Kollaard Associates
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Kemptville, Ontario K0G 1J0

Civil • Geotechnical •
Structural • Environmental •
Hydrogeology •
(613) 860-0923
FAX: (613) 258-0475

January 15, 204

Kollaard File # 240021 – LOT94

Phoenix Homes
18A Bentley Avenue
Ottawa, Ontario
K2E 6T8

Attn: Catherine Buck
Tel: 613-723-9227 x 191
Email: CBuck@phoenixhomes.ca

Re: Proposed Single Family Dwelling, Lot # 94 Silver Dart Private, Diamondview Estates, Carp, City of Ottawa, Kollaard Associates File # 240021

With regard to structural issues only, Kollaard Associates has reviewed the following drawings:

- Phoenix Homes, Lot # 94, Diamondview, Pages # 1M to 9M, Dated January 15, 2024
- Grandor, High Roof Truss Layout, Kingswood Elevation 'M', DV 3-94, Dated 01/12/2024
- Grandor, 2nd Floor Joist Layout, Kingswood Elevation M Bedroom Above Solarium, Dated 2022/04/26
- Grandor, 1st Floor Joist Layout, Kingswood Elevation M Bedroom Above Solarium, Dated 2022/07/04

Kollaard Associates offers the following comments:

Second Floor Plan – Pages # 4M:

1. It is the opinion of Kollaard Associates that the proposed lintels and supporting posts shown on Phoenix Homes Pages # 4M are adequate.

2. The proposed tall wall noted on Phoenix Homes Pages # 1 is adequate.

3. Posts supporting girders may consist of built up 2x6 posts as indicated on Phoenix Homes Pages # 4M and are laterally supported by plywood or OSB sheathing (i.e. posts form part of sheathed exterior walls unless noted).

4. Truss design is by others.

Ground Floor Plan – Pages # 3M:

5. It is the opinion of Kollaard Associates that the proposed lintels, beams and supporting posts shown on Phoenix Homes Pages # 3M are adequate

6. Ramset a 2x6 to the top flange of all steel beams to attach the above framing, floor joists and flush LVL beams.

7. The proposed single angle connection of two steel beams noted on Phoenix Homes Sheet # 8M is adequate.

8. Posts supporting girders may consist of built up 2x6 posts as indicated on Phoenix Homes Pages # 3M and are laterally supported by plywood or OSB sheathing (i.e. posts form part of sheathed exterior walls unless noted).

9. Truss design is by others.

10. Floor joist design and flush LVL beams within the floor structure are by the manufacturer.

Basement Plan – Pages # 2M:

11. It is the opinion of Kollaard Associates that the proposed steel beams and posts shown on Phoenix Homes Sheet # 2M are adequate.

12. The front porch slab reinforcement described on Phoenix Homes Sheet # 1M is adequate.

13. The foundation walls at the bottom of the window openings that exceed 47¼" in width (or the sum of the widths of the window openings exceed 25% of the length of the wall) are considered to be laterally unsupported as per 2012 OBC 9.15.4.3. The proposed reinforcement noted on Phoenix Homes Pages # 2C is adequate to withstand the lateral earth pressures.

14. The remaining proposed foundation walls conform to 2012 OBC Table 9.15.4.2.A. ensuring that the grade difference between the basement slab and the exterior grade (including the garage slab) does not exceed 7'-6½" for the full height 8'-10" foundation walls.

15. The proposed strip footings, interior pad footings and exterior pad footings shown on Phoenix Homes Page # 2M and noted on Phoenix Homes Sheet # 1M are adequate.

16. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer. The posts supporting the flush LVL beams shown on Phoenix Homes Sheet # 2M are adequate.

General Notes:

17. All gravity loads to be carried to foundation through solid blocking.

18. Truss design is by others.

19. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer.

20. The self supporting stairs are to be designed by the stair manufacturer.

21. All dimension lumber, except non-load bearing 8 ft 2x6 studs to be No.2 grade SPF or better.

22. Non-load bearing 8 ft 2x6 studs to be No.3 or Stud grade SPF or better.

23. All guards to be as per OBC SB-7, unless otherwise mentioned and designed by others.

24. All brick lintels to be as per OBC Table 9.20.5.2.B.

25. Unless otherwise noted, LVL to be 1.8E 3000Fb LVL (Canadian Limit States bending strength of at least 39.5 MPa) with 1¾" nominal width or better.

26. Pemco Steel adjustable posts are designed and approved by the manufacturer. The adjustable steel posts are designed for a maximum allowable load of 106.8 kN at a maximum height of 9'-3".

27. All 3" x 3" x 3/16" HSS posts c/w 6" x 6" x 3/8" top and bottom bearing plates.

28. The assumed soil bearing resistance of 100 kPa is to be verified prior to construction.

29. Note that the truss manufacturer/floor joist supplier has sized the flush LVL beams and girder trusses shown on the building drawings. The comments provided by Kollaard Associates in this report are based in part on the design indicated in the truss and floor layouts. If a different truss and/or floor layout is used in construction, comments made in this report may no longer be valid. Provide Kollaard Associates with the full truss package prior to construction.

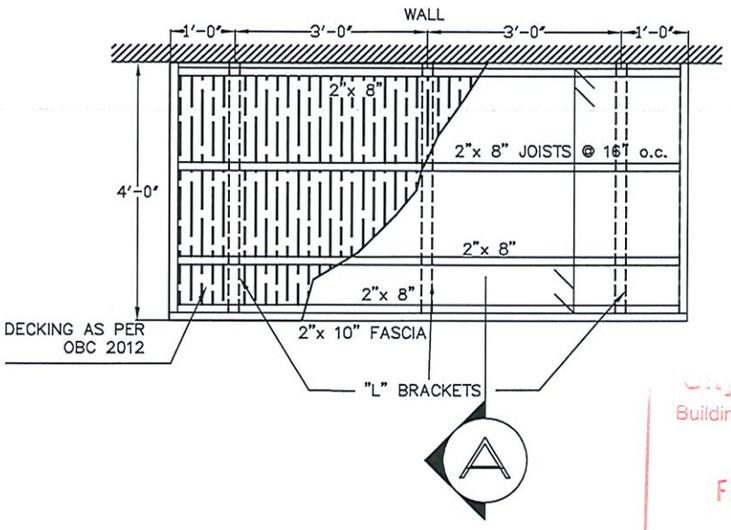
30. Comments provided in this report are made in consideration of Part 9 and Part 4 (where applicable) of the 2012 OBC as amended.

31. This report constitutes a review of the structural information indicated on the building plans cited in this report for the client indicated above.

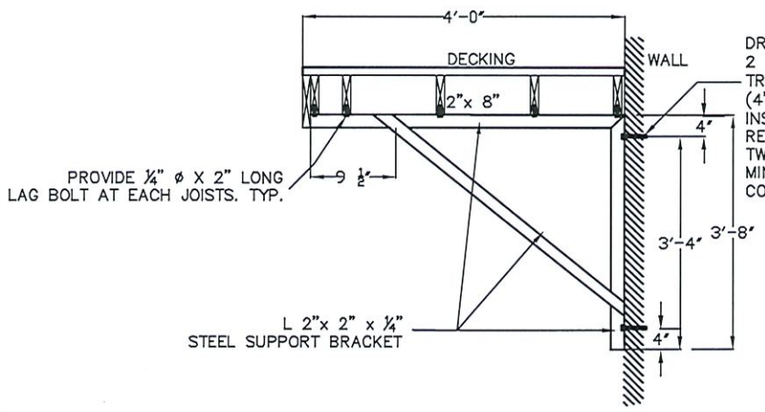
We trust this letter provides sufficient information for your present purposes. If you have any questions concerning this letter please do not hesitate to contact our office.

Sincerely,
Kollaard Associates Inc.

Christopher Cogliati, P.Eng.



PLAN



DRILL INTO EXISTING FOUNDATION WALL
2 –1/2" ø RED HEAD STAINLESS STEEL TRUBOLT WEDGE ANCHOR
(4" MIN. EMBEDMENT)
INSTALL AS PER MANUFACTURERS RECOMMENDATIONS.
TWO BOLTS PER BRACKET LEG.
MIN. EDGE DISTANCE FROM TOP OF CONCRETE WALL=4"

SECTION 'A'

NOTES:
STEEL
–ALL STRUCTURAL STEEL WORK INCLUDING DESIGN OF ALL COMPONENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA–S16–09.
–HOLLOW STRUCTURAL SECTIONS TO CAN/CSA G40.20 GRADE 350, CLASS C OF H.
– STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.21 GRADE 300W
ALL WORK SHALL CONFORM OBC 2012
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.
FOR ADDITIONAL INFORMATION, SEE ENGINEERING DWGS.

ALL HARDWARE TO BE HOT–DIP GALVANIZED
CONCRETE MIN. STRENGTH: 25 MPA

No.	Revision	Date	By

Contractor must verify all dimensions on the job and report any discrepancy to the architect before proceeding with the work. All drawings and specifications are instruments of service and the property of the architect which must be returned at the completion of the work. Drawings are NOT to be scaled.

Estructura Inc.
TEL: (819) 918-4382
EMAIL: estructurainc@yahoo.com

DS DESIGN STRUCTURAL

Client: CUT RITE CONSTRUCTION
Project Name:
Sheet Title: DECK CONNECTION 4'-0"x8'-0"
Drawn By: DS
Checked By: -
Project No.:
Scale: N.T.S.
Date: DECEMBER 2019
Drawing No.: SK-1
File Name:

Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority	
Application No:	Model/Certification Number

A. Project Information

Building number, street name		Unit number	Lot/Con
202 Silver Dart Private			94
Municipality	**Postal code**	**Reg. Plan number / other description**	
West Carleton		4M-1593	

B. Prescriptive Compliance [indicate the building code compliance package being employed in this house design]

SB-12 Prescriptive (input design package): Package: A1 Table: 3.1.1.2.A(IP)

C. Project Design Conditions

Climatic Zone (SB-1):	**Heating Equipment Efficiency**	**Space Heating Fuel Source**
■ Zone 1 (< 5000 degree days)	■ ≥ 92% AFUE	■ Gas □ Propane □ Solid Fuel
□ Zone 2 (≥ 5000 degree days)	□ ≥ 84% < 92% AFUE	□ Oil □ Electric □ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		**Other Building Characteristics**
Area of walls = _____ m^2 or 4423 ft^2	W, S & G % = 16.4	□ Log/Post&Beam □ ICF Above Grade □ ICF Basement □ Slab-on-ground □ Walkout Basement □ Air Conditioning □ Combo Unit □ Air Sourced Heat Pump (ASHP) □ Ground Sourced Heat Pump (GSHP)
Area of W, S & G = _____ m^2 or 724 ft^2	Utilize window averaging: □Yes ■No	

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

Energy Efficiency Substitutions

□ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6))

□ Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7))

□ Airtightness substitution(s)		
Airtightness test required (Refer to Design Guide Attached)	□ Table 3.1.1.4.B Required: _____	Permitted Substitution: _____
	□ Table 3.1.1.4.C Required: _____	Permitted Substitution: _____
	Required: _____	Permitted Substitution: _____

Building Component	**Minimum RSI / R values or Maximum U-Value(1)**		**Building Component**	**Efficiency Ratings**
Thermal Insulation	Nominal	Effective	**Windows & Doors** Provide U-Value(1) or ER rating	
Ceiling with Attic Space	R60		Windows/Sliding Glass Doors	25
Ceiling without Attic Space	R31		Skylights/Glazed Roofs	0.49
Exposed Floor	R31		**Mechanicals**	
Walls Above Grade	R22		Heating Equip.(AFUE)	96%
Basement Walls	R12+10ci	R21.12	HRV Efficiency (SRE% at 0° C)	75%
Slab (all >600mm below grade)	--		DHW Heater (EF)	0.8
Slab (edge only ≤600mm below grade)	R10		DWHR (CSA B55.1 (min. 42% efficiency))	# Showers 1
Slab (all ≤600mm below grade, or heated)	R10		Combined Heating System	NO

(1) U value to be provided in either W/(m^2·K) or Btu/(h·ft^2·F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the building code]

Qualified Designer Declaration of designer to have reviewed and take responsibility for the design work.		
Name	BCIN	Signature
Catherine Buck	46674	

Form authorized by OHBA, OBOA, LMCBO. Revised December 1, 2016.

Mechanical Design Report
Low rise residential

Location of Installation	**Address**	**House Builder** PHOENIX
	Application Number	**House Model (if applicable)** KINGSWOOD 6 BEDROOM

Installing Contractor	**Name** **HARDING MECHANCIAL**	
	Address **2210 CAVANMORE RD**	
	City **OTTAWA**	**Postal Code** **KOA 1LO**
	Telephone Number **613-831-2257**	**Fax Number** **613-831-9011**

SYSTEM DESIGN PARAMETERS

Combustion Appliances 9.32.3.1.(1)

a) [X] Direct vent (sealed combustion) only
b) [ ] Positive venting induced draft (except fireplaces)
c) [ ] Natural draft, B-vent or induced draft fireplace
d) [ ] Solid Fuel (including fireplaces)
e) [ ] No Combustion Appliances

Heating System

[X] Forced Air
[ ] Non-Forced Air (Other - _____)
[ ] Electric Space Heat
[ ] Radiant Floor Heat (attach pipe details)
[ ] Geothermal (attach loop, pipe & well details)
[ ] High Velocity Residential (attach duct details)

House Type 9.32.3.1.(2)

[X] I Type a) or b) appliances only, no solid fuel
[ ] II Type I except with solid fuel (including fireplace)
[ ] III Any Type c) appliance = Part 6 Design
[ ] IV Electric space heat
[ ] Other: No forced air = Option 4

Ventilation System

[ ] CAN/CSA-F326
[ ] HRV - Exhaust Ducts / Forced Air System
[X] HRV - Simplified Connection to Forced Air System
[ ] HRV - Full Ducting / Not Coupled to Forced Air System
[ ] Part 6 Design (Other - _____)

EQUIPMENT DESIGN REQUIREMENTS

Total Ventilation Capacity 9.32.3.3.(1)

						TOTAL
Master Bedroom	1	x	10 L/s	=	10 L/s	
Unfinished Basement	~~1~~ 0	x	10 L/s	=	~~10~~ 0	
Other Habitable Rooms	~~17~~ 20	x	5 L/s	=	~~85~~ 100	~~105~~ 110 **T.V.C.**

Principal Ventilation Capacity 9.32.3.4.(1)

Master Bedroom	1	x	15 L/s	=	15	
Other Bedrooms	5	x	7.5 L/s	=	37.5	- 52.5 **P.V.C.**

Required Supplemental Ventilation Capacity (T.V.C. less P.V.C.) = ~~52.5~~ 57.5

Furnace size: _____ GMEC961004CN 1000,000 BTU'S_____ KJ

Air conditioner size: _____GSX16048 4.0 TON_____ KJ (If provided / applicable)

Heating / Cooling Equipment sized according to heat loss/gain calculations of CAN/CSA F280: Yes

Geothermal Equipment designed according to CAN/CSA-C448.2: No

Hydronic Equipment designed according to CAN/CSA-B214: No

Duct (and pipe) schematic attached including sizes, runs and material used: Yes

VENTILATION EQUIPMENT

Heat Recovery Ventilator

Model: CLEAN COMFORT VH70200ESNC HRV

105 L/s High 52.5 L/s Low

City of Ottawa
Building Services Branch
FEB 26 2024
Building Code Reviewed
Signature

City of Ottawa
JAN 25 2024
101 Centrepointe Dr
BCSB

SITE COPY
City of Ottawa

Exhaust Fans

	Location	Model	L/s	Sones	Principal or Supplemental
1	BATH	DX90	45	2.5	PRINCIPAL
2	ENSUITE	EC50	25/25	3.	SUPPLEMENTAL
3	BATH1	EC50	25	3.	SUPPLEMENTAL
4	BATH 2	EC50	25	3.	SUPPLEMENTAL

EQUIPMENT EFFICIENCIES (Please also refer to Energy Efficiency Design Summary)

Heating system: 96% AFUE

Cooling system (if applicable):

Water heater: 0.8 EF

HRV: 75 % sensible efficiency at 0 degrees:

60 % sensible efficiency at -25 degrees:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the 2012 Ontario Building Code.

Name: LINDA MCPARLAN Company Name: HARDING MECHANICAL

Signature: Linda McParlan Date: AUG 12/22 BCIN 24379 HRAI # 6080

IMBALANCE @ TVCC (Total Ventilation Capacity Condition) for systems with more exhaust than supply @ TVCC

RESET

W-3A line #

1. FLOOR AREA

(total heated floor area including basement; count crawl space at 1/2 actual area)

Total Floor Area 5519 ft2 — 301

2. ASSUMED AIR CHANGES PER HOUR AT 50 PASCAL'S

Tight R-2000 0.5 ACH | Typical R-2000 1.0 ACH | Prairies/North (new) 1.0 ACH

Atlantic (new) 1.5 ACH | Other provinces (new) 1.4 ACH | Older homes 2.5 ACH

or actual test _____

House ACH50 1.4 — 302

3. COMBUSTION APPLIANCE DEPRESSURIZATION LIMIT

If spillage susceptible, = -5pa. flow factor = 0.022

If non-spillage susceptible, = -10pa flow factor = 0.037

Depressurization Limit @ TVCC -10 pa — 303

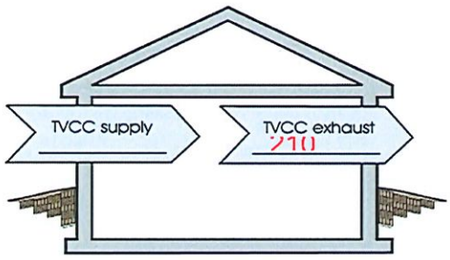
Flow Factor 0.037 — 304

4. ALLOWABLE NET EXHAUST

Floor Area (301) 5519 ft^2 **x** ACH50 (302) 1.4 **x** Flow Factor (304) 0.037 =

Allowable Net Exhaust @ TVCC 286 cfm — 305

5. ACTUAL NET EXHAUST



TVCC Exhaust 210 cfm — 306

- minus

TVCC Supply _____ cfm — 307

= equals

Actual Net Exhaust @ TVCC 210 cfm — 308

Note: If supply is greater than exhaust, use worksheet #W-3B

6. REQUIRED MAKE-UP AIR FLOW

Note:
If **Actual** Net Exhaust is **less** than **Allowable** Net Exhaust **no action** is required.

Actual Net Exhaust @ TVCC (line 308) 210 cfm

- minus

Allowable Net Exhaust @ TVCC (line 305) 286 cfm

= equals

Required Make-Up Airflow @ TVCC -76 cfm — 309

At Depressurization Limit (line 303) -10 pa

City of Ottawa
Building Services Branch
FEB 26 2024
Building Code Reviewed
Signature

CITY OF OTTAWA
JAN 25 2024
101 Centrepointe Dr.
BCSB

7. DESCRIPTION OF MAKE-UP AIR SYSTEM

8. ON-SITE TEST DEPRESSURIZATION TEST ☐ Required ☑ Not Required — 310

Prepared By:	HRAI #:	Job Name:	
LINDA MCPARLAN	6080	KINGSWOOD 6 BEDROOM	
Signature: LINDA MCPARLAN	Date: AUG 12/22	Job #:	Official Use:

SITE COPY
City of Ottawa

Basement
1" = 1" (Full Size)
1:53 = 1"

Phoenix

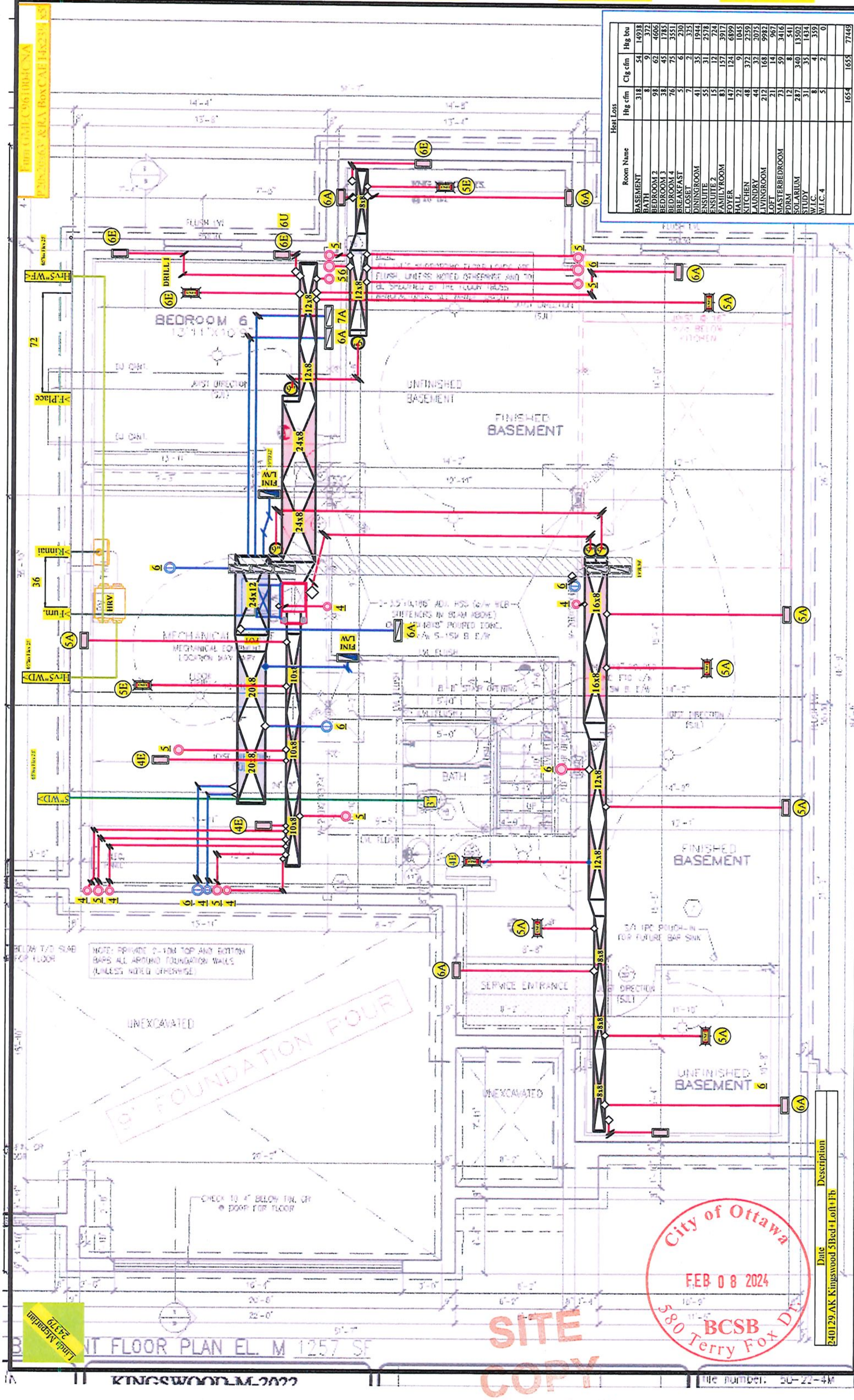
Kingswood 5Bed+Loft+Fb

2024-01-29

240129.AK

Heat Loss

Room Name	Htg cfm	Clg cfm	Htg btu
BASEMENT	318	54	14938
BATH	8	9	372
BEDROOM 2	98	62	4606
BEDROOM 3	38	45	1785
BEDROOM 4	76	75	3551
BREAKFAST	5	6	230
CLOSET	7	2	325
DININGROOM	41	35	1944
ENSUITE	55	31	2578
ENSUITE 2	15	12	724
FAMILYROOM	83	157	3917
FOYER	147	124	6899
HALL	22	9	1045
KITCHEN	48	372	2259
LAUNDRY	44	32	2075
LIVINGROOM	212	168	9982
LOFT	21	14	967
MASTERBEDROOM	73	59	3416
PDRM	12	8	541
SOLARIUM	287	340	13502
STUDY	31	35	1434
W.I.C	8	4	359
W.I.C.4	5	2	0
	1654	1655	77449



Date	Description
	240129.AK Kingswood 5Bed+Loft+Fb

Linda Mcparlan
24379

BASEMENT FLOOR PLAN EL. M 1257 SF

KINGSWOOD-M-2022

file number: 50-22-4M

1:53 = 1" | 1st Floor | 1" = 1" (Full Size) | Phoenix | Kingswood 5Bed+Loft+Fb | 2024-01-29 | 240129.AK

Heat Loss			
Room Name	Htg cfm	Clg cfm	Htg btu
BASEMENT	318	54	14938
BATH	8	9	372
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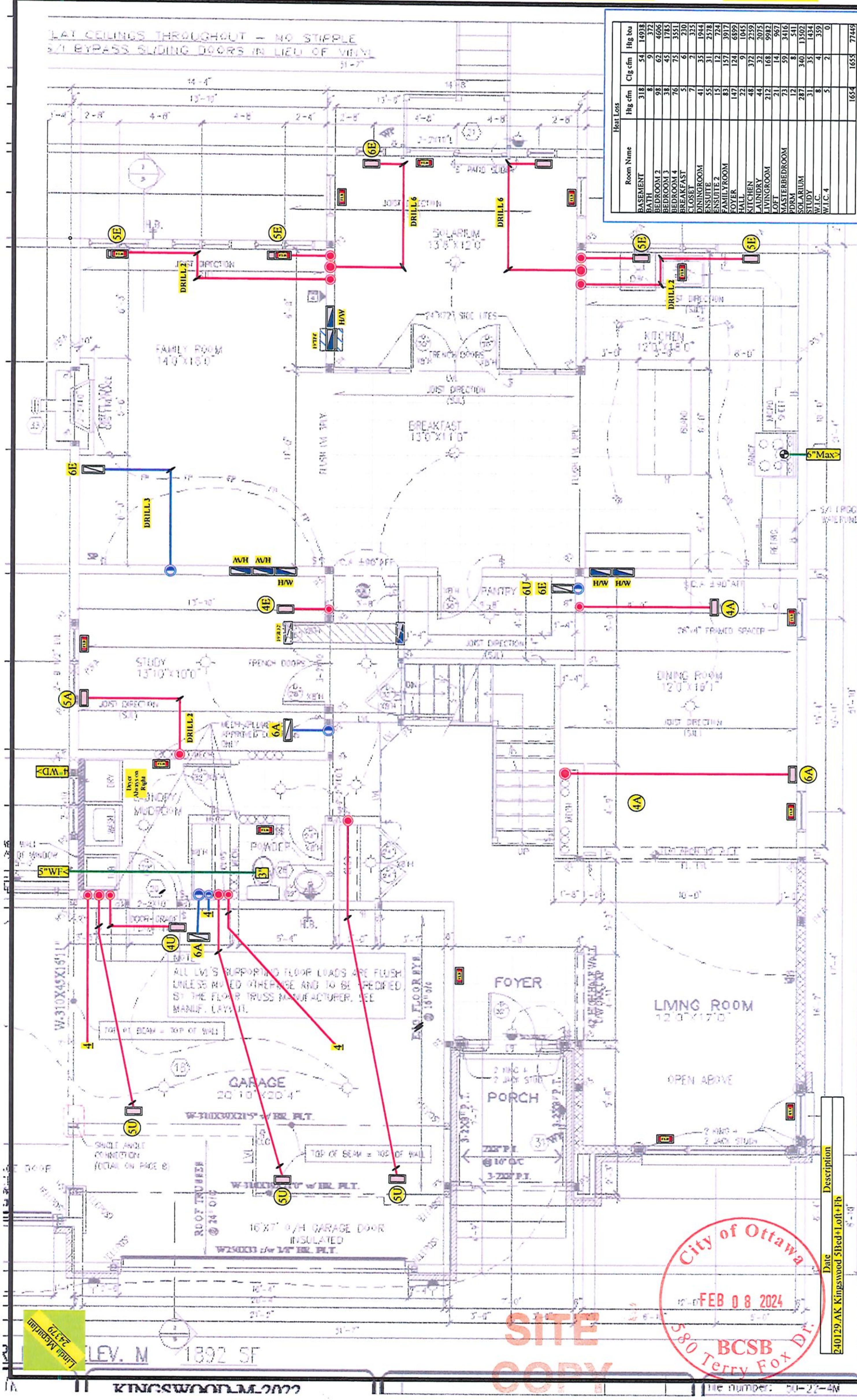
W.I.C.	8	4	359
W.I.C. 4	5	2	0
	1654	1655	77449



Date	Description
	240129.AK Kingswood 5Bed+Loft+Fb

1.53=1" | 2nd Floor 1" = 1" (Full Size) | Phoenix | Kingswood 5Bed+Loft+Fb | 2024-01-29 | 240129.AK

Heat Loss			
Room Name	Htg cfm	Clg cfm	Htg btu
BASEMENT	318	54	14938
BATH	8	9	372
BEDROOM 2	98	62	4606
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	1654	1655	77449