Case Summary

Case Number		16-2020			
Zoning District		R-3			
Project Address		14 Heatherbrook Lane			
Applicant Name		Dillon Corr			
Property Owner		Same as above			
Article	IV	Section	A-420.7	Sub-Section	420.7(3)(a)
Variance Request		West side yard for a deck addition			
Required		12'			
Proposed		7' 8"			
Variance Requested		4' 4"			

History of address:

Summary Approved by: AGL

Labels printed _____

Letter mailed on _____

300 ft. notice mailed on _____

Board of Adjustment Variance Application

139 S. Kirkwood Rd. Kirkwood, MO 63122 (314) 822-5823 Fax (314) 822-5898

***An appointment with staff is required prior to the submittal of a variance application.** Your meeting with staff will assist you in preparing your submittal information. Please contact Amy Lowry, Assistant City Planner at 314-822-5815 to schedule an appointment.

City Use Only	Meeting Date June 8, 2020	Case# 16-2020	Zoning District R-3

Action Requested:

X Variance of Zoning Code

4-29-20 No Payment pd

- X **$240** non-refundable filing fee for additions/alterations to existing single-family structures and for accessory structures such as shed, garages, and swimming pools
- □ **$500** non-refundable filing fee for all others not listed above,
- □ **$50** fee for each additional variance request on the same application.

□ **Variance of Fence Code- $200** non-refundable filing fee (per Code §5-45(c))

□ **Appeal the decision of the Building Commissioner - $240** non-refundable filing fee

□ **Appeal the interpretation of the Zoning Code - $500** non-refundable filing fee

RECEIVED
APR 29 2020
CITY OF KIRKWOOD
PUBLIC WORKS DEPARTMENT

Project Address 14 Heatherbrook

Type of Work: □ New Construction X Addition □ Other _____

Type of Structure: X Single-family □ Multi-family □ Commercial □ Accessory
□ Other _____

Has a previous variance application been filed on these premises within the last three (3) years?
□ Yes X No *If yes, provide available information that may affect this application.

I hereby certify that all the information provided, including that contained in any supporting documents submitted, is true and accurate to the best of my knowledge and belief.

Applicant Information: X Property Owner X Occupant □ Contractor □ Architect □Other _____

Name Dillon Corr Phone 314-452-5544

Address 14 Heatherbrook

City/State/Zip Kirkwood/MO/63122 E-mail dilloncorr@gmail.com

Applicants Signature _____ Date 4/28/20

Property Owner Information (if different from above):

Name _____ Phone _____

Address _____

City/State/Zip _____ E-mail _____

Owner's Signature _____ Date _____

Received by: _____

VARIANCE(S) REQUESTED:

Setback (front, side, rear)	Required	Requested	Variance Needed	Code Section
Side	12'	7'-8"	4'-4"	A-420.7(3)a

Setback (front, side, rear)	Required	Requested	Variance Needed	Code Section

Setback (front, side, rear)	Required	Requested	Variance Needed	Code Section

Other:	Code Section:
Describe: Reduced side setback distance due to irregularly shaped lot in effort to change patio with failing retaining wall and handrail to a deck with secure safety handrail due to toddler in house.	

BOARD OF ADJUSTMENT - SUBMITTAL SCHEDULE- 2020 - *Schedule is subject to change*

LAST DATE FOR SUBMITTAL*	**BOARD OF ADJUSTMENT MEETING DATE****
December 16, 2019	January 13, 2020
January 13, 2020	February 10, 2020
February 10, 2020	March 9, 2020
March 16, 2020	April 13, 2020
April 13, 2020	May 11, 2020
May 11, 2020	June 8, 2020
June 15, 2020	July 13, 2020
July 13, 2020	August 10, 2020
August 17, 2020	September 14, 2020
September 14, 2020	October 12, 2020
October 12, 2020	November 9, 2020
November 16, 2020	December 14, 2020
December 14, 2020	January 11, 2021

14 Heatherbrook Hardship letter

Description of Intended Addition/Improvement & Distance

We intend to construct a wooden deck over the existing brick patio. This will be located on the northwest side of our house, filling the space between the sunken living room and family room. Distance from edge of deck to property line varies as the lot is irregular. I expect approximately 8' of the northwest corner will be out of compliance with zoning set backs. I am expecting a 7'8" completed setback condition, so am requesting a minimum of 7'-8" setback for a 4'4" variance. This will be a side setback adjustment only for A-420.7(3)a which requires a R-3 side setback of 12'.

Hardship/Practicalities

This whole neighborhood is zoned R-3 and should never have been. Lots in this area are typically irregular, and rarely meet the 12' setback in the existing condition let alone leaving room for future changes. Our current lot width varies form 138' wide and necks down to 50'. If my lot were zoned based on the width of the lot at the location of the deck an adjustment would not be necessary. To further make this point, distance from edge of deck will vary from 7'-8" to approximately 18' just within the 12' edge.

As stated, neighboring properties do not follow zoning setbacks. The neighbors on the deck (west) side have a garage located approximately 7'-6" from the property line. The neighbors to the north's whole house is less than 10' from the property line. The neighbors to my East have a fence that is almost 3' onto my property at one point, and over 5' onto their property at another. Holding us to a higher standard due to incorrectly assigned zoning rules creates impracticalities especially when the existing lines haven't been followed in the past.

The existing retaining wall poses many challenges on this site. The wall was originally constructed in the 60s with railroad ties, and then was updated between 15 and 20 years ago with segmented block but neighbors believe only the face was replaced. The location of the wall is closer than the setback distance at my problem corner at 10'. The wall is skewed to the house as well. As a civil engineer, my education indicates that under no circumstances should I load this wall with foundations above. As a result, I must push foundations to the outside face of the wall. The column foundation on the southwest corner of the deck sets the dimension off the house for both posts. The corners of the deck are planned as chamfers to reduce the impact on the setback distance. To push these foundations further inward instead of out would result in a deck foundation 5' off the back of the wall, creating a 7' wide deck with a 5' wide patio at a lower elevation. This will create a swath of patio that is not easily accessible, full of dirt/leaves/debris/animals, with the same failed handrail left in place not protecting anyone but an interior wood handrail that is safe. This seems an unreasonable hardship and completely impractical from a maintenance and safety standpoint.

From a practical standpoint, the primary cause of this project is that the handrails mounted to the existing retaining walls are unsafe and can be pushed over by hand without much effort. I have a toddler in the house who is now a wild child and of course only wants to play with the handrails because he is

not allowed to. I cannot come up with a good method to install safe handrails on the current wall/patio as I do not know how it was built, don't trust the backfill, and none of the blocks are actually attached to anything (drystack only). The only other option that we can think of is to construct a new retaining wall in front of the existing wall with appropriate support zone at a 1:1 slope from the existing wall. Due to existing slopes this will result in an 8' tall retaining wall touching my property line at some places. This is unfair hardship to place on my neighbors, who have a beautiful competition garden and don't want it torn up to install a stone wall on their fenceline. This would also harm the drainage in the area. Currently my neighbors to the east's yard drains into mine, and then downhill to my neighbors to the west. We have multiple sump pumps running to aid with this runoff but it still results in plantings washing out and significant ponding/mosquito growth. Installing the deck will allow for water to drain through the decking and be captured in soil/rock/French drain under the deck and absorbed in the soil with excess channeled to my driveway. An impermeable patio over a retaining wall will not and will either overtop into the neighbors yard or dump all of the rain through underdrains into my driveway (depending on the rain event). Currently my driveway backs up into my garage on a regular basis. Increasing the runoff dumped onto my driveway will certainly make this worse.

Access to the hard is another issue. Currently there is a low brick sidewalk with retaining wall block steps interspersed. The walk is uneven and sinking, steps are inconsistent and loose. The same handrail system was installed on the downhill side of the sidewalk and is not safe. Downhill from the handrail is a steeply sloped plantings area full of euonymus vines. These vines have eliminated undergrowth and don't catch drainage at all. Our proposed final configuration is to remove the bricks/blocks/handrail and vines and go back with landscaping rock and vegetation to maximize runoff capture. This should also reduce the slope of the plantings area and create a safer pathway to the back yard. The steps as installed fail to meet any part of the standard details for safe stairs and this will be remedied. As such, the concern that a setback allows for safe passage from front to back does not apply.

If this zoning adjustment/exemption is not approved a deck will not be installed and we will either have to move to create a safe environment for our family hoping that the new occupants of a 4 bedroom home in Kirkwood aren't elderly and don't want/have children, or install a monstrous retaining wall directly on our property line that will cost a fortune and enrage neighbors for a multitude of reasons. Neither of these options seem reasonable to me. I have discussed this at length with the neighbor on the side of the adjustment (an architect) and we came up with the plan together. This is a deck with a greater setback than the neighbor's existing structures, planned by both sides of the property line, that will fix an urgent safety issue, mitigate runoff, and provide a more attractive look to neighborhood.

I would also beg the Board to approve this as soon as possible. I specialize in occupied hospital reconstruction projects. Right now I am sitting at home with very little to do. As soon as the COVID-19 crisis tapers down I have over $26 million worth of projects that will start. For a point of reference I typically do $10 million per year. While me being swamped is not your issue I want to fix this safety issue ASAP before I don't have time to do the work without angering residents with small children (including my wife) by working till midnight with a nailgun outside...

Cardinal
Surveying & Mapping

PO BOX 278 Cottleville, MO 63338
Phone (636) 922.1001
Fax (636) 922.1002
Shelly@CardinalSurveying.com

November 19, 2015

Closing 12/23

Attn: Cori R – Regency Title Group

Type of Survey: Boundary Survey
Job Number: 1512010
Address: 14 Heatherbrook Lane
Legal: Lot 45 in Section D of Osage Hills – St. Louis County

Potential Items to Note:

Left: Adjoining property landscaping located onto subject property by 1.7'; Adjoining property stone wall located onto subject property by 4.9'; Adjoining property fence located onto subject property by 0.6' at the worst spot; Adjoining property rock wall located onto subject property by 0.6' at the worst spot

Rear: None

Right: Adjoining property fence located onto subject property by 2.5' at the worst spot; Subject property landscaping located onto adjoining property by 1.0' at the worst

Easements: No additional easements shown in title

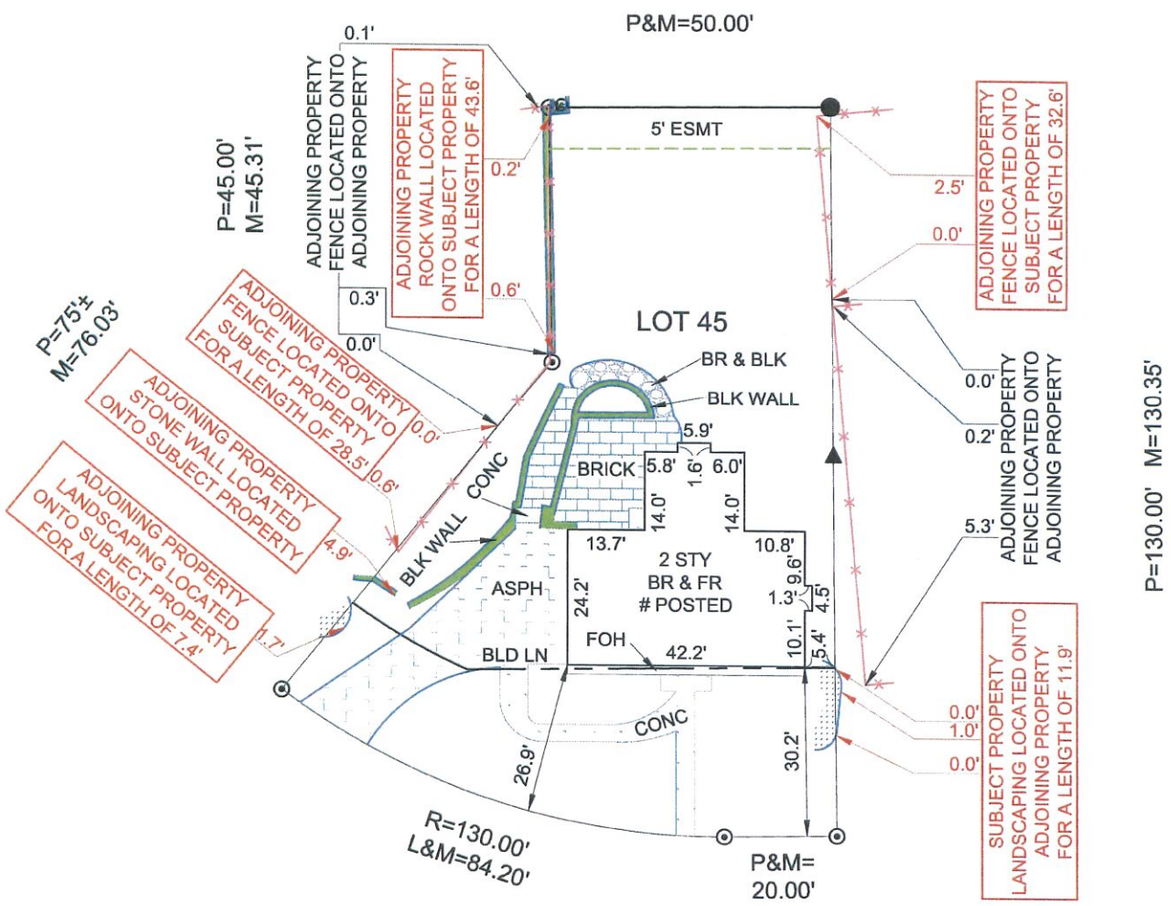
Amount Due: $ 495.00

We appreciate your business!

BOUNDARY SURVEY
LOT 45 SECTION D OSAGE HILLS
PB 23 PG 48, ST LOUIS COUNTY, MO

FENCE
MANHOLE
L PLATTED LENGTH
P PLATTED DISTANCE
M MEASURED DISTANCE
● SET REBAR
▲ SET POINT ON LINE
⊙ FOUND IRON PIPE

1" = 30'



#14 HEATHERBROOK LANE (50'W)

SHEET 1 OF 2

Cardinal Surveying & Mapping
PO BOX 278
COTTLEVILLE, MO 63338
PHONE: 636.922.1001
Corp # 2005000229
www.CardinalSurveying.com

JOB # 1512010
FB 359:15

FIELD WORK BY: CML/PND

DRAWN BY: KSL

REVIEWED BY:
WILLIAM JACOB CLARK
LS# 2002014101

This is to certify that on November 12th, 2015 a request by Regency Title Group was made for a Boundary Survey and to locate the improvements on the above named tract and that the results are, to the best of my knowledge, correctly represented on this drawing.

STATE OF MISSOURI
WILLIAM JACOB CLARK
NUMBER PLS 2002014101
11/18/15
PROFESSIONAL LAND SURVEYOR

BOUNDARY SURVEY
LOT 45 SECTION D OSAGE HILLS
PB 23 PG 48, ST LOUIS COUNTY, MO

SURVEYORS NOTES:

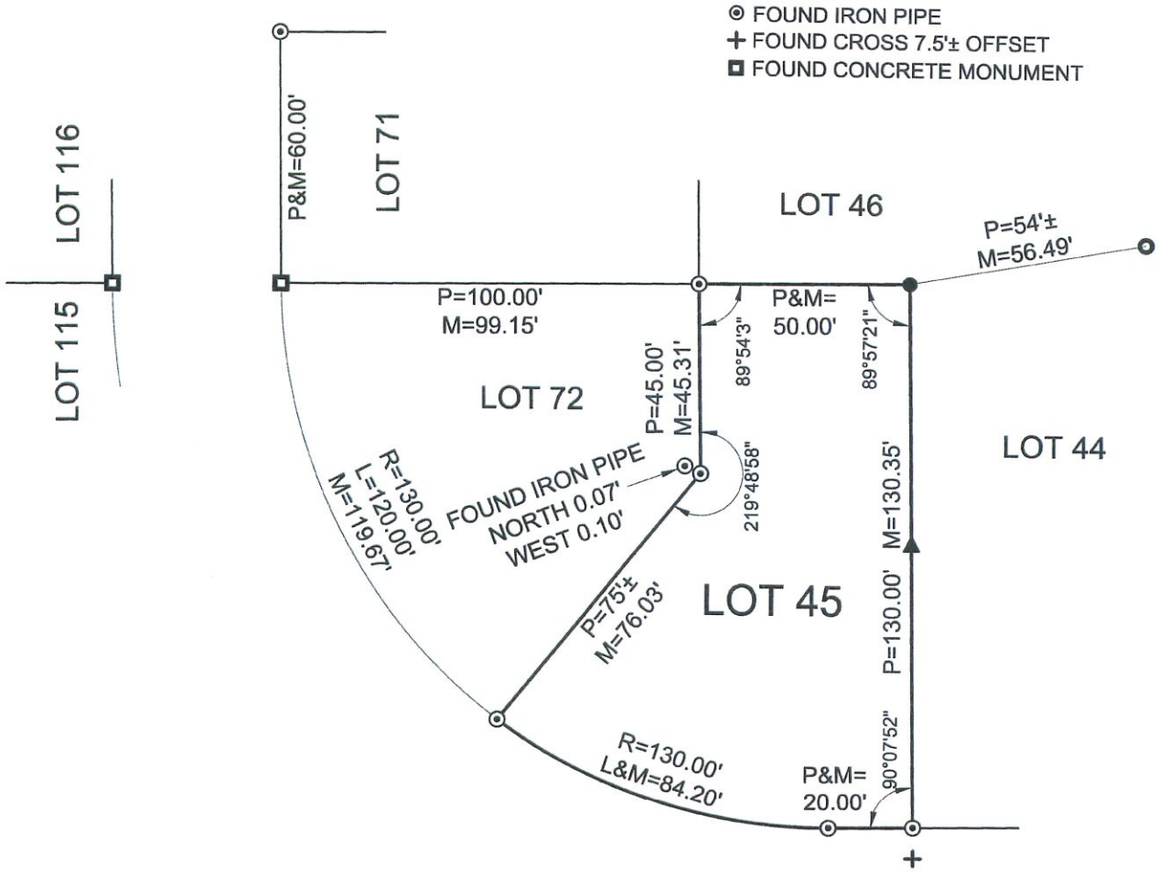
1. BASIS OF SURVEY PER RECORD PLAT OF OSAGE HILLS PER PLAT BOOK 23 PAGE 48 OF THE ST LOUIS COUNTY RECORDS.

2. EASEMENTS AND BUILDING LINES SHOWN PER SAID RECORD PLAT. PROPERTY MAY BE SUBJECT TO ADDITIONAL ZONING AND BUILDING LINE REQUIREMENTS. NO ADDITIONAL EASEMENTS LISTED PER REGENCU TITLE COMMITMENT #RTS-15-176323. NO ADDITIONAL RESEARCH WAS COMPLETED BY SURVEY COMPANY.

3. SURVEY COMPLETED TO URBAN PROPERTY BOUNDARY ACCURACY STANDARDS PER 20 CSR 2030-16.040 OF THE MISSOURI STATE STATUTES.

4. FENCE, LANDSCAPE, STONE WALL & ROCK WALL OWNERSHIP AS SHOWN ON THIS DRAWING IS THE OPINION OF THE SURVEYOR AT THE TIME THE SURVEY WAS EXECUTED AND HAS NOT BEEN VERIFIED TO ANY EXTENT, NOR IMPLIES ANY EXCLUSIVE OWNERSHIP.

L PLATTED LENGTH
P PLATTED DISTANCE
M MEASURED DISTANCE
● SET REBAR
▲ SET POINT ON LINE
○ FOUND REBAR
◉ FOUND IRON PIPE
+ FOUND CROSS 7.5'± OFFSET
◘ FOUND CONCRETE MONUMENT



#14 HEATHERBROOK LANE (50'W)

SHEET 2 OF 2

Cardinal Surveying & Mapping

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COTTLEVILLE, MO 63338
PHONE: 636.922.1001
Corp # 2005000229
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JOB # 1512010
FB 359:15

FIELD WORK BY: CML/PND

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STATE OF MISSOURI
WILLIAM JACOB CLARK
NUMBER PLS 2002014101
11/18/15
PROFESSIONAL LAND SURVEYOR

Summary: Construction of New Back Deck over Existing Patio

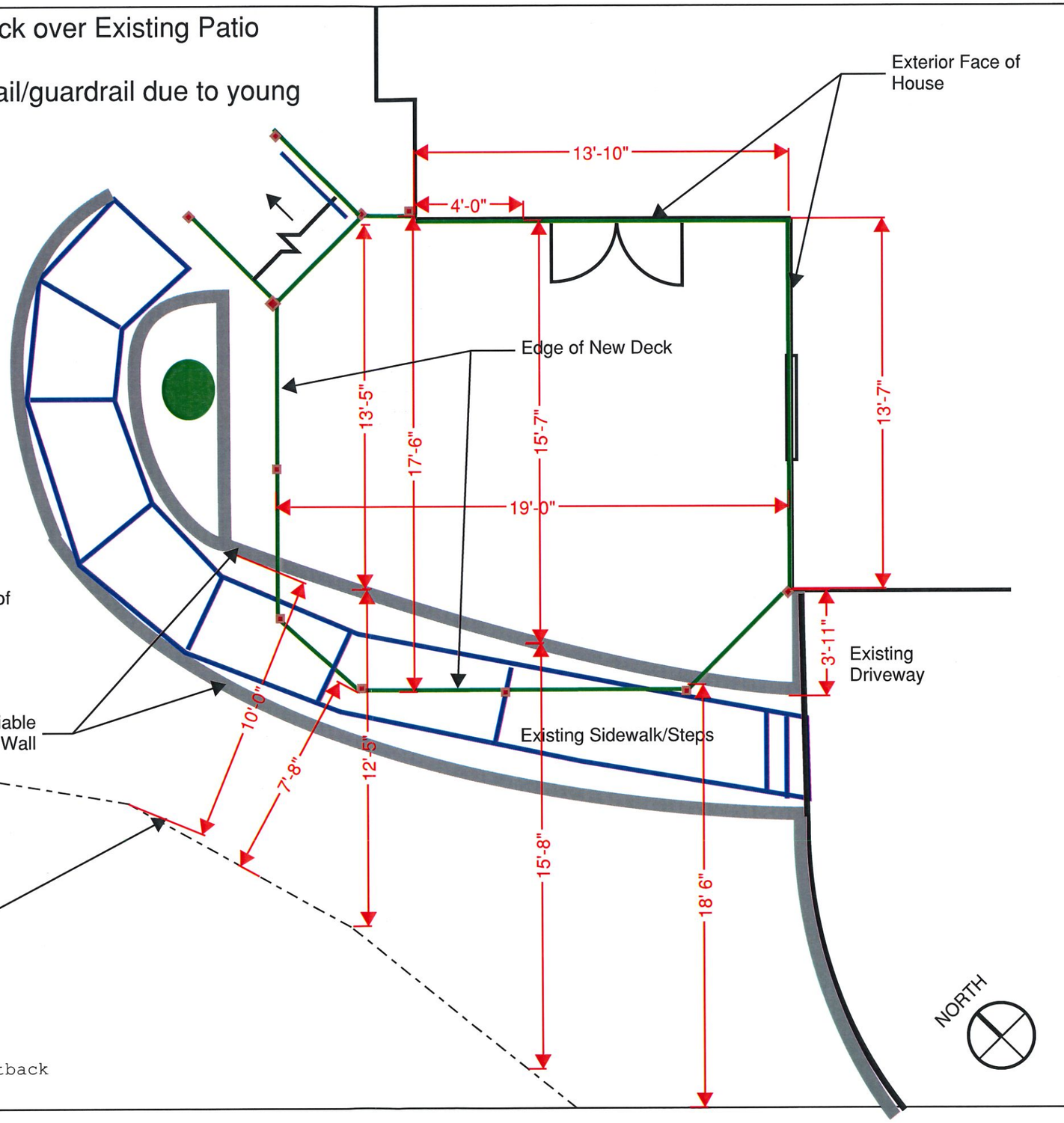
Purpose: Replace existing unsafe handrail/guardrail due to young child in home and aging patio.

STATE OF MISSOURI
THOMAS J. BAHR
A2015008746
ARCHITECT

Expires:
12/31/2021

The dimensions from the existing fence to the existing retaining walls and to the edge of the proposed new deck have been measured and verified by me on Tuesday, May, 12th, 2020, at 5:00 PM CST. At its closest point, the edge of the proposed new deck will be 7'-8" away from the existing fence (property line), a difference of 4'-4" from the required side yard setback of 12'-0" as listed in the Zoning Code section A-420.7(3)a.

Thomas J. Bahr
A2015008746
5/14/2020



Mike & Nancy Karpowicz
18 Heatherbrook
See notes on calculations page regarding setback

Design Team
Company
Address

Site Plan

Back Deck

14 Heatherbrook

Revisions

RHODEY CONSTRUCTION

BOUNDARY SURVEY
LOT 45 SECTION D OSAGE HILLS
PB 23 PG 48, ST LOUIS COUNTY, MO

FENCE
MH MANHOLE
L PLATTED LENGTH
P PLATTED DISTANCE
M MEASURED DISTANCE
● SET REBAR
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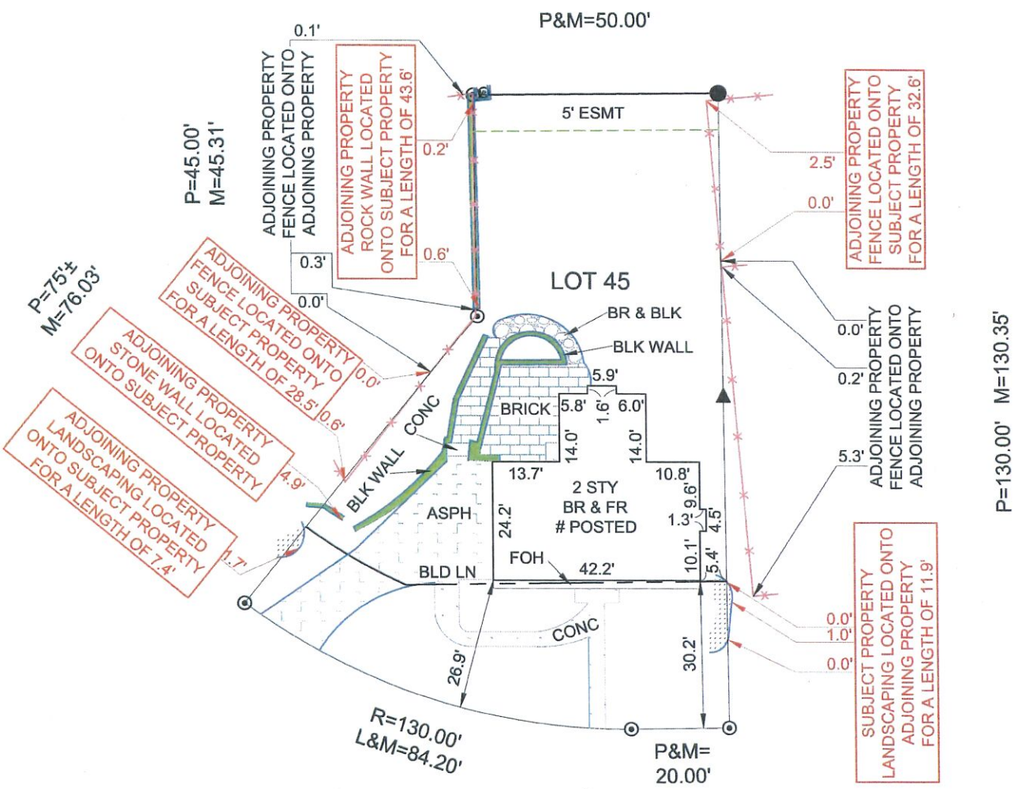
1" = 30'



#14 HEATHERBROOK LANE (50'W)

SHEET 1 OF 2

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JOB # 1512010
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FIELD WORK BY: CML/PND

DRAWN BY: KSL

REVIEWED BY:
WILLIAM JACOB CLARK
LS# 2002014101

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STATE OF MISSOURI
WILLIAM JACOB CLARK
NUMBER PLS 2002014101
11/18/15
PROFESSIONAL LAND SURVEYOR

Revisions

Site Survey

Back Deck

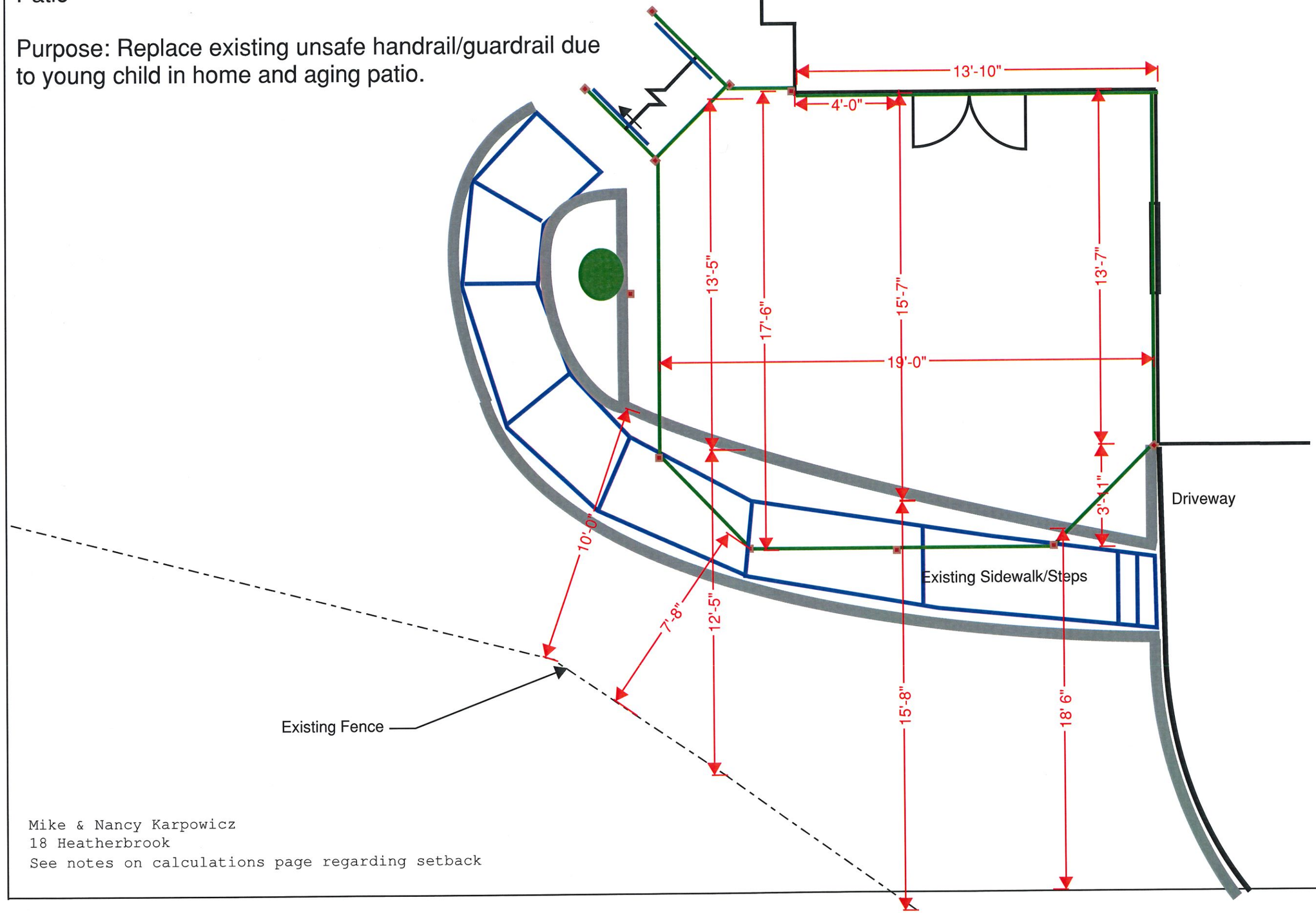
14 Heatherbrook

Design Team
Company
Address

< Seal >Site

Summary: Construction of New Back Deck over Existing Patio

Purpose: Replace existing unsafe handrail/guardrail due to young child in home and aging patio.



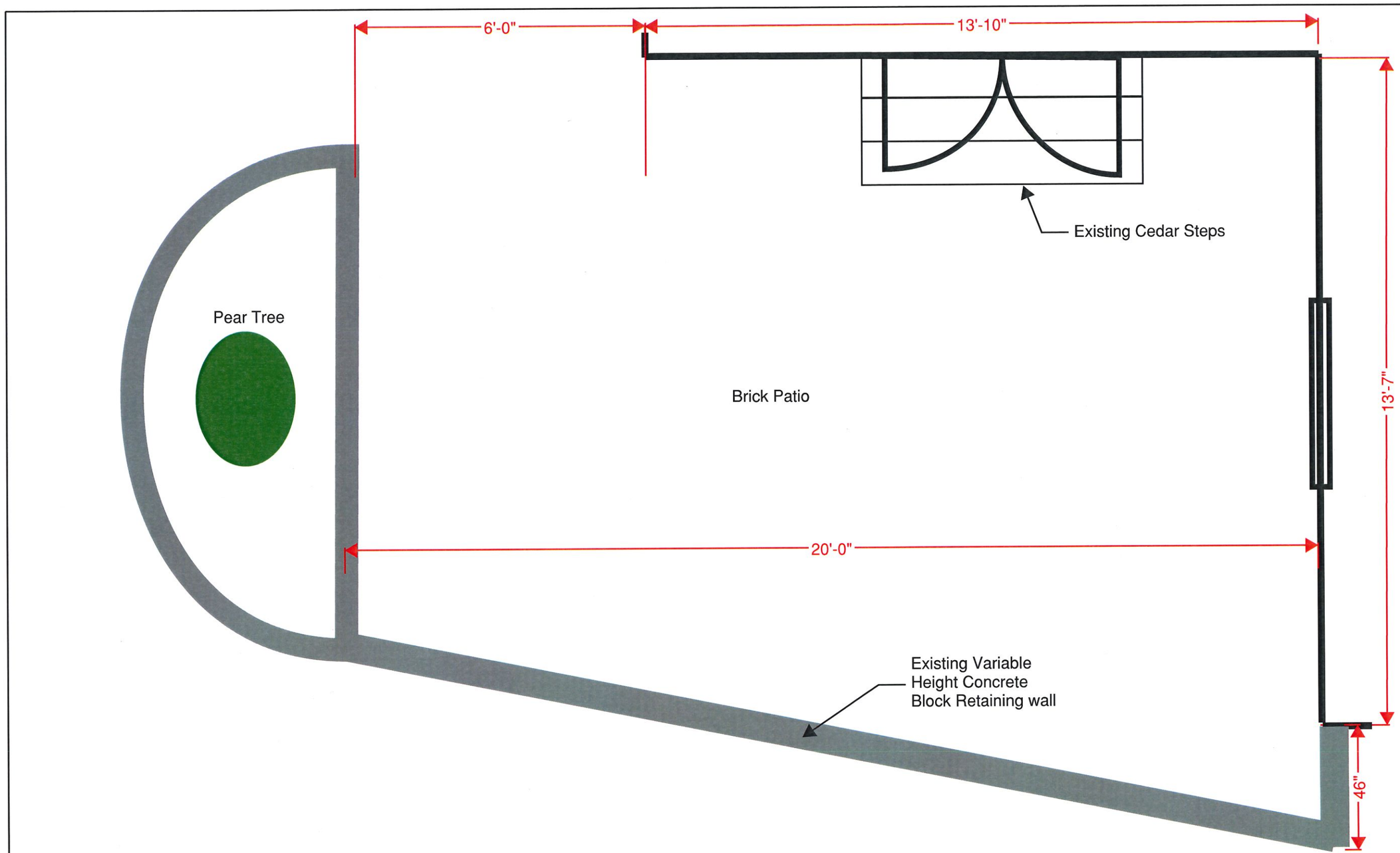
Mike & Nancy Karpowicz
18 Heatherbrook
See notes on calculations page regarding setback

< Seal >

Design Team
Company
Address

Site Plan
Back Deck
14 Heatherbrook

Revisions



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Design Team
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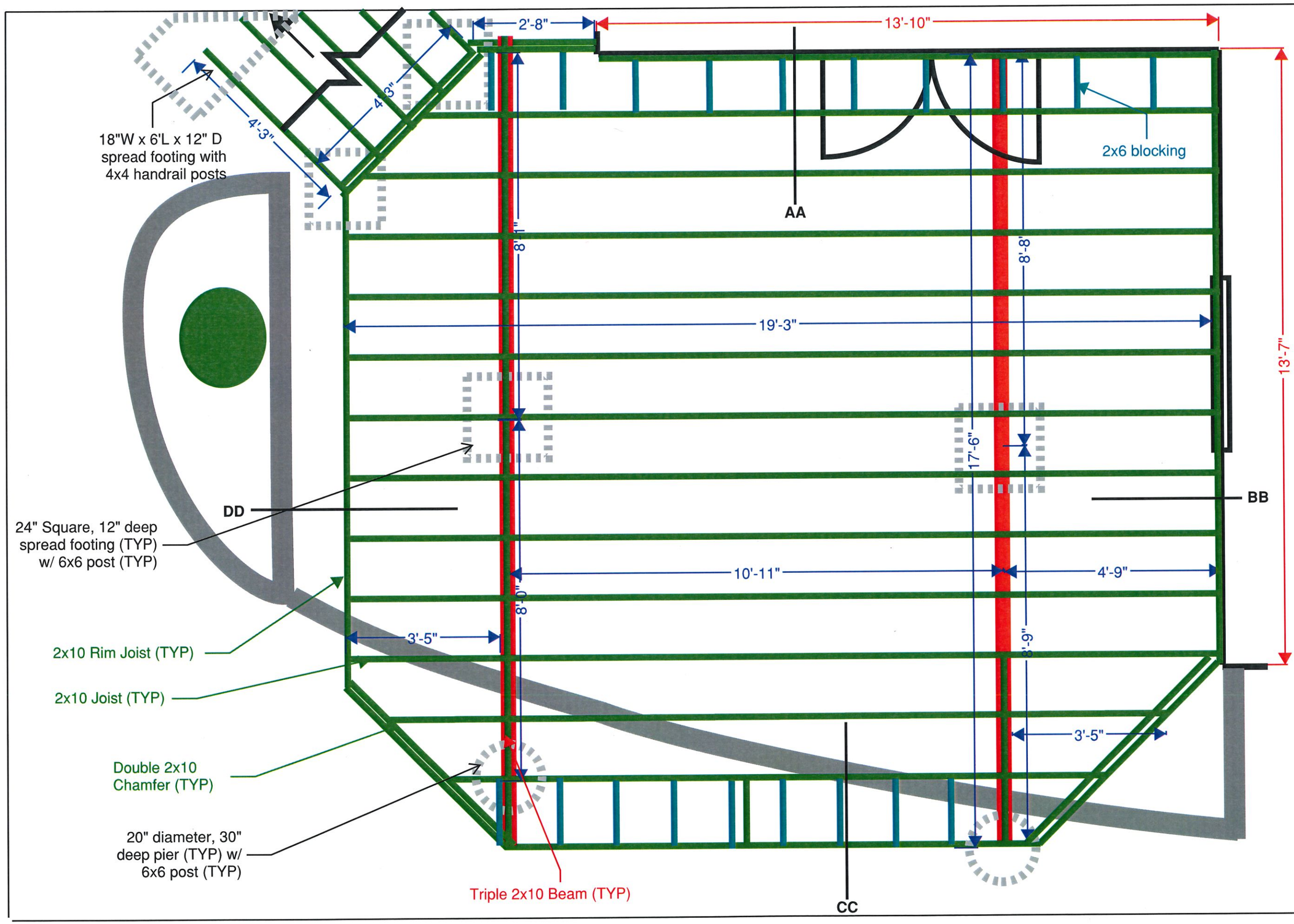
Existing Condition

Back Deck

14 Heatherbrook

Revisions



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Design Team
Company
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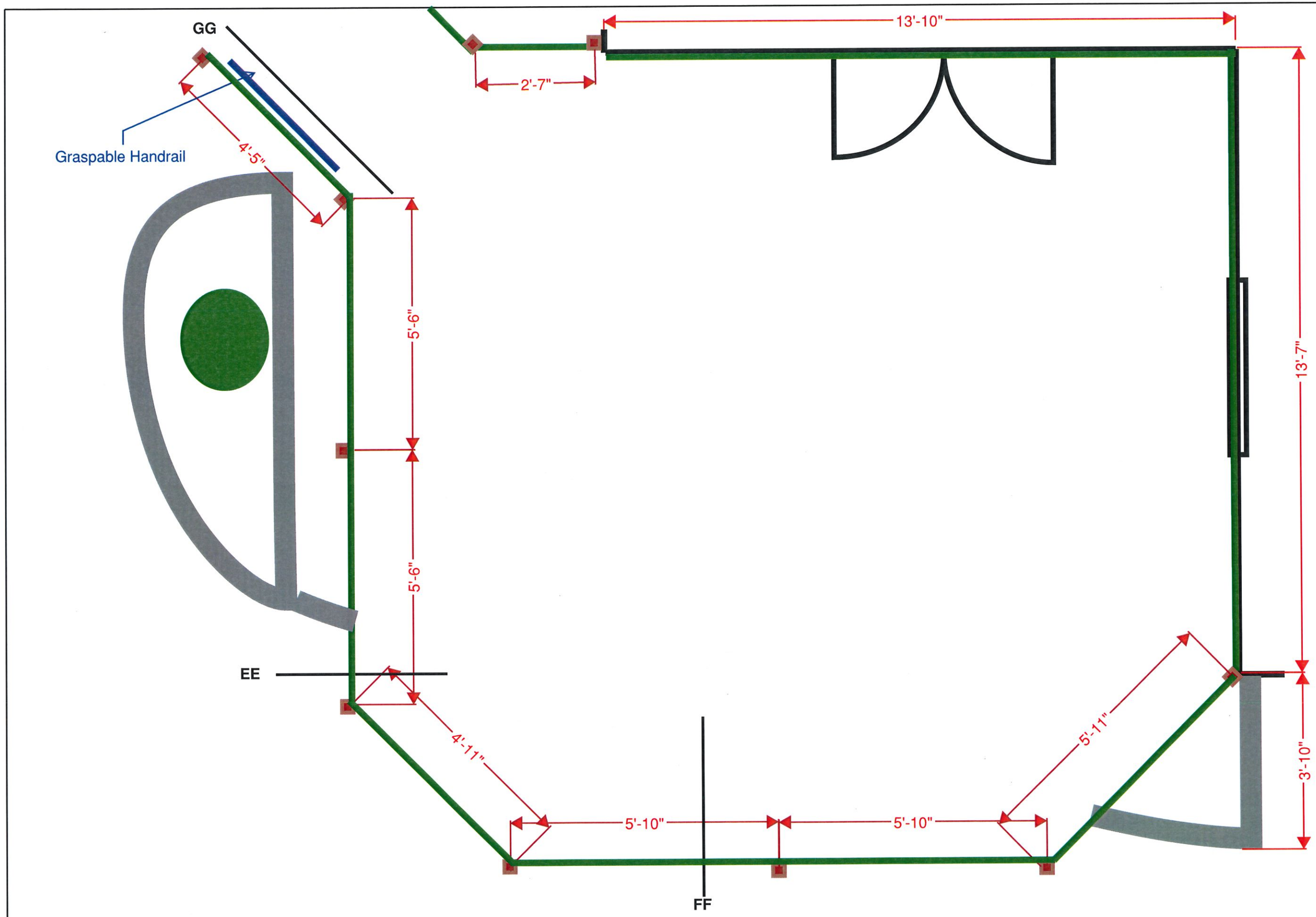
Framing Plan

Back Deck

14 Heatherbrook

Revisions



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Design Team
Company
Address

Hand/Guardrail Plan

Back Deck

14 Heatherbrook

Revisions

< Seal >

Design Team
Company
Address

West Elevation

Back Deck

14 Heatherbrook

Revisions

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Design Team
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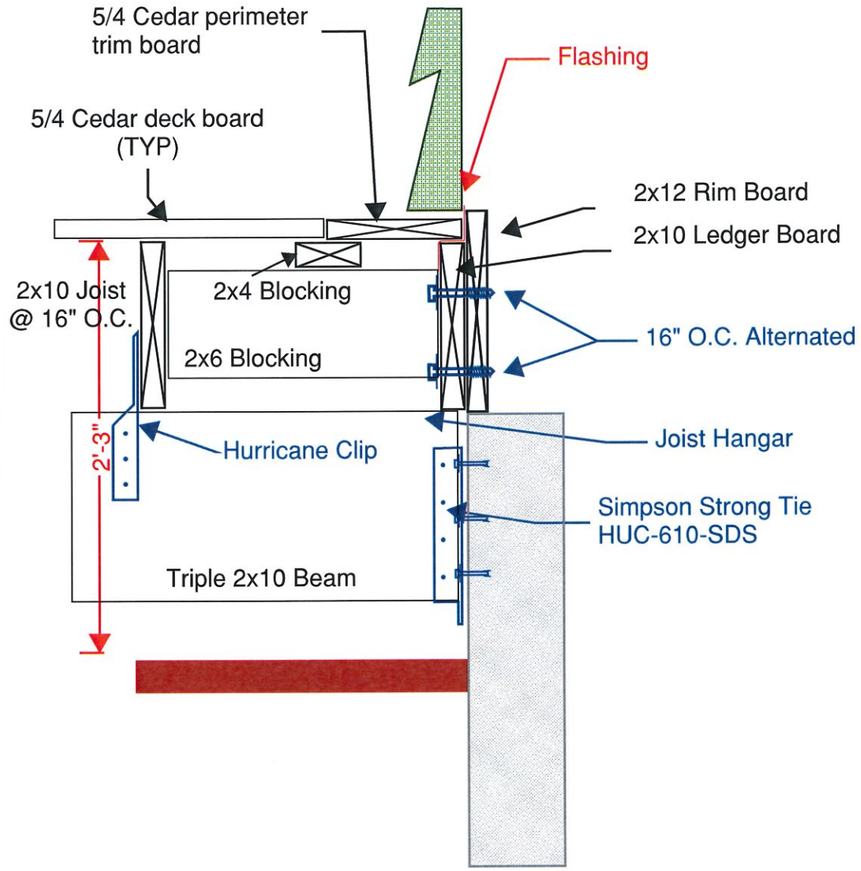
Address

North Elevation

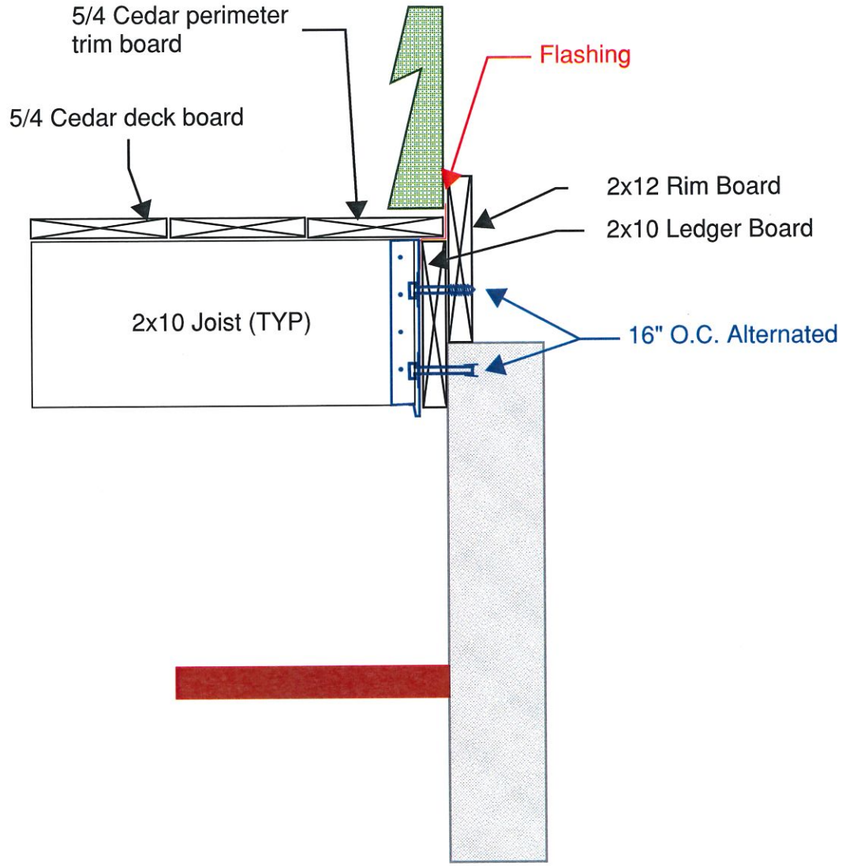
Back Deck

14 Heatherbrook

Revisions



Section AA



Section BB

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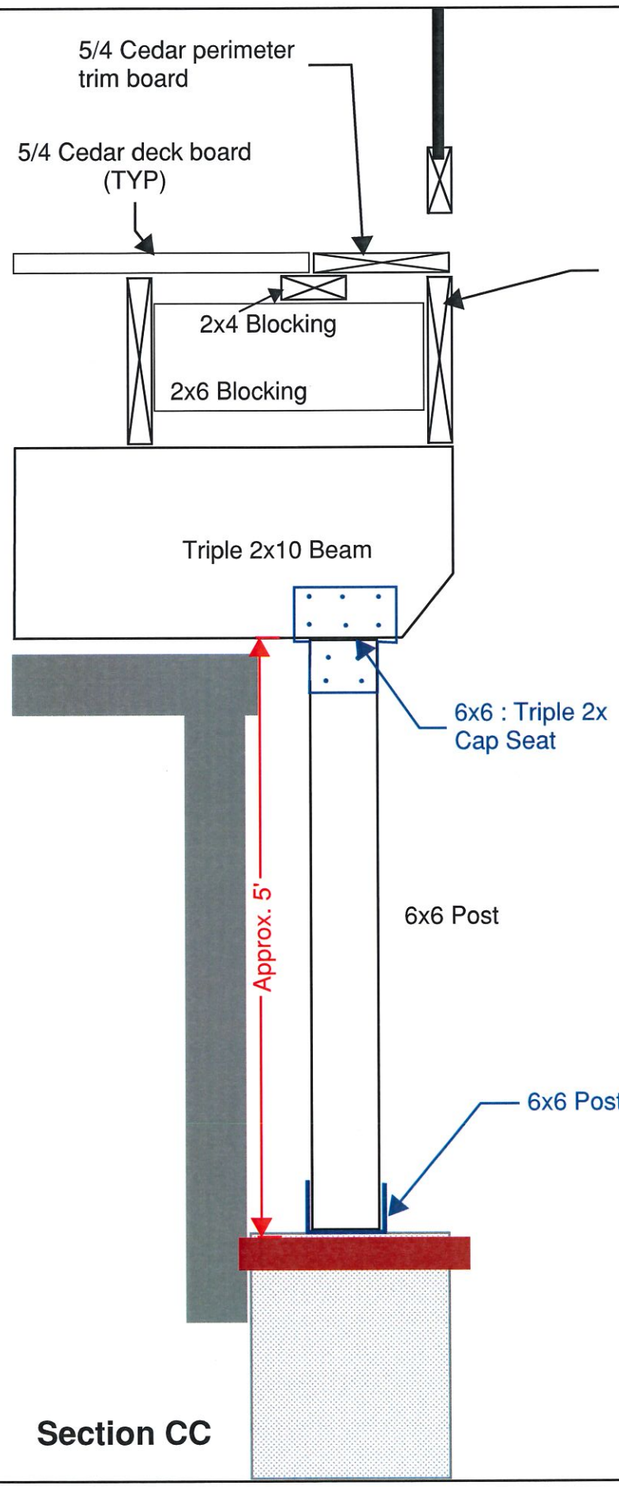
Design Team
Company
Address

Sections

Back Deck

14 Heatherbrook

Revisions



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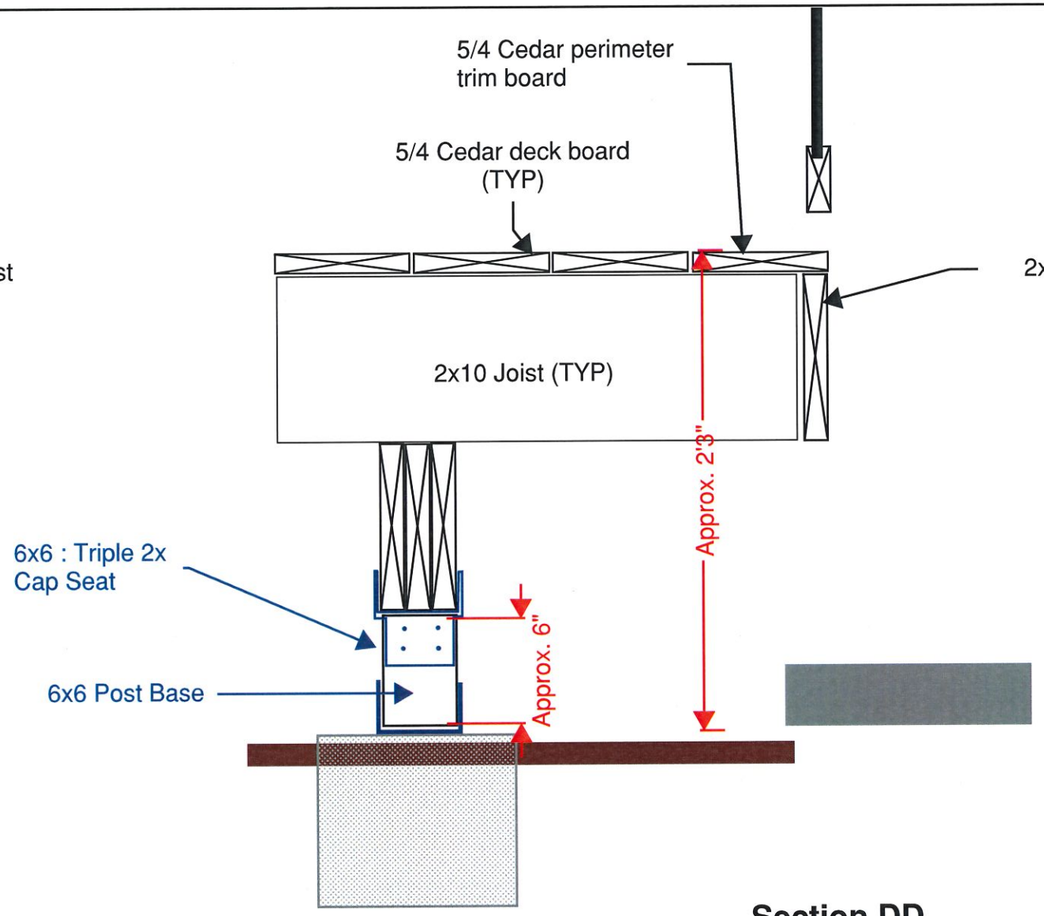

Section DD

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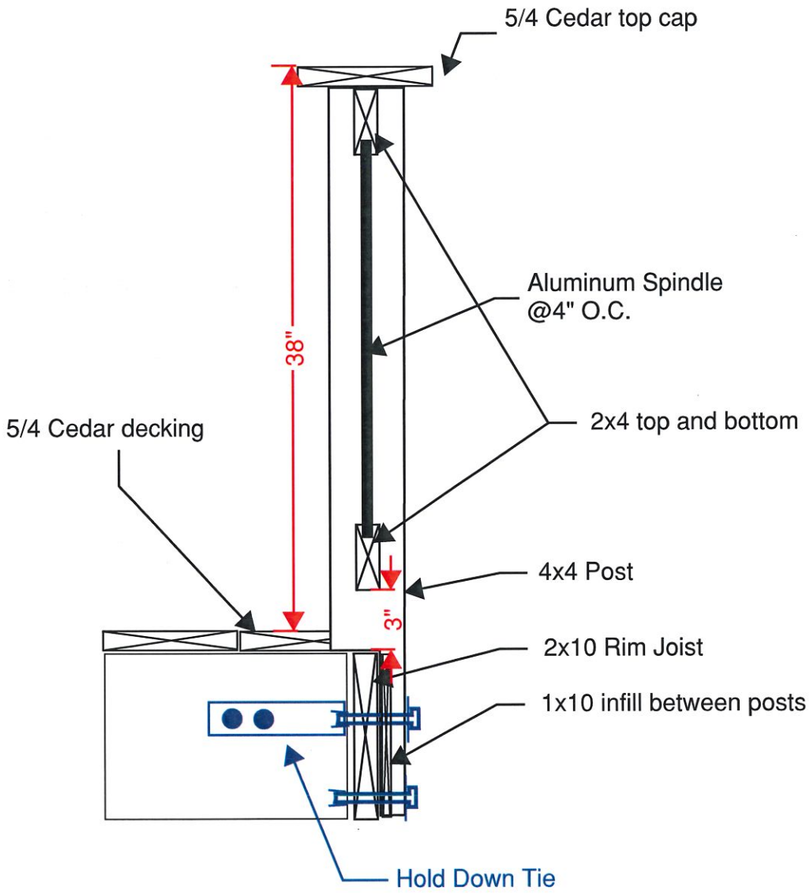
Design Team
Company
Address

Sections

Back Deck

14 Heatherbrook

Revisions



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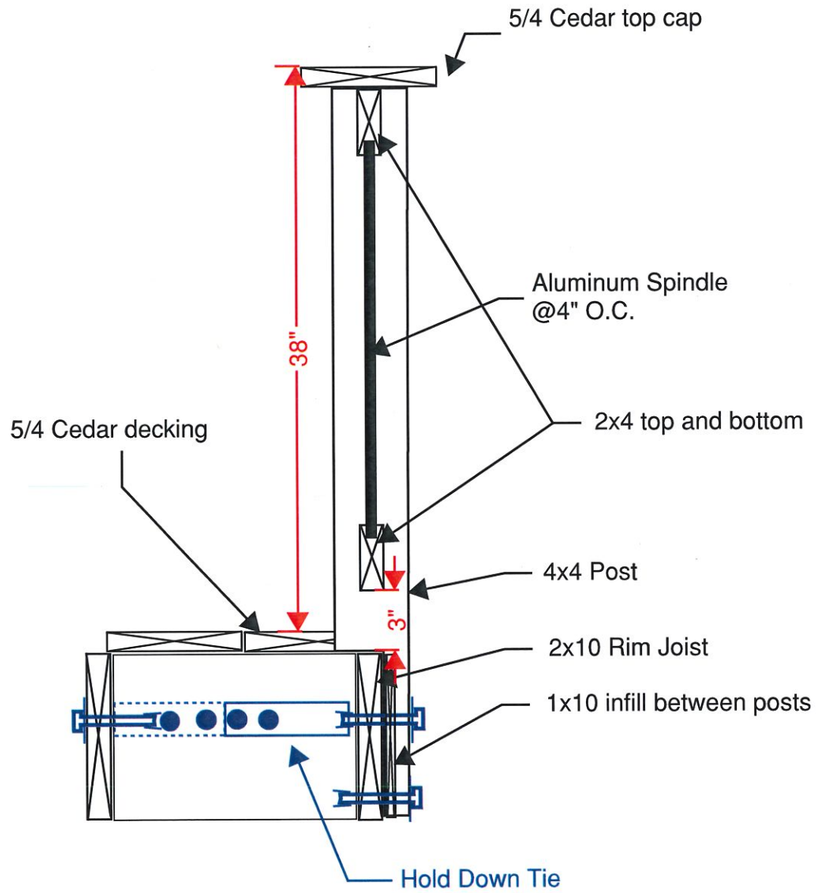

Section FF

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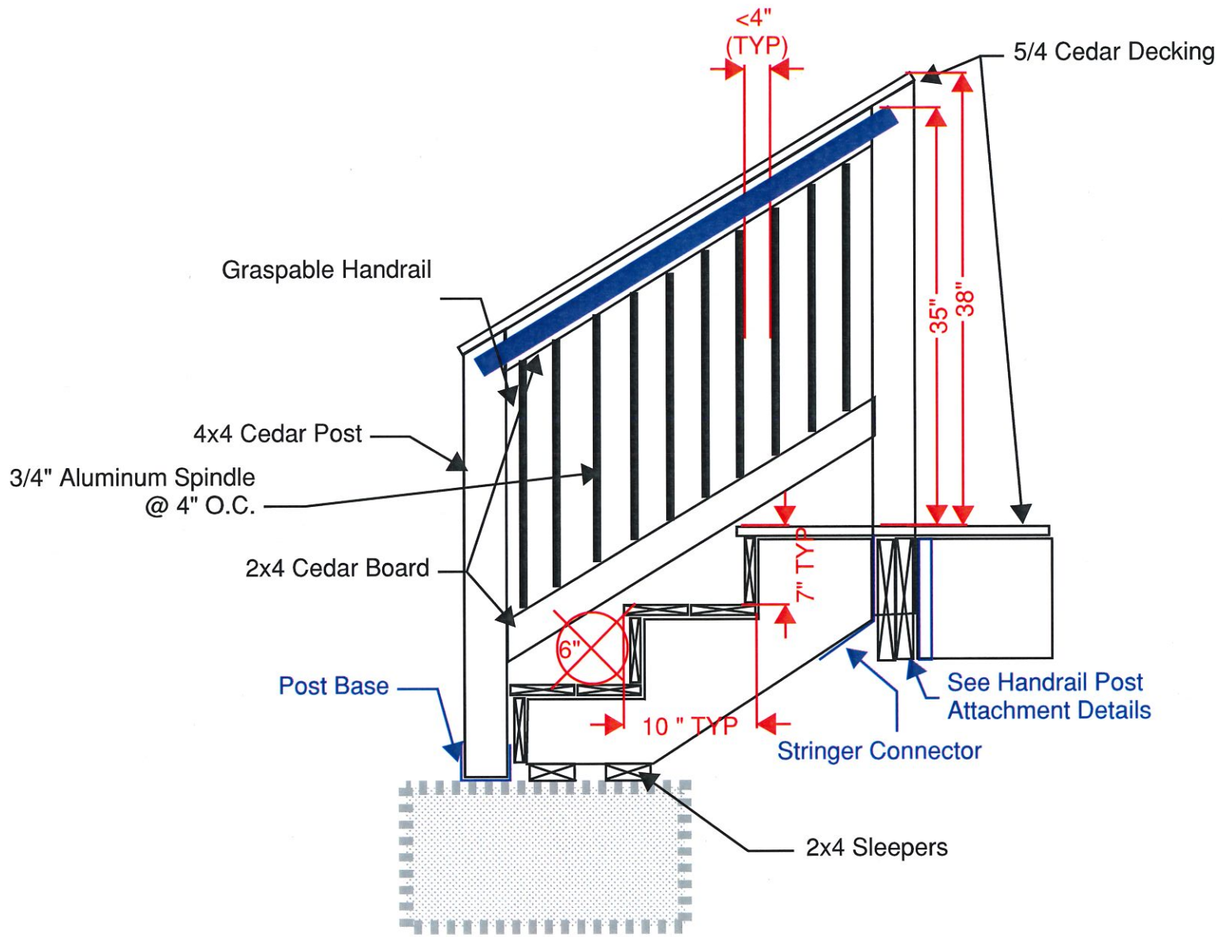
Design Team
Company
Address

Section

Back Deck

14 Heather

Revisions



Stair Details

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Stair Details

Back Deck

14 Heatherbrook

Revisions

Table 2. Maximum Joist Spans and Overhangs.[1]

Species	Size	Joist Spacing (o.c.) 12"	16"	24"	12"	16"	24"
		Allowable Span[2] (L_J)			Allowable Overhang[3] (L_O)		
Southern Pine	2x6[6]	9' - 11"	9' - 0"	7' - 7"	1' - 0"	1' - 1"	1' - 3"
	2x8	13' - 1"	11' - 10"	9' - 8"	1' - 10"	2' - 0"	2' - 4"
	2x10	16' - 2"	14' - 0"	11' - 5"	3' - 1"	3' - 5"	2' - 10"
	2x12	18' - 0"[7]	16' - 6"	13' - 6"	4' - 6"	4' - 2"	3' - 4"
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir[4]	2x6[6]	9' - 6"	8' - 4"	6' - 10"	0' - 11"	1' - 0"	1' - 2"
	2x8	12' - 6"	11' - 1"	9' - 1"	1' - 8"	1' - 10"	2' - 2"
	2x10	15' - 8"	13' - 7"	11' - 1"	2' - 10"	3' - 2"	2' - 9"
	2x12	18' - 0"[7]	15' - 9"	12' - 10"	4' - 4"	3' - 11"	3' - 3"
Redwood, Western Cedars, Ponderosa Pine[5], Red Pine[5]	2x6[6]	8' - 10"	8' - 0"	6' - 10"	0' - 9"	0' - 10"	0' - 11"
	2x8	11' - 8"	10' - 7"	8' - 8"	1' - 5"	1' - 7"	1' - 9"
	2x10	14' - 11"	13' - 0"	10' - 7"	2' - 5"	2' - 7"	2' - 8"
	2x12	17' - 5"	15' - 1"	12' - 4"	3' - 7"	3' - 9"	3' - 1"

1. Assumes 40 psf live load, 10 psf dead load, No. 2 stress grade, and wet service conditions.
2. Assumes L/360 deflection.
3. Maximum allowable overhang cannot exceed L/4 or ¼ of actual main span. Assumes cantilever length/180 deflection with 220 lb point load (See Figure 1A and Figure 2).
4. Incising assumed for Douglas fir-larch, hem-fir, and spruce-pine-fir.
5. Design values based on northern species with no incising assumed.
6. Ledger shall be a minimum of 2x8 nominal. Where guards are required, outside joists and rim joists shall be a minimum of 2x8 nominal.
7. Joist length prescriptively limited to 18'-0" for footing design.

Table 3A. Dimension Lumber Deck Beam Spans (L_B)[1] for Joists Framing from One Side Only.

Species	Size[4]	Joist Spans (L) Less Than or Equal to: 6'	8'	10'	12'	14'	16'	18'
Southern Pine	2-2x6	6' - 8"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	4' - 0"	3' - 9"
	2-2x8	8' - 6"	7' - 4"	6' - 6"	5' - 11"	5' - 6"	5' - 1"	4' - 9"
	2-2x10	10' - 1"	8' - 9"	7' - 9"	7' - 1"	6' - 6"	6' - 1"	5' - 9"
	2-2x12	11' - 11"	10' - 4"	9' - 2"	8' - 4"	7' - 9"	7' - 3"	6' - 9"
	3-2x6	7' - 11"	7' - 2"	6' - 5"	5' - 10"	5' - 5"	5' - 0"	4' - 9"
	3-2x8	10' - 7"	9' - 3"	8' - 3"	7' - 6"	6' - 11"	6' - 5"	6' - 1"
	3-2x10	12' - 9"	11' - 0"	9' - 9"	8' - 9"	8' - 3"	7' - 8"	7' - 3"
	3-2x12	15' - 0"	13' - 0"	11' - 7"	10' - 6"	9' - 9"	9' - 1"	8' - 7"
Douglas Fir-Larch[5], Hem-Fir[2], Spruce-Pine-Fir[2], Redwood, Western Cedars, Ponderosa Pine[3], Red Pine[3]	3x6 or 2-2x6	5' - 2"	4' - 5"	3' - 11"	3' - 7"	3' - 3"	2' - 10"	2' - 6"
	3x8 or 2-2x8	6' - 7"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	3' - 10"	3' - 5"
	3x10 or 2-2x10	8' - 1"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 10"	4' - 5"
	3x12 or 2-2x12	9' - 5"	8' - 2"	7' - 3"	6' - 7"	6' - 1"	5' - 8"	5' - 4"
	4x6	6' - 2"	5' - 3"	4' - 8"	4' - 3"	3' - 11"	3' - 8"	3' - 5"
	4x8	8' - 2"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 11"	4' - 7"
	4x10	9' - 8"	8' - 4"	7' - 5"	6' - 9"	6' - 3"	5' - 10"	5' - 5"
	4x12	11' - 2"	9' - 8"	8' - 7"	7' - 10"	7' - 3"	6' - 9"	6' - 4"
	3-2x6	7' - 1"	6' - 5"	5' - 9"	5' - 3"	4' - 10"	4' - 6"	4' - 3"
	3-2x8	9' - 5"	8' - 3"	7' - 4"	6' - 8"	6' - 2"	5' - 9"	5' - 5"
	3-2x10	11' - 9"	10' - 2"	9' - 1"	8' - 3"	7' - 7"	7' - 1"	6' - 8"
	3-2x12	13' - 8"	11' - 10"	10' - 6"	9' - 7"	8' - 10"	8' - 3"	7' - 10"

1. Assumes 40 psf live load, 10 psf dead load, L/360 simple span beam deflection limit, cantilever length/180 deflection limit, No. 2 stress grade, and wet service conditions.
2. Incising assumed for Douglas fir-larch, hem-fir, and spruce-pine-fir.
3. Design values based on northern species with no incising assumed.
4. Beam depth must be equal to or greater than joist depth if joist hangers are used (see Figure 6, Option 3).

LB/4=Max Overhang = 2'-2"

Table 4. Post Height for 6x6[5] and Footing Sizes for all Posts.

Beam Span, L_B	Joist Span L_J	Post Heights[1] Southern Pine	Douglas Fir-Larch[3]	Hem-Fir[3], Western Cedars	Redwood	Ponderosa Pine, Red Pine, SPF[3]	Footing Sizes[2] Round Footing Diameter	Square Footing	Footing Thickness[4]
6'	≤10'	14'	14'	14'	14'	14'	18"	16"x16"	7"
	≤14'	14'	14'	14'	14'	14'	21"	18"x18"	8"
	≤18'	14'	14'	12'	14'	11'	24"	21"x21"	10"
8'	≤10'	14'	14'	14'	14'	14'	20"	18"x18"	8"
	≤14'	14'	14'	14'	14'	11'	24"	21"x21"	10"
	≤18'	14'	13'	11'	12'	8'	27"	24"x24"	11"
10'	≤10'	14'	14'	14'	14'	12'	23"	20"x20"	9"
	≤14'	14'	13'	11'	13'	8'	27"	24"x24"	11"
	≤18'	12'	11'	8'	11'	2'	31"	27"x27"	13"
12'	≤10'	14'	14'	12'	14'	10'	25"	22"x22"	10"
	≤14'	13'	12'	9'	11'	5'	30"	26"x26"	13"
	≤18'	11'	9'	6'	9'	2'	34"	30"x30"	15"
14'	≤10'	14'	13'	11'	13'	8'	27"	24"x24"	11"
	≤14'	11'	10'	7'	10'	2'	32"	29"x29"	14"
	≤18'	9'	8'	2'	8'	NP	37"	33"x33"	16"
16'	≤10'	13'	12'	10'	12'	6'	29"	26"x26"	12"
	≤14'	10'	9'	5'	9'	2'	35"	31"x31"	15"
	≤18'	7'	5'	2'	7'	NP	40"	35"x35"	18"
18'	≤10'	12'	11'	8'	11'	2'	31"	27"x27"	13"
	≤14'	9'	8'	2'	8'	NP	37"	33"x33"	16"
	≤18'	5'	2'	2'	6'	NP	42"	37"x37"	19"

1. Assumes 40 psf live load, 10 psf dead load, L_B/4 and L_J/4 overhangs, No 2. Stress grade and wet service conditions.
2. Assumes 1,500 psf soil bearing capacity and 150 pcf concrete. Value may be multiplied by 0.9 for corner posts.
3. Incising assumed for Douglas fir-larch, hem-fir, and spruce-pine-fir.
4. Assumes 2,500 psi compressive strength of concrete. Coordinate footing thickness with post base and anchor requirements.
5. 8x8 nominal posts may be substituted anywhere in Table 4 to a maximum height of 14'.

Table 5. Fastener Spacing for a Southern Pine, Douglas Fir-Larch, or Hem-Fir Deck Ledger or Band or Rim Joist and a 2-inch Nominal Solid-Sawn Spruce-Pine-Fir Band Joist or EWP Rim Joist.[3,4,5,6,8]
(Deck Live Load = 40 psf, Deck Dead Load = 10 psf)

Joist Span	Rim Joist or Band Joist	6'-0" and less	6'-1" to 8'-0"	8'-1" to 10'-0"	10'-1" to 12'-0"	12'-1" to 14'-0"	14'-1" to 16'-0"	16'-1" to 18'-0"
Connection Details		On-Center Spacing of Fasteners						
½" diameter lag screw[1] with $^{15}/_{32}$" maximum sheathing	1" EWP	24"	18"	14"	12"	10"	9"	8"
	1-$^{1}/_{8}$" EWP	28"	21"	16"	14"	12"	10"	9"
	1-½" Lumber	30"	23"	18"	15"	13"	11"	10"
½" diameter bolt with $^{15}/_{32}$" maximum sheathing	1" EWP	24"	18"	14"	12"	10"	9"	8"
	1-$^{1}/_{8}$" EWP	28"	21"	16"	14"	12"	10"	9"
	1-½" Lumber	36"	36"	34"	29"	24"	21"	19"
½" diameter bolt with $^{15}/_{32}$" maximum sheathing and ½" stacked washers[2,7]	1-½" Lumber	36"	36"	29"	24"	21"	18"	16"

1. The tip of the lag screw shall fully extend beyond the inside face of the band or rim joist.
2. The maximum gap between the face of the ledger board and face of the wall sheathing shall be ½".
3. Ledgers shall be flashed or caulked to prevent water from contacting the house band joist (see Figures 14 and 15).
4. Lag screws and bolts shall be staggered per Figure 19.
5. Deck ledgers shall be minimum 2x8 pressure-preservative-treated No.2 grade lumber, or other *approved* materials as established by standard engineering practice.
6. When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (minimum 1" thick wood structural panel band joist or structural composite lumber including laminated veneer lumber), the ledger attachment shall be designed in accordance with accepted engineering practice. Tabulated values based on 300 lbs and 350 lbs for 1" and 1-$^{1}/_{8}$" EWP rim joist, respectively.
7. Wood structural panel sheathing, gypsum board sheathing, or foam sheathing shall be permitted between the band or rim joist and ledger. Stacked washers are permitted in combination with wood structural panel sheathing, but are not permitted in combination with gypsum board or foam sheathing. The maximum distance between the face of the ledger board and the face of the band joist shall be 1".
8. Fastener spacing also applies to southern pine, Douglas fir-larch, and hem-fir band or rim joists.

Notes:
Maximum beam overhang for 2x10 joists is 3'5" with 16" joist spacing. This figure was used on the back yard size to move the furthest beam in towards the house. This allows for a chamfered corner to meet framing requirements/overhang. Chamfer size was based on this dimension. Existing set back is less than 12' R-3 requirement (to large retaining wall structure measures 10 feet, sidewalk retaining wall measures 5').

Foundations were located as follows:
- Twp "tall posts" were located below the existing retaining wall to prevent surcharging of the wall backfill. The wall has been in place "forever" according to neighbors, but was upgraded 15-20 years ago from rail road ties to block. The patio above has noticeable settling at edges, but this settling doesn't appear to have increased in the last 4 1/2 years of occupancy.
- Beam closest to the house was located based on putting the post as close to the wall as possible, without conflicting.
- Triple joist hangers will be used on the beam at house intersection to minimize footings on house/wall backfill.
- Spread footings on the existing patio area will be used as this is likely backfill and piers to undisturbed soil are not practical considering the depth of existing backfill is not known.

< Seal >

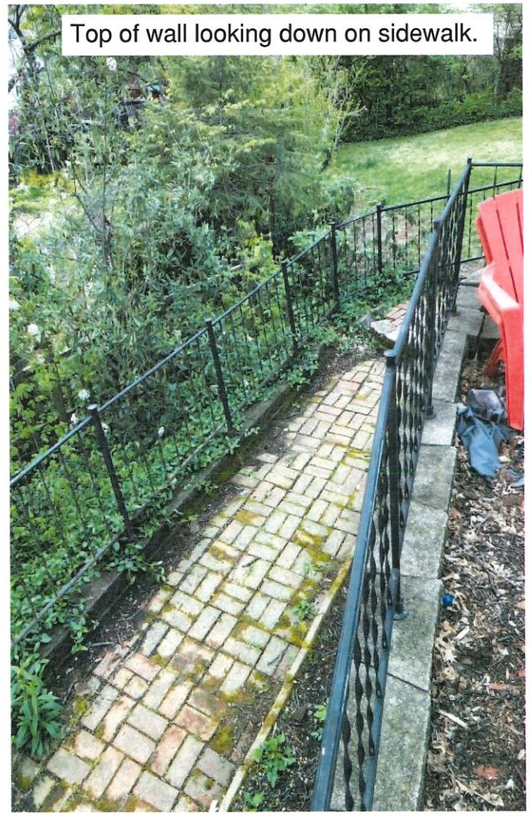
Design Team
Company
Address

AWI Table References

Back Deck

14 Heatherbrook

Revisions



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Back Deck

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Revisions