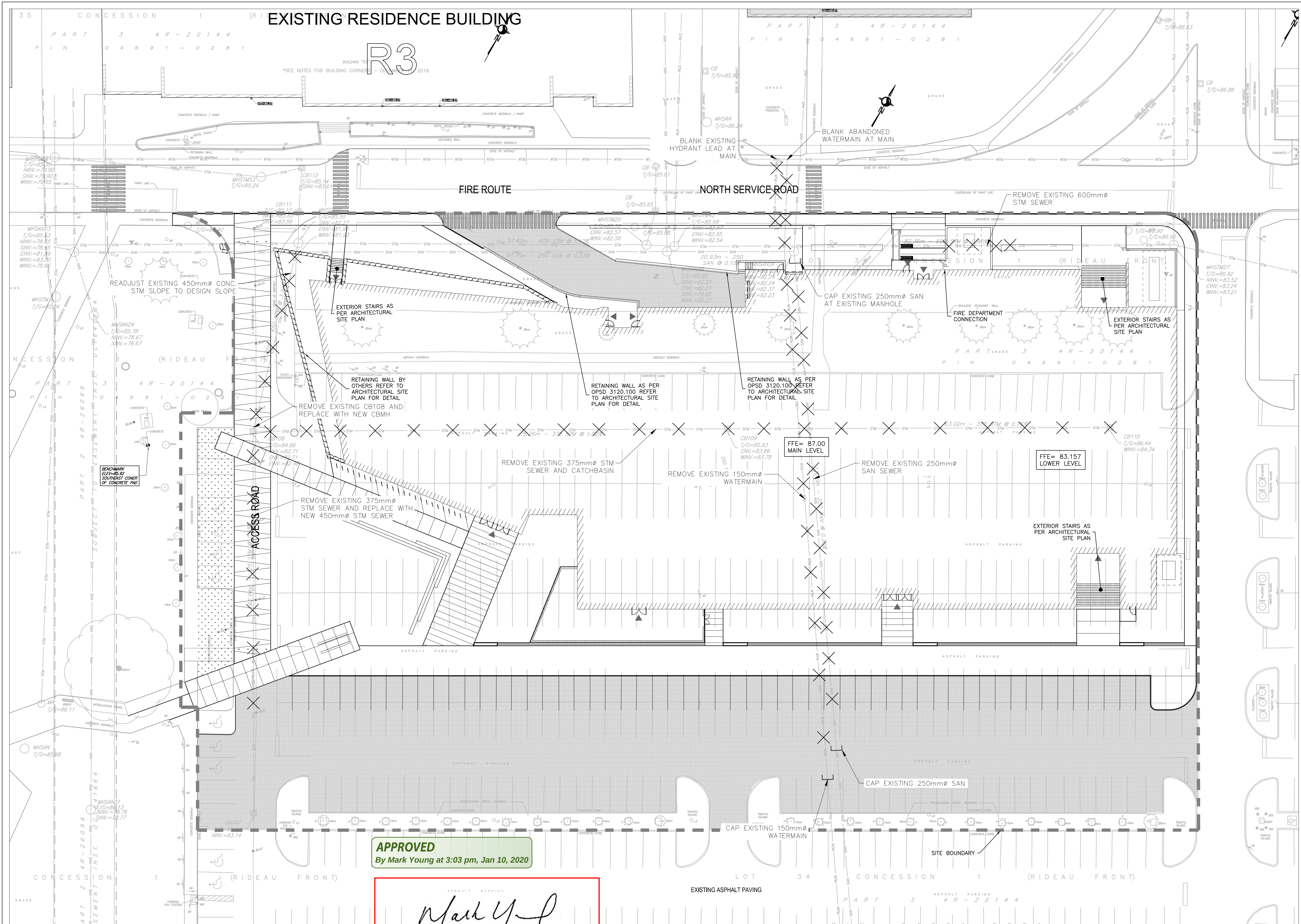


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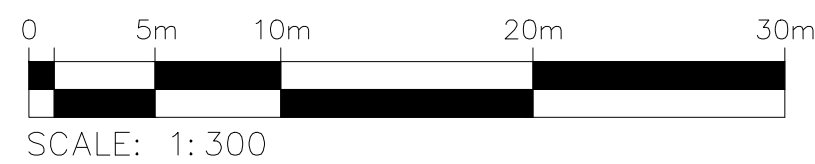
APPROVED
By Mark Young at 3:03 pm, Jan 10, 2020

Mark Y. P.

MARK YOUNG, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - WEST
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

LEGEND

✕ REMOVE EXISTING PIPE INFRASTRUCTURE



Project
ATHLETICS AND RECREATION CENTRE (ARC)
Prepared For
ALGONQUIN STUDENTS' ASSOCIATION



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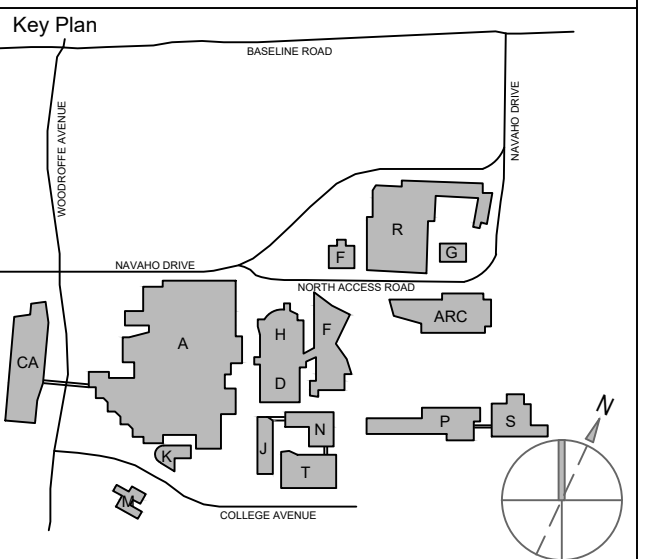
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Professional Seals



No.	Description	Date
1	SITE PLAN APPROVAL	2019-06-24
2	ISSUED FOR PERMITTENDER	2019-08-20
3	RESPONSE TO SPA COMMENTS	2019-09-24
4	RESPONSE TO SPA COMMENTS	2019-11-21
5	ISSUED FOR CLASS B	2019-12-06
6	RESPONSE TO SPA COMMENTS	2019-12-19

Drawn by: D.B.Y. Reviewed by: J.J.
Project No: 191-01517-00

Sheet Title
PIPE SERVICES REMOVAL PLAN

Original drawing is A1. Do not scale contents of this drawing.
Sheet Number

C02

NOTES: GENERAL

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS
- ALL SERVICES, MATERIALS, CONSTRUCTION METHODS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND REGULATIONS OF THE CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS, AND ONTARIO PROVINCIAL SPECIFICATION STANDARD SPECIFICATION (OPSS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT
- THE POSITION OF EXISTING POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND ABOVEGROUND UTILITIES, STRUCTURES AND APPURTENANCES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION. ANY RELOCATION OF EXISTING UTILITIES REQUIRED BY THE DEVELOPMENT OF SUBJECT LANDS IS TO BE UNDERTAKEN AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO START OF CONSTRUCTION AND HAVE ALL EXISTING UTILITIES AND SERVICES LOCATED IN THE FIELD OR EXPOSED PRIOR TO THE START OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO HYDRO, BELL, CABLE TV, AND CONSUMERS GAS LINES.
- ALL TRENCHING AND EXCAVATIONS TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS AND AS PER THE RECOMMENDATIONS INCLUDED IN THE GEOTECHNICAL REPORT.
- REFER TO ARCHITECTS PLANS FOR BUILDING DIMENSIONS, LAYOUT AND REMOVALS. REFER TO LANDSCAPE PLAN FOR LANDSCAPED DETAILS AND OTHER RELEVANT INFORMATION. ALL INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- TOPOGRAPHIC SURVEY COMPLETED AND PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. DATED ON JULY 31, 2018. CONTRACTOR TO VERIFY IN THE FIELD PRIOR TO CONSTRUCTION OF ANY WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. VERIFY THAT JOB BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED.
- ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
- ALL DISTURBED AREAS OUTSIDE PROPOSED GRADING LIMITS TO BE RESTORED TO ORIGINAL ELEVATIONS AND CONDITIONS UNLESS OTHERWISE SPECIFIED. ALL RESTORATION SHALL BE COMPLETED WITH THE GEOTECHNICAL REQUIREMENTS FOR BACKFILL AND COMPACTION.
- ABUTTING PROPERTY GRADES TO BE MATCHED UNLESS OTHERWISE SHOWN.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
- MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
- AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- CONTRACTOR TO OBTAIN POST-CONSTRUCTION TOPOGRAPHIC SURVEY, COMPLETED BY OLS OR P/ENG CONFIRMING COMPLIANCE WITH DESIGN GRADING AND SERVING. SURVEY IS TO INCLUDE LOCATION AND INVERTS FOR BURIED UTILITIES.
- ABIDE BY RECOMMENDATIONS OF GEOTECHNICAL REPORT, REPORT ANY VARIATIONS IN OBSERVED CONATIONS FROM THOSE INCLUDED IN REPORT.
- REPORT REFERENCES
i. STORMWATER MANAGEMENT REPORT, PREPARED BY WSP CANADA INC, PROJ. NO. 191-01517-00, JUNE 24, 2019
ii. GEOTECHNICAL INVESTIGATION, PREPARED BY PATERSON GROUP, PROJ. NO. PG4624-1, JUNE 03, 2019

NOTES: WATERMAIN

- ALL WATERMAIN AND WATERMAIN APPURTENANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND MINISTRY OF ENVIRONMENT STANDARDS AND SPECIFICATIONS.
- ALL WATERMAIN 300mm DIAMETER AND SMALLER TO BE POLY VINYL CHLORIDE (PVC) CLASS 150 DR 18 MEETING AWWA SPECIFICATION C900.
- ALL WATERMAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE. WHERE WATERMAINS CROSS OVER OTHER UTILITIES, A MINIMUM 0.30m CLEARANCE SHALL BE MAINTAINED; WHERE WATERMAINS CROSS UNDER OTHER UTILITIES, A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED, THE WATERMAIN SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARDS W25 AND W25.2. WHERE 2.4m MINIMUM DEPTH CANNOT BE ACHIEVED, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W22. WHERE A WATERMAIN IS IN CLOSE PROXIMITY TO AN OPEN STRUCTURE, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W23.
- CONCRETE THRUST BLOCKS AND MECHANICAL RESTRAINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, REDUCERS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER, IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS W25.3 & W25.4.
- CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA STANDARD W40 & W42.
- ALL VALVES AND VALVE BOXES AND CHAMBERS, HYDRANTS, AND HYDRANT VALVES AND ASSEMBLES SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD
- FIRE HYDRANT LOCATION AND INSTALLATION AS PER CITY OF OTTAWA STANDARD W18 & W19. CONTRACTOR TO PROVIDE FLOW TEST AND PAINTING OF NEW HYDRANT IN ACCORDANCE WITH CITY STANDARDS.
- IF WATER MAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

NOTES: SANITARY SEWER AND MANHOLES

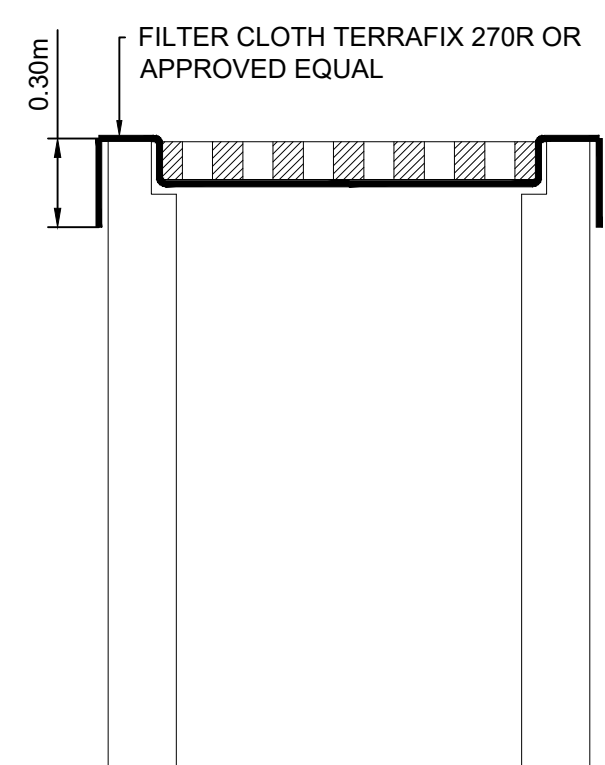
- ALL SANITARY SEWER, SANITARY SEWER APPURTENANCES AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW SANITARY PIPING. PROVIDE DYE TESTING FOR NEW SERVICES.
- SANITARY SEWER PIPE SIZE 150mm DIAMETER AND GREATER TO BE PVC SDR-35 (UNLESS SPECIFIED OTHERWISE) WITH RUBBER GASKET TYPE JOINTS IN CONFORMANCE WITH CSA B-182.2.3.4.
- SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
- ALL SANITARY MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01. FRAME AND COVER TO BE AS PER CITY OF OTTAWA STANDARD S25 AND S24.
- MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES AS PER THE OPSD 701.021
- ANY SANITARY SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.

PAVEMENT STRUCTURE - BUS ACCESS LANES		
COURSE	MATERIAL	THICKNESS
SURFACE	HL3 OR SUPERPAVE 12.5 AC	40 mm
BINDER	HL8 OR SUPERPAVE 19.0 AC	50 mm
BASECOURSE	OPSS GRANULAR A'	150 mm
SUBBASE	OPSS GRANULAR B' TYPE II	450 mm

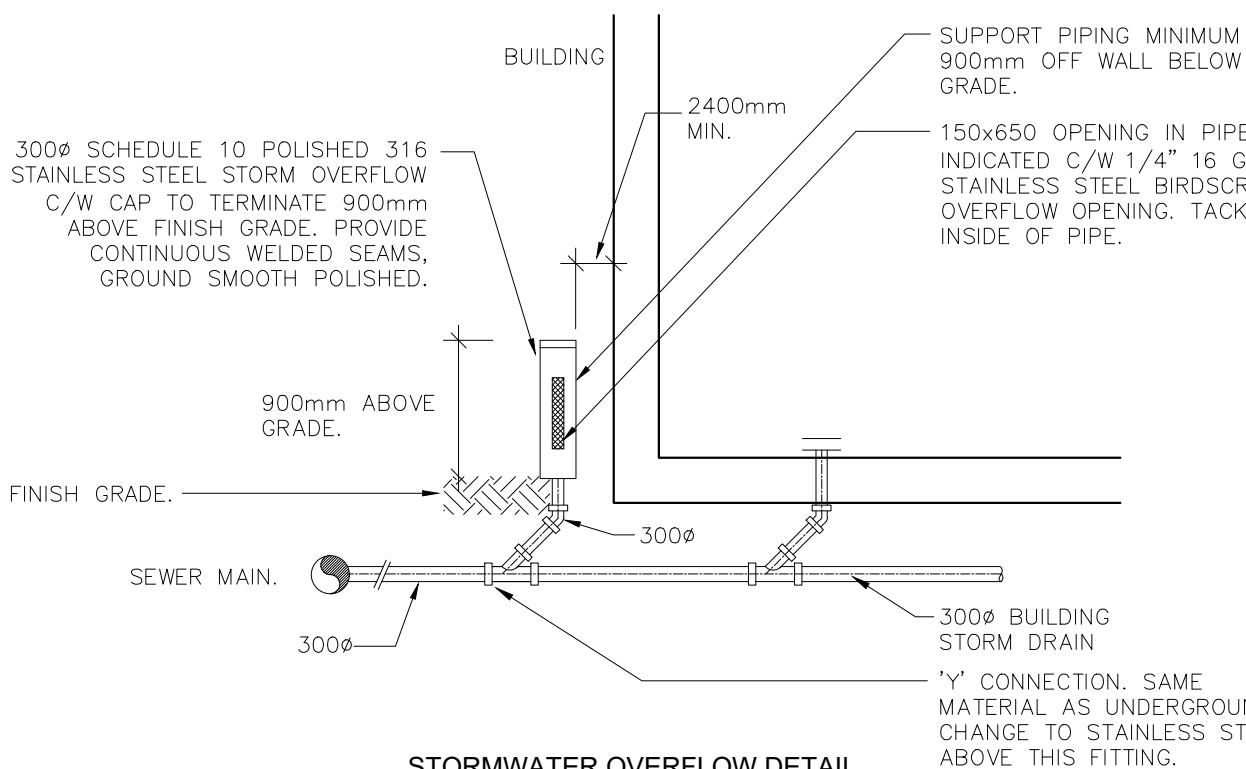
PAVEMENT STRUCTURE - PARKING AREAS		
COURSE	MATERIAL	THICKNESS
SURFACE	HL3 OR SUPERPAVE 12.5 AC	50 mm
BASECOURSE	OPSS GRANULAR A'	150 mm
SUBBASE	OPSS GRANULAR B' TYPE II	300 mm

NOTES: STORM SEWERS AND STRUCTURES

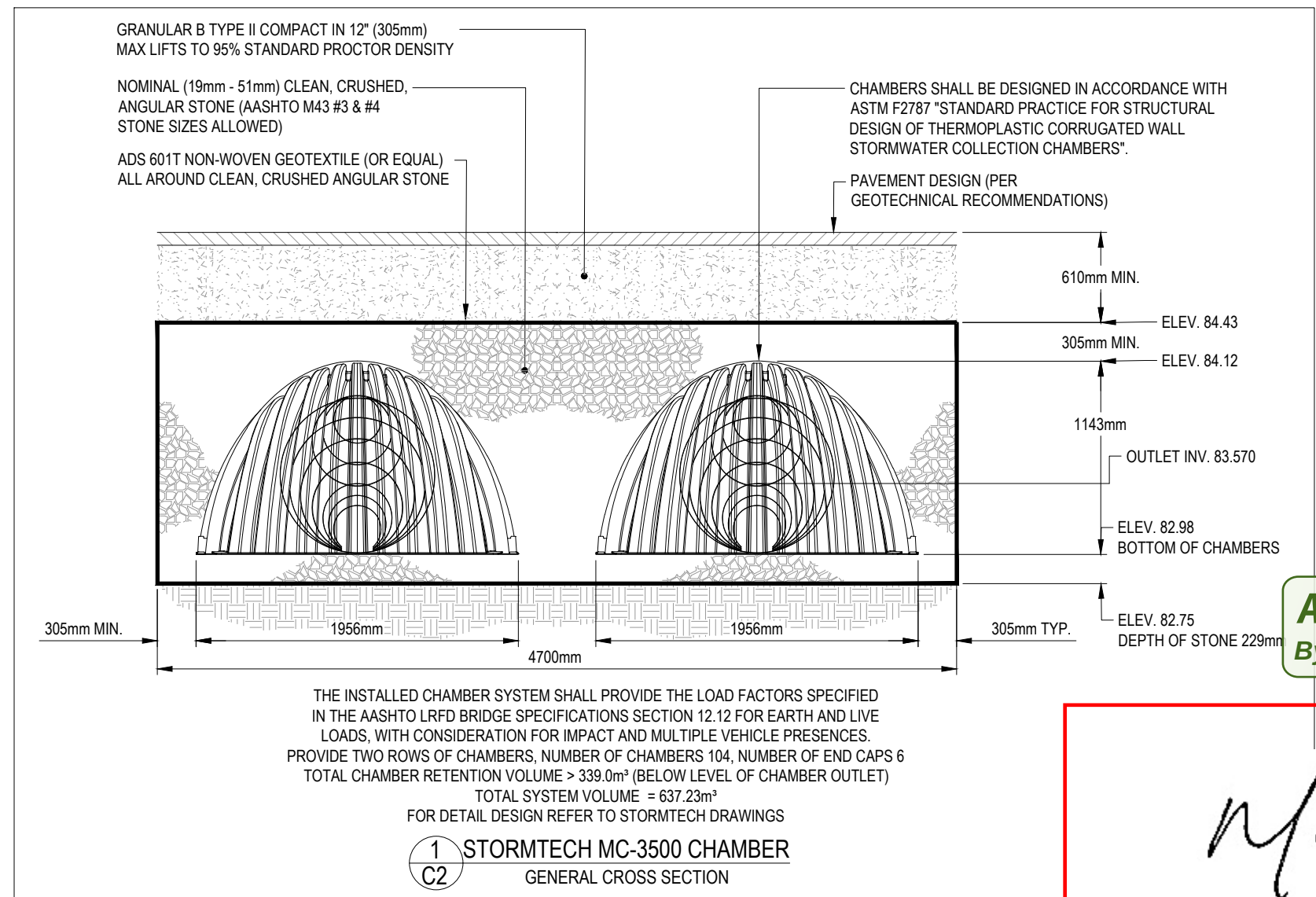
- ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW STORM SEWERS, SERVICES AND CB LEADS.
- STORM SEWERS 450mm DIAMETER AND SMALLER SHALL BE PVC SDR-35, WITH RUBBER GASKET PER CSA A-257.3.
- SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
- ALL STORM MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01. FRAME AND COVER TO BE AS PER CITY OF OTTAWA STANDARD S25 AND S24.1.
- ANY NEW OR EXISTING STORM SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER. ADD INSULATION ABOVE EXISTING STORM SEWER BETWEEN EXISTING CBMH101 AND CB1.
- CB IN LANDSCAPE AREAS SHALL BE AS PER CITY OF OTTAWA STANDARD S31.
- ALL CATCHBASIN LEADS TO BE MINIMUM 200mm DIAMETER AT MINIMUM 1.0% SLOPE UNLESS OTHERWISE SPECIFIED.
- STORM CATCHBASINS AS PER OPSD 705.010 AND FRAME/COVER AS PER CITY STANDARD DRAWINGS S19. STORM CBMHS AS INDICATED IN TABLE WITH SUMP AND FRAME/COVER AS PER OPSD 401.010 TYPE B. SANITARY MHS AS PER OPSD 701.010 TYPE A BASE WITH BENCHING, AND FRAME/COVER AS PER OPSD 401.010 TYPE A. ADJUSTMENT SECTIONS SHALL BE AS PER OPSD 704.010.
- INSTALLATION OF FLOW CONTROL ICDS TO BE VERIFIED BY QUALITY VERIFICATION ENGINEER RETAINED BY CONTRACTOR.



FILTER CLOTH CATCHBASIN OR MANHOLE SEDIMENT CONTROL DEVICE (NTS)



STORMWATER OVERFLOW DETAIL (NTS)



APPROVED
By Mark Young at 3:03 pm, Jan 10, 2020

MARK YOUNG, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - WEST
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

NOTES: EROSION AND SEDIMENT CONTROL

- ** CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES, AND MEETING ASSOCIATED LEED REQUIREMENT **
- PRIOR TO START OF CONSTRUCTION:
 - INSTALL SILT FENCE IN LOCATION SHOWN ON DWG C06.
 - INSTALL FILTER FABRIC OR SILT SACK FILTERS IN ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE (SEE TYPICAL DETAIL).
 - INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
 - DURING CONSTRUCTION:
 - MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE AND IMPACTS TO EXISTING GRADING.
 - PERIMETER VEGETATION TO REMAIN IN PLACE UNTIL PERMANENT STORM WATER MANAGEMENT IS IN PLACE. OTHERWISE, IMMEDIATELY INSTALL SILT FENCE WHEN THE EXISTING SITE IS DISTURBED AT THE PERIMETER.
 - PROTECT DISTURBED AREAS FROM OVERLAND FLOW BY PROVIDING TEMPORARY SWALES TO THE SATISFACTION OF THE FIELD ENGINEER. TIE-IN TEMPORARY SWALE TO EXISTING CBS AS REQUIRED.
 - PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
 - INSPECT SILT FENCES, FILTER FABRIC FILTERS AND CATCH BASIN SUMPS WEEKLY AND WITHIN 24 HOURS AFTER A STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
 - DRAWING TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
 - EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
 - DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDER IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
 - CONTROL WIND-BLOWN DUST OFF SITE BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED AND TO THE SATISFACTION OF THE ENGINEER).
 - NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE FIELD ENGINEER.
 - CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AS REQUIRED.
 - DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPED.
 - ANY MUD/MATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
 - TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
 - ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
 - THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE. DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

WATERMAIN SCHEDULE for BUILDING SERVICE					
STATION	DESCRIPTION	FINISHED GRADE	EXISTING GRADE	PROP. TOP OF	AS-BUILT WATERMAIN
0+000	Connect to Ex. 200mm W/M		86.550		84.150
0+010.1	200mm V&VB	86.560		84.160	
0+014.2	Crossing the Ex. 600mm STM	86.600		84.200	
0+017.2	Cap to Building water service	86.840		84.440	
WATERMAIN SCHEDULE for W/M RELOCATION					
0+000	Connect to Ex. 200mm W/M		85.520		83.120
0+011.6	200mm V&VB	85.330		82.930	
0+013.9	Crossing the Ex. 600mm STM	85.340		82.940	
0+015.3	Crossing the Ex. 250mm SAN	85.350		82.950	
0+034.1	Crossing the 450mm STM	85.240		82.019	
0+037.4	Crossing the 200mm STM	85.190		82.317	
0+092.0	Crossing the 375mm STM	85.240		82.507	
0+096.1	45 degree bend	85.240		82.840	
0+098.3	45 degree bend	85.250		82.850	
0+185.6	200x150 Reducer	86.599		84.199	
0+187.5	45 degree bend	86.610		84.210	
0+189.0	45 degree bend	86.660		84.260	
0+189.4	Connect to Ex. 150mm W/M	86.670	86.910		84.510

PIPE CROSSING TABLE					
Obvert			Invert		
1.	600mm Dia. Ex. STM	82.478	0.522	Clearance Under	84.000 200mm Dia. WM
2.	600mm Dia. Ex. STM	82.480	0.260	Clearance Under	82.740 200mm Dia. WM
3.	250mm Dia. Ex. SAN	82.246	0.504	Clearance Under	82.750 200mm Dia. WM
4.*	250mm Dia. Ex. SAN	82.261	0.027	Clearance Under	82.288 450mm Dia. Ex. STM
5.	200mm Dia. WM	82.019	0.500	Clearance Under	82.519 450mm Dia. STM
6.	200mm Dia. WM	82.317	0.500	Clearance Under	82.817 200mm Dia. STM
7.	200mm Dia. WM	82.507	0.500	Clearance Under	83.007 375mm Dia. STM
8.	200mm Dia. SAN	82.555	0.529	Clearance Under	83.084 375mm Dia. STM

9.	200mm Dia. STM	84.173	0.265	Clearance Under	84.438 150mm Dia. STM
10.	200mm Dia. SAN	82.456	0.993	Clearance Under	83.449 150mm Dia. STM

*Existing Crossing

CATCH BASIN AND ICD DATA TABLE										
STRUCTURE ID	AREA ID	STRUCTURE	COVER	TOP OF GRATE ELEVATION	INVERT			DIAMETER (mm)	TYPE	HEAD FLOW
					INLET	INLET	OUTLET			
CB1*	A-1	OPSD 705.010	\$19.1	85.20			83.141	200	PVC SDR-35	
CB2*	A-2	OPSD 705.010	\$19.1	85.76			83.141	200	PVC SDR-35	
CB3*	A-3	OPSD 705.010	\$19.1	86.25			83.141	200	PVC SDR-35	
CB4*	A-5	OPSD 705.010	\$19.1	86.40			83.141	200	PVC SDR-35	
CB9	A-7	OPSD 705.010	\$19.1	86.48			84.281	200	PVC SDR-35	
CB6	A-9	OPSD 705.010	\$19.1	84.93			82.730	200	PVC SDR-35	
CB7	A-11	OPSD 705.010	\$19.1	85.35	83.241		83.221	200	PVC SDR-35	
CB8*	A-12	OPSD 705.011	\$19.1	86.10			83.187	200	PVC SDR-35	
CBMH9	A-13	OPSD 701.010	\$28.1	86.55	83.030		83.030	600	CONC 65-D	
CBMH8	EXT1	OPSD 701.010	\$28.1	86.67	84.141		84.091	200	PVC SDR-35	
CB11	A-8	OPSD 705.010	\$19.1	85.05			83.935	200	PVC SDR-35	
CB12	A-4	OPSD 705.010	\$19.1	86.46			84.260	200	PVC SDR-35	
CB13	A-6	OPSD 705.010	\$19.1	86.60			84.400	200	PVC SDR-35	
CB5	A-22	OPSD 705.010	\$19.1	86.68			84.022	200	PVC SDR-35	
CBMH3	EXT2	OPSD 701.010	\$28.1	85.26	83.570		83.144	375	PVC SDR-35	1.00 40
CBMH6	EXT3	OPSD 701.010	\$28.1	84.96	82.340		82.310	450	Ex. CONC 65-D	
CBMH7	A-10	OPSD 701.010	\$28.1	85.13	82.990		82.930	200	PVC SDR-35	

*Note: Non-Standard Catchbasin

SAN STRUCTURE TABLE						
STRUCTURE ID	TOP OF GRATE ELEVATION	INVERT IN	INVERT OUT	DESCRIPTION		
SAMH1	85.57		82.296	82.266	1200mm DIA.	OPSD-701.010 S24
SAMH2	86.72		82.624	82.594	1200mm DIA.	OPSD-701.010 S24
SAMH3	85.23		82.301	82.271	1200mm DIA.	OPSD-701.010 S24
SAMH4	85.34	82.013	81.983	81.983	1200mm DIA.	OPSD-701.010 S24

PONDING TABLE									
AREA ID	Ponding Type	LOCATION	Top of CB Elev. (m)	Low Point Elev. (m)	100-YEAR		100-YEAR+20% Stress Test		
					CB PONDING ELEV. (m)	CB PONDING DEPTH (m)	PONDING VOL. (m³)	CB PONDING ELEV. (m)	PONDING VOL. (m³)
A-1	Surface	CB1	85.20	85.20	85.25	0.053	2.60	85.26	0.056
A-2	Surface	CB2	85.76	85.76	85.82	0.058	1.00	85.82	0.061
A-3	Surface	CB3	86.25	86.25	86.30	0.054	3.10	86.31	0.057
A-4	Bioretetion	CB12	86.46	86.31	86.47	0.156	1.70	86.47	0.158
A-5	Surface	CB4	86.40	86.40	86.45	0.046	0.40	86.45	0.051
A-6	Bioretetion	CB13	86.60	86.45	86.61	0.156	2.20	86.61	0.159
A-8	Surface	CB11	85.05	85.05	85.08	0.032	2.20	85.09	0.041
A-9	Surface	CB6	84.93	84.93	84.94	0.008	0.20	84.94	0.011
A-10	Surface	CBMH7	85.13	85.13	85.17	0.041	0.60	85.18	0.050
A-12	Bioretetion	CB8	86.10	85.95	86.10	0.154	1.00	86.11	0.155
A-13	Bioretetion	CBMH9	86.55	86.40	86.56	0.157	2.30	86.56	0.159
A-22	Bioretetion	CB5	86.68	86.53	86.69	0.155	0.50	86.69	0.156

*Ponding Depth and Ponding Volume are generated by StormWater Model. Refer to SWM Memo for details.

ALGONQUIN COLLEGE

Algonquin Students' ASSOCIATION

Project
ATHLETICS AND RECREATION CENTRE (ARC)

Prepared For
ALGONQUIN STUDENTS' ASSOCIATION



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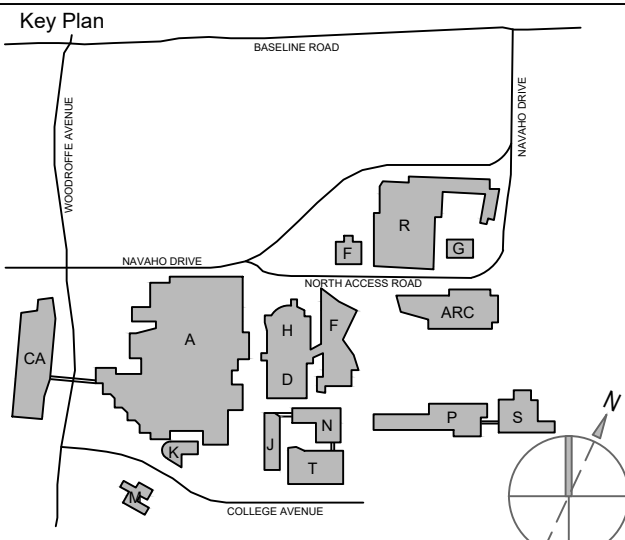
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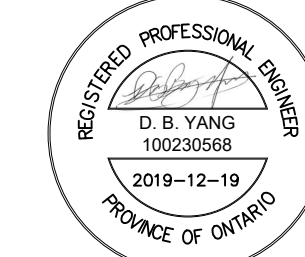
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No.	Description	Date
1	SITE PLAN APPROVAL	2019-06-24
2	ISSUED FOR PERMIT/TENDER	2019-08-20
3	RESPONSE TO SPA COMMENTS	2019-09-24
4	ISSUED FOR WATER PERMIT	2019-10-30
5	RESPONSE TO SPA COMMENTS	2019-11-21
6	REVISED AS PER STORMTECH DESIGN	2019-11-28
7	ISSUED FOR CLASS B	2019-12-06
8	RESPONSE TO SPA COMMENTS	2019-12-19

Drawn

Project
**ATHLETICS AND
RECREATION CENTRE
(ARC)**

Prepared For
**ALGONQUIN STUDENTS'
ASSOCIATION**



HOK Architects Corporation
205 Catherine Street, Suite 101
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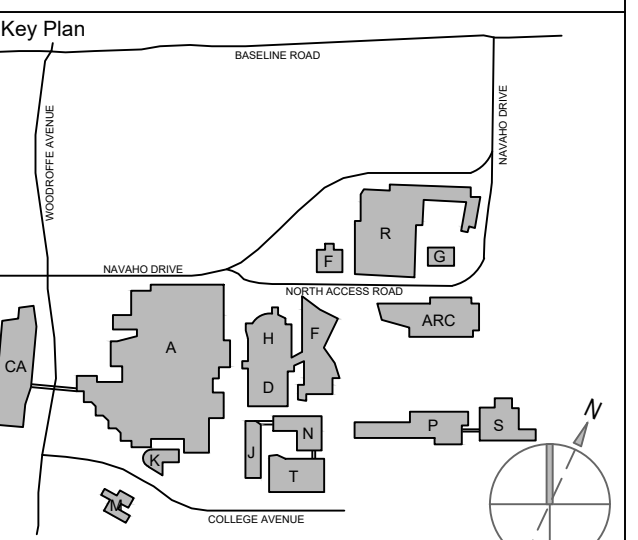
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7	RESPONSE TO SPA COMMENTS	2019-12-19

Drawn by: D.B.Y. Reviewed by: J.J.
Project No: 191-01517-00

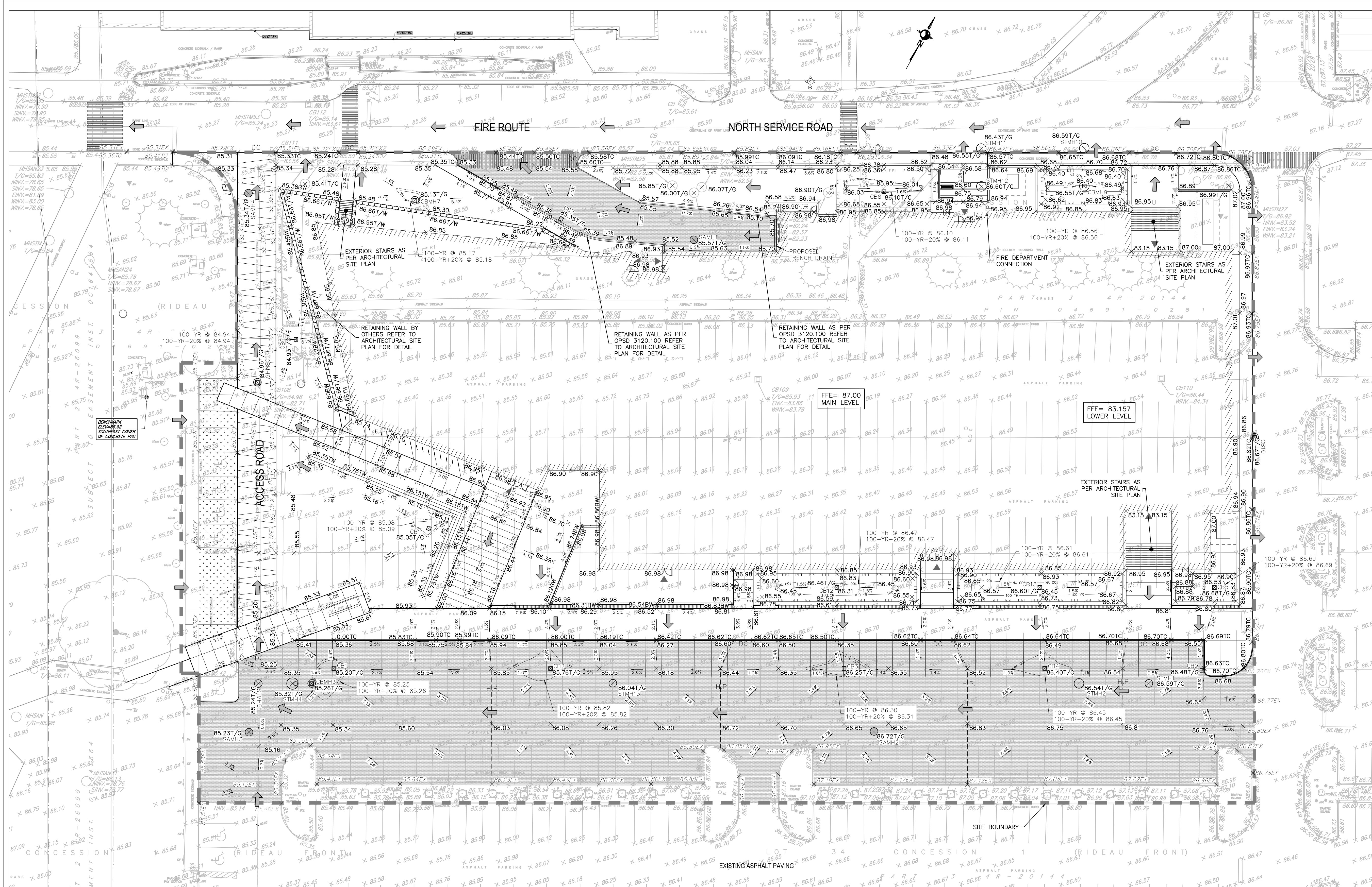
Sheet Title
GRADING PLAN

Original drawing is A1. Do not scale contents of this drawing.

Sheet Number

C03

#17981

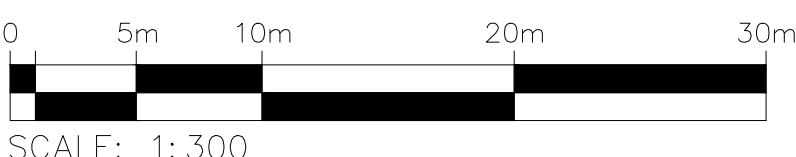


LEGEND:

	EXISTING FIRE HYDRANT		PROPOSED METER		PROPOSED TOP OF CURB		PROPOSED CONCRETE CURB
	EXISTING V&V		PROPOSED CATCHBASIN MANHOLE		PROPOSED SWALE ELEVATION		EXISTING BUILDING OR STRUCTURE
	EXISTING VALVE CHAMBER		PROPOSED CATCHBASIN		PROPOSED SLOPE		LIMIT OF CONSTRUCTION
	PROPOSED FIRE HYDRANT		EXISTING CATCHBASIN MANHOLE		100 YEAR + 20% PONDING LIMIT		PROPOSED CENTERLINE OF SWALE
	PROPOSED V&V		EXISTING GRADE		SIAMESE CONNECTION		PROPOSED TERRACING (3:1 MAX)
	PROPOSED REMOTE METER		PROPOSED GRADE		OVERLAND MAJOR FLOW ROUTE		EXISTING CONCRETE CURB

MARK YOUNG, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - WEST
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Mark Young at 3:04 pm, Jan 10, 2020



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Key Plan
Map showing the location of the project site relative to surrounding roads and landmarks.

Professional Seals
Registered Professional Engineer
D. B. YANG
100220568
2019-12-19
PROVINCE OF ONTARIO

No. Description Date
1 SITE PLAN APPROVAL 2019-06-24
2 ISSUED FOR PERMIT/TENDER 2019-08-20
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7 ISSUED FOR CLASS B 2019-12-06
8 RESPONSE TO SPA COMMENTS 2019-12-19

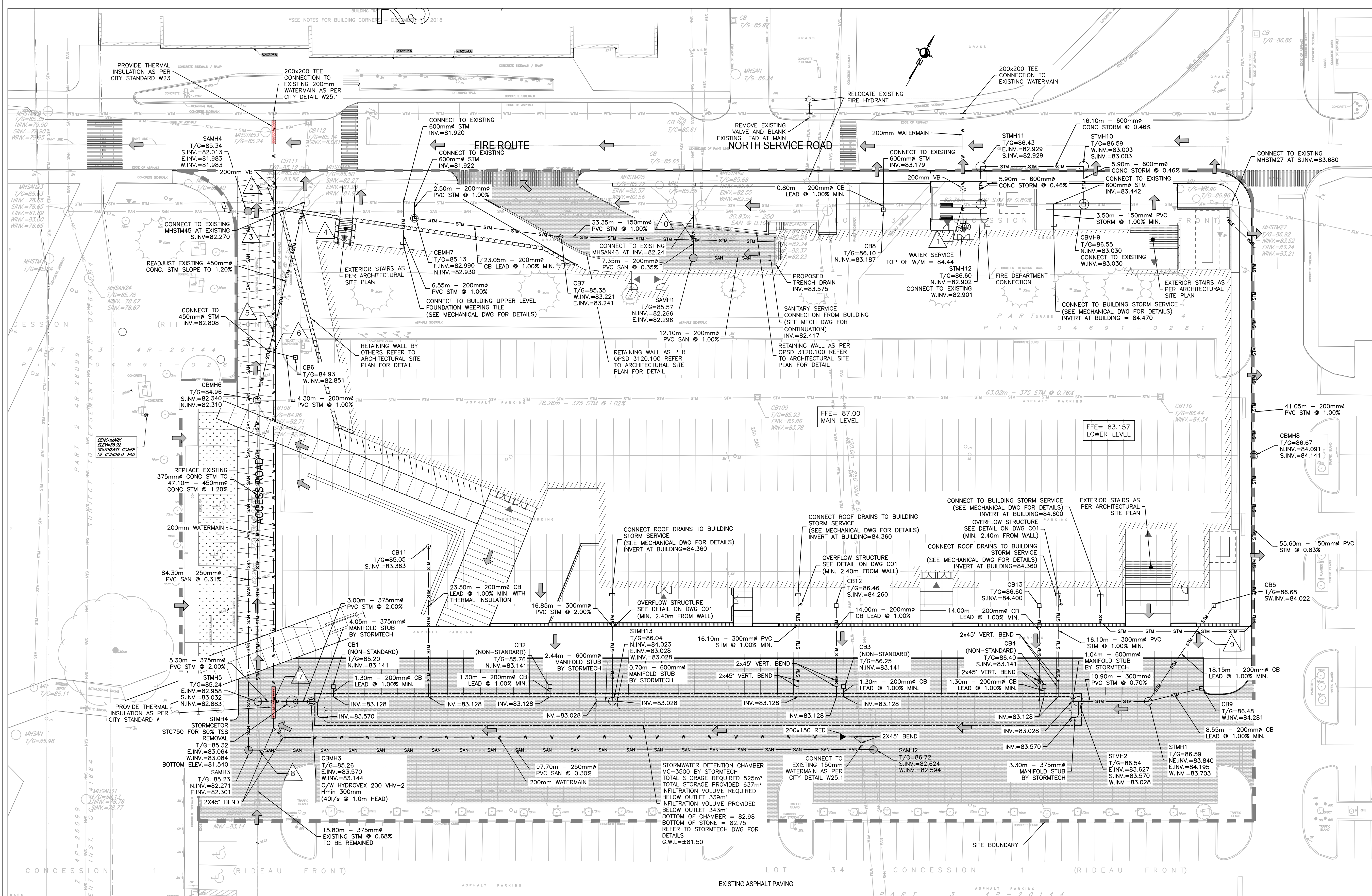
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Project No: 191-01517-00

Sheet Title
SERVICING PLAN

Original drawing is A1. Do not scale contents of this drawing.
Sheet Number

C04

17981



LEGEND:

EXISTING FIRE HYDRANT	PROPOSED METER	STM	EXISTING STORM SEWER AND MANHOLE	PROPOSED CENTERLINE OF SWALE
EXISTING V&B	PROPOSED CATCHBASIN MANHOLE	STM	PROPOSED STORM SEWER AND MANHOLE	PROPOSED TERRACING (3:1 MAX)
EXISTING VALVE CHAMBER	PROPOSED CATCHBASIN	W	PROPOSED WATERMAIN	PROPOSED CONCRETE CURB
PROPOSED FIRE HYDRANT	EXISTING CATCHBASIN MANHOLE	W	EXISTING WATERMAIN	EXISTING BUILDING OR STRUCTURE
PROPOSED V&B	EXISTING SANITARY SEWER AND MANHOLE	W	PROPOSED FIRE HYDRANT	LIMIT OF CONSTRUCTION
PROPOSED REMOTE METER	PROPOSED SANITARY SEWER AND MANHOLE	W	PROPOSED V&B	EXISTING CONCRETE CURB

MARK YOUNG, MCIP, RPP
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By Mark Young at 3:04 pm, Jan 10, 2020

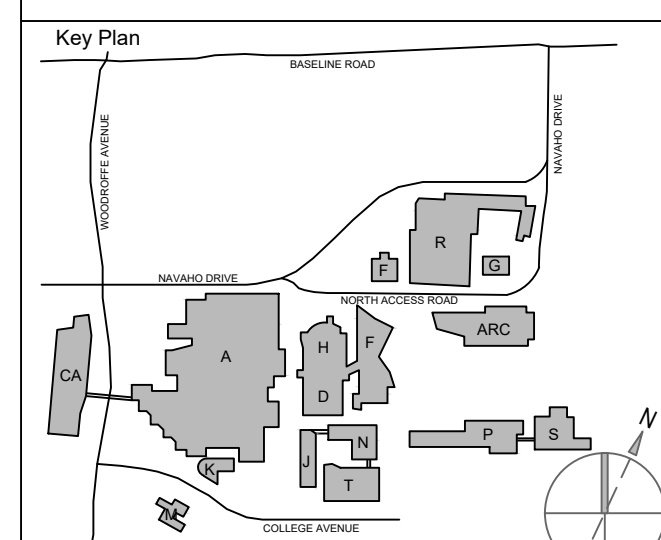


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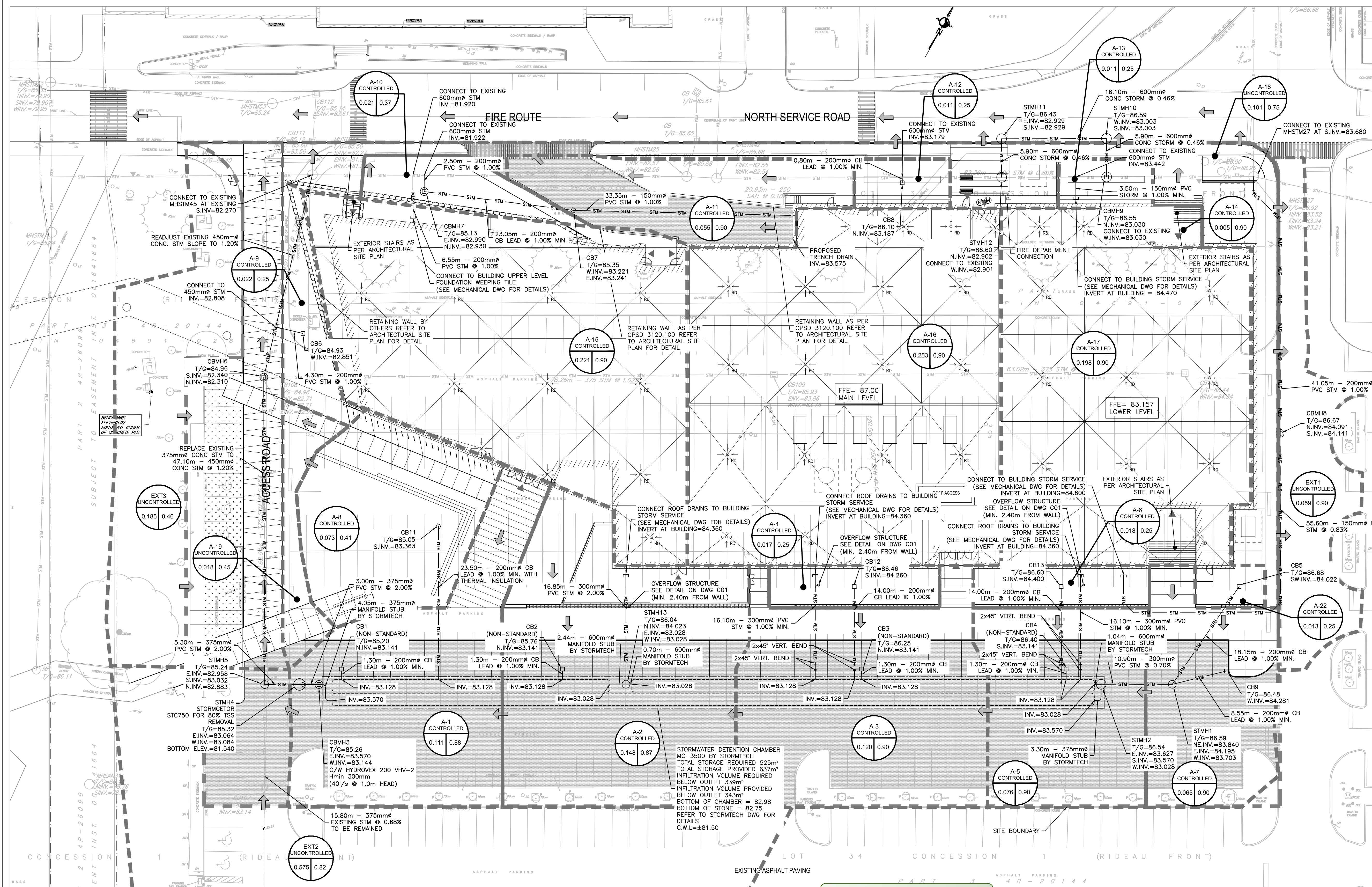
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Project No: 191-01517-00

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN

Sheet Number

C05

#17981



By Mark Young at 3:04 pm, Jan 10, 2020


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	EXISTING FIRE HYDRANT		PROPOSED METER
	EXISTING V&B		PROPOSED CATCHBASIN MANHOLE
	EXISTING VALVE CHAMBER		PROPOSE CATCHBASIN
	PROPOSED FIRE HYDRANT		EXISTING CATCHBASIN MANHOLE
	PROPOSED V&B		EXISTING STORM SEWER AND MANHOLE
	PROPOSED REMOTE METER		PROPOSED STORM SEWER AND MANHOLE

STORM DRAINAGE BOUNDARY

ID DENOTES WATERSHED NAME
A DENOTES AREA IN HECTARES
C DENOTES RUNOFF COEFFICIENT

OVERLAND MAJOR FLOW ROUTE



Project
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Prepared For
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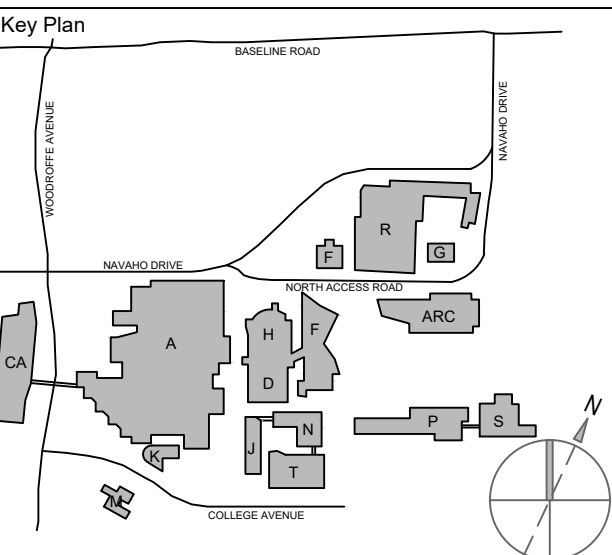
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Sheet Title

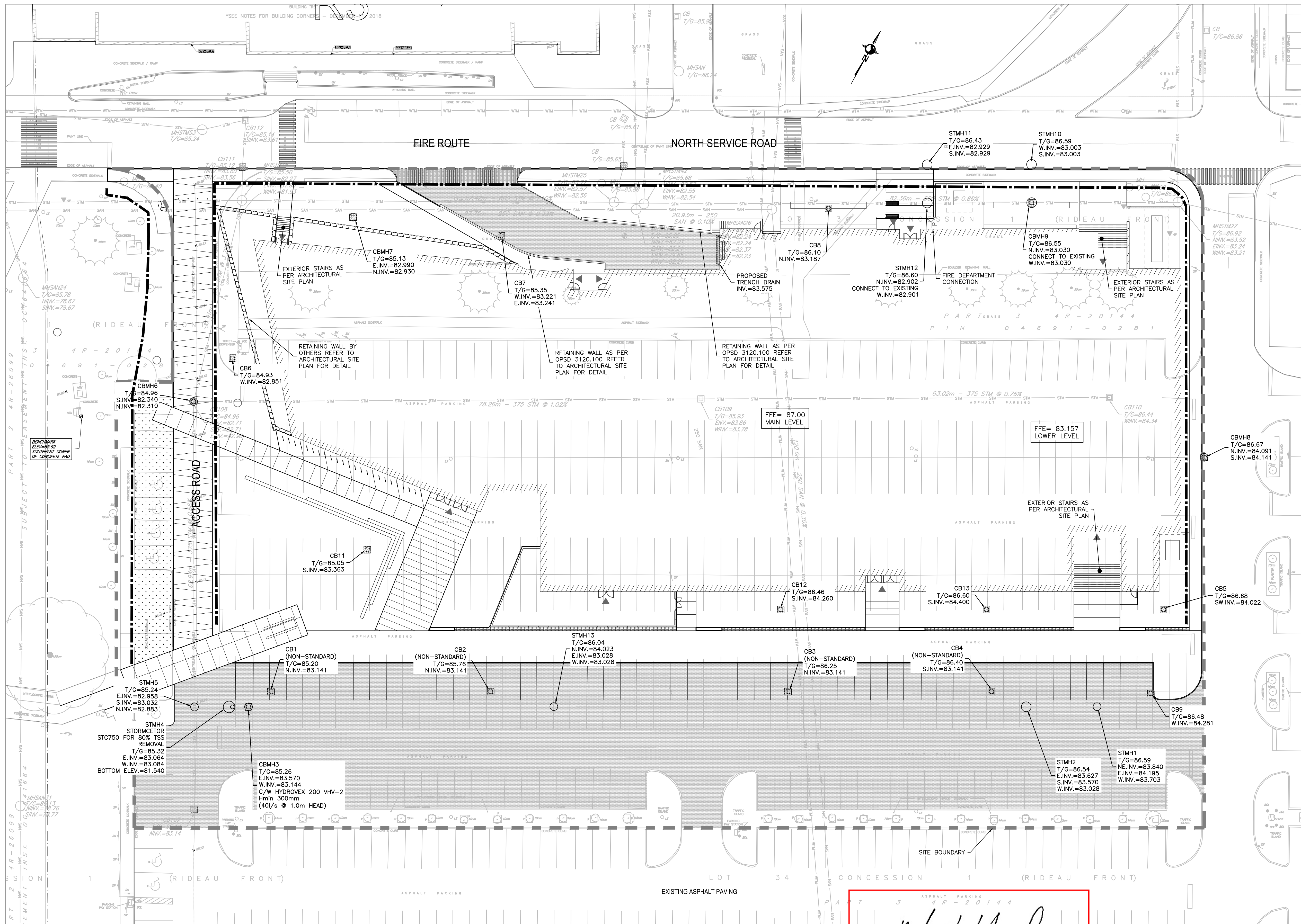
EROSION AND SEDIMENTATION CONTROL PLAN

Original drawing is A1. Do not scale contents of this drawing.

Sheet Number

C06

#17981



- LEGEND
- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
 - SNOW FENCE
 - ROCK CHECK DAM AS PER OPSD-219.211
 - STRAW BALE CHECK DAM AS PER OPSD-219.180
 - FILTER CLOTH PLACED UNDER CB AND CBMH COVER

APPROVED
By Mark Young at 3:04 pm, Jan 10, 2020

Mark Y. P.

MARK YOUNG, MCIP, RPP
(A) MANAGER, DEVELOPMENT REVIEW - WEST
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