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 ELEVATIONS ARE GEODETIC.
8. REFER TO GEOTECHNICAL REPORT (No. 190227, DATED JUNE, 2019), PREPARED BY LRL ENGINEERING 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.
9. REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
10. REFER TO DEVELOPMENT SERVICING & STORMWATER MANAGEMENT REPORT (R-2019-193) PREPARED BY NOVATECH.
11. SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

SEWER NOTES:

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

ITEM	SPEC. No.	REFERENCE
STORM & CBMH / SANITARY / COMB. MH (1200mmØ)	701.010	OPSD
STORM MANHOLE (1500mmØ)	701.020	OPSD
CBMH MANHOLE (1800mmØ)	701.030	OPSD
CIRCULAR SAN / COMB. MH FRAME & COVER	S25 & S24	CITY OF OTTAWA
CIRCULAR STORM & CBMH FRAME & COVER	S25 & S24.1	CITY OF OTTAWA
AREA DRAIN	S31	CITY OF OTTAWA
EXTERIOR MECHANICAL DRAIN (FD)	FD-490-F-4	WATTS CANADA
SEWER TRENCH	S6	CITY OF OTTAWA
SANITARY / STORM SEWER / CB LEAD	PVC DR 35 or CONC 65-D	

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 1.5m 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. SUBDRAINS ARE TO BE INSTALLED WITH A RIGID PIPE EXTENDER AT ANY AND ALL CONNECTIONS TO CONCRETE STRUCTURES.
9. 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.
10. ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS UNLESS OTHERWISE INDICATED.
11. ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
12. ALL WEEPING TILE CONNECTIONS TO BE MADE TO THE PROPOSED STORM SEWER SYSTEM DOWNSTREAM OF ANY INLET CONTROL DEVICES.
13. THE CONTRACTOR IS 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.
14. CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE 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 AND ANY ALIGNMENT CHANGES, ETC.

WATERMAIN NOTES:

1. 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 BY CITY OF OTTAWA FORCES. 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
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION AT OPEN STRUCTURES	W23	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	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.
5. WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

PROPOSED 150mmØ WATER SERVICE TABLE

STATION	SURFACE ELEVATION	T/WM ELEVATION	COMMENTS
0+00	79.85±	77.45 *	150mmØ WM CONNECTION TO EX. 200mmØ WM
0+05.3	79.77	77.37	CROSS BELOW EX. 50mmØ GAS LINE (1.4m± CLEAR)
0+10	80.15	77.65	- - -
0+11.8	80.24	77.74	PROPERTY LINE / 150mmØ V&VB
0+12.1	80.25	77.75	CAP 1.0m FROM FOUNDATION WALL

* CONNECTION TO EXISTING 200mmØ WATERMAIN. EXACT ELEVATIONS 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.

ROOF DRAIN TABLE: AREA R-1 (ROOF DRAINS 1 to 5)

AREA ID *	ROOF DRAIN No. (WATTS MODEL)	ROOF DRAIN OPENING SETTING	1:5 YEAR RELEASE RATE	APPROX. 5-YR PONDING DEPTH	1:100 YEAR RELEASE RATE	APPROX. 100-YR PONDING DEPTH
R-1	RD 1 (RD-100-A-ADJ)	3/4 EXPOSED	0.95 L/s	11 cm	1.58 L/s	15 cm
R-1	RD 2 (RD-100-A-ADJ)	CLOSED	0.32 L/s	7 cm	0.32 L/s	12 cm
R-1	RD 3 (RD-100-A-ADJ)	1/4 EXPOSED	0.79 L/s	11 cm	0.95 L/s	15 cm
R-1	RD 4 (RD-100-A-ADJ)	CLOSED	0.32 L/s	11 cm	0.32 L/s	15 cm
R-1	RD 5 (RD-100-A-ADJ)	1/4 EXPOSED	0.79 L/s	10 cm	0.87 L/s	14 cm

* REFER TO THE 'DEVELOPMENT SERVICING AND STORMWATER MANAGEMENT REPORT' (R-2019-193) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.

**ALL CONTROLLED FLOW ROOF DRAINS FOR THE PROPOSED BUILDING TO BE WATTS 'ADJUSTABLE ACCUTROL' ROOF DRAINS.

INTERNAL SWM STORAGE SYSTEM

DESIGN EVENT	STORAGE SYSTEM CONTROLLED FLOW	STORAGE VOLUMES	
		REQUIRED	PROVIDED
1:2 YR	1.26 L/s	0.7 m³	> 5.0 m³
1:5 YR	1.26 L/s	1.3 m³	
1:100 YR	1.26 L/s	3.7 m³	
1:100+20%	1.26 L/s	4.9 m³	

NOTES:
1. ALL DRAINAGE FROM AREA B-1 (ALL PROPOSED EXTERIOR MECHANICAL DRAINS + WEEPING TILE DRAINAGE SYSTEM) TO BE DIRECTED TO THE INTERNAL STORMWATER STORAGE SYSTEM. REFER TO THE ARCHITECTURAL AND MECHANICAL PLANS FOR DETAILS.
2. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT SIZE AND DETAILS OF INTERNAL STORMWATER STORAGE SYSTEM.
3. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATION AND CONNECTIONS AND DETAILS OF THE INTERNAL STORMWATER STORAGE SYSTEM.

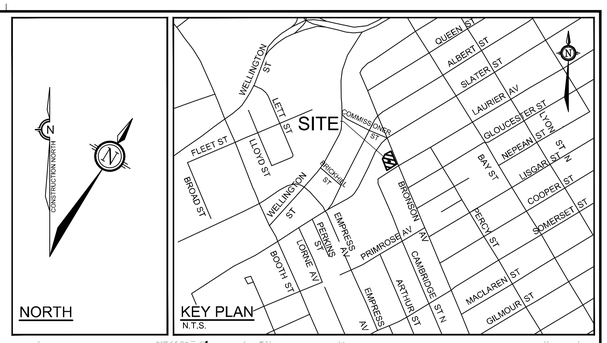
SITE FLOWS & STORMWATER MANAGEMENT TABLE

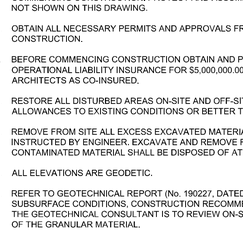
DESIGN EVENT	PRE-DEVELOPMENT CONDITIONS		POST-DEVELOPMENT CONDITIONS							
	UNCONTROLLED FLOW (L/s)	ALLOWABLE RELEASE RATE (L/s)	SAN FLOWS (L/s)	R-1 FLOW (L/s)	B-1 FLOW (L/s)	A-1 FLOW (L/s)	A-2 FLOW (L/s)	A-3 FLOW (L/s)	TOTAL FLOW (L/s)	REDUCTION IN FLOW (L/s OR %)*
1:5 YR	17.7	10.5	1.2	3.2	1.3	0.1	0.1	2.5	8.5	9.2 or 52%
1:100 YR	34.6	10.5		4.0	1.3	0.2	0.2	3.5	10.5	24.1 or 70%

* REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

INLET CONTROL DEVICE DATA TABLE - CBMH 01

DESIGN EVENT	ICD TYPE (VORTEX MODEL)	DIAMETER OF OUTLET PIPE (mm)	DESIGN FLOW (L/s)	DESIGN HEAD (m)	WATER ELEVATION (m)	VOLUME (m³)	AVAILABLE STORAGE
1:2 YR	HYDROVEX (MODEL 75 VHV-1)	250mmØ PVC	2.1	0.34	79.49	6.0	19.1 m³
1:5 YR			2.5	0.46	79.61	9.9	
1:100 YR			3.5	0.89	80.04	19.1	



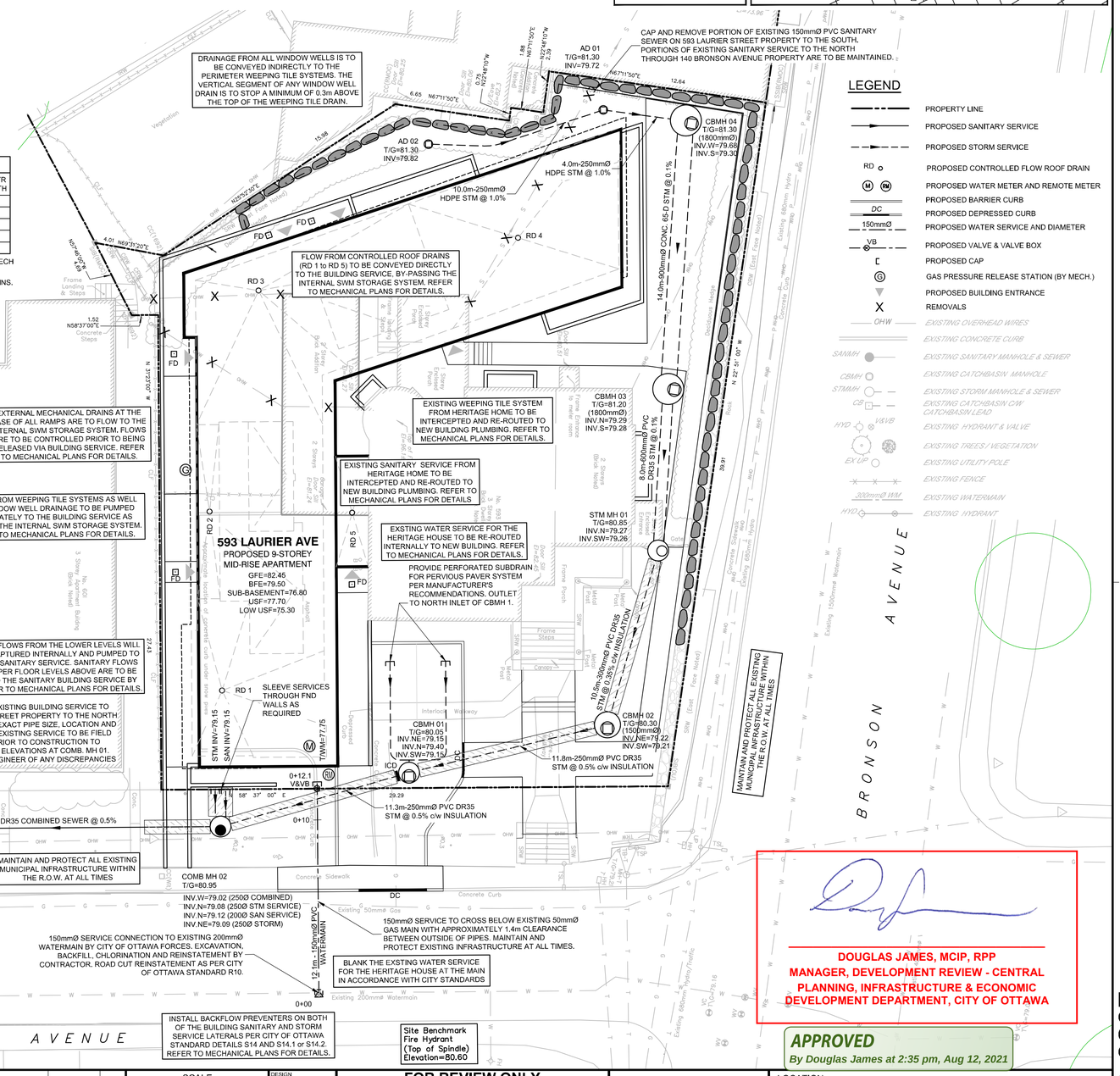


INSULATION DETAIL FOR SHALLOW SEWERS
NOT TO SCALE

ti = 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)
1500-1200	75
1200-900	100
900-600	125

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 1500mm (SEE TABLE ABOVE)



LEGEND

- PROPERTY LINE
- PROPOSED SANITARY SERVICE
- PROPOSED STORM SERVICE
- RD — PROPOSED CONTROLLED FLOW ROOF DRAIN
- M EM — PROPOSED WATER METER AND REMOTE METER
- PROPOSED BARRIER CURB
- DC — PROPOSED DEPRESSED CURB
- 150mmØ — PROPOSED WATER SERVICE AND DIAMETER
- VB — PROPOSED VALVE & VALVE BOX
- PROPOSED CAP
- G — GAS PRESSURE RELEASE STATION (BY MECH.)
- PROPOSED BUILDING ENTRANCE
- X — REMOVALS
- OHW — EXISTING OVERHEAD WIRES
- EXISTING CONCRETE CURB
- SANMH — EXISTING SANITARY MANHOLE & SEWER
- CBMH — EXISTING CATCHBASIN MANHOLE
- STMMH — EXISTING STORM MANHOLE & SEWER
- CB — EXISTING CATCHBASIN C/W CATCHBASIN LEAD
- HYD — VALVE — EXISTING HYDRANT & VALVE
- EXISTING TREES / VEGETATION
- EX UP — EXISTING UTILITY POLE
- EXISTING FENCE
- 300mmØ WM — EXISTING WATERMAIN
- HYD — EXISTING HYDRANT

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
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No.	REVISION	DATE	BY
2	REVISED SITE PLAN / ISSUED FOR SITE PLAN APPROVAL	JUL 31/20	MS
1	ISSUED FOR SITE PLAN APPROVAL	DEC 9/19	MS

SCALE 1:150
1:150 0 2 4 6
DESIGN SM / MS
CHECKED MS
DRAWN BF / SM
CHECKED JLS
APPROVED MS

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M. SAVIC 100102651 July 31, 2020 PROVINCE OF ONTARIO

DOUGLAS JAMES, MCIP, RPP
MANAGER, DEVELOPMENT REVIEW - CENTRAL
PLANNING, INFRASTRUCTURE & ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

APPROVED
By Douglas James at 2:35 pm, Aug 12, 2021

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LOCATION
CITY OF OTTAWA
593 LAURIER AVENUE

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 119019
REV REV # 2
DRAWING No. 119019-GP

D07-12-19-0207

PLAN #18087