GENERAL NOTES:

1. COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
2. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
4. BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR $5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
5. COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSD & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED'.
6. RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
7. REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
8. ALL ELEVATIONS ARE GEODETIC.
9. REFER TO GEOTECHNICAL REPORT (NO. PG6153-1 REVISION 1, DATED APRIL 28, 2022), PREPARED BY PATERSON GROUP INC., FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
10. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
11. REFER TO THE DEVELOPMENT SERVICING STUDY & STORMWATER MANAGEMENT REPORT (R-2022-014) PREPARED BY NOVATECH.
12. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
13. PROVIDE LINE / PARKING PAINTING AS REQUIRED PER THE ARCHITECTURAL SITE PLAN.

GRADING NOTES:

1. ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED BUILDING PAVED AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
2. EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
3. ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUB-EXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
4. THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
5. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
6. MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
7. ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
8. CONCRETE BARRIER CURBS ARE TO BE CONSTRUCTED PER CITY OF OTTAWA STANDARDS (SC1.1) AT A HEIGHT OF 150mm AND ALL DEPRESSIONS ARE TO BE CONSTRUCTED FLUSH (AT 0mm HEIGHT).
9. CONCRETE MOUNTABLE CURBS ARE TO BE CONSTRUCTED PER CITY OF OTTAWA STANDARD (SC1.3) AT A HEIGHT OF 50mm AND ALL DEPRESSIONS ARE TO BE CONSTRUCTED FLUSH (AT 0mm HEIGHT).
10. REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
11. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.

EROSION AND SEDIMENT CONTROL NOTES :

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.

1. ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA. THEY ARE TO BE APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION. THESE PRACTICES ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL AND SHOULD INCLUDE AS A MINIMUM THOSE MEASURES INDICATED ON THE PLAN.
2. EROSION AND SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED DURING CONSTRUCTION IN ACCORDANCE WITH THE "GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES" (GOVERNMENT OF ONTARIO, MAY 1987). THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEETING ALL REGULATORY AGENCY REQUIREMENTS.
3. TO PREVENT SURFACE EROSION FROM ENTERING ANY STORM SEWER SYSTEM DURING CONSTRUCTION, FILTER CLOTH WILL BE PLACED UNDER GRATES OF NEARBY CATCHBASINS AND STRUCTURES. A LIGHT DUTY SILT FENCE BARRIER WILL ALSO BE INSTALLED AROUND THE CONSTRUCTION AREA (WHERE APPLICABLE). THESE CONTROL MEASURES WILL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
4. TO LIMIT EROSION: MINIMIZE THE AMOUNT OF EXPOSED SOILS AT ANY GIVEN TIME, RE-VEGETATE EXPOSED AREAS AND SLOPES AS SOON AS POSSIBLE AND PROTECT EXPOSED SLOPES WITH NATURAL OR SYNTHETIC MULCHES.
5. FOR MATERIAL STOCKPILING: MINIMIZE THE AMOUNT OF EXPOSED MATERIALS AT ANY GIVEN TIME; APPLY TEMPORARY SEEDING, TARPS, COMPACTION AND/OR SURFACE ROUGHENING AS REQUIRED TO STABILIZE STOCKPILED MATERIALS THAT WILL NOT BE USED WITHIN 14 DAYS.
6. THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE ENGINEER, THE MEASURES ARE NO LONGER REQUIRED. NO CONTROL MEASURES MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER.
7. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO ANY STORM SEWER SYSTEM. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.
8. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
9. ROADWAYS ARE TO BE SWEPT AS REQUIRED OR AS DIRECTED BY THE ENGINEER AND/OR THE MUNICIPALITY.
10. THE CONTRACTOR SHALL ENSURE PROPER DUST CONTROL IS PROVIDED WITH THE APPLICATION OF WATER (AND IF REQUIRED, CALCIUM CHLORIDE) DURING DRY PERIODS. MONITOR DUST LEVELS DURING SITE PREPARATION/EXCAVATION, AND CONSTRUCTION ACTIVITIES, AND WHEN DUST LEVELS BECOME VISUALLY APPARENT SPRAY WATER TO MINIMIZE THE RELEASE OF DUST FROM GRAVEL, PAVED AREAS AND EXPOSED SOILS. USE CHEMICAL DUST SUPPRESSANTS ONLY WHERE NECESSARY ON PROBLEM AREAS.

PAVEMENT STRUCTURES:

LIGHT DUTY (NEW PAVEMENT)
50mm HL3 or SUPERPAVE 12.5
150mm GRANULAR "A"
300mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 58-34
*INSTALLED PER GEOTECHNICAL REPORT

HEAVY DUTY (NEW PAVEMENT)
40mm HL3 or SUPERPAVE 12.5
50mm HL8 or SUPERPAVE 19.0
150mm GRANULAR "A"
450mm GRANULAR "B" TYPE II
ASPHALT GRADE PG 58-34
* INSTALLED PER GEOTECHNICAL REPORT

Erosion and Sediment Control Responsibilities:

				During Construction			After Construction Prior to Final Acceptance		After Final Acceptance
	ESC Measure	Symbol	Specification	Installation Responsibility	Inspection/Maintenance Responsibility	Inspection Frequency	Approval to Remove	Removal Responsibility	Inspection/Maintenance Responsibility
Temporary Measures	Silt Fence		OPSD 219.110	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Filter Fabric	Location as Indicated in ESC Note #3	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Mud Mat	MM	Drawing Details	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Developer's Contractor	Developer's Contractor	N/A
	Dust Control	Location as Required Around Site	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Consultant	Developer's Contractor	N/A
	Stabilized Material Stockpiling	Location as Required by Contractor	Erosion and Sediment Control Notes	Developer's Contractor	Developer's Contractor	Weekly (as a minimum)	Developer's Contractor	Developer's Contractor	N/A
	Sediment Basin (for flows being pumped out of excavations)	Location as Required by Contractor	---	Developer's Contractor	Developer's Contractor	After Every Rainstorm	Developer's Contractor	Developer's Contractor	N/A

BENCHMARK INFO:

CUT CROSS LOCATED ON THE TOP OF THE EXISTING CONCRETE HEADWALL NEAR THE WEST LIMIT OF THE MUNICIPAL STORM SEWER OUTLFALL TO THE CARP RIVER. GEODETIC ELEVATION = 93.77m.

ALL ELEVATIONS ARE REFERRED TO THE CGVD28:78 GEODETIC DATUM, DERIVED FROM VERTICAL CONTROL MONUMENT NO. 00119883075 HAVING A PUBLISHED ELEVATION OF 90.612 METRES. BEARINGS ARE GRID, DERIVED FROM THE OLS FIELD OBSERVATIONS USING REAL TIME NETWORK (RTN) OSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN OF MTM ZONE 9, NAD-83 (CSRS)(2010.0).

THE EXISTING GRADES SHOWN ON THE PLANS ARE TAKEN DIRECTLY FROM TOPOGRAPHICAL SURVEY PLAN (Ref. # 21-10-026-00), PREPARED BY J.D. BARNES LIMITED COMPLETED ON APRIL 8, 2021.

SURROUNDING BACKGROUND TOPO INFORMATION BEYOND THE LIMITS OF THE SITE SURVEY ARE SHOWN FROM CITY OF OTTAWA 1:2000 MAPPING FOR CONTEXT ONLY.

SEWER NOTES:

1. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200mmØ)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
SANITARY MH FRAME & COVER	401.010 - TYPE "A"	OPSD
STORM / CBMH MANHOLE FRAME AND COVER	401.010 - TYPE "B"	OPSD
WATERTIGHT MH FRAME AND COVER	401.030	OPSD
LANDSCAPE DRAIN (ELBOW, COVER & PIPE)	S29 / S31	CITY OF OTTAWA
SEWER TRENCH	S6	CITY OF OTTAWA

STORM SEWER — PVC DR 35
SANITARY SEWER — PVC DR 35
CATCHBASIN LEAD — PVC DR 35

3. ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
4. INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.8m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
5. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
6. PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
7. FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
8. THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
9. ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS.
10. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
11. ALL WEEPING TILE SYSTEMS ARE TO BE PUMPED TO THE SURFACE AS INDICATED ON THE GENERAL PLAN OF SERVICES DRAWING. REFER TO MECHANICAL PLANS FOR DETAILS.
12. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.
13. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, T/WM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

CRITICAL SEWER PIPE CROSSING TABLE

CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE	SURFACE ELEVATION
A	300mmØ T/WM=91.24	200mmØ STM INV=93.14	± 1.9m	94.72 m
B	450mmØ SAN OBV=91.65	200mmØ STM INV=93.11	± 1.5m	94.87 m
C	200mmØ SAN OBV=91.51	1050mmØ U/S STM=92.01	± 0.5m	94.96 m
D	200mmØ SAN OBV=92.00	375mmØ STM INV=93.08	± 1.1m	94.82 m
E	200mmØ SAN OBV=92.61	375mmØ STM INV=93.29	± 0.7m	95.12 m
F	200mmØ SAN OBV=92.09	375mmØ STM INV=92.97	± 0.9m	95.18 m
G	200mmØ SAN OBV=92.52	150mmØ U/S WM=92.77	± 0.25m	95.20 m
H	200mmØ SAN OBV=92.61	375mmØ STM INV=93.12	± 0.5m	95.06 m
I	150mmØ T/WM=92.41	375mmØ STM INV=93.23	± 0.8m	95.12 m
J	150mmØ T/WM=92.41	200mmØ SAN INV=92.71	± 0.3m	95.17 m

✱ SEE 121326-GP1 AND 121326-GP2 PLANS FOR SEWER CROSSING LOCATIONS ON-SITE

WATERMAIN NOTES:

1. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE CITY OF OTTAWA FORCES.
2. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
HYDRANT INSTALLATION	W19	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION AT OPEN STRUCTURES	W23	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING OVER SEWER	W25.2	CITY OF OTTAWA

WATERMAIN — PVC DR 18

3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE, UNLESS OTHERWISE INDICATED.
4. PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, UNLESS OTHERWISE INDICATED.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED.

U-HAUL SITE FLOWS & STORMWATER MANAGEMENT TABLE

DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS		POST-DEVELOPMENT CONDITIONS				
	UNCONTROLLED FLOW (L/s)	ALLOWABLE RELEASE RATE (L/s)	DIRECT RUNOFF (L/s)	A-1 to A-19 FLOW (L/s)	R-1 FLOW (L/s)	TOTAL FLOW (L/s)	REDUCTION IN FLOW (L/s or %)*
1:2 YR	92.1	107.9	0.1	53.8	17.7	71.5	20.6 or 22%
1:5 YR	125.0			61.0	24.9	85.9	39.0 or 31%
1:100 YR	267.7			71.1	31.1	102.2	165.4 or 62%

* REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

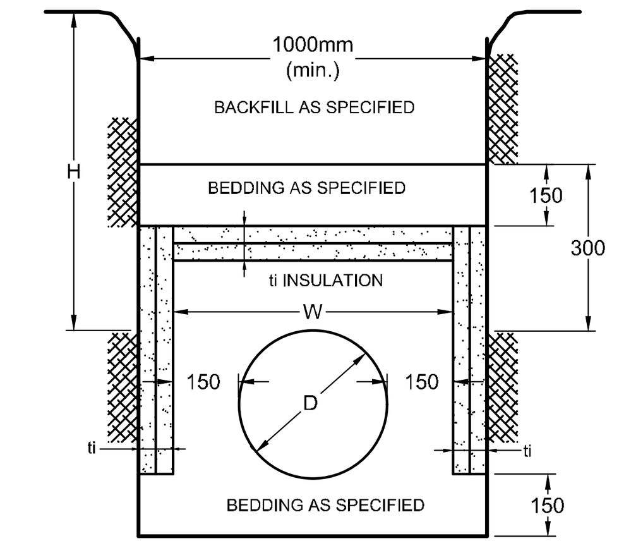
AREA A-1 to A-19: RESTRICTOR PIPE DATA - CBMH 101

DESIGN EVENT	DIAMETER OF RESTRICTOR PIPE (mm)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m^3)
1:2 YR	200mmØ RINGTIGHT (NOMINAL PIPE SIZE)	200	53.8	0.76	93.63	486.9
1:5 YR			61.0	1.02	93.89	788.0
1:100 YR			71.1	1.78	94.65	1813.0

* RESTRICTOR PIPE TO BE IPEX 'RING TIGHT' PVC DR35 PIPE ONLY - SIZE = 8" NOMINAL DIAMETER FOR RESTRICTOR PIPE AS THE OUTLET PIPE FROM CBMH 101.

AREA R-1: ICD TABLE - CB 08

DESIGN EVENT	TYPE OF ICD	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER DEPTH (m)	VOLUME (m^3)
1:2 YR	TEMPEST MHF VORTEX 'CUSTOM'	200	17.7	0.24	93.49	0.1
1:5 YR			24.9	0.71	93.96	0.3
1:100 YR			31.1	1.60	94.85	6.2

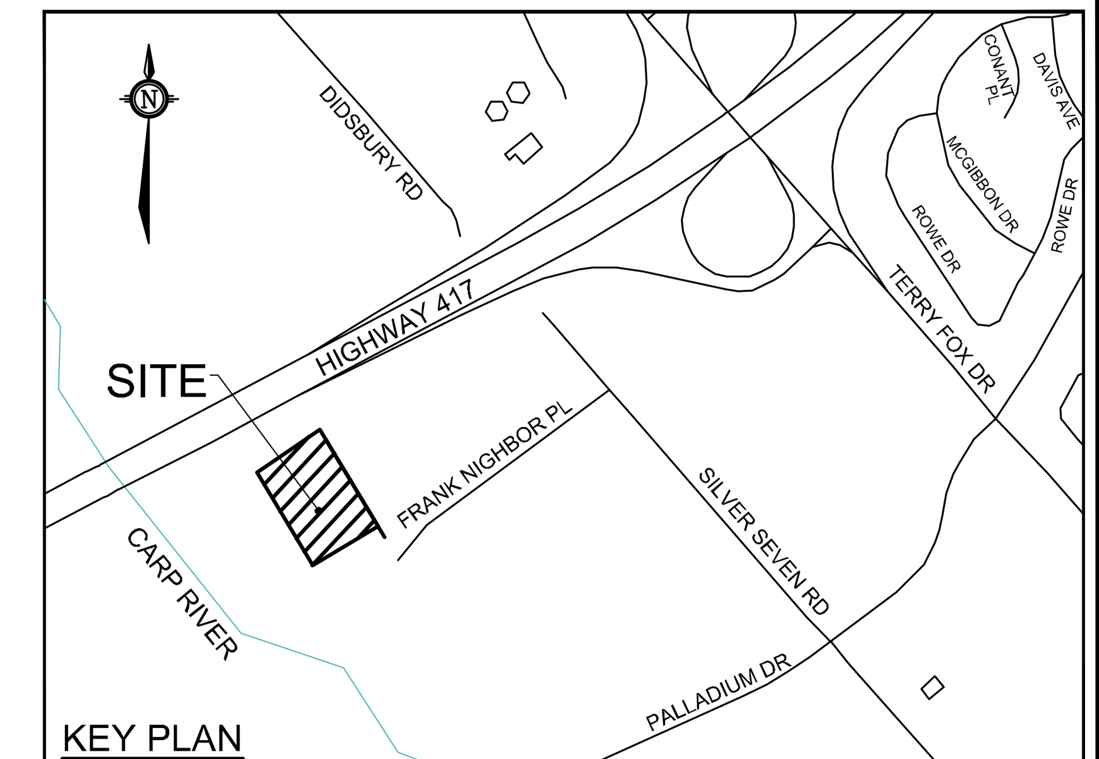


INSULATION DETAIL FOR SHALLOW SEWERS
NOT TO SCALE

INSULATION NOTES:
1. THE THICKNESS OF SEWER INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER LESS THAN 1800mm (SEE TABLE)

S = THICKNESS OF INSULATION (mm)
H = DEPTH OF COVER
W = D + 300 (1000 min.)
W = WIDTH OF INSULATION (mm)
D = O.D OF PIPE (mm)

COVER (mm)	INSULATION THICKNESS (mm)
1800-1500	50
1500-1200	75
1200-900	100
900-600	125



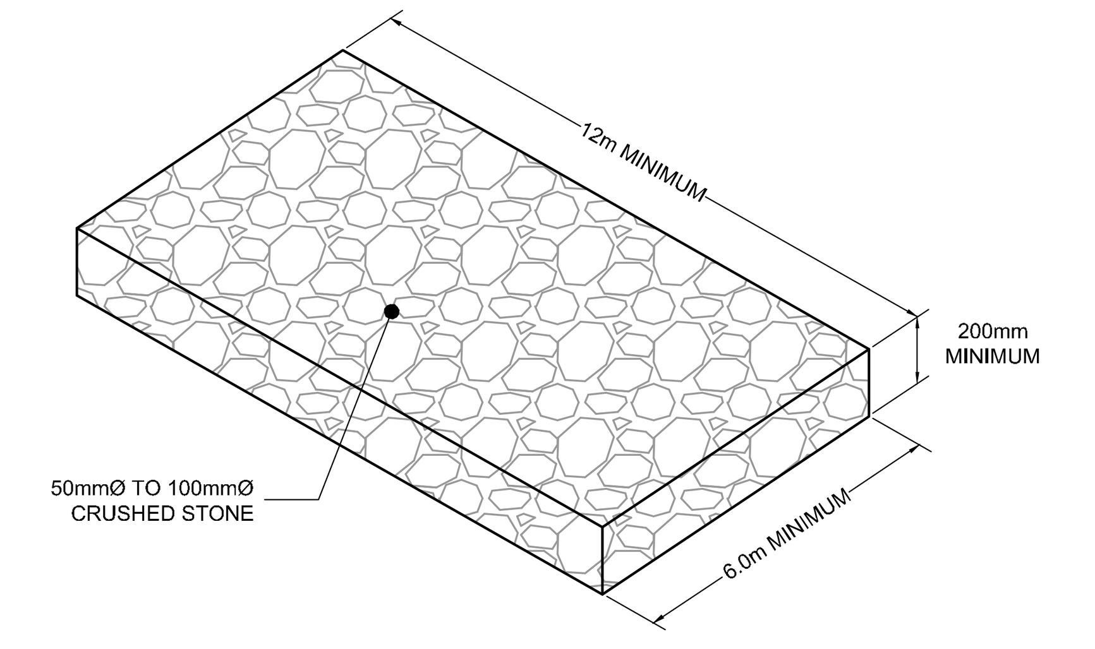
KEY PLAN
N.T.S.

PROPOSED 200mmØ / 150mmØ WATERMAIN TABLE

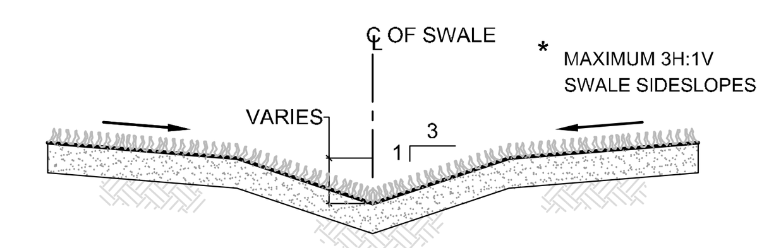
STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
0+000	94.88	91.10± ✱	CONNECTION FROM ABOVE TO EX. 300mmØ WM
0+002.5	94.89	93.64 ✱✱	45° VERTICAL BEND
0+003.3	94.89	93.65 ✱✱	CROSS ABOVE EX. 450Ø SAN (±1.8m CLEARANCE)
0+005.0	94.93	93.67 ✱✱	CROSS BELOW EX. 1050Ø STM (±0.2m CLEARANCE)
0+005.5	94.93	93.67 ✱✱	45° VERTICAL BEND
0+006.1	94.94	93.16 ✱✱	45° VERTICAL BEND
0+006.4	94.95	93.15 ✱✱	200mmØ VALVE AND VALVE BOX
0+007.4	94.96	93.12 ✱✱	11.25° HORIZONTAL BEND
0+025.9	94.86	92.46	CROSS BELOW 375mmØ STM (±0.7m CLEARANCE)
0+027.4	94.90	92.50	CROSS ABOVE 200mmØ SAN (±0.25m CLEARANCE)
0+029.9	94.95	92.55	200 x 200 x 200 TEE FOR BLDG 'D' SERVICE (1+000)
0+050	95.18	92.78	---
0+075	95.21	92.81	---
0+082.4	95.14	92.74	200 x 200 x 150 TEE FOR HYDRANT No.1
0+088.6	95.08	92.68	200 x 200 x 150 TEE FOR BLDG 'A' SERVICE (2+000)
0+091.6	95.04	92.64	CROSS BELOW 375mmØ STM (±0.5m CLEARANCE)
0+100	95.12	92.62	---
0+116.0	95.13	92.41	200 x 200 x 150 TEE FOR HYDRANT No.2
0+126.0	95.04	92.64	CROSS BELOW 375mmØ STM (±0.65m CLEARANCE)
0+129.6	95.07	92.67	22.5° HORIZONTAL BEND
0+150	95.32	92.92	---
0+170.7	95.26	92.86	CROSS BELOW 375mmØ STM (±0.6m CLEARANCE)
0+173.2	95.27	92.87	200 x 150 REDUCER
0+174.2	95.30	92.90	150mmØ VALVE AND VALVE BOX
0+180.2	95.41	93.00	FIRE HYDRANT No.3
1+000	94.95	92.55	200 x 200 x 200 TEE FOR BLDG 'D' SERVICE (0+029.9)
1+003.0	95.02	92.62	200mmØ VALVE AND VALVE BOX
1+025	95.27	92.77	---
1+026.7	95.29	92.78	CROSS BELOW 375mmØ STM (±0.5m CLEARANCE)
1+033.7	95.33	92.80	45° HORIZONTAL BEND
1+037.1	95.41	92.93	45° HORIZONTAL BEND
1+042.2	95.49	92.95	CAP 1.0m FROM BLDG 'D' FOUNDATION WALL
2+000	95.08	92.68	200 x 200 x 150 TEE FOR BLDG 'A' SERVICE (0+088.6)
2+002.5	95.09	92.67	22.5° VERTICAL BEND
2+004.4	95.10	91.88	22.5° VERTICAL BEND
2+005.5	95.10	91.88	CROSS BELOW 200mmØ SAN (±0.5m CLEARANCE)
2+006.6	95.12	91.88	22.5° VERTICAL BEND
2+008.3	95.18	92.58	22.5° VERTICAL BEND
2+010.1	95.19	92.60	CROSS BELOW 375mmØ STM (±0.5m CLEARANCE)
2+025	95.33	92.93	---
2+035.1	95.33	92.93	45° HORIZONTAL BEND
2+036.8	95.35	92.95	150mmØ VALVE AND VALVE BOX
2+038.5	95.45	92.95	45° HORIZONTAL BEND
2+039.1	95.47	92.95	CAP 1.0m FROM BLDG 'A' FOUNDATION WALL

✱ 300mm x 300mm x 200mm CONNECTION TO EXISTING 300mmØ WATERMAIN BY CITY FORCES. EXACT ELEVATION TO BE FIELD DETERMINED.

✱✱ PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W22 IN SHALLOW TRENCHES AND/OR CITY OF OTTAWA DETAIL W23 ADJACENT TO OPEN STRUCTURES.

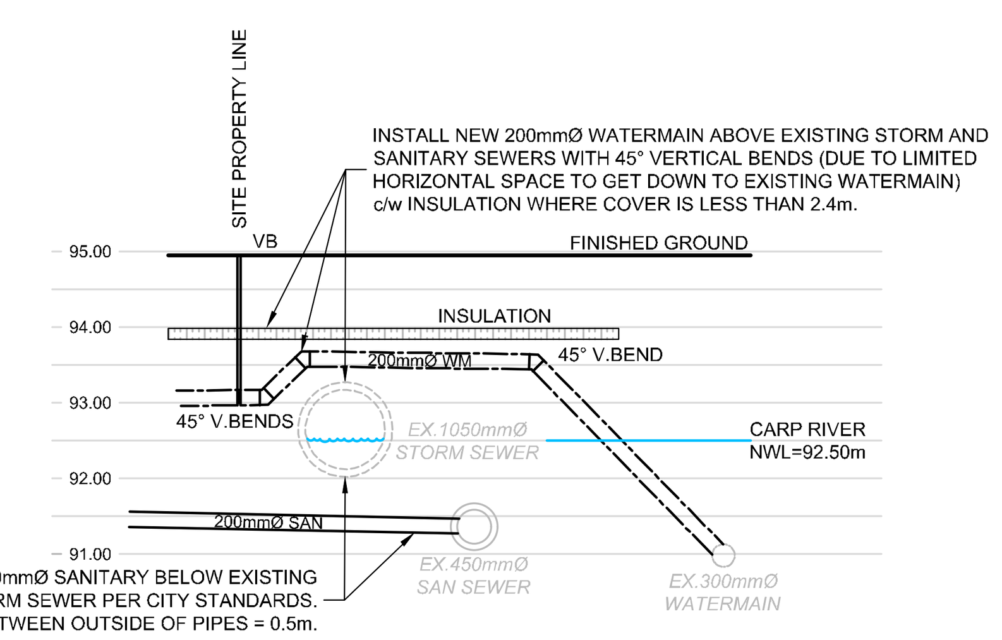


MUD MAT DETAIL
NOT TO SCALE

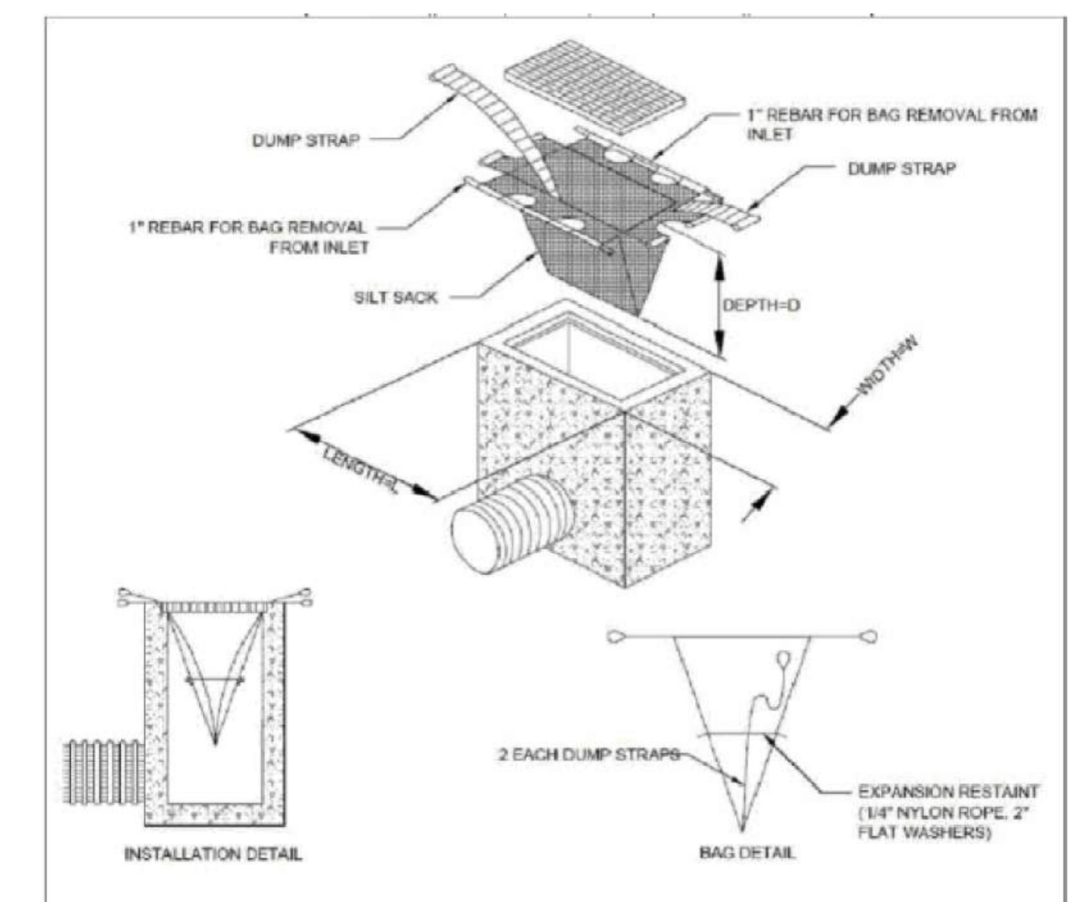


* MAXIMUM 3H:1V SWALE SIDESLOPES

TYPICAL SWALE SECTION
SCALE : 1:300 (H)
1:150 (V)



WATERMAIN CONNECTION AND CROSSING SECTION
NOT TO SCALE



INLET SEDIMENT CONTROL DEVICE
N.T.S

THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE GRADING AND SERVICING DESIGN DRAWINGS

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

OWNER INFORMATION
U-HAUL CANADA
3636 INNES ROAD
OTTAWA, ONTARIO, K1C 1T1
DAVID POLLOCK
PHONE: 1-602-263-6555
david_pollock@uhaul.com

No.	REVISION	DATE	BY
1	ISSUED FOR SITE PLAN APPROVAL	MAY 20/22	FST

SCALE: AS INDICATED
DESIGN: SM / FST
CHECKED: FST
DRAWN: SM
CHECKED: SM / FST
APPROVED: FST

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER
F.S. THAUVETTE
100041399
MAY 20, 2022
PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
30 FRANK NIGHBOR PLACE: U-HAUL SITE

DRAWING NAME
CIVIL NOTES, DETAILS AND TABLES PLAN

PROJECT No. 121326
REV: REV # 1
DRAWING No. 121326-NDT

D07-12-22-

Plan #

M:\2021\121326\CAD\Design\121326-NDT.dwg, NDT, May 20, 2022 - 1:12pm, smatthews