



Grand Lake Planning Commission

Wednesday, August 16, 2023 at 6:30 PM

Town Hall - 1026 Park Ave. * Participation In-Person Only*

*The Town of Grand Lake upholds the Six Pillars of Character:
Citizenship, Trustworthiness, Respect, Responsibility, Fairness and Caring*

AGENDA

1. Call to Order
2. Roll Call
3. Consideration to approve Meeting Minutes
4. Unscheduled Citizen Participation
This time is reserved for members of the public to make a presentation to the Commission on items or issues that are not scheduled on the agenda. The Commission will not make any decisions on items presented during this time.
5. Conflicts of Interest
6. Items of Business
7. Items for Discussion
 - A. QUASI JUDICIAL (PUBLIC HEARING)** : Consideration to Grant an Variance to Height Regulations for Retaining Walls at 1204 West Portal Rd, Grand Lake, Colorado.
8. Future Agenda Items
9. Adjourn Meeting

For live streaming (listening only) scan the QR code.
You will not be able to actively participate via the web streaming.



<https://us06web.zoom.us/j/85942185849?pwd=Q0xDTHNlMVc4ejFlcmx3eGJ3bnpuZz09>

You can also dial in using your phone. 1 (719) 359-4580

Meeting ID: 859 4218 5849

Access Code: 496153



Date: August 16th, 2023
To: Chairman Shockey and Commissioners
From: Kim White, Planning Department

RE: **QUASI JUDICIAL (PUBLIC HEARING)** : Consideration to Grant an Variance to Height Regulations for Retaining Walls at 1204 West Portal Rd, Grand Lake, Colorado.

Public Hearing Process

The public hearing should be conducted as follows:

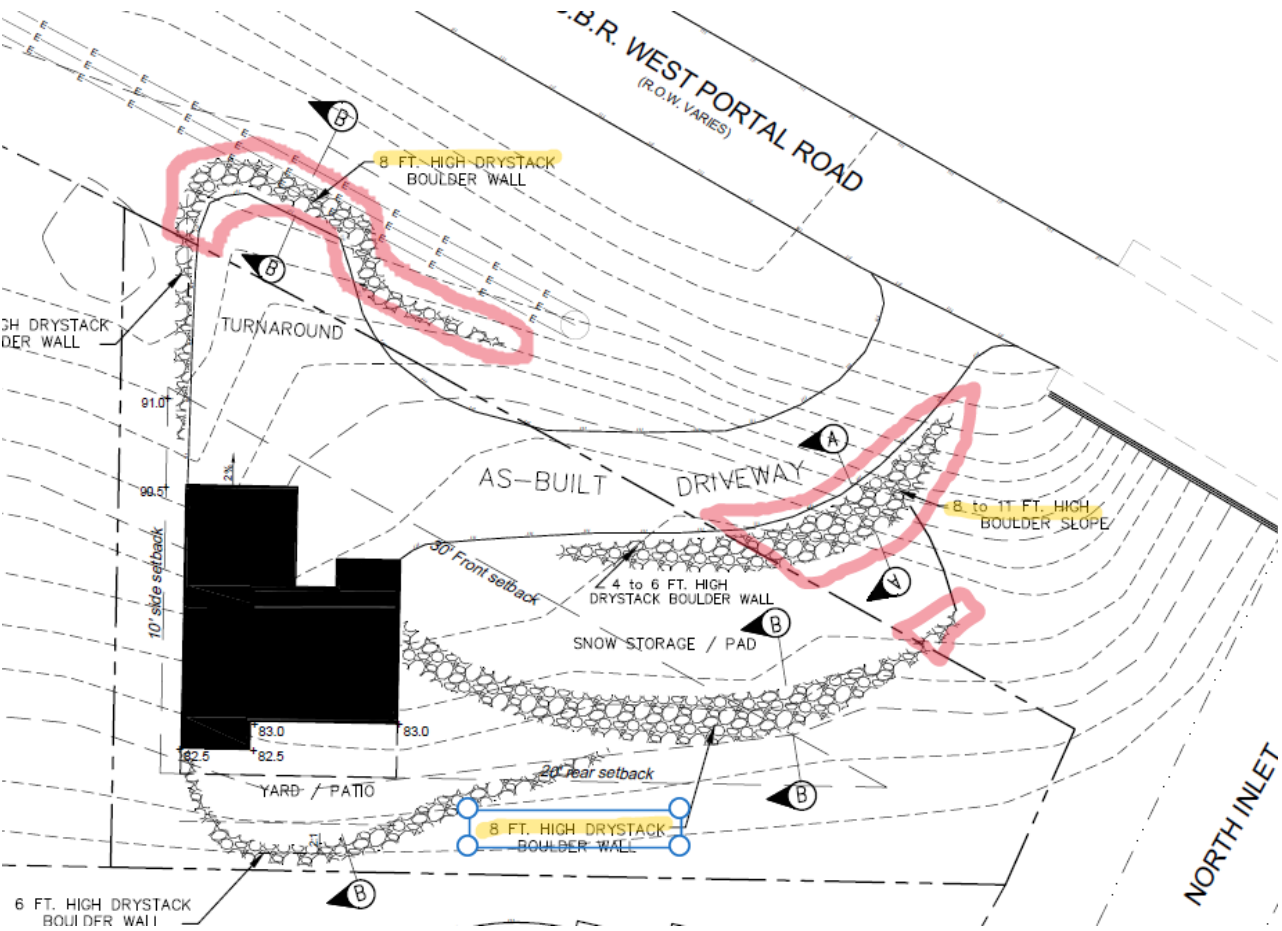
- 1. Open the Public Hearing
- 2. Allow staff to present the matter
- 3. Allow the applicant to address the Commission
- 4. Take all public comment
- 5. Close the Public Hearing
- 6. Have Commission discuss amongst themselves
- 7. Commission make a motion

Location Map





Wall Height and Location Graphic



Purpose

The Town has received a variance request from Cynthia A. Biersdorfer and Keith Nichols to permit 8 foot retaining walls to remain on their property and in the Town Right of Way. Per Municipal code 11-2-11, this request requires Planning Commission review and Board Approval.

Context

The property is located at 1204 West Portal Rd. The property is approximately 0.4 acres located adjacent to the Tonahutu Creek and zoned Single Family Residential High Density.

Background

The location of the walls that are over 8 feet are highlighted in yellow above. The applicant stated that the walls were not planned in the initial plans, but during the spring runoff, mud slides and flooding occurred and ran into their home, so they had to quickly build the walls to prevent further damage to their home. They stated that the runoff occurred due to the lack of vegetation upstream from the East Troublesome Fire.

Municipal Code:

Municipal Code 12-2-11(C) – [Zoning Standards]

<i>Minimum Setback</i>	<i>Front 25'</i>	<i>Side 10'</i>	<i>Rear 10'</i>	<i>Shoreline 30'</i>
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11-2-4 (D) - Roadway Specifications.

9. Retaining Walls.

- (a) Where necessary to meet required side slope grades, walls may be utilized.*
- (b) Height. Retaining walls may not exceed six (6) feet in height and require a four (4) feet shelf between walls. Any walls exceeding six (6) feet will require a variance.*
- (c) Location. Retaining walls may not be located closer than ten (10) feet from the traveled lanes (maximum separation is desired).*
- (d) Design. Retaining walls over four (4) feet must be designed by a Colorado Professional Engineer. Retaining walls should include façade design, which is subject to approval by the Town and county building department.*

Municipal Code 12-2-27 Supplemental Regulations for Setback, Height and Area.

11-2-11 Variance Request and Procedure.

If an applicant responsible to the Town for public improvements desires to design and construct such improvements in variance to criteria in these standards, each variance shall be identified in the initial submittal.

- (A) Application. An application for a variance shall be filed with Town Staff no later than twenty-one (21) days prior to the next regularly-scheduled Planning Commission meeting...*
- (B) Planning Commission Review. Variances from the Street Development Policies, Standards, and Specifications shall be reviewed by the Planning Commission at a Public Hearing and make a recommendation to the Board of Trustees.*
 - 1. Fifteen (15) days prior to the scheduled Public Hearing date, legal notice shall be placed in the local newspaper of general circulation advertising the time, date, and location of the Public Hearing.*
 - 2. In addition, certified letters are to be mailed at least fifteen (15) days prior to the Public Hearing to all property owners within two hundred (200) feet of any portion of the property.*
- (C) Board of Trustees Review. The Board of Trustees shall grant no variance without first receiving a recommendation from the Planning Commission. The Board may opt to hold a Public Hearing before granting the variance.*
- (D) Hardships for Consideration. Variance requests will only be granted if the applicant can demonstrate all of the following:*
 - 1. That by reason of exceptional shape, size or topography of lot, or other exceptional situation or condition of the building or land, practical difficulty or unnecessary hardship would result to the owners of said property from a strict enforcement of these Regulations;*
 - 2. That literal interpretation of the provisions of these Regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these Regulations.*
 - 3. That the special conditions and circumstances do not result from the actions of the applicant;*
 - 4. That granting the variance request will not confer on the applicant any special privilege that is denied by this ordinance to other lands, structures, or buildings in the same district;*
 - 5. That the granting of the variance does not pose a detriment to the public good and does not substantially impair the intent and purpose of the Zone Plan and these Regulations.*

Staff Comments

This hearing is to request an exception to the height of the walls due to a hardship listed in the attached submission. This hearing is not to request the encroachment license for the wall into the Town right of way. The Encroachment license is being requested and heard by the Board as a separate item.



A public hearing was properly noticed in the Middle Park Times and the Town has received 17 of the 23 notices that were sent to neighboring properties within 200'. No comment has been received against the walls, but 2 letters received with no issues with the walls (see attached).

The Applicant has submitted the engineered drawings of the walls as required by the code for walls over 4' (attached). The site plan is also attached for review.

Staff received all required items for the request:

- 1. Appropriate Fee and/or deposit; and
- 2. Signed Agreement for Services; and
- 3. A site plan and/or survey; and
- 4. The applicable Municipal Code Standard to be waived; and
- 5. A letter explaining the Hardships for Consideration associated with the variance request.

Commission Discussion

The Commission should discuss the findings of fact from the code 11-2-11 (D) (1-5), in order to make a decision/recommendation.

- 1. That by reason of exceptional shape, size or topography of lot, or other exceptional situation or condition of the building or land, practical difficulty or unnecessary hardship would result to the owners of said property from a strict enforcement of these Regulations;
- 2. That literal interpretation of the provisions of these Regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these Regulations.
- 3. That the special conditions and circumstances do not result from the actions of the applicant;
- 4. That granting the variance request will not confer on the applicant any special privilege that is denied by this ordinance to other lands, structures, or buildings in the same district;
- 5. That the granting of the variance does not pose a detriment to the public good and does not substantially impair the intent and purpose of the Zone Plan and these Regulations.

Suggested Commission Motion

Motion to approve Resolution xx-2023, a variance to Municipal Code 11-2-4(D)(9)(b) allowing retaining walls over 8 feet to remain on the property located at 1204 West Portal Rd.

OR

Motion to approve Resolution xx-2023, a variance to Municipal Code 11-2-4(D)(9)(b) allowing retaining walls over 8 feet to remain on the property located at 1204 West Portal Rd. with the following conditions:

OR

Motion to Deny the Request for Variance.



Town of Grand Lake

Planning Department

• P.O. Box 99 • 1026 Park Avenue • Grand Lake, CO 80447
• Phone: 970-627-3435 • Fax: 970-627-9290

Grand Lake, CO 80447 • www.grandlake.org

ZONING VARIANCE REQUEST APPLICATION

PROPERTY LOCATION:
 Street Address: 1204 W. Portal Rd
 Legal Description: Lot _____ Block _____ Subdivision _____

PROPERTY OWNER INFORMATION:
 Name: Cindy Coolen-Biersdorfer, Keith Nichols Email: Coolen_c@yahoo.com
 Mailing Address: PO Box 2115 Phone: 303 881-5335
 City: Grand Lake State: CO Zip: 80447 Fax: _____

APPLICANT INFORMATION: Is the Applicant the Property Owner? YES NO
 Name: _____ Email: _____
 Mailing Address: _____ Phone: _____
 City: _____ State: _____ Zip: _____ Fax: _____

CONTACT INFORMATION: Is the Contact Person the Applicant? YES NO
 Contact Person (if not Applicant): _____ Email: _____
 Mailing Address: _____ Phone: _____
 City: _____ State: _____ Zip: _____ Fax: _____

VARIANCE REQUEST (Brief Description): Variance 11-2-409 regarding wall height. - See attached

REQUIRED INFORMATION CHECKLIST:

- Site Plan (showing dimensions to existing and proposed features, locations of specific activities, proposed and existing signage, parking, ingress and egress points, traffic circulation, utilities, drainage features, and property lines)
- Explanation of Hardship (See Municipal Code for review criteria 11-2-11)
- Statement of Authority (If applicable. Required for representatives of entities and property owners.)
- Property Survey
- Agreement for Services Form
- Application Deposit (See Fee and Deposit schedule for amount)
- Additional Information (If applicable. Staff may require other helpful information for review.)

AFFIDAVIT:
 BY MY SIGNATURE, I attest that the information contained or attached to this application is true and correct to the best of my knowledge. I further understand that submission of false or misleading information shall be sufficient cause for the Special Use Permit to be revoked immediately without notice or hearing.
 Print Name: Cindy Coolen-Biersdorfer, Keith R. Nichols
 Signature: [Handwritten Signatures] Date: 6-21-2023

STAFF USE ONLY
 Application Received By: K White # 3013 Date & Time: 6/22/23
 File Name: _____ Deposit: YES NO Amount: \$ 300
 Agreement for Services Form Signed? YES NO

Town of Grand Lake-Planning Dept

Legal Summary Subd: METES & BOUNDS 75 ALL PT OF LOTS 2,6,7 SEC 5 T3N R75W DESC AT B/266 P/5+3 .447 AC +/- LYING SOUTH OF TUNNEL RD AND WEST OF NORTH INLET LOCATED IN LOT 2, SECT 5 T3N R75W DESC IN B/266 P/462

Request: We are requesting approval and subsequent sign off for the landscape changes that were completed without prior submission for the following reason:

This was a hardship situation combined with us being first-time home builders and exacerbated by a builder who abandoned us with no assistance following through on the initial landscape plans or the necessary changes.

There were no disingenuous intentions on our part to slip anything by the board, we were in an emergency state with water and mud causing extreme risk to the lower level of our new home. Surveys we had done previously led us to believe the public land was no more than the 25-foot easement from the street.

Minimal landscape plans were submitted and approved in 2019 (pre-troublesome fire) which did include some grading into what we now realize was the town right of way.

The erosion, flooding and mud slides caused by the burn scar above our property could not be foreseen. We were also unprepared for the unprecedented challenges we endured finding skilled workers because of covid19, especially an immediate need for a professional landscaper.

We were shoveling mud and water from our lower level almost daily due to the heavy rains.

We were watching the land up top erode every day including around the posts of the guardrail we had spent 10,000 moving.

Snow removal was inadequate & we had no turnaround to do any kind of snow management properly. There were notable rocks & boulders already existing in the areas we built up.

There were already steep drops & rocks at the top of the property, where we made it safer with some tiering.

The encroached area is not impeding on any utility cables or lines and the guard rail relocated down the west side of the driveway (pre-approved) protects and blocks any option of heading into the Tonahutu creek. This area wouldn't be conducive for public use.

We had a Civil Engineer onsite to inspect and approve the landscape construction, grading and aggressive drainage strategy.

All rock landscape walls have been included in our insurance policy with American Family insurance.

Pending board approval, we are looking forward to investing in revegetation throughout the property and are open to board suggestions.

Respectfully,
Cindy Coolen- Biersdorfer
Keith R Nichols

TOWN OF GRAND LAKE

AGREEMENT FOR PAYMENT OF FEES FOR REVIEW AND PROCESSING OF SUBDIVISION PLATS, ZONING AND REZONING REQUESTS, ANNEXATIONS, REQUESTS FOR ROAD VACATIONS, AND OTHER LAND USE RELATED MATTERS

THIS AGREEMENT ("the Agreement") is entered into this 20th day of June, 2023 by and between the Town of Grand Lake, Colorado, a Colorado municipal corporation, ("the Town") and Cindy Biersdorfer, ("the Owner"). Keith Nichols

WHEREAS, the Owner owns certain property situated in the Grand County, Colorado described on Exhibit A, attached hereto and incorporated herein by reference, (the Property");

WHEREAS, the review and processing includes review of all aspects of land use including, but not limited to, subdivision, zoning and rezoning, annexation, road vacations, change of land use, installation of public improvements, encroachments, dedication of lands and the availability of and feasibility of providing utility services;

WHEREAS, the Owner requests a change in land use for the Property and has made application to the Town for approval, and

WHEREAS, the Parties recognize that the fees as specified by Resolution No. 11-2004 may not be adequate to fully cover the Town's expenses incurred during the application process, including but not limited to, legal publications, notices, reproduction of materials, public hearing expenses, recording of documents, engineering fees, attorney fees, consultant fees, and fees for administrative time of Town staff, and

WHEREAS, the Parties hereto recognize that the Town will continue to incur expenses through the entire development review process until final completion of the development including but not limited to, legal publications, notices, reproduction of materials, public hearing expenses, recording of documents, engineer fees, surveyor fees, geologist fees, hydrologist fees, landscape architect fees, attorney fees, consultant fees, and fees for administrative time of Town staff, security, permits and easements;

NOW THEREFORE, for and in consideration of the foregoing premises and of the mutual promises and conditions hereinafter contained, it is agreed as follows:

- 1. The Town has collected or will collect certain land use fees from the Owner and the Town will apply those fees against the review and processing expenses incurred by the Town while processing the Owner's land use review proposal. In the event the Town incurs review and processing expenses greater than the monies collected from the Owner, the Owner agrees to reimburse the Town for the additional expenses and fees upon submittal of an

invoice. Owner shall pay all invoices submitted by the Town within ten (10) days of the Town's delivery of such invoice. Failure by the Owner to pay any invoice within the specified time shall result in immediate suspension of the review process by the Town, including cancellation of any scheduled hearings. Nor shall any building permits, certificates of occupancy or other Town approvals be issued or granted and for the Town to exercise such rights and remedies as are otherwise available to it in law or equity or under the applicable provisions of the Town Code.

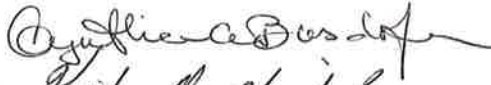

2. Except where the law or an agreement with the Town provides otherwise, the Owner may terminate its application at any time by giving written notice to the Town. The Town shall take all reasonable steps necessary to terminate the accrual of costs to the Owner and file such notices as are required by the Town's regulations. The Owner shall be liable for all costs incurred by the Town in terminating the processing of the application.
3. If the Owner fails to pay the fees and costs required herein when due, the Town may take those steps necessary and authorized by law to collect the fees and costs due, in addition to exercising those remedies set forth in Section 1, above. The Town shall be entitled to recover from Owner all court costs and attorney's fees incurred in collection of the balance due, including interest on the amount due from its due date at the rate of 18% per annum.
4. The Town will account for all funds expended and fees and expenses incurred by the Town as a result of the development review of the application throughout the development process. Statements of expenses incurred will be made available to the Owner by the Town. Expenses to be charged to the Owner's account shall include, but shall not be limited to, legal publications, notices, reproduction of materials, public hearing expenses, recording of documents, engineer fees, surveyor fees, geologist fees, hydrologist fees, landscape architect fees, attorney fees, consultant fees, and fees for administrative time of Town staff, security, permits and easements. Within sixty (60) days after the completion of the processing of the application by the Town, the Town will provide Owner with a statement of account and will refund to the Owner any funds paid by the Owner that were not expended by the Town, except where the Parties expressly agree to the contrary.
5. Owner's obligation to pay costs and expenses provided for in this Agreement shall exist and continue independent of whether the Owner's application, or any part thereof, is approved, approved with conditions, denied, withdrawn, or terminated by the Town or the Owner prior to a final decision in the process.

IN WITNESS WHEREOF, The Town and the Owner have caused this Agreement to be duly executed on the day and year first above written.

TOWN OF GRAND LAKE

By: 
Kim White, Community Development Director

Attest: 
Alayna Carrell, Town Clerk


OWNER:  Date: 6/20/23

Printed: Cynthia A. Biersdorfer

Keith R Nichols

Biersdorfer, Cindy

From: Keith Nichols <keithrussellnichols@icloud.com>
Sent: Tuesday, May 23, 2023 9:42 PM
To: Biersdorfer, Cindy
Subject: Fwd: Colorado 811 Current Status of Positive Response for Ticket A313703721-00A

[EXTERNAL EMAIL]

Sent from my iPhone

Begin forwarded message:

From: Colorado 811 <OCARS_Pro@uncc.org>
Date: May 20, 2023 at 12:23:38 AM MDT
To: keithrussellnichols@icloud.com
Subject: Colorado 811 Current Status of Positive Response for Ticket A313703721-00A

This is an automatically generated response. Please do not reply to this message.

Ticket: A313703721 Rev: 00A Taken: 05/17/23 03:08 PM

State: CO County: GRAND Place: GRAND LAKE
Address : 1204 W PORTAL RD
Location: LOC ENTIRE FRONT LOT *ACCESS OPEN*

View map and file attachments at:

Member Code	Member Facility	Response
CCMTN01	COMCAST CLEAR - NO CONFLICT Comments: 2023/05/19 14:40 Attempted Phone Call tel:(970)798-8282 Additional information from member available	05/19/23 03:47 PM 002
GRLKW1	TOWN OF GRAND LAKE CLEAR - NO CONFLICT	05/18/23 08:04 AM 002
MPEL01	MOUNTAIN PARKS ELECTRIC, INC. CLEAR - NO CONFLICT Comments: 2023/05/19 14:40 Attempted Phone Call tel:(970)798-8282 Additional information from member available	05/19/23 03:46 PM 002
QLNCC00	CENTURYLINK CLEAR - NO CONFLICT Comments: 2023/05/19 14:40 Attempted Phone Call tel:(970)798-8282	05/19/23 03:47 PM 002
TLWS01	THREE LAKES WATER AND SANITATI CLEAR - NO CONFLICT	05/18/23 08:20 AM 002
XLSLV00	XCEL ENERGY COMPLETED - SEE MARKS ON SITE Comments: Locate Completed	05/18/23 08:30 PM 017

DOUGLASS ENGINEERING

CIVIL / LAND DEVELOPMENT

15153 WEST 32ND DRIVE, GOLDEN, COLORADO 80401 (303) 421 - 4165

May 9, 2023

Ms. Kim White
Community Development Director
Town of Grand Lake
1026 Park Avenue
Grand Lake, Colorado 80447

**RE: - ASBUILT Drystack Boulder Gravity Retaining Walls
1204 W. Portal Road Certification / Inspection Letter**

Dear Ms. White:

I, Glenn M. Douglass, a Registered Professional Engineer in the State of Colorado, do hereby certify that I have inspected the above referenced drystack boulder retaining walls on May 5, 2023.

Based on our experience with drystack boulder wall and boulder slope construction methodology, the embankment fill slopes and boulder placements were observed to be constructed in accordance to previous boulder slope and wall designs this firm has been involved with. The boulder slopes vary between 0.75:1 to 1.25:1 horizontal to vertical. The vertical heights of the boulder walls and slopes vary between 4 to 11.75 feet in height and are constructed from native and imported boulders ranging in size from 2 to 5 feet in diameter.

Attached are the boulder retaining wall stability calculations and typical construction detail of the as-built walls. We have also prepared an As-Built Retaining Wall Site Plan showing the locations of the recently constructed walls.

It is our professional opinion, based on our experience with drystack boulder wall construction methodology, that the completed walls are satisfactory in terms of structural stability for site conditions and loading.

Sincerely,

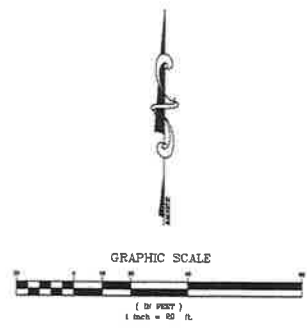
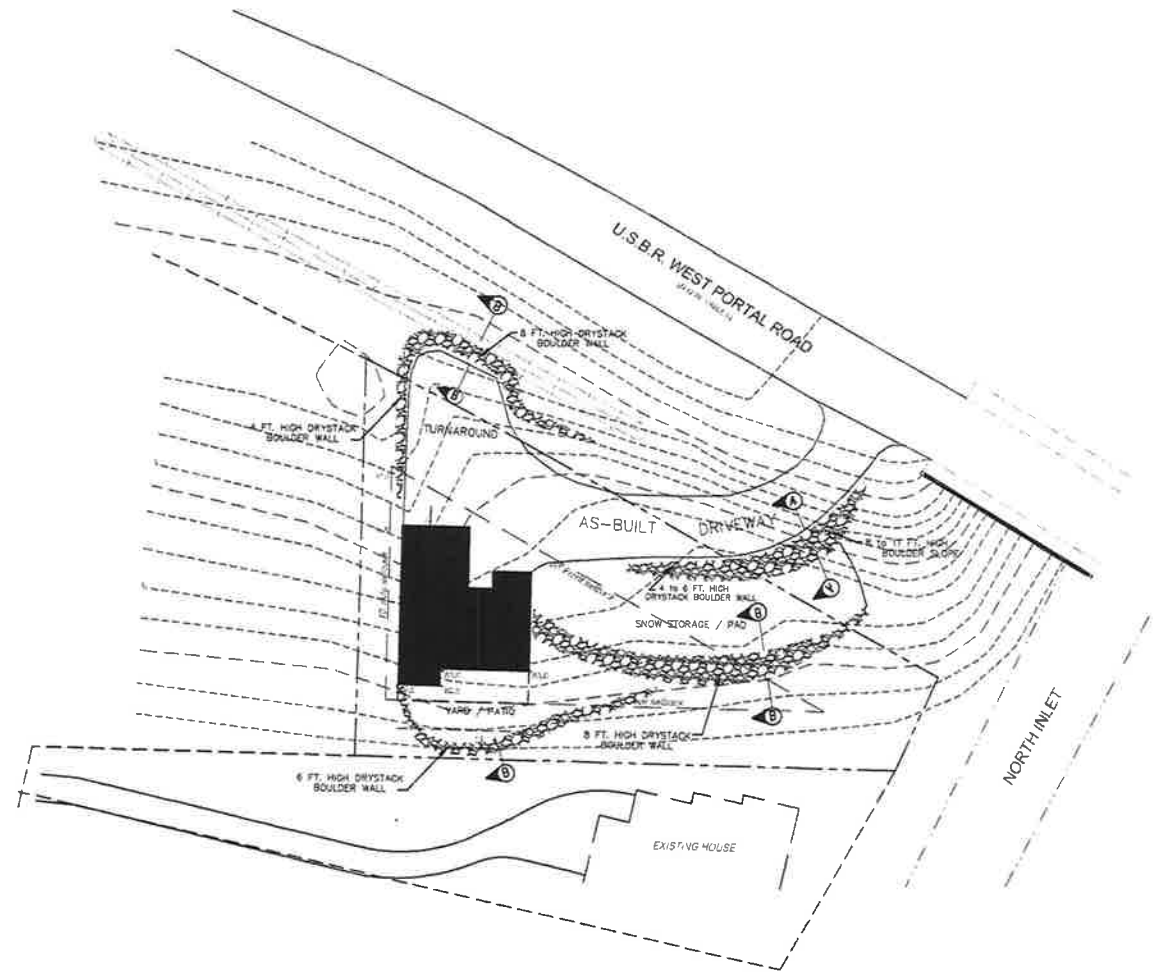


Glenn M. Douglass, P.E.

cc: Cindy Biersdorfer & Keith Nichols

BIERSDORFER - NICHOLS RESIDENCE
1204 WEST PORTAL ROAD

AS-BUILT SITE PLAN
AND WALL LOCATION PLAN



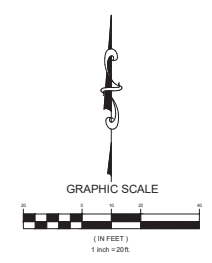
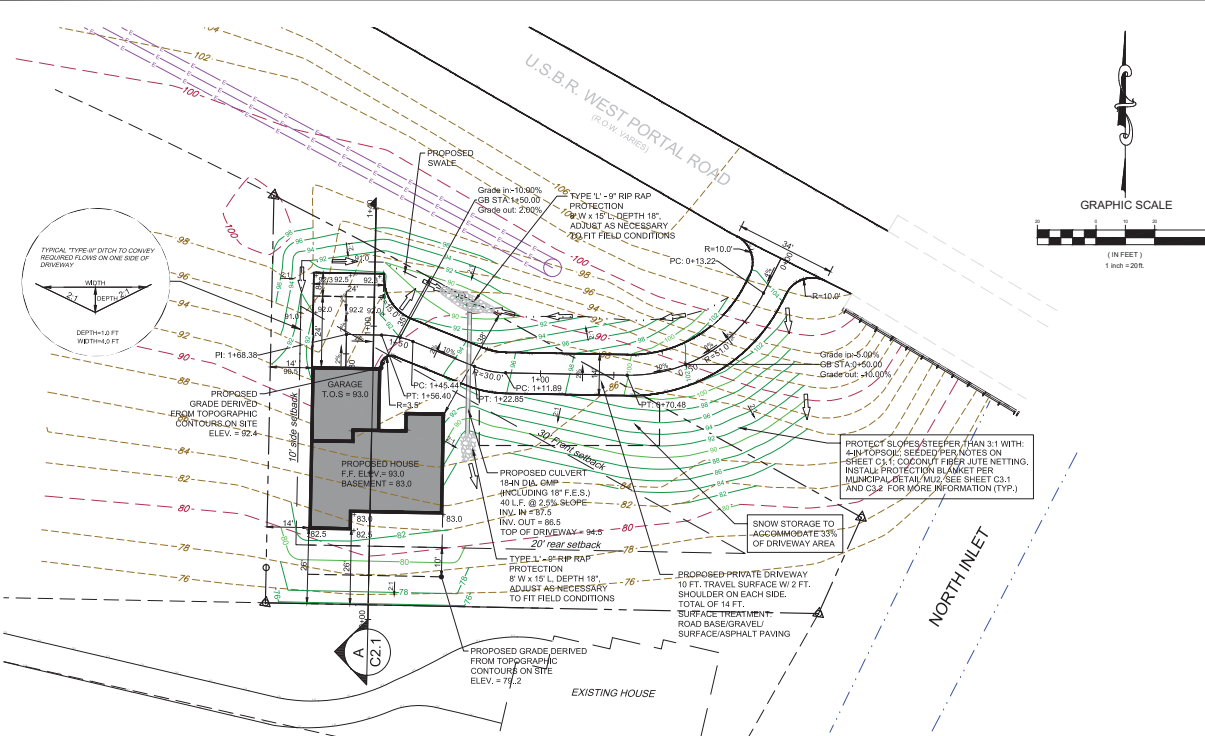
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
OR 303-534-6700
CALL BEFORE YOU DIG
FOR THE LOCATION OF UNDERGROUND MEMBER UTILITIES



PREPARED BY
DOUGLASS ENGINEERING
15153 WEST 32ND DRIVE
GOLDEN, COLORADO 80401
(303) 421-4165
**1204 WEST PORTAL ROAD
AS-BUILT PLAN**

REV _____ DATE: 9-9-22 SHEET: 1 OF 1

Section 7, Item A.



LEGEND

	EXISTING BOUNDARY LINE
	EXISTING RIGHT-OF-WAY
	EXISTING EASEMENT LINE
	EXISTING CENTERLINE OF EASEMENT/ROW
	EXISTING ADJACENT LOT LINE
	EXISTING BUILDING SETBACK/ENVELOPE
	EXISTING 10-FT CONTOUR
	EXISTING 2-FT CONTOUR
	PROPOSED 10-FT CONTOUR
	PROPOSED 5-FT CONTOUR
	EXISTING EDGE OF DIRT/GRAVEL/ASPHALT ROAD
	PROPOSED EDGE OF DRIVEWAY
	EXISTING DRAINAGE FLOWLINE
	PROPOSED DRAINAGE FLOWLINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING POWER POLE
	PROPOSED RIP RAP
	EXISTING TOPOGRAPHY SLOPE
	PROPOSED TOPOGRAPHY SLOPE
	PROPOSED GRADE SPOT ELEVATION

LAND DISTURBANCE DATA:

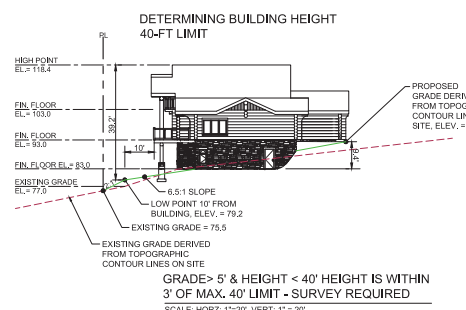
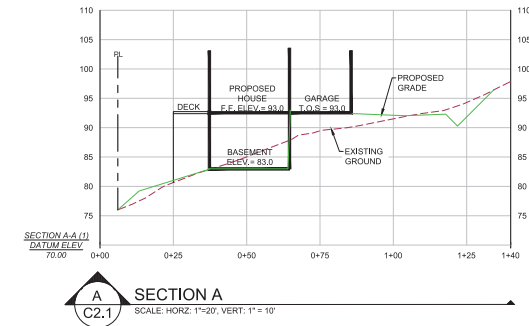
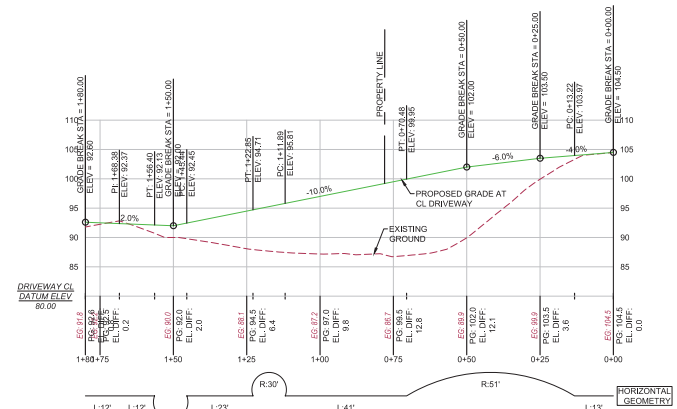
- EARTHWORK CUT: 285 CY
- EARTHWORK FILL: 1,728 CY
- EARTHWORK NET: 1,443 CY (CUT)
- PROPOSED IMPERVIOUS AREA:
 - ROOF, DECK, CONCRETE = 2,400 S.F.
 - GRAVEL, ASPHALT = 3,022 S.F.
 - TOTAL IMPERVIOUS AREA = 5,422 S.F.
- UNDEVELOPED/REVEGETATED AREA = 0.28 ACRES
- TOTAL PROPERTY AREA = 0.40 ACRES
- AREA OF DISTURBANCE: 12,847 S.F.
- STEEPEST DISTURBED NATURAL SLOPE ON PROPERTY: 50%
- STEEPEST PROPOSED GRADE: 2:1 CUT/FILL SLOPE

NOTES:

- SURVEY ORIGIN:** LAND SURVEY INFORMATION IS BASED ON AN IMPROVEMENT LOCATION CERTIFICATE PROVIDED BY THE CLIENT. SEE SHEET C1.2 FOR ADDITIONAL INFORMATION. PROPERTY LINES, EASEMENT, SETBACKS, BUILDING ENVELOPES, AND TRUE BUILDING LOCATIONS ARE TO BE VERIFIED PRIOR TO CONSTRUCTION.
- ALL CONSTRUCTION STAKING IS TO BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF COLORADO.
- PLANS NOT APPROVED BY GRAND COUNTY ARE NOT VALID FOR CONSTRUCTION.
- PROPERTY PINS, PROPERTY LINE, RIGHT-OF-WAY AND SLOPES TO BE CONFIRMED BY THE CONTRACTOR/APPLICANT AS THEY RELATE TO THIS DRIVEWAY PERMIT APPLICATION PRIOR TO THE START OF EARTH MOVING ACTIVITIES.

SITE NOTES:

- THERE ARE OVERHEAD UTILITIES OFFSITE. THERE IS EVIDENCE OF ABOVE GROUND ELECTRICAL UTILITIES.
- THERE IS NO EVIDENCE OF EXISTING UNDERGROUND SANITARY SEWER AND WATER UTILITIES OR EXISTING CULVERTS. NONE ARE SHOWN ON THE SURVEY. SEE SHEET C1.2 FOR MORE INFORMATION.



DRIVEWAY PROFILE
SCALE: 1" = 20' (HORIZ), 1" = 10' (VERT)

SECTION A-A (1)
SCALE: HORIZ: 1"=20', VERT: 1"=10'

CALL BEFORE YOU DIG
CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987



CHG. BY:	JMM
REVISIONS:	COUNTY COMMENTS
DATE:	05-18-20

INSIGHT ENGINEERING, INC.
ENGINEERING & DESIGN SERVICES
EVERGREEN, COLORADO 80439
PHONE (303) 929-4272 FAX (720) 398-3052

THIS DOCUMENT IS UNCLASSIFIED AND NOT TO BE USED OR REPRODUCED IN ANY MANNER UNLESS AUTHORIZED WRITING BY INSIGHT ENGINEERING.



PROJECT EXCLUSIVELY DESIGNED FOR:

PARCEL ID: 116005100020
GRAND LANE, CO 80447
GRAND COUNTY

DRAWING NAME:
GRADING PLAN AND DRIVEWAY PROFILE

FILE NAME:
E19-0232 GESC Plans.dwg

JOB NO.
E19-0232

SCALE:
AS SHOWN

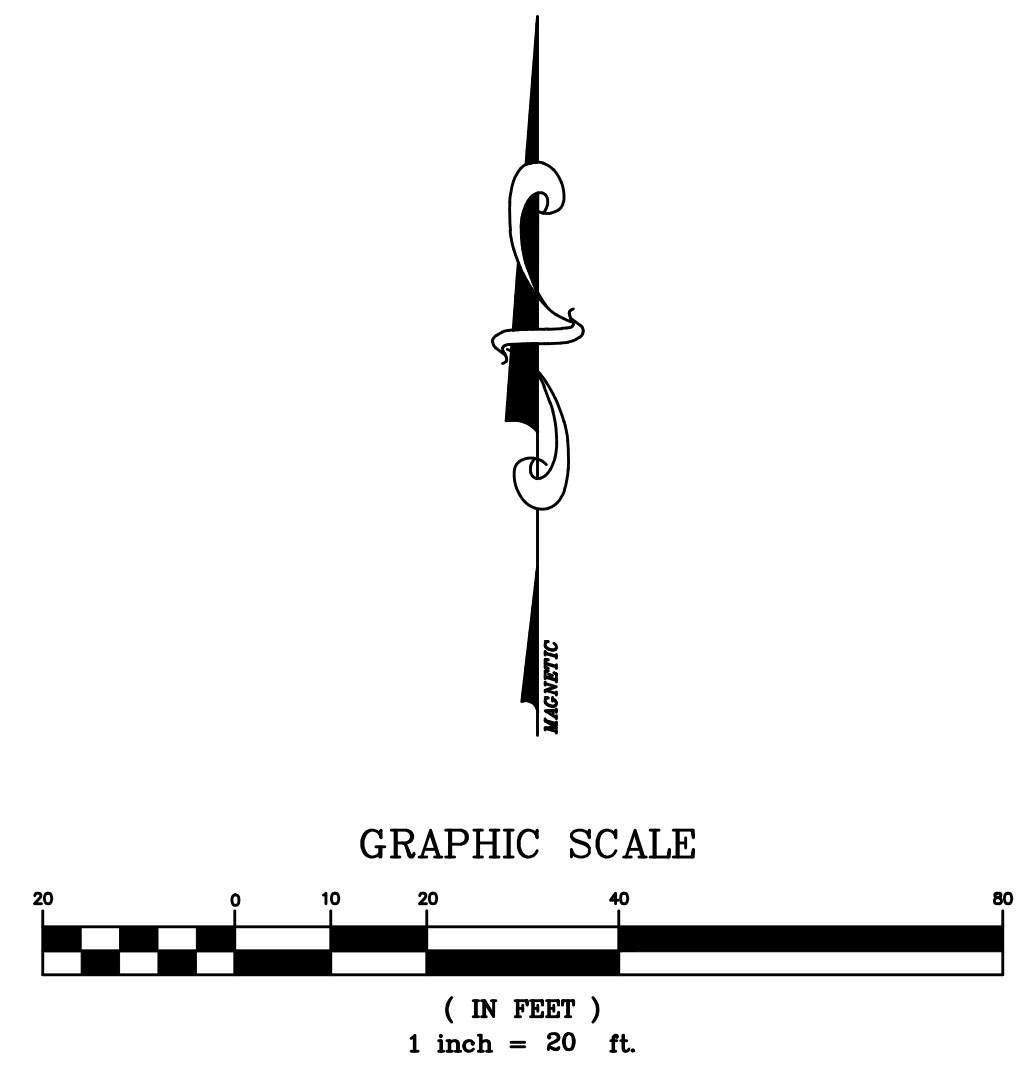
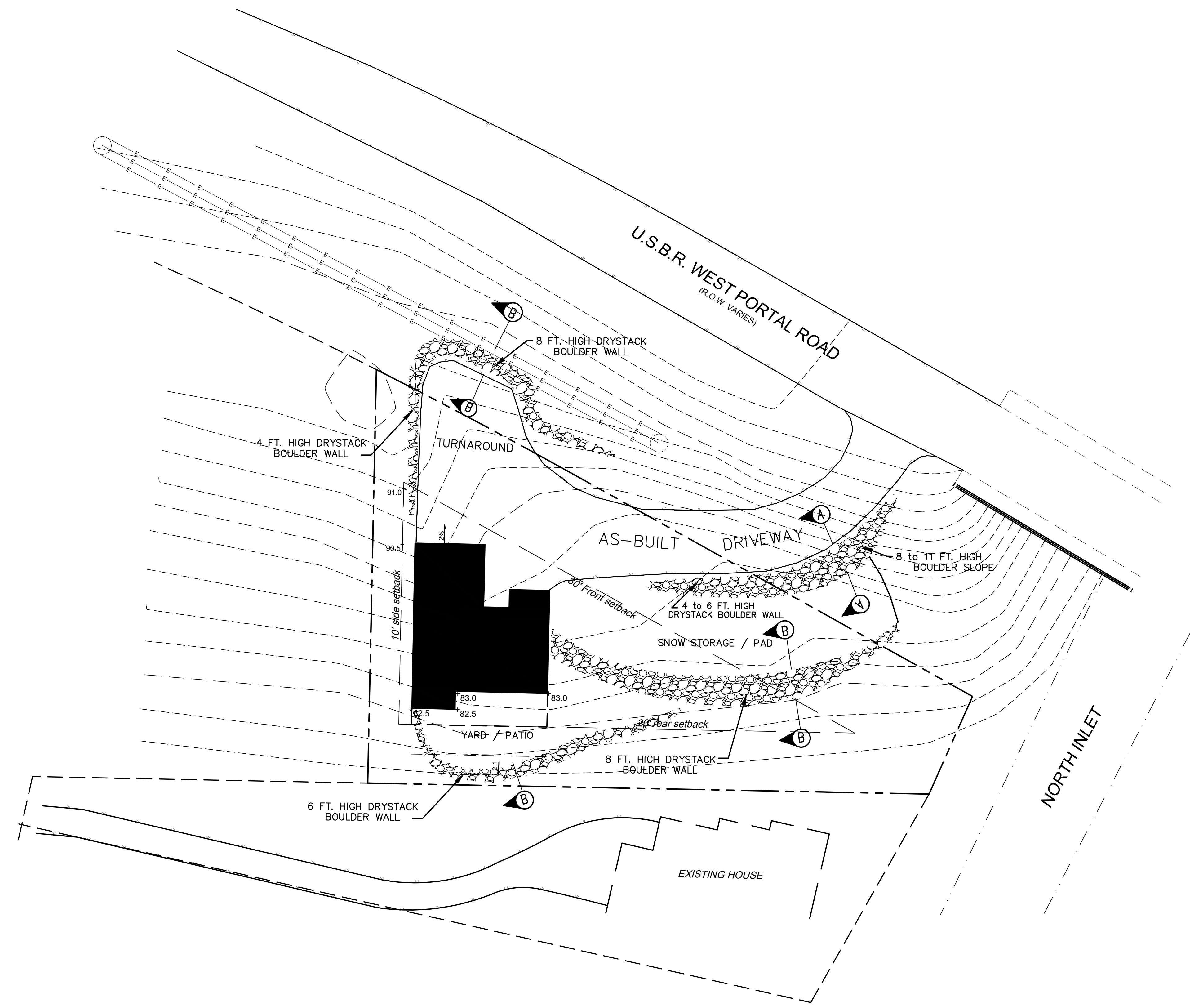
PLOTTED:
05-18-20

SHEET:

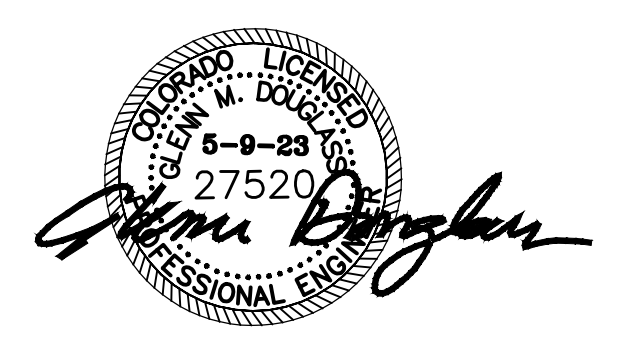
C2.1

BIERSDORFER - NICHOLS RESIDENCE 1204 WEST PORTAL ROAD

AS-BUILT SITE PLAN AND WALL LOCATION PLAN



CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
OR 303-534-6700 IN METRO DENVER
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES



PREPARED BY
DOUGLASS ENGINEERING
15153 WEST 32ND DRIVE
GOLDEN, COLORADO 80401
(303) 421-4165

**1204 WEST PORTAL ROAD
AS-BUILT PLAN**

DOUGLASS ENGINEERING

CIVIL / LAND DEVELOPMENT

15153 WEST 32ND DRIVE, GOLDEN, COLORADO 80401 (303) 421 - 4165

May 9, 2023

Ms. Kim White
Community Development Director
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Grand Lake, Colorado 80447

**RE: - ASBUILT Drystack Boulder Gravity Retaining Walls
1204 W. Portal Road Certification / Inspection Letter**

Dear Ms. White:

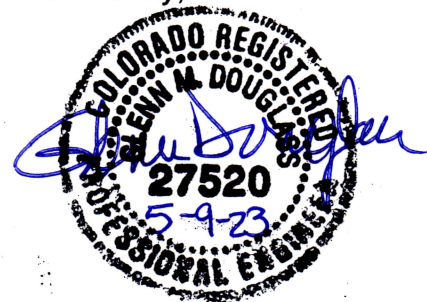
I, Glenn M. Douglass, a Registered Professional Engineer in the State of Colorado, do hereby certify that I have inspected the above referenced drystack boulder retaining walls on May 5, 2023.

Based on our experience with drystack boulder wall and boulder slope construction methodology, the embankment fill slopes and boulder placements were observed to be constructed in accordance to previous boulder slope and wall designs this firm has been involved with. The boulder slopes vary between 0.75:1 to 1.25:1 horizontal to vertical. The vertical heights of the boulder walls and slopes vary between 4 to 11.75 feet in height and are constructed from native and imported boulders ranging in size from 2 to 5 feet in diameter.

Attached are the boulder retaining wall stability calculations and typical construction detail of the as-built walls. We have also prepared an As-Built Retaining Wall Site Plan showing the locations of the recently constructed walls.

It is our professional opinion, based on our experience with drystack boulder wall construction methodology, that the completed walls are satisfactory in terms of structural stability for site conditions and loading.

Sincerely,



Glenn M. Douglass, P.E.

cc: Cindy Biersdorfer & Keith Nichols

**DRystack BOULDER GRAVITY TYPE
RETAINING WALL
DETAILS AND DESIGN CALCULATIONS**

FOR

**1204 W. PORTAL ROAD
SITE RETAINING / LANDSCAPING WALLS**

PREPARED FOR:

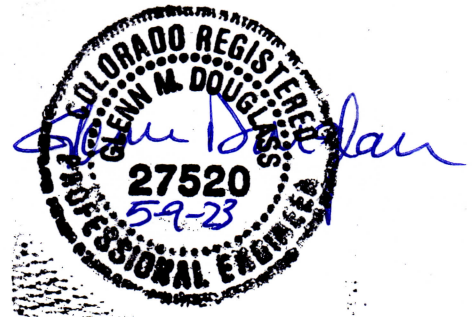
Cindy Biersdorfer & Keith Nichols
1204 W. Portal Road
Grand Lake, Colorado 80447

PREPARED BY:

Douglass Engineering
15153 W. 32nd Drive
Golden, CO 80401

(303) 421-4165

MAY 2023

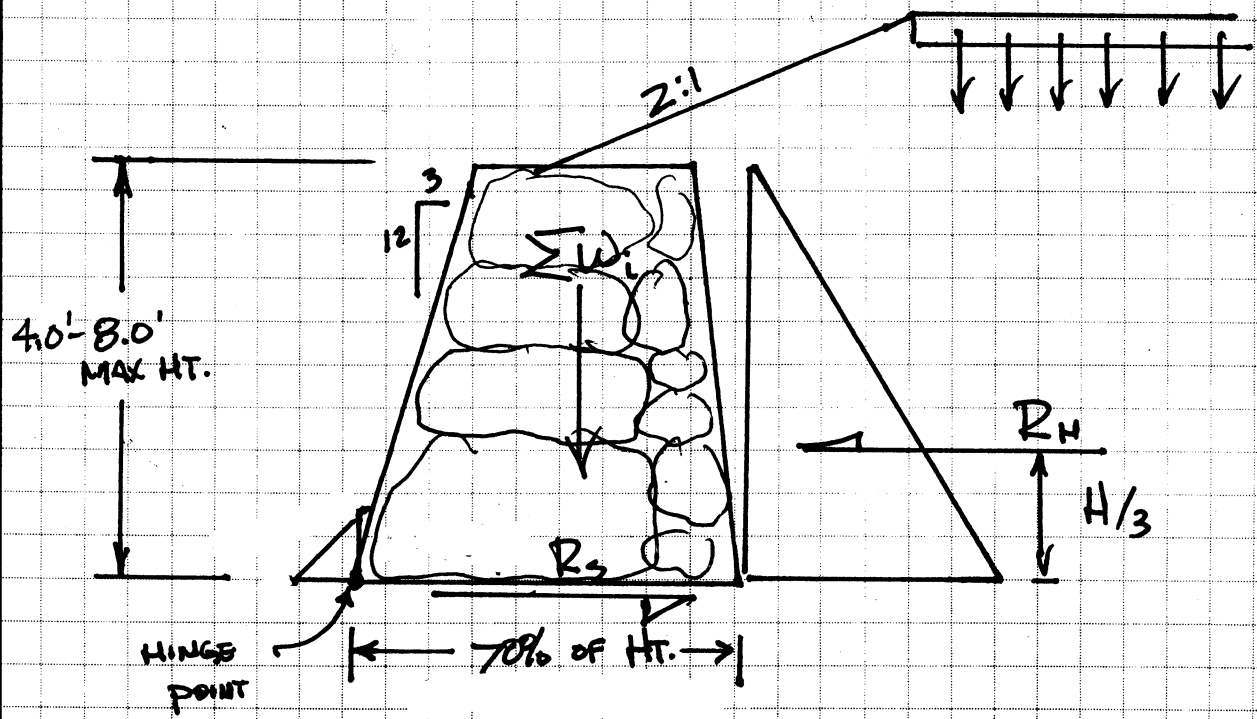


DRYSTACK BOULDER WALL DIAGRAM

DESIGN CRITERIA : VARIES 4' to 8'
 MAX HEIGHT = 8.0'

1. UNIT WEIGHT SOIL : 115 pcf.
2. UNIT WEIGHT ROCK : 125 pcf.
3. ALLOWABLE SOIL BEARING CAP. : 3500 pcf.
4. COEF. OF SLIDING FRICTION : 0.5
5. PASSIVE EARTH PRESSURE : 300 pcf.
6. ACTIVE EARTH PRESSURE : 35 pcf.
7. * INTERNAL FRICTION ϕ : 30°

TYPICAL WALL CONFIGURATION:



RETAINING WALL EQUIVALENT HEIGHT: 4.5'

CALCULATE ACTIVE EARTH PRESSURE:

$$R_H = \frac{1}{2} (0.33) \times 115 \text{ lb/ft}^3 \times (4.5)^2 \\ = 384.2 \text{ lbs.}$$

RESULTANT ACTS H/3 FROM BASE $H/3 = 1.5'$

CALC. MOMENT OVERTURNING $M_o = 384.2 \times 1.5'$
 $= 576.3 \text{ ft-lbs.}$

CALC. MOMENT RESTORING: Wt. OF ROCK:
 $125 \text{ lbs.} \times 3.0 \times 4.5 = 1688\#$

$$M_R = 1688 \times 1.5 = 2531 \text{ ft-lbs.}$$

OVERTURNING RATIO: $M_R / M_o = 2531 / 576.3 = 4.39$
 $= 4.39 > 1.5$ OK ✓

$$M_{\text{NET}} = 2531 \text{ ft-lbs.} - 576.3 \text{ ft-lbs.} \\ = 1954.7 \text{ ft-lbs.}$$

$$\bar{x} = 1954.7 / 1688 = 1.158$$

$$e = 3/2 - 1.158 = 0.342$$

CHECK AGAINST SLIDING: $R_s = (\sum W_i + R_v) \tan \delta$

$$\text{RATIO} = R_s / R_H = \frac{1688\# (0.50)}{384.2} = 2.19 > 1.5$$

OK ✓

CALCULATIONS FOR 8.0' HIGH DRY STACK BOLLIDER WALL.

USE EQUIVALENT HEIGHT: 8.0'

CALC. ACTIVE EARTH PRESSURE: $R_H = \frac{1}{2} (33) (115 \frac{\#}{ft^3}) (8.0)^2$
 $= 1214.40 \text{ LBS.}$

RESULTANT ACTS H/3 FROM BASE = $\frac{8.0}{3} = 2.67'$

MOMENT OVERTURNING $M_O = 1214.4 \# \times 2.67'$
 $= 3238.4 \text{ Ft. lbs.}$

MOMENT RESTORING: W_t OF ROCK: $125 \frac{\text{lb}}{\text{ft}^3} \times 5.5 \times 8.0$
 $= 5500 \text{ lbs.}$

$M_R = 5500 \text{ lbs.} \times 2.5' = 13,750 \text{ Ft. lbs.}$

OVERTURNING RATIO: $M_R / M_O = 13,750 / 3238 = 4.25$

$4.25 > 1.5 \therefore \underline{\text{OK}} \checkmark$

$M_{\text{NET}} = 13,750 - 3238 = 10512 \#$ $\bar{x} = 10512 / 5500 = 1.91$
 $e = \frac{5}{2} - 1.91 = 0.46$

CHECK AGAINST SLIDING $R_s = (\sum W_i + R_v) \tan \delta$

RATIO = $R_s / R_H = \frac{5500 \# (.50)}{1214 \#} =$

$= 2.27 > 1.5 \checkmark$

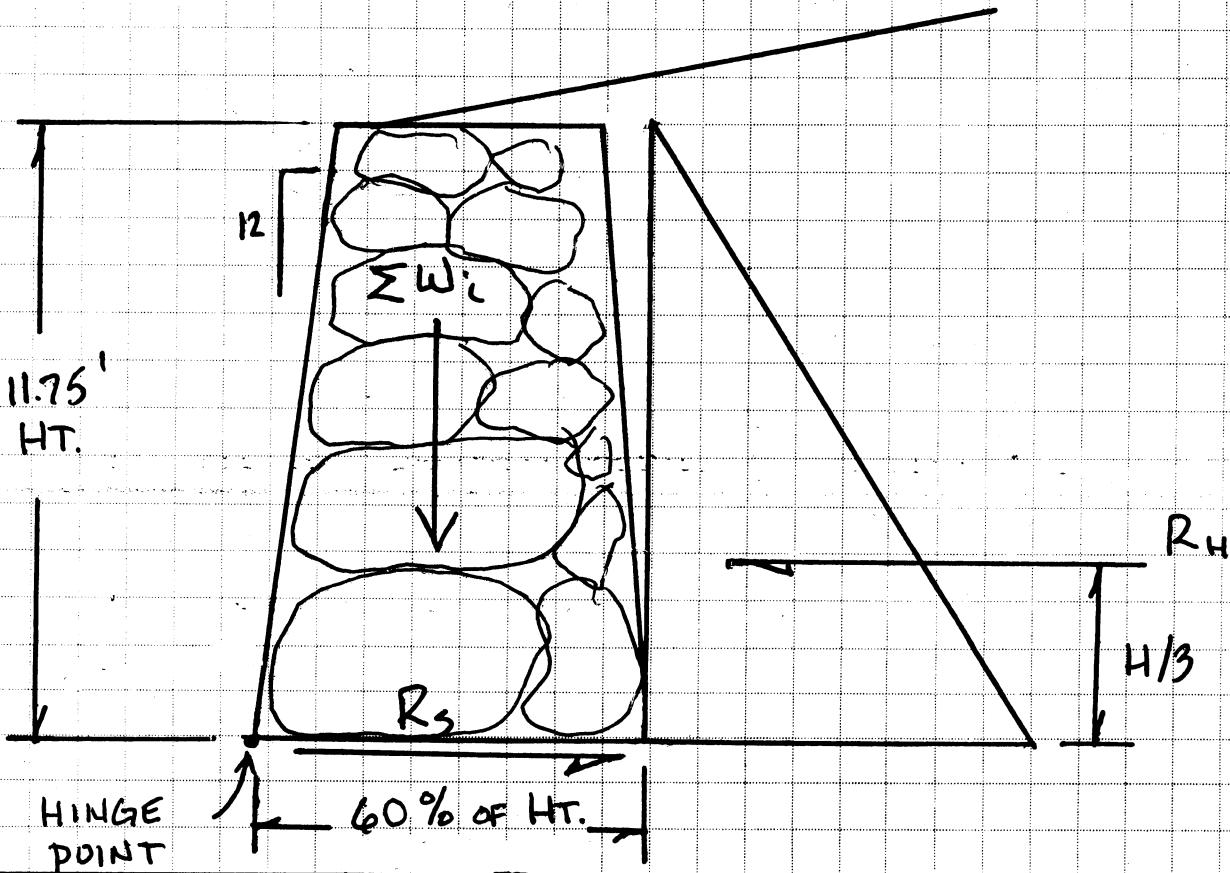
OK

DRY STACK BOULDER WALL DIAGRAM

DESIGN CRITERIA: MAX HEIGHT = 11.75'

1. UNIT WEIGHT SOIL : 115 #/ft³
2. UNIT WEIGHT ROCKS : 125 #/ft³
3. ALLOWABLE SOIL BEARING CAP : 3000 pcf.
4. COEF. OF SLIDING FRICTION : 0.5
5. PASSIVE EARTH PRESSURE: 300 pcf.
6. ACTIVE EARTH PRESSURE: 35 pcf.
7. ANGLE (ϕ) OF INTERNAL FRICTION : 30°

WALL CONFIGURATION



CALCULATIONS FOR 11.75' HIGH DRUSTACK BOULDER WALL

USE EQUIVALENT HEIGHT : 12.0'

CALC ACTIVE EARTH PRESSURE :

$$P_H = \frac{1}{2} (0.33) (115 \# / \text{ft}^3) (12.0)^2 \\ = 2732.40 \text{ lbs.}$$

RESULTANT ACTS $\frac{1}{3}(H)$ FROM BASE = $12.0/3 = 4.0'$

CALC. OVERTURNING MOMENT : $M_O = 2732 \times 4.0$
 $= 10929.6 \text{ ft-lbs.}$

CALC. RESTORING MOMENT : M_R

WEIGHT OF ROCK : $125 \# / \text{ft}^3 \times 7.8' \times 12.0'$
 $= 11700 \text{ lbs.}$

$$M_R = 11700 \text{ lbs} \times 3.9' = 45630 \text{ ft-lbs.}$$

OVERTURNING RATIO : M_R / M_O

$$= 45630 / 10929 = 4.18$$

$$4.18 > 1.5 \therefore \text{OK} \checkmark$$

$$M_{\text{NET}} : 45630 - 10929 = 34701 \text{ ft-lbs}$$

$$\bar{x} = 34701 / 45630 = 0.7285$$

$$e = 3/2 - 0.7285 = 0.7715$$

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(303) 421 - 4165

JOB 1204 W. PORTAL ROAD

SHEET NO. 6 OF 7

Section 7, Item A.

CALCULATED BY GMD DATE 5-9-23

CHECKED BY _____ DATE _____

SCALE _____

11.75' HT DRYSTACK WALL (CONT.)

CHECK AGAINST SLIDING

$$R_s = (\sum W_i + R_v) \tan \delta$$

$$\text{RATIO} = R_s / R_H = \frac{11700 \# (0.50)}{2732 \#}$$

$$= 2.14$$

2.14 > 1.5 ∴ OK ✓

Bearing Capacity Calculations:

$$Factor\ Safety = \frac{Q_c \text{ (soil capacity)}}{Q_c \text{ (bearing stress)}} = \frac{Q_{ult}}{Q_a}$$

$$Q_{ult} = c N_c + .5 \gamma (B) N_\gamma$$

$c =$ cohesion
 $B =$ equiv. ftg. width.
 $N_c, N_\gamma =$ bearing capacity factors from
 Fig. 7 using ϕ of
 foundation soil.

$\phi = 27^\circ$ (silty clay - sandy clay)
 $N_c = 23.94$
 $N_\gamma = 14.47$

Assume cohesion $c = 0$ for extreme case + conservative design.

$$\therefore Q_{ult} = 0.5(125)(4.5)(14.47) =$$

$$Q_{ult} = \dots = 4069 \text{ psf.} \leftarrow \text{seems high, use typical value of 2500 psf this type soil}$$

$$Q_a = \frac{\gamma_r (H L \cdot H)}{B} = \frac{(125)(4.5)(6.5)}{3.09} = 1183 \text{ psf.}$$

$$B = L - 2e \quad e = \frac{P_s \gamma_s}{W_r} = \frac{(928.8)(2.33)}{3062.5} = .71$$

$$B = 4.5 - (2)(.71) = 3.09$$

$$FS_{BC} = \frac{Q_{ult}}{Q_a} = \frac{4069}{1183} = 3.44 \text{ OK, However if more realistic value of 2500 psf is used for } Q_{ult}$$

$$FS_{BC} = 2.11 > 2.0 \text{ } \checkmark \text{ OK} = \frac{2500}{1183} = 2.11 \text{ } \checkmark \text{ } > \underline{2.0}$$

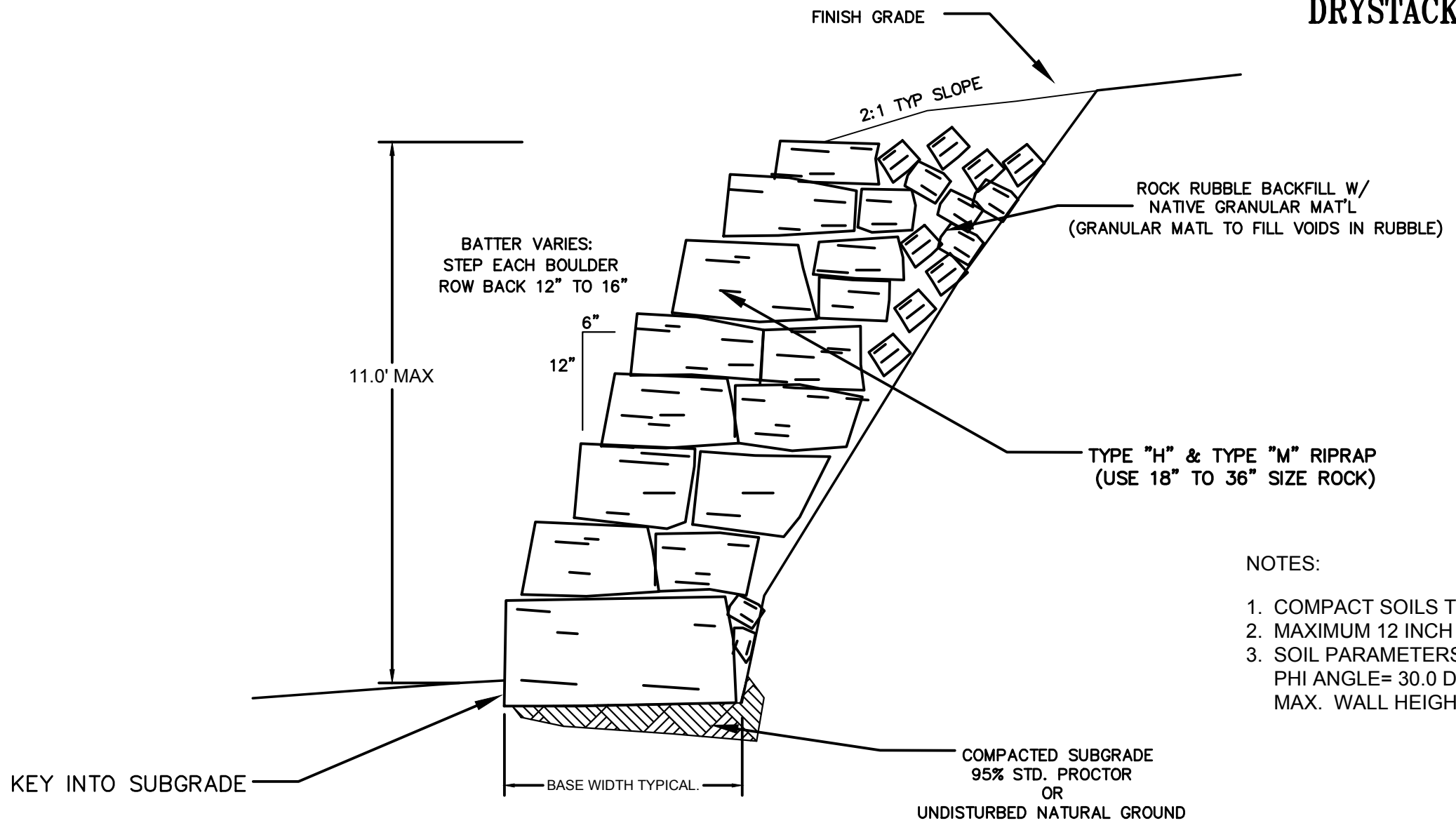
ϕ^+	N_c	N_q^*	N_γ	N_q/N_c	$\tan \phi$
0	5.14	1.00	0.00	0.20	0.00
1	5.38	1.09	0.07	0.20	0.02
2	5.63	1.20	0.15	0.21	0.03
3	5.90	1.31	0.24	0.22	0.05
4	6.19	1.43	0.34	0.23	0.07
5	6.49	1.57	0.45	0.24	0.09
6	6.81	1.72	0.57	0.25	0.11
7	7.16	1.88	0.71	0.26	0.12
8	7.53	2.06	0.86	0.27	0.14
9	7.92	2.25	1.03	0.28	0.16
10	8.35	2.47	1.22	0.30	0.18
11	8.80	2.71	1.44	0.31	0.19
12	9.28	2.97	1.69	0.32	0.21
13	9.81	3.26	1.97	0.33	0.23
14	10.37	3.59	2.29	0.35	0.25
15	10.98	3.94	2.65	0.36	0.27
16	11.63	4.34	3.06	0.37	0.29
17	12.34	4.77	3.53	0.39	0.31
18	13.10	5.26	4.07	0.40	0.32
19	13.93	5.80	4.68	0.42	0.34
20	14.83	6.40	5.39	0.43	0.36
21	15.82	7.07	6.20	0.45	0.38
22	16.88	7.82	7.13	0.46	0.40
23	18.05	8.66	8.20	0.48	0.42
24	19.32	9.60	9.44	0.50	0.45
25	20.72	10.66	10.88	0.51	0.47
26	22.25	11.85	12.54	0.53	0.49
27	23.94	13.20	14.47	0.55	0.51
28	25.80	14.72	16.72	0.57	0.53
29	27.86	16.44	19.34	0.59	0.55
30	30.14	18.40	22.40	0.61	0.58
31	32.67	20.63	25.99	0.63	0.60
32	35.49	23.18	30.22	0.65	0.62
33	38.64	26.09	35.19	0.68	0.65
34	42.16	29.44	41.06	0.70	0.67
35	46.12	33.30	48.03	0.72	0.70
36	50.59	37.75	56.31	0.75	0.73
37	55.63	42.92	66.19	0.77	0.75
38	61.35	48.93	78.03	0.80	0.78
39	67.87	55.96	92.25	0.82	0.81
40	75.31	64.20	109.41	0.85	0.84
41	83.86	73.90	130.22	0.88	0.87
42	93.71	85.38	155.55	0.91	0.90
43	105.11	99.02	186.54	0.94	0.93
44	118.37	115.31	224.64	0.97	0.97
45	133.88	134.88	271.76	1.01	1.00
46	152.10	158.51	330.35	1.04	1.04
47	173.64	187.21	403.67	1.08	1.07
48	199.26	222.31	496.01	1.12	1.11
49	229.93	265.51	613.16	1.15	1.15
50	266.89	319.07	762.89	1.20	1.19

+ Use ϕ , the phi angle for foundation soils
 * N_q not used, wall embedment ignored (sect 3.2.1)

Figure 7:
 Bearing Capacity Factors
 (after Vesic (13))

Y_q

BIERSDORFER - NICHOLS RESIDENCE TYPICAL DETAIL FOR DRystack BOULDER SLOPE / WALL



NOTES:

- 1. COMPACT SOILS TO 95% STD. PROCTOR (ASTM D - 698)
- 2. MAXIMUM 12 INCH LIFTS WHEN COMPACTING SOIL BACKFILL.
- 3. SOIL PARAMETERS:
PHI ANGLE= 30.0 DEG. DENSITY= 125 PCF
MAX. WALL HEIGHT: 11 FT

TYPICAL DRystack BOULDER RETAINING WALL
USING MACHINE PLACED TYPE H & VH RIPRAP
FOR WALLS 8 TO 11 FEET IN HEIGHT
TYPICAL DRIVEWAY FILL SECTION

SECTION 

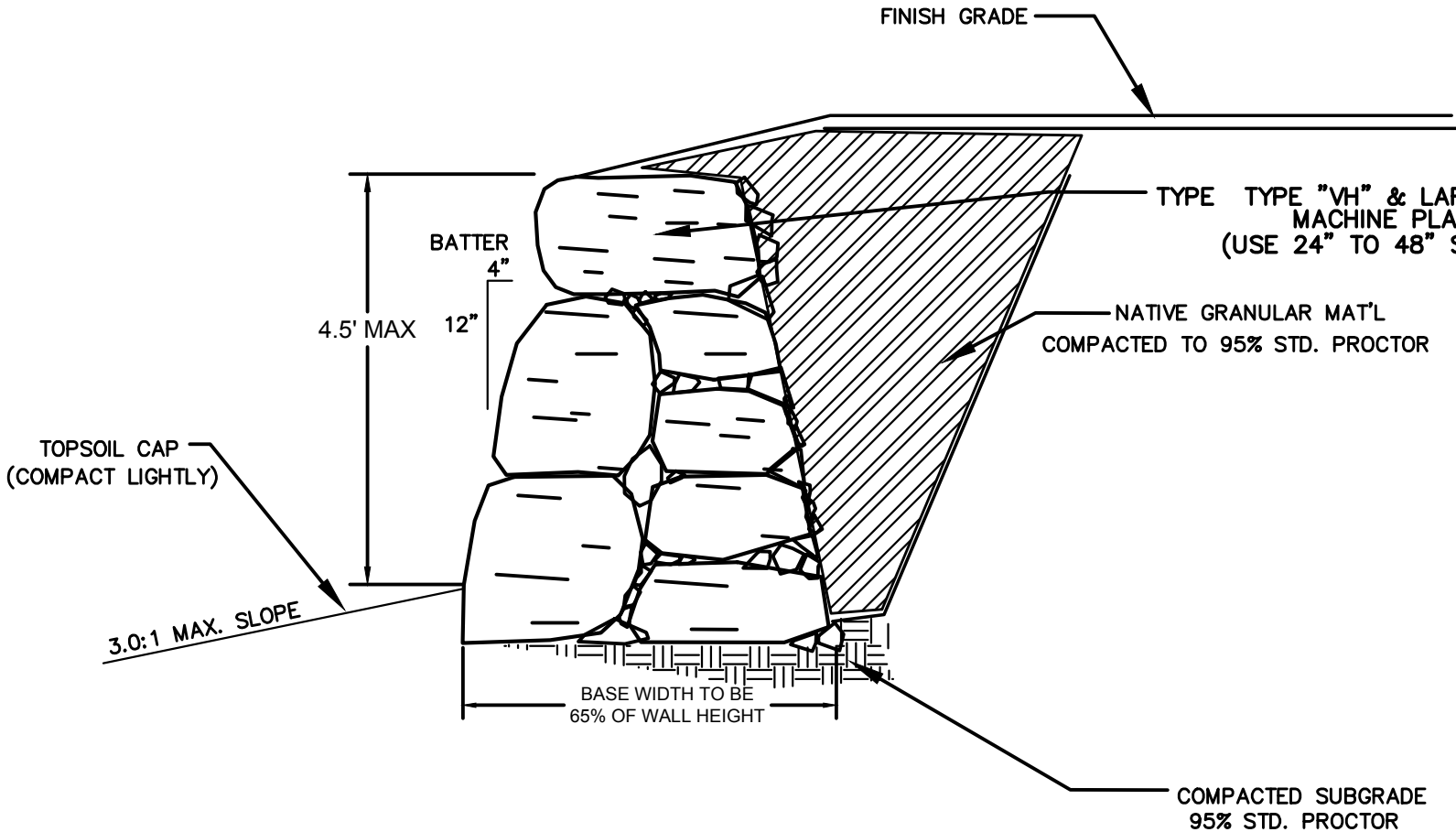


PREPARED BY
DOUGLASS ENGINEERING
15153 WEST 32nd DRIVE
GOLDEN, COLORADO 80401
(303) 421-4165

1204 WEST PORTAL ROAD
DRystack RETAINING WALLS

REV. DATE: 5-9-23 SHEET: 1 OF 2

BIERSDORFER - NICHOLS RESIDENCE TYPICAL DETAIL FOR DRystack BOULDER RETAINING WALLS



NOTES:

1. COMPACT SOILS TO 95% STD. PROCTOR (ASTM D - 698)
2. MAXIMUM 12 INCH LIFTS WHEN COMPACTING SOIL BACKFILL.
3. SOIL PARAMETERS:
PHI ANGLE= 30.0 DEG. DENSITY= 125 PCF
MAX. WALL HEIGHT: 8 FT
4. RESIDENCE DOWNSPOUTS TO BE CONNECTED TO SUBGRADE DRAIN PIPES AND DISCHARGED BEYOND WALL TO PREVENT SATURATION OF BACKFILL SOILS

TYPICAL DRystack BOULDER / GRAVITY TYPE RETAINING WALL
 USING MACHINE PLACED TYPE VH / LARGER BOULDERS
 FOR WALLS VARYING 4 TO 8 FT. MAX HEIGHT
 RETAINED CUT & FILL SLOPES FOR
 FOR DRIVEWAY & TURNAROUND & LANDSCAPE WALLS

SECTION **(B)**



PREPARED BY
DOUGLASS ENGINEERING
 15153 WEST 32nd DRIVE
 GOLDEN, COLORADO 80401
 (303) 421-4185

**1204 WEST PORTAL ROAD
 DRystack RETAINING WALLS**

Neighbors letters received (2):

Aug 4, 2023

Grand Lake Planning
Commission

We are homeowners
of 200 Hancock and
to state that we have
no issues, problems,
or concerns with any
of the landscaping
at 1204 West Portal
Rd.

respectfully,

Robert (Bill) and
Sandra (Dandie)
Rothphone - 719-767-5384
cell 719-340-0321

2 August 2023

Thomas Clarke
1663 Steele St. #808
Denver, CO 80206
303-322-4401

TO: Kim White, Community Development Director
Town of Grand Lake, P.O. Box 99, Grand Lake, CO 80447-0099

Attn. Kim White,

I have received your notification of the Planning Commission Public Hearing on August 28th regarding the Retaining Wall Height Exception on my neighbor’s property at 1204 West Portal Road. My wife and I are owners of the adjacent property (110 Hancock St.) to the west of the Nichols property. I will try to attend the hearing via zoom if possible.

I met with Keith Nichols back in May and he showed me the excavation and retaining wall that had been constructed along his north property line and mentioned that Grand Lake was not pleased that the work was not properly permitted.

The work in question does not impact my property and did not appear to me to pose a safety hazard when Keith showed it to me (there are lots of better places to take a spill in and around Grand Lk.). So I indicated to Mr. Nichols that I had no particular objection to what was built on his property. I do not intend to make an objection to the retaining wall height or location before the Grand Lake Planning Commission. It would have been much better if Mr. Nichols had gotten proper approvals before the work on his property was performed.

Mistakes are made. Over 20 years back- the Town of Grand Lake rebuilt the (8") water line going up Hancock St. to the treatment plant. The line was built partly on my property (N. W. corner) and the trees along my west property line were damaged - some of them died. The construction work on the water line was so sloppy it eventually had to be re-done.

After about three years of negotiating with Town Attorney, Scott Krob, we came to an agreement to build the Spitzmiller-Kane Trail in that section of Hancock St. I think that was a good outcome for us and our neighbors, Jean Demmler & John Kane, and the people of Grand Lake who use the Trail. We appreciated the help that Bernie McGinn & Grand Lake provided to actually build the trail. The Trail is a big improvement over that previously steep, washed-out section of Hancock St.. Today- many people use the Trail heading when coming and going to and from the trails in Rocky Mountain Park.

Conclusion : I don’t think its necessary to make a ‘big deal’ out of the Nichols retaining wall infraction so long as it only affects their property. Grand Lake’s development guidelines are important but enforcement should be flexible. Compromises are necessary when possible.

Cordially, Tom Clarke



Copy: Keith & Cindy Nichols, 1204 West Portal Road, Grand Lake, CO

**TOWN OF GRAND LAKE
PLANNING COMMISSION
RESOLUTION NO. 09-2023**

**A RESOLUTION RECOMMENDING GRANTING A VARIANCE TO RETAINING
WALL HEIGHT REGULATIONS FOR 1204 WEST PORTAL ROAD**

WHEREAS, Cynthia A. Bierdorfer and Keith Nichols (collectively the “Applicant”) are the property owners of 1204 West Portal Drive, Grand Lake, Colorado (hereinafter referred to as the “Property”); and

WHEREAS, the Town of Grand Lake (the “Town”) received a request for a variance (the “Application”) from the Applicants as required by Section 11-2-4(D)(9)(b) of the Grand Lake Municipal Code (the “Code”) which requires all retaining walls “exceeding six (6) feet” to obtain a variance; and

WHEREAS, the Applicants constructed a retaining wall in excess of six feet which were not in the initial plans, but during the spring runoff, after fire damage from the East Troublesome Fire, mud slides and flooding occurred and ran into the Applicant’s home and the Applicant was force to quickly build the walls to prevent further damage to their home; and

WHEREAS, a Public Hearing was properly noticed and all notices required by the Code were timely sent and the Town received no responses against the Applicants Application; and

WHEREAS, the Applicants submitted all appropriate fees and deposits and other code requirements as well as a letter explaining the hardships for considerations associated with the variance request; and,

WHEREAS, the Planning Commission has reviewed the Application pursuant to the standards set forth in the variance procedures of Town Code section 11-2-11(D)(1-5):

1. That by reason of exceptional shape, size or topography of lot, or other exceptional situation or condition of the building or land, practical difficulty or unnecessary hardship would result to the owners of said property from a strict enforcement of these Regulations;
2. That literal interpretation of the provisions of these Regulations would deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of these Regulations.
3. That the special conditions and circumstances do not result from the actions of the applicant;
4. That granting the variance request will not confer on the applicant any special privilege that is denied by this ordinance to other lands, structures, or buildings in the same district;
5. That the granting of the variance does not pose a detriment to the public good and does not substantially impair the intent and purpose of the Zone Plan and these Regulations.

WHEREAS, the Planning Commission has reviewed the Application, considered Staff's recommendation as well as public comments and finds the elements required to approve a variance set forth above have been satisfied and the Application shall be recommended to the Grand Lake Board of Trustees for approval.

NOW THEREFORE BE IT RECOMMENDED BY THE PLANNING COMMISSION OF THE TOWN OF GRAND LAKE, COLORADO,

THAT, the Commission hereby forwards a favorable recommendation onto the Town Board of Trustees to grant the Application for a variance to the six (6) foot retaining wall height requirements required by Town Code Section 11-2-4(D)(9)(b) with the following recommended conditions of approval:

- a. Payment by Applicant of all legal, engineering and administrative fees incurred by the Town in connection with review, processing, consideration and approval of the Application.
- b. Compliance by the Applicant with all representations made to the Planning Commission during all public hearings or meetings related to the Application

DULY MOVED, SECONDED AND ADOPTED BY THE PLANNING COMMISSION OF THE TOWN OF GRAND LAKE, COLORADO THIS 16TH DAY OF AUGUST, 2023.

(S E A L)

Votes Approving:
Votes Opposed:
Absent:
Abstained:

ATTEST:

TOWN OF GRAND LAKE

Alayna Carrell
Town Clerk

James Shockey
Planning Commission Chairman