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. 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.
6. 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.
7. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
8. THE SITE BENCHMARK IS CURRENTLY SET ON TOP OF THE FIRE HYDRANT SPINDLE (ELEV. = 89.26), LOCATED TO THE NORTH OF THE SUBJECT PROPERTY WITHIN THE SOUTHERN BOULEVARD OF BRIAN COBURN BOULEVARD. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM. BEARINGS ARE GRID, DERIVED FROM CAN-NET 2016 REAL TIME NETWORK OBSERVATIONS, MTM ZONE 9 NAD-83 (ORIGINAL). REFER TO THE ANNIS O'SULLIVAN VOLLEBEKK LTD TOPOGRAPHIC SURVEY OF PART OF LOTS 2 AND 3 CONCESSION 11, GEOGRAPHIC TOWNSHIP OF CUMBERLAND, CITY OF OTTAWA.
9. REFER TO GEOTECHNICAL REPORT (No. PG6526-1, DATED JANUARY 30, 2023), AND THE GRADING PLAN REVIEW MEMO (No. PG6526-MEMO.01, DATED MAY 6,20224), PREPARED BY PATERSON GROUP 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 HARDSURFACE AREAS AND DIMENSIONS.
11. REFER TO SERVICING AND STORMWATER MANAGEMENT REPORT PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD, R-2023-131 (DATED AUGUST 9TH, 2024).
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.
14. 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.
15. CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.

SEWER NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	705.010	OPSD
STORM / SANITARY MANHOLE (1200Ø)	701.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME	S25	CITY OF OTTAWA
SANITARY COVER	S24	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	S6 & S7	CITY OF OTTAWA
STORM SEWER	PVC DR 35	
SANITARY SEWER	PVC DR 35	
CATCHBASIN LEAD	PVC DR 35	

INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER WITH 50mmX1200mm HI-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION (REFER TO DETAIL).

2. SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0% (2.0% IS PREFERRED).
3. SEWER SERVICE CONNECTIONS PER CITY OF OTTAWA DETAILS S11 AND S11.1.
4. THE PIPE BEDDING FOR THE SEWER AND WATER PIPES SHOULD CONSIST OF AT LEAST 150 MM OF OPSS GRANULAR A. THE BEDDING LAYER THICKNESS SHOULD BE INCREASED TO A MINIMUM OF 300 MM WHERE THE SUBGRADE WILL CONSIST OF GREY SILTY CLAY. THE MATERIAL SHOULD BE PLACED IN A MAXIMUM 225 MM THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 99% OF ITS SPMDD. THE BEDDING MATERIAL SHOULD EXTEND AT LEAST TO THE SPRING LINE OF THE PIPE.
5. THE COVER MATERIAL, WHICH SHOULD CONSIST OF OPSS GRANULAR A, SHOULD EXTEND FROM THE SPRING LINE OF THE PIPE TO AT LEAST 300 MM ABOVE THE OBVERT OF THE PIPE. THE MATERIAL SHOULD BE PLACED IN MAXIMUM 225 MM THICK LIFTS AND COMPACTED TO A MINIMUM OF 99% OF ITS SPMDD.
6. WHERE HARD SURFACE AREAS ARE CONSIDERED ABOVE THE TRENCH BACKFILL, THE TRENCH BACKFILL MATERIAL WITHIN THE FROST ZONE (ABOUT 1.8 M BELOW FINISHED GRADE) SHOULD MATCH THE SOILS EXPOSED AT THE TRENCH WALLS TO MINIMIZE DIFFERENTIAL FROST HEAVING. THE TRENCH BACKFILL SHOULD BE PLACED IN MAXIMUM 300 MM THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S SPMDD.
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. STORM MANHOLES AND CBMHS ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
10. 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.
11. ALL CATCHBASINS AND CATCHBASIN MANHOLES TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS EXTENDING IN TWO DIRECTIONS AT THE SUBGRADE LEVEL. SUBDRAIN IS TO BE PROVIDED AT THE TRANSITIONS BETWEEN DIFFERENT PAVEMENT COMPOSITIONS. THE SUBGRADE SURFACE SHOULD BE SHAPED TO PROMOTE WATER FLOW TO THE DRAINAGE LINES.
12. TO REDUCE LONG-TERM LOWERING OF THE GROUNDWATER LEVEL AT THIS SITE, CLAY SEALS SHOULD BE PROVIDED IN THE SERVICE TRENCHES. THE SEALS SHOULD BE AT LEAST 1.5 M LONG AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. GENERALLY, THE SEALS SHOULD EXTEND FROM THE FROST LINE AND FULLY PENETRATE THE BEDDING, SUB BEDDING AND COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPATIBLE BROWN SILTY CLAY PLACED IN MAXIMUM 225 MM THICK LOOSE LAYERS AND COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT STRATEGIC LOCATIONS AT NO MORE THAN 60 M INTERVALS IN THE SERVICE TRENCHES.

WATERMAIN NOTES:

1. SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER/ABOVE SEWER	W25 / W25.2	CITY OF OTTAWA
WATERMAIN	PVC DR 18	
HYDRANT	W19	CITY OF OTTAWA
VALVE AND VALVE BOX	W24	CITY OF OTTAWA

2. SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. 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 CITY OFFICIALS.
3. WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. ANY WATERMAIN WITH LESS THAN 2.4m COVER TO BE INSULATED PER THE SHOWN DETAIL.
4. PROVIDE MINIMUM 0.25m ABOVE, 0.5m IF BELOW, CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS PER CITY OF OTTAWA STANDARDS W25/W25.2
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
6. CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS CITY OF OTTAWA STANDARD DETAILS W-39, 40, 41, 42, 43 AND 44.
7. PROVIDE THERMAL INSULATION FOR WATERMAIN AT OPEN STRUCTURES PER CITY OF OTTAWA STANDARD DETAIL W-23.
8. IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

GRADING NOTES:

1. ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
2. NON-SPECIFIED EXISTING FILL ALONG WITH SITE-EXCAVATED SOIL COULD BE PLACED AS GENERAL LANDSCAPING FILL AND BENEATH EXTERIOR PARKING AREAS WHERE SETTLEMENT OF THE GROUND SURFACE IS OF MINOR CONCERN. AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
3. EXPOSED SUB-GRADES 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.
4. IF SOFT SPOTS DEVELOP IN THE SUBGRADE DURING COMPACTION OR DUE TO CONSTRUCTION TRAFFIC, THE AFFECTED AREAS SHOULD BE EXCAVATED AND REPLACED WITH OPSS GRANULAR B TYPE II MATERIAL. AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
5. FILL USED FOR GRADING BENEATH THE BASE AND SUBBASE LAYERS OF PAVED AREAS SHOULD CONSIST, UNLESS OTHERWISE SPECIFIED, OF CLEAN IMPORTED GRANULAR FILL, SUCH AS OPSS GRANULAR A, GRANULAR B TYPE II OR SELECT SUBGRADE MATERIAL. THIS MATERIAL SHOULD BE TESTED AND APPROVED PRIOR TO DELIVERY TO THE SITE. THE FILL SHOULD BE PLACED IN LIFTS NO GREATER THAN 300 MM THICK AND COMPACTED USING SUITABLE COMPACTION EQUIPMENT FOR THE LIFT THICKNESS. FILL PLACED BENEATH THE PAVED AREAS SHOULD BE COMPACTED TO AT LEAST 100% OF ITS SPMDD.
6. THE PAVEMENT GRANULAR BASE AND SUBBASE SHOULD BE PLACED IN MAXIMUM 300 MM THICK LIFTS AND COMPACTED TO A MINIMUM OF 100% OF THE MATERIAL'S SPMDD USING SUITABLE COMPACTION EQUIPMENT.
7. THE TRANSITION BETWEEN THE PAVEMENT STRUCTURE OVER THE PODIUM DECK SUBGRADE AND SOIL SUBGRADE BEYOND THE FOOTPRINT OF THE PODIUM DECK SHALL BE AS FOLLOWS:, A 5H:1V IS RECOMMENDED BETWEEN THE TWO SUBGRADE SURFACES. FURTHER, THE BASE LAYER THICKNESS SHOULD BE INCREASED TO A MINIMUM THICKNESS OF 500 MM BELOW THE TOP OF THE PODIUM SLAB A MINIMUM OF 1.5 M FROM THE FACE OF THE FOUNDATION WALL PRIOR TO PROVIDING THE RECOMMENDED TAPER.
8. MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
9. MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
10. ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
11. ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED.
12. BACKFILL MATERIAL BELOW SIDEWALK AND WALKWAY SUBGRADE AREAS OR OTHER SETTLEMENT SENSITIVE STRUCTURES WHICH ARE NOT ADJACENT TO THE BUILDINGS SHOULD CONSIST OF FREE-DRAINING,NON-FROST SUSCEPTIBLE MATERIAL. THIS MATERIAL SHOULD BE PLACED IN MAXIMUM 300 MM THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 98% OF ITS SPMDD UNDER DRY AND ABOVE FREEZING CONDITIONS.
6. REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
7. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.

PAVEMENT STRUCTURE:

PODIUM DECK - CAR ONLY PARKING AREAS
- 50mm HL3 OR SUPERPAVE 12.5
- 200mm OPSS GRAN "A" CRUSHED STONE
- 101.6mm RIGID INSULATION
- 31.8mm WATERPROOFING MEMBRANE AND PROTECTION BOARD

(SUBGRADE - REINFORCED CONCRETE PODIUM DECK)

PODIUM DECK -ACCESS LANE, FIRE TRUCK LANE, RAMP AND HEAVY TRUCK PARKING AREAS
- 40mm HL3 OR SUPERPAVE 12.5
- 50mm HL8 OR SUPERPAVE 19.0
- 300mm OPSS GRAN "A" CRUSHED STONE
- 101.6mm RIGID INSULATION
- 31.8mm WATERPROOFING MEMBRANE AND PROTECTION BOARD

(SUBGRADE - REINFORCED CONCRETE PODIUM DECK)

CAR ONLY PARKING AREAS
- 50mm HL3 OR SUPERPAVE 12.5
- 150mm OPSS GRAN "A" CRUSHED STONE
- 300mm OPSS GRAN "B" TYPE II

(SUBGRADE - EITHER IN SITU SOIL, FILL OR OPSS GRANULAR TYPE I OR II MATERIAL PLACED OVER IN SITU SOIL.)

HEAVY-TRUCK TRAFFIC AND LOADING AREAS
- 40mm HL3 OR SUPERPAVE 12.5
- 50mm HL8 OR SUPERPAVE 19.0
- 150mm OPSS GRAN "A" CRUSHED STONE
- 450mm OPSS GRAN "B" TYPE II

(SUBGRADE - EITHER IN SITU SOIL, FILL OR OPSS GRANULAR TYPE I OR II MATERIAL PLACED OVER IN SITU SOIL.)

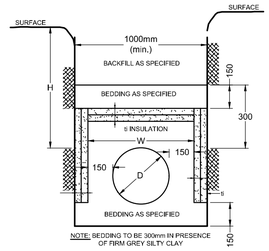
NOTE:
- MINIMUM PERFORMANCE GRADED (PG) 58-34 ASPHALT CEMENT.

SEWER & WATERMAIN INSULATION NOTES:

1. INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.
2. THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
2000-1700 / 2400-2100	50
1700-1400 / 2100-1800	75
1400-1100 / 1800-1500	100

T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 min.)
D = O.D OF PIPE (mm)



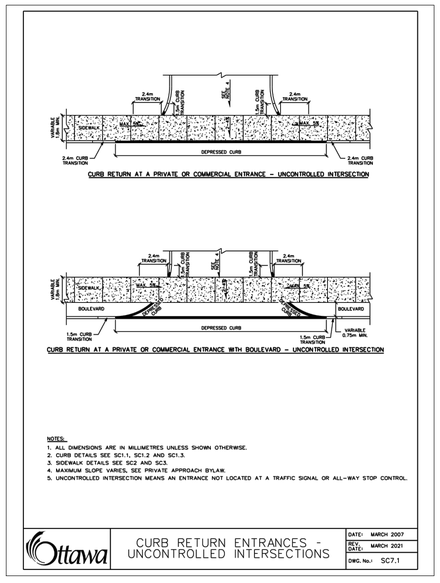
INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN
N.T.S

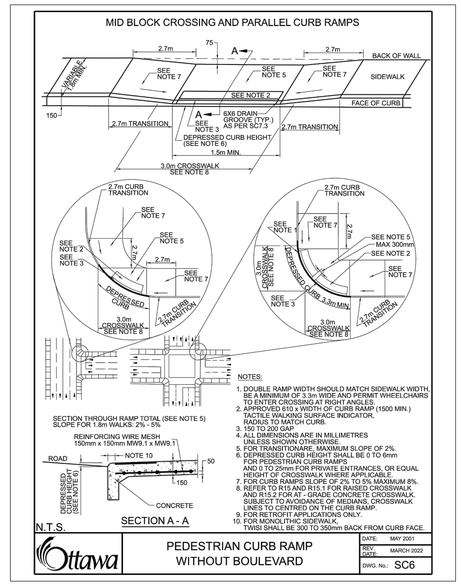
ICD SIZING AND FLOWS

STRUCTURE	TEMPEST LMF ICD SIZE	ICD INVERT (m)	T/G (m)	100-yr HGL (m)	100-yr HEAD (m)	100-yr RELEASE RATE (L/s)
CB02	Vortex 105	87.10	88.60	88.68	1.48	11.9
CB03A	Vortex 105	87.38	88.65	88.73	1.25	11.1

ACCUTROL RD-100-A-ADJ ROOF DRAIN TABLE

ROOF DRAIN ID	WEIR SETTING	5-YEAR EVENT		100-YEAR EVENT	
		HEAD	FLOW RATE	HEAD	FLOW RATE
RD-1	¼ OPEN	0.11m	1.14 L/s	0.14m	1.43 L/s
RD-2	¼ OPEN	0.11m	1.15 L/s	0.14m	1.46 L/s
RD-3	¼ OPEN	0.10m	1.11 L/s	0.14m	1.42 L/s
RD-4	¼ OPEN	0.10m	1.12 L/s	0.14m	1.43 L/s
RD-5	¼ OPEN	0.11m	1.20 L/s	0.15m	1.52 L/s
RD-6	¼ OPEN	0.11m	1.18 L/s	0.14m	1.50 L/s





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.

No.	REVISION	DATE	BY
6.	REVISED PER CITY COMMENTS	NOV 29/2024	ARM
5.	REVISED PER CITY COMMENTS	NOV 04/2024	ARM
4.	REVISED PER CITY COMMENTS	AUG 09/24	ARM
3.	REVISED PER UPDATED SITE PLAN	JUNE 10/24	ARM
2.	REVISED PER CITY COMMENTS	APR 23/24	ARM
1.	ISSUED FOR SITE PLAN APPLICATION	JULY 31/23	GJM

SCALE: AS SHOWN

DESIGN: ARM
CHECKED: GJM
DRAWN: ARM/CJF
CHECKED: GJM
APPROVED: GJM

LICENSED PROFESSIONAL ENGINEER — A.R. MESTIWARP — 100201604 — November 29/2024 — PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER — G.J. MacDONALD — Nov 29, 2024 — PROVINCE OF ONTARIO

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LOCATION
CITY OF OTTAWA
CASSETTE COMMONS - 119 RYAN REYNOLDS WAY

DRAWING NAME
NOTES AND DETAILS

PROJECT No. 123050
REV REV # 6
DRAWING No. 123050-ND

M:\2023\123050\CAD\Civil\123050-ND.dwg ND, Nov 04, 2024 - 10:38am, amestwarp

PLAN A1.DWG - 841mmx594mm