH24 to Hwy 26 Outlet

5yr SCS Storm



Profile 6 DCB01 to Hwy 26 Outlet

5yr SCS Storm



Post Development - 100yr 24hr SCS Type II - PCSWMM Output

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

Element Count

Number of rain gages 14
Number of subcatchments ... 27
Number of nodes 34
Number of links 32
Number of pollutants 0
Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_4h_100Yr	Chicago_4h_100Yr	INTENSITY	5 min.
Chicago_4h_10Yr	Chicago_4h_10Yr	INTENSITY	5 min.
Chicago_4h_25Yr	Chicago_4h_25Yr	INTENSITY	5 min.
Chicago_4h_2Yr	Chicago_4h_2Yr	INTENSITY	5 min.
Chicago_4h_50Yr	Chicago_4h_50Yr	INTENSITY	5 min.
Chicago_4h_5yr	Chicago_4h_5yr	INTENSITY	5 min.
SCS_Type_II_108.79mm_25Yr	SCS_Type_II_108.79mm_25Yr	INTENSITY	6 min.
SCS_Type_II_121.11mm_50Yr	SCS_Type_II_121.11mm_50Yr	INTENSITY	6 min.
SCS_Type_II_133.1mm_100yr	SCS_Type_II_133.1mm_100yr	INTENSITY	6 min.
SCS_Type_II_59.84mm_2Yr	SCS_Type_II_59.84mm_2Yr	INTENSITY	6 min.
SCS_Type_II_79.64mm_5Yr	SCS_Type_II_79.64mm_5Yr	INTENSITY	6 min.
SCS_Type_II_92.51mm_10Yr	SCS_Type_II_92.51mm_10Yr	INTENSITY	6 min.
Timmins_Storm_(0-25)	Timmins_Storm_(0-25)	INTENSITY	60 min.

Subcatchment Summary

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
A1	0.53	401.59	1.50	2.0000	SCS_Type_II_133.1mm_100yr	J11
A10	0.03	16.08	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH22
A11	0.05	35.13	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCB13
A12	0.04	28.62	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH14
A13	0.03	23.40	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH15
A14	0.05	28.33	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH16
A15	0.05	26.70	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCB09
A16	0.04	27.53	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH10
A17	0.03	24.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH11
A18	0.05	27.08	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH12
A19	0.04	24.40	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH23
A2	1.34	190.64	4.00	1.0000	SCS_Type_II_133.1mm_100yr	J7
A20	0.21	136.66	75.00	1.0000	SCS_Type_II_133.1mm_100yr	J2
A21	0.17	25.46	18.00	2.0000	SCS_Type_II_133.1mm_100yr	SWMF
A22	0.15	20.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCB01
A23	0.02	16.00	80.00	2.0000	SCS_Type_II_133.1mm_100yr	DCBMH02
A24	0.03	12.00	100.00	2.0000	SCS_Type_II_133.1mm_100yr	DCBMH03
A25	0.04	10.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH05
A26	0.05	10.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH06
A27	0.04	10.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH07
A3	0.23	39.72	95.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH24
A4	0.16	51.73	95.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH25
A5	0.11	43.98	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH04
A6	0.12	40.62	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCB17
A7	0.04	19.00	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH18
A8	0.04	24.30	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH19
A9	0.05	15.48	100.00	1.0000	SCS_Type_II_133.1mm_100yr	DCBMH20

Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
DCB01	JUNCTION	185.43	1.41	0.0	
DCB09	JUNCTION	185.35	1.41	0.0	
DCB13	JUNCTION	185.43	1.43	0.0	
DCB17	JUNCTION	185.54	1.68	0.0	

DCBMH02	JUNCTION	185.39	1.17	0.0
DCBMH03	JUNCTION	185.29	1.56	0.0
DCBMH04	JUNCTION	185.24	1.40	0.0
DCBMH05	JUNCTION	185.09	1.64	0.0
DCBMH06	JUNCTION	184.84	1.88	0.0
DCBMH07	JUNCTION	184.74	2.00	0.0
DCBMH10	JUNCTION	185.21	1.24	0.0
DCBMH11	JUNCTION	185.02	1.23	0.0
DCBMH12	JUNCTION	184.87	1.25	0.0
DCBMH14	JUNCTION	185.30	1.24	0.0
DCBMH15	JUNCTION	185.19	1.11	0.0
DCBMH16	JUNCTION	185.03	1.09	0.0
DCBMH18	JUNCTION	185.41	1.35	0.0
DCBMH19	JUNCTION	185.17	1.55	0.0
DCBMH20	JUNCTION	185.03	1.61	0.0
DCBMH22	JUNCTION	184.79	1.15	0.0
DCBMH23	JUNCTION	184.62	1.29	0.0
DCBMH24	JUNCTION	184.96	1.20	0.0
DCBMH25	JUNCTION	184.74	1.22	0.0
J11	JUNCTION	185.76	0.24	0.0
J12	JUNCTION	186.00	0.40	0.0
J2	JUNCTION	186.50	0.41	0.0
J7	JUNCTION	182.52	2.08	0.0
MH08	JUNCTION	184.68	2.20	0.0
MH21	JUNCTION	184.89	1.68	0.0
OGS1	JUNCTION	184.48	1.42	0.0
OGS2	JUNCTION	184.58	1.44	0.0
Clark_Street	UTFALL	185.75	0.00	0.0
HWY26	UTFALL	182.51	1.52	0.0
SWMF	STORAGE	184.00	1.90	0.0

Link Summary

Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	DCBMH24	DCBMH25	CONDUIT	27.3	0.5124	0.0130
C1_2	J7	HWY26	CONDUIT	21.6	0.0464	0.0130
C10	DCBMH23	OGS1	CONDUIT	8.7	0.4584	0.0130
C11	J11	Clark_Street	CONDUIT	5.8	0.1718	0.0100

C13	OGS1	SWMF	CONDUIT	10.9	0.2750	0.0130
C14	DCB13	DCBMH14	CONDUIT	27.8	0.4678	0.0130
C15	DCBMH15	DCBMH16	CONDUIT	15.9	0.5017	0.0130
C16	DCBMH14	DCBMH15	CONDUIT	22.1	0.4970	0.0100
C17	DCBMH16	DCBMH22	CONDUIT	33.1	0.4835	0.0130
C18	DCB09	DCBMH10	CONDUIT	28.2	0.4966	0.0130
C19	DCBMH10	DCBMH11	CONDUIT	21.9	0.5013	0.0130
C2	DCBMH25	OGS2	CONDUIT	3.4	0.2962	0.0130
C20	DCBMH11	DCBMH12	CONDUIT	15.9	0.5038	0.0130
C21	DCBMH12	DCBMH23	CONDUIT	33.2	0.5114	0.0130
C22	DCB01	DCBMH02	CONDUIT	12.1	0.3314	0.0130
C22_1	J2	J12	CONDUIT	115.2	0.4339	0.0300
C22_4	J12	SWMF	CONDUIT	16.6	0.6035	0.0300
C23	DCBMH02	DCBMH03	CONDUIT	34.1	0.2934	0.0130
C24	DCBMH03	DCBMH04	CONDUIT	17.4	0.2881	0.0130
C25	DCBMH04	DCBMH05	CONDUIT	26.4	0.3035	0.0130
C26	DCBMH05	DCBMH06	CONDUIT	31.4	0.3185	0.0130
C27	DCBMH06	DCBMH07	CONDUIT	34.2	0.2927	0.0130
C28	DCBMH07	MH08	CONDUIT	20.3	0.2954	0.0130
C29	MH08	OGS1	CONDUIT	14.8	0.3376	0.0130
C3	OGS2	SWMF	CONDUIT	25.5	0.5103	0.0130
C5	DCB17	DCBMH18	CONDUIT	25.8	0.5033	0.0130
C6	DCBMH18	DCBMH19	CONDUIT	32.0	0.4995	0.0130
C7_1	DCBMH19	DCBMH20	CONDUIT	28.9	0.4850	0.0130
C7_2	DCBMH20	MH21	CONDUIT	29.0	0.4831	0.0130
C8	MH21	DCBMH22	CONDUIT	19.3	0.5194	0.0130
C9	DCBMH22	DCBMH23	CONDUIT	18.1	0.4970	0.0130
C12	SWMF	J7	OUTLET			

Cross Section Summary

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C1_2	RECT_CLOSED	1.52	3.71	0.47	2.44	1	3.71
C10	CIRCULAR	0.60	0.28	0.15	0.60	1	0.42
C11	DUMMY	0.00	0.00	0.00	0.00	1	0.00
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.58

C14	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C15	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C16	CIRCULAR	0.30	0.07	0.07	0.30	1	0.09
C17	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
C18	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C19	CIRCULAR	0.30	0.07	0.07	0.30	1	0.07
C2	CIRCULAR	0.60	0.28	0.15	0.60	1	0.33
C20	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
C21	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C22	CIRCULAR	0.38	0.11	0.09	0.38	1	0.10
C22_1	TRAPEZOIDAL	0.40	0.58	0.21	2.65	1	0.45
C22_4	TRAPEZOIDAL	0.40	0.58	0.21	2.65	1	0.53
C23	CIRCULAR	0.38	0.11	0.09	0.38	1	0.09
C24	CIRCULAR	0.38	0.11	0.09	0.38	1	0.09
C25	CIRCULAR	0.38	0.11	0.09	0.38	1	0.10
C26	CIRCULAR	0.45	0.16	0.11	0.45	1	0.16
C27	CIRCULAR	0.60	0.28	0.15	0.60	1	0.33
C28	CIRCULAR	0.60	0.28	0.15	0.60	1	0.33
C29	CIRCULAR	0.60	0.28	0.15	0.60	1	0.36
C3	CIRCULAR	0.75	0.44	0.19	0.75	1	0.80
C5	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
C6	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
C7_1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C7_2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C8	CIRCULAR	0.45	0.16	0.11	0.45	1	0.21
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20

Analysis Options

Flow Units CMS

Process Models:

Rainfall/Runoff YES

RDII NO

Snowmelt NO

Groundwater NO

Flow Routing YES

Ponding Allowed YES

Water Quality NO

Infiltration Method GREEN_AMPT

Flow Routing Method DYNWAVE
 Surcharge Method EXTRAN
 Starting Date 05/09/2022 00:00:00
 Ending Date 05/11/2022 00:00:00
 Antecedent Dry Days 0.0
 Report Time Step 00:01:00
 Wet Time Step 00:05:00
 Dry Time Step 00:05:00
 Routing Time Step 5.00 sec
 Variable Time Step YES
 Maximum Trials 8
 Number of Threads 4
 Head Tolerance 0.001500 m

*****	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
*****	-----	-----
Total Precipitation	0.499	133.100
Evaporation Loss	0.000	0.000
Infiltration Loss	0.112	29.931
Surface Runoff	0.384	102.452
Final Storage	0.003	0.917
Continuity Error (%)	-0.150	

*****	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
*****	-----	-----
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.384	3.841
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.384	3.844
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	-0.084	

Time-Step Critical Elements

Link C2 (62.44%)

Highest Flow Instability Indexes

All links are stable.

Most Frequent Nonconverging Nodes

Node Clark_Street (0.14%)

Node HWY26 (0.14%)

Node DCBMH20 (0.03%)

Node DCBMH07 (0.03%)

Node DCBMH16 (0.03%)

Routing Time Step Summary

Minimum Time Step	:	0.50 sec
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Average Time Step	:	3.49 sec
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Maximum Time Step	:	5.00 sec
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% of Time in Steady State	:	0.00
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Average Iterations per Step	:	2.01
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% of Steps Not Converging	:	0.14
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Time Step Frequencies	:	
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5.000 - 3.155 sec	:	52.07 %
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3.155 - 1.991 sec	:	36.21 %
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1.991 - 1.256 sec	:	7.81 %
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1.256 - 0.792 sec	:	2.77 %
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0.792 - 0.500 sec	:	1.13 %
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Subcatchment Runoff Summary

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
A1	133.10	0.00	0.00	52.46	1.97	78.96	80.93	0.43	0.22	0.608
A10	133.10	0.00	0.00	0.00	131.28	0.00	131.28	0.04	0.01	0.986
A11	133.10	0.00	0.00	0.00	131.25	0.00	131.25	0.06	0.02	0.986
A12	133.10	0.00	0.00	0.00	131.25	0.00	131.25	0.05	0.02	0.986
A13	133.10	0.00	0.00	0.00	131.25	0.00	131.25	0.04	0.02	0.986
A14	133.10	0.00	0.00	0.00	131.31	0.00	131.31	0.07	0.03	0.987
A15	133.10	0.00	0.00	0.00	131.29	0.00	131.29	0.06	0.02	0.986
A16	133.10	0.00	0.00	0.00	131.27	0.00	131.27	0.05	0.02	0.986
A17	133.10	0.00	0.00	0.00	131.25	0.00	131.25	0.04	0.02	0.986
A18	133.10	0.00	0.00	0.00	131.32	0.00	131.32	0.07	0.03	0.987
A19	133.10	0.00	0.00	0.00	131.30	0.00	131.30	0.06	0.02	0.986
A2	133.10	0.00	0.00	54.53	5.24	78.56	78.56	1.05	0.26	0.590
A20	133.10	0.00	0.00	12.34	98.41	21.03	119.44	0.25	0.11	0.897
A21	133.10	0.00	0.00	42.75	23.61	66.51	90.12	0.16	0.06	0.677
A22	133.10	0.00	0.00	0.00	131.49	0.00	131.49	0.19	0.07	0.988
A23	133.10	0.00	0.00	9.86	104.92	16.81	121.73	0.03	0.01	0.915
A24	133.10	0.00	0.00	0.00	131.30	0.00	131.30	0.04	0.02	0.986
A25	133.10	0.00	0.00	0.00	131.46	0.00	131.46	0.05	0.02	0.988
A26	133.10	0.00	0.00	0.00	131.48	0.00	131.48	0.06	0.02	0.988
A27	133.10	0.00	0.00	0.00	131.47	0.00	131.47	0.06	0.02	0.988
A3	133.10	0.00	0.00	2.47	124.91	4.21	129.12	0.30	0.11	0.970
A4	133.10	0.00	0.00	2.47	124.83	4.20	129.03	0.20	0.08	0.969
A5	133.10	0.00	0.00	0.00	131.37	0.00	131.37	0.14	0.05	0.987
A6	133.10	0.00	0.00	0.00	131.40	0.00	131.40	0.16	0.06	0.987
A7	133.10	0.00	0.00	0.00	131.31	0.00	131.31	0.05	0.02	0.987
A8	133.10	0.00	0.00	0.00	131.30	0.00	131.30	0.06	0.02	0.986
A9	133.10	0.00	0.00	0.00	131.42	0.00	131.42	0.07	0.03	0.987

Node Depth Summary

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
DCB01	JUNCTION	0.03	0.65	186.08	0 11:53	0.46
DCB09	JUNCTION	0.01	0.20	185.55	0 12:00	0.20
DCB13	JUNCTION	0.01	0.23	185.66	0 11:55	0.22
DCB17	JUNCTION	0.02	0.19	185.73	0 11:53	0.18
DCBMH02	JUNCTION	0.03	0.65	186.04	0 11:53	0.47
DCBMH03	JUNCTION	0.03	0.59	185.88	0 11:53	0.47
DCBMH04	JUNCTION	0.04	0.53	185.77	0 11:53	0.46
DCBMH05	JUNCTION	0.04	0.49	185.58	0 12:00	0.49
DCBMH06	JUNCTION	0.05	0.69	185.53	0 12:00	0.69
DCBMH07	JUNCTION	0.07	0.78	185.52	0 12:01	0.78
DCBMH10	JUNCTION	0.02	0.33	185.54	0 12:00	0.33
DCBMH11	JUNCTION	0.03	0.50	185.52	0 12:00	0.50
DCBMH12	JUNCTION	0.04	0.65	185.52	0 12:00	0.65
DCBMH14	JUNCTION	0.02	0.35	185.65	0 11:54	0.34
DCBMH15	JUNCTION	0.02	0.63	185.82	0 11:53	0.43
DCBMH16	JUNCTION	0.03	0.70	185.73	0 11:53	0.56
DCBMH18	JUNCTION	0.02	0.22	185.63	0 11:55	0.22
DCBMH19	JUNCTION	0.03	0.44	185.61	0 12:00	0.43
DCBMH20	JUNCTION	0.03	0.56	185.59	0 11:57	0.56
DCBMH22	JUNCTION	0.06	0.76	185.55	0 12:00	0.76
DCBMH23	JUNCTION	0.12	0.89	185.51	0 12:01	0.89
DCBMH24	JUNCTION	0.04	0.55	185.51	0 12:01	0.55
DCBMH25	JUNCTION	0.07	0.76	185.50	0 12:02	0.76
J11	JUNCTION	0.00	0.00	185.76	0 00:00	0.00
J12	JUNCTION	0.03	0.20	186.20	0 11:56	0.20
J2	JUNCTION	0.02	0.23	186.73	0 11:54	0.23
J7	JUNCTION	0.04	0.25	182.77	0 12:01	0.25
MH08	JUNCTION	0.10	0.83	185.51	0 12:02	0.83
MH21	JUNCTION	0.04	0.68	185.57	0 12:00	0.68
OGS1	JUNCTION	0.19	1.02	185.50	0 12:02	1.02
OGS2	JUNCTION	0.13	0.92	185.50	0 12:02	0.92
Clark_Street	OUTFALL	0.00	0.00	185.75	0 00:00	0.00
HWY26	OUTFALL	0.02	0.20	182.71	0 12:01	0.20
SWMF	STORAGE	0.49	1.50	185.50	0 12:03	1.50

Node Inflow Summary

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
DCB01	JUNCTION	0.072	0.072	0 11:54	0.194	0.194	0.004
DCB09	JUNCTION	0.023	0.023	0 11:54	0.0595	0.0595	-0.027
DCB13	JUNCTION	0.024	0.024	0 11:54	0.0632	0.0632	-0.014
DCB17	JUNCTION	0.060	0.060	0 11:54	0.156	0.156	0.007
DCBMH02	JUNCTION	0.011	0.084	0 11:54	0.0255	0.219	-0.010
DCBMH03	JUNCTION	0.015	0.101	0 11:54	0.0401	0.259	-0.019
DCBMH04	JUNCTION	0.055	0.156	0 11:54	0.142	0.402	0.305
DCBMH05	JUNCTION	0.021	0.177	0 11:54	0.0545	0.455	0.088
DCBMH06	JUNCTION	0.024	0.192	0 11:54	0.0638	0.518	-0.337
DCBMH07	JUNCTION	0.022	0.216	0 11:54	0.0587	0.579	-0.024
DCBMH10	JUNCTION	0.021	0.044	0 11:54	0.0549	0.114	0.302
DCBMH11	JUNCTION	0.017	0.059	0 11:53	0.0431	0.157	-0.117
DCBMH12	JUNCTION	0.027	0.085	0 11:53	0.0698	0.227	-0.090
DCBMH14	JUNCTION	0.020	0.045	0 11:53	0.0531	0.116	-0.011
DCBMH15	JUNCTION	0.016	0.058	0 11:52	0.0427	0.159	0.133
DCBMH16	JUNCTION	0.027	0.080	0 11:55	0.0696	0.228	0.013
DCBMH18	JUNCTION	0.018	0.078	0 11:53	0.0464	0.203	0.393
DCBMH19	JUNCTION	0.022	0.100	0 11:54	0.0564	0.258	-0.316
DCBMH20	JUNCTION	0.025	0.118	0 11:54	0.0659	0.325	-0.035
DCBMH22	JUNCTION	0.014	0.210	0 11:54	0.0351	0.589	-0.082
DCBMH23	JUNCTION	0.022	0.309	0 11:54	0.0565	0.873	-0.051
DCBMH24	JUNCTION	0.115	0.115	0 11:54	0.298	0.298	0.082
DCBMH25	JUNCTION	0.078	0.190	0 11:54	0.2	0.498	-0.162
J11	JUNCTION	0.224	0.224	0 11:54	0.43	0.43	0.000
J12	JUNCTION	0.000	0.103	0 11:55	0	0.251	0.179
J2	JUNCTION	0.106	0.106	0 11:54	0.251	0.251	-0.170
J7	JUNCTION	0.256	0.692	0 12:01	1.05	3.41	0.000
MH08	JUNCTION	0.000	0.214	0 11:54	0	0.579	-0.014
MH21	JUNCTION	0.000	0.117	0 11:54	0	0.325	-0.045
OGS1	JUNCTION	0.000	0.522	0 11:54	0	1.45	-0.043

OGS2	JUNCTION	0.000	0.187	0	11:54	0	0.499	-0.119
Clark_Street	OUTFALL	0.000	0.224	0	11:54	0	0.43	0.000
HWY26	OUTFALL	0.000	0.692	0	12:01	0	3.41	0.000
SWMF	STORAGE	0.056	0.850	0	11:54	0.158	2.36	-0.000

Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
DCB01	JUNCTION	0.05	0.274	0.761
DCBMH02	JUNCTION	0.07	0.272	0.523
DCBMH03	JUNCTION	0.14	0.217	0.968
DCBMH04	JUNCTION	0.15	0.157	0.868
DCBMH05	JUNCTION	0.12	0.044	1.146
DCBMH06	JUNCTION	0.22	0.088	1.192
DCBMH07	JUNCTION	0.38	0.176	1.224
DCBMH10	JUNCTION	0.09	0.033	0.907
DCBMH11	JUNCTION	0.29	0.123	0.727
DCBMH12	JUNCTION	0.42	0.196	0.604
DCBMH14	JUNCTION	0.11	0.054	0.886
DCBMH15	JUNCTION	0.20	0.333	0.477
DCBMH16	JUNCTION	0.31	0.317	0.393
DCBMH20	JUNCTION	0.20	0.113	1.052
DCBMH22	JUNCTION	0.57	0.307	0.388
DCBMH23	JUNCTION	0.61	0.290	0.400
DCBMH24	JUNCTION	0.26	0.099	0.651
DCBMH25	JUNCTION	0.36	0.160	0.460
J11	JUNCTION	48.00	0.000	0.240
MH08	JUNCTION	0.48	0.229	1.371
MH21	JUNCTION	0.41	0.228	1.002
OGS1	JUNCTION	0.58	0.275	0.395
OGS2	JUNCTION	0.37	0.169	0.521

Node Flooding Summary

No nodes were flooded.

Storage Volume Summary

Storage Unit	Average Volume 1000 m ³	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m ³	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
SWMF	0.177	14.8	0.0	0.0	0.798	66.9	0 12:03	0.450

Outfall Loading Summary

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10 ⁶ ltr
Clark_Street	63.01	0.009	0.224	0.430
HWY26	91.88	0.039	0.692	3.414
System	77.45	0.048	0.876	3.844

Link Flow Summary

	Maximum Flow	Time of Max Occurrence	Maximum Veloc	Max/ Full	Max/ Full
--	------------------	---------------------------	-------------------	--------------	--------------

Link	Type	CMS	days	hr:min	m/sec	Flow	Depth
C1	CONDUIT	0.112	0	11:54	0.90	0.55	1.00
C1_2	CONDUIT	0.692	0	12:01	1.26	0.19	0.15
C10	CONDUIT	0.310	0	11:54	1.09	0.74	1.00
C11	DUMMY	0.224	0	11:54			
C13	CONDUIT	0.522	0	11:54	1.18	0.89	1.00
C14	CONDUIT	0.024	0	11:53	0.75	0.37	0.88
C15	CONDUIT	0.056	0	11:55	1.10	0.82	1.00
C16	CONDUIT	0.042	0	11:52	0.93	0.47	1.00
C17	CONDUIT	0.080	0	11:55	0.91	0.66	1.00
C18	CONDUIT	0.023	0	11:54	0.66	0.34	0.83
C19	CONDUIT	0.042	0	11:52	1.01	0.61	1.00
C2	CONDUIT	0.187	0	11:54	0.69	0.56	1.00
C20	CONDUIT	0.058	0	11:53	0.92	0.46	1.00
C21	CONDUIT	0.084	0	11:53	0.54	0.41	1.00
C22	CONDUIT	0.074	0	11:54	0.82	0.73	1.00
C22_1	CONDUIT	0.103	0	11:55	0.54	0.23	0.53
C22_4	CONDUIT	0.099	0	11:56	0.72	0.19	0.44
C23	CONDUIT	0.085	0	11:54	0.77	0.90	1.00
C24	CONDUIT	0.101	0	11:54	0.92	1.07	1.00
C25	CONDUIT	0.156	0	11:54	1.46	1.62	1.00
C26	CONDUIT	0.169	0	11:54	1.28	1.05	1.00
C27	CONDUIT	0.194	0	11:54	0.69	0.58	1.00
C28	CONDUIT	0.214	0	11:54	0.76	0.64	1.00
C29	CONDUIT	0.215	0	11:54	0.76	0.60	1.00
C3	CONDUIT	0.185	0	11:54	0.50	0.23	1.00
C5	CONDUIT	0.060	0	11:53	1.01	0.48	0.53
C6	CONDUIT	0.078	0	11:54	1.20	0.63	0.75
C7_1	CONDUIT	0.094	0	11:55	1.02	0.47	0.98
C7_2	CONDUIT	0.117	0	11:54	1.03	0.59	1.00
C8	CONDUIT	0.117	0	11:54	0.74	0.57	1.00
C9	CONDUIT	0.210	0	11:54	1.32	1.05	1.00
C12	DUMMY	0.450	0	12:03			

Flow Classification Summary

Conduit	Adjusted /Actual Length	----- Fraction of Time in Flow Class -----								
		Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.03	0.00	0.00	0.09	0.00	0.00	0.88	0.06	0.00
C1_2	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.00	0.00
C10	1.00	0.03	0.00	0.00	0.33	0.00	0.00	0.64	0.01	0.00
C13	1.00	0.03	0.00	0.00	0.39	0.00	0.00	0.58	0.01	0.00
C14	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.52	0.00
C15	1.00	0.03	0.00	0.00	0.02	0.00	0.00	0.96	0.00	0.00
C16	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.96	0.00
C17	1.00	0.03	0.00	0.00	0.05	0.00	0.00	0.92	0.03	0.00
C18	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.96	0.00
C19	1.00	0.03	0.00	0.00	0.02	0.00	0.00	0.95	0.01	0.00
C2	1.00	0.03	0.00	0.00	0.23	0.00	0.00	0.74	0.00	0.00
C20	1.00	0.03	0.00	0.00	0.03	0.00	0.00	0.94	0.01	0.00
C21	1.00	0.03	0.00	0.00	0.28	0.00	0.00	0.69	0.23	0.00
C22	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.95	0.00
C22_1	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.84	0.00
C22_4	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C23	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.68	0.00
C24	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.96	0.00
C25	1.00	0.03	0.00	0.00	0.01	0.00	0.00	0.96	0.00	0.00
C26	1.00	0.03	0.00	0.00	0.02	0.00	0.00	0.95	0.01	0.00
C27	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.65	0.00
C28	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.56	0.00
C29	1.00	0.03	0.00	0.00	0.31	0.00	0.00	0.66	0.02	0.00
C3	1.00	0.03	0.00	0.00	0.40	0.00	0.00	0.57	0.07	0.00
C5	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.96	0.00
C6	1.00	0.03	0.00	0.00	0.01	0.00	0.00	0.96	0.01	0.00
C7_1	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.95	0.00
C7_2	1.00	0.03	0.00	0.00	0.97	0.00	0.00	0.00	0.14	0.00
C8	1.00	0.03	0.02	0.00	0.95	0.00	0.00	0.00	0.93	0.00
C9	1.00	0.03	0.00	0.00	0.28	0.00	0.00	0.69	0.15	0.00

Conduit Surcharge Summary

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1	0.26	0.26	0.49	0.01	0.01
C10	0.61	0.61	0.70	0.01	0.01
C13	0.58	0.58	0.64	0.01	0.01
C14	0.01	0.01	0.11	0.01	0.01
C15	0.19	0.19	0.31	0.01	0.01
C16	0.11	0.11	0.20	0.01	0.01
C17	0.32	0.32	0.57	0.01	0.01
C18	0.01	0.01	0.09	0.01	0.01
C19	0.09	0.09	0.29	0.01	0.01
C2	0.36	0.36	0.37	0.01	0.01
C20	0.30	0.30	0.43	0.01	0.01
C21	0.42	0.42	0.79	0.01	0.01
C22	0.05	0.05	0.07	0.01	0.01
C23	0.07	0.07	0.14	0.01	0.01
C24	0.14	0.14	0.15	0.02	0.01
C25	0.11	0.15	0.13	0.19	0.09
C26	0.12	0.12	0.22	0.02	0.01
C27	0.22	0.22	0.38	0.01	0.01
C28	0.38	0.38	0.48	0.01	0.01
C29	0.48	0.48	0.58	0.01	0.01
C3	0.37	0.37	0.64	0.01	0.01
C7_1	0.01	0.01	0.20	0.01	0.01
C7_2	0.20	0.20	0.41	0.01	0.01
C8	0.41	0.41	0.58	0.01	0.01
C9	0.58	0.58	0.79	0.03	0.03

Analysis begun on: Wed Dec 13 10:55:17 2023
 Analysis ended on: Wed Dec 13 10:55:18 2023
 Total elapsed time: 00:00:01

Profile 1 DCB17 to Hwy 26 Outlet

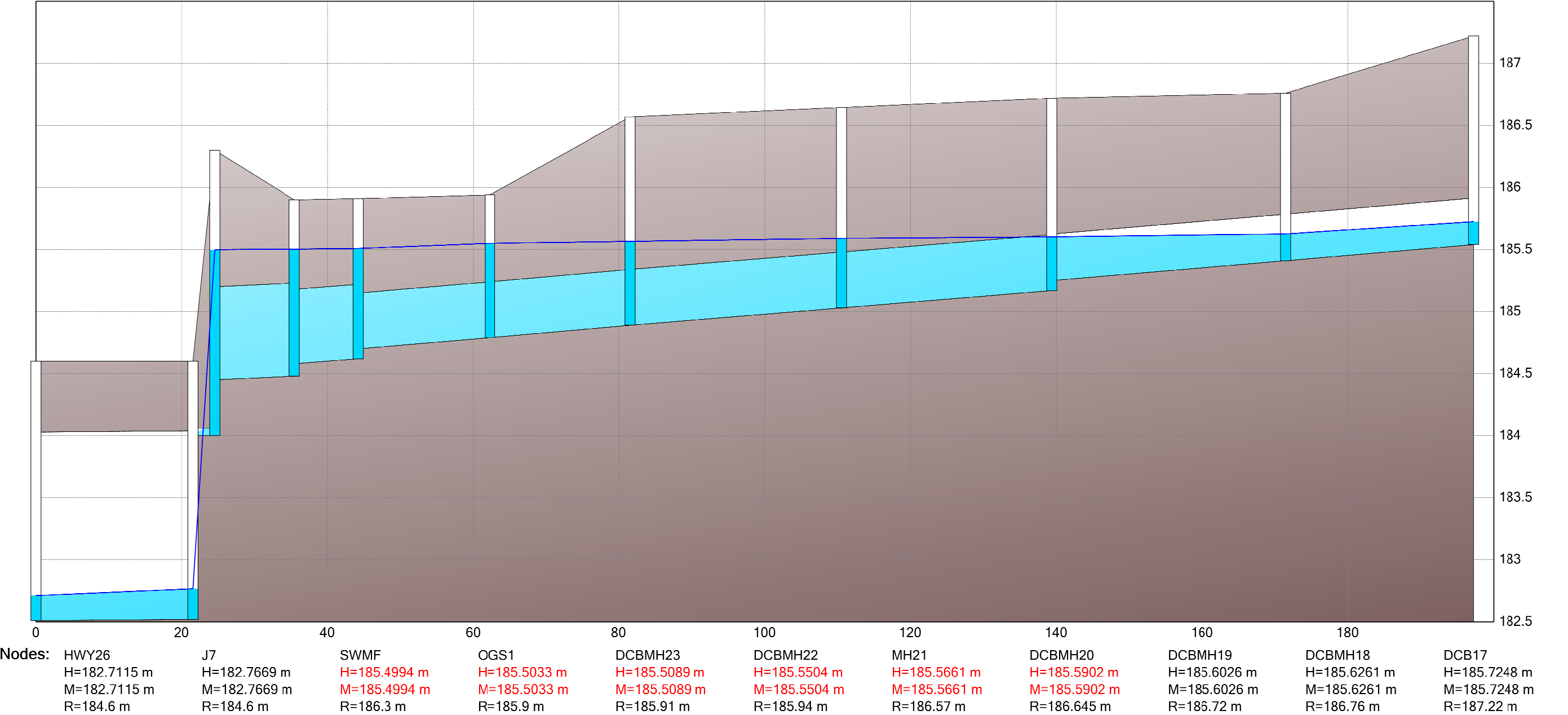
100yr SCS Storm

HGL

Peak values

Links:

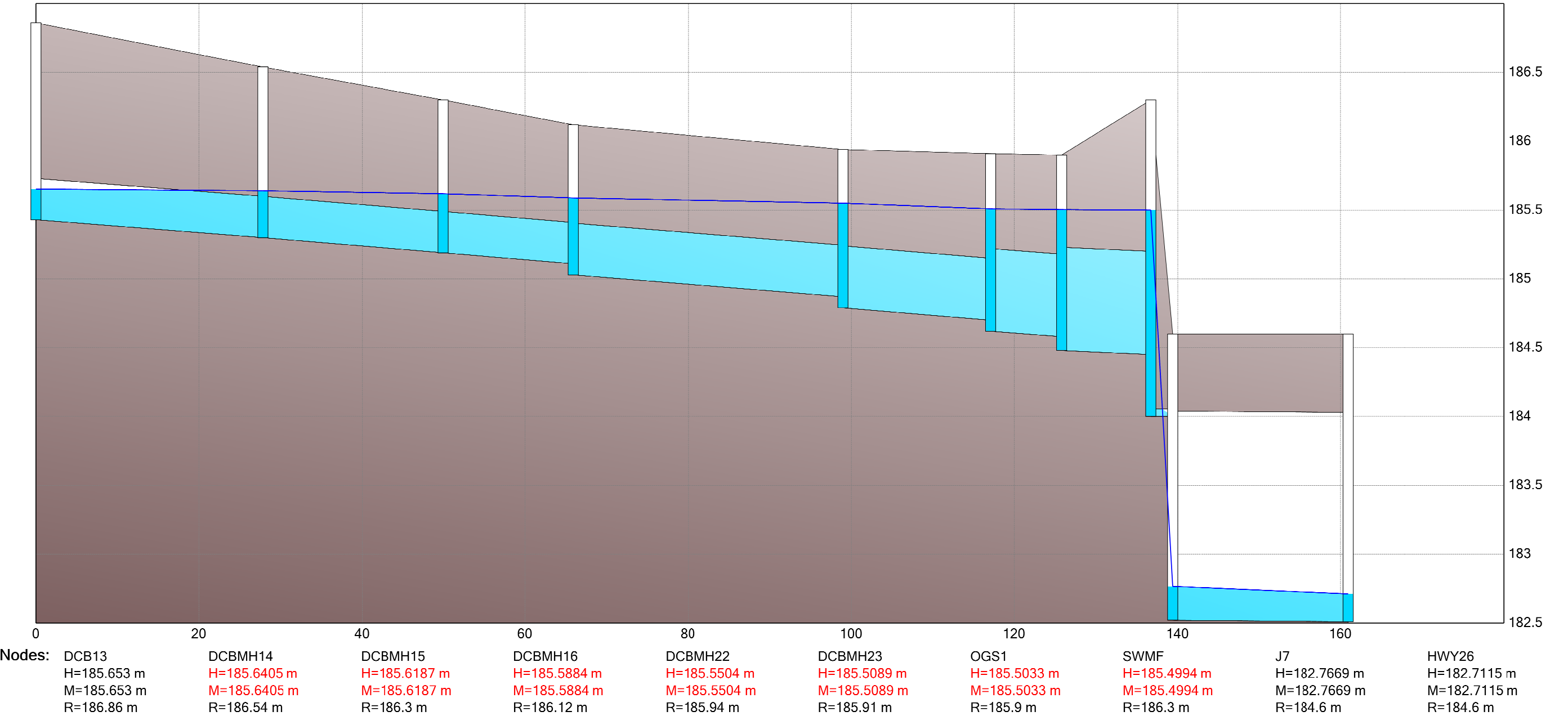
C1_2	C12	C13	C10	C9	C8	C7_2	C7_1	C6	C5
Q=0.692 m³/s	Q=0.45 m³/s	Q=0.515 m³/s	Q=0.307 m³/s	Q=0.209 m³/s	Q=0.117 m³/s	Q=0.117 m³/s	Q=0.093 m³/s	Q=0.078 m³/s	Q=0.06 m³/s
L=21.555 m		L=10.911 m	L=8.727 m	L=18.108 m	L=19.254 m	L=28.98 m	L=28.865 m	L=32.03 m	L=25.828 m
D=1.52 m		D=0.75 m	D=0.6 m	D=0.45 m	D=0.45 m	D=0.45 m	D=0.45 m	D=0.375 m	D=0.375 m
V=1.264 m/s	V=0 m/s	V=1.166 m/s	V=1.087 m/s	V=1.313 m/s	V=0.736 m/s	V=1.034 m/s	V=1.024 m/s	V=1.187 m/s	V=1.006 m/s
S=0.00046 m/m		S=0.00275 m/m	S=0.00458 m/m	S=0.00497 m/m	S=0.00519 m/m	S=0.00483 m/m	S=0.00485 m/m	S=0.005 m/m	S=0.00503 m/m



Profile 2 DCB13 to Hwy 26 Outlet

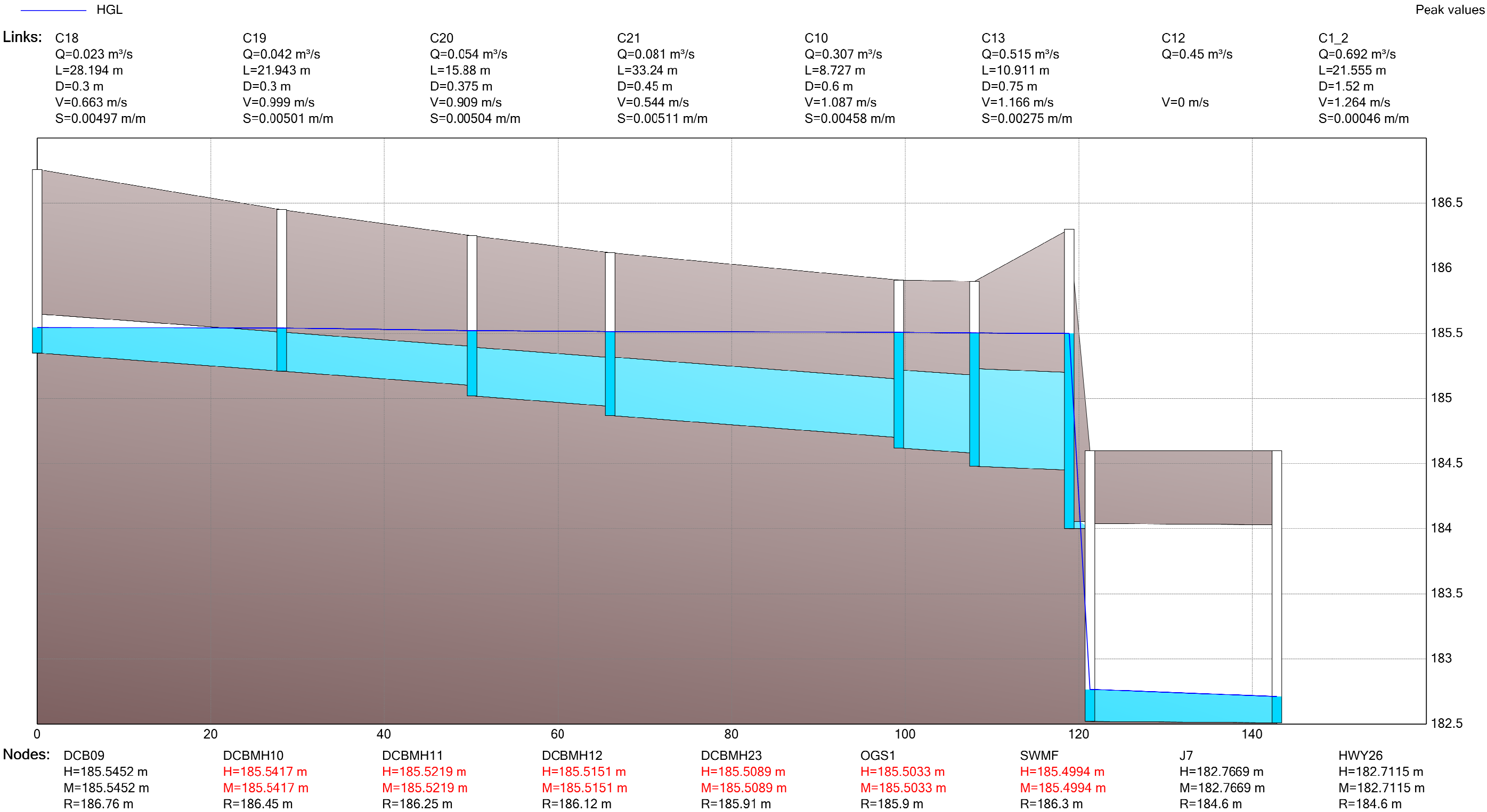
100yr SCS Storm

Links:									Peak values
C14	C16	C15	C17	C9	C10	C13	C12	C1_2	
Q=0.024 m³/s	Q=0.04 m³/s	Q=0.055 m³/s	Q=0.079 m³/s	Q=0.209 m³/s	Q=0.307 m³/s	Q=0.515 m³/s	Q=0.45 m³/s	Q=0.692 m³/s	
L=27.79 m	L=22.135 m	L=15.947 m	L=33.094 m	L=18.108 m	L=8.727 m	L=10.911 m		L=21.555 m	
D=0.3 m	D=0.3 m	D=0.3 m	D=0.375 m	D=0.45 m	D=0.6 m	D=0.75 m		D=1.52 m	
V=0.734 m/s	V=0.931 m/s	V=1.065 m/s	V=0.91 m/s	V=1.313 m/s	V=1.087 m/s	V=1.166 m/s	V=0 m/s	V=1.264 m/s	
S=0.00468 m/m	S=0.00497 m/m	S=0.00502 m/m	S=0.00483 m/m	S=0.00497 m/m	S=0.00458 m/m	S=0.00275 m/m		S=0.00046 m/m	

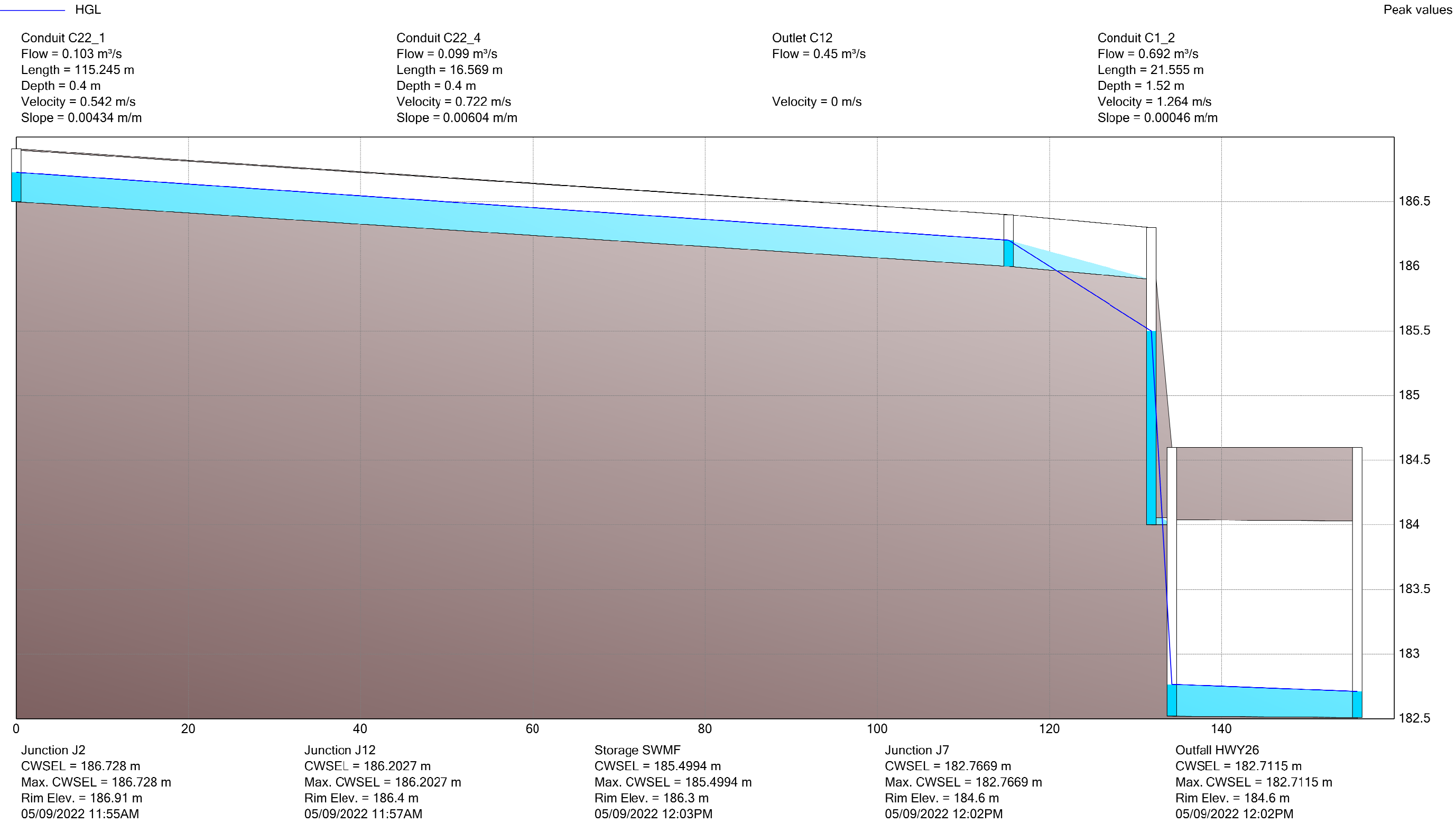


Profile 3 DCB09 to Hwy 26 Outlet

100yr SCS Storm

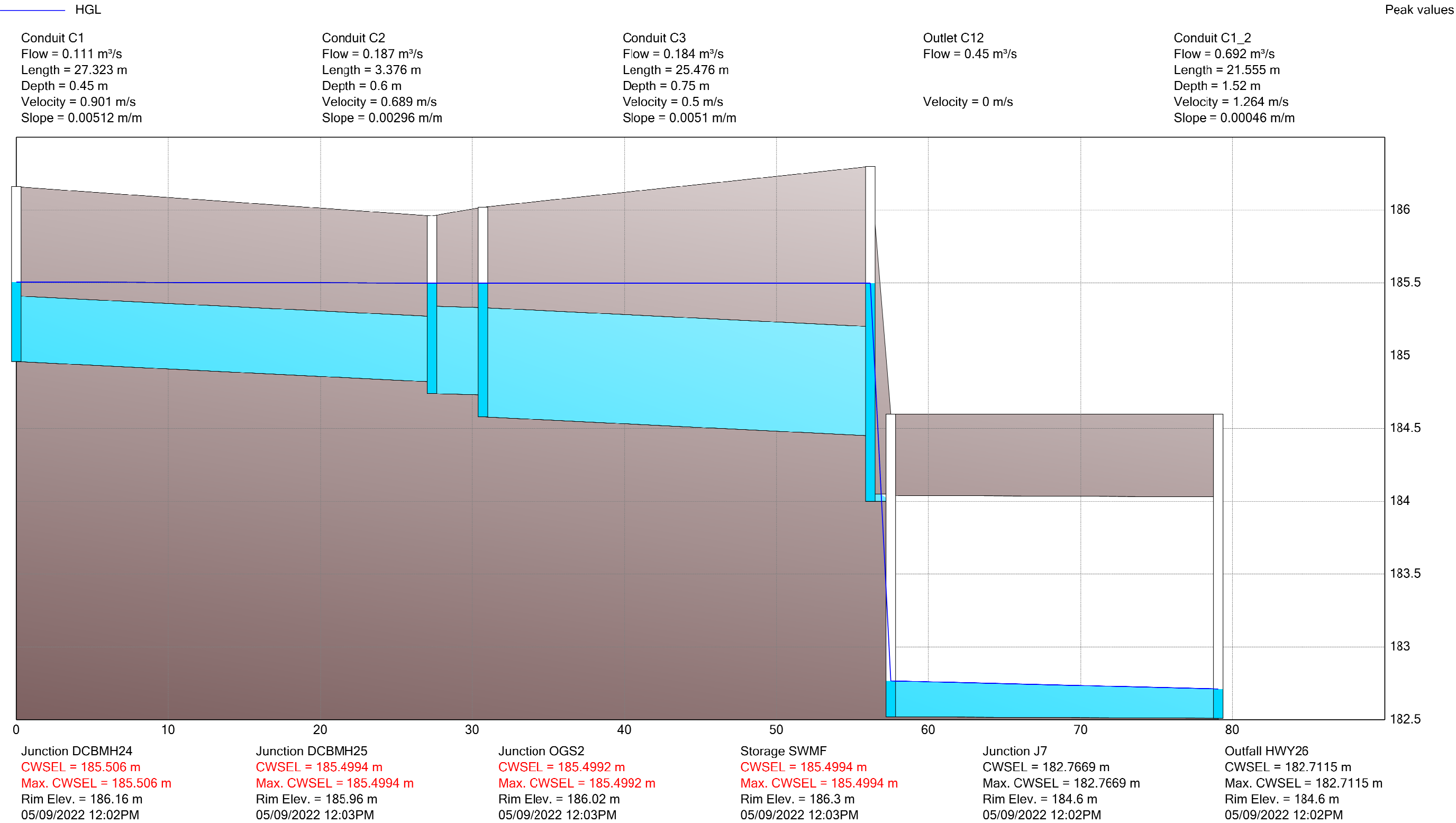


Profile 4 Swale to Hwy 26 Outlet
100yr SCS Storm



Profile 5 DCBMH24 to Hwy 26 Outlet

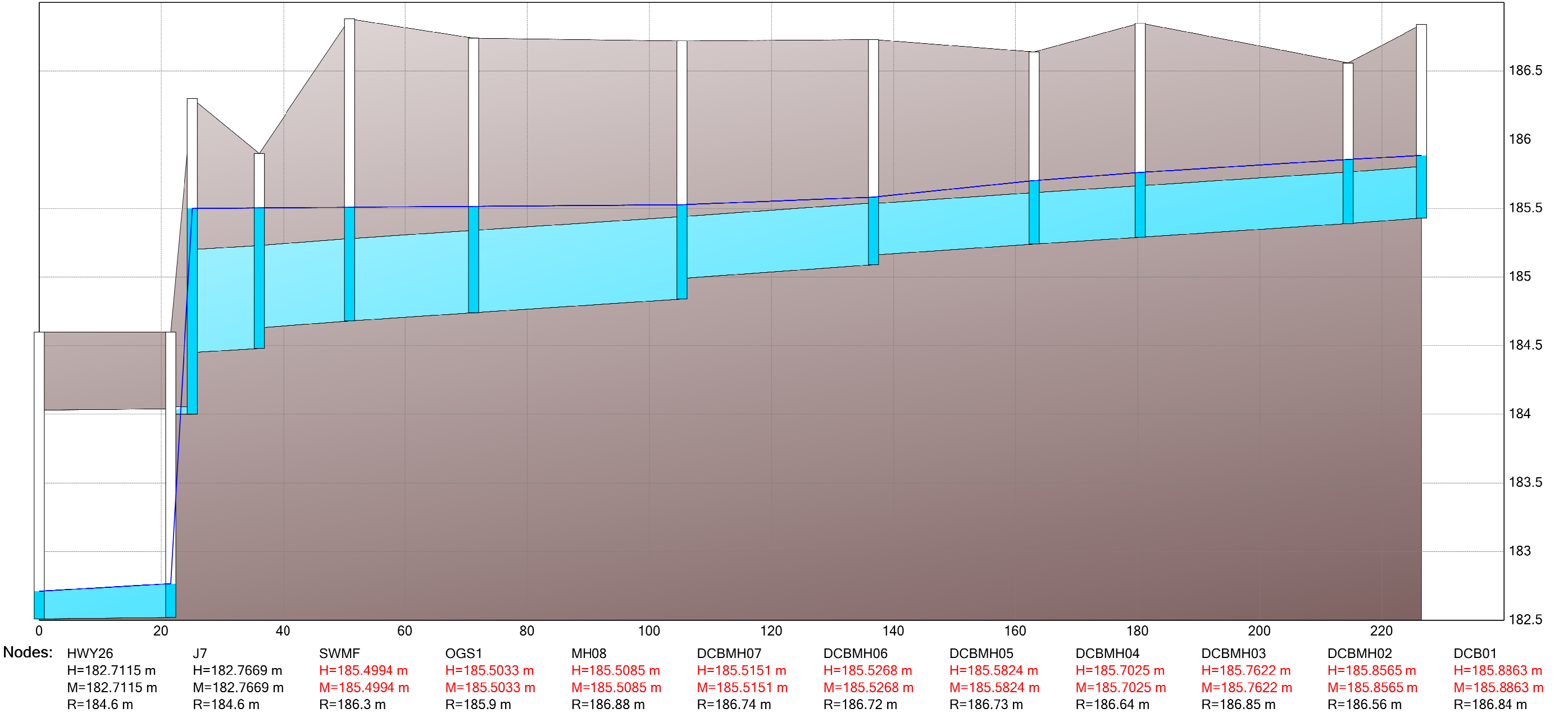
100yr SCS Storm



Profile 6 DCB01 to Hwy 26 Outlet

100yr SCS Storm

	HGL										Peak values
Links:	C1_2	C12	C13	C29	C28	C27	C26	C25	C24	C23	C22
	Q=0.692 m³/s	Q=0.45 m³/s	Q=0.515 m³/s	Q=0.209 m³/s	Q=0.209 m³/s	Q=0.188 m³/s	Q=0.166 m³/s	Q=0.156 m³/s	Q=0.101 m³/s	Q=0.085 m³/s	Q=0.073 m³/s
	L=21.555 m		L=10.911 m	L=14.809 m	L=20.311 m	L=34.163 m	L=31.396 m	L=26.358 m	L=17.357 m	L=34.083 m	L=12.071 m
	D=1.52 m		D=0.75 m	D=0.6 m	D=0.6 m	D=0.6 m	D=0.45 m	D=0.375 m	D=0.375 m	D=0.375 m	D=0.375 m
	V=1.264 m/s	V=0 m/s	V=1.166 m/s	V=0.738 m/s	V=0.739 m/s	V=0.68 m/s	V=1.269 m/s	V=1.463 m/s	V=0.91 m/s	V=0.767 m/s	V=0.816 m/s
	S=0.00046 m/m		S=0.00275 m/m	S=0.00338 m/m	S=0.00295 m/m	S=0.00293 m/m	S=0.00319 m/m	S=0.00304 m/m	S=0.00288 m/m	S=0.00293 m/m	S=0.00331 m/m





**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



Project Name: 185 Clark Street
Location: Blue Mountains, ON
OGS #: 1

Engineer: Capes Engineering
Contact: Clayton Capes, P.Eng
Report Date: 15-Aug-22

Area 0.920 ha
Weighted C 0.90
CDS Model 2025

Rainfall Station # 198
Particle Size Distribution FINE
CDS Treatment Capacity 45 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate</u> <u>(l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.8%	21.1%	2.3	2.3	5.1	97.4	10.5
1.5	10.1%	31.2%	3.5	3.5	7.6	96.7	9.7
2.0	8.5%	39.7%	4.6	4.6	10.2	95.9	8.1
2.5	6.7%	46.4%	5.8	5.8	12.7	95.2	6.4
3.0	6.1%	52.4%	6.9	6.9	15.2	94.5	5.7
3.5	4.1%	56.5%	8.1	8.1	17.8	93.8	3.8
4.0	4.2%	60.7%	9.2	9.2	20.3	93.0	3.9
4.5	3.7%	64.4%	10.4	10.4	22.9	92.3	3.4
5.0	3.9%	68.2%	11.5	11.5	25.4	91.6	3.5
6.0	5.3%	73.5%	13.8	13.8	30.5	90.1	4.8
7.0	3.8%	77.4%	16.1	16.1	35.6	88.7	3.4
8.0	2.8%	80.1%	18.4	18.4	40.6	87.2	2.4
9.0	2.5%	82.6%	20.7	20.7	45.7	85.8	2.1
10.0	2.1%	84.7%	23.0	23.0	50.8	84.3	1.8
15.0	5.7%	90.5%	34.5	34.5	76.2	77.0	4.4
20.0	3.4%	93.8%	46.0	45.3	100.0	69.1	2.3
25.0	3.4%	97.2%	57.5	45.3	100.0	55.3	1.9
30.0	0.8%	98.0%	69.1	45.3	100.0	46.1	0.4
35.0	0.9%	98.8%	80.6	45.3	100.0	39.5	0.3
40.0	0.4%	99.3%	92.1	45.3	100.0	34.5	0.1
45.0	0.5%	99.7%	103.6	45.3	100.0	30.7	0.1
50.0	0.3%	100.0%	115.1	45.3	100.0	27.6	0.1

89.4

Removal Efficiency Adjustment² = 6.5%

Predicted Net Annual Load Removal Efficiency = 82.9%

Predicted Annual Rainfall Treated = 96.9%

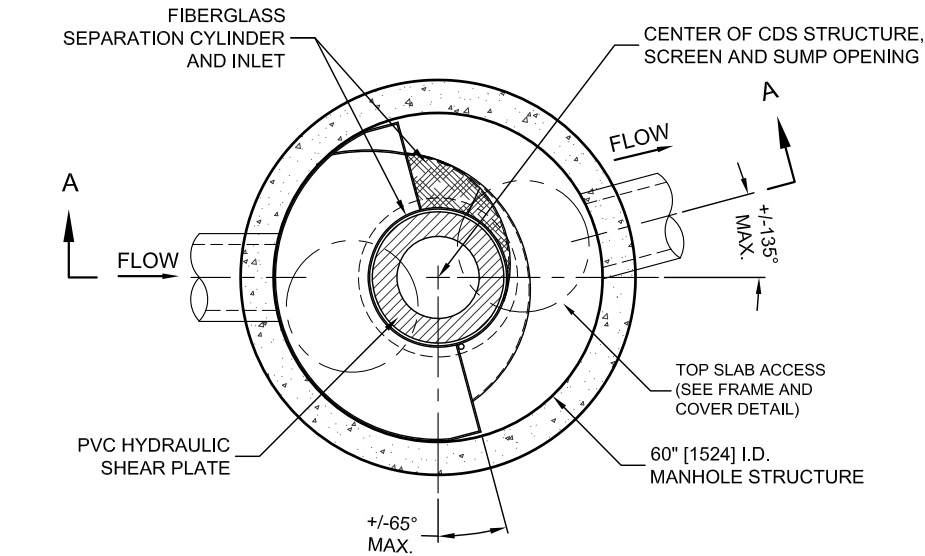
1 - Based on 38 years of hourly rainfall data from Canadian Station 6166132, Owen Sound ON

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

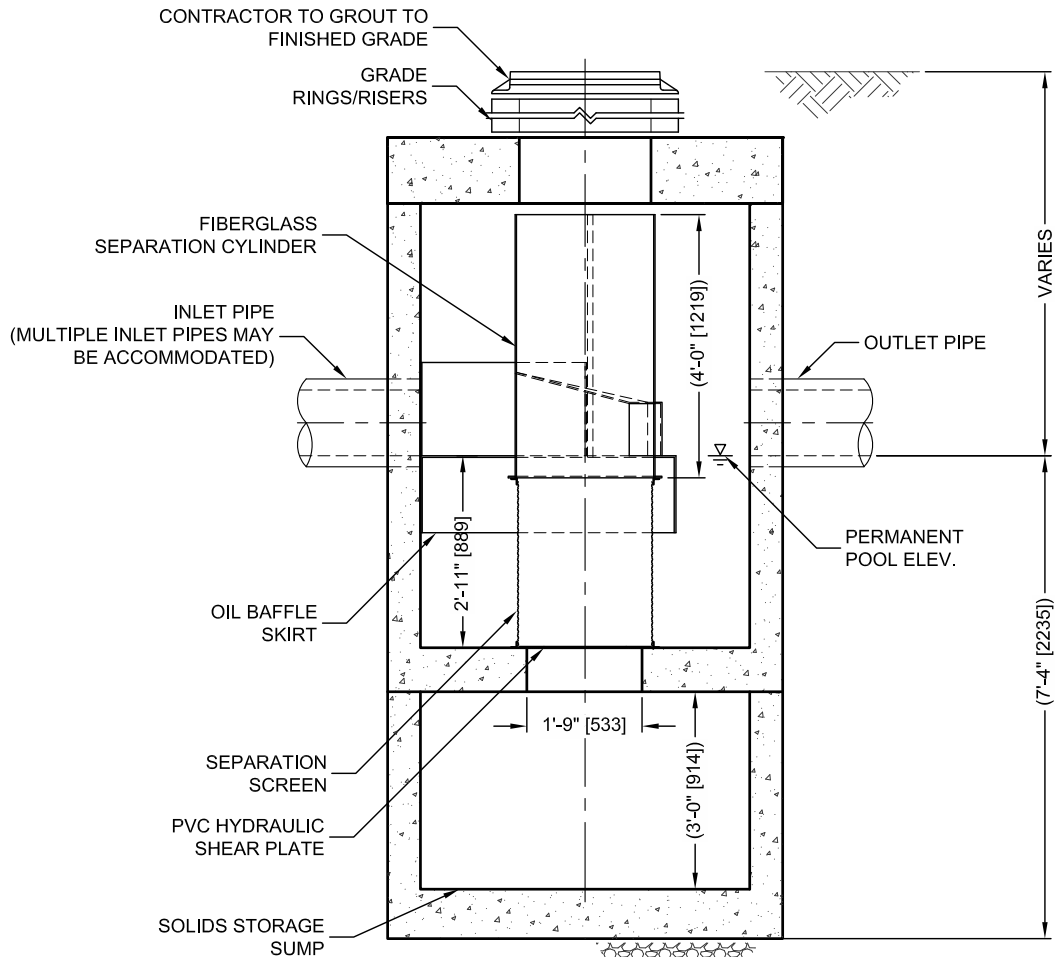
3 - CDS Efficiency based on testing conducted at the University of Central Florida

4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

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PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



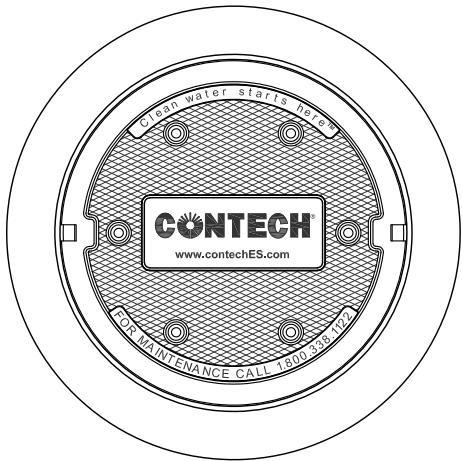
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,768,848; 6,841,722; 6,911,502; 6,981,793; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS PMSU2025-5-C DESIGN NOTES

THE STANDARD CDS PMSU2025-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- CUSTOMIZABLE SUMP DEPTH AVAILABLE
- ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC
DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
- PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC

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9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069

800-338-1122

513-645-7000

513-645-7993 FAX

CDS PMSU2025-5-C
INLINE CDS
STANDARD DETAIL



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



Project Name: 185 Clark Street
Location: Blue Mountains, ON
OGS #: 2

Engineer: Capes Engineering
Contact: Clayton Capes, P.Eng
Report Date: 15-Aug-22

Area 0.360 ha
Weighted C 0.90
CDS Model 2015

Rainfall Station # 198
Particle Size Distribution FINE
CDS Treatment Capacity 20 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate</u> <u>(l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.8%	21.1%	0.9	0.9	4.5	97.6	10.5
1.5	10.1%	31.2%	1.4	1.4	6.8	96.9	9.8
2.0	8.5%	39.7%	1.8	1.8	9.1	96.3	8.2
2.5	6.7%	46.4%	2.3	2.3	11.4	95.6	6.4
3.0	6.1%	52.4%	2.7	2.7	13.6	94.9	5.7
3.5	4.1%	56.5%	3.2	3.2	15.9	94.3	3.9
4.0	4.2%	60.7%	3.6	3.6	18.2	93.6	3.9
4.5	3.7%	64.4%	4.1	4.1	20.4	93.0	3.4
5.0	3.9%	68.2%	4.5	4.5	22.7	92.3	3.6
6.0	5.3%	73.5%	5.4	5.4	27.3	91.0	4.8
7.0	3.8%	77.4%	6.3	6.3	31.8	89.7	3.4
8.0	2.8%	80.1%	7.2	7.2	36.3	88.4	2.4
9.0	2.5%	82.6%	8.1	8.1	40.9	87.1	2.2
10.0	2.1%	84.7%	9.0	9.0	45.4	85.8	1.8
15.0	5.7%	90.5%	13.5	13.5	68.2	79.3	4.5
20.0	3.4%	93.8%	18.0	18.0	90.9	72.8	2.5
25.0	3.4%	97.2%	22.5	19.8	100.0	61.8	2.1
30.0	0.8%	98.0%	27.0	19.8	100.0	51.5	0.4
35.0	0.9%	98.8%	31.5	19.8	100.0	44.1	0.4
40.0	0.4%	99.3%	36.0	19.8	100.0	38.6	0.2
45.0	0.5%	99.7%	40.5	19.8	100.0	34.3	0.2
50.0	0.3%	100.0%	45.0	19.8	100.0	30.9	0.1

90.5

Removal Efficiency Adjustment² = 6.5%
Predicted Net Annual Load Removal Efficiency = 84.0%
Predicted Annual Rainfall Treated = 97.4%

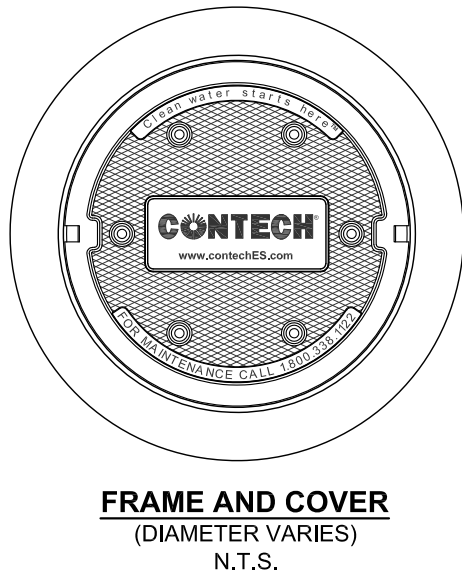
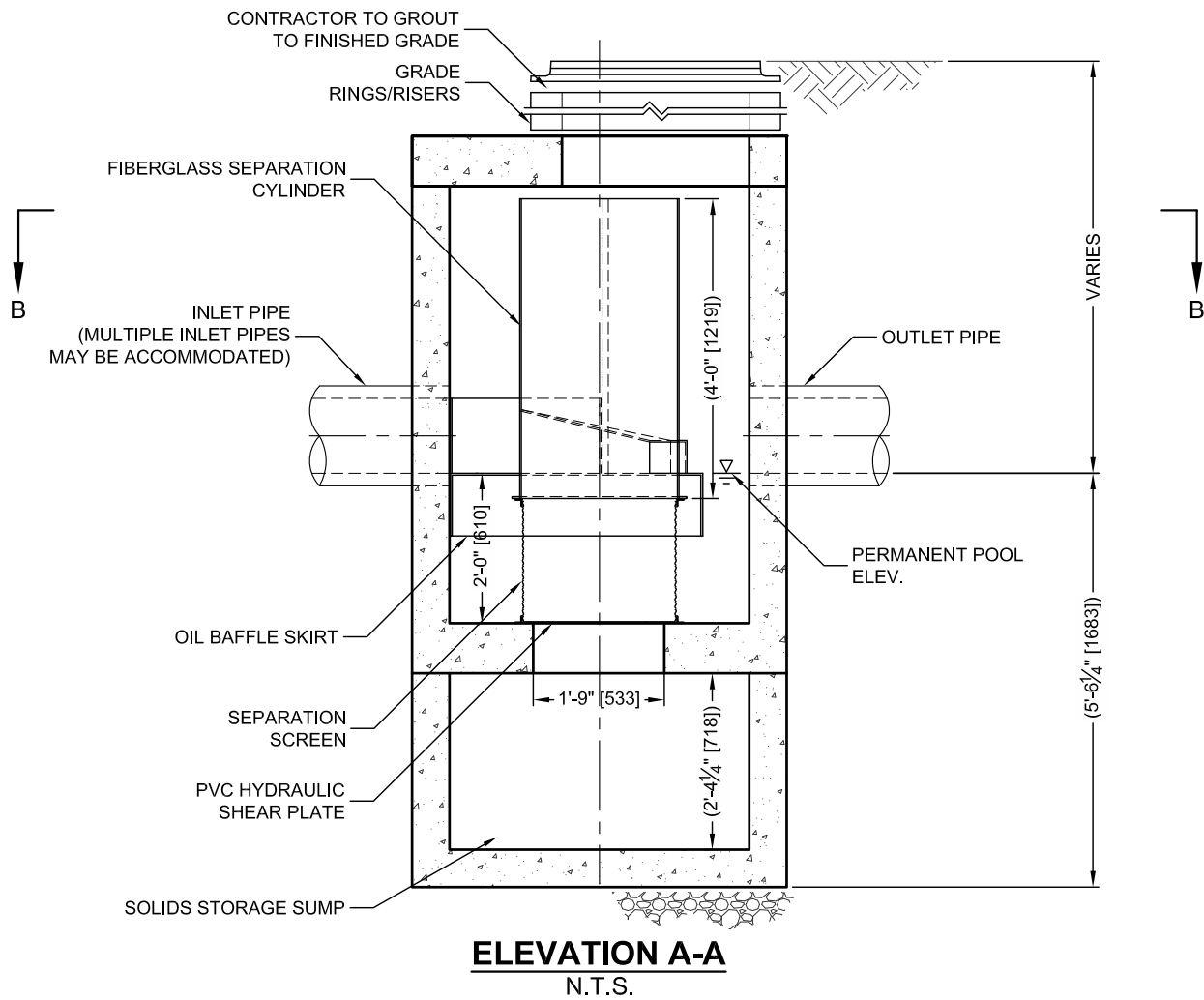
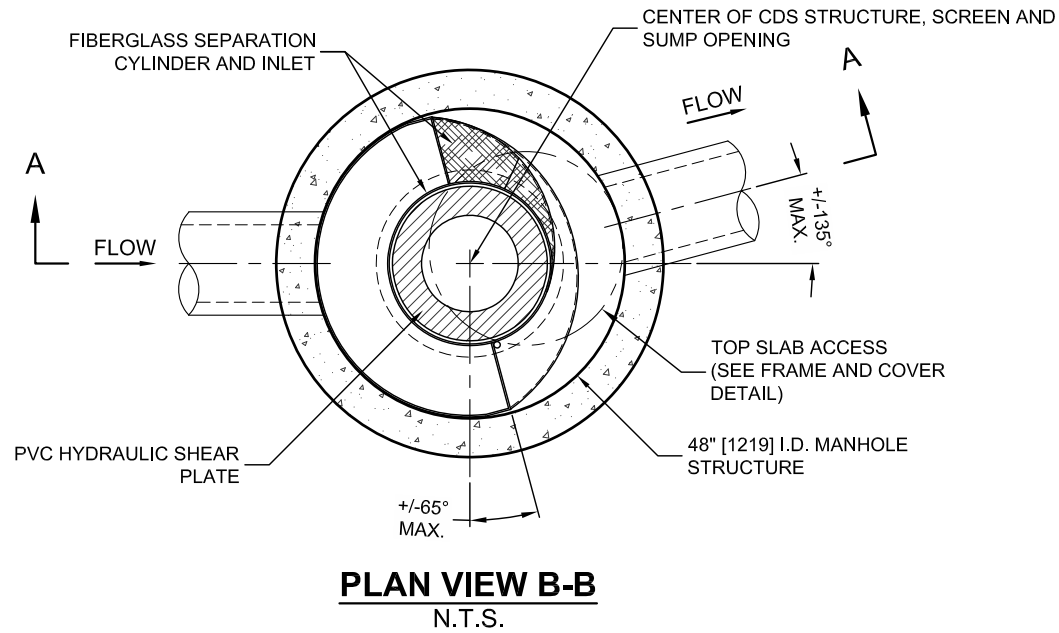
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SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)		*	
PEAK FLOW RATE (CFS OR L/s)		*	
RETURN PERIOD OF PEAK FLOW (YRS)		*	
SCREEN APERTURE (2400 OR 4700)		*	
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

- GENERAL NOTES**
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- INSTALLATION NOTES**
- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
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 - C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
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THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,768,848; 6,841,722; 6,911,500; 6,981,793; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

Appendix G – Water Demand



Prepared by:	C. Capes
Checked by:	C. Capes
Project No:	2021-185
Date:	December 13, 2023

Domestic Demand + Fire Flow = **413.92 L/s** **24835 l/min** Max Value Under FUS = 45,000 L/min

Project: **Lot 31 Clark Street**
Town of the Blue Mountains

Prepared by:
Checked by:
Project No:
Date:

C. Capes
C. Capes
2021-185
December 13, 2023

Domestic Flow Calculations

Industrial Buildings

Number of Water Fixture Units =	<260	OBC Table 7.4.10.5 Conversion of WFSU to L/day (minimum value 2360 L when WFU <260)
Water Demand =	2360 L/day	
Operating Hours =	10 hrs	
Average Day Demand =	2,360 L/day	per building
Max Day Demand =	4,720 L/day	Town Recommended Max Day Demand Factor = 2.0
Peak Hourly Demand =	1,062 L/hr	Town Recommended Max Hour Demand Factor = 4.5
Domestic Peak Demand =	0.30 L/s	per building
Total Domestic Peak Demand =	0.59 L/s	

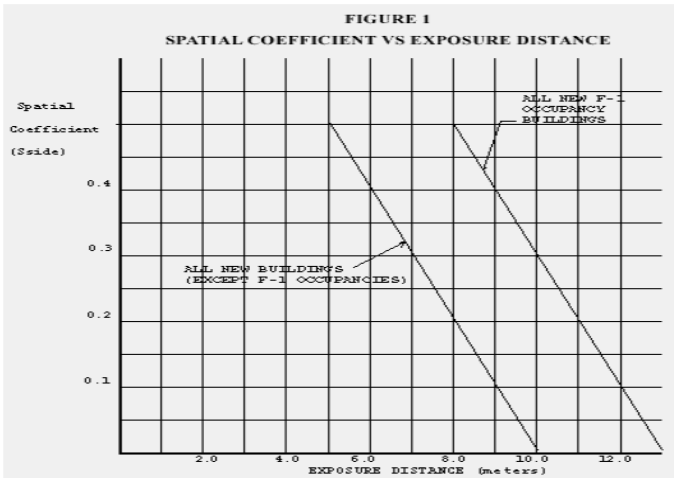
Fire Flow Calculations

Office of the Fire Marshal, OFM Guideline, Fire Protection Water Supply Guideline for Part 3 in the Ontarion Building Code (Oct 1999)
Subsection 3.2.2 of the Ontario Building Code, 2012

Q=KVS_{Total} where

Q = Minimum supply of water in Litres (L)
K = water supply coefficient from Table 1
V = total building volume in cubic meters
S_{Tot} = total of the spacial coefficient values from the property line exposures on all sides as obtained from the formula:
 $S_{Tot} = 1.0 + [(S_{Side1}) + (S_{Side2}) + (S_{Side3}) + \dots \text{etc.}]$

where S_{Side} values are obtained from Figure 1, as modified by Sections 6.39(e) and 6.3(f) of the OBC Guideline
S_{Tot} need not exceed 2.0



1 Building Classification:

Building is of noncombustible construction or of heavy timber construction conforming to Article 3.1.4.6. of the OBC. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.

Water Supply Coefficient - K

Table 1 of OBC A.3.2.5.7

K = 22

Type F3, OBC Table 3.1.2.1

2 Building Volumes

Bldg.	Area (m ²)	Height (m)	Volume (m ³)
Bldg. A	1,301	7.50	9755
Bldg. B	454	3.00	1362
Bldg. C	681	3.00	2044
Bldg. D	764	3.00	2291
Bldg. E	1,054	3.00	3161
Bldg. F	764	3.00	2291
Bldg. G	530	3.00	1591
Bldg. H	1,704	4.00	6816
		Total	29310

← Total Building Volume

3 Exposure Distances

$S_{Tot} = 1.0 + [(S_{Side1}) + (S_{Side2}) + (S_{Side3}) + \dots \text{etc.}]$

Bldg.	North (m)	S _{Side} (N)	East (m)	S _{Side} (E)	South (m)	S _{Side} (S)	West (m)	S _{Side} (W)	S _{Tot}
Bldg. A	>10 m	0	>10 m	0	>10 m	0	>10 m	0	0
Bldg. B	>10 m	0	>10 m	0	>10 m	0	>10 m	0	0
Bldg. C	>10 m	0	9 m	0.1	>10 m	0	>10 m	0	0.1
Bldg. D	>10 m	0	6 m	0.4	>10 m	0	9 m	0.1	0.5
Bldg. E	>10 m	0	6 m	0.4	>10 m	0	6 m	0.4	0.8
Bldg. F	>10 m	0	9.00	0.1	>10 m	0	6.00	0.4	0.5
Bldg. G	>10 m	0	>10 m	0	>10 m	0	9.00	0.1	0.1
Bldg. H	>10 m	0	>10 m	0	>10 m	0	>10 m	0	0

← Max S_{Tot}

S_{Tot} = 1.80

Max. Value = 2.0

4 Minimum Fire Water Supply

Q=KVS_{Total} = 1160671 Litres

5 Fire Water Supply Flow Rate

= 9000 L/min

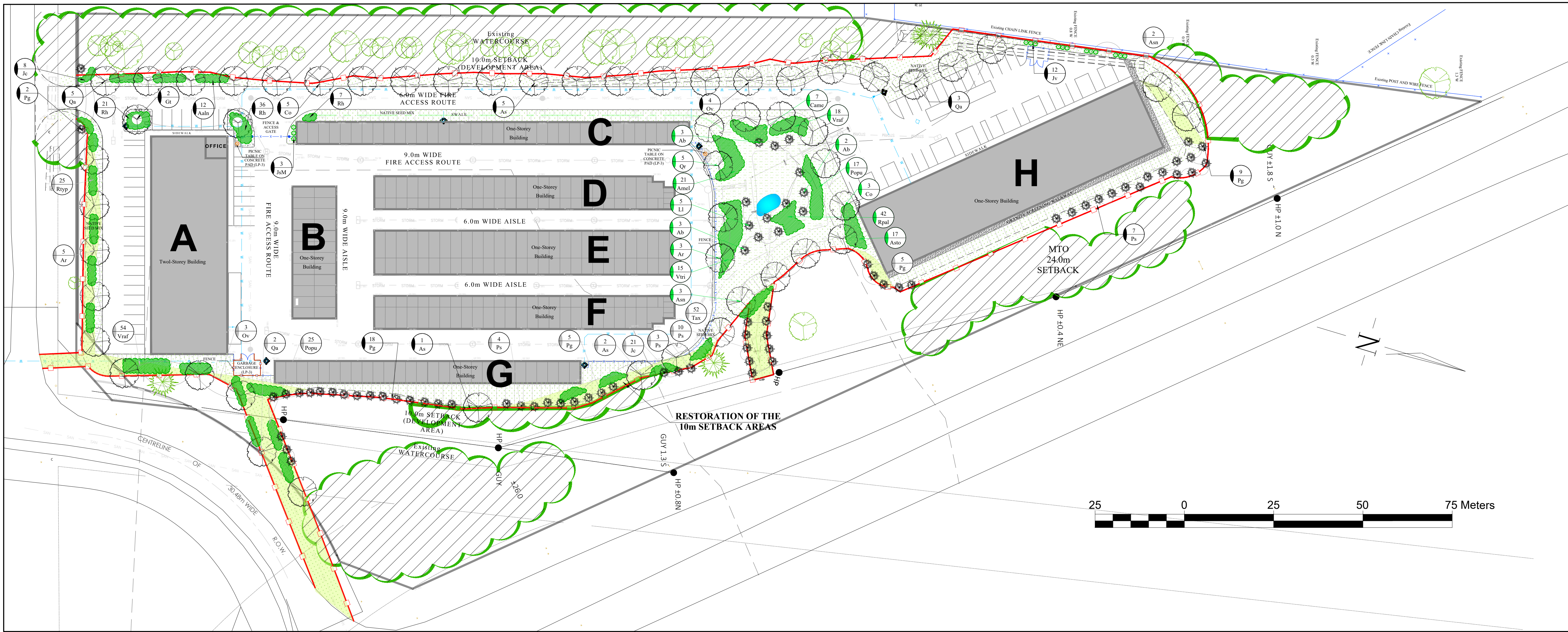
Table 2 Required Minimum Water Supply Flow Rate (L/min), provided in the OBC A.3.2.5.7

= 150.00 L/s

6 Domestic + Fire Flow Rate

= 150.59 L/s

Appendix H – Landscape Plan



LANDSCAPE PLAN - tree canopy after 3 years

CODE	QNTY	COMMON NAME	BOTANICAL NAME	SIZE	FORM	SPACING	DETAIL	NOTES
DECIDUOUS TREES								
As	6	SUGAR MAPLE	Acer saccharum	60 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
Co	5	COMMON HACKBERRY	Celtis occidentalis	60 mm	W.B.	9.0 m o/c	D-1	Full Form
Gt	2	SHADEMASTER HONEYLOCUST	Gleditsia triacanthos var. inermis 'Shademaster'	60 mm	W.B.	9.0 m o/c	D-1	Full Form
Ov	4	IRONWOOD	Ostrya virginiana	60 mm	W.B.	7.0 m o/c	D-1	Full Form/ Spring plant only
Qa	8	WHITE OAK	Quercus alba	60 mm	W.B.	15.0 m o/c	D-1	Spring planting/ Soil pH<7.5

CONIFEROUS TREES								
Pg	29	WHITE SPRUCE	Picea glauca	200cm	w.b.	5m o/c	D-2	Full form / Do not cut leader
Jv	12	EASTERN RED CEDAR	Juniperus virginiana	200cm	w.b.	2.5m o/c	D-2	Full form / Do not cut leader
Ps	7	EASTERN WHITE PINE	Pinus strobus	150 cm	w.b.	6m o/c	D-2	Full form / Do not cut leader
SHRUBS								
Aaln	12	SERVICE-BERRY	Amelanchier alnifolia	60 cm	3 gal	1.8m o/c	D-3	Full form / Container grown
Jc	8	CANADIAN JUNIPER	Juniperus communis var. depressa	40cm	3 gal	1.5m o/c	D-2	Full form / Container grown
JsM	3	MOFFET JUNIPER	Juniperus scopulorum 'Moffetti'	150cm	w.b.	1.5 m o/c	D-3	Full form / Container grown
NATIVE PERENNIALS								
Rh	64	BLACK EYED SUSAN	Rudbeckia hirta	1 gal	pot	0.90 m o/c	n/a	Full form / Container grown

SITE PLAN PLANT LIST. REFER TO DETAILS AND NOTES ON LP-2

DECIDUOUS TREES								
Ar	3	RED MAPLE	Acer rubrum	60 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
Asn	3	SILVER MAPLE	Acer saccharinum	60 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
Co	3	COMMON HACKBERRY	Celtis occidentalis	60 mm	W.B.	9.0 m o/c	D-1	Full Form
Qr	5	RED OAK	Quercus rubra	60 mm	W.B.	9.0 m o/c	D-1	Spring planting/ Soil pH<7.5

CONIFEROUS TREES								
Ab	8	BALSAM FIR	Abies balsamea	200cm	w.b.	6m o/c	D-2	Full form / Do not cut leader
LI	5	AMERICAN LARCH	Larix laricina	200cm	w.b.	8.0m o/c	D-2	Full form / Do not cut leader

NATIVE SHRUBS								
Amel	21	BLACK CHOKEBERRY	Aronia melanocarpa	60 cm	3 gal	1.2m o/c	D-3	Full form / Container grown
Asto	17	RUNNING JUNE BERRY	Amelanchier solanifera	60 cm	3 gal	1.8m o/c	D-3	Full form / Container grown
Came	7	AMERICAN HAZELNUT	Corylus americana	60 cm	3 gal	2.5m o/c	D-3	Full form / Container grown
Popu	17	COMMON NINEBARK	Physocarpus opulifolius	60 cm	3 gal	1.8m o/c	D-3	Full form / Container grown
Rpal	42	SWAMP ROSE	Rosa palustris	60 cm	3 gal	1.0m o/c	D-3	Full form / Container grown
Vraf	18	DOWNY ARROW-WOOD	Viburnum rafinesquianum	60 cm	3 gal	1.5m o/c	D-3	Full form / Container grown
Vtri	15	HIGH BUSH CRANBERRY	Viburnum trilobum	60 cm	3 gal	2.5m o/c	D-3	Full form / Container grown

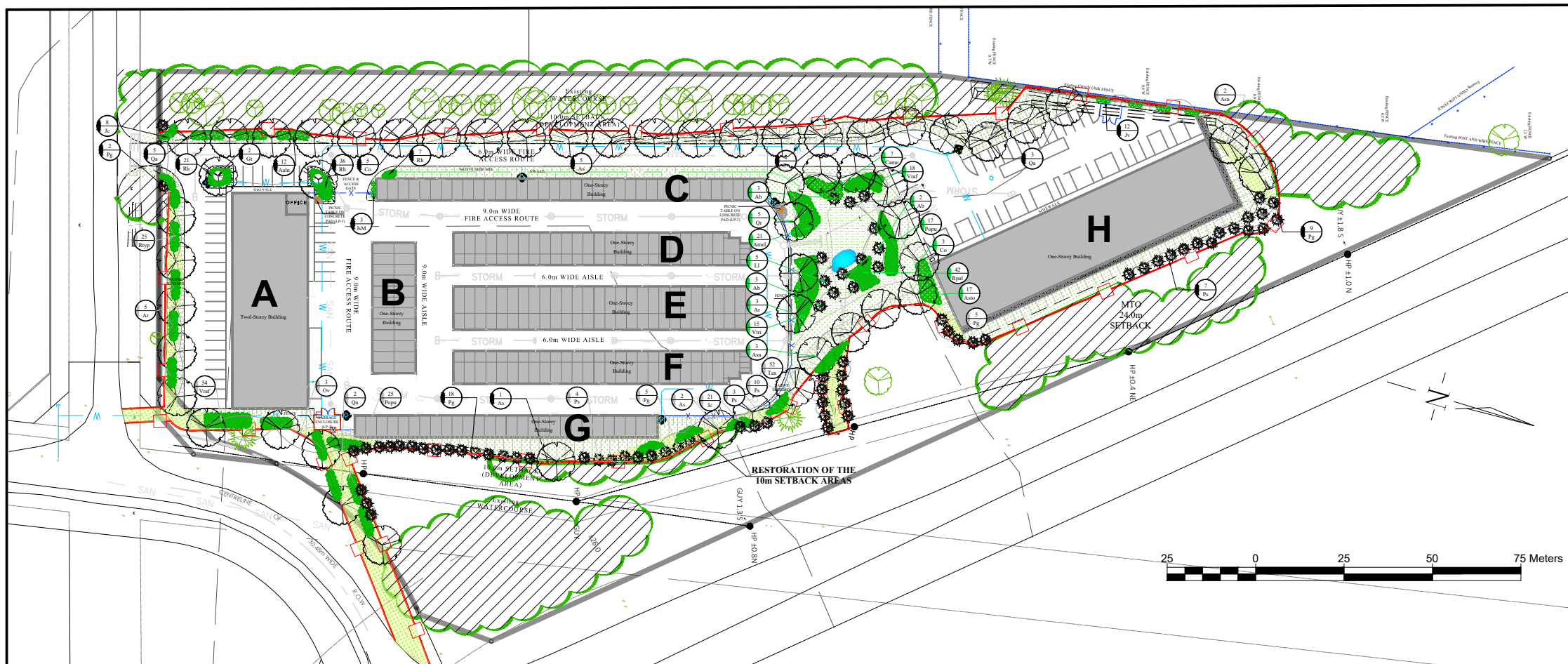
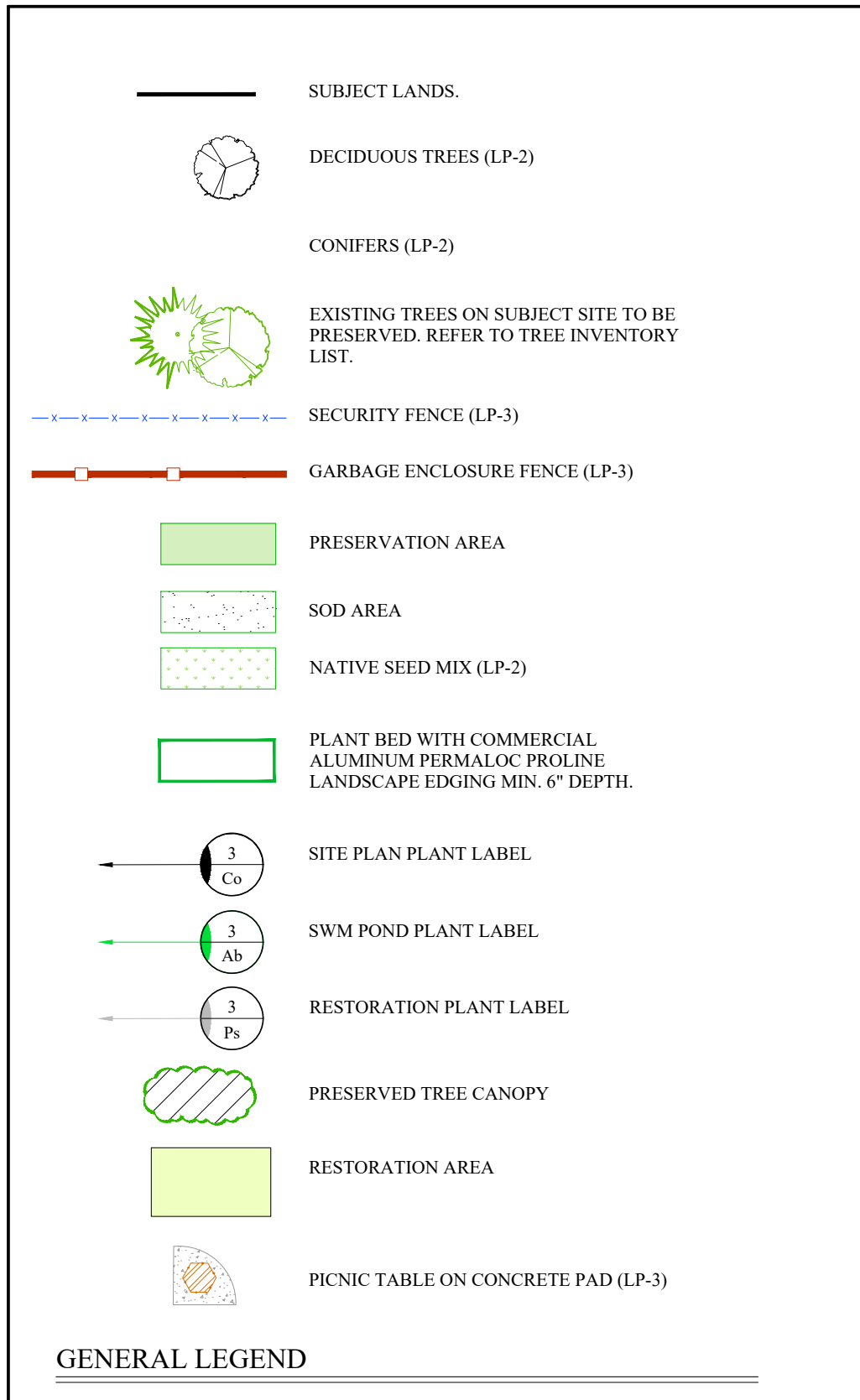
SWM POND PLANT LIST. REFER TO DETAILS AND NOTES ON LP-2

DECIDUOUS TREES								
Ar	5	RED MAPLE	Acer rubrum	45 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
As	2	SUGAR MAPLE	Acer saccharum	45 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
Asn	2	SILVER MAPLE	Acer saccharinum	60 mm	W.B.	9.0 m o/c	D-1	Full Form/ Fall pruning only
Ov	3	IRONWOOD	Ostrya virginiana	45 mm	W.B.	7.0 m o/c	D-1	Full Form/ Spring plant only
Qa	2	WHITE OAK	Quercus alba	45 mm	W.B.	15.0 m o/c	D-1	Spring planting/ Soil pH<7.5

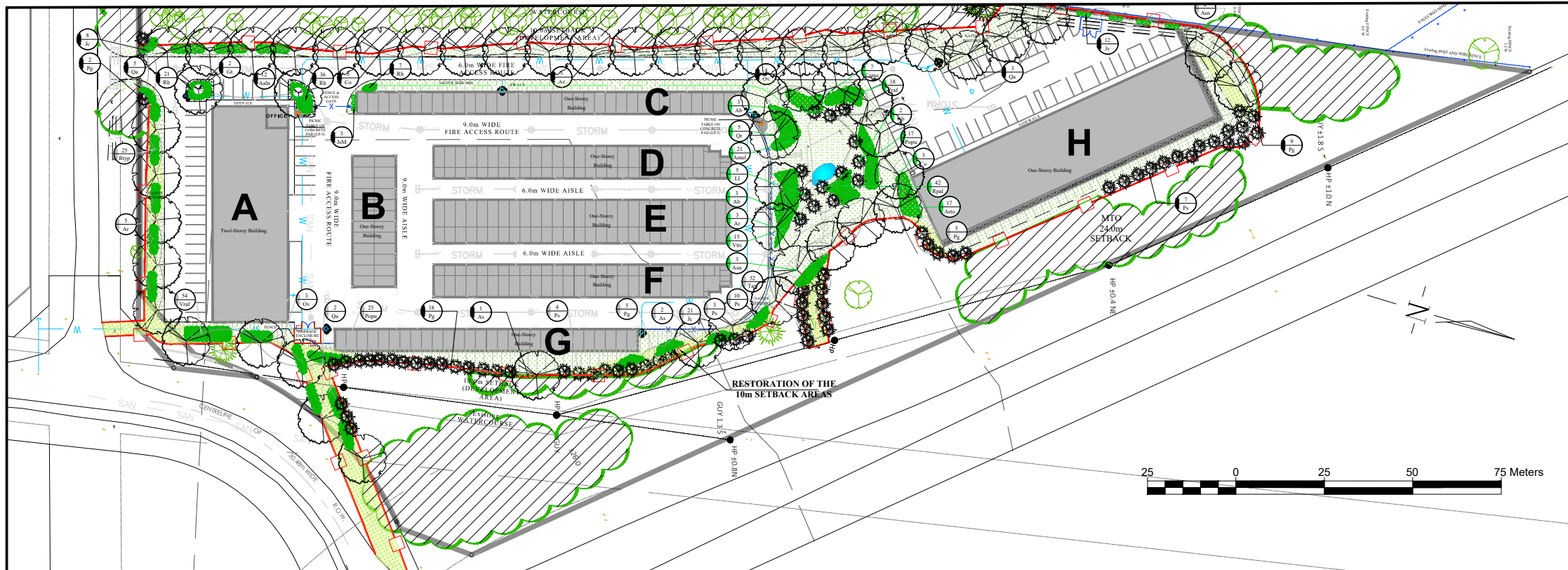
CONIFEROUS TREES								
Pg	10	WHITE SPRUCE	Picea glauca	150 cm	w.b.	5m o/c	D-2	Full form / Do not cut leader
Ps	17	EASTERN WHITE PINE	Pinus strobus	150 cm	w.b.	6m o/c	D-2	Full form / Do not cut leader

NATIVE SHRUBS								
Jc	21	CANADIAN JUNIPER	Juniperus communis var. depressa	40cm	3 gal	1.5m o/c	D-2	Full form / Container grown
Popu	25	COMMON NINEBARK	Physocarpus opulifolius	50cm	3 gal	1.8m o/c	D-3	Full form / Container grown
Rtyp	25	STAGHORN SUMAC	Rhus typhina	80cm	3 gal	2.5m o/c	D-3	Full form / Container grown
Tax	52	AMERICAN YEW	Taxus canadensis	40cm	2 gal	1.0 m o/c	D-3	Full form / Container grown
Vraf	54	DOWNY ARROW-WOOD	Viburnum rafinesquianum	50 cm	3 gal	1.5m o/c	D-3	Full form / Container grown

RESTORATION PLANT LIST. REFER TO DETAILS AND NOTES ON LP-2



Estimated tree canopy size after 5 years



Estimated tree canopy size after 10 years



GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR ALL LOCATES INCLUDING ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION OR INSTALLATIONS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANY ACCOMPANYING DOCUMENTATION RELATING TO THE LANDSCAPE PLAN AND/OR PRESERVATION PLAN SUCH AS TENDER DOCUMENTS AND CHANGE NOTICES ARE TO BE ENDORSED BY JDB ASSOCIATES LIMITED PRIOR TO THE BEGINNING OF ANY SITE WORKS. IN THE EVENT THAT OF A DISCREPANCY THE DRAWING SHALL BE ASSUMED CORRECT.

IT IS THE RESPONSIBILITY OF THE PERSON OR PERSONS RESPONSIBLE FOR THE CONSTRUCTED WORKS TO NOTIFY THE LANDSCAPE ARCHITECT WHEN PREPARED FOR ANY REQUIRED INSPECTIONS AND SIGN OFFS.

SCHEDULED MEETINGS SHALL TAKE PLACE AT THE CLOSEST MUTUALLY CONVENIENT TIME.

No.	REVISION	DATE	APRVD.
1.	CLIENT REVIEW	December 6 th , 2022	SJT
2.	AS PER TOWN COMMENTS	December 27 th , 2023	SJT
3.	AS PER TOWN COMMENTS	May 28 th , 2024	SJT
4.	AS PER TOWN COMMENTS	August 1 st , 2024	SJT
5.	AS PER UPDATED SITE PLAN	November 14 th , 2024	SJT

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THIS DRAWING IS NOT TO BE SCALED.

ACCEPTED BY:

DATE

BASE PLAN REVISED: MARCH, 2022

Client info:
IPS INNOVATIVE PLANNING SOLUTIONS
647 Welham Road, Unit 9A, Barrie, ON, L4N 0B7



JDB ASSOCIATES LTD.

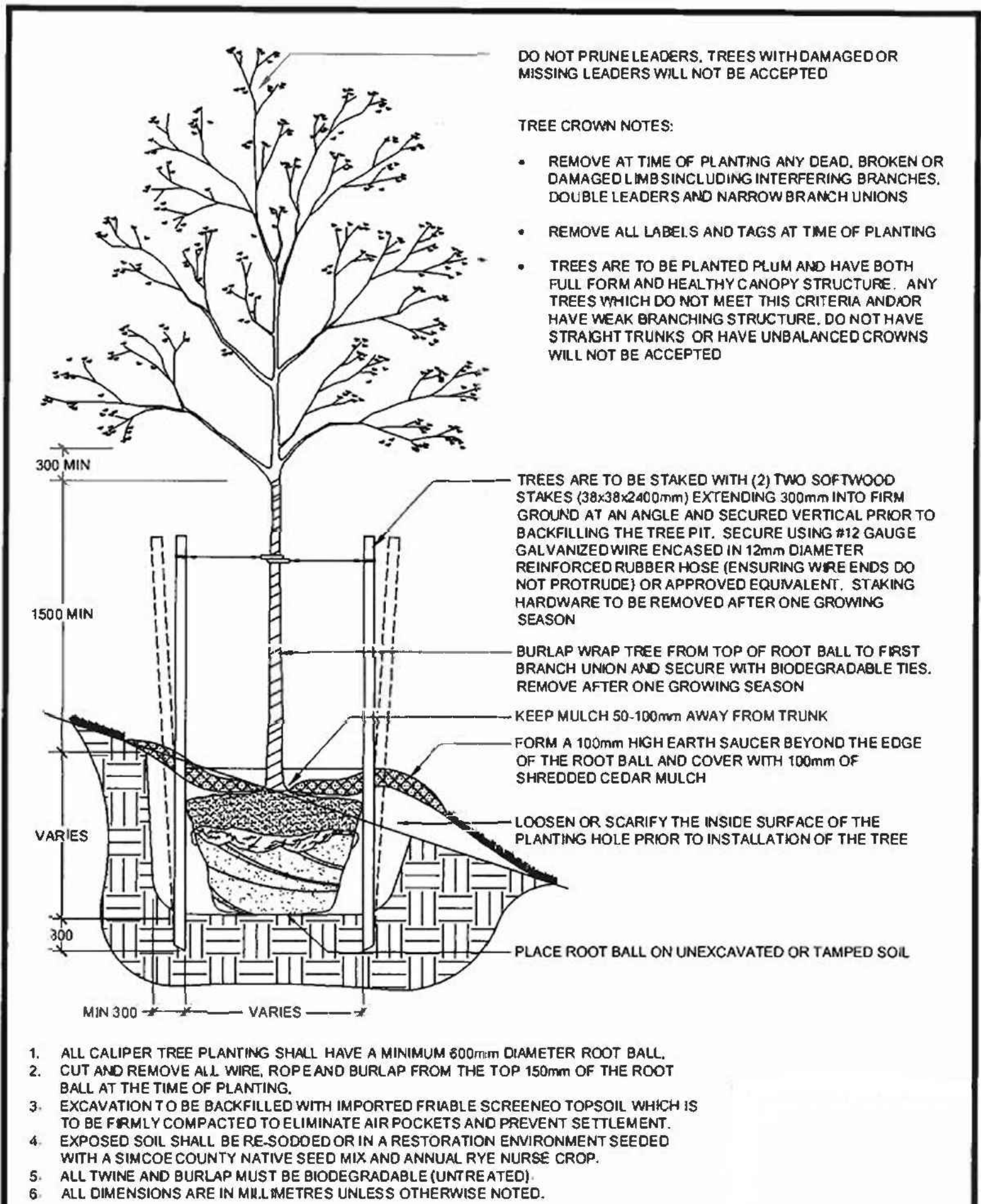
Urban Designers
Landscape Architects
Arborists
274 Burton Ave., Suite 1201
Barrie, Ontario
L4N 5W4

Fax: 705-722-5660
Tel: 705-722-6278

LOT 31 CLARK ST
Town of the Blue Mountains, ON

LANDSCAPE/ RESTORATION PLANTING PLAN

SCALE: As shown	DESIGNED BY: IT	REVIEWED BY: NB
TOWN FILE No.	OUR FILE REF. # 14-22	LP-1



DECIDUOUS TREE PLANTING ON SLOPE D-1

SITE CONDITIONS

1. VERIFY ALL EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES BEFORE COMMENCING WORK.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND IS RESPONSIBLE FOR ANY DAMAGE TO SERVICES, EXISTING VEGETATION OR ANY OTHER FEATURES TO BE RETAINED.
3. FOR ALL AREAS OF DISTURBANCE: NATIVE TOPSOIL IS TO BE STRIPPED, STOCK PILED, LABORATORY TESTED AND REPLACED AS PER TOPSOIL REQUIREMENTS.

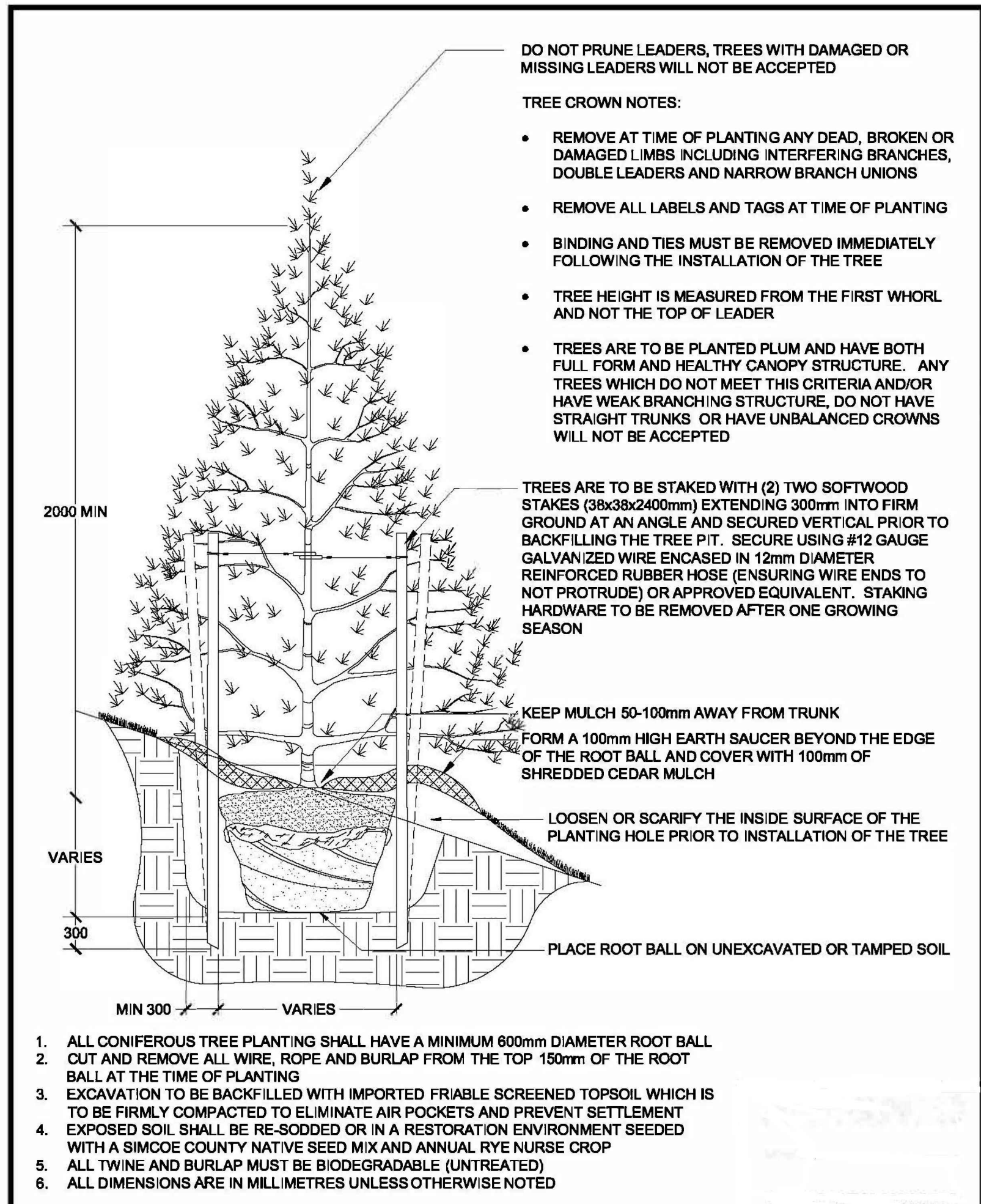
PLANT MATERIAL REQUIREMENTS

4. PLANT MATERIAL LISTED IN THE PLANT SCHEDULE ARE MINIMUM SIZES +/- NURSERY GROWN AND UNIFORM SPECIMENS, NO SUBSTITUTIONS WILL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECTS.
5. DECIDUOUS TREES SHALL HAVE A STRAIGHT CENTRAL LEADER AND WELL BRANCHED 1.5M ABOVE GRADE UNLESS OTHERWISE STATED.
6. CONIFEROUS TREES SHALL HAVE A STRAIGHT CENTRAL LEADER AND DENSELY BRANCHED TO WITHIN 0.3m OF THE GROUND.
7. ALL PLANTING MATERIAL AND OPERATIONS TO MEET OR EXCEED THE HORTICULTURAL STANDARDS OF THE CANADIAN NURSERY LANDSCAPE ASSOCIATION AND THE HORTICULTURAL TRADES ASSOCIATION. ALL PLANT MATERIAL TO BE NO.1 GRADE NURSERY STOCK, UNSATISFACTORY STOCK WILL BE REFUSED ON THE SITE.
8. SOD TO BE CANADA NO.1 NURSERY SOD, MEETING ONTARIO SOD GROWERS ASSOCIATION STANDARDS. ALL SOD AREAS TO RECEIVE 200MM DEPTH OF TOPSOIL UNLESS OTHERWISE INDICATED.

PLANTING NOTES

9. LOCATIONS FOR PLANT MATERIAL AND PLANTING BEDS ARE TO BE MARKED OR STAKED OUT BY THE CONTRACTOR AND APPROVED BY THE LANDSCAPE ARCHITECT AND MUNICIPAL STAFF PRIOR TO INSTALLATION.
10. ALL PLANT MATERIAL WHICH ARE SPECIFIED BY O.C. (ON CENTER SPACING) ARE TO BE PLANTED AS NOTED IN THE PLANT SCHEDULE.
11. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANT LIST AND DRAWING, THE DRAWING WILL BE ASSUMED TO BE CORRECT.
12. ALL MASS PLANTINGS OF SHRUBS SHALL BE IN CONTINUOUS BEDS AND MULCHED AS SPECIFIED.
13. ALL TREE PITS SHALL INCLUDE TREATMENT WITH MICORRHIZAL FUNGI OF THE WALLS BEFORE PLANTING (2L OF "MIKE" OR SIMILAR PRODUCT SHALL BE USED FOR EACH 60MM CALIPER TREE)
14. TREES ARE TO BE STAKED OR GUY WIRED ACCORDING TO DETAILS PROVIDED. NO ACCESSIBLE OPEN HOLE TREE PITS SHALL BE PERMITTED OVERNIGHT.
15. REMOVE BURLAP AND ROPE FROM THE TOP 1/3 OF ROOT BALLS.
16. WATER AT TIME OF PLANTING AND WHENEVER DEEMED NECESSARY TO MAINTAIN THE TREES IN A HEALTHY CONDITION.
17. ALL PLANT MATERIALS WHICH CAN NOT BE PLANTED IMMEDIATELY UPON ARRIVAL ON SITE SHALL BE PROPERLY HEELED IN OR WELL PROTECTED WITH SOIL OR SIMILAR MATERIALS TO PREVENT DRYING OUT AND SHALL BE KEPT MOIST UNTIL COMMENCEMENT OF PLANTING.
18. NO ACCESSIBLE OPEN HOLE TREE PITS SHALL BE PERMITTED OVERNIGHT. ALL OPEN PITS SHALL BE ADEQUATELY PROTECTED BY BARRIERS OR FILLED IN WITH SOIL PRIOR TO THE END OF EACH PLANTING DAY.
19. ALL NEW WORK TO BLEND NEATLY AND SMOOTHLY WITH EXISTING CONDITIONS.

PLANTING NOTES (REFER TO "SEEDING AND TOPSOIL NOTES" ON THIS PAGE FOR THE SWM POND AREA)



CONIFEROUS TREE PLANTING ON SLOPE D-2

INSPECTION AND WARRANTY

1. GIVE TIMELY NOTICE TO THE LANDSCAPE ARCHITECT FOR THE REQUIRED START UP SITE INSPECTION TO REVIEW SITE CONDITIONS AND SCHEDULE FOLLOW UP INSTALLATIONS.
2. INSTALLATION OF PLANT MATERIAL PRIOR TO INSPECTION BY THE LANDSCAPE ARCHITECT WILL BE THE CONTRACTOR'S RESPONSIBILITY.
3. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS, WHETHER INSTALLED OR NOT, WHICH DO NOT CONFORM TO THE SPECIFICATIONS AND/OR SITE DRAWING. REMOVE ALL REJECTED PLANTS FROM THE SITE IMMEDIATELY. DO NOT REMOVE ANY LABELS FROM PLANTS UNTIL PLANTS HAVE BEEN INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT.
4. ALL PLANT MATERIAL AND WORKMANSHIP WILL BE INSPECTED AND IS UNDER WARRANTY FOR A MINIMUM OF TWO YEAR FROM DATE OF WRITTEN ACCEPTANCE. ALL PLANT MATERIAL MUST BE IN A HEALTHY, VIGOROUS GROWING CONDITION SATISFACTORY TO THE CONTRACT ADMINISTRATOR AT THE END OF THE WARRANTY PERIOD OR BE REPLACED AT THE CONTRACTORS EXPENSE.
5. FINAL ACCEPTANCE OF THE PROJECT WILL BE CARRIED OUT UPON COMPLETION OF ALL WORK INCLUDED IN THE CONTRACT.

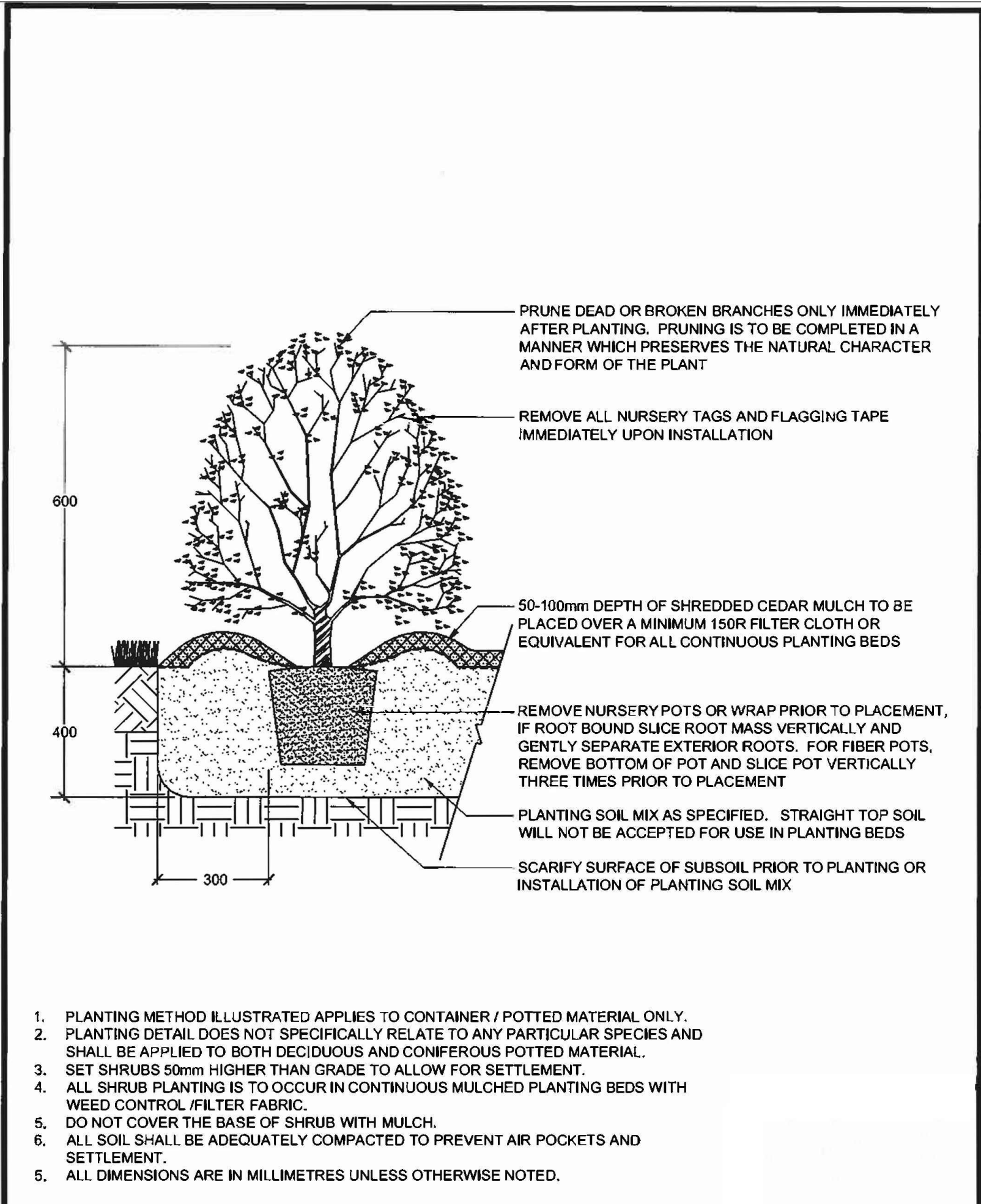
TOPSOIL REQUIREMENTS (LANDSCAPING AREAS)

6. PROVIDE MINIMUM SOIL VOLUME PER TREE AT 0.45m DEPTH FOR STREET TREES (OR ABOVE UTILITIES) AND MAX. 0.9m IN OTHER AREAS:
 - 18 m³ FOR LARGE TREES
 - 12 m³ FOR SMALL TREES
7. PREPARED SOIL MIXTURE FOR EACH TREE PITS AND SHRUBS SHALL CONSIST OF HIGH QUALITY SOIL:
 - SIX PARTS OF FERTILE LOAM SOIL (50-60% SAND, 20-40% SILT, 6-10% CLAY, 2-5% ORGANIC), WITH A pH OF 7.5+ OR LESS, FREE OF CLAY LUMPS, DEBRIS, TOXIC SUBSTANCES, STONES, WOODY MATERIAL, WEED SEEDS AND GRASS ROOTS
 - ONE PART COARSE PULVERIZED CANADIAN PEAT MOSS
 - ONE PART OF WELL-ROTTED FARM MANURE
8. PREPARED SOIL MIXTURE FOR SOD AREAS SHALL CONSIST OF MIN. 20cm HIGH QUALITY SOIL:
 - SIX PARTS OF FERTILE LOAM SOIL (50-60% SAND, 20-40% SILT, 6-10% CLAY, 2-5% ORGANIC), WITH A pH OF 7.5+ OR LESS, FREE OF CLAY LUMPS, DEBRIS, TOXIC SUBSTANCES, STONES, WOODY MATERIAL, WEED SEEDS AND GRASS ROOTS

9. NO FOOT TRAFFIC ON ECO-BLANKET FOR ONE FULL GROWING SEASON AFTER INSTALLATION
 - BASE OF PLANTS TO BE SITUATED FLUSH WITH FINISH GRADE OF ECO-BLANKET

ECOBLANKET SPECIFICATIONS AND DETAIL

DETAIL ADAPTED FROM LANDSOURCE ORGANIX EcoBlanket (tel:1-877-548-8558)



CONTAINER GROWN SHRUB PLANTING DETAIL D-3

1.0 Description:

This work shall consist of furnishing, constructing and maintaining an EcoBlanket to Rexius specifications. EcoBlanket is a ground cover (surface blanket) of the Rexius specified compost/mulch (Erosion Blend) combined with a special additive (Microblend) constructed with a pneumatic blower to control and reduce soil erosion. An EcoBlanket stabilizes the soil, prevents splash, sheet and rill erosion, and removes suspended soil particles and contaminants from water moving off the site and into adjacent waterways or storm water conveyance systems.

1.1. This EcoBlanket must be applied by Landsource Organix Ltd., 100 Britannia Road East, Hornby, Ontario L0P 1E0, tollfree 1 877 548 8558 (toll free fax 1 877 548 8559) or equivalent certified EcoBlanket installer.

1.2. Materials must be applied using a pneumatic blower unit complete with a supplemental granular injection system capable of installing at least 15 cubic meters per hour.

1.3. Contractor must have at least 3 years of proven experience in successfully installing EcoBlanket™.

2.0 Material:

The EcoBlanket filtering material consists of the Rexius Erosion Blend of compost and mulch materials, according to the Rexius particle sizing specifications, in combination with the Rexius Microblend additive.

2.1. Particle size must meet exact specifications of the Rexius EcoBlanket Erosion Blend material supplied by a certified supplier/installer.

2.2. The compost portion of EcoBlanket shall be derived from well-decomposed organic matter source produced by controlled aerobic (biological) decomposition that has been sanitized through the generation of heat and stabilized to the point that it is appropriate for this particular application. Compost material shall be processed through proper thermophilic composting, meeting the Canadian Council of Ministers of the Environment's (CCME) definition for a "process to further reduce pathogens" (PFRP). The compost portion shall meet the chemical, physical and biological properties (as outlined in the chart on reverse). These and all other required properties for the performance of the EcoBlanket are included in the Rexius EcoBlanket Manufacture Guidelines followed by certified suppliers/installers.

2.3. Rexius Microblend additive shall be injected into Erosion Blend material at time of EcoBlanket construction.

2.4. A proof of certification as an EcoBlanket supplier shall be submitted to the Landscape Architect for approval prior to installation. Test results for EcoBlanket performance shall be made available upon request.

2.5. Where seeding or planting is planned, Erosion Blend material must meet Rexius' minimum specification requirements for seeding purposes.

3.0 Construction:

- 3.1. The EcoBlanket shall be placed as shown on the plans or as directed by the Landscape Architect.
- 3.2. On areas with slopes 3:1 to 2:1 (H:V) the EcoBlanket shall be uniformly applied directly at the soil surface with a pneumatic blower as specified by Rexius. EcoBlanket shall be applied at a depth of 50 mm minimum and approximately 90 cm over the top of the slope, or overlap into existing vegetation. On areas with slopes up to 3:1 (H:V) the EcoBlanket shall be applied at a depth of 25mm minimum. In extreme conditions and where specified by the Engineer/Landscape Architect, EcoBerms shall be added and constructed at the top of the slope in parallel intervals down the profile of the slope (6 metres to 9 metres apart) if necessary. (The Engineer/Landscape Architect shall specify berm requirements)
- 3.3. Rexius Microblend shall be applied/injected at a minimum rate of 615 kgs. per hectare (or as specified by Rexius), to be confirmed by inspector/project manager.
- 3.4. EcoBlanket application depth may be modified based on specific site (e.g., soil characteristics, existing vegetation) and climatic conditions, as well as particular project related requirements. The severity of slope grade, as well as slope length will also influence the addition of EcoBerms and number of EcoBerm placements in combination with the EcoBlanket.
- 3.5. If temporary or long-term vegetation is required, Erosion Blend material may be injected with seed during application. The Engineer/Landscape Architect shall specify seed requirements and the compost/mulch component shall abide by the minimum standards set by Rexius for seeding.
- 3.6. Where vegetation is to be established, slightly roughen (scarify) slopes and remove large clods, rocks, stumps, roots larger than 50 mm in diameter and debris on slopes. This soil preparation step may be eliminated where approved by the Landscape Architect/Designer, or where seeding or planting is not planned. Where practical, track (compact) perpendicular to contours on the slope using a bulldozer before applying EcoBlanket before applying EcoBlanket injected with seed.
- 3.7. Do not use EcoBlankets in areas of concentrated flow (i.e. ditches, streams, etc.)
- 3.8. Unless otherwise allowed by Landscape Architect, seeding shall be performed within the local region's seeding deadlines.

4.0 Maintenance:

The Contractor shall maintain the EcoBlanket in a functional condition at all times. Contractor shall make periodic inspections of the EcoBlanket for effectiveness and shall immediately correct all deficiencies. Where deficiencies exist, additional EcoBlanket material shall be installed immediately to required depth.

5.0 Method of Measurement:

EcoBlanket shall be measured by the square metre, complete in place.

6.0 Performance:

- 6.1. Place EcoBlankets on denuded areas immediately or as directed by Landscape Architect. EcoBerms and/or temporary or permanent vegetation shall be applied/established when necessary, along with other appropriate structural measures and controls, for additional erosion and sediment control.
- 6.2. The work specified in this Section consists of designing, providing, and maintaining erosion and sedimentation controls as necessary. All existing and foreseeable future conditions that affect the work inside and outside the site limits must be acknowledged as the Contractor's responsibility.
- 6.3. Contractor is responsible for providing effective sediment control measures based on performance. Contractor may, with approval from the Landscape Architect, work outside the minimum construction requirements to establish a working erosion control system.

Parameters 1.4 Reported as (units of measure) EcoBlanket to be Vegetated EcoBlanket to be left Un-vegetated
pH2 pH units 5.0 - 8.5 N/A
Soluble Salt Concentration2 (electrical conductivity) dS/m (mmhos/cm) Maximum 5 N/A
Stability3 Carbon Dioxide Evolution Rate mg CO2-C per g OM per day < 8 N/A
Physical Contaminants (man-made inerts) % dry weight basis < 1 < 1

1. Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (SCC through BNQ)
2. Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating, and maximum tolerable quantities are known. When specifying the establishment of any plant or turf species, it is important to understand their pH and soluble salt requirements, and how they relate to the compost in use.
3. Stability/Maturity rating is an area of compost science that is still evolving, and as such, other various test methodologies could be considered. Also, never base compost quality conclusions on the result of a single stability/maturity test.
4. Landscape Architect may modify the allowable compost specification ranges based on specific field conditions and plant requirements.



SHORELINE ZONE

NO-MOW ZONE
APPROXIMATELY 837 sq/m (+/-10%) (+/- MEASUREMENTS TO BE TAKEN ON SITE)

#7107 - SEASONALLY FLOODED ANNUAL/PERENNIAL MIXTURE
5% NODDING BUR MARIGOLD (*Bidens cernua*)
22% FOX SIDING (*Carex vulpinoidea*)
25% CANADA WILD RYE (*Elymus canadensis*)
25% SWITCHGRASS (*Panicum virgatum*)
23% FOWL MEADOWGRASS (*Poa palustris*)

SEEDING RATE - 30kg PER HECTARE
SUPPLIED BY - OSC SEEDS 1-519-886-0557
ANNUAL RYE NURSE CROP TO BE APPLIED AT TIME OF SEASONALLY FLOODED ANNUAL/PERENNIAL MIXTURE AT A RATE OF 12kg PER HECTARE. REFER TO TERRASEEDING NOTES AND MULCH APPLICATION SPECIFICATIONS IN THIS BOX FOR FURTHER DETAILS.

NB - ALL DISTURBED AREAS TO BE TERRASEEDED

UPLAND ZONE

NO-MOW ZONE (INCLUDING ACCESS ROAD)
APPROXIMATELY 5,500 sq/m (+/-10%) (+/- MEASUREMENTS TO BE TAKEN ON SITE)

SIMCOE COUNTY NATIVE UPLAND MIXTURE
2% NEW ENGLAND ASTER (*Aster novae-angliae*)
12% BLACK EYED SUSAN (*Rudbeckia hirta*)
20% SAND DROPSIDE (*Sporobolus cryandrus*)
20% CANADA WILD RYE (*Elymus canadensis*)
4% CANADA GOLDEN ROD (*Solidago canadensis*)
5% COMMON MILKWEED (*Asclepias syriaca*)
1% WILD BERGAMONTE (*Monarda fistulosa*)
15% SMOOTH BLUE ASTER (*Aster laevis*)
15% LITTLE BLUE STEM (*Andropogon scoparius*)
20% INDIANGRASS (*Sorghastrum nutans*)

SEEDING RATE - 30kg PER HECTARE
SUPPLIED BY - OSC SEEDS 1-519-886-0557
ANNUAL RYE NURSE CROP TO BE APPLIED AT TIME OF NATIVE UPLAND PLANTING MIXTURE AT A RATE OF 12kg PER HECTARE. REFER TO TERRASEEDING NOTES AND MULCH APPLICATION SPECIFICATIONS IN THIS BOX FOR FURTHER DETAILS.

TERRASEEDING APPLICATION SPECIFICATIONS

ECOBANKET OR TERRASEEDING TACTIFIER / FLEXGUARD HYDROMULCH SHALL BE APPLIED AS PER MANUFACTURER SPECIFICATIONS. SEE NOTES ON THIS PAGE.

TOP SOIL:

IN THE SWM POND AREA TOPSOIL SHALL BE PROVIDED TO A MINIMUM DEPTH OF 0.45m FOR TERRESTRIAL AREAS EXCEPT THE ACCESS ROAD BASE (5cm) AND MINIMUM 0.35m FOR TEMPORARY UNDERWATER AREAS.
TOPSOIL QUALITY SHALL BE AS PER OPSW 570. IT SHALL BE TESTED BY AN INDEPENDENT LABORATORY PRIOR TO INSTALLATION.

SEEDING AND TOP SOIL NOTES



GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR ALL LOCATES INCLUDING ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION OR INSTALLATIONS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

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SCHEDULED MEETINGS SHALL TAKE PLACE AT THE CLOSEST MUTUALLY CONVENIENT TIME.

No.	REVISION	DATE	APRVD.
1.	CLIENT REVIEW	December 6 th , 2022	SJT
2.	AS PER TOWN COMMENTS	December 27 th , 2023	SJT
3.	AS PER TOWN COMMENTS	May 28 th , 2024	SJT
4.	AS PER TOWN COMMENTS	August 1 st , 2024	SJT
5.	AS PER UPDATED SITE PLAN	November 14 th , 2024	SJT

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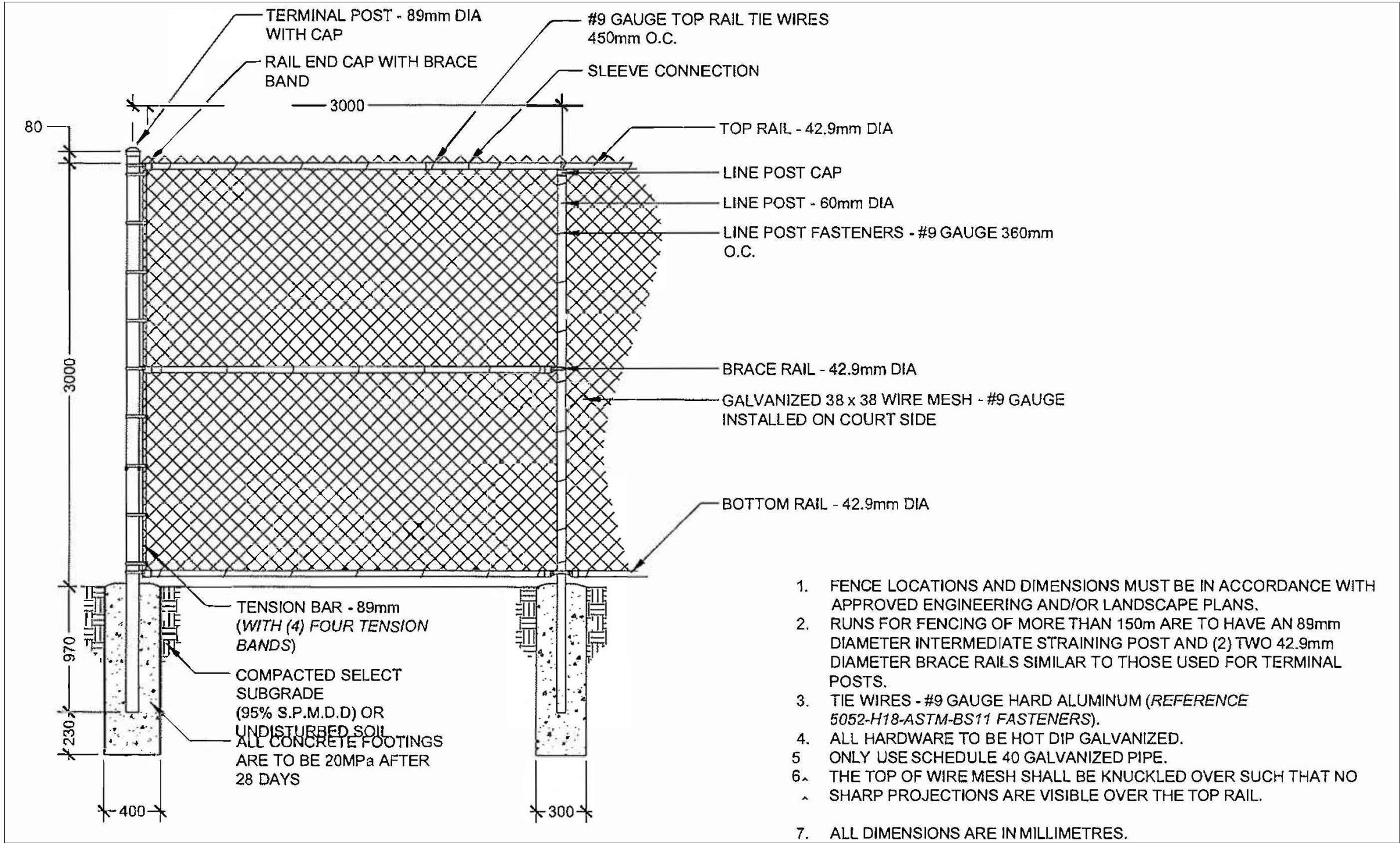
DATE

LANDSCAPE ARCHITECTS STAMP
J.D.B. ASSOCIATES LTD.
MEMBER
LAND AND NATURE VALUE VENDOR REGISTRATION

JDB ASSOCIATES LTD.
Urban Designers
Landscape Architects
Arborists
274 Burton Ave., Suite 1201
Barrie, Ontario
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Tel: 705-722-6278

LOT 31 CLARK ST
Town of the Blue Mountains, ON

SCALE: NTS	DESIGNED BY: IT	REVIEWED BY: NB
TOWN FILE No.	OUR FILE REF. # 14-22	LP-2



SECURITY CHAIN LINK FENCE DETAIL - black vinyl coated

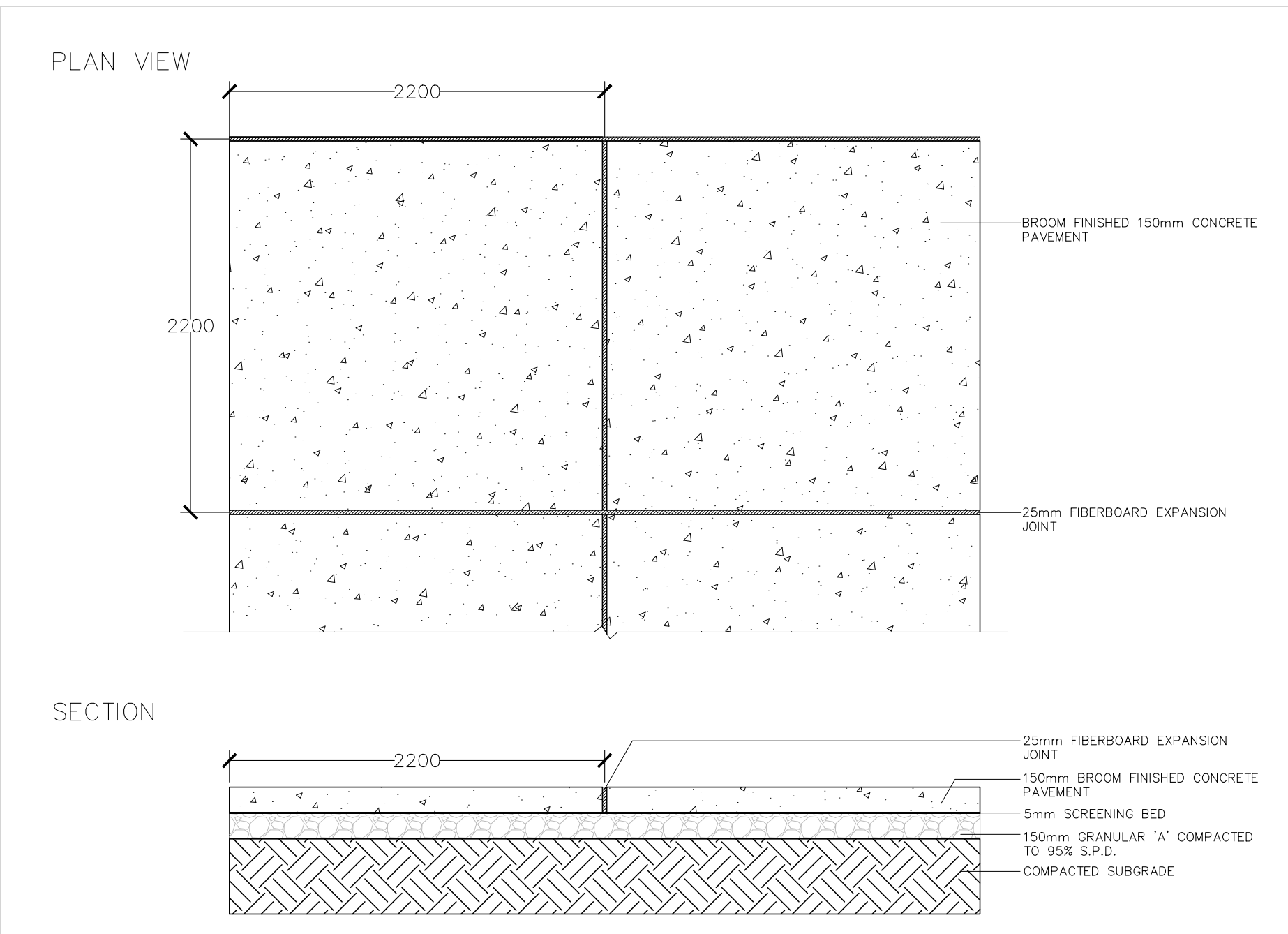
ADA Hex Recycled Plastic Picnic Table - 46", Cedar



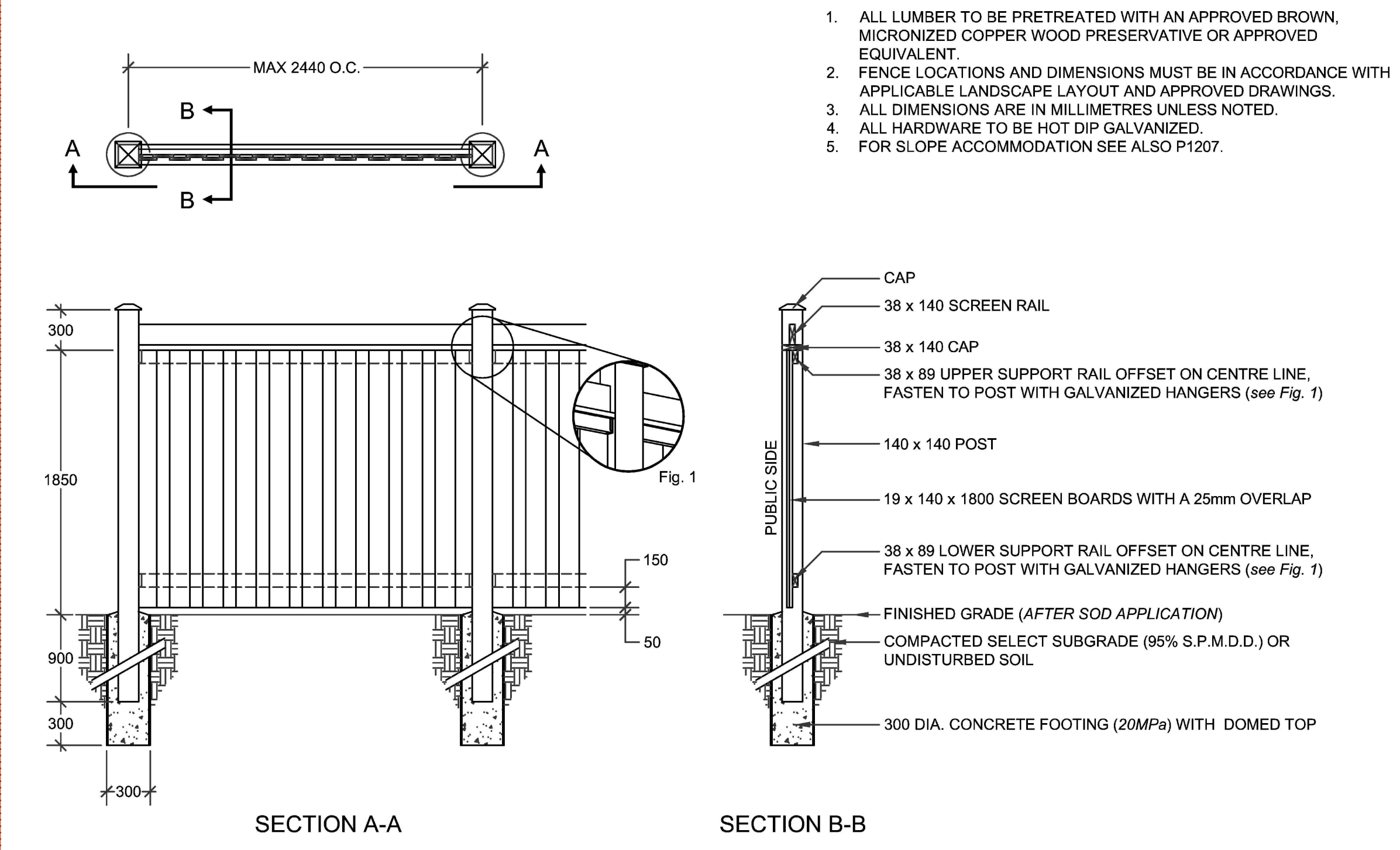
Virtually maintenance free! Recommended for warehouse patios, campgrounds, schools and parks.

- Accommodates 1 wheelchair and 4 adults.
- 100% recycled UV-protected plastic won't rot, splinter or crack. Withstands harsh weather.
- Natural-looking wood material never needs sanding, sealing, painting or staining.
- Durable 2" thick planks predrilled for easy assembly.
- [H-6681 Mounting Hardware](#) available.

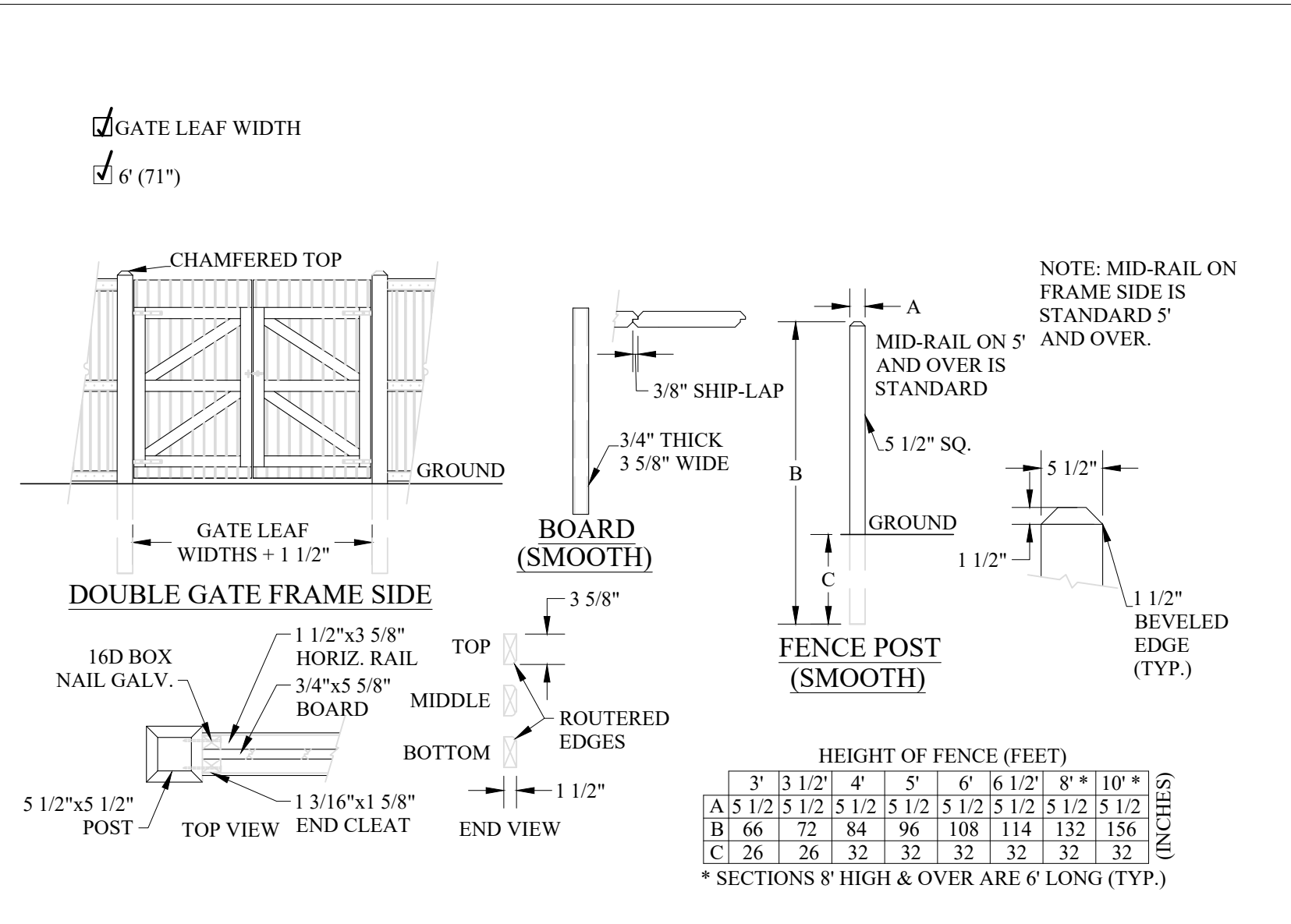
PICNIC BENCH U-LINE MODEL H-6575 ON CONCRETE PAD (BELOW)



CONCRETE PAD DETAIL (typ.)



GARBAGE ENCLOSURE FENCE DETAIL



GATE DETAIL (typ.) - GATE STYLE TO MATCH THE FENCE STYLE AND SPECS.

SHOP DRAWING TO BE PROVIDED TO THE LANDSCAPE ARCHITECT FOR APPROVAL BEFORE CONSTRUCTION



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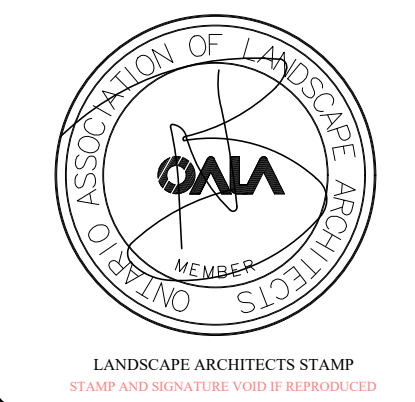
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ACCEPTED BY:

DATE



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DESIGNED BY: IT
REVIEWED BY: NB
TOWN FILE No. OUR FILE REF. # 14-22
LP-3

Appendix I – Sanitary Design

Project:	Lot 31 Clark Street
Municipality:	Town of the Blue Mountains
Project No.:	2021-185
Analyzed by:	KG
Date:	November 18, 2024
Manning n Value	0.013

Sanitary Sewer Design Sheet

Town of the Blue Mountains



	DESIGN SEWAGE FLOWS										SANITARY SEWER CAPACITY					
Location of Section	Cumulative Sanitary Catchment Area (ha)	From Upstream MH #	To Downstream MH #	Cumulative Served Population Cap.	Peaking Factor	Average Flow L/s	Peak Flow L/s	Peak Flow Infiltration: L/s	Total Peak Flow Infiltration L/s	Total Peak Flow L/s	Pipe Length m	Pipe Diameter mm	Pipe Grade %	Full Flow. Cap. L/s	Full Flow Velocity m/s	Percentage Full
Bulding H	0.38	Building H	MH01A	n/a	4.50	0.21	0.95	0.087	0.087	1.04	15.0	150	2.00	21.5	1.22	4.82%
Internal Access Road	0.98	MH01A	MH02A	n/a	4.50	0.54	2.45	0.225	0.225	2.68	15.1	200	1.00	32.8	1.04	8.16%
Internal Access Road	1.06	MH02A	MH03A	n/a	4.50	0.59	2.65	0.244	0.244	2.89	82.7	200	0.50	23.2	0.74	12.48%
Internal Access Road	2.06	MH03A	MH04A	n/a	4.50	1.14	5.15	0.474	0.474	5.62	81.7	200	0.50	23.2	0.74	24.25%
Internal Access Road	2.23	MH04A	MH05A	n/a	4.50	1.24	5.58	0.513	0.513	6.09	70.4	200	0.50	23.2	0.74	26.25%
Internal Access Road	2.23	MH05A	MH06A	n/a	4.50	1.24	5.58	0.513	0.513	6.09	26.2	200	3.00	56.8	1.81	10.72%
Grey Road 2	2.23	MH06A	MH09A	n/a	4.50	1.24	5.58	0.513	0.513	6.09	27.2	200	0.50	23.2	0.74	26.25%
Grey Road 2	0.25	MH07A	MH08A	n/a	4.50	0.14	0.63	0.058	0.058	0.68	44.9	200	0.50	23.2	0.74	2.94%
Grey Road 2	0.25	MH08A	MH09A	n/a	4.50	0.14	0.63	0.058	0.058	0.68	32.8	200	0.50	23.2	0.74	2.94%
Grey Road 2	2.73	MH09A	MH10A	n/a	4.50	1.52	6.83	0.628	0.628	7.45	36.6	200	0.50	23.2	0.74	32.14%
Hwy. 26	2.73	MH10A	MH11A	n/a	4.50	1.52	6.83	0.628	0.628	7.45	89.5	200	0.50	23.2	0.74	32.14%
Hwy. 26	2.73	MH11A	EX. SAN MH1	n/a	4.50	1.52	6.83	0.628	0.628	7.45	5.3	200	0.50	23.2	0.74	32.14%
Cedar Run Wakeboard Cable Pk	5.00	Future Site	EX. SAN MH1	n/a	4.50	0.07	0.32	1.150	1.150	1.47	100.0	200	0.50	23.2	0.74	6.32%
Hwy. 26	7.73	Ex. SAN MH1	Ex. SAN MH2	n/a	4.50	1.59	7.14	1.778	1.778	8.92	101.2	250	0.35	35.2	0.72	25.35%
Hwy. 26	7.73	Ex. SAN MH2	Ex. SAN MH3	n/a	4.50	1.59	7.14	1.778	1.778	8.92	81.0	250	0.36	35.7	0.73	25.00%
Hwy. 26	7.73	Ex. SAN MH3	Ex. SAN MH4	n/a	4.50	1.59	7.14	1.778	1.778	8.92	61.0	250	0.26	30.3	0.62	29.41%
Hwy. 26	7.73	Ex. SAN MH4	Ex. SAN MH5	n/a	4.50	1.59	7.14	1.778	1.778	8.92	67.0	250	0.31	33.1	0.67	26.94%
Hwy. 26	7.73	Ex. SAN MH5	Ex. SAN MH6	n/a	4.50	1.59	7.14	1.778	1.778	8.92	72.0	250	0.31	33.1	0.67	26.94%
Hwy. 26	7.73	Ex. SAN MH6	Ex. SAN MH7	n/a	4.50	1.59	7.14	1.778	1.778	8.92	92.0	250	2.25	89.2	1.82	10.00%
Hwy. 26	7.73	Ex. SAN MH7	Ex. SAN MH8	n/a	4.50	1.59	7.14	1.778	1.778	8.92	117.0	250	0.44	39.4	0.80	22.61%
Lakeshore Road E.		Ex. SAN MH8	Ex. SAN MH	n/a	**Measured Peak Flow of 8.0L/s I-I accumulated here					16.92	72.0	450	0.30	156.1	0.98	10.83%
Lakeshore Road E.		Ex. SAN MH	Ex.SPS	n/a						24.92	8.0	450	0.30	156.1	0.98	15.96%

NOTE:	
	AVERAGE DAILY PER CAPITA FLOW = 20,000 L/ha/day (light industrial land)
	EXTRANEOUS FLOW ALLOWANCE = 0.23 L/sec/gross hectare
	PEAKING FACTOR : Assumed 4.5 (max. recommended by the Town)
	MANNING "n" = 0.013

