

**CONCRETE** - ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF THE UBC AND THE INTERNATIONAL BUILDING CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

ITEM	DESCRIPTION	QUANTITY	UNIT
1	CONCRETE	100	CU YD
2	REINFORCING BARS	100	LB
3	FORMWORK	100	SQ YD
4	ADDITIONAL REINFORCING BARS	100	LB
5	ADDITIONAL FORMWORK	100	SQ YD
6	ADDITIONAL CONCRETE	100	CU YD
7	ADDITIONAL REINFORCING BARS	100	LB
8	ADDITIONAL FORMWORK	100	SQ YD
9	ADDITIONAL CONCRETE	100	CU YD
10	ADDITIONAL REINFORCING BARS	100	LB
11	ADDITIONAL FORMWORK	100	SQ YD
12	ADDITIONAL CONCRETE	100	CU YD
13	ADDITIONAL REINFORCING BARS	100	LB
14	ADDITIONAL FORMWORK	100	SQ YD
15	ADDITIONAL CONCRETE	100	CU YD
16	ADDITIONAL REINFORCING BARS	100	LB
17	ADDITIONAL FORMWORK	100	SQ YD
18	ADDITIONAL CONCRETE	100	CU YD
19	ADDITIONAL REINFORCING BARS	100	LB
20	ADDITIONAL FORMWORK	100	SQ YD

**STEEL** - ALL STEEL SHALL BE FABRICATED AND WELDED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL AND THE AISC CODE OF BEST PRACTICES FOR FABRICATING AND ERECTOR'S QUALITY CONTROL. ALL STEEL SHALL BE FABRICATED AND WELDED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL AND THE AISC CODE OF BEST PRACTICES FOR FABRICATING AND ERECTOR'S QUALITY CONTROL.

**WOOD** - ALL WOOD SHALL BE DRY-KNOWN AND TREATED WITH AN APPROPRIATE PRESERVATIVE TO PROTECT AGAINST TERMITES AND OTHER INSECT DAMAGE. ALL WOOD SHALL BE DRY-KNOWN AND TREATED WITH AN APPROPRIATE PRESERVATIVE TO PROTECT AGAINST TERMITES AND OTHER INSECT DAMAGE.

**MECHANICAL** - ALL MECHANICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MECHANICAL CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

**ELECTRICAL** - ALL ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE ELECTRICAL CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

**FOUNDATION** - ALL FOUNDATION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOUNDATION CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

**ROOFING** - ALL ROOFING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE ROOFING CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

**PAINTING** - ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE PAINTING CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

**GLAZING** - ALL GLAZING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE GLAZING CODES AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL BUILDING DEPARTMENT.

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LAND ZONE	CLIMATE ZONE	CLIMATE ZONE	CLIMATE ZONE
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20

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2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
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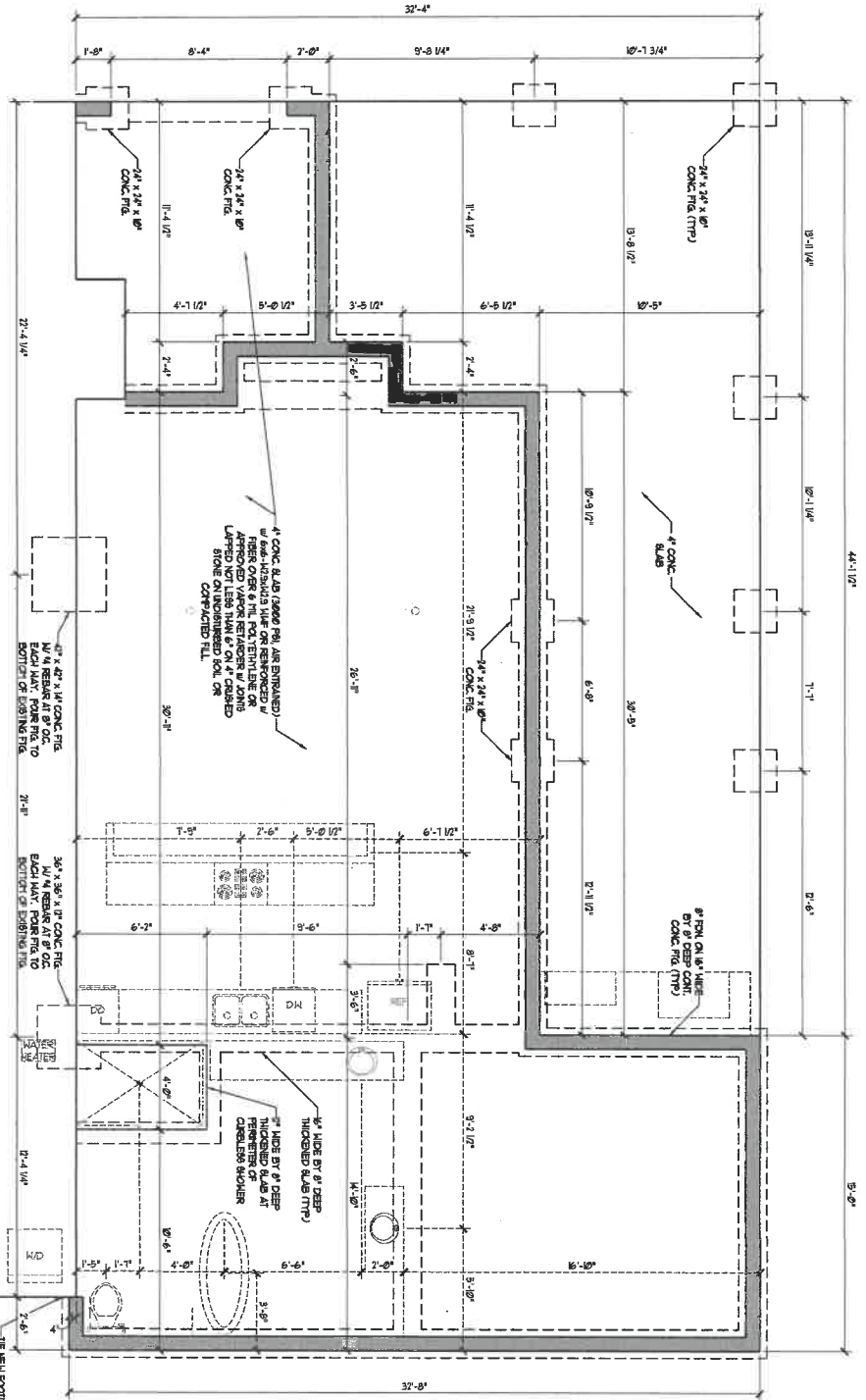
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DATE: APRIL 04, 2022  
 SCALE:  
 DRAWN BY: TSZ  
 ENGINEERED BY: TSZ  
 REVIEWED BY: TSZ

SPECTRA ENGINEERING AND DESIGN, PLLC  
 P.O. BOX 31635  
 RALEIGH, NORTH CAROLINA 27617  
 LICENSE NO. NC. P-2946 VA. 0006462

STANDARD STRUCTURAL NOTES

STANDARD STRUCTURAL NOTES  
 SN-1  
 SHEET ... OF ...



TYPICAL STEM WALL FOUNDATION DETAIL  
W/ SIDING OR SHAKE SIDING AND  
NO BRICK AT FOUNDATION

THICKENED SLAB DETAIL

SLAB FLOOR  
ELEVATION CHANGE

\* DIMENSIONS SUBJECT TO  
CHANGE ±2" TO MATCH  
EXISTING STRUCTURE.

ENGINEER'S SEAL IS VALID UP TO ONE YEAR OF SEAL DATE.

NOTE - IF THE  
OBSERVED EXISTING  
FOUNDATIONS  
DO NOT MEET THE  
REQUIREMENTS  
ASSUMED FOR THE  
DESIGN, THE  
ENGINEER SHALL  
BE CONTACTED FOR  
REVISIONS AND  
REDESIGNATION.

EXISTING WALL  
NEW WALL  
BRACED WALL

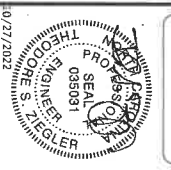
STRUCTURAL NOTES:  
1) REFER TO STANDARD STRUCTURAL NOTES  
AND WALL SECTION DETAILS PAGES FOR  
ADDITIONAL STRUCTURAL INFORMATION.  
2) IN LABEL OF NOTE 5, ON PG. 041, WALL  
BRACING SHALL BE PER THE WORK  
SCHEDULED IN THE CONTRACT.  
3) ALL EXISTING WALLS SHALL BE REINFORCED  
ON ALL EXTERIOR WALLS SHALL BE REINFORCED  
WITH #4 BARS AT 16" ON CENTER AND  
#4 BARS AT 16" ON CENTER AND 4" LABELED  
STONE AND ON GABLE END WALLS.

THE NEW FOOTING TO EXISTING  
W/ (U) 8" LONG 4" REBAR DOWN 6"  
FROM EXISTING FOOTING TO NEW  
FOOTING (SEE CONNECTION)

OSBORN RESIDENCE ADDITION/RENOVATION  
139 CLEARVIEW COURT  
SANFORD, NORTH CAROLINA

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RALEIGH, NORTH CAROLINA 27612  
TEL: 919.876.1111 FAX: 919.876.1112  
LICENCE NO. NC. P-0946 VOL. 000462

DATE: OCTOBER 21, 2022  
SCALE: 1/4" = 1'-0"  
DRAWN BY: TSZ  
ENGINEERED BY: TSZ  
REVIEWED BY: JBW

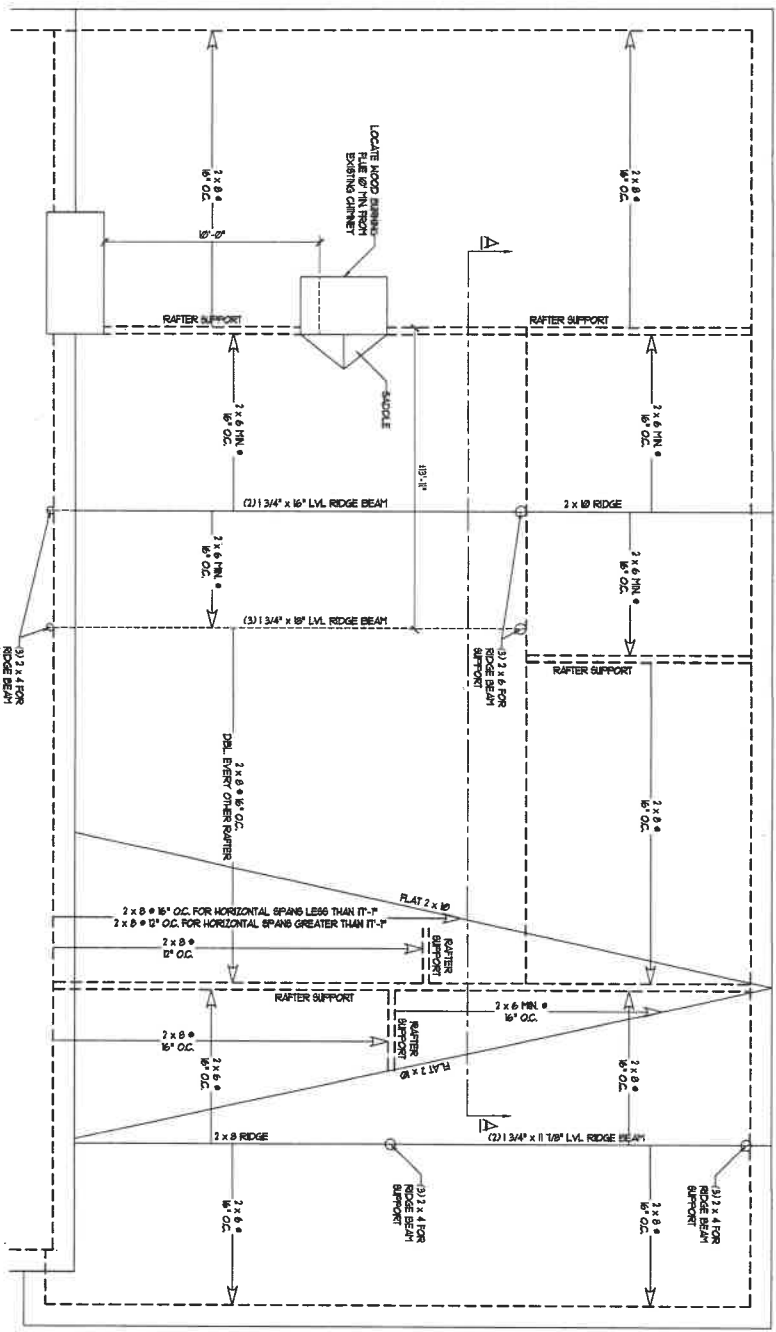


STEM WALL  
FOUNDATION PLAN  
5-1  
SHEET 4 OF 6



**ATTIC VENT CALCULATION**  
 193 SQ. FT. OF ATTIC DIVIDED BY 80%  
 YIELDS 241.25 SQ. FT. MINIMUM OF TOTAL NET  
 FREE VENTILATING AREA  
 SEE SECTION 9003.2 OF THE IBC, 2006  
 EDITION FOR ALTERNATIVES AND  
 EXCEPTIONS

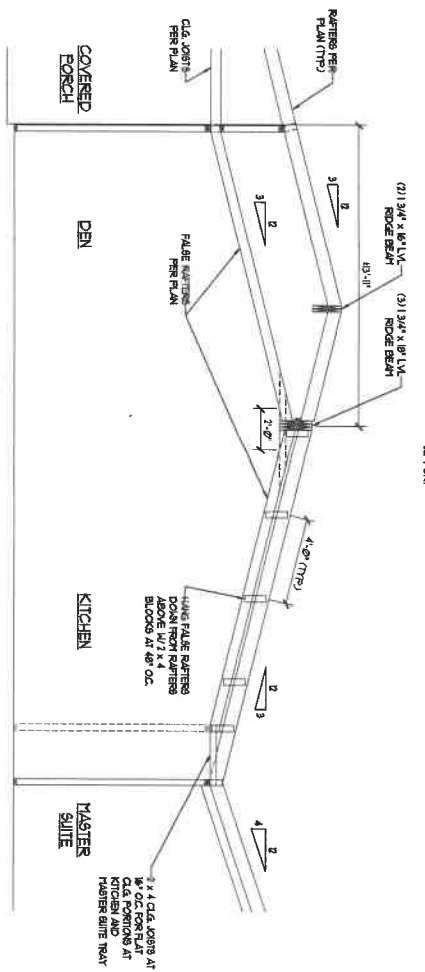
**NOTE - IF THE  
 OBSERVED DRIBBLES  
 FORMING CONDENSATION  
 ARE NOT CORRECTLY  
 IDENTIFIED OR REMOVED  
 AS SPECIFIED ON THE PLAN,  
 THE CONTRIBUTION  
 FROM THIS AREA TO THE  
 TOTAL VENTILATING AREA  
 SHALL BE ZERO.  
 SPECTRA ENGINEERING AND  
 DESIGN, FLLC FOR  
 FURTHER INSTRUCTION**



**STRUCTURAL NOTES:**  
 1) REFER TO STANDARD STRUCTURAL NOTES AND WALL BRACING DETAILS PROVIDED FOR ADDITIONAL STRUCTURAL INFORMATION.  
 2) LABEL OF ROOF SLOPE SHALL WALL BRACING DESIGN AS PER THE NORTH CAROLINA RESIDENTIAL CODE, 2006 EDITION UNLESS OTHERWISE NOTED.  
 3) ALL EXTERIOR WALLS SHALL BE REINFORCED ON ALL SEISMICALLY SIGNIFICANT AREAS. REINFORCEMENT SHALL BE REINFORCED IN PANELS ABOVE AND BELOW WALL CORNERS AND ON GABLE END WALLS.

**\* DIMENSIONS SUBJECT TO CHANGE ±2" TO MATCH EXISTING STRUCTURE.**

**SECTION A-A**



**ENGINEER'S SEAL IS VALID UP TO ONE YEAR OF SEAL DATE**



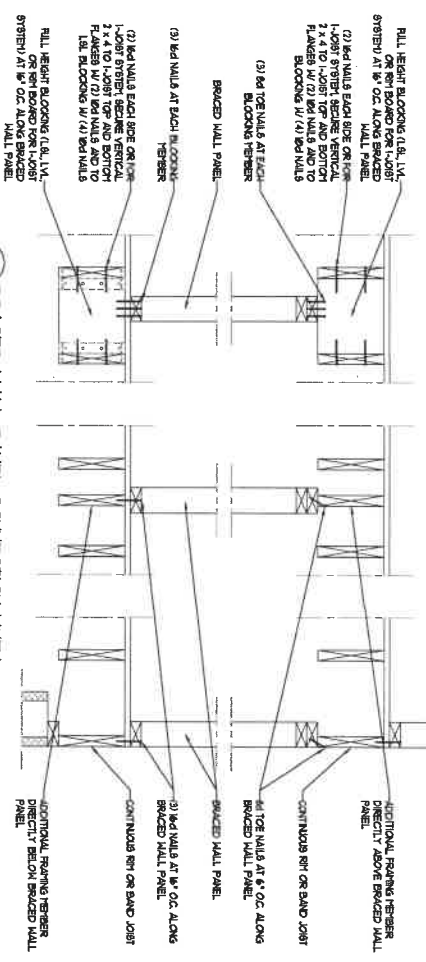
**OSBORN RESIDENCE ADDITION/RENOVATION**  
 139 CLEARVIEW COURT  
 SANFORD, NORTH CAROLINA

**SPECTRA ENGINEERING AND DESIGN, FLLC**  
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 RALEIGH, NORTH CAROLINA 27627  
 TEL: (919) 220-2200  
 LICENSE NO. NC-P-2946 VA: 000462

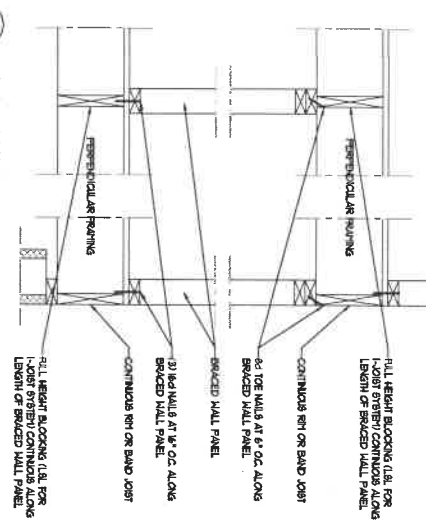
**DATE: OCTOBER 27, 2022**  
**SCALE: 1/4" = 1'-0"**  
**DRAWN BY: T5Z**  
**ENGINEERED BY: T5Z**  
**REVIEWED BY: JBW**



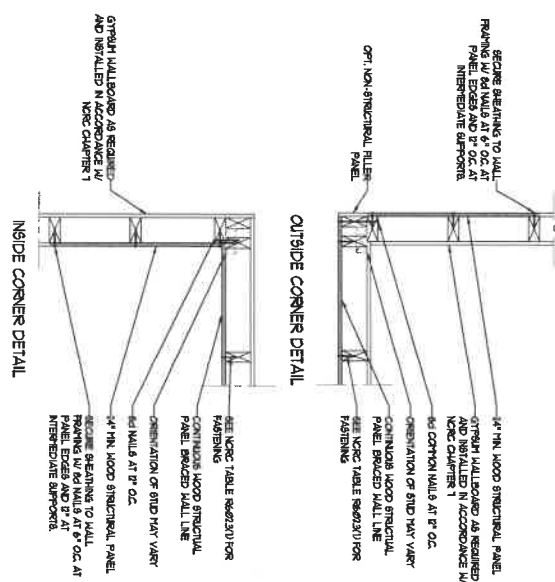
**ROOF PLAN**  
**5-3**  
 SHEET 6 OF 6



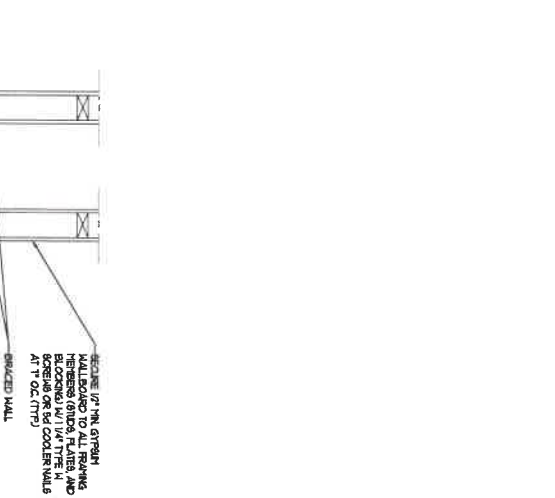
1 BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING



2 BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING



3 TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING



4 METHOD GB (1) AND GB (2) INTERSECTION DETAILS

ABBREVIATIONS	PANEL TYPE	FRAMING	HASHERS
MBP	INTERMITTENT WOOD STRUCTURAL PANEL	1 1/4\"/>	
GB (1)	INTERMITTENT GYPSUM BOARD (REMAINING ON ONE FACE OF WALL)	1/2\"/>	
GB (2)	INTERMITTENT GYPSUM BOARD (REMAINING ON BOTH FACES OF WALL)	1/2\"/>	
GB (3)	INTERMITTENT GYPSUM BOARD (REMAINING ON BOTH FACES OF WALL)	1/2\"/>	
LB	LET-IN-BLOCKS	1 x 4 WOOD ONE BRICK OR STRIP	WOOD: (1) 2x4 WALLS PER SBP INCLUDING TOP AND BOTTOM PLATE. (2) 2x4 WALLS PER SBP INCLUDING TOP AND BOTTOM PLATE. (3) 2x4 WALLS PER SBP
GB-WBP	CONTINUOUS BEATEN WOOD STRUCTURAL PANEL	1 1/4\"/>	
GB-G	CONT. BEATEN WOOD STRUCTURAL PANEL ADJACENT TO GARAGE	1 1/4\"/>	
GB-PP	CONTINUOUS FORMAL FRAME	1 1/2\"/>	
GB-BM1	CONTINUOUS BEATEN WOOD STRUCTURAL PANEL	1 1/4\"/>	
GB-BM2	CONTINUOUS BEATEN WOOD STRUCTURAL PANEL	1 1/4\"/>	

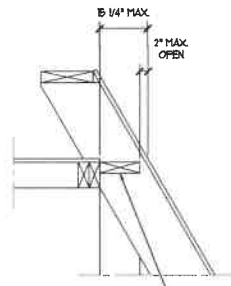
NOTES:  
 1) ALL BRACED WALL PANELS SHALL HAVE N BRACING BETWEEN WALL STUDS AT ALL HORIZONTAL SHEET EDGES.  
 2) PROVIDE WALL NAILING ABOVE AND BELOW ALL BRACED WALL PANELS PER DETAIL 15B-1 AND 25B-1.  
 3) ALL EXTERIOR WALLS OF THE HOME ARE TO BE BEATEN IN THE OSB OR 5/8\"/>

**SPECTRA ENGINEERING AND DESIGN, PLLC**  
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 LICENSE NO. NC P-2946 VA 0006462

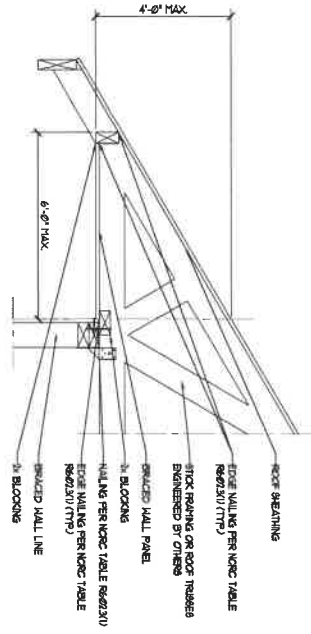
DATE: APRIL 04, 2022  
 SCALE: NTS  
 DRAWN BY: TSG  
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 REVIEWED BY: TSG

WALL BRACING DETAILS

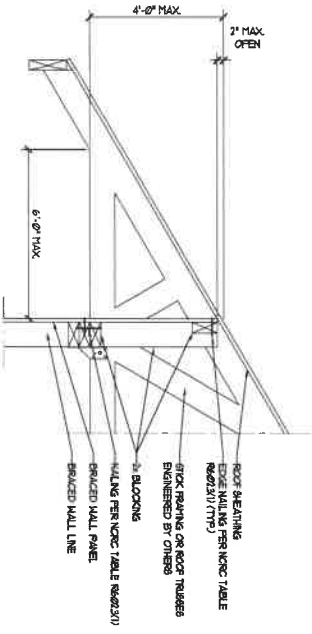
DETAILS  
**BM-1**  
 SHEET X OF X



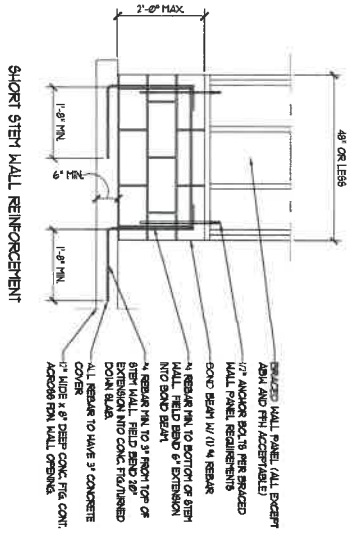
1 BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS



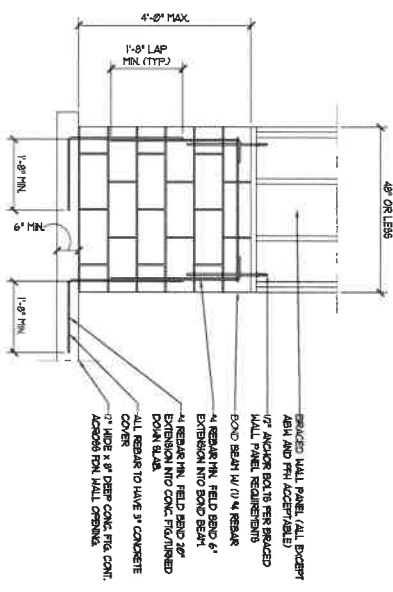
2 BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES  
PROVIDE VERTICAL SECTION BELOW (NOT SHOWN)



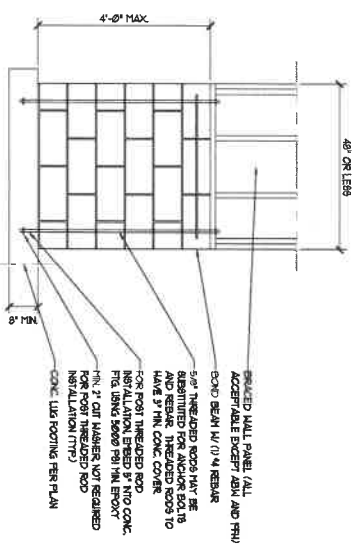
3 BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES  
PROVIDE VERTICAL SECTION BELOW (NOT SHOWN)



SHORT STEM WALL REINFORCEMENT



TALL STEM WALL REINFORCEMENT



OPT STEM WALL REINFORCEMENT CONFIGURATION

4 MASONRY STEM WALL'S SUPPORTING BRACED WALL PANELS

ENGINEER'S SEAL IS VALID UP TO ONE YEAR OF SEAL DATE



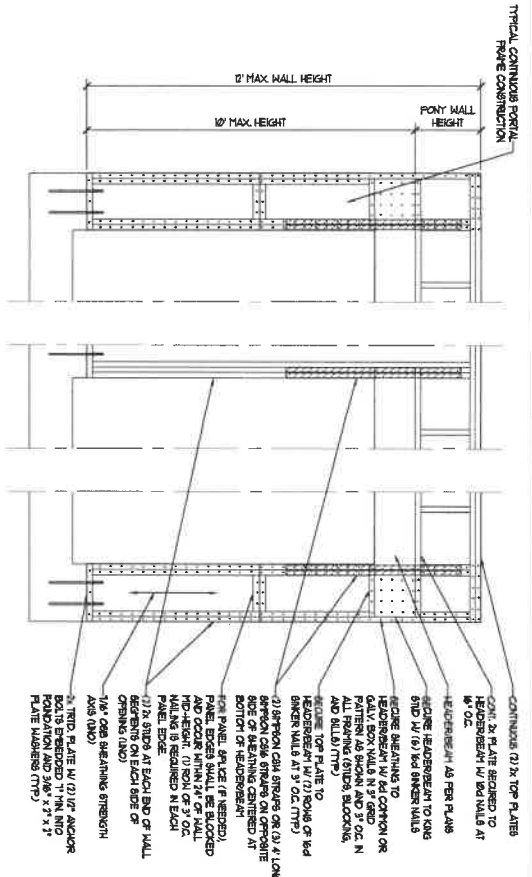
DATE: APRIL 24, 2022  
SCALE: NTS  
DRAWN BY: TSZ  
ENGINEERED BY: TSZ  
REVIEWED BY: TSZ

SPECTRA ENGINEERING AND DESIGN, LLC  
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TEL: 919.822.8818 FAX: 919.822.8819  
LIC#06 NO. NC. P-0246 VA. 000462

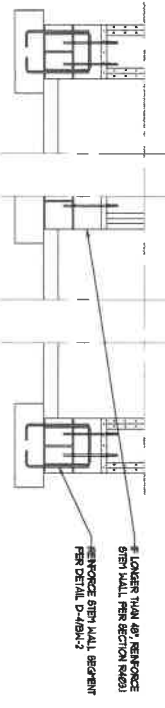
WALL BRACING DETAILS



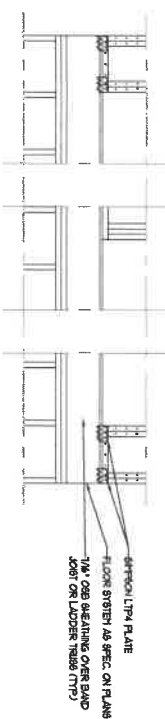
DETAILS  
BM-2  
SHEET X OF X



WITH MONOLITHIC SLAB FOUNDATION



ON STEEL WALL OR CRAWL SPACE FOUNDATION



OVER RAISED WOOD FLOOR OR SECOND FLOOR - FRAMING ANCHOR OPTION



OVER RAISED WOOD FLOOR OR SECOND FLOOR - WOOD STRUCTURAL PANEL OPTION

1 METHOD C5-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION

WALL BRACING DETAILS

DATE: APRIL 04, 2022
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DRAWN BY: T5Z
ENGINEERED BY: T5Z
REVIEWED BY: T5Z

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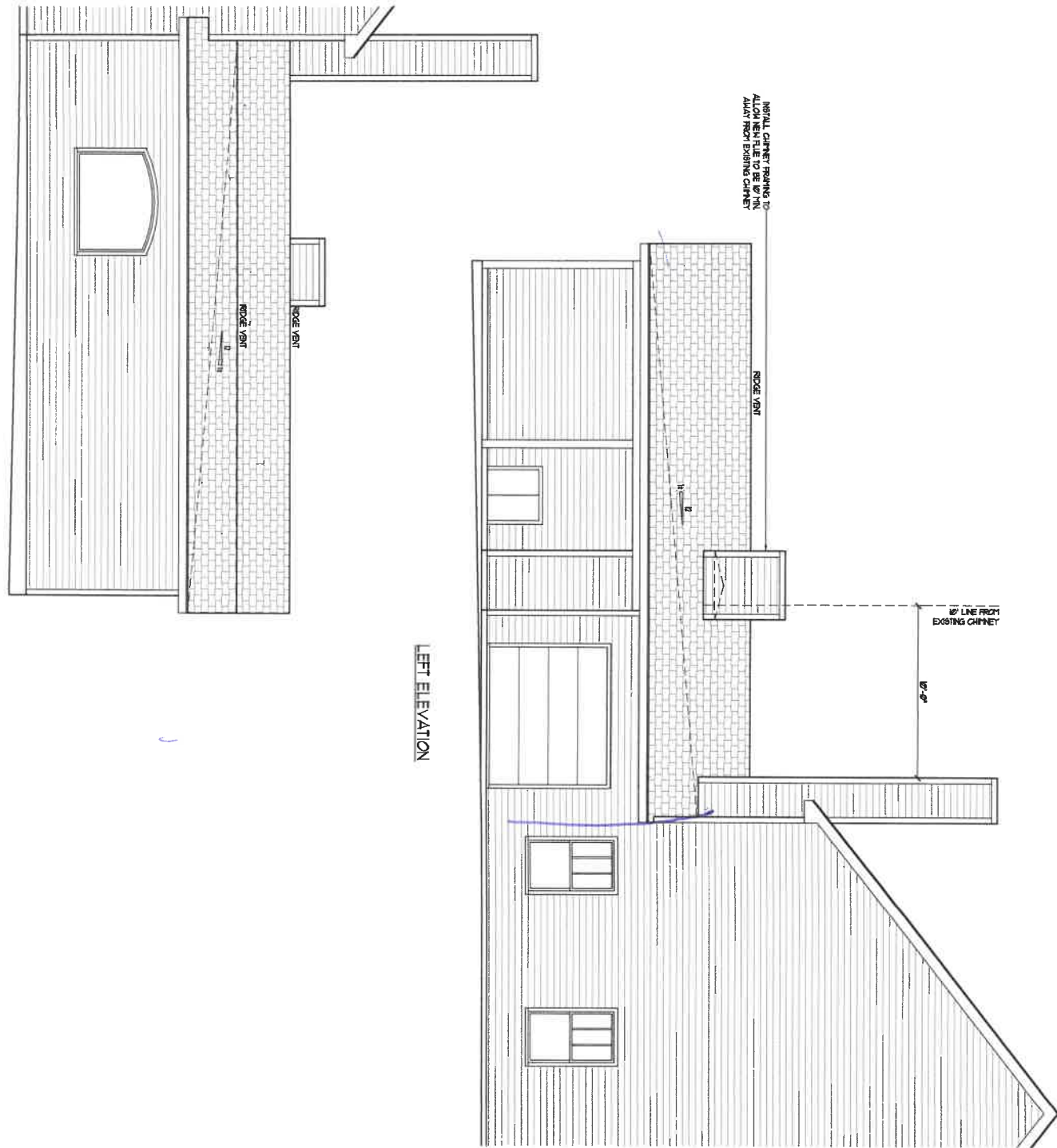


ENGINEER'S SEAL IS VALID UP TO ONE YEAR OF SEAL DATE

DETAILS  
**BM-3**  
 SHEET X OF X







LEFT ELEVATION

RIGHT ELEVATION

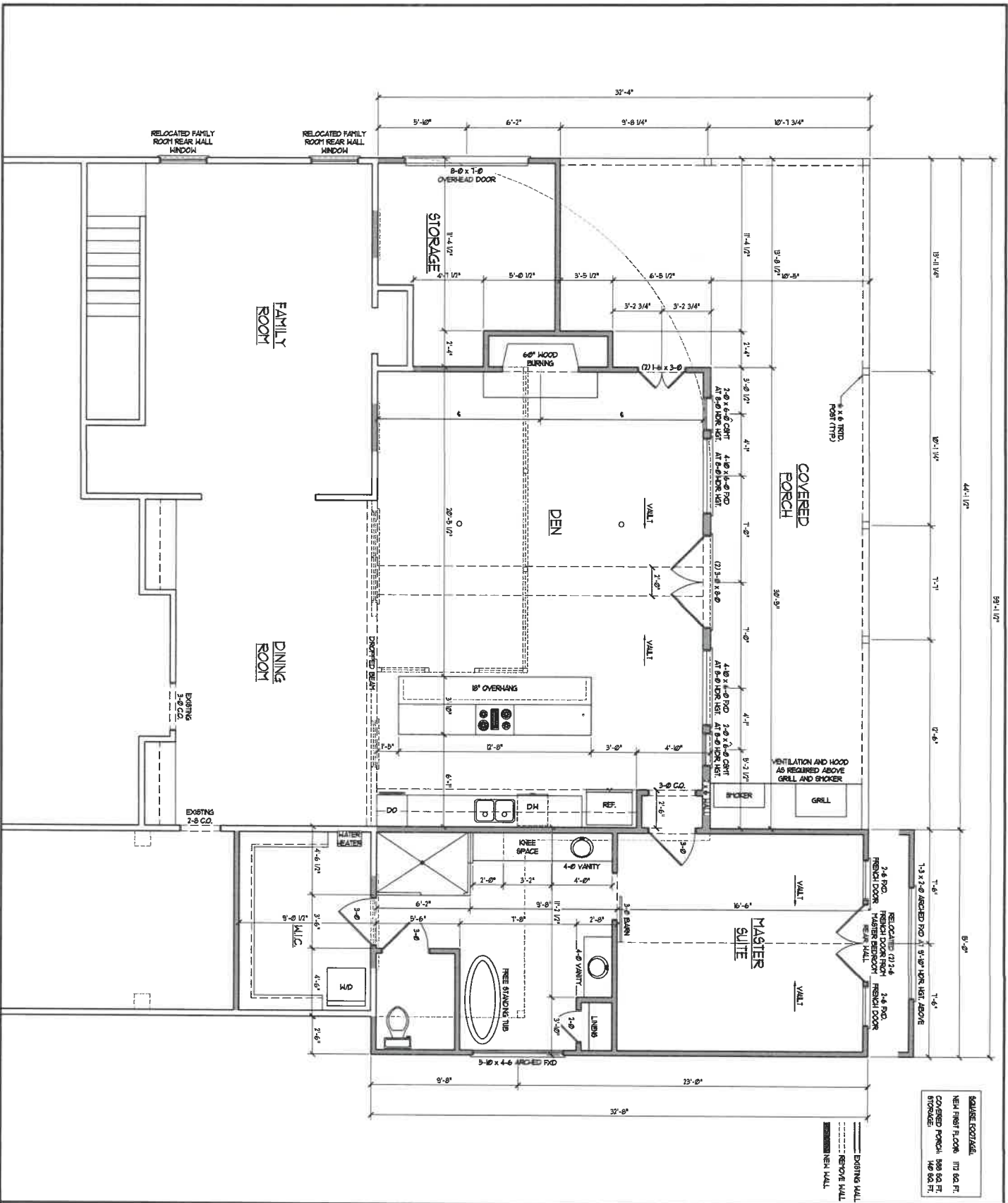
OSBORN RESIDENCE ADDITION/RENOVATION  
 139 CLEARVIEW COURT  
 SANFORD, NORTH CAROLINA

SPECTRA ENGINEERING  
 AND DESIGN, PLLC  
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 LICENSE NO. NC P-09146 VAL 000462

DATE: OCTOBER 27, 2022  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: T5Z  
 ENGINEERED BY: T5Z  
 REVIEWED BY: JBW



SIDE ELEVATIONS  
 A-2  
 SHEET 2 OF 6



SQUARE FOOTAGE	177 SQ. FT.
NEW FIRST FLOOR	599 SQ. FT.
COVERED PORCH	149 SQ. FT.
STORAGE	149 SQ. FT.

FIRST FLOOR PLAN  
A-3  
SHEET 3 OF 6

OSBORN RESIDENCE ADDITION/RENOVATION  
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TEL: (919) 228-2941  
LICENSE NO. NC. P-0946 VA: 000462

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DRAWN BY: TSZ  
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