AGENDA OF THE PLANNING
COMMISSION
CITY OF BIRCHWOOD VILLAGE
WASHINGTON COUNTY, MINNESOTA
August 22nd, 2024
7:00 P.M.

CALL TO ORDER

PUBLIC FORUM

APPROVE AGENDA

REGULAR AGENDA

A. Approve July 25, 2024, PC Meeting Minutes* (pp. 2-3)
B. Set November and December alternative meeting dates to avoid holidays
C. Appeal Regarding Approval of the Building Permit at 160 Cedar
    1. Review of Appeal
        a. Appeal* (pp. 4-6)
        b. Building Permit* (pp. 7-42)
        c. City Engineer Response to Appeal* (pp. 43-54)
    2. Recommendation on the Appeal for the City Council

ADJOURN

MEETING MINUTES (Draft)

Birchwood Planning Commission Regular Meeting

City Hall - 7:00 PM Regular Meeting 7/25/2024

Submitted by Michael Kraemer – secretary

COMMISSIONERS PRESENT: – Michael McKenzie – Vice Chairperson, Michael Kraemer, Casey Muhm,

COMMISSIONERS ABSENT:, Andy Sorenson, Michelle Maiers-Atakpu

OTHERS PRESENT: Council Member Ryan Hankins – Council Member

TO ORDER: Meeting called to order by Vice-Chairperson McKenzie at 7:05 PM.

1. PUBLIC FORUM
    a. none
2. APPROVE AGENDA
    a. Motion by Muhm, 2nd by McKenzie to approve agenda as presented. Vote: Yes - 3, No – 0. Motion passed.
3. REGULAR AGENDA
    a. Item A – Review/Approve June 27, 2024 Planning Commission Meeting Minutes.
        i. Motion by Muhm, 2nd by Kraemer to approve the minutes. Vote: Yes – 3, No – 0, Motion passed.
    b. Item B – Revisions to Variance Application Requirements – Replacement Subsection 304.020 City Code
        1. Review and Discuss Variance Application –
            i. Document centered around providing as much variance application guidance as possible in effort to improve the quality and completeness of the variance applications being submitted to the Planning Commission.
        2. Discuss Recommendations to City Council
            a. Planning Commission **Recommendation**: It is the opinion of the Planning Commission that the draft document as presented was a good discussion on the details and expectations on the quality and thoroughness expected by the Planning Commission. Advisory Motion by McKenzie and 2nd by Muhm recommending the Council approve the document as submitted. Advisory Vote: Yes – 3, No – 0.
4. **Suggested additional agenda Item for August, 2024 Planning Commission meeting.** Set dates for November and December, 2024 Planning Commission meetings since the 4th Thursday of each of these month's conflicts with Thanksgiving and Christmas holidays.

ADJOURN 7:37 PM

a. Motion by Motion by Muhm, 2nd by Kraemer to adjourn meeting. Vote: Yes - 3, No – 0. Motion passed.

160 Cedar Street
Birchwood, MN 55110

July 15, 2024

City Clerk
207 Birchwood Avenue
White Bear Lake, MN 55110

Re: Appeal of City permit issued for 160 Cedar Street

Dear City Clerk:

Pursuant to the letter we received from your city attorney dated June 18, 2024, we are appealing the permit issued by the City of Birchwood Village for 160 Cedar Street in Birchwood. There are a number of code provisions the City has failed to apply. These are the issues and the code that should have been applied:

1. "Birchwood Code 301.055 (7) Stormwater and erosion control plans. For a building permit, the applicant must submit stormwater and erosion control plans prepared and signed by a licensed professional engineer." This has not been done.
   And "The stormwater management plan must detail how stormwater will be controlled to prevent damage to adjacent property". There are no drainage control structures or any provisions for impoundment/containment of water at and within 160 Cedar Street.

2. "Birchwood Code 301 NOTE: A separate Conditional Use Permit is not required for a land disturbance activity in conjunction with construction as part of a building permit as granted. However, as part of the Building Permit application, the applicant shall provide information required pursuant to Section 306.030 and shall follow all provisions of Section 302.050 ...and 302.055".

   a. Birchwood Code 302.050 states "to reduce the unwanted harmful effects of stormwater, it is policy of the City of Birchwood Village that each property within the City manage its own stormwater to limit runoff into streets, waterways, and neighboring properties."

   b. "Birchwood Code 302.055 (2)(a)(1) No construction or alteration of new or existing structures or land topography shall be done to increase the rate of storm water runoff from the parcel as compared to the runoff rate before such construction or alteration unless: . . . ." (Note: none of the exceptions listed apply.)

Per the builder's survey dated 4/25/2024, the increase in impervious surface is 3500 square feet. Much of that impervious surface will drain directly onto our property. There are no

containment provisions included in the plan, nor are there any calculations for runoff or analysis of any soils to determine the infiltration rate of storm water.

The city engineer, at a site meeting with us on June 11, 2024, stated he calculated there would be no increased runoff based on a "quick calculation that I just did in my head" and he included in his impervious "analysis" a garage that was torn down three years prior. The city code does not provide for the long- demolished garage to be included since the runoff must be "compared to the runoff rate before such construction or alteration". And the engineer's "analysis" was not presented as a "signed" evaluation.

c. Birchwood Code 306.030 (a)(6) requires "a description of soils of the site, including a map indicating soil types of the areas to be disturbed." This has not been done.

A Site Construction Plan is required including

"(2) Locations and dimensions of all temporary soil and construction materials." This has not been done.

"(3) Locations and dimensions of all construction site erosion control and permanent stabilization measures to meet City and State Code both during and after the construction process." This has not been done.

"(4) Schedule of anticipated starting and ending dates of each land disturbance activity and construction site erosion control, storm water runoff control, and inspection, and maintenance activity." This has not been done.

Plat of Final Site Conditions is required including

"(3) A drainage plan of the developed site including final storm water drainage systems and natural drainage patterns on and immediately adjacent to the site with delineation of the direction in which storm water is conveyed from the site." This has not been done.

d. Birchwood Code 306.030(b) "Demonstration that the work will not adversely affect ...the adjacent parcels of land." This has not been done.

Our property will incur additional runoff due to the city's failure to apply the city code as required. We have consulted a licensed, professional engineer. They have been advised that low area delineated by elevation 1002 feet on the site survey, and endorsed as the drainage area by the city engineer, will cause water to intrude onto our property at that elevation. Due to the lack of runoff calculations and analysis of soil types, it is impossible to know how much water will pond and how long it will take to infiltrate. Regardless, the ground floor elevation of our house is at least five feet below this ponding area. This additional runoff puts our house at risk for water infiltration and/or flooding—neither of which have we previously experienced. The ground floor elevation is finished, and any water damage to it will be substantial. This damage will be a direct result of the City's failure to require any drainage controls as mandated by city code.

Furthermore, the building area of the lot immediately to the west of 160 Cedar Street drains almost exclusively to our property. In our May 17, 2024 email to the city engineer, we attempted to have City Engineer Marcus Johnson address this issue. He responded, "That is where I recommended coming up with a drainage agreement between the three neighbors essentially in an agreement saying if there are any issues back there that the three property owners will come up with a solution together". This statement is in contravention to the planning and building requirements of the city's code.

The city has a responsibility to protect our property. This failure will result in substantial, ongoing damage to our property and is an unlawful taking of our property without just compensation. We ask that you remedy the problem immediately by requiring the above-referenced code be applied and enforced as part of the permit issued for 160 Cedar Street.

We appreciate your prompt response.

Very truly yours,

Rachael & David Drew

Rachael and David Drew

City of Birchwood Village

☑ APPROVED

Permit#: 24-0038

Permit

Application Date:March 27, 2024
Permit#: 24-0038
Location: 176 Cedar Street Lot C
Applicant Name: MORSE, AVERY
Email:
Property Owner Name: HUSNIK PAUL
Property Owner Email amorse330@gmail.com
Contractor:
Contractor Email: amorse330@gmail.com
Contractor License:
License Expires on: HomeOwner

Expiration Date: April 8, 2025
Parcel #: 3003021230069
Permit Type/use: **Building Permit**
Address: 176 CEDAR STREET (LOT C)
Phone:
Address: 2370 COUNTY ROAD J #105, WHITE BEAR LAKE MN 55110
Phone:
Address:
Phone: 763-291-3021
Project Valuation: $432,414

DESCRIPTION OF WORK: Building New 2 Story Home with Lookout basement. East Lot of Subdivision of (176) Cedar St.

Fees

Date	Description	Paid Date	Amount	Paid	Balance
April 18, 2024	Plan Check Fee		$1,858.05		
April 18, 2024	State Surcharge		$216.20		
April 18, 2024	Building Permit Fee		$2,858.55		
May 3, 2024	WAC Fee		$1,960.00		
May 3, 2024	SAC Fee		$2,485.00		
May 3, 2024	Engineering Fee		$447.00		
May 3, 2024	Sewer Connection Fee		$2,016.00		
	TOTAL: Permit Fees		**$11,840.80**		**$11,840.80**

Inspectors

Please allow 24 hours minimum notice for inspection requests.

Inspection Type	Inspector Name	Contact Information
Building /HVAC/ Plumbing	Jack Kramer	Phone: 651-351-5051 Email: inspjack@msn.com
Sewer Water	John Manship	Phone: 651-426-9386
Electrical	Don Edel	Phone: 507-210-8233

Birchwood Village Contacts

Main Phone# 651-426-3404
Email Address:
therese.bellinger@cityofbirchwoodvillage.com

Permit Approved On: 4 / 16 / 24
By the City of Birchwood Village

See Attached
Jack Kramer - Building Official

City of Birchwood Village

Permit#: 24-0038

Permit

Application Date:March 27, 2024
Permit#: 24-0038
Location: 176 Cedar Street Lot C
Applicant Name: MORSE, AVERY
Email:
Property Owner Name: HUSNIK PAUL
Property Owner Email amorse330@gmail.com
Contractor:
Contractor Email: amorse330@gmail.com
Contractor License: Home owner
License Expires on: — / — / —

Expiration Date: April 8, 2025
Parcel #: 3003021230069
Permit Type/use: **Building Permit**
Address: 176 CEDAR STREET (LOT C)
Phone:
Address: 2370 COUNTY ROAD J #105, WHITE BEAR LAKE MN 55110
Phone:
Address:
Phone: 763-291-3021
Project Valuation: $PENDING PLAN REVIEW
$ 432,414.00

DESCRIPTION OF WORK: Building New 2 Story Home with Lookout basement on Lot C (176) Cedar St.

Fees

City Fee: $ 2,858.55
Plan City Fee $ 1,858.05
State Surcharge $ 316.20
Total Fee: 4,932.80

Date	Description	Paid Date	Amount	Paid	Balance
April 16, 2024	Building Permit Fee		$0.00		
	TOTAL: Permit Fees		$0.00		$0.00

Inspectors

Please allow 24 hours minimum notice for inspection requests.

Inspection Type	Inspector Name	Contact Information
Building /HVAC/ Plumbing	Jack Kramer	Phone: 651-351-5051 Email: inspjack@msn.com
Sewer Water	John Manship	Phone: 651-426-9386
Electrical	Don Edel	Phone: 507-210-8233

Birchwood Village Contacts

Main Phone# 651-426-3404
Email Address:
therese.bellinger@cityofbirchwoodvillage.com

Permit Approved On: 4 / 16 / 2024
By the City of Birchwood Village
Jack Kramer
Jack Kramer - Building Official

City of Birchwood Village

Intellipay <noreply@intellipay.com>
Fri 5/3/2024 1:46 PM
To:City of Birchwood Village <info@cityofbirchwood.com>

City of Birchwood Village

Payment Receipt

Avery Morse
4902 S Tri Oak Circle NE
Wyoming MN 55092
763-291-3021
amorse330@gmail.com

Your bank account will be debited the amount of the payment.
Please ensure there are sufficient funds available in your bank account to cover this amount.

Customer Account:	Building
Invoice:	C42868068
Payment Amount:	**$11,840.80**
Service Fee:	**$2.00**
Payment Total:	**$11,842.80**
Payment Date:	05/03/2024
Bank Name:	
Bank Account:	Checking account ending in 510
Reference Number	C42868068P73122885
Comments:	
Payment Origin:	Online Payment Terminal
Agent:	Online Payment Page
Merchant#:	M8145

160 Cedar St

Building/Planning/Zoning Permit

Permit Type:	Building
Permit Number:	24-0038

Thank you,
City of Birchwood Village
Support: 651-426-3403Email: info@cityofbirchwood.com

* The service fee is non-refundable.

CERTIFICATE OF SURVEY

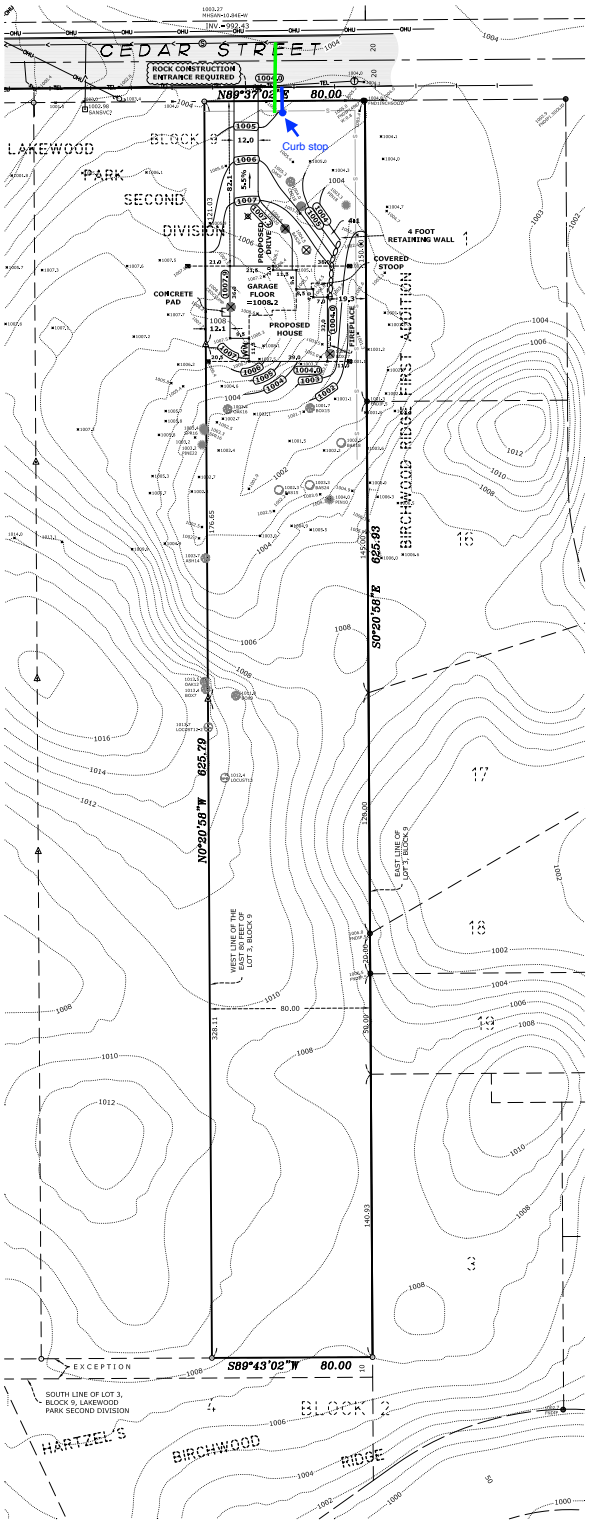
~for~ AVERY MORSE
~of~ 176 CEDAR STREET
BIRCHWOOD, MN

LEGAL DESCRIPTION

The East 80.00 feet of Lot 3, Block 9, LAKEWOOD PARK SECOND DIVISION, Washington County, Minnesota. Except the south 10.00 feet thereof.

GRAPHIC SCALE
30 0 15 30 60
1 INCH = 30 FEET

NORTH



LEGEND

- DENOTES IRON MONUMENT FOUND
- DENOTES IRON MONUMENT SET
- 800.0 DENOTES PROPOSED ELEVATION
- 1011.2 DENOTES EXISTING ELEVATION
- DENOTES DIRECTION OF DRAINAGE
- DENOTES WOOD HUB/METAL SPIKE AT 11 FOOT OFFSET (UNLESS OTHERWISE NOTED)
- DENOTES SANITARY SEWER MANHOLE
- DENOTES TELEPHONE MANHOLE
- DENOTES EXISTING CONTOURS
- GAS DENOTES UNDERGROUND GAS LINE
- TEL DENOTES UNDERGROUND TELEPHONE LINE
- DENOTES BITUMINOUS SURFACE
- DENOTES PROPOSED RETAINING WALL
- DENOTES PROPOSED CONTOURS
- S DENOTES SILT FENCE

HOUSE NOTES

- BUILDER TO VERIFY HOUSE DIMENSIONS, SEWER DEPTH AND FOUNDATION DEPTH.
- DRIVEWAYS ARE SHOWN FOR GRAPHIC PURPOSES ONLY. FINAL DRIVEWAY DESIGN AND LOCATION TO BE DETERMINED BY CONTRACTOR.
- FINISHED GRADE ADJACENT TO HOME SHALL BE 0.5 FEET BELOW TOP OF BLOCK EXCEPT AT DRIVEWAY AND PATIO.

SURVEY NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 03/07/24.
- Bearings shown are on Washington County datum.
- Parcel ID Number: 30-030-21-23-0069.
- Address: 176 Cedar Street, White Bear Lake, MN 55110.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- Contours shown are a combination of field work and MNGeo Lidar Topography.
- Location of utilities existing on or serving the surveyed property determined by:
  - Observed evidence collected pursuant to Section 5.E.iv.
  - Markings requested by E.G. Rud & Sons, Inc. per Gopher State One Call Ticket No. 212601645.
  - Record drawings provided by the City of Birchwood's engineering department.
- Excavations were not made during the process of this survey to locate underground utilities and/or structures. The location of underground utilities and/or structures may vary from locations shown hereon and additional underground utilities and/or structures may be encountered. Contact Gopher State One Call Notification Center at (651) 454-0002 for verification of utility type and field location, prior to excavation.
- Finished grade adjacent to home shall be 0.5 feet below top of block except at driveway and patio.

TREE DETAIL

- DENOTES ELEVATION
- DENOTES TREE QUANTITY
- DENOTES TREE SIZE IN INCHES
- DENOTES TREE TYPE
- DENOTES TREE TO BE REMOVED

DIAG: 47.50 X 70.50 = 85.01
(8'4" POURED WALL LOOKOUT BASEMENT)

PROPOSED ELEVATIONS

TOP OF BLOCK = 1009.3
GARAGE FLOOR = 1008.2 (DROP 8 INCHES)
LOWEST OPENING = 1004.5
LOWEST FLOOR = 1001.3
TOP OF FOOTING = 1001.0

SETBACKS

FRONT ROAD = 40 FEET
SIDE STREET = 40 FEET
SIDE YARD = 10 FEET
REAR YARD = 10 FEET

EXISTING ZONING

RESIDENTIAL

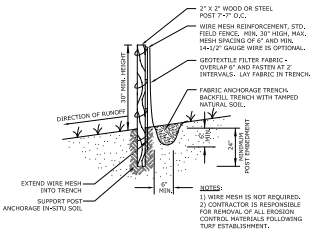
IMPERVIOUS SURFACE CALCULATIONS

TOTAL PARCEL AREA ..... 50,069 S.F. (1.15 Acres)

PROPOSED HOUSE, GARAGE, STOOP ..... 2,027 S.F.
PROPOSED DRIVEWAY ..... 1,457 S.F.
PROPOSED CONCRETE ..... 16 S.F.
TOTAL IMPERVIOUS SURFACE ..... 3,500 S.F.
PERCENT IMPERVIOUS 7.0%

SEWER AND WATER INSTRUCTIONS

1. SEWER LINE: CONTACT JOHN MANSHIP 651-426-9386 AND STEVE THATCHER 612-867-7234 ON THE DAY THE HOLE IS OPENED UP.
2. WATER LINE: CONTACT JOHN MANSHIP 651-426-9386 AND STEVE THATCHER 612-867-7234 ON THE DAY THE HOLE IS OPENED UP.



SILT FENCE

N.T.S.

E. G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

JASON E. RUD
Date: 3/14/2024 License No. 41578

DRAWN BY: RAF	JOB NO: 240185HS	DATE: 03-14-24
CHECK BY: JER	FIELD CREW: DT/CT	

NO.	DATE	DESCRIPTION	BY
1			
2			
3			

S:\RUD\CAD\24PROJ\240185HS\240185HS.DWG

240185HS

ALUM SOFFIT & FASCIA
SIDES & REAR: VINYL SIDING
FRONT: LP SMARTSIDE

FRONT ELEVATION
SCALE 1/4"=1'-0"

HOMES BY HELM
DESIGNING & DRAFTING
OF FINE CUSTOM HOMES
jhelm78@YAHOO.COM
PHONE 651-815-3727

PLANS DRAWN BY JOHN HELM

BUILDER:

NEW HOME FOR:

DATE: 3-1-2024

SHEET 1 OF 10

HOMES BY HELM
DESIGNING & DRAFTING
OF FINE CUSTOM HOMES
jhelm78@yahoo.com
PHONE 651-815-3727

PLANS DRAWN BY:

DATE:

BUILDER:

NEW HOME FOR:

SHEET OF

ALUM SOFFIT & FASCIA

REAR ELEVATION

SCALE 1/4"=1'-0"

7/12 PITCH

1'-9"

6|12

12|16

2'-0"

VINYL SIDING

9|12

12|3

8" LAP LP SIDING

3'-0"

GRADE BEYOND

LEFT SIDE ELEVATION

SCALE 1/4" = 1'-0"

6|12

6|12

12|6

2'-0"

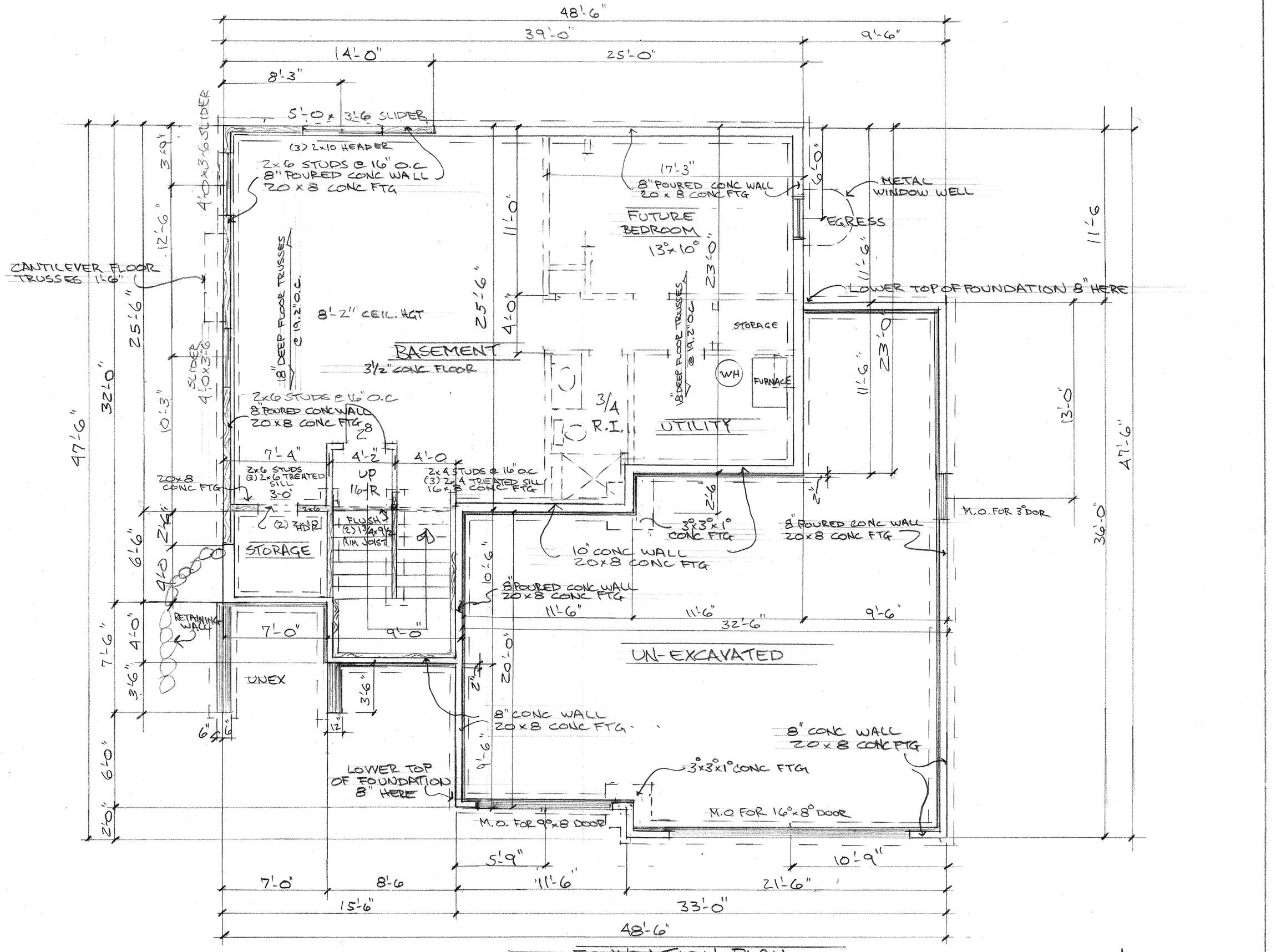
ROOF LINE BEYOND

1'-0"

2'-0

3'-0"

VINYL SIDING



FOUNDATION PLAN

SCALE 1/4"=1'-0"

SHEET 9 OF 10

39x23 = 897
27.5x2.5 = 69
16x6 = 96
9x4 = 36
1098

48'-6"
39'-0
9'-6"
27'-4"
11'-8
8'-3"
14'-3"
7'-6

SLIDER 2'-6 x 5'-0 | PICTURE 5'-0 x 5'-0 | SLIDER 2'-6 x 5'-0
6'-0" 6'-10" PATIO DOOR
(2) 1 3/4 x 7 1/2 LVL HEADER
6'-0 x 4'-6 CASEMENT
BOTTOM OF KITCHEN WINDOW TO BE 2" ABOVE COUNTERTOP

(2) 2x6 LVL STUDS
(3) 1 3/4 x 11 7/8 LVL HEADER
VERIFY SIZE W/ SUPPLIER
(3) 1 3/4 x 9 1/2 LVL HEADER
TOP OF WINDOWS ARE 7'-10" ABOVE FLOOR
FIXED 3'-0 x 1'-6"
7'-0"
3'-3"
1'-6"
18" GAS FIREPLACE
9' CEIL. HGT
GREAT ROOM
15'-6" x 21'-0"
18" DEEP FLOOR TRUSSES @ 19.2" O.C.
9' CEIL. HGT
DINING AREA
12'-0" x 16'-0"
DW
2'-0"
4'-0"
11'-6" x 15'-6"
KITCHEN
36" RANGE & OVEN
4'-0"
12" SNACK BAR
ISLAND
OVEN & MICRO
6'-0"
36" REF'G
11'-6"
16'-1"
25'-6"
3'-8"
23'-0"
MECH. CHASE
ALL EXTERIOR DIMENSIONS TO BE FROM WALL SHEATHING TO WALL SHEATHING
11'-6"
13'-0"
47'-6"
32'-0"
25'-6"
18'-6"
47'-6"

FIXED 3'-0 x 1'-6"
3'-3"
1'-6"
2'-0"
4'-2"
6'-11"
4'-0"
45°
3'-0" x 7'-0"
2'-6"
3'-2" CASED OPNG
BENCH
MUD ROOM
3'-0"
2'-6"
WALK-IN PANTRY
6'-3"
Hooks
7'-4"
4'-2"
4'-2"
WALK-IN CLOSET 6'-0" x 8'-9"
24"
2'-8"
5'-9"
4'-0" x 3'-6" LANDING
TREATED STAIRS
CEDAR RAILING
3°
4'-0" x 4'-0" CONC PAD

FLUSH
(3) 1 3/4 x 11 7/8 LVL BEAM VERIFY SIZE W/ SUPPLIER
UP 17 R
3°
DOWN 16 R
FOYER
6'-6" x 10'-0"
METAL RAILING
HALF WALL W/ PREFAB CAP
6'-8"
4'-0 x 5'-6" SLIDER
6'-6"
3'-6"
6"
3°
5'-10"
5'-8"
5/8" GYB BD TO RIDGE
SHEETROCK CEILING
11'-6"
9'-6"
(3) 1 3/4 x 18" LVL WOOD BEAM
VERIFY SIZE W/ SUPPLIER
32'-6"
18" DEEP FLOOR TRUSS @ 19.2" O.C.
10'-6"
WALL LINE ABOVE
3 CAR GARAGE
3 1/2" MIN. CONC FLOOR SLOPE TO OVERHEAD GAR. DR.
INSULATE FLOOR W/ SPRAY FOAM
(2) 1 3/4 x 11 7/8 LVL RIM JOIST
ROOF TRUSSES @ 24" O.C
24'-6"
LINE OF OVERHEAD GARAGE DOORS
2x6 GARAGE STUDS @ 16" O.C.
(2) 1 3/4 x 11 7/8 LVL HEADER
16'-3" x 8'-0" GAR. DOOR
10'-9"
21'-6"
36'-0"
4'-0"
7'-0"
2'-0"
15'-6"
9'-6"
(2) 2x10 WOOD BEAM
3'-6"
COVERED CONC STOOP
18"
6x6 TREATED WOOD POSTS
4'-0"
FIXED 2'-0 x 2'-0 MULL 4'-0 x 4'-6 MULL CASEMENT
3'-0"
9'-6"
ROOF TRUSSES @ 24" O.C.
(2) 1 3/4 x 11 7/8 LVL HEADER
9'-0" x 8'-0" GAR. DOOR
5'-9"
11'-6"
7'-0"
8'-6"
15'-6"
33'-0"
48'-6"

FIRST FLOOR SQ FT 1098
SECOND FLOOR SQ FT 1200
TOTAL SQ FT 2298

FIRST FLOOR PLAN

SCALE 1/4"=1'-0"

22
39x23 --- 897
28x8.5 --- 238
21x2.5 --- 52
9x1.5 --- 13
1200

39'-0"
11'-6 2'-6" 9'-6" 15'-3
6'-0" 4'-6 7'-9"
5'-0 x 4'-0 SLIDER
TEMP 3'-6 x 4'-0 SLIDER
7'-4" x 4'-0 SLIDER EGRESS
(2) 1 3/4 x 9 1/2 LVL HEADER
(2) 2x10 HDR
(3) 1 3/4 x 9 1/2 LVL HEADER
2'-6" x 5' TUB SHOWER BATH
8' CEIL HGT
9' CEIL HGT.
MASTER SUITE
14'6 x 13'6
FIREPLACE WALL BELOW
BEDROOM 2
11'x12'
LINEN
2'-0"
ROOF TRUSSES 24" O.C.
22" x 30" ATTIC ACCESS
LT
W
LAUN.
D
FLOOR DRAIN
PLUMBING BOX
DRYER VENT
32" HIGH CORNER HUTCH
4'-2 MIRRORS
WALK-IN CLOSET 7'x8'6"
9'-6 GLASS PANEL DOOR
3'x4' SHOWER
MASTER BATH
LIN
(2) 2x10 HDR
GARAGE WALLS BELOW
2'-0 x 1'-0 AWN
5'-6"
2'-0 2'-0 7'-6
BEDROOM 3
11'x12'
4'-0 SLIDER
(2) 2x10 HEADER
5'-0 x 6'-4"
7'-4" 4'-2
3'-8"
DOWN 17 R
WOOD CAP
WALK-IN CLOSET
(2) 2x10 HDR
2'-0 x 2'-0 FIXED
BEDROOM 4
11'x11'
GIRDER ROOF TRUSS
ROOF TRUSSES @ 24" O.C
5'-0 x 4'-0 CAS.
(2) 2x10 HDR.
4'-0 x 6'-0 FIXED TEMP.
3'-6" 4'-6 4'-6 6'-0"
GARAGE WALLS BELOW
7'-0" 9'-0" 11'-6" 11'-6" 9'-6"
39'-0"
FINISHED SQ FT.---1200

SOFFIT LIGHT
MIRROR
HUTCH
32"

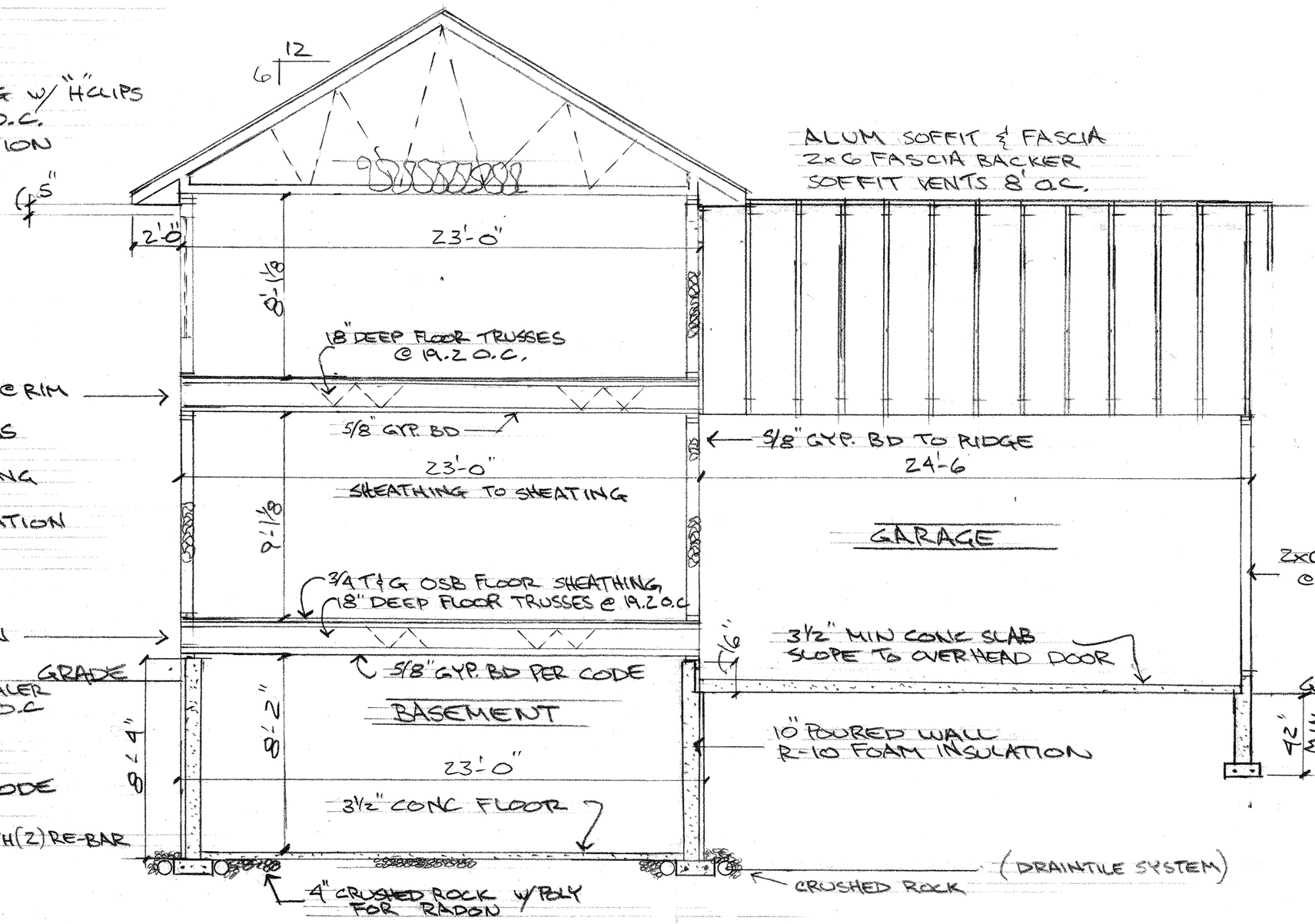
36'-0" 32'-0" 12'-10" 12'-8" 6'-4" 6'-6" 4'-0" 14'-0" 23'-0" 5'-4" 3'-8" 36'-0" 11'-6"

SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

SHEET 6 of 10

CONT. ROOF VENT
TIMBERLINE SHINGLES
15 LB. ROOFING FELT
17/32 OSB ROOF SHEATHING w/ "H" CLIPS
ROOF TRUSSES @ 24" O.C.
R-49 CEILING INSULATION
6 MIL POLY
5/8" GYP. BD.



SPRAY FOAM INSULATION @ RIM

SIDING: SEE ELEVATIONS
TYVEX HOUSE WRAP
7/16 OSB WALL SHEATHING
2x6 STUDS @ 16" O.C.
R-21 FIBERGLASS INSULATION
4 MIL POLY
1/2 GYP. BD

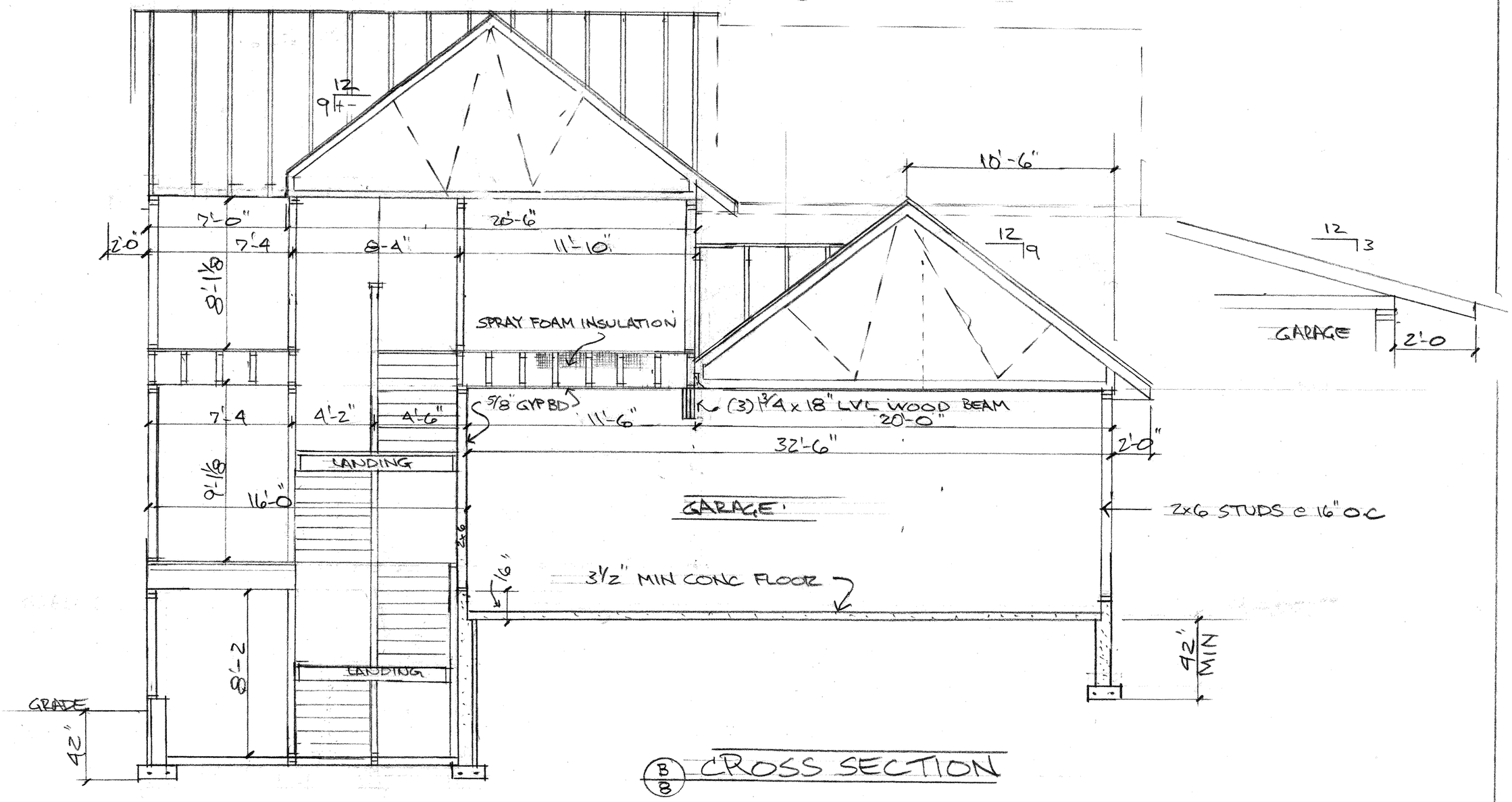
SPRAY FOAM INSULATION @ RIM JOIST

2x6 TREATED SILL w/ SEALER
1/2" ANCHOR BOLTS @ 6'0.C

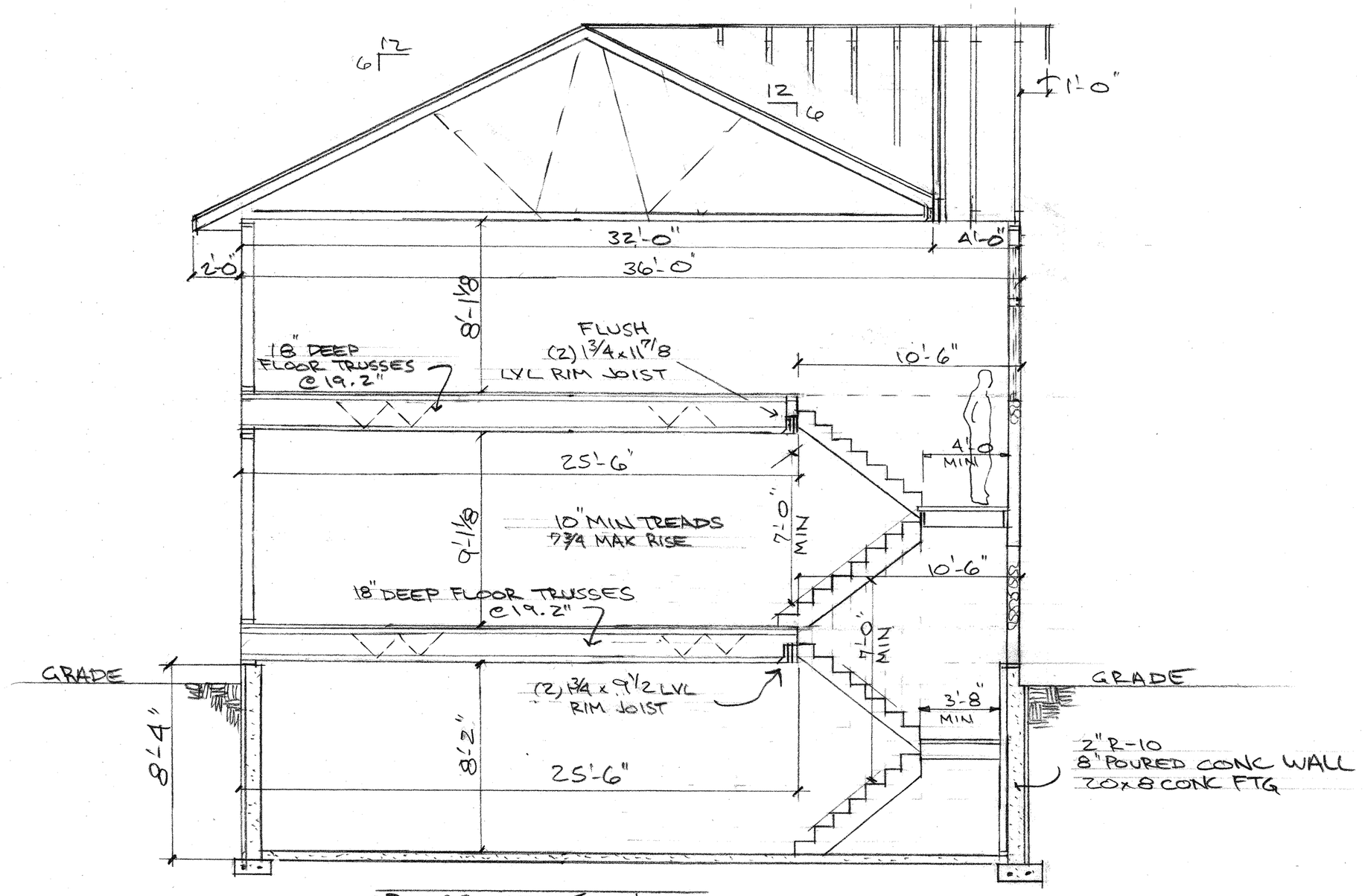
6 MIL SLIP SHEET
R-10 FOAM INSULATION
WATERPROOFING PER CODE

8" POURED CONC WALL
20x8 CONC FOOTING WITH (2) RE-BAR

A/7 CROSS SECTION

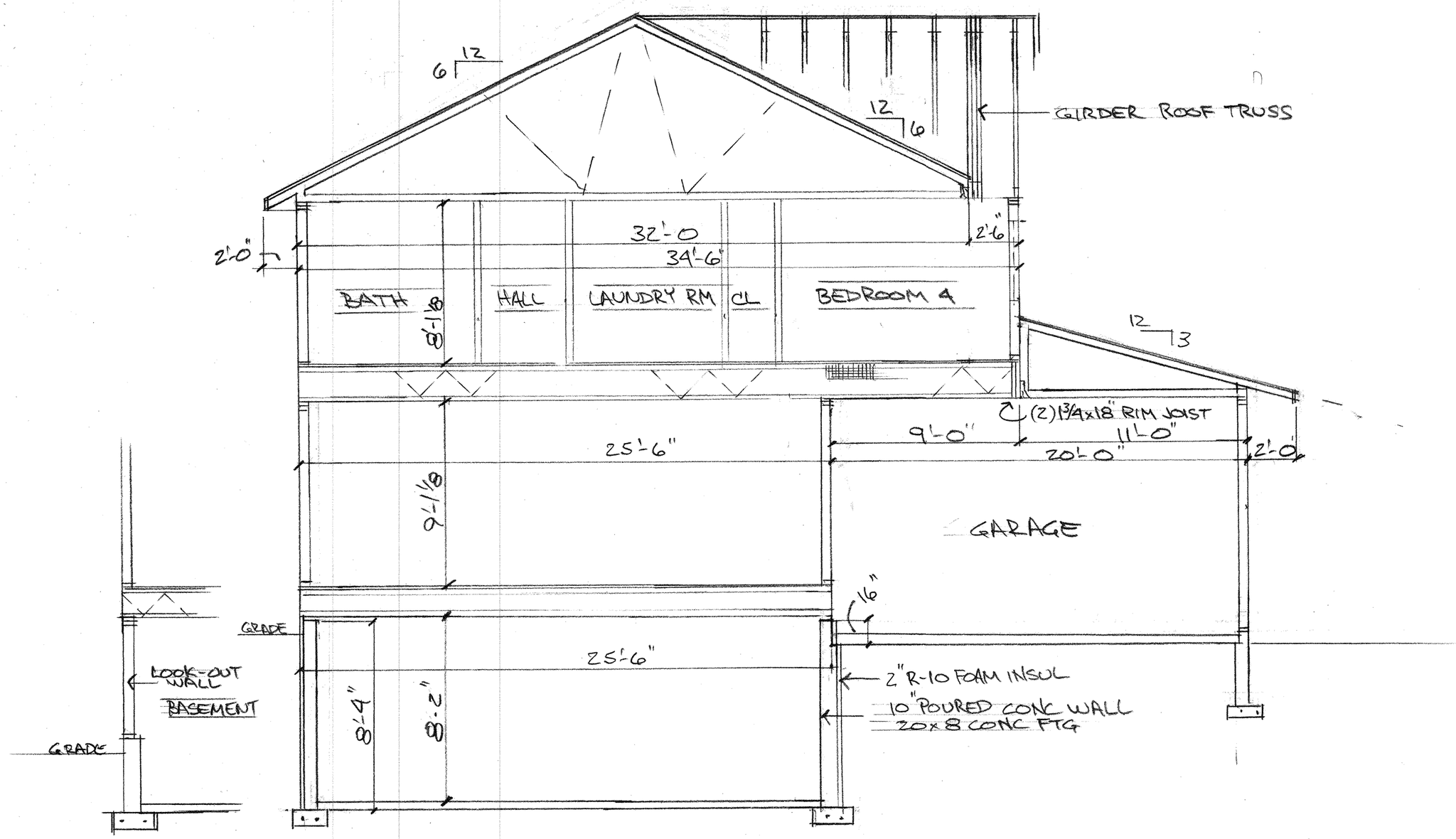


B/8 CROSS SECTION



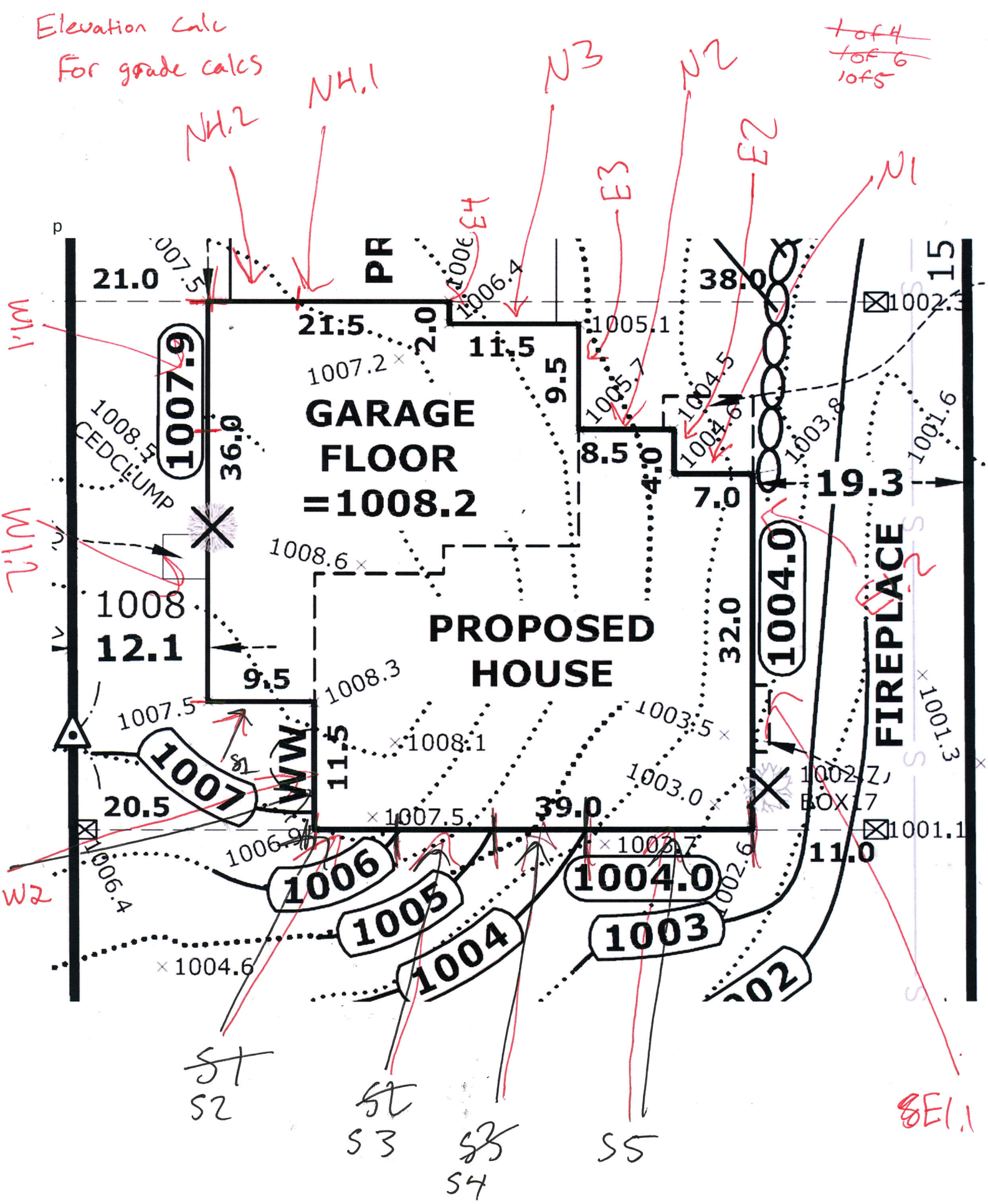
C/9 CROSS SECTION

SCALE 1/4" = 1'-0"



D/10 CROSS SECTION

SHEET 10 OF 10

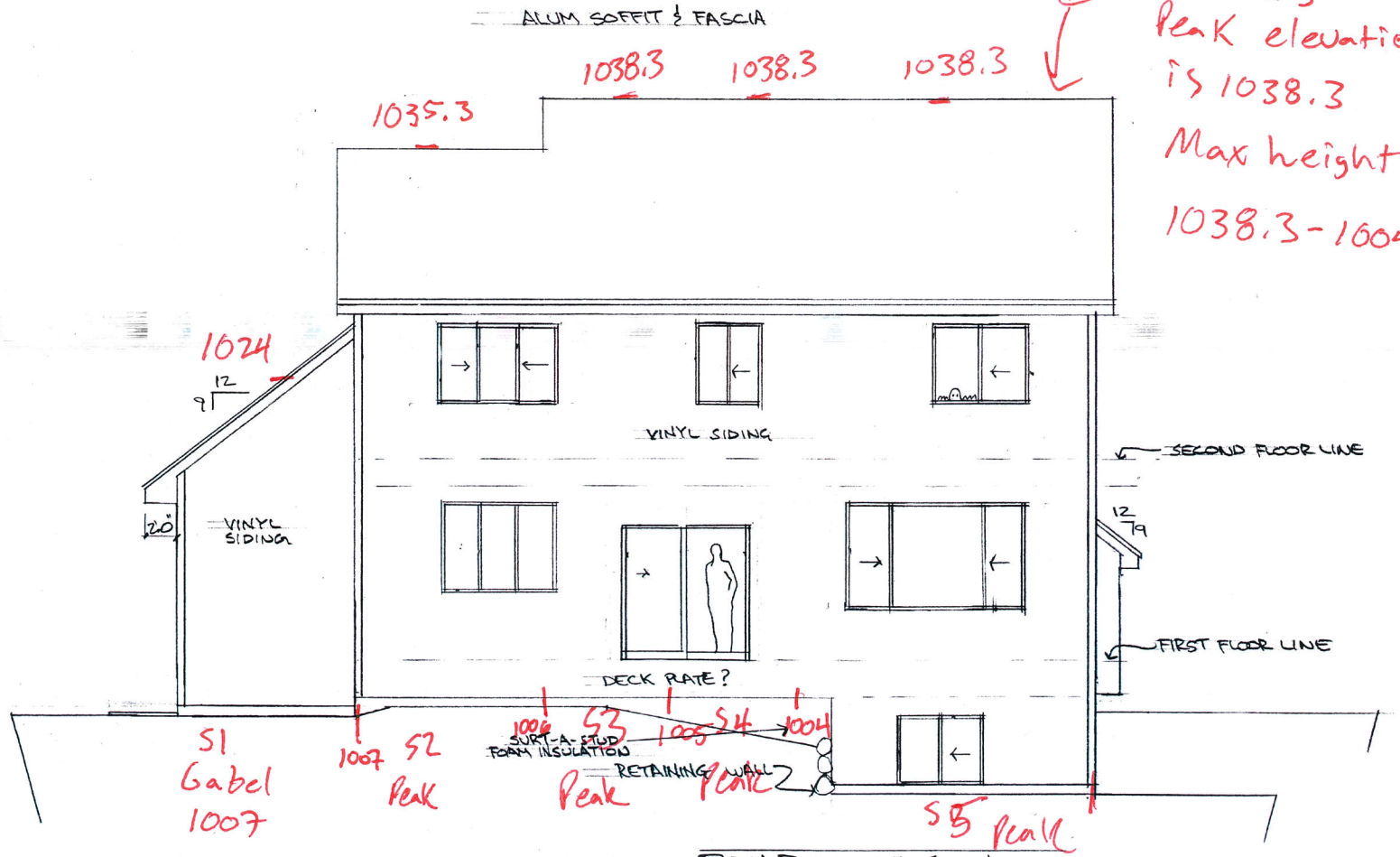

Elevation Calc
For grade calcs
NH.2
NH.1
N3
N2
E3
E2
N1
1 of 4
1 of 6
1 of 5
PR
21.0
21.5
2.0
11.5
9.5
8.5
4.0
7.0
38.0
19.3
36.0
32.0
9.5
11.5
20.5
39.0
11.0
GARAGE
FLOOR
=1008.2
PROPOSED
HOUSE
1008
12.1
1007.9
1004.0
1007
1006
1005
1004
1003
1004.0
WW
FIREPLACE
1008.5
CEDCLUMP
BOX 17
W1.1
W1.2
W2
S1
S2
S3
S4
S5
SE1.1
15

HOMES BY HELM
DESIGNING & DRAFTING OF FINE CUSTOM HOMES
jhelm78@yahoo.com
PHONE 651-815-3727

PLANS DRAWN BY | DATE: | SHEET OF

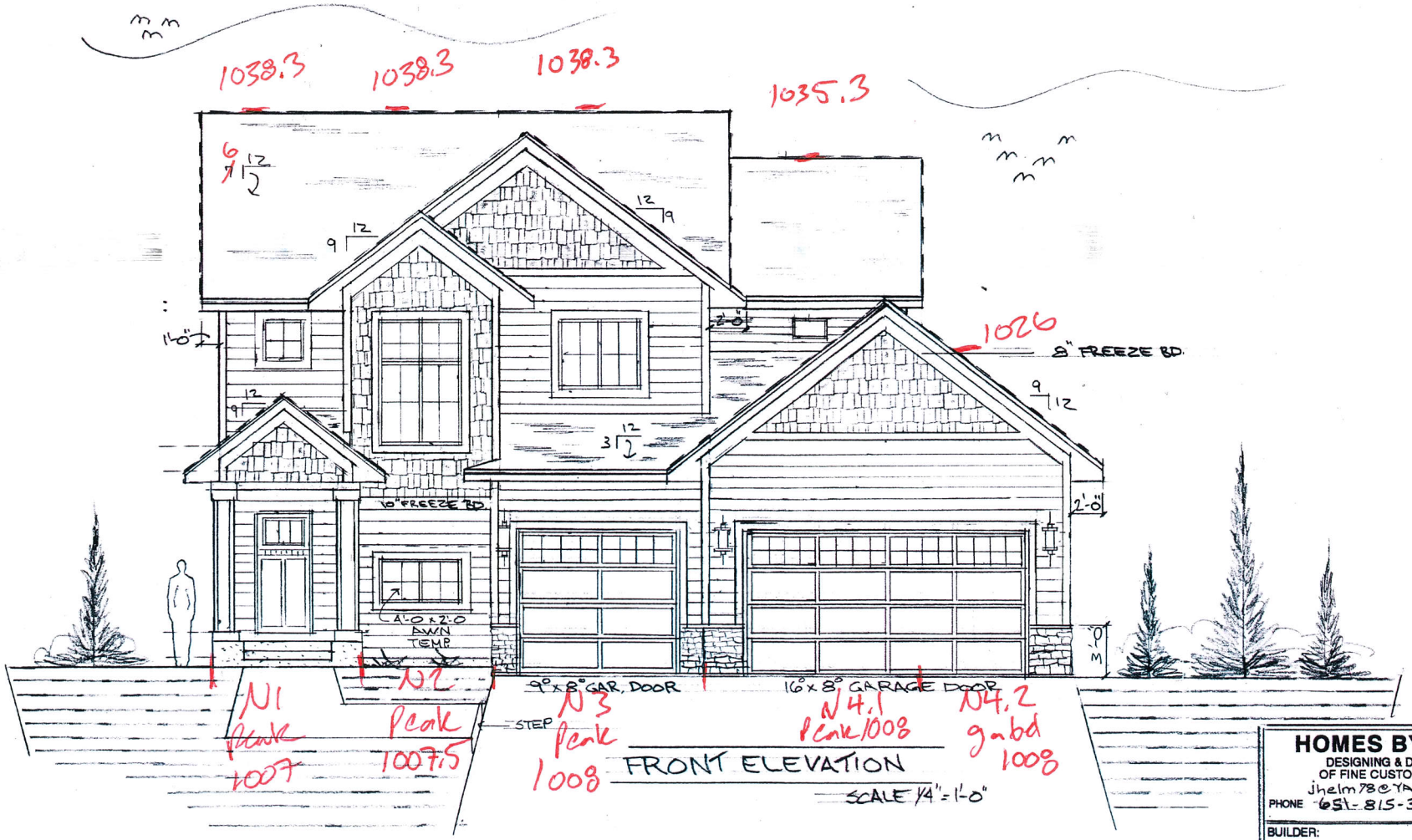
BUILDER: | NEW HOME FOR:

Highest peak 37 feet from Basement. elevation of 1001.3
Peak elevation is 1038.3
Max height at S5
1038.3 - 1004 = 34.3 ~~35~~ feet



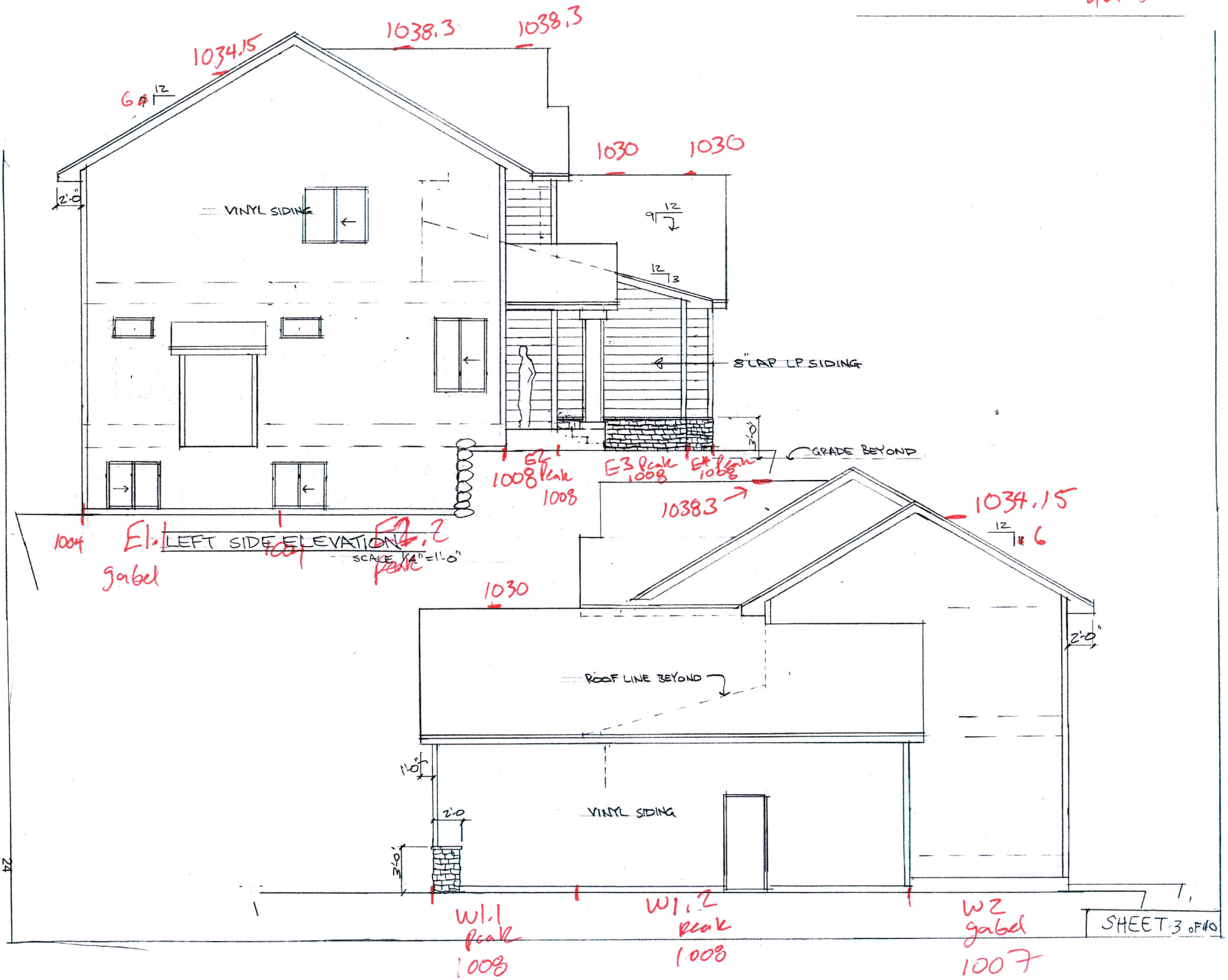
REAR ELEVATION
SCALE 1/4" = 1'-0"

ALUM SOFFIT & FASCIA
SIDES & REAR: VINYL SIDING
FRONT: LP SMARTSIDE



HOMES BY HELM
DESIGNING & DRAFTING
OF FINE CUSTOM HOMES
Jhelm78@YAHOO.COM
PHONE 651-815-3727

PLANS DRAWN BY JOHN HELM
BUILDER:
DATE: 3-1-2024
NEW HOME FOR:
SHEET 1 OF 10


1038.3
1038.3
1034.15
6 12
1030
1030
2'-0"
VINYL SIDING
9 12
12 3
8" LAP LP SIDING
3'-0"
GRADE BEYOND
E2 peak 1008
E3 peak 1008
E4 peak 1008
1038.3
1034.15
12 6
1004
E1.1 LEFT SIDE ELEVATION
SCALE: 1/4"=1'-0"
gabel
1030
2'-0"
ROOF LINE BEYOND
1'-0"
2'-0
3'-0"
VINYL SIDING
W1.1 peak 1008
W1.2 peak 1008
W2 gabel 1007
SHEET 3 OF 10

House average grade calc's example

* See excel for all calcs

South

S_1

Length 9.5 ft

grade EL ~~Elevation at~~ 1007

Peak hight 1024

S_1 Peak height = elevation

$-\cancel{15.75}^{13}$ feet off Max peak

- 2.7 feet off gabel max height

$= 1039 - \cancel{15.75}^{13} - 2.7$

$= 1024$ (rounded)

Elevation component $S_1 = 9.5 \times (1024 - 1007)$

$= 161.5$

S_2

Length 8.25

grade El_1 1007

grad El_2 1006

Straight Peak → Peak Light 1036

Elevation component S_2 =

$8.25 \times \left(1036 - \left[\frac{1007 - 1006}{2}\right]\right)$

$= 243.375$

etc.

Add up all lengths for S_1, S_2, S_3, S_4, S_5

$= 48.5$ ft

Add up all elevation components for S_1, S_2, S_3, S_4, S_5

$= 1439.875$

South Wall Average elevation $= \frac{1439.825}{48.5} = \cancel{29.68}$ 29.7 ft for South

Add up all perimters for was S, E, N, W and add up all elevation compants S, E N, W

Total averge height $= \frac{5493.75}{192}$ Elvation / perimeter $= 28.6$ ft

wrightsoft

Load Short Form
Entire House
Nystrom's Htg

Job: Nystrom's - Birchwood ...
Date: Apr 03, 2024
By: Ryan Boelke

16842 47th Place N, Plymouth, MN

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Information

	Htg	Clg
Outside db (°F)	*-18*	91
Inside db (°F)	70	72
Design TD (°F)	88	19
Daily range	-	M
Inside humidity (%)	30	50
Moisture difference (gr/lb)	32	39

Infiltration	
Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

HEATING EQUIPMENT

Make	
Trade	
Model	
AHRI ref	
Efficiency	92 AFUE
Heating input	0 Btuh
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	1345 cfm
Air flow factor	0.026 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

COOLING EQUIPMENT

Make	
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	13.4 SEER
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	1345 cfm
Air flow factor	0.055 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.79

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Basement Lookout	196	2434	1305	63	72
Basement	1113	8631	1065	225	59
Main Floor	1125	20697	13562	539	749
2nd Floor	1221	19912	8440	518	466
Entire House	3655	51674	24372	1345	1345
Other equip loads		7503	1611		
Equip. @ 0.96 RSM			24918		
Latent cooling			6701		
TOTALS	3655	59177	31619	1345	1345

Bold/italic values have been manually overridden

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

16842 47th Place N, Plymouth, MN

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

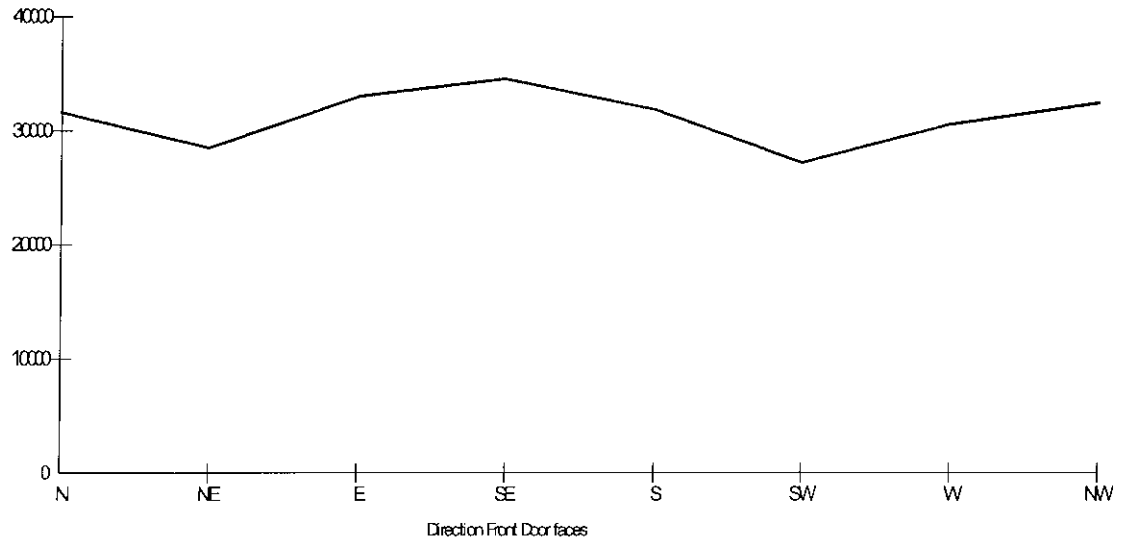
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	-18	91
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2

Infiltration:

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	24918	21810	26278	27820	25152	20437	23845	25707
Latent Load (Btuh)	6701	6701	6701	6701	6701	6701	6701	6701
Total Load (Btuh)	31619	28511	32980	34521	31853	27138	30546	32408
Heating AVF (cfm)	1345	1166	1423	1512	1359	1087	1283	1391
Cooling AVF (cfm)	1345	1166	1423	1512	1359	1087	1283	1391

Building Orientation Cooling Load



Current Orientation: Front Door faces North
Highest Cooling Load: Front Door faces Southeast

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

16842 47th Place N, Plymouth, MN

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:	**Heating**	**Cooling**
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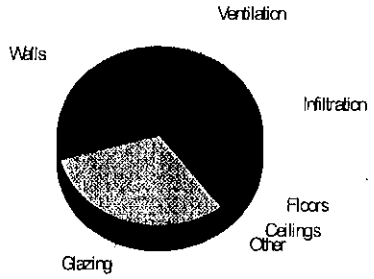
Dailyrange (°F)	-	17 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2
Infiltration:		
Method	Simplified	
Construction quality	Semi-tight	
Fireplaces	1 (Semi-tight)	

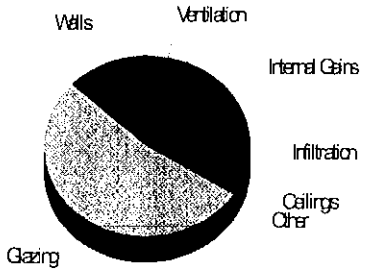
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	5.2	17414	29.4
Glazing	41.5	18261	30.9
Doors	25.5	536	0.9
Ceilings	1.8	2170	3.7
Floors	2.0	2524	4.3
Infiltration	3.4	10768	18.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		7503	12.7
Adjustments		0	
Total		**59177**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.0	3388	13.0
Glazing	31.3	13766	53.0
Doors	9.2	193	0.7
Ceilings	0.9	1115	4.3
Floors	0.1	64	0.2
Infiltration	0.3	1066	4.1
Ducts		0	0
Ventilation		1611	6.2
Internal gains		4780	18.4
Blower		0	0
Adjustments		0	
Total		**25983**	**100.0**



Latent Cooling Load = 6701 Btuh
Overall U-value = 0.074 Btuh/ft²-°F, Window / Floor Area = 12.1 %

Data entries checked.

Bold/italic values have been manually overridden

Supporting Detail		
Project Name: Nystrom's - Birchwood Village		Date: Apr 03, 2024
Address: White Bear Lake		
Phone:	Job ID: Nystrom's - Birchwood Village	

Worksheet A
Location and Design Conditions

Weather Location: Minneapolis-St Paul, MN, US	Elevation = 872	Latitude = 45
Indoor Conditions, Heating: DB = 70 °F RH = 30 %	Indoor Conditions, Cooling: DB = 72 °F RH = 50 %	
Table 1 Conditions 99% DB = -18°F 1% DB = 91 °F	Grains Difference = 39 gr/lb	Daily Range = M
Design Temperature Differences	HTD = 88 °F	CTD = 19 °F

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:	Heating	Cooling
Drybulb (°F)	-18	91
Dailyrange (°F)	-	17 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	ne	604	0.065	21.0	5.72	3455	1.33	805
	se	485	0.065	21.0	5.72	2774	1.33	646
	sw	612	0.065	21.0	5.72	3501	1.33	815
	nw	562	0.065	21.0	5.72	3212	1.33	748
	all	2263	0.065	21.0	5.72	12942	1.33	3015
15B11-8wc-4: Bg wall, heavy dry or light damp soil, 2"x4" wood int frm, concrete wall, r-10 ins, 8" thk, 1/2" gypsum board int fnsh	ne	99	0.043	19.0	4.44	440	0.54	54
	ne	126	0.043	19.0	3.98	502	0.16	21
	se	113	0.043	19.0	4.44	500	0.54	61
	se	137	0.043	19.0	3.98	544	0.16	22
	sw	150	0.043	19.0	4.41	662	0.52	78
	sw	126	0.043	19.0	3.98	502	0.16	21
	nw	176	0.043	19.0	4.44	780	0.54	95
	nw	137	0.043	19.0	3.98	544	0.16	22
	all	1062	0.043	19.0	4.21	4472	0.35	373
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, clr strm, 1/2" gap, 1/8" thk; 6.67 ft head ht	ne	71	0.470	0	41.4	2937	27.5	1956
	se	195	0.470	0	41.4	8065	34.2	6677
	se	64	0.470	0	41.4	2647	34.2	2191
	sw	12	0.470	0	41.4	496	34.2	411
	nw	75	0.470	0	41.4	3081	27.5	2052
	all	417	0.470	0	41.4	17226	31.9	13287
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/2" gap, 1/8" thk; 6.67 ft head ht	nw	24	0.490	0	43.1	1035	20.0	479
Doors								
11P0: Door, mtl pur core type	nw	21	0.290	10.5	25.5	536	9.19	193
Ceilings								
16CR-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 5/8" gypsum board int fnsh		1233	0.020	50.0	1.76	2170	0.90	1115

Floors

20P-30c: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-30 cav ins, amb ovr	108	0.035	30.0	3.08	333	0.53	57
20P-30t: Flr floor, frm flr, 12" thkns, r-30 cav ins, amb ovr	12	0.035	30.0	3.08	37	0.53	6
21A-28t: Bg floor, heavy dry or light damp soil, 6.5' depth, carp 80% flr fnsh	1113	0.022	0	1.94	2155	0	0

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:	Heating	Cooling
Drybulb (°F)	-18	91
Dailyrange (°F)	-	17 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum	ne	50	0.065	21.0	5.72	283	1.33	66
board int fnsh, 2"x6" wood frm, 16" o.c. stud	se	41	0.065	21.0	5.72	232	1.33	54
	all	90	0.065	21.0	5.72	515	1.33	120
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr	ne	14	0.470	0	41.4	558	27.5	372
innr, clr strm, 1/2" gap, 1/8" thk; 6.67 ft head ht	se	23	0.470	0	41.4	931	34.2	770
	all	36	0.470	0	41.4	1489	31.7	1142
Doors								
(none)								
Ceilings								
(none)								
Floors								
(none)								

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

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Walls								
15B11-8wc-4: Bg wall, heavy dry or light damp soil, 2"x4" wood int frm, concrete wall, r-10 ins, 8" thk, 1/2" gypsum board int fnsh	ne	99	0.043	19.0	4.44	440	0.54	54
	ne	126	0.043	19.0	3.98	502	0.16	21
	se	113	0.043	19.0	4.44	500	0.54	61
	se	137	0.043	19.0	3.98	544	0.16	22
	sw	150	0.043	19.0	4.41	662	0.52	78
	sw	126	0.043	19.0	3.98	502	0.16	21
	nw	176	0.043	19.0	4.44	780	0.54	95
	nw	137	0.043	19.0	3.98	544	0.16	22
	all	1062	0.043	19.0	4.21	4472	0.35	373
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, clr strm, 1/2" gap, 1/8" thk; 6.67 ft head ht	sw	12	0.470	0	41.4	496	34.2	411
Doors								
(none)								
Ceilings								
(none)								
Floors								
21A-28t: Bg floor, heavy dry or light damp soil, 6.5' depth, carp 80% flr fnsh		1113	0.022	0	1.94	2155	0	0

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
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Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	ne	297	0.065	21.0	5.72	1696	1.33	395
	se	218	0.065	21.0	5.72	1244	1.33	290
	sw	324	0.065	21.0	5.72	1853	1.33	432
	nw	316	0.065	21.0	5.72	1808	1.33	421
	all	1154	0.065	21.0	5.72	6601	1.33	1538
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, clr strm, 1/2" gap, 1/8" thk; 6.67 ft head ht	ne	28	0.470	0	41.4	1137	27.5	757
	se	88	0.470	0	41.4	3619	34.2	2996
	se	64	0.470	0	41.4	2647	34.2	2191
	nw	8	0.470	0	41.4	331	27.5	220
	all	187	0.470	0	41.4	7734	33.0	6165
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/2" gap, 1/8" thk; 6.67 ft head ht	nw	24	0.490	0	43.1	1035	20.0	479
Doors								
11P0: Door, mtl pur core type	nw	21	0.290	10.5	25.5	536	9.19	193
Ceilings								
16CR-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 5/8" gypsum board int fnsh		12	0.020	50.0	1.76	21	0.90	11
Floors								
20P-30t: Flr floor, frm flr, 12" thkns, r-30 cav ins, amb ovr		12	0.035	30.0	3.08	37	0.53	6

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:	**Heating**	**Cooling**
Drybulb (°F)	-18	91
Dailyrange (°F)	-	17 (M)
Wetbulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2
Infiltration:		
Method	Simplified	
Construction quality	Semi-tight	
Fireplaces	1 (Semi-tight)	

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	ne	258	0.065	21.0	5.72	1476	1.33	344
	se	227	0.065	21.0	5.72	1298	1.33	302
	sw	288	0.065	21.0	5.72	1647	1.33	384
	nw	246	0.065	21.0	5.72	1404	1.33	327
	all	1019	0.065	21.0	5.72	5826	1.33	1357
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, clr strm, 1/2" gap, 1/8" thk; 6.67 ft head ht	ne	30	0.470	0	41.4	1241	27.5	826
	se	85	0.470	0	41.4	3516	34.2	2910
	nw	67	0.470	0	41.4	2750	27.5	1832
	all	182	0.470	0	41.4	7507	30.7	5568
Doors								
(none)								
Ceilings								
16CR-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 5/8" gypsum board int fnsh		1221	0.020	50.0	1.76	2149	0.90	1104
Floors								
20P-30c: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-30 cav ins, amb ovr		108	0.035	30.0	3.08	333	0.53	57

16842 47th Place N, Plymouth, MN

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Notes: 2 story w/ lookout basement, 5 bed

Design Information

Weather: Minneapolis-St Paul, MN, US

Winter Design Conditions

Outside db	*-18* °F
Inside db	70 °F
Design TD	88 °F

Summer Design Conditions

Outside db	91 °F
Inside db	72 °F
Design TD	19 °F
Daily range	M
Relative humidity	50 %
Moisture difference	39 gr/lb

Heating Summary

Structure	51674 Btuh
Ducts	0 Btuh
Central vent (SER=50% 160 cfm)	*7503* Btuh
Heat recovery	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	59177 Btuh

Sensible Cooling Equipment Load Sizing

Structure	24372 Btuh
Ducts	0 Btuh
Central vent (SER=50% 160 cfm)	*1611* Btuh
Heat recovery	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.96
Equipment sensible load	24918 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

	Heating	Cooling
Area (ft²)	3655	3655
Volume (ft³)	24436	24436
Air changes/hour	0.28	0.13
Equiv. AVF (cfm)	115	53

Latent Cooling Equipment Load Sizing

Structure	2568 Btuh
Ducts	0 Btuh
Central vent (160 cfm)	*4133* Btuh
Heat recovery	
Equipment latent load	6701 Btuh
Equipment Total Load (Sen+Lat)	31619 Btuh
Req. total capacity at 0.70 SHR	3.0 ton

Heating Equipment Summary

Make	
Trade	
Model	
AHRI ref	
Efficiency	92 AFUE
Heating input	0 Btuh
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	1345 cfm
Air flow factor	0.026 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

Cooling Equipment Summary

Make	
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	13.4 SEER
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	1345 cfm
Air flow factor	0.055 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.79

Bold/italic values have been manually overridden

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Project Information

For: Birchwood Village, Nystrom's Htg
White Bear Lake

Design Conditions

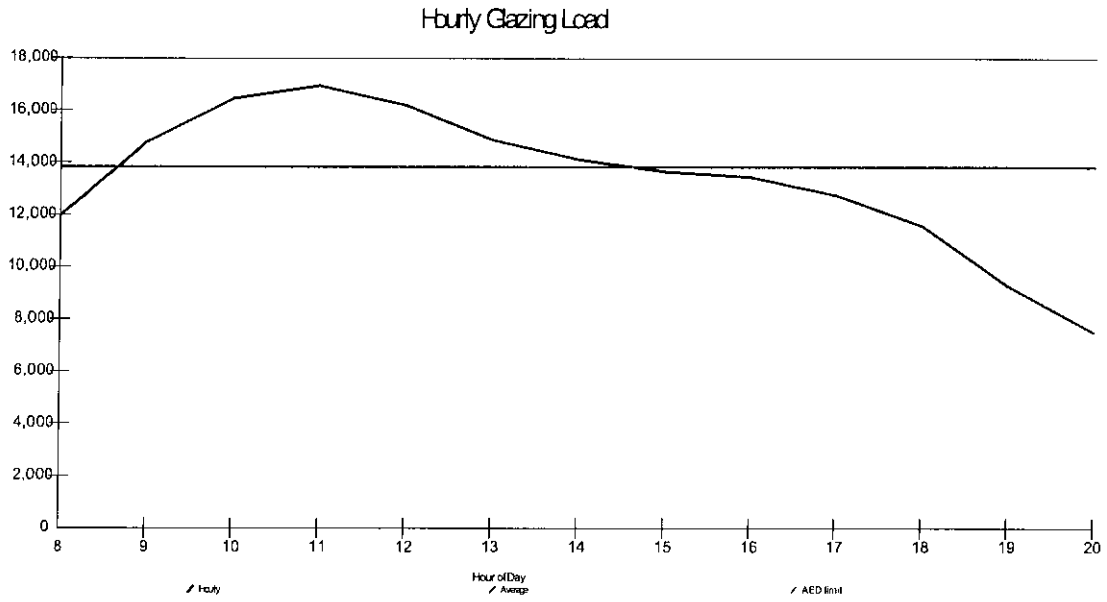
Location:
Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	*-18*	91
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	72
Design TD (°F)	88	19
Relative humidity (%)	30	50
Moisture difference (gr/lb)	32.1	39.2

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 22.5%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

Bold/italic values have been manually overridden

wrightsoft

Right-J® Worksheet
Entire House
Nystrom's Htg

Job: Nystrom's - Birchwood Vill...
Date: Apr 03, 2024
By: Ryan Boelke

16842 47th Place N, Plymouth, MN

		Entire House	Basement Lookout
1	Room name		
2	Exposed wall	454.0 ft	28.0 ft
3	Room height	8.1 ft	4.5 ft heat/cool
4	Room dimensions		14.0 x 14.0 ft
5	Room area	3655.0 ft²	196.0 ft²

	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	ne	5.72	1.33	675	604	3455	805	63	50	283	66
	G	4A5-2ov	0.470	ne	41.36	27.54	71	0	2937	1958	14	0	558	372
	W	15B11-8wc-4	0.055	ne	4.44	0.54	99	99	440	54	0	0	0	0
	W	15B11-8wc-6	0.055	ne	3.98	0.16	126	126	502	21	0	0	0	0
11	W	12F-0sw	0.065	se	5.72	1.33	744	485	2774	646	63	41	232	54
	G	4A5-2ov	0.470	se	41.36	34.24	195	0	8065	6677	23	0	931	770
	G	4A5-2ovd	0.470	se	41.36	34.24	64	0	2647	2191	0	0	0	0
	W	15B11-8wc-4	0.055	se	4.44	0.54	113	113	500	61	0	0	0	0
	W	15B11-8wc-6	0.055	se	3.98	0.16	137	137	544	22	0	0	0	0
	W	12F-0sw	0.065	sw	5.72	1.33	612	612	3501	815	0	0	0	0
	W	15B11-8wc-4	0.055	sw	4.41	0.52	162	150	662	78	0	0	0	0
	G	4A5-2ov	0.470	sw	41.36	34.24	12	0	496	411	0	0	0	0
	W	15B11-8wc-6	0.055	sw	3.98	0.16	126	126	502	21	0	0	0	0
	W	12F-0sw	0.065	nw	5.72	1.33	681	562	3212	748	0	0	0	0
	G	10D-v	0.490	nw	43.12	19.97	24	0	1035	479	0	0	0	0
	G	4A5-2ov	0.470	nw	41.36	27.54	75	0	3081	2052	0	0	0	0
	D	11P0	0.290	nw	25.52	9.19	21	21	536	193	0	0	0	0
	W	15B11-8wc-4	0.055	nw	4.44	0.54	176	176	780	95	0	0	0	0
	W	15B11-8wc-6	0.055	nw	3.98	0.16	137	137	544	22	0	0	0	0
	C	16CR-50ad	0.020	-	1.76	0.90	1233	1233	2170	1115	0	0	0	0
	F	20P-30c	0.035	-	3.08	0.53	108	108	333	57	0	0	0	0
	F	20P-30l	0.035	-	3.08	0.53	12	12	37	6	0	0	0	0
	F	21A-28t	0.022	-	1.94	0.00	1113	1113	2155	0	0	0	0	0
6	c) AED excursion									0				0
	Envelope loss/gain								40905	18526			2004	1262
12	a) Infiltration								10768	1066			430	43
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					6			1380	0			0
		Appliances/other								3400				0
	Subtotal (lines 6 to 13)								51674	24372			2434	1305
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								51674	24372			2434	1305
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								51674	24372			2434	1305
	Air required (cfm)								1345	1345			63	72

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

wrightsoft

Right-J® Worksheet
Entire House
Nystrom's Htg

Job: Nystrom's - Birchwood Vill...
Date: Apr 03, 2024
By: Ryan Boelke

16842 47th Place N, Plymouth, MN

		Basement	Main Floor
1	Room name		
2	Exposed wall		
3	Room height	8.0 ft	9.0 ft
4	Room dimensions	122.0 ft heat/cool 1.0 x 1113.0 ft	154.0 ft heat/cool 1.0 x 1125.0 ft
5	Room area	1113.0 ft²	1125.0 ft²

	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²) Heat	HTM (Btuh/ft²) Cool	Basement Area (ft²) or perimeter (ft) Gross	Basement Area (ft²) or perimeter (ft) N/P/S	Basement Load (Btuh) Heat	Basement Load (Btuh) Cool	Main Floor Area (ft²) or perimeter (ft) Gross	Main Floor Area (ft²) or perimeter (ft) N/P/S	Main Floor Load (Btuh) Heat	Main Floor Load (Btuh) Cool
6	W	**12F-0sw**	**0.065**	**ne**	**5.72**	**1.33**	**0**	**0**	**0**	**0**	**324**	**297**	**1696**	**395**
	G	**4A5-2ov**	**0.470**	**ne**	**41.36**	**27.54**	**0**	**0**	**0**	**0**	**28**	**0**	**1137**	**757**
	W	15B11-8wc-4	0.055	ne	4.44	0.54	99	99	440	54	0	0	0	0
	W	**15B11-8wc-6**	**0.055**	**ne**	**3.98**	**0.16**	**126**	**126**	**502**	**21**	**0**	**0**	**0**	**0**
11	W	12F-0sw	0.065	se	5.72	1.33	0	0	0	0	369	218	1244	290
	G	4A5-2ov	0.470	se	41.36	34.24	0	0	0	0	88	0	3619	2996
	G	4A5-2ovd	0.470	se	41.36	34.24	0	0	0	0	64	0	2647	2191
	W	**15B11-8wc-4**	**0.055**	**se**	**4.44**	**0.54**	**113**	**113**	**500**	**61**	**0**	**0**	**0**	**0**
	W	15B11-8wc-6	0.055	se	3.98	0.16	137	137	544	22	0	0	0	0
	W	**12F-0sw**	**0.065**	**sw**	**5.72**	**1.33**	**0**	**0**	**0**	**0**	**324**	**324**	**1853**	**432**
	W	15B11-8wc-4	0.055	sw	4.41	0.52	162	150	662	78	0	0	0	0
	G	4A5-2ov	0.470	sw	41.36	34.24	12	0	496	411	0	0	0	0
	W	**15B11-8wc-6**	**0.055**	**sw**	**3.98**	**0.16**	**126**	**126**	**502**	**21**	**0**	**0**	**0**	**0**
	W	12F-0sw	0.065	nw	5.72	1.33	0	0	0	0	369	316	1808	421
	G	10D-v	0.490	nw	43.12	19.97	0	0	0	0	24	0	1035	479
	G	4A5-2ov	0.470	nw	41.36	27.54	0	0	0	0	8	0	331	220
	D	11P0	0.290	nw	25.52	9.19	0	0	0	0	21	21	536	193
	W	**15B11-8wc-4**	**0.055**	**nw**	**4.44**	**0.54**	**176**	**176**	**780**	**95**	**0**	**0**	**0**	**0**
	W	15B11-8wc-6	0.055	nw	3.98	0.16	137	137	544	22	0	0	0	0
	C	**16CR-50ad**	**0.020**	**-**	**1.76**	**0.90**	**0**	**0**	**0**	**0**	**12**	**12**	**21**	**11**
	F	20P-30c	0.035	-	3.08	0.53	0	0	0	0	0	0	0	0
	F	**20P-30t**	**0.035**	**-**	**3.08**	**0.53**	**0**	**0**	**0**	**0**	**12**	**12**	**37**	**6**
	F	21A-28t	0.022	-	1.94	0.00	1113	1113	2155	0	0	0	0	0

6	c) AED excursion				131	-79
	Envelope loss/gain		7123	915	15964	8314
12	a) Infiltration		1508	149	4733	469
	b) Room ventilation		0	0	0	0
13	Internal gains:	Occupants @ 230	0	0	6	1380
		Appliances/other		0		3400
	Subtotal (lines 6 to 13)		8631	1065	20697	13562
	Less external load		0	0	0	0
	Less transfer		0	0	0	0
	Redistribution		0	0	0	0
14	Subtotal		8631	1065	20697	13562
15	Duct loads	-0% 0%	0	0	-0% 0% 0	0
	Total room load		8631	1065	20697	13562
	Air required (cfm)		225	59	539	749

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

16842 47th Place N, Plymouth, MN

1	Room name					2nd Floor									
2	Exposed wall					150.0 ft									
3	Room height					8.0 ft				heat/cool					
4	Room dimensions					1.0 x 1221.0 ft									
5	Room area					1221.0 ft²									
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	ne	5.72	1.33	288	258	1476	344				
.	G	4A5-2ov	0.470	ne	41.36	27.54	30	0	1241	826				
.	W	15B11-8wc-4	0.055	ne	4.44	0.54	0	0	0	0				
.	W	15B11-8wc-6	0.055	ne	3.98	0.16	0	0	0	0				
11	W	12F-0sw	0.065	se	5.72	1.33	312	227	1298	302				
	G	4A5-2ov	0.470	se	41.36	34.24	85	0	3516	2910				
	G	4A5-2ovd	0.470	se	41.36	34.24	0	0	0	0				
	W	15B11-8wc-4	0.055	se	4.44	0.54	0	0	0	0				
	W	15B11-8wc-6	0.055	se	3.98	0.16	0	0	0	0				
	W	12F-0sw	0.065	sw	5.72	1.33	288	288	1647	384				
	W	15B11-8wc-4	0.055	sw	4.41	0.52	0	0	0	0				
	G	4A5-2ov	0.470	sw	41.36	34.24	0	0	0	0				
	W	15B11-8wc-6	0.055	sw	3.98	0.16	0	0	0	0				
	W	12F-0sw	0.065	nw	5.72	1.33	312	246	1404	327				
	G	10D-v	0.490	nw	43.12	19.97	0	0	0	0				
	G	4A5-2ov	0.470	nw	41.36	27.54	67	0	2750	1832				
	D	11P0	0.290	nw	25.52	9.19	0	0	0	0				
	W	15B11-8wc-4	0.055	nw	4.44	0.54	0	0	0	0				
	W	15B11-8wc-6	0.055	nw	3.98	0.16	0	0	0	0				
	C	16CR-50ad	0.020	-	1.76	0.90	1221	1221	2149	1104				
	F	20P-30c	0.035	-	3.08	0.53	108	108	333	57				
	F	20P-30t	0.035	-	3.08	0.53	0	0	0	0				
	F	21A-28t	0.022	-	1.94	0.00	0	0	0	0				

6	c) AED excursion			-52	
	Envelope loss/gain		15814	8035	
12	a) Infiltration		4098	406	
	b) Room ventilation		0	0	
13	Internal gains: Occupants @ 230	0		0	
	Appliances/other			0	
	Subtotal (lines 6 to 13)		19912	8440	
	Less external load		0	0	
	Less transfer		0	0	
	Redistribution		0	0	
14	Subtotal		19912	8440	
15	Duct loads	-0% 0%	0	0	
	Total room load		19912	8440	
	Air required (cfm)		518	466	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

New Construction Energy Code Compliance Certificate

Per R401.3 Certificate. A building certificate shall be posted on or in the electrical distribution panel. | Date Certificate Post

Mailing Address of the Dwelling or Dwelling Unit | City

Name of Residential Contractor | MN License Number

Place your logo here

THERMAL ENVELOPE

Insulation Location	Total R-Value of all Types of Insulation	Type: Check All That Apply: None or Not Applicable	Fiberglass, Blown	Fiberglass, Batts	Foam, Closed Cell	Foam, Open Cell	Mineral Fiberboard	Rigid, Extruded Polystyrene	Rigid, Isocyanurate
Below Entire Slab									
Foundation Wall									
Perimeter of Slab on Grade									
Rim Joist (1st Floor)									
Rim Joist (2nd Floor+)									
Wall									
Ceiling, flat									
Ceiling, vaulted									
Bay Windows or cantilevered areas									
Floors over unconditioned area									
Describe other insulated areas									

Other Please Describe Here:

Building envelope air tightness: | **Duct system air tightness:**

Windows & Doors

Average U-Factor (excludes skylights and one door) U:

Solar Heat Gain Coefficient (SHGC):

Heating or Cooling Ducts Outside Conditioned Spaces

Y Not applicable, all ducts located in conditioned space

R-value

RADON CONTROL SYSTEM

Passive (No Fan)

Active (Vent fan and manometer or other system monitoring device)

Location (or future location) of Fan:

MECHANICAL SYSTEMS

Appliances	Heating System	Domestic Water Heater	Cooling System
Fuel Type:	Nat Gas		Electric
Manufacturer:	Lennox		Lennox
Model:	ML9[illegible]H070		ML14XC1503
Rating or Size:	Input in BTUS: 70000	Capacity in Gallons:	Output in Tons: 3
Efficiency:	AFUE or HSPF%: 96		SEER /EER: 14
Residential Load Calculation:	Heating Loss: 39,177	Heating Gain: 31,619	Cooling Load: 2-1/2 3

Make-up Air *Select a Type*

X Not required per mech. code

Passive

Powered

Interlocked with exhaust device Describe:

Other, describe:

Location of duct or system:

CFM's

" round duct OR

" metal duct

MECHANICAL VENTILATION SYSTEM

Describe any additional or combined heating or cooling systems if installed: (e.g. two furnaces or air source heat pump with gas back-up furnace):

Select Type

	Heat Recover Ventilator (HRV) Capacity in cfms:	Low:		High:	
Y	Energy Recover Ventilator (ERV) Capacity in cfms:	Low:	140	High:	180
	Balanced Ventilation capacity in cfms:				
	Location of fan(s), describe:				
	Capacity continuous ventilation rate in cfms:				
	Total ventilation (intermittent + continuous) rate in cfms:				

Combustion Air *Select a Type*

X Not required per mech. code

Passive

Other, describe:

Location of duct or system:

mech room

CFM's

" round duct OR

" metal duct

South			East			North			West		
	S1	Wall Total Elv		E1.1	Wall Total Elv		N1	Wall Total Elv		W1.1	Wall Total Elv
Length	9.5	161.5	Length	22	663.3	Length	7	219.1	Length	11.5	253
E1	1007		E	1004		E	1007		E	1008	
E2	1007		Max	1034.15		Max	1038.3		Max	1030	
Max	1024			E1.1			N2			W1.2	
	s2		Length	10	343	Length	8.5	261.8	Length	24.5	742.35
Length	8.25	237.6	E	1004		E	1007.5		E	1008	
E1	1007		Max	1038.3		Max	1038.3		Max	1038.3	
E2	1006			E2			N3			W2	
Max	1035.3		Length	4	121.2	Length	11.5	348.45	Length	11.5	312.225
	s3		E	1008		E	1008		E	1007	
Length	8.25	270.60	Max	1038.3		Max	1038.3		Max	1034.15	
E1	1005			E3			N4.1				
E2	1006		Length	9.5	209	Length	12	327.6			
Max	1038.3		E	1008		E	1008				
	s4		Max	1030		Max	1035.3				
Length	8.25	278.85		E4			N4.2				
E3	1005		Length	2	44	Length	9.5	171			
E4	1004		E	1008		E	1008				
Max	1038.3		Max	1030		Max	1026				
	s5										
Length	14.25	488.775									
E5	1004										
E6	1004										
Max	1038.3										
	Total Side Perir	Total Elv		Total Side Perir	Total Elv		Total Side Perir	Total Elv		Total Side Perir	Total Elv
	48.5	1437.325		47.5	1380.5		48.5	1327.95		47.5	1307.575

	Perimeter	Total Elv
South	48.5	1437.325
East	47.5	1380.5
North	48.5	1327.95
West	47.5	1307.575
Total	192	5453.35
Average Heigh	**28.4**	ft

BOLTON & MENK
Real People. Real Solutions.

3507 High Point Drive North
Bldg. 1 Suite E130
Oakdale, MN 55128

Ph: (651) 704-9970
Bolton-Menk.com

MEMORANDUM

Date: 8-13-2024

To: Rebecca Kellen, City of Birchwood Village

From: Marcus Johnson, Bolton & Menk

Subject: 160 Cedar Appeal
City of Birchwood Village
Project No.: 0N1.131471

Rebecca,

Behind this memo is Bolton and Menk's response to the appeal in red. Behind the appeal are the attachments that go along with the response to the appeal.

Should the planning commission or city council like more information please reach out to me.

Sincerely,

Bolton & Menk, Inc.

Marcus A. Johnson

Marcus Johnson PE
Associate Project Engineer

160 Cedar Street
Birchwood, MN 55110

July 15,2024

City Clerk
207 Birchwood Avenue
White Bear Lake, MN S5110

Re: Appeal of City permit issued for 160 Cedar Street

Dear City Clerk:

Pursuant to the letter we received from your city attorney dated June 18, 2024, we are appealing the permit issued by the City of Birchwood Village for 160 Cedar Street in Birchwood. There are a number of code provisions the City has failed to apply. These are the issues and the code that should have been applied:

1. "Birchwood Code 301.055 (7) Stormwater and erosion control plans. For a building permit, the applicant must submit stormwater and erosion control plans prepared and signed by a licensed professional engineer." This has not been done.
   And "The stormwater management plan must detail how stormwater will be controlled to prevent damage to adjacent property". There are no drainage control structures or any provision for impoundment/containment of water at and within 160 Cedar Street.
   a. As far as I am aware, the city has granted the option of a licensed engineer or a surveyor. It is signed by a licensed surveyor.
   b. Due to the nature of the project it was not required to be signed off by a licensed engineer on the plans.
      - We have asked for a structural engineer signature for more complex structures. For example, a retaining wall larger than 4' tall would require a engineer's sign off.
   c. Erosion control is on the survey drawing and is following the MPCA requirements as far as BMP's (Best management practices) are concerned. See attached survey document.

2. "Birchwood Code 301 NOTE: A separate Conditional Use Permit is not required for a land disturbance activity in conjunction with construction as part of a building permit as granted. However, as part of the Building Permit application, the applicant shall provide information required pursuant to Section 306.030 and shall follow all provisions of Section 302.050...and 302.055".

   a. Birchwood Code 302.050 states "to reduce the unwanted harmful effects of stormwater, it is policy of the City of Birchwood Village that each property within the City manage its own stormwater to limit runoff into streets, waterways, and neighboring properties."
      - See survey attachment where drainage arrows have been applied. If you follow my drainage arrows (if constructed per plans), drainage would follow near the property line but not cross.

b. "Birchwood Code 302.055 (2)(a)(1) No construction or alteration of new or existing structures or land topography shall be done to increase the rate of storm water runoff from the parcel as compared to the runoff rate before such construction or alteration unless: . . . ." (Note: none of the exceptions listed apply.)

- The existing house that was on the property prior (approximately 5300 square feet of impervious) was compared to the impervious proposed in the current building permit (3500 square feet of impervious). I have attached an impervious area map for the proposed building and the google maps image showing the approximate previous house on the property. The existing building appears to primarily be on 160 Cedar's property, which is why the impervious area of the existing building was included in the analysis of this building permit. Since there was no survey of the previous house, Google maps was used to verify the amount of impervious was onsite prior to the demolition. In looking at this, the city would see a decrease in the rate of storm water runoff as there is proposed to date. In future building permits of the two remaining lots there would be the potential for an increase in rate runoff should they be developed.
- On the attached survey from the 160 Cedar building permit, the square footage of impervious area that is running to the low point at the back of the property is noted at approximately 1250 square feet. When comparing the existing contours shown on the provided survey, the drainage pattern does not appear to be significantly changing onsite. So it appears to me the back yard low spot would not see an increase in the rate of storm water runoff.

Per the builder's survey dated 4/25/2024, the increase in impervious surface is 3500 square feet. Much of that impervious surface will drain directly onto our property. There are no

containment provisions included in the plan, nor are there any calculations for runoff or analysis of any soils to determine the infiltration rate of storm water.

The city engineer, at a site meeting with us on June 11, 2024, stated he calculated there would be no increased runoff based on a "quick calculation that I just did in my head" and he included in his impervious "analysis" a garage that was torn down three years prior. The city code does not provide for the long-demolished garage to be included since the runoff must be "compared to the runoff rate before such construction or alteration". And the engineer's "analysis" was not presented as a "signed" evaluation.

See the attached survey where drainage arrows have been applied. 1250 square feet of the impervious surface would run to the low point. As shown in my interpretation the drainage would run along the property.

c. Birchwood Code 306.030 (a)(6) requires "a description of soils of the site, including a map indicating soil types of the areas to be disturbed." This has not been done.

A Site Construction Plan is required including

"(2) Locations and dimensions of all temporary soil and construction materials." This has not been done.

"(3) Locations and dimensions of all construction site erosion control and permanent stabilization measures to meet City and State Code both during and after the construction process." This has not been done.

"(4) Schedule of anticipated starting and ending dates of each land disturbance activity and construction site erosion control, storm water runoff control, and inspection, and maintenance activity." This has not been done.

Plat of Final Site Conditions is required including

"(3) A drainage plan of the developed site including final storm water drainage systems and natural drainage patterns on and immediately adjacent to the site with delineation of the direction in which storm water is conveyed from the site." This has not been done.

Section 306 is a Conditional Use section. A conditional use permit was not needed in the application.

d. Birchwood Code 306.030(b) "Demonstration that the work will not adversely affect ...the adjacent parcels of land." This has not been done.

Our property will incur additional runoff due to the city's failure to apply the city code as required. We have consulted a licensed, professional engineer. They have been advised that low area delineated by elevation 1002 feet on the site survey, and endorsed as the drainage area by the city engineer, will cause water to intrude onto our *property* at that elevation. Due to the Lack of runoff calculations and analysis of soil types, it is impossible to know how much water will pond and how long it will take to infiltrate. Regardless, the ground floor elevation of our house Is at least five feet below this ponding area. This additional runoff puts our house at risk for water infiltration and/or flooding—neither of which have we previously experienced. The ground floor elevation is finished, and any water damage to

it will be substantial. This damage will be a direct result of the City's failure to require any drainage controls as mandated by city code.

To fully respond to the feedback from the consulted engineer, I would need to see the conclusions of the professional engineer employed to understand what their model parameters are. I would be happy to consult with their engineer.

It would take a large enough storm for ponding to occur in this low point. When ponding occurs, it would start just below 1002' in elevation. The low elevation of 160 Cedar is approximately 1003.7. The low elevation of the closest neighbor (180 Cedar) is the windowsill at 1004' or 1003.8' along the south side of the house. Should ponding occur, it would require approximately 9600 cubic feet of ponding to occur prior to flooding of homes should occur. 160 Cedar would see flooding prior to surrounding neighbors, at this point, the area of 160 Cedar low floor would be included in the ponding area prior to 180 Cedar seeing water. To date, it has been assumed that the neighbor's basement walls are in good condition. Based on the attached email dated 4/25/2024 from the neighbor of 160 Cedar, it has been acknowledged that this low point does occasionally hold water and with no history of flooding when the existing house and garage of 176 Cedar was in place. It is my understanding 180 Cedar does not have a sump pump, which additionally suggests the low point ponding has not risen to a point of concern to date. The photos sent to the city on 8/9/2024, is not concerning as it has been my understanding that ponding has occurred at the low point historically during large rain events. See the attached survey for the location of the silt fence. As shown on the survey, the silt fence runs right through the low point. Ponding should still be expected to occur during large rain events. The silt fence's purpose is to retain sediment from leaving the site, which in return may restrict water to flow through leaving or coming onto the site.

With the concern expressed on the future properties being built, should those plans show drainage leaving the property onto 160 Cedar as the existing contours show to date. That set of plans would violate city code 302.050 which would trigger further investigation.

Furthermore, the building area of the lot immediately to the west of 160 Cedar Street drains almost exclusively to our property. In our May 17, 2024 email to the city engineer, we attempted to have City Engineer Marcus Johnson address this issue. He responded, "Yhat is where I recommended coming up with a drainage agreement between the three neighbors essentially in an agreement saying if there are any issues back there that the three property owners will come up with a solution together". This statement is in contravention to the planning and building requirements of the city's code.

The city has a responsibility to protect our property. This failure will result in substantial, ongoing damage to our property and is an unlawful taking of our property without just compensation. We ask that you remedy the problem immediately by requiring the above-referenced code be applied and enforced as part of the permit issued for 160 Cedar Street.

We appreciate your prompt response.

Very truly yours,

Rachael and David Drew

In summary, Bolton and Menk received the attached survey and the building layout, traffic control plan, and the permit itself. Most of the site's drainage is reviewed from the survey drawing. To determine which portion of the house drains off to the back of the property, it was required to review the building layout. The city code requires storm water management for all new impervious surfaces. However, it is not as clear as to what level of management is needed when the impervious percentage is less than 25% across the site. As shown in the survey, this property is proposed to only have 7% of surfaces be impervious on the property. The code also does not cover what level of treatment is needed for the stormwater runoff that comes on site from surrounding properties and whose responsibility it is to manage. The permit was approved since the low point was onsite with no variance or conditional use permit. If the permit showed 25% or more impervious onsite or if the drainage left the site, a more in-depth management plan would be asked of the 160 Cedar permit. At that point, a SWPPP signed by a licensed engineer would also be required assuming calculations that would need to be signed off would be involved.

CERTIFICATE OF SURVEY

~for~ AVERY MORSE
~of~ 160 CEDAR STREET
BIRCHWOOD, MN

LEGAL DESCRIPTION

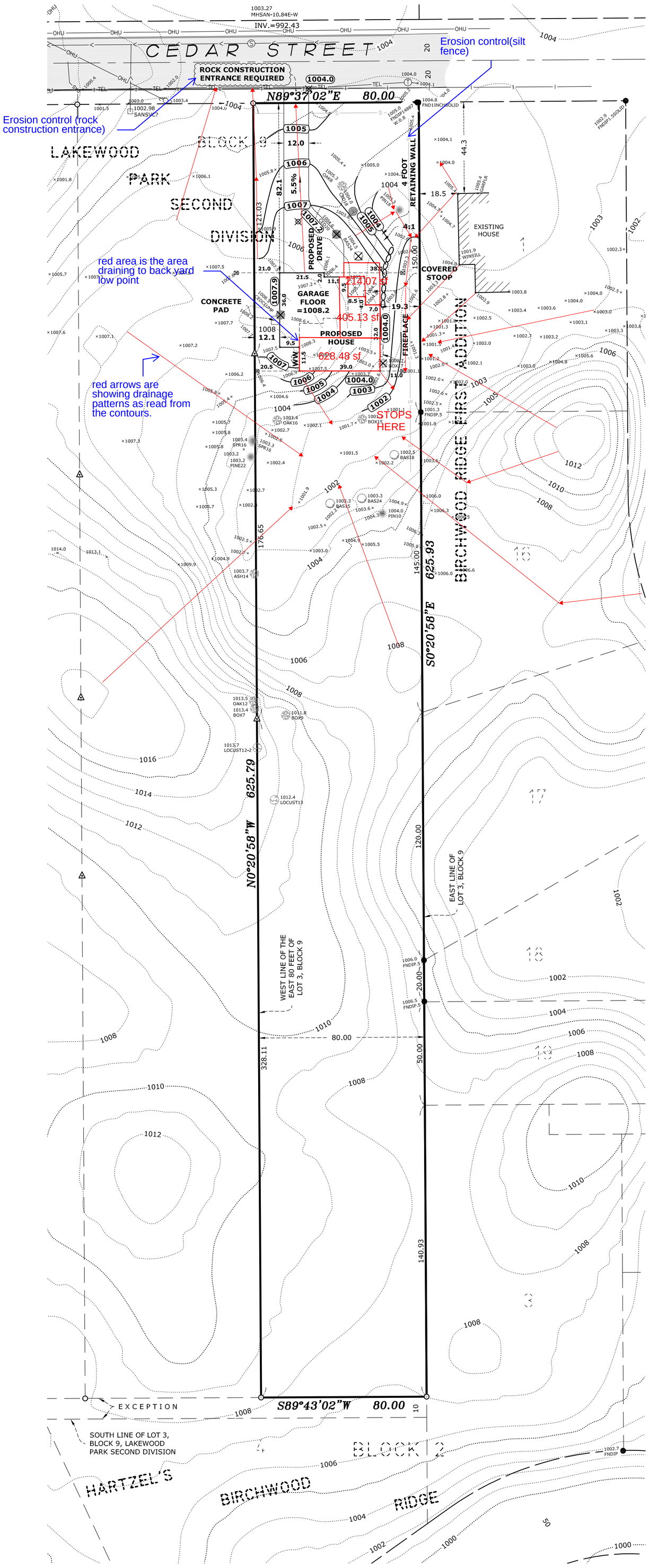
The East 80.00 feet of Lot 3, Block 9, LAKEWOOD PARK SECOND DIVISION, Washington County, Minnesota. Except the south 10.00 feet thereof.

GRAPHIC SCALE

30 0 15 30 60

1 INCH = 30 FEET

NORTH



LEGEND

- DENOTES IRON MONUMENT FOUND
- DENOTES IRON MONUMENT SET
- 800.0 DENOTES PROPOSED ELEVATION
- x1011.2 DENOTES EXISTING ELEVATION
- DENOTES DIRECTION OF DRAINAGE
- DENOTES WOOD HUB/METAL SPIKE AT 11 FOOT OFFSET (UNLESS OTHERWISE NOTED)
- DENOTES SANITARY SEWER MANHOLE
- DENOTES TELEPHONE MANHOLE
- DENOTES EXISTING CONTOURS
- GAS DENOTES UNDERGROUND GAS LINE
- TEL DENOTES UNDERGROUND TELEPHONE LINE
- DENOTES BITUMINOUS SURFACE
- DENOTES PROPOSED RETAINING WALL
- DENOTES PROPOSED CONTOURS
- S DENOTES SILT FENCE

HOUSE NOTES

* BUILDER TO VERIFY HOUSE DIMENSIONS, SEWER DEPTH AND FOUNDATION DEPTH.
* DRIVEWAYS ARE SHOWN FOR GRAPHIC PURPOSES ONLY. FINAL DRIVEWAY DESIGN AND LOCATION TO BE DETERMINED BY CONTRACTOR.
* FINISHED GRADE ADJACENT TO HOME SHALL BE 0.5 FEET BELOW TOP OF BLOCK EXCEPT AT DRIVEWAY AND PATIO.

SURVEY NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 03/07/24, and 04/24/24.
- Bearings shown are on Washington County datum.
- Parcel ID Number: 30-030-21-23-0069.
- Address: 176 Cedar Street, White Bear Lake, MN 55110.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- Contours shown are a combination of field work and MNGeo Lidar Topography.
- Location of utilities existing on or serving the surveyed property determined by:
  -- Observed evidence collected pursuant to Section 5.E.iv.
  -- Markings requested by E.G. Rud & Sons, Inc. per Gopher State One Call Ticket No. 212601645.
  -- Record drawings provided by the City of Birchwood's engineering department.
- Excavations were not made during the process of this survey to locate underground utilities and/or structures. The location of underground utilities and/or structures may vary from locations shown hereon and additional underground utilities and/or structures may be encountered. Contact Gopher State One Call Notification Center at (651) 454-0002 for verification of utility type and field location, prior to excavation.
- Finished grade adjacent to home shall be 0.5 feet below top of block except at driveway and patio.

TREE DETAIL

- DENOTES ELEVATION
- DENOTES TREE QUANTITY
- DENOTES TREE SIZE IN INCHES
- DENOTES TREE TYPE

950.26 OAK20 2

- DENOTES TREE TO BE REMOVED

DIAG: 47.50 X 70.50 = 85.01
(8'4" POURED WALL LOOKOUT BASEMENT)

PROPOSED ELEVATIONS

TOP OF BLOCK = 1009.3
GARAGE FLOOR = 1008.2 (DROP 8 INCHES)
LOWEST OPENING = 1004.5
LOWEST FLOOR = 1001.3
TOP OF FOOTING = 1001.0

roughly the same elevation as the window well

SETBACKS

FRONT ROAD = 40 FEET
SIDE STREET = 40 FEET
SIDE YARD = 10 FEET
REAR YARD = 10 FEET

EXISTING ZONING

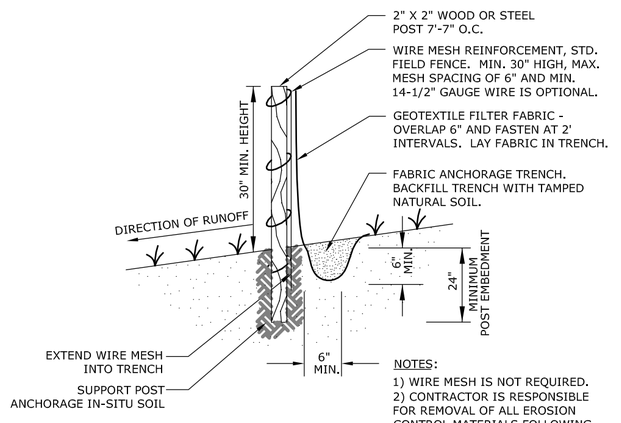
RESIDENTIAL

IMPERVIOUS SURFACE CALCULATIONS

TOTAL PARCEL AREA	50,069 S.F. (1.15 Acres)
PROPOSED HOUSE, GARAGE, STOOP	2,027 S.F.
PROPOSED DRIVEWAY	1,457 S.F.
PROPOSED CONCRETE	16 S.F.
TOTAL IMPERVIOUS SURFACE	3,500 S.F.
PERCENT IMPERVIOUS	7.0%

impervious calculations

part of the erosion control suggested was missing



SILT FENCE

N.T.S.

SEWER AND WATER INSTRUCTIONS

1. SEWER LINE: CONTACT JOHN MANSHIP 651-426-9386 AND STEVE THATCHER 612-867-7234 ON THE DAY THE HOLE IS OPENED UP.
2. WATER LINE: CONTACT JOHN MANSHIP 651-426-9386 AND STEVE THATCHER 612-867-7234 ON THE DAY THE HOLE IS OPENED UP.

licensed survey

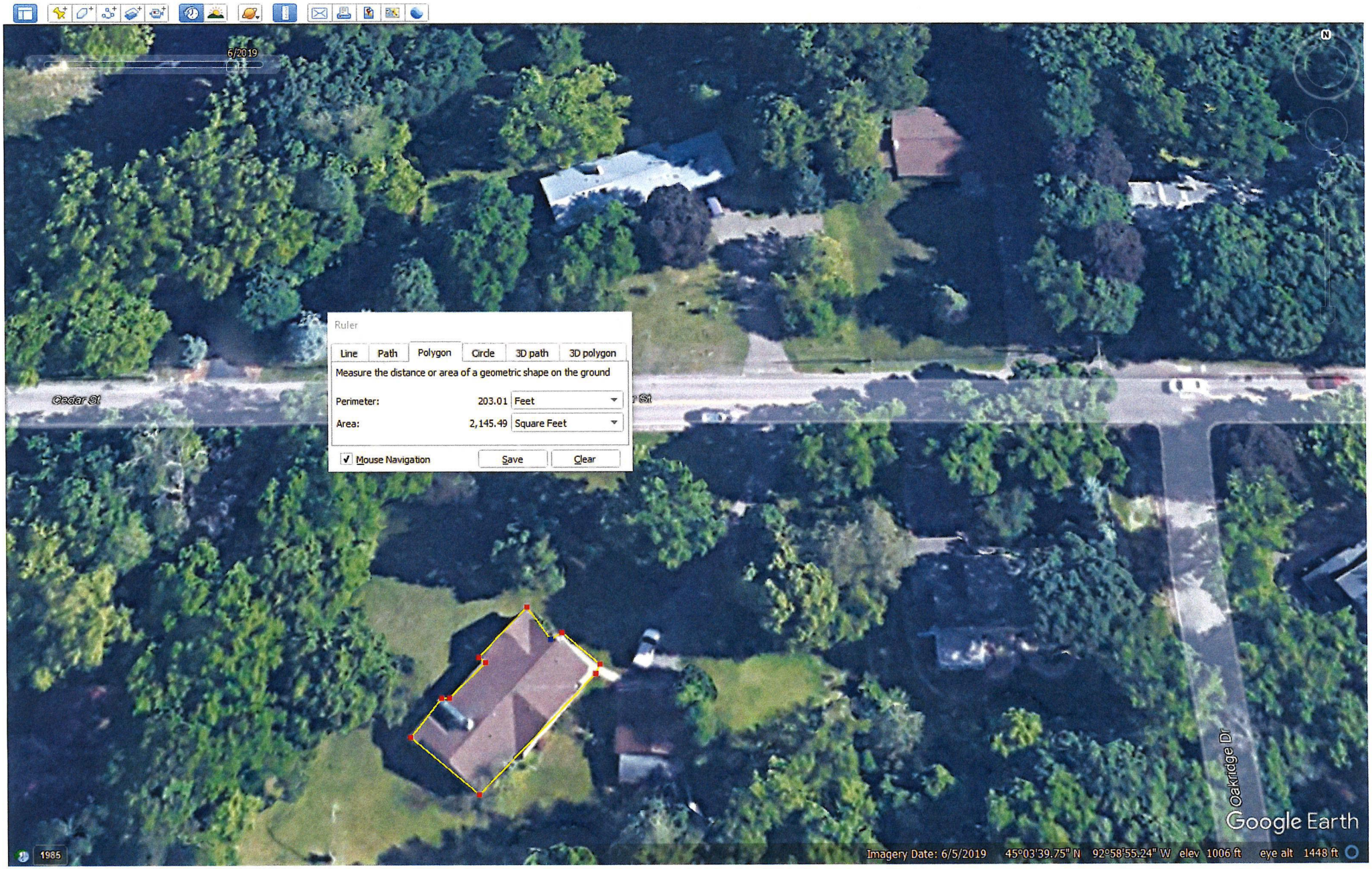
I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

JASON E. RUD

Date: 4/25/2024 License No. 41578

E. G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

DRAWN BY: RAF		JOB NO: 240185HS	DATE: 03-14-24
CHECK BY: JER		FIELD CREW: DT/CT	
1	04-23-24	UPDATED ADDRESS	RAF
2	04-25-24	ADDED FIELD INFO.	RAF
3			
NO.	DATE	DESCRIPTION	BY


5/2019
Ruler
Line
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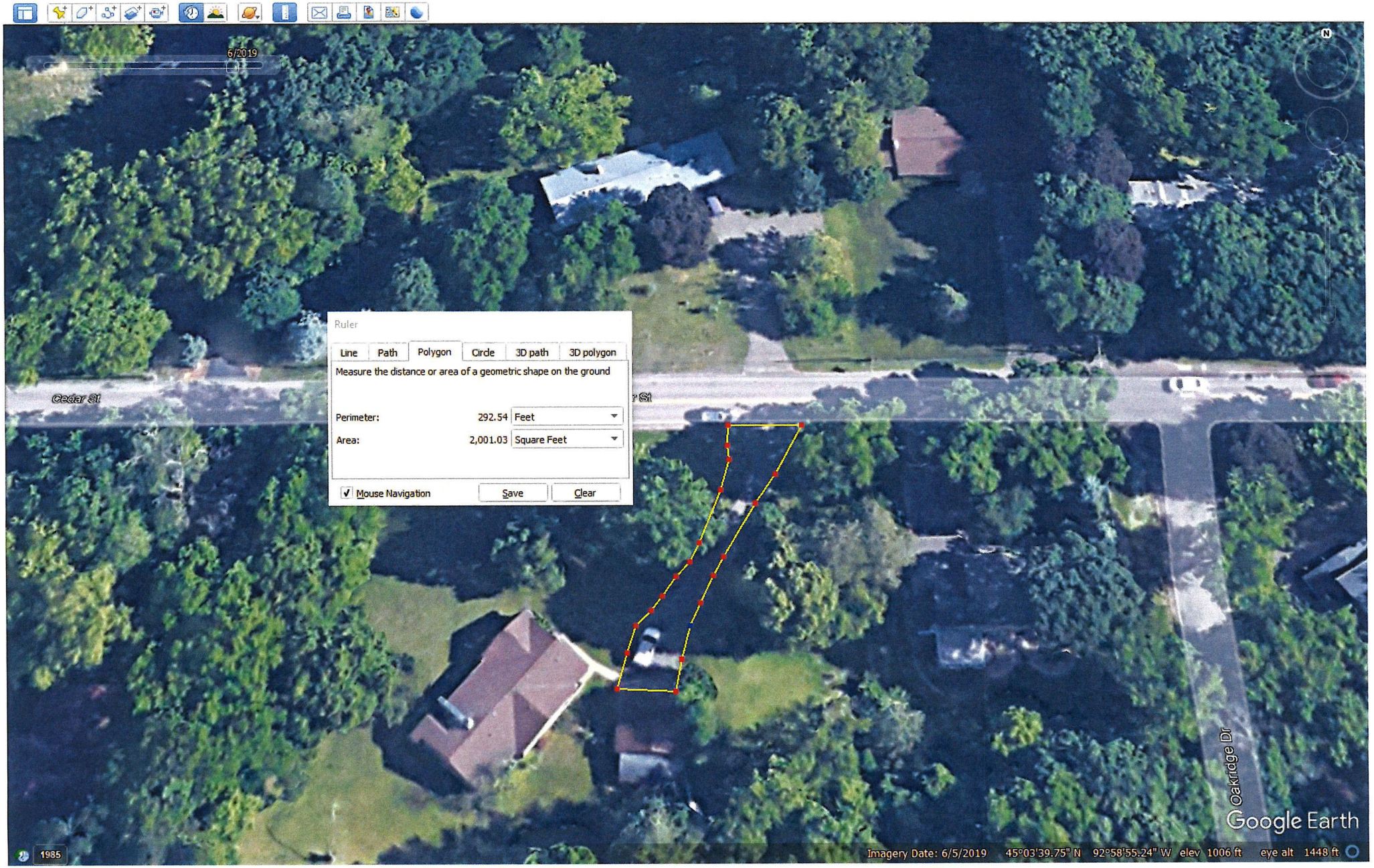
Circle
3D path
3D polygon
Measure the distance or area of a geometric shape on the ground
Perimeter: 203.01 Feet
Area: 2,145.49 Square Feet
Mouse Navigation
Save
Clear
Cedar St
Oakridge Dr
Google Earth
1985
Imagery Date: 6/5/2019 45°03'39.75" N 92°58'55.24" W elev 1006 ft eye alt 1448 ft


6/2019
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3D polygon
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Mouse Navigation
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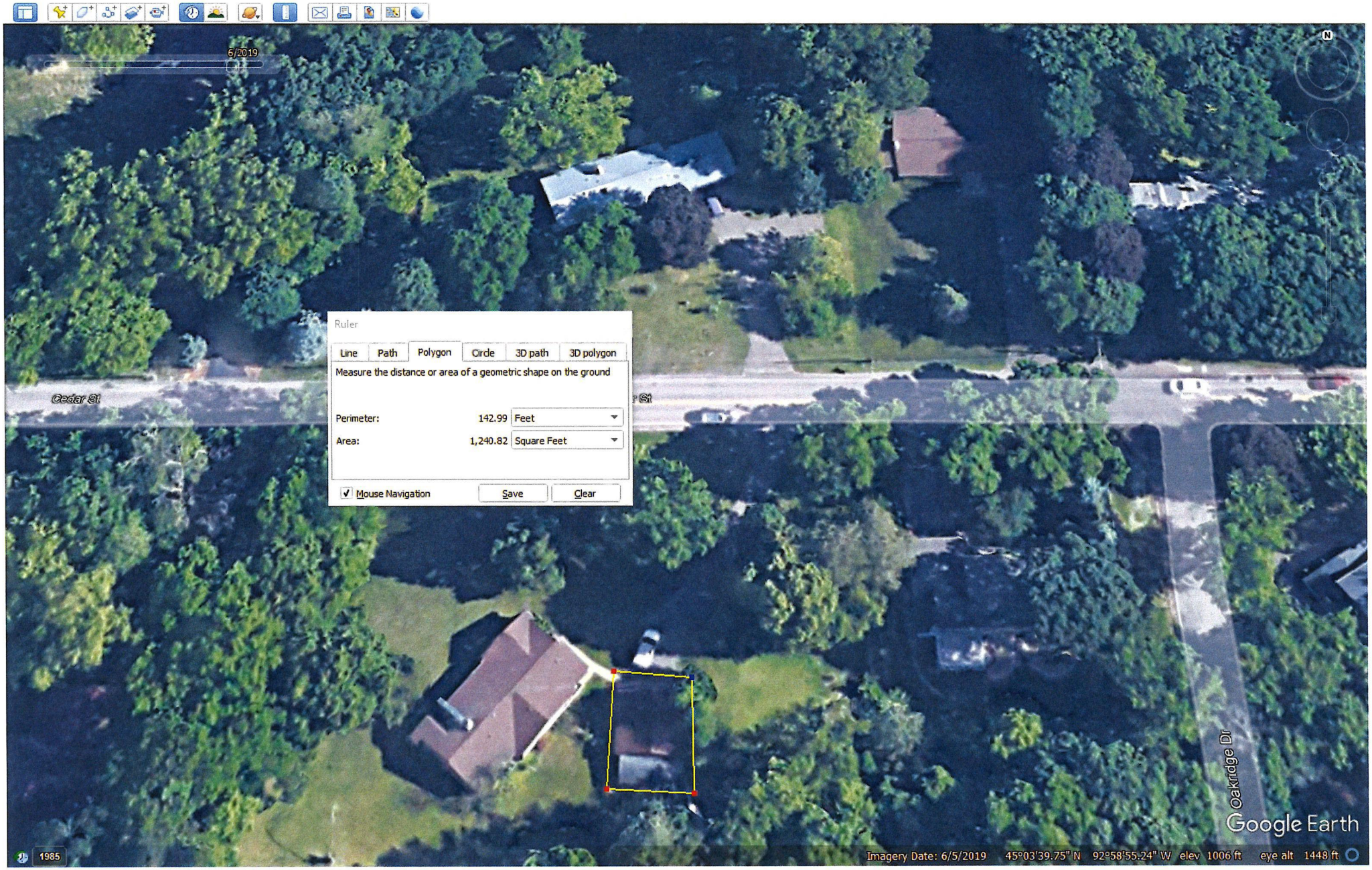
Clear
Cedar St
Oakridge Dr
Google Earth
1985
Imagery Date: 6/5/2019 45°03'39.75" N 92°58'55.24" W elev 1006 ft eye alt 1448 ft


5/2019
Ruler
Line
Path
Polygon
Circle
3D path
3D polygon
Measure the distance or area of a geometric shape on the ground
Perimeter: 142.99 Feet
Area: 1,240.82 Square Feet
Mouse Navigation
Save
Clear
Cedar St
Oakridge Dr
Google Earth
1985
Imagery Date: 6/5/2019 45°03'39.75" N 92°58'55.24" W elev 1006 ft eye alt 1448 ft

Marcus Johnson

From: Rachael Drew <rdrew5954@gmail.com>
Sent: Thursday, April 25, 2024 9:24 AM
To: Marcus Johnson; benwikstrom@gmail.com
Subject: Building permit

To:
Marcus Johnson, City Engineer for Birchwood Village

Ben Wickstrom, City Planner for Birchwood Village

From:
Rachael and Dave Drew, homeowners of 180 Cedar St. Birchwood Village

We are writing this email to make clear our concerns with the current building permit submitted for 160 Cedar St- the adjacent property to our west.

The nature of this lot- very narrow, long and hilly makes it very important to determine the best placement for the new owners as well as the surrounding neighbors.

Most homes in Birchwood are built in line with the street but because this property is so long it affords the new owners the luxury of building their home setback from the street. The current plans have the house sitting on a fairly large hill and close to the shared property line since it is a narrow lot.
We have many concerns about this location.
We have concerns with the height of the property. Even though it complies with the rules it is being built on a hill and very close to the property line. The 35 foot height limit when built on a hill does not afford us the protection intended by that 35 ft rule. We will lose all privacy in our backyard and any kind of feel for space. We know that you are viewing the permit to see if it follows the guidelines set by Birchwood but as a City Planner we hoped that there might be more than just guidelines and rules. The value of a homeowners property might be considered.

Our biggest concern is how a home built on a hill so close to our property will affect the water flow. We feel that a home so close at that elevation will mean that our yard will be the area that holds the water. Historically, during rainy periods and winter thaws we have had standing water in the back of our lot. We are not the only homeowners in Birchwood that have experienced this. With this change to the terrain we are very concerned that this will be an ongoing issue for our property.

It was brought up by the owner that their surveyor suggested they might need to do “something” on our property to ensure the water stays on their lot. We gave some thought to this and decided that we don’t feel we should have to make changes to our property to accommodate this plan. If the current plan does not guarantee our land will be unharmed then a more level land location should be considered by the new owners.

We also have concerns about future building on the middle lot. A view from our backyard will show that if those property owners also choose to build high on the hill, this will mean more water moving down toward our property. Water displaced by this home will hit already saturated land moving more water our way.

Lastly, we are concerned with the plan the new owners have with the fill removed for their foundation. Any placement of this dirt and fill on their property will impact water flow to adjacent properties. It will be important to know the plan in order to protect us or other property owners.

You are welcome any time to go on our property to have a look. We are available anytime for questions. It might also be interesting to view the lots from a higher point of view from our home. You are welcome to take a look from inside our second story.

We would appreciate being informed as to the status of the permit once a decision is made. We like our new neighbors and welcome them but this is very important to us and we feel we need to stand up for our property and its value.

Rachael and Dave Drew
Best to reach by phone - (651)808-5700
Or email- david.drew@sawmillmgt.com

Sent from my iPhone