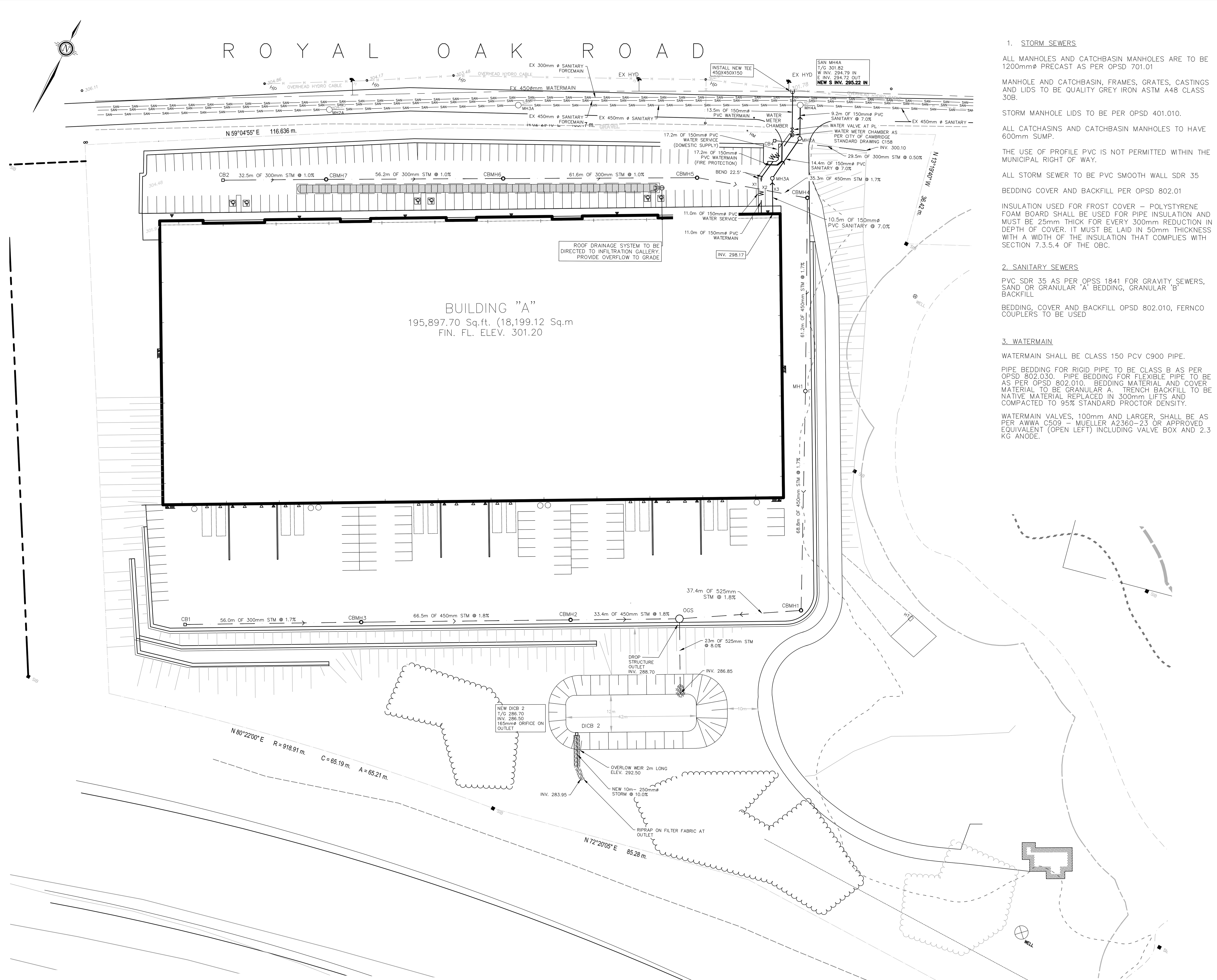
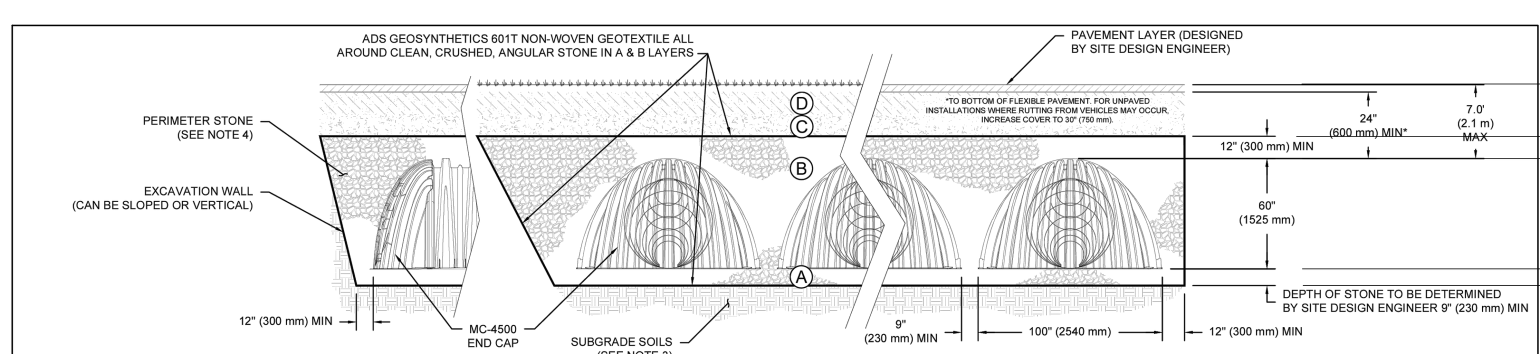




NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - [illegible]
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF [illegible]

1. STORM SEWERS

ALL MANHOLES AND CATCHBASIN MANHOLES ARE TO BE 1200mmø PRECAST AS PER OPSD 701.01

MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

STORM MANHOLE LIDS TO BE PER OPSD 401.010.

ALL CATCHASINS AND CATCHBASIN MANHOLES TO HAVE 600mm SUMP.

THE USE OF PROFILE PVC IS NOT PERMITTED WITHIN THE MUNICIPAL RIGHT OF WAY.

ALL STORM SEWER TO BE PVC SMOOTH WALL SDR 35

BEDDING COVER AND BACKFILL PER OPSD 802.01

INSULATION USED FOR FROST COVER – POLYSTYRENE FOAM BOARD SHALL BE USED FOR PIPE INSULATION AND MUST BE 25mm THICK FOR EVERY 300mm REDUCTION IN DEPTH OF COVER. IT MUST BE LAID IN 50mm THICKNESS WITH A WIDTH OF THE INSULATION THAT COMPLIES WITH SECTION 7.3.5.4 OF THE OBC.

2. SANITARY SEWERS

PVC SDR 35 AS PER OPSS 1841 FOR GRAVITY SEWERS, SAND OR GRANULAR 'A' BEDDING, GRANULAR 'B' BACKFILL

BEDDING, COVER AND BACKFILL OPSD 802.010, FERNCO COUPLERS TO BE USED

3. WATERMAIN

WATERMAIN SHALL BE CLASS 150 PCV C900 PIPE.

PIPE BEDDING FOR RIGID PIPE TO BE CLASS B AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRANULAR A. TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.

WATERMAIN VALVES, 100mm AND LARGER, SHALL BE AS PER AWWA C509 – MUELLER A2360–23 OR APPROVED EQUIVALENT (OPEN LEFT) INCLUDING VALVE BOX AND 2.3 KG ANODE.

PVC WATERMAIN SHALL HAVE TWU SOLID COPPER, AWG10 TRACER WIRE STRAPPED TO TOP AS PER DGSSMS STANDARDS AT 5 METRE INTERVALS.

ANODES CONNECTED TO EACH METALLIC FITTING USING BRASS GROUNDING CLAMPS, AND SHALL NOT BE ATTACHED TO TRACER WIRES, AND TRACER WIRE SHALL NOT BE CONNECTED TO WATERMAIN FITTINGS.

ALL METALLIC WATERMAIN FITTING AND APPUTENANCES ARE TO BE WRAPPED WITH AN APPROVED PETROLEUM SYSTEM.

ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 2m COVER.

CITY OF CAMBRIDGE TO SUPPLY WATER METER. CONTRACTOR TO INSTALL METER, ALL VALVES, PIPING AND REMOTE METER READOUT AT LOCATION ON BUILDING EXTERIOR ACCEPTABLE TO THE CITY.

BACKFLOW PREVENTION DEVICES ARE REQUIRED AT THE WATER METER AND OTHER LOCATION AS NECESSARY IN ACCORDANCE WITH CSA AND OBC REGULATIONS. DEVICES TO BE TESTED ANNUALLY BY A LICENSED PLUMBER WITH A COPY OF THE CERTIFICATION REPORT SUBMITTED TO THE REGION.

SERVICE PROVIDING FIRE FLOWS MUST BE PRESSURE TESTED TO 200psi AS PER OBC PLUMBING CODE.

WATER SERVICE TESTING AND COMMISSIONING SHALL COMPLY WITH DGSSMS SECTION D.2.8. 'COMMISSIONING'.

THE DESIGN, CONSTRUCTION, INSTALLATION AND TESTING OF WATERMAIN AND SERVICE PIPING SHALL BE IN CONFORMANCE WITH OPSS 441.

THE TRENCH SHALL BE BACKFILLED BETWEEN JOINTS BEFORE TESTING TO PREVENT MOVEMENT OF PIPE.

THE AMOUNT OF LEAKAGE SHALL NOT EXCEED THE ALLOWABLE LEAKAGE SPECIFIED IN OPSS 441.

ALL CONTROL VALVES SHALL BE FULLY CLOSED AND OPENED UNDER SYSTEM WATER PRESSURE TO ENSURE PROPER OPERATION.

PRESSURE LEAKAGE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE CONSULTING ENGINEER.

CERTIFICATION SHALL BE COMPLETED BY THE CONSULTANT INDICATING THE TESTS WERE COMPLETED AND PASSED, AND SUBMITTED TO THE ENGINEERING SERVICES INSPECTOR.

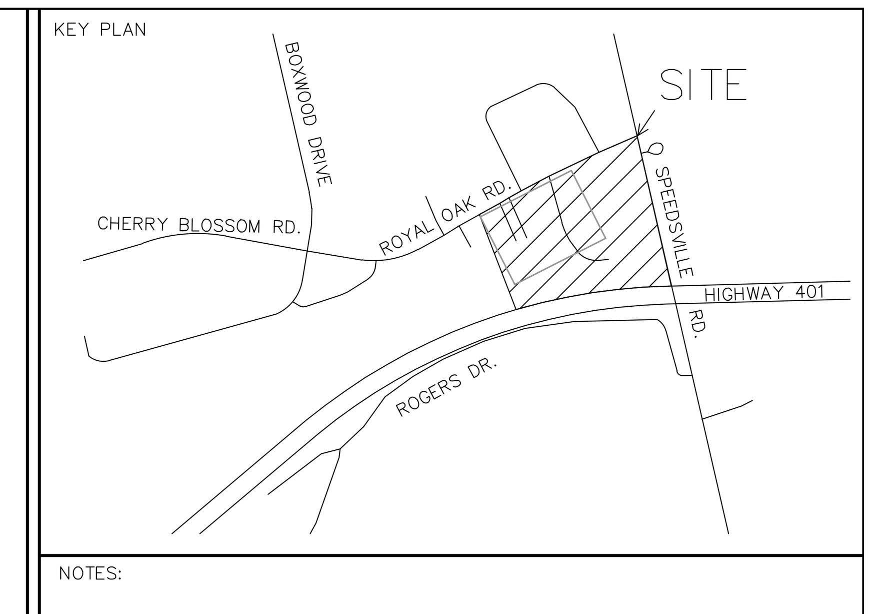
SANITARY INVERTS

STRUCTURE	T/G	INV. IN	INV. OUT	COVER
MH2A	301.77	S 296.36	N 295.86	5.76
MH3A	300.80	S 297.43	N 297.37	3.28
EX. MH4A	301.82	W 294.79 **S 295.22**	E 294.72	6.65

STORM INVERTS

STRUCTURE	T/G	INV. IN	INV. OUT	COVER
CBMH1	298.30	E 293.77	W 293.74	4.00
CBMH2	299.00	W 294.56	E 294.50	3.99
CBMH3	298.25	W 295.90	E 295.75	2.05
CB1	298.65	–	E 296.85	1.50
OGS	299.55	W 293.90 (DROPPED STRUCTURE) E 293.90 (DROPPED STRUCTURE)	S 293.82	5.12
MH1	300.20	N 294.84	S 295.81	4.91
CBMH4	300.65	W 296.94	S 296.88	3.26
CBMH5	300.50	W 296.53	E 297.54	3.55
CBMH6	300.60	W 298.34	E 298.31	1.96
CBMH7	300.70	W 298.93	E 298.90	1.47
CB2	300.65	–	E 299.25	1.10
CB4	301.40	–	E 300.25	1.10

KEY PLAN



NOTES:

—SAN— —SAN—	EXISTING SANITARY
—ST— —ST—	EXISTING STORM
—W— —W—	EXISTING WATERMAIN
—H— —H—	EXISTING HYDRO
—G— —G—	EXISTING GAS
—BC— —BC—	EXISTING BELL
	PROPOSED SANITARY
	PROPOSED STORM
	PROPOSED WATERMAIN

INTERSECTING PIPES

INTERSECTION	TOP PIPE	BOTTOM PIPE	CLEARANCE
X1	STM OBV. 296.51	WATER INV. 297.01	0.50
X2	STM OBV. 296.49	WATER INV. 296.99	0.50
X3	STM OBV. 296.43	SAN INV. 297.69	1.26

No.	REVISIONS	BY	DATE
2	SITE PLAN APPLICATION COMMENTS	JG	MAY 16, 2024
1	SITE PLAN APPLICATION COMMENTS	SL	AUG 18, 2023

CONSTRUCTION

TENDER

ISSUE FOR APPROVALS

ISSUE BLOCK

247 ROYAL OAK ROAD

REGION OF WATERLOO — CITY OF CAMBRIDGE

SERVICING PLAN
BUILDING A

K. SMART ASSOCIATES LIMITED
CONSULTING ENGINEERS AND PLANNERS
KITCHENER — SUDBURY

LICENSED PROFESSIONAL ENGINEER
SANDRA SWANTON
100119707
MAY 16/24
PROVINCE OF ONTARIO

DESIGNED BY: S.S.	SCALE: 1:750	DATE: NOV. 16, 2022	
CHECKED BY: S.S.		SHEET	
DRAWN BY: T.B.			
CHECKED BY: S.S.		2 OF 7	
FILE No. 21–280	REVISION No. 2		

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