



RENDERING OF SIMILAR DUPLEX

New Single Family Homes Located At:

John Knox  
Village

Duplex Unit  
626-628 Willow  
Lee's Summit, Missouri

Project No:	20056
Date:	02.22.21
Issued For:	PERMIT

1 3.29.21 CITY COMMENTS

FINKLE + WILLIAMS  
ARCHITECTURE

ARCHITECT

FINKLE + WILLIAMS ARCHITECTURE  
8787 Renner Blvd., Suite 100  
Lenexa, Kansas 66219  
P. 913.498.1550

STRUCTURAL ENGINEER

BSE STRUCTURAL ENGINEERS  
11320 West 79th Street  
Lenexa, Kansas 66214  
P. 913.492.7400

CIVIL ENGINEER

BHC RHODES  
7101 College Blvd., Ste. 400  
Overland Park, KS 66210  
P. 913.663.1900

CONTRACTOR

HARKRADER CONSTRUCTION  
1001 NW Chipman Rd Suite 113  
Lee's Summit, MO 64081  
P. 816.607.7191

Drawing Index

COVER SHEET

CIVIL

C.1 PLOT PLAN

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ARCHITECTURAL

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A4.02 ENLARGED EXTERIOR ELEVATIONS  
A5.01 SECTIONS/DETAILS  
A7.01 INTERIOR ELEVATIONS  
A9.01 CEILING/POWER PLAN  
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STRUCTURAL

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S2.2 ROOF FRAMING PLAN - FULL BUILDING  
S3 FOUNDATION DETAILS  
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RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



PLOT PLAN  
PART OF LOT 2, REPLAT OF  
JOHN KNOX RETIREMENT VILLAGE, THIRD PLAT, LOTS 1, 2 & 3  
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

LEGEND

- UE— Underground Electric Line  
EP Electric Pedestal (above ground)  
EM Electric Meter  
EB Electric Access Box (mounted)  
AC Air Conditioner Unit  
● Utility Pole w/Light  
SC Sprinkler Control Box  
⊙ Utility Pull Box (underground)  
—T— Underground Telephone Line  
TB Telephone Access Box (mounted)  
T Telephone Pedestal (above ground)  
WM Water Meter  
⊕ Down Spout  
RG Regulator Unit  
S Sanitary Sewer Manhole  
—S— Sanitary Sewer Line  
□ Grate Inlet  
□<sub>YD</sub> Yard Drain  
xxx.xx' Spot Elevation  
Deciduous Tree and Size

LOT INFORMATION

ADDRESS: 626 NW Willow Dr.  
628 NW Willow Dr.

EXISTING FINISHED FLOOR = 975.3

LEGAL DESCRIPTION

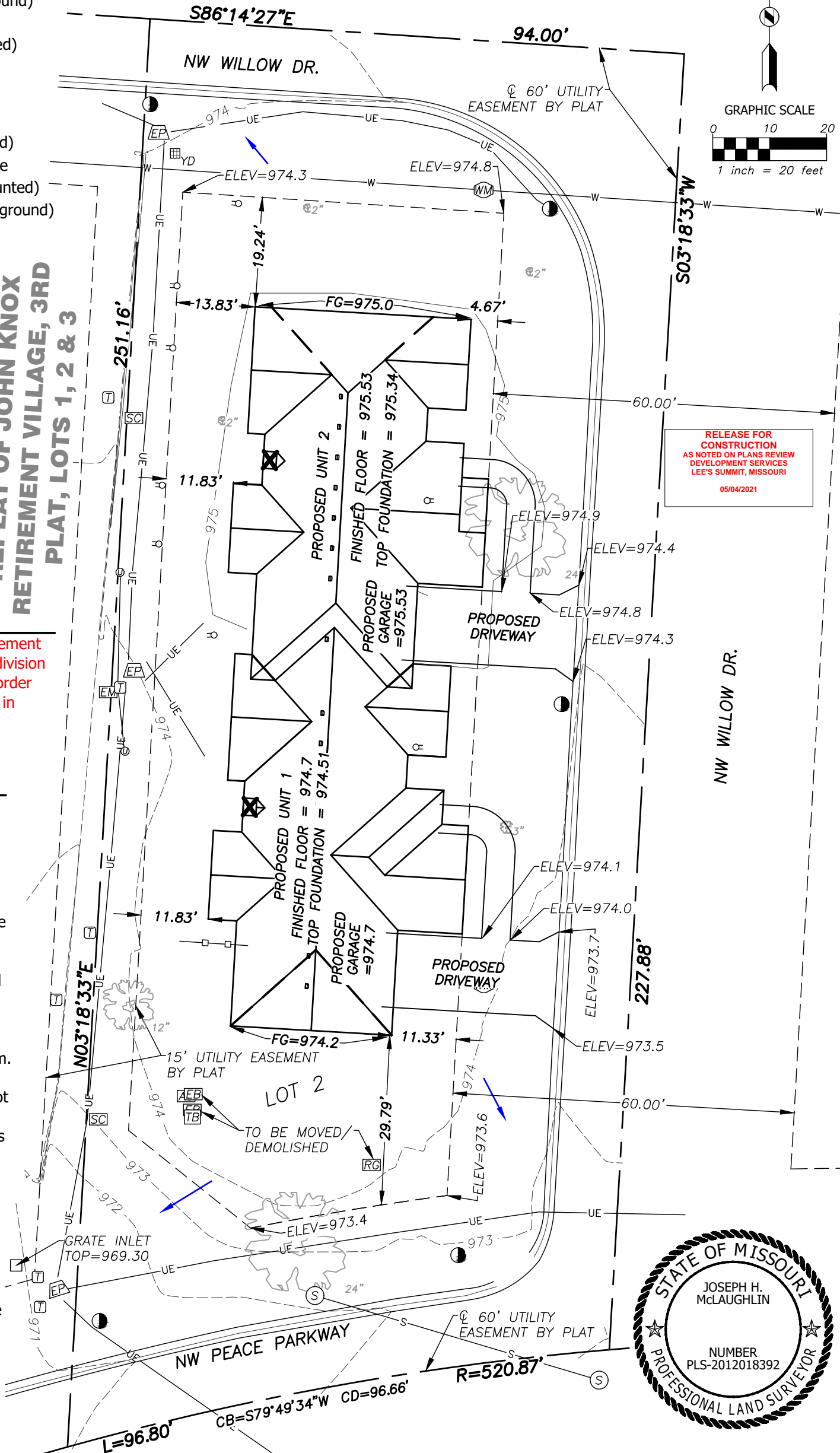
Part of Lot 2, Replat of John Knox Retirement Village, Third Plat, Lots 1, 2 & 3, a subdivision as recorded at the Jackson County Recorder of Deeds office on December 30, 2016, in Book I167 at Page 30.

GENERAL NOTES

- The plat of "REPLAT OF JOHN KNOX RETIREMENT VILLAGE, THIRD PLAT, LOTS 1, 2 & 3" recorded on December 30, 2016, in Plat Book I167, Page 30.
- This Tract contains 22,369 square feet or 0.5135 acres. Area is measured from the centerline of existing easements that surround the subject property.
- Contours are shown at 1 foot intervals based on NAVD88 datum.
- The easements shown on this Plot Plan are taken from the subdivision plat. Other easements may exist.
- Utilities shown were located by Missouri One Call, Ticket Number 203351939, and are subject to relocation as a consequence of this Plot Plan.
- This Plot Plan does not constitute a boundary survey and is subject to any inaccuracies a boundary survey may disclose.

(NOT TO BE USED TO ESTABLISH BOUNDARY LINES)

REPLAT OF JOHN KNOX  
RETIREMENT VILLAGE, 3RD  
PLAT, LOTS 1, 2 & 3



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LEE'S SUMMIT, MISSOURI  
05/04/2021



Sheet:	DLB	Project:
1	028800.01.01	PLOT PLAN
OF	Field Date: 12/17/2020	PART OF LOT 2, REPLAT OF JOHN KNOX
1	Issue Date: 4/9/2021	RETIREMENT VILLAGE, THIRD PLAT,
		LOTS 1, 2 & 3, LEE'S SUMMIT,
		JACKSON COUNTY, MISSOURI

Client:  
JOHN KNOX VILLAGE  
1001 NW CHIPMAN RD.  
LEE'S SUMMIT, MO 64081

**BHC**  
CIVIL ENGINEERING / SURVEYING / UTILITIES  
712 State Avenue, Kansas City, KS 66101  
Phone: (913) 371-5300

Rev.	Date	Release for Construction
		AS NOTED ON PLANS REVIEW
		DEVELOPMENT SERVICES
		LEE'S SUMMIT, MISSOURI

05/04/2021



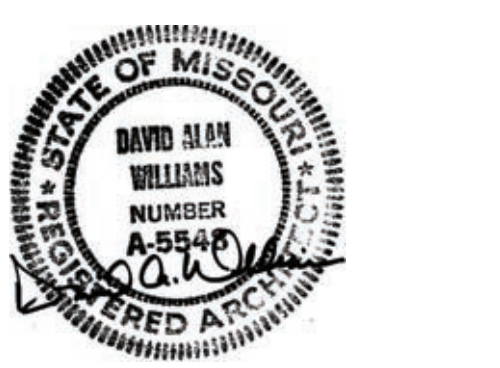
John Knox Village

DUPLEX UNIT  
626 - 628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS	
No.	Date Description
1	02.22.21 CITY COMMENTS

REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS

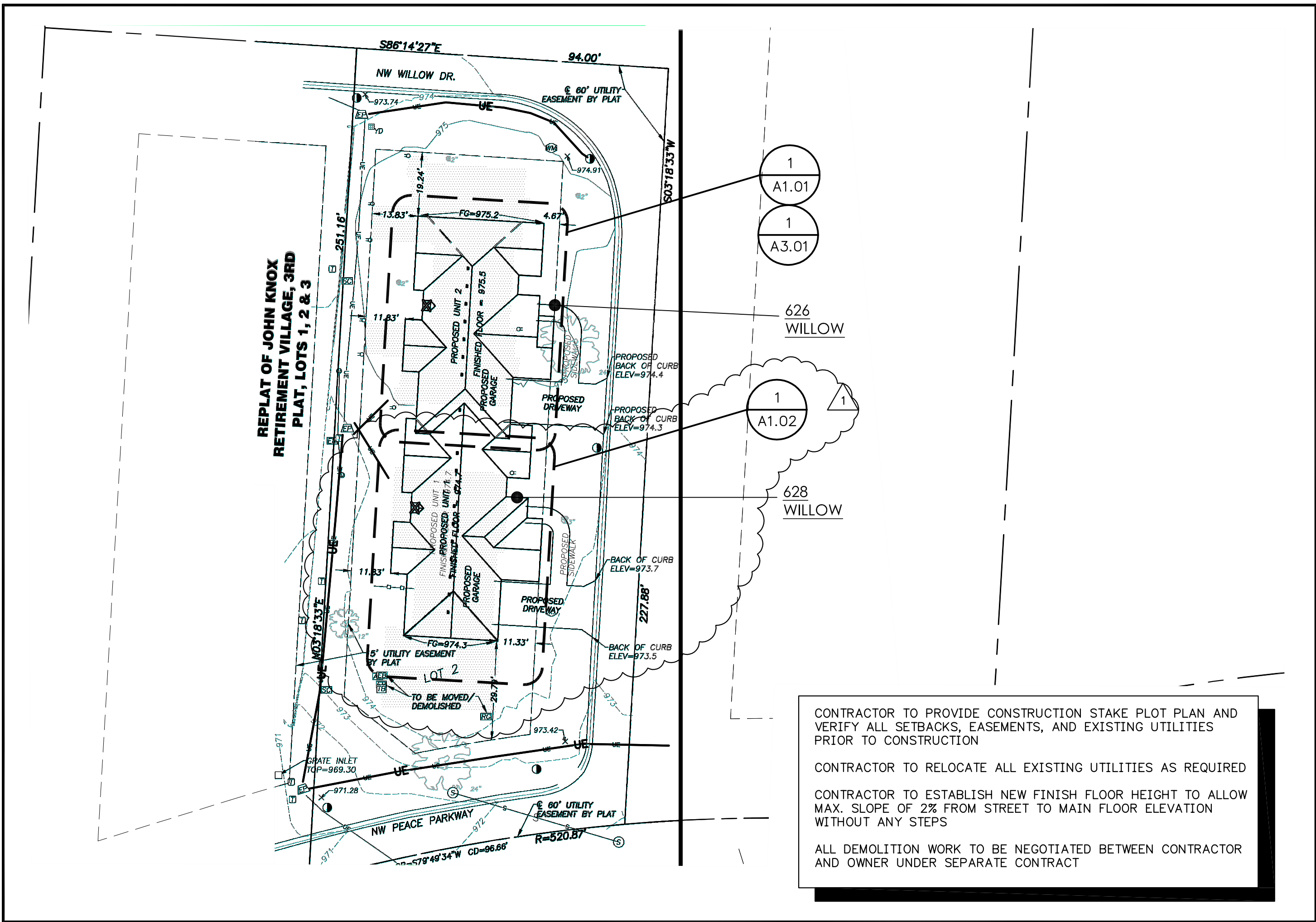


FINKLE + WILLIAMS  
ARCHITECTURE

8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

SHEET NUMBER

A001  
RELEASER FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



General Building Information:

PROJECT NAME: JOHN KNOX VILLAGE - 2 PLEX UNIT  
ADDRESS: 626 - 628 WILLOW DR.  
PROPOSED USE: RESIDENTIAL

APPLICABLE CODE

2018 INTERNATIONAL RESIDENTIAL CODE (IRC) WITH CITY AMENDMENTS

BUILDING AREA SUMMARY

	Unit 626	Unit 628	
House:	1,200 s.f.	1,200 s.f.	= 2,400 s.f.
Screened Porch:	130 s.f.	130 s.f.	= 260 s.f.
Garage:	440 s.f.	440 s.f.	= 880 s.f.
Total:			3,540 s.f.

Note:  
Area calculated to outside face of framing. Does not include overhangs or front porches.

Professional Services Disclaimer

THIS DISCLAIMER SERVES NOTICE OF ACCEPTANCE OF RESPONSIBILITY AND DISCLAIMER OF RESPONSIBILITY AS TO THE CONTRACT DOCUMENTS PREPARED FOR PROJECT NUMBER 20056, JOHN KNOX VILLAGE (626 - 628 WILLOW DRIVE)

THE UNDERSIGNED ARCHITECT, AND FINKLEWILLIAMS, INC., ARE RESPONSIBLE FOR PREPARATION OF ONLY THE NOTED CONSTRUCTION DRAWINGS BELOW:

NO.	TITLE	DATE
	COVER	
A0.01	PROJECT INFORMATION	02.22.21
A1.00	CRAWL SPACE PLAN, TYPICAL	02.22.21
A1.01	FLOOR PLAN/SCHEDULES	02.22.21
A1.02	FLOOR PLAN	03.29.21
A3.01	ROOF PLAN	02.22.21
A4.01	EXTERIOR ELEVATIONS	02.22.21
A4.02	ENLARGED EXTERIOR ELEVATIONS	02.22.21
A5.01	SECTIONS/DETAILS	02.22.21
A7.01	INTERIOR ELEVATIONS	02.22.21
A8.01	CEILING/POWER PLAN	02.22.21
A8.02	CEILING/POWER PLAN	03.29.21

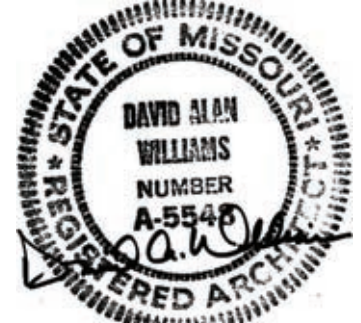
THE UNDERSIGNED ARCHITECT AND FINKLEWILLIAMS DISCLAIM RESPONSIBILITY FOR ALL OTHER CONSTRUCTION DOCUMENTS, SPECIFICATIONS, REPORTS, ESTIMATES, SHOP DRAWINGS, ETC. RELATING TO OR INTENDED TO BE USED FOR ANY PART OF THE ARCHITECTURAL OR ENGINEERING PROJECT, INCLUDING ANY GEOTECHNICAL ENGINEERING SERVICES, OR ENVIRONMENTAL REPORTS.

THIS NOTICE IS EXECUTED BY THE UNDERSIGNED AND AUTHENTICATED BY THE ARCHITECTURAL SEAL OF THE PERSON PREPARING THIS NOTICE.

FINKLEWILLIAMS, INC.

(SEAL)

BY  
ARCHITECT: DAVID ALAN WILLIAMS





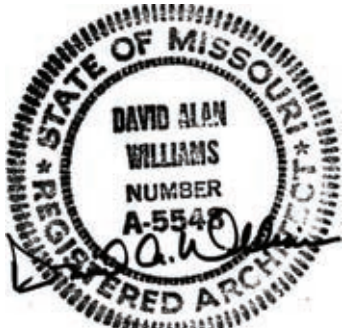
John Knox Village

DUPLEX UNIT  
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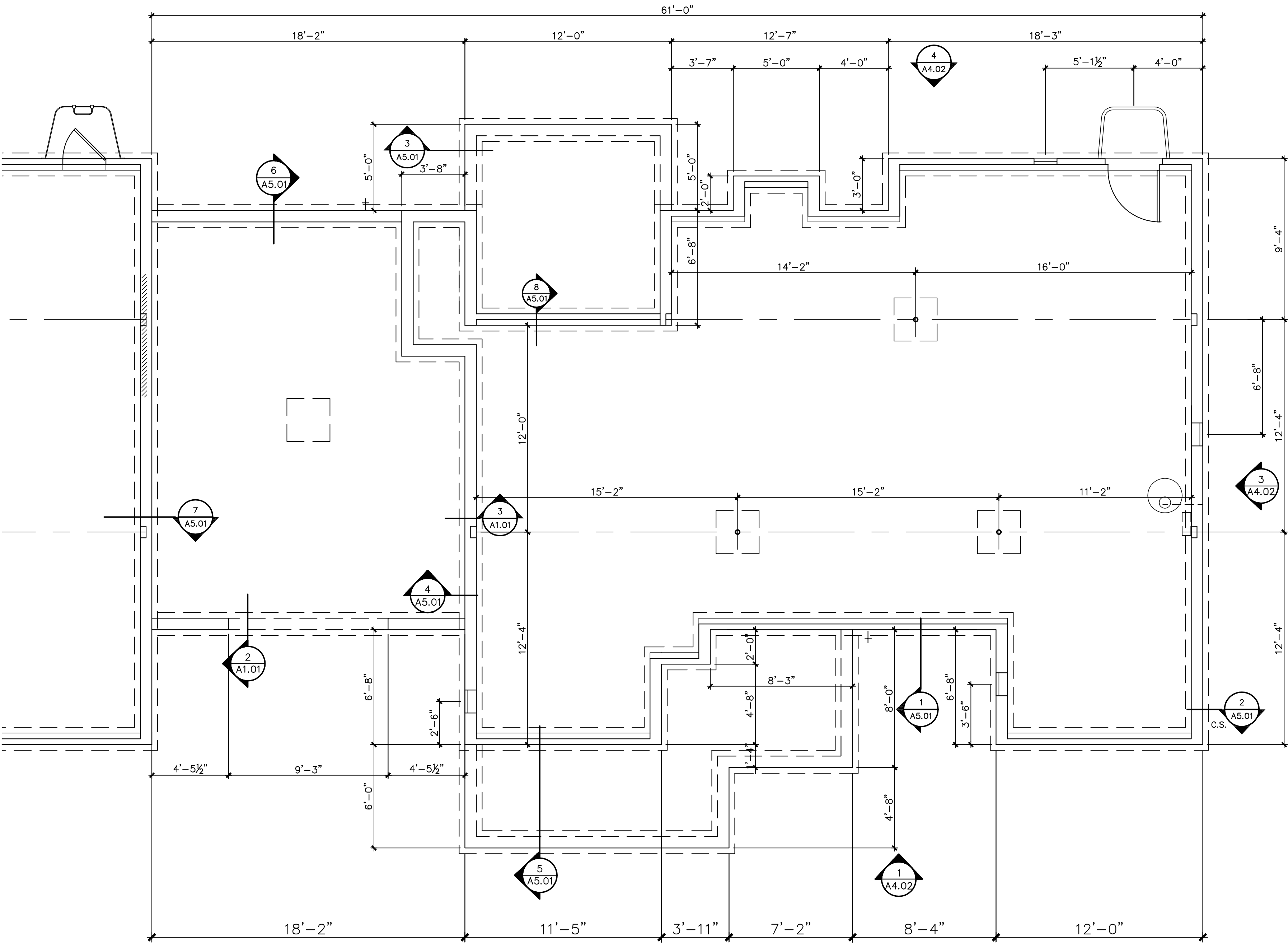


FINKLE + WILLIAMS  
ARCHITECTURE

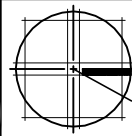
8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

SHEET NUMBER

100  
RELEASE FOR  
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AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



1 CRAWL SPACE PLAN (TYP.)  
A100 SCALE : 1/4" = 1'-0"





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1	3.29.21	CITY COMMENTS

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PROJECT TEAM

ARCHITECT	FINKE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



FINKLE + WILLIAMS  
ARCHITECTURE

8787 Renner Blvd, Suite 100  
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SHEET NUMBER

A101  
RELEASE FOR  
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LEE'S SUMMIT, MISSOURI  
05/04/2021

ROOM FINISH SCHEDULE

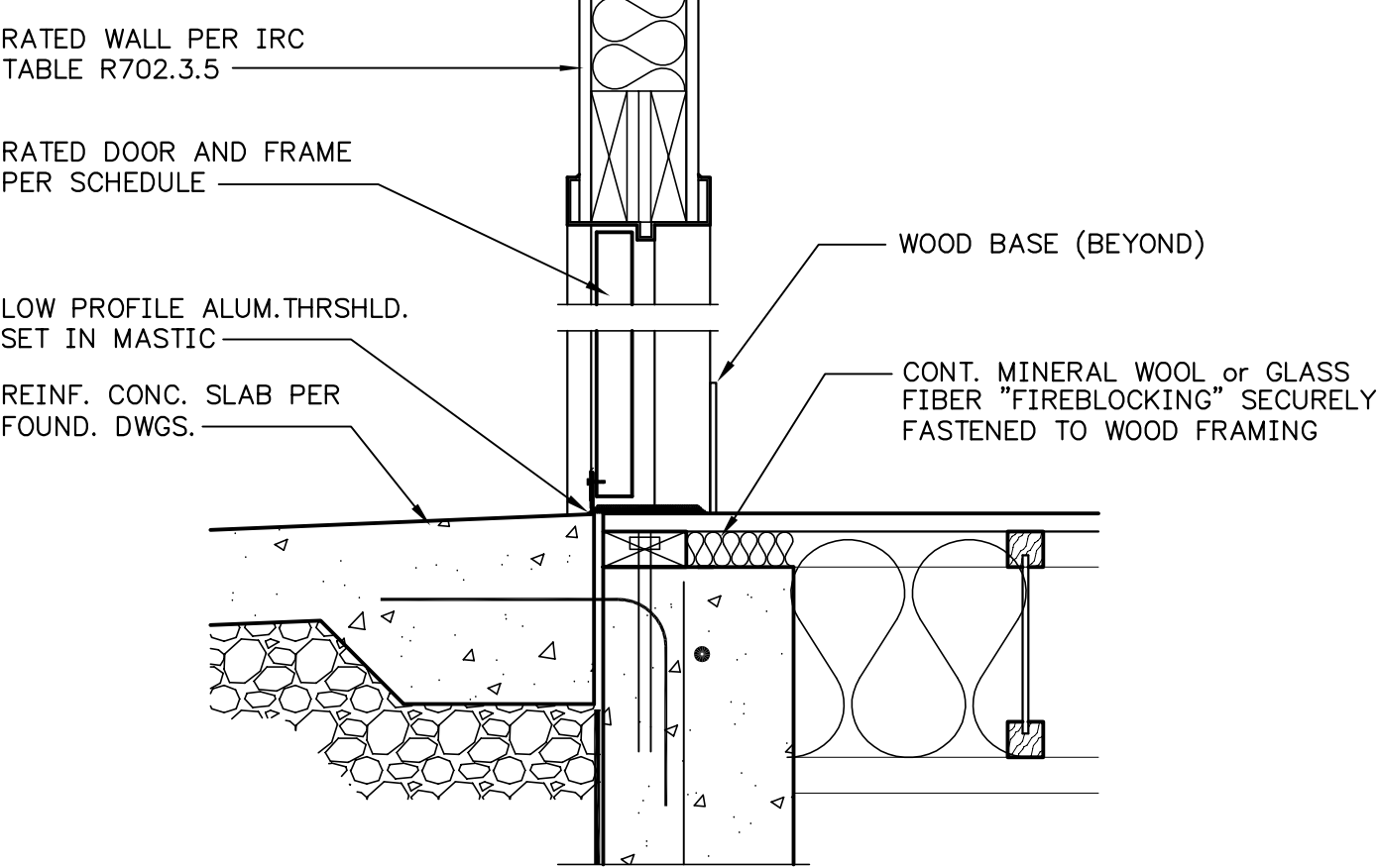
ROOM	FLOOR (SEE NOTE A BELOW)	BASE	WALLS	CEILING		REMARKS
				MAT.	HT.	
GARAGE		4" HIGH RUBBER	PAINT	PAINT	9'-0"	
STAIR		NONE	PAINT	PAINT	9'-0"	
UTILITY		NONE	PAINT	PAINT	9'-0"	
3-SEASON ROOM		EXTERIOR TRIM	PAINT	PAINT	9'-0"	
DINING ROOM		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
KITCHEN		5/2 COLONIAL - PAINT	PAINT/TILE	PAINT	9'-0"	
LIVING ROOM		5/2 COLONIAL - PAINT	PAINT	PAINT	VAULT	
ENTRY		5/2 COLONIAL - PAINT	PAINT	PAINT	VAULT	
ENTRY CLOSET		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
HALLWAY		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
LAUNDRY		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	+1/2" CONC. BD. UNDER TILE
HALL CLOSET/LIN.		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
HALL BATH		5/2 COLONIAL - PAINT	PAINT/TILE	PAINT	9'-0"	+1/2" CONC. BD. UNDER TILE
BEDROOM		5/2 COLONIAL - PAINT	PAINT	PAINT	VAULT	
BEDROOM CLOSET		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
MASTER BEDROOM		5/2 COLONIAL - PAINT	PAINT	PAINT	VAULT	
MASTER CLOSET		5/2 COLONIAL - PAINT	PAINT	PAINT	9'-0"	
MASTER BATH		5/2 COLONIAL - PAINT	PAINT/TILE	PAINT	9'-0"	+1/2" CONC. BD. UNDER TILE

NOTE:  
A. FUTURE FLOOR FINISH TO BE SELECTED BY OWNER

DOOR SCHEDULE \* REFERENCE DIVISION 8 FOR DOOR & WINDOW SPECS.

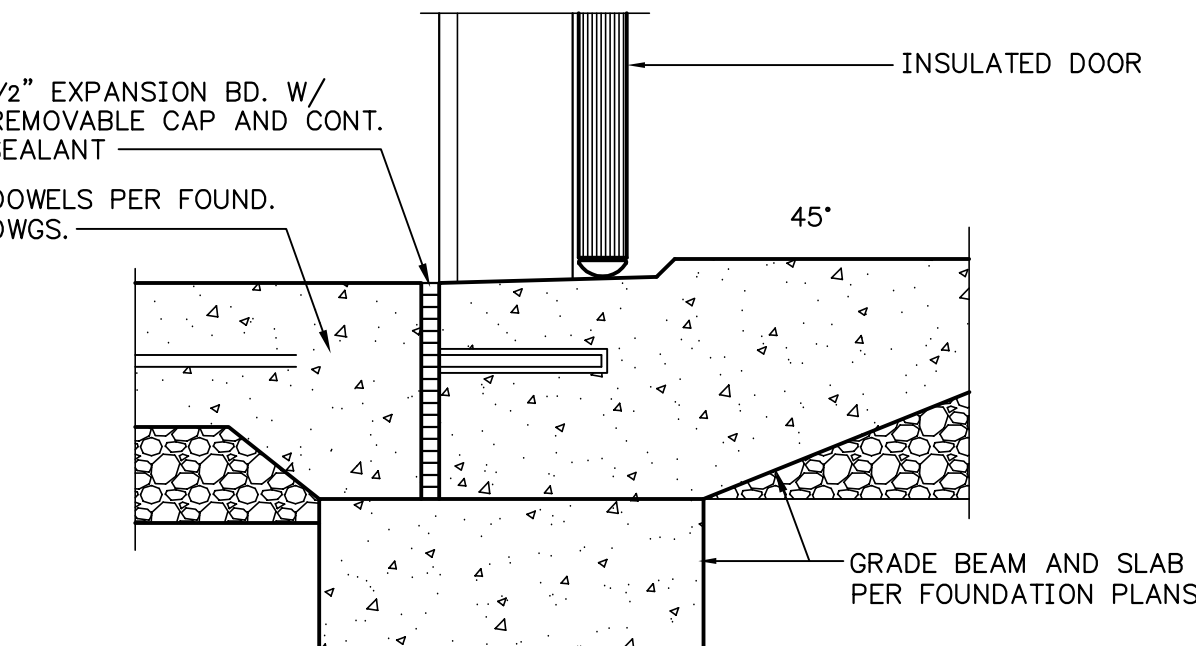
MARK	SIZE (WxH)	LOCATION	DESCRIPTION
A	3'-0"x6'-8" + SL	FRONT ENTRANCE	INSUL. EXT. FIBERGLASS W/ LOW PROFILE (LP) SILL & 14" SIDELITE
B	3'-0"x6'-8"	GARAGE TO EXTERIOR	INSUL. EXT. FIBERGLASS DOOR W/ LOW PROFILE (LP) SILL
C	9'-0"x7'-0"	GARAGE O.H. DOOR	INSUL. STEEL 2-SIDED O.H. DOOR W/ 1/2hp LIFT MASTER OPENER
D	6'-0"x6'-8"	HORIZ. SLIDER TO 3-SEASON	ANDERSON 100 SERIES INSUL. NARROW STYLE SLIDING DOOR
E	3'-0"x6'-8"	ENTRY STORM	ALUM. (COLUMBIA FULL VIEW-KING ONE LITE W/ SCREEN INSERT)
F	3'-0"x6'-8"x1 1/2"	HOUSE TO GARAGE	COLONIST COMMERCIAL SMOOTH, 20 MIN. FIRE RATED W/ LP SILL
G	PR. 2'-6"x6'-8"	MECHANICAL CLOSET	COLONIST COMMERCIAL SMOOTH, 20 MIN. FIRE RATED W/ LP SILL
H	3'-0"x6'-8"	BEDROOMS	COLONIST MASONITE, SMOOTH FINISH
I	2'-8"x6'-8"	BATHROOM, MBR CLOSET	COLONIST MASONITE, SMOOTH FINISH
J	2'-8"x6'-8"	MASTER BATH TOILET	COLONIST MASONITE, SMOOTH FINISH POCKET DOOR
K	2'-0"x6'-8"	ENTRY, LINEN CLOSETS	COLONIST MASONITE, SMOOTH FINISH
L	PR. 2'-6"x6'-8"	LAUNDRY, B.R. #2 CLOSET	COLONIST MASONITE, SMOOTH FINISH PAIR
M	PR. 2'-0"x6'-8"	MASTER BATH	COLONIST MASONITE, SMOOTH FINISH PAIR
N	2'-6"x2'-6"	CRAWL SPACE (ONLY)	BOMAN-KEMP 3030 "EASY-BUCK" SYSTEM OR EQ.
P	3'-0"x6'-8"	GARAGE/3-SEAS. TO PATIO ALUM.	(COLUMBIA TIARA SELF-STORING, WHITE)

\* NOTE: DOOR F TO HAVE SELF-CLOSING DEVICE PER IRC R302.5.1



3 DOOR DETAIL

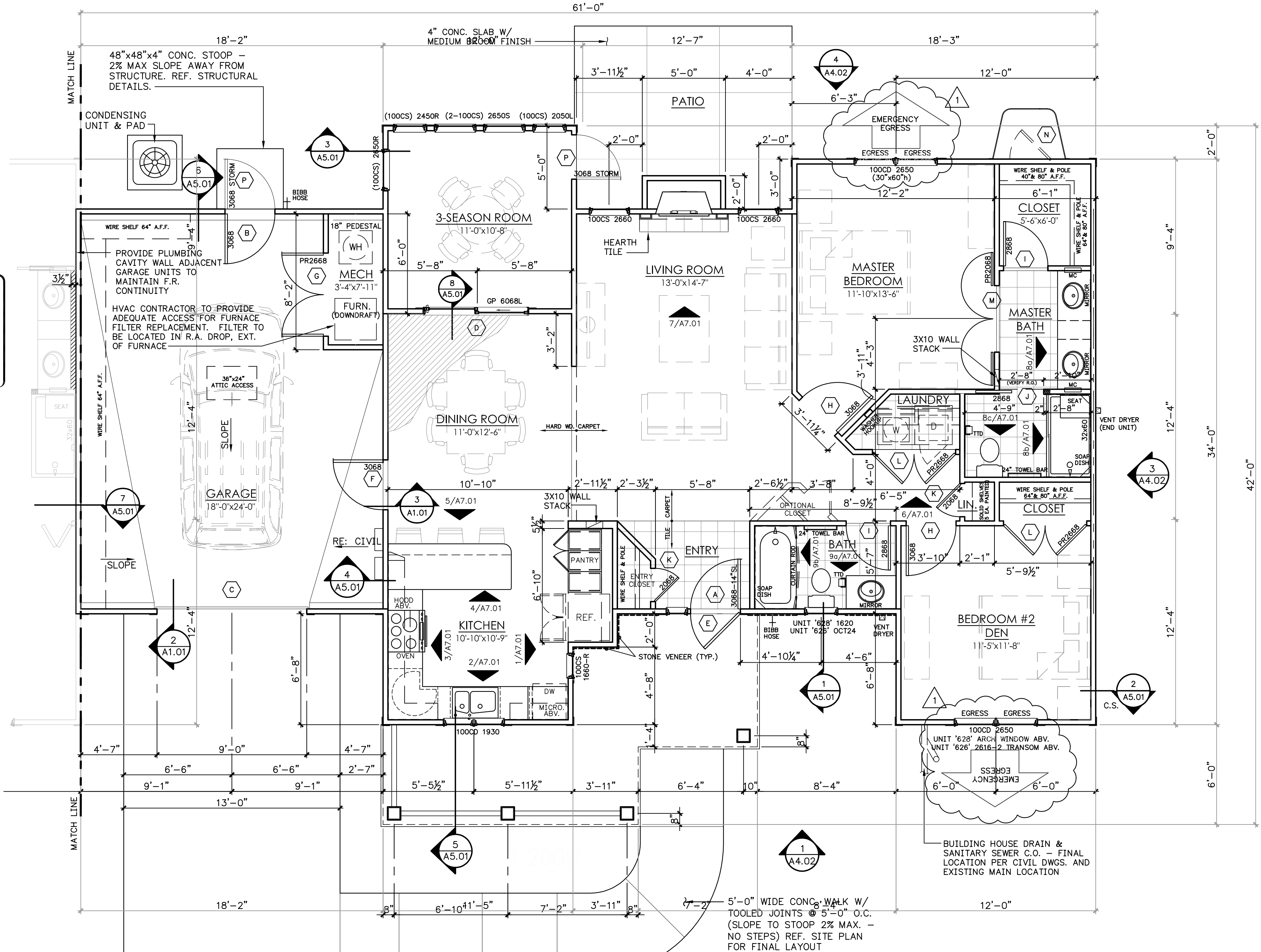
A101 SCALE : 3" = 1'-0"



2 DOOR SILL DETAIL

A101 SCALE : 3" = 1'-0"

PLUMBING, MECH. EQUIPMENT, DUCTS AND VENTS NOT ALLOWED IN FIRE SEPARATION WALL (PROVIDE 3/4" CAVITY WALL AT MIDDLE UNITS FOR PLUMBING REQUIREMENTS)  
ROOF PENETRATIONS MUST BE 4'-0" MIN. FROM FIRE BARRIER WALL  
ELECTRICAL OUTLET BOXES SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479



PLAN NORTH

1 FLOOR PLAN (TYP.)

A101 SCALE : 1/4" = 1'-0"



John Knox  
Village

DUPLEX UNIT  
626 - 628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

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PROJECT TEAM

ARCHITECT FINKLE+WILLIAMS ARCHITECTURE  
CIVIL BHC RHODES  
STRUCTURAL BSE STRUCTURAL ENGINEERS



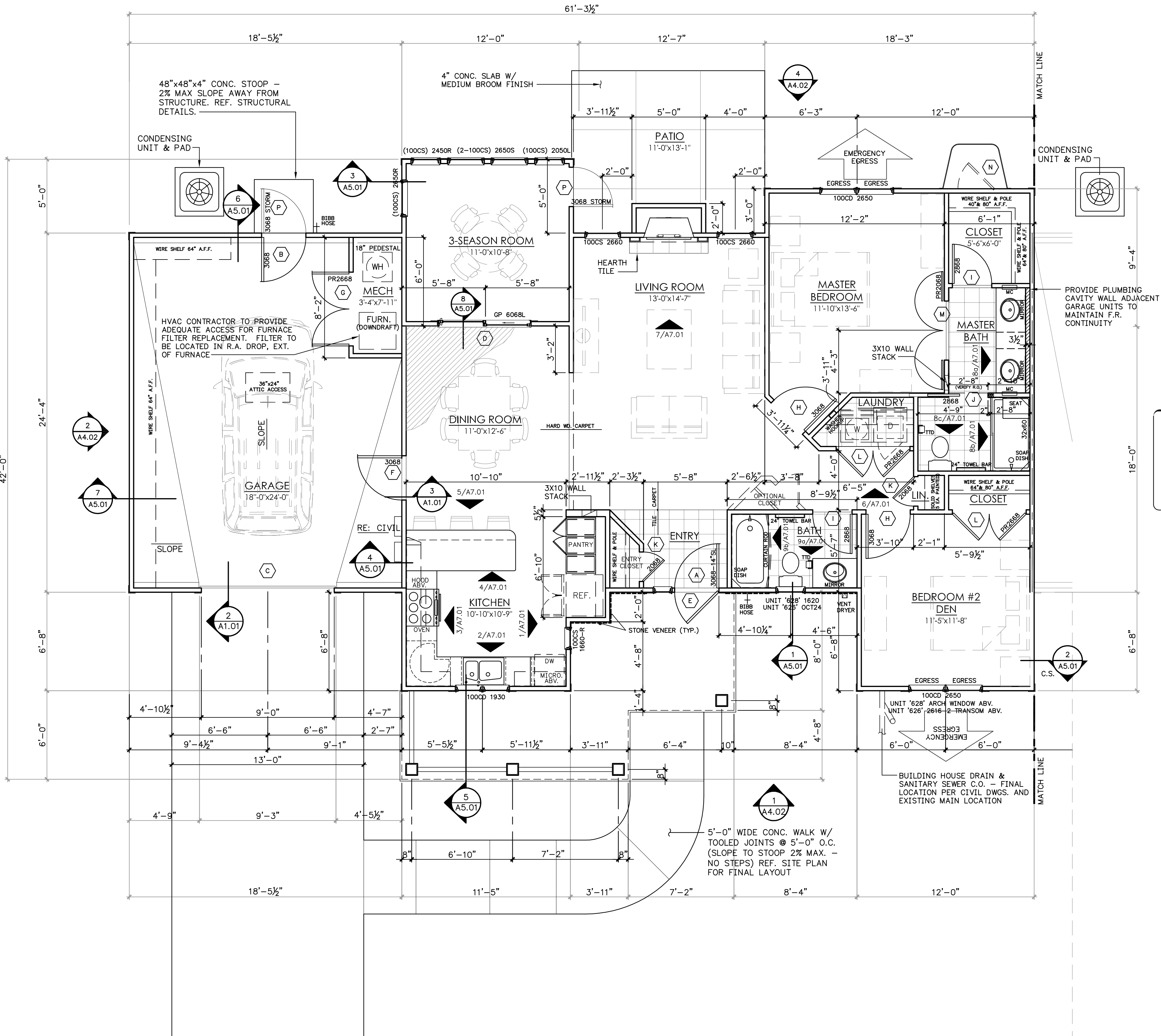
FINKLE + WILLIAMS  
ARCHITECTURE

8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

SHEET NUMBER

A102

05/04/2021

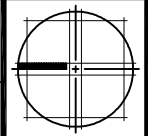


PLUMBING, MECH. EQUIPMENT, DUCTS AND VENTS NOT ALLOWED IN FIRE SEPARATION WALL (PROVIDE 3/4" CAVITY WALL AT MIDDLE UNITS FOR PLUMBING REQUIREMENTS)  
ROOF PENETRATIONS MUST BE 4'-0" MIN. FROM FIRE BARRIER WALL.  
ELECTRICAL OUTLET BOXES SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479

PLAN NORTH

1 FLOOR PLAN

A102 SCALE : 1/4" = 1'-0"





John Knox Village

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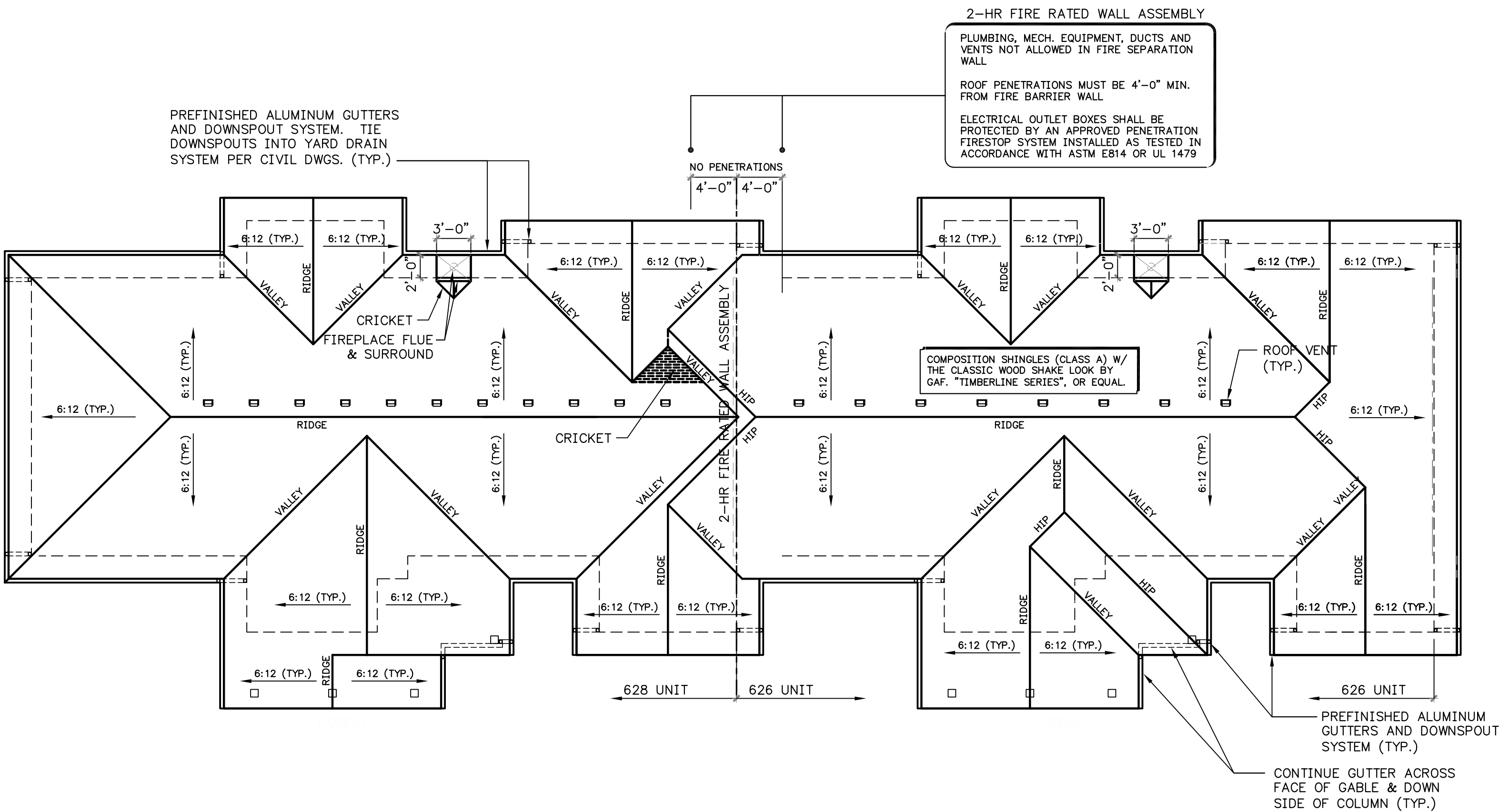


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ARCHITECTURE

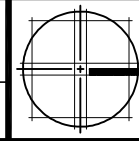
8787 Renner Blvd, Suite 100  
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SHEET NUMBER

A3.01  
PREPARED FOR  
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1	ROOF PLAN
A3.01	SCALE : 1/8" = 1'-0"





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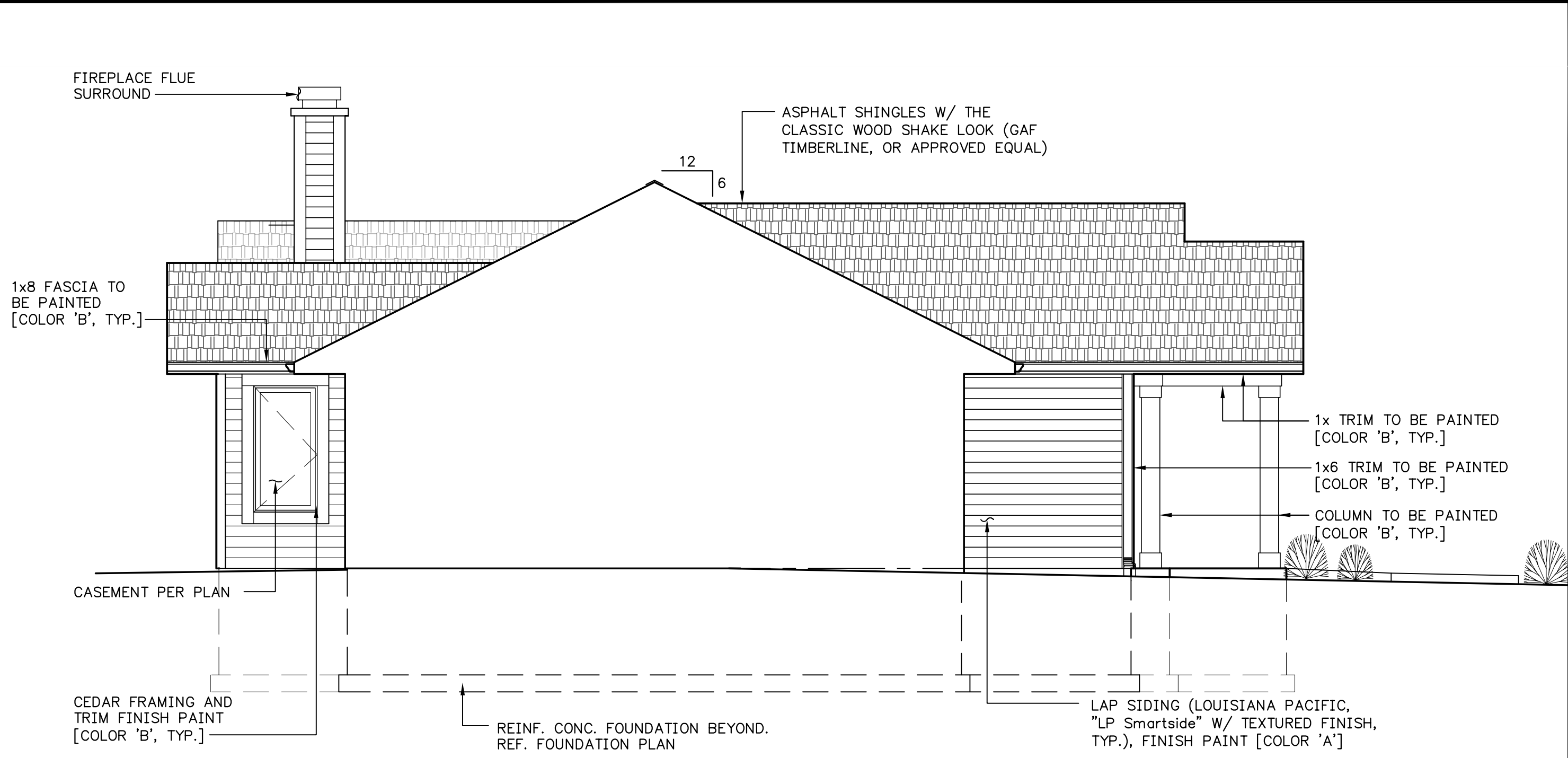


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ARCHITECTURE

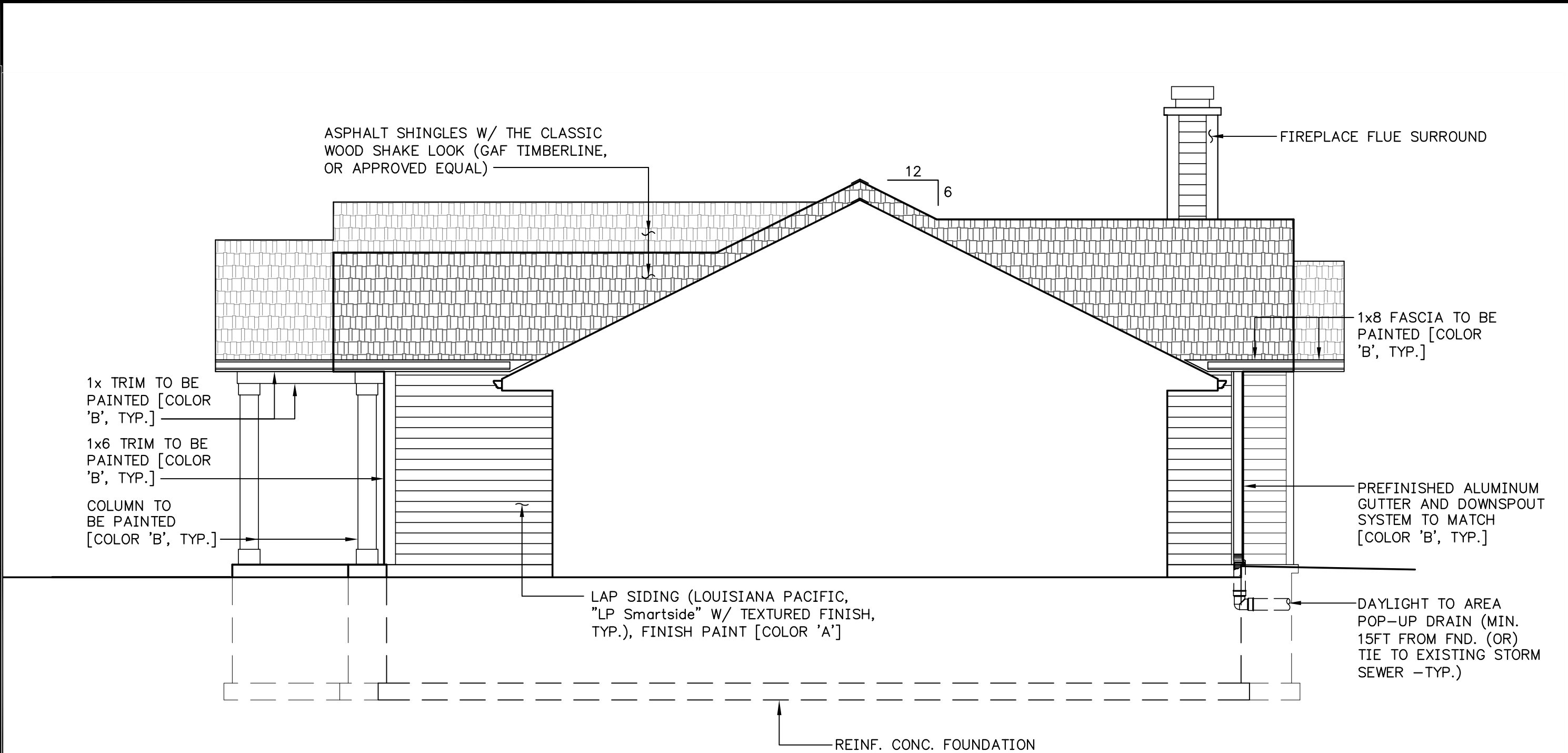
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A4.01  
RELEASER FOR  
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LEE'S SUMMIT, MISSOURI  
05/04/2021



2 SIDE ELEVATION/SECTION (TYP.)  
A4.01 SCALE : 1/4" = 1'-0"

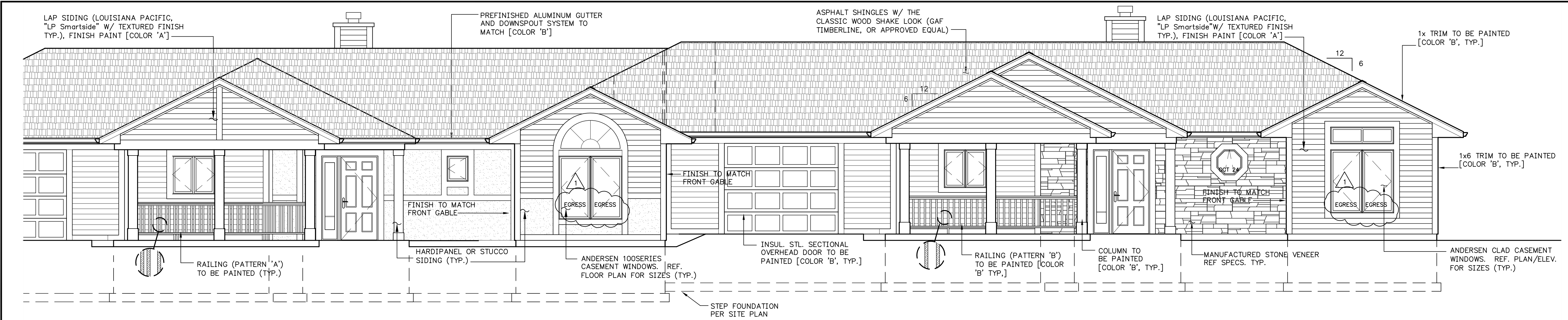


3 SIDE ELEVATION/SECTION (TYP.)  
A4.01 SCALE : 1/4" = 1'-0"

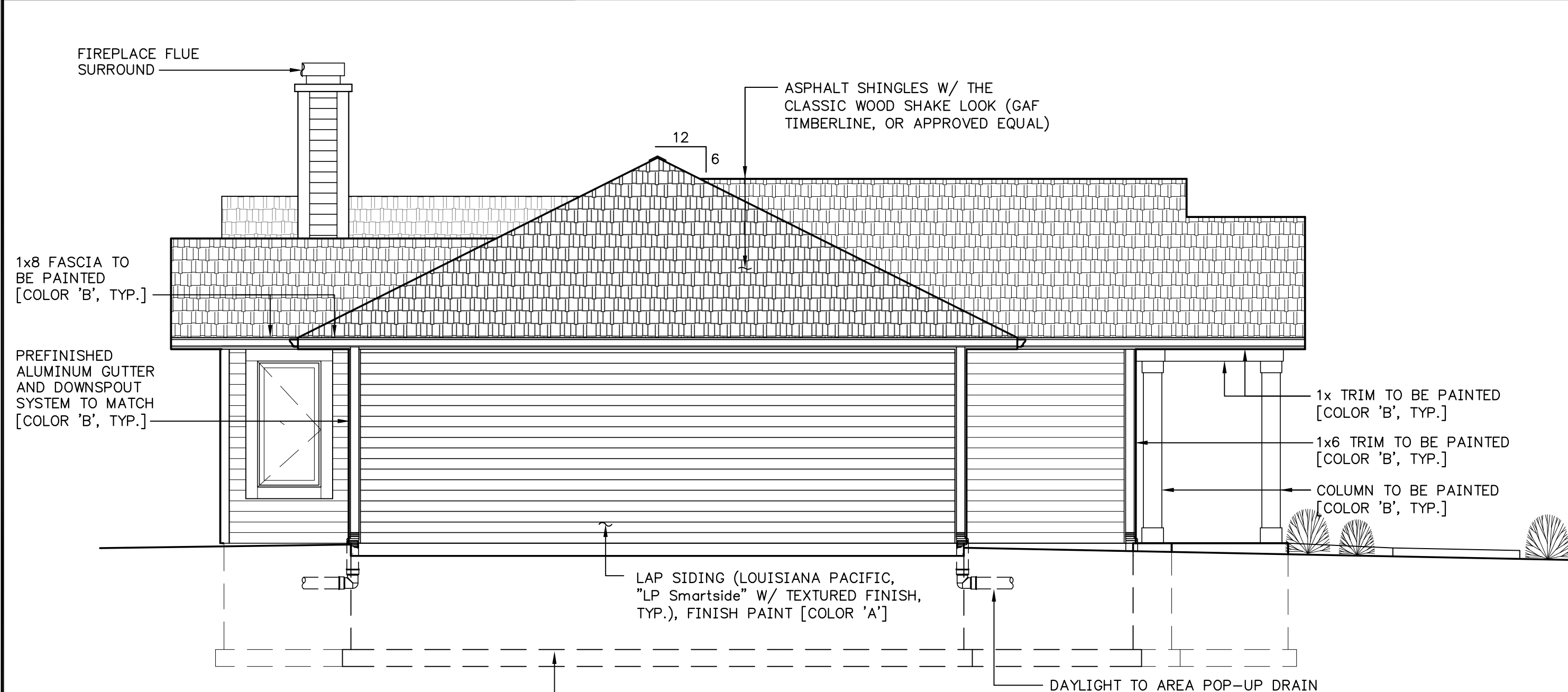


1 FRONT ELEVATION  
A4.01 SCALE : 1/8" = 1'-0"

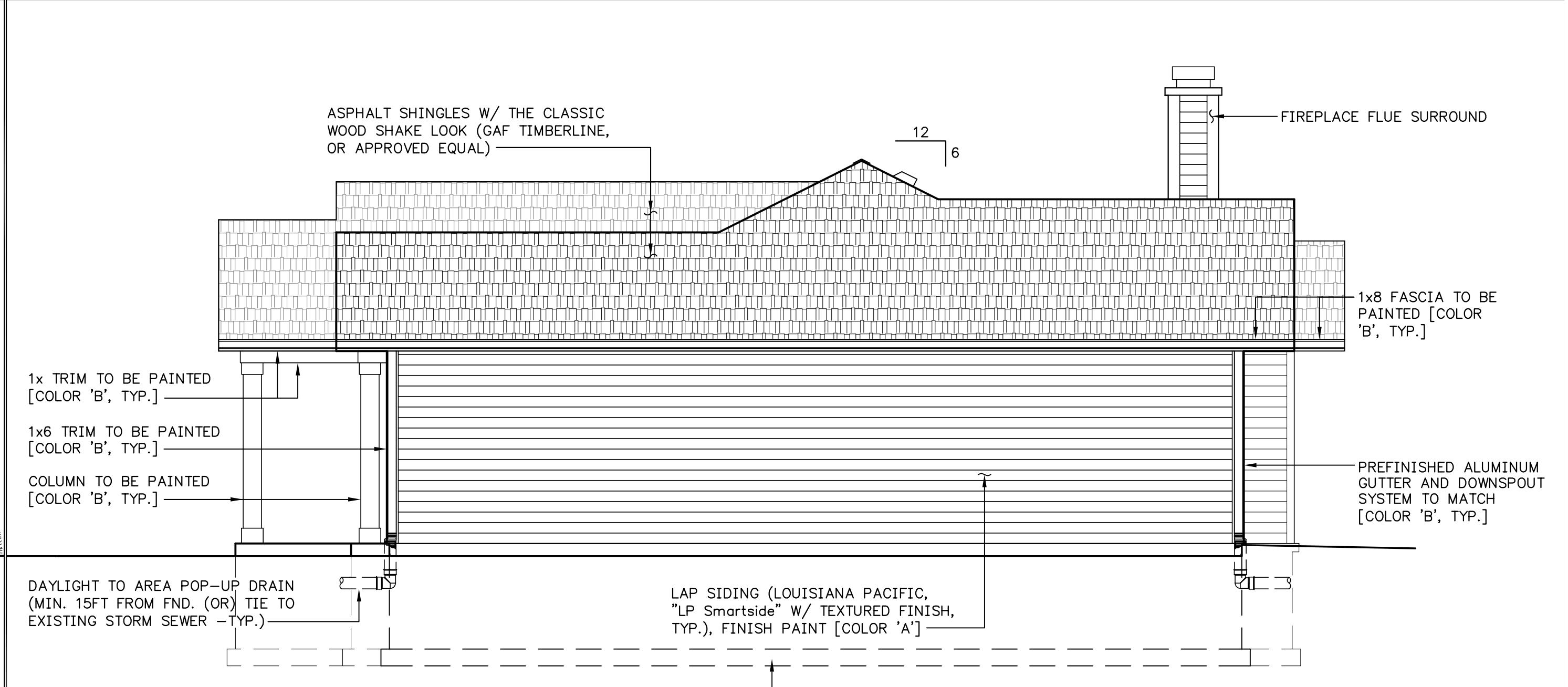




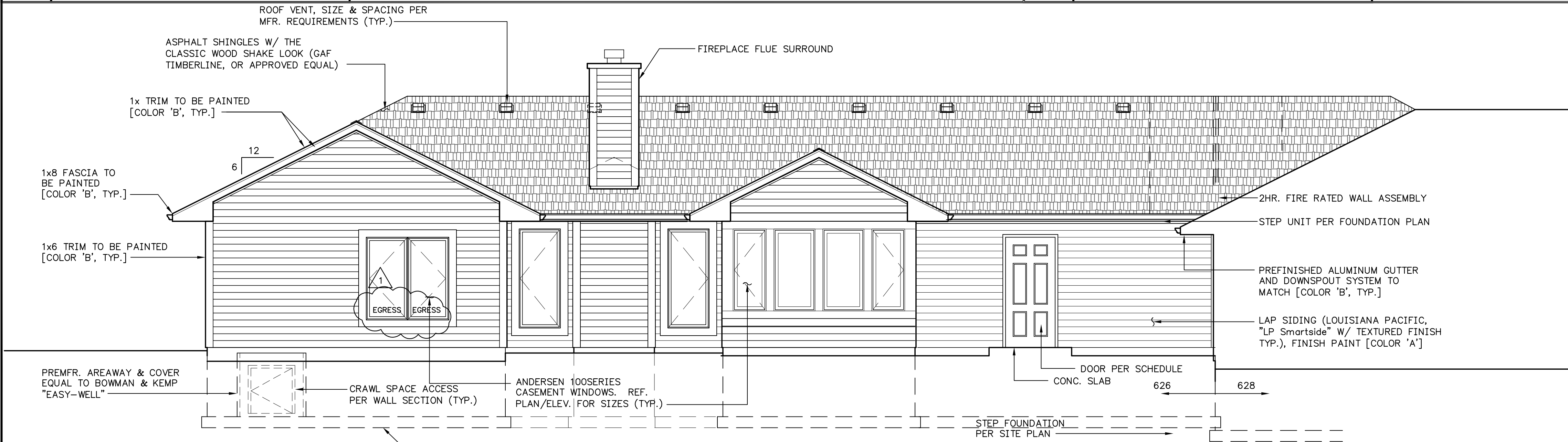
**1 FRONT ELEVATION (TYP.)**  
A4.02 SCALE : 1/4" = 1'-0"



**2 SIDE ELEVATION (TYP.)**  
A4.02 SCALE : 1/4" = 1'-0"



**3 SIDE ELEVATION (TYP.)**  
A4.02 SCALE : 1/4" = 1'-0"



**4 REAR ELEVATION (TYP.)**  
A4.02 SCALE : 1/4" = 1'-0"

EXTERIOR PAINT SCHEDULE	
REFERENCE SHEET A0.01 FOR PAINT FINISH SPECIFICATIONS	
LILAC:	
(FIELD) COLOR 'A':	TBD
(TRIM) COLOR 'B':	TBD
(ENTRY DOOR)	
626 -	TBD
628 -	TBD

New Single Family Homes Located At

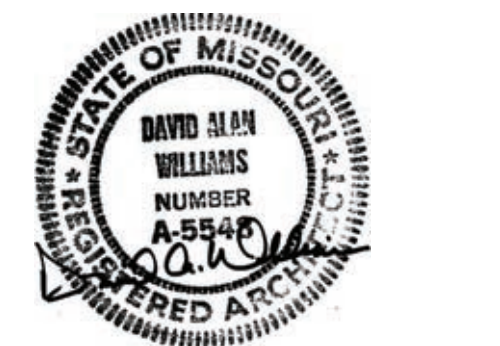
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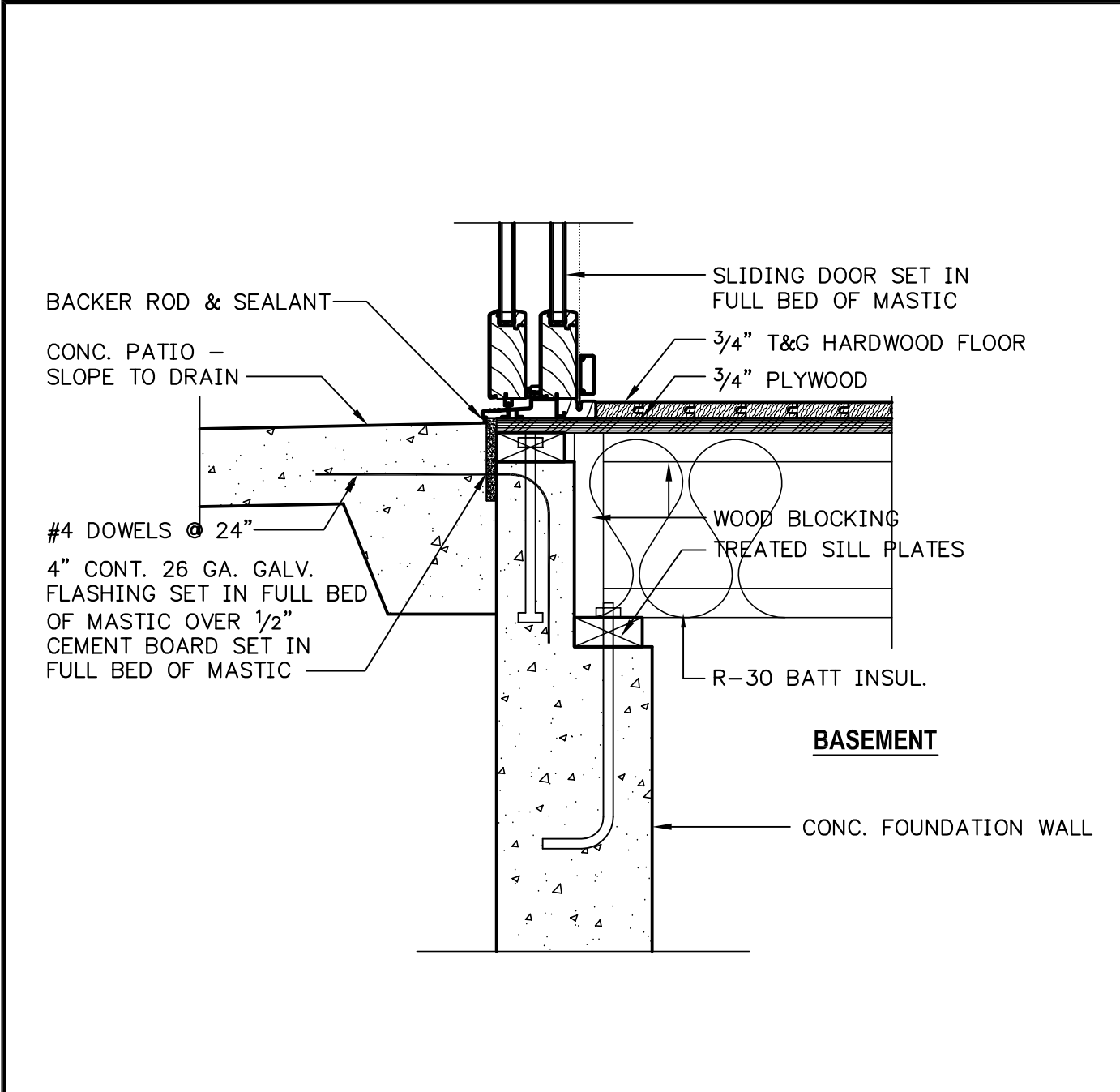


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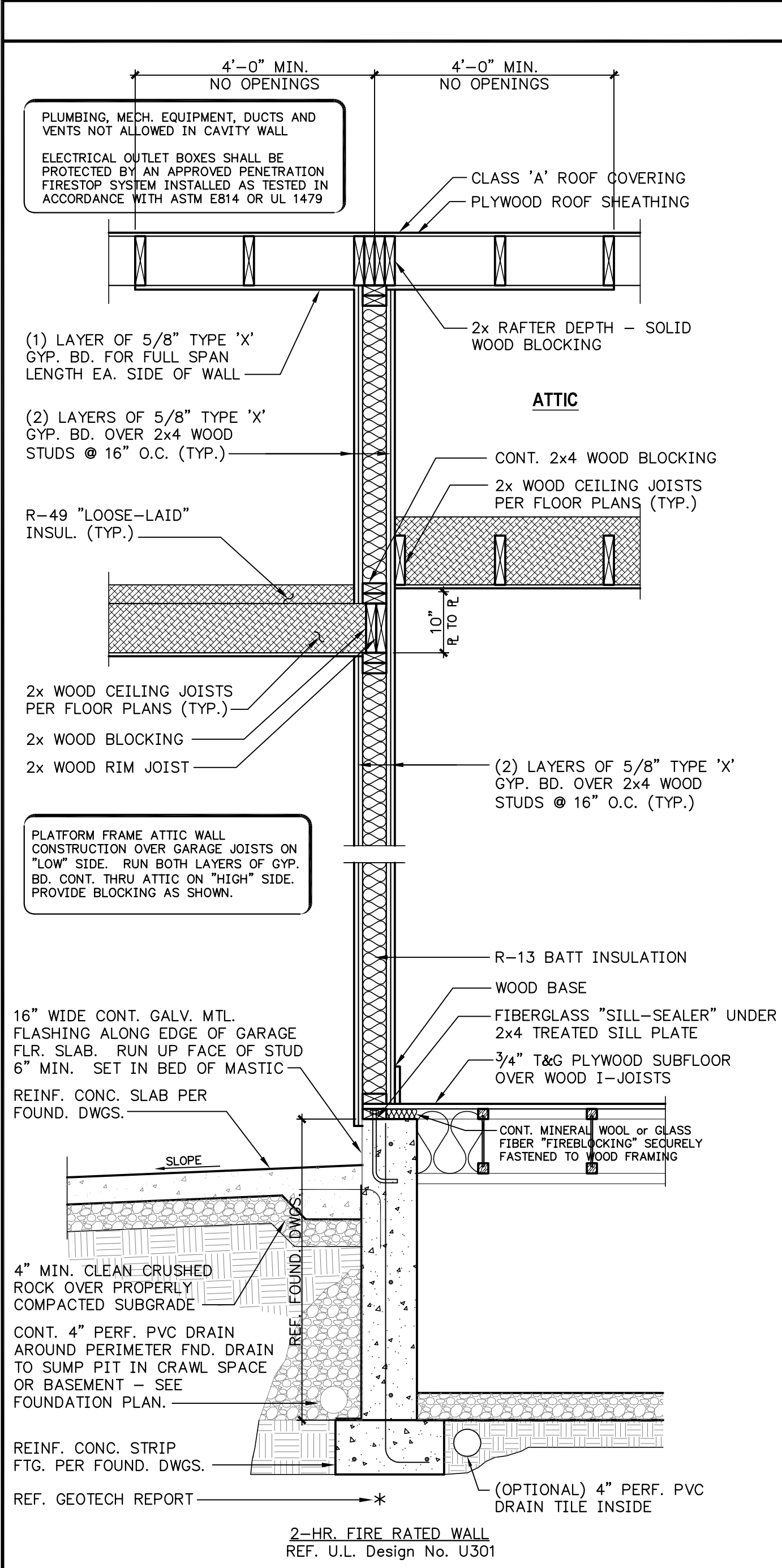
SHEET NUMBER

**A4.02**  
RELEASE FOR  
CONSTRUCTION  
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05/04/2021

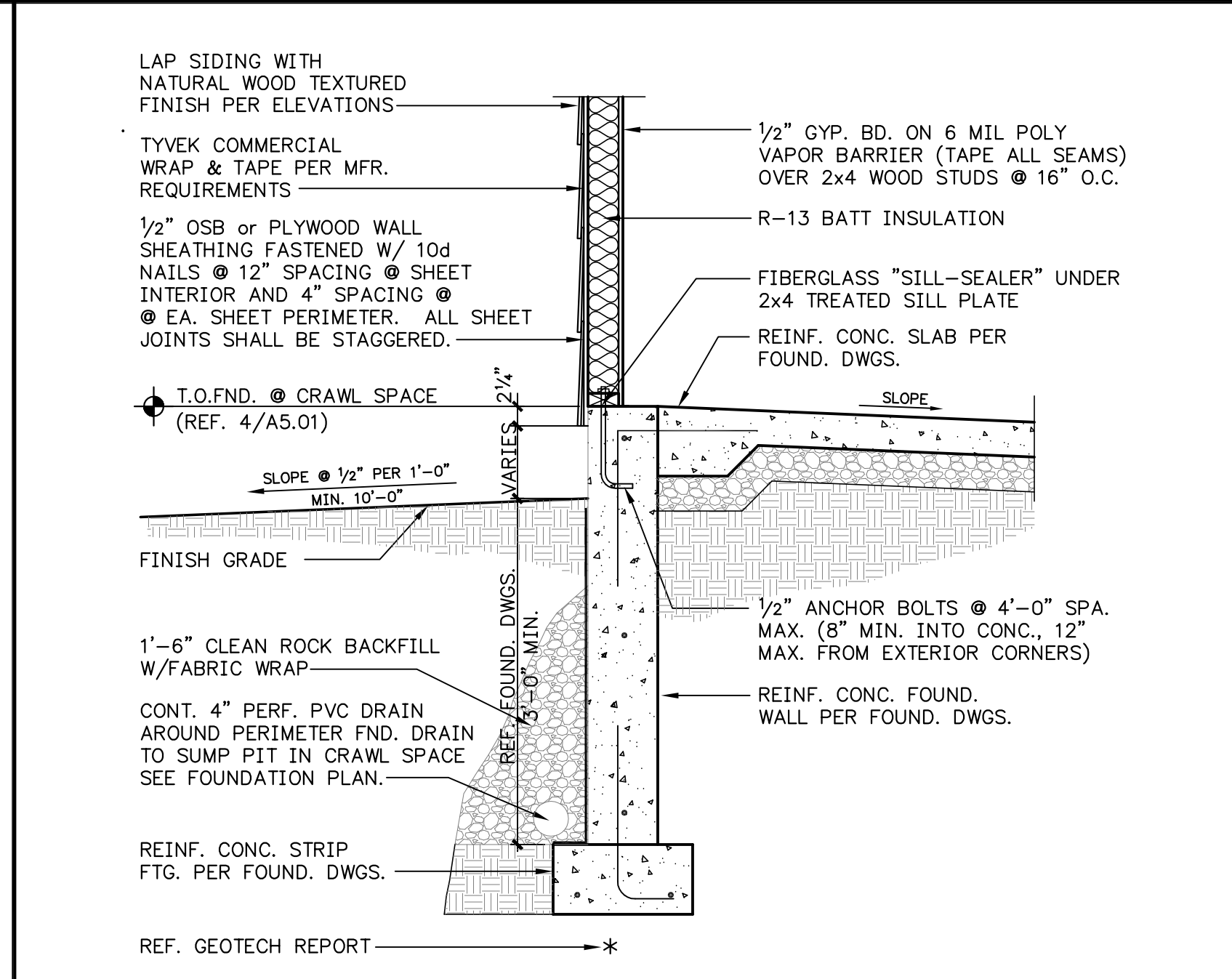




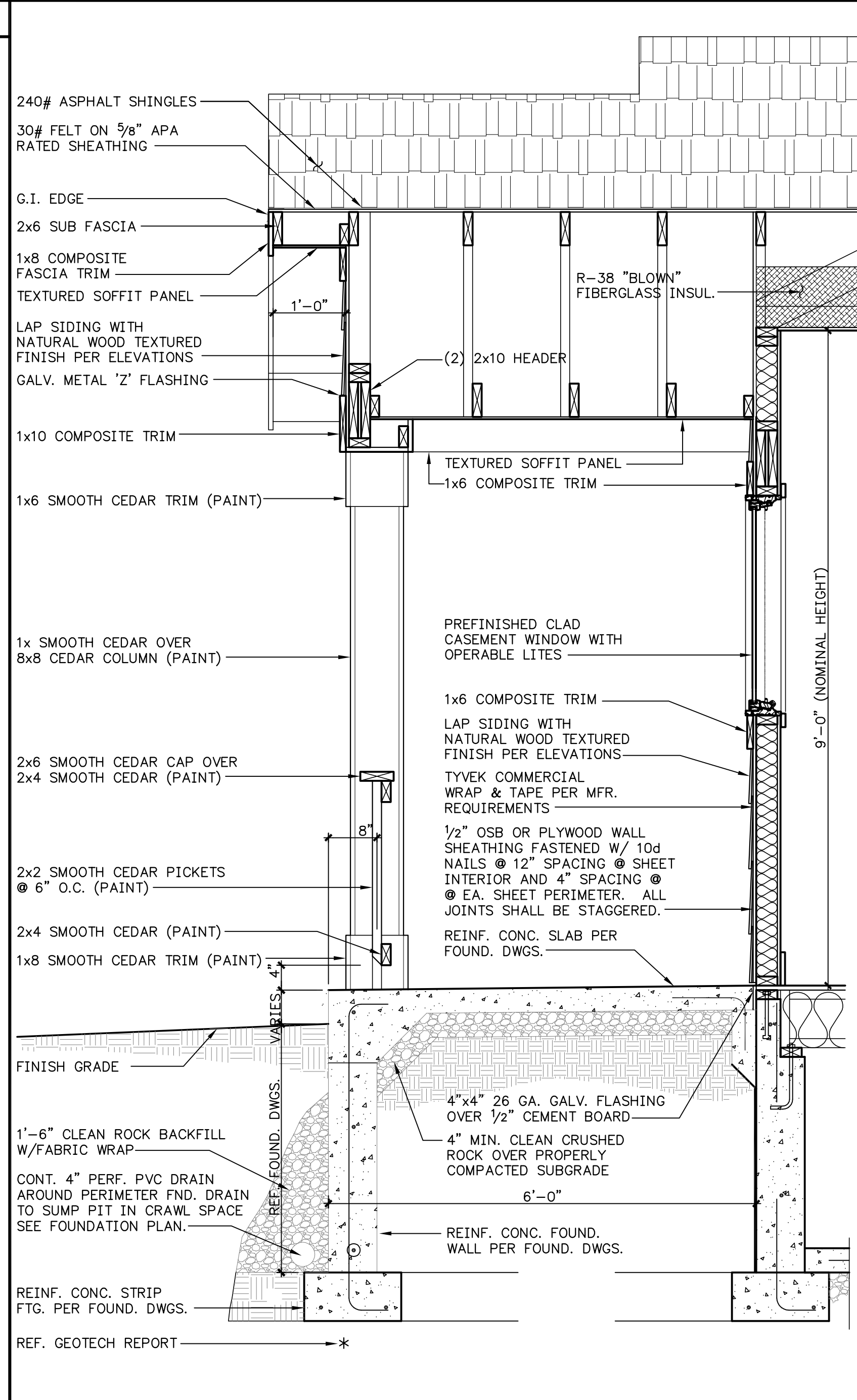
**8 SLIDING DOOR THRESHOLD**  
A5.01 SCALE : 1/2" = 1'-0"



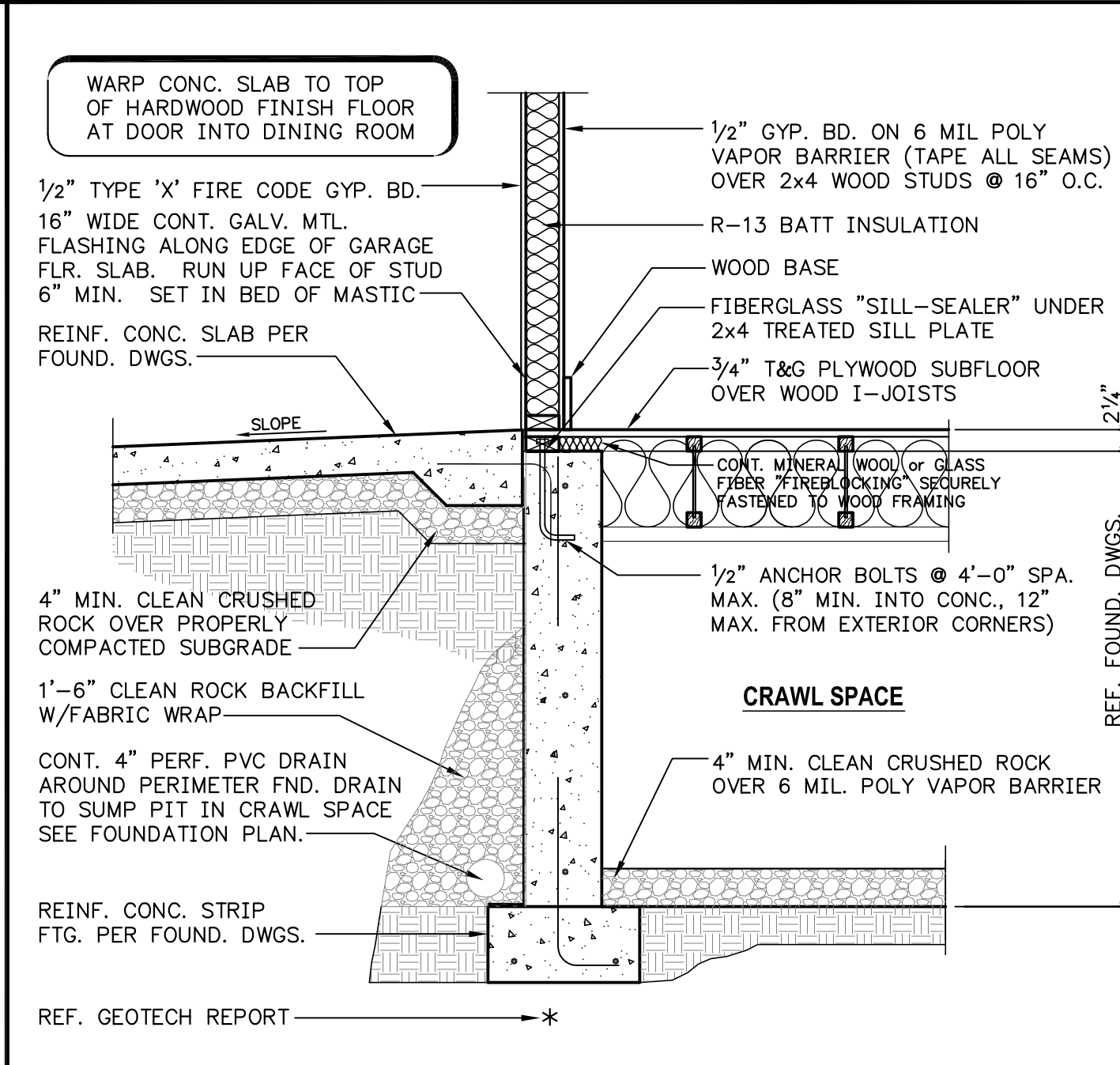
**7 WALL SECTION • GARAGE**  
A5.01 SCALE : 3/4" = 1'-0"



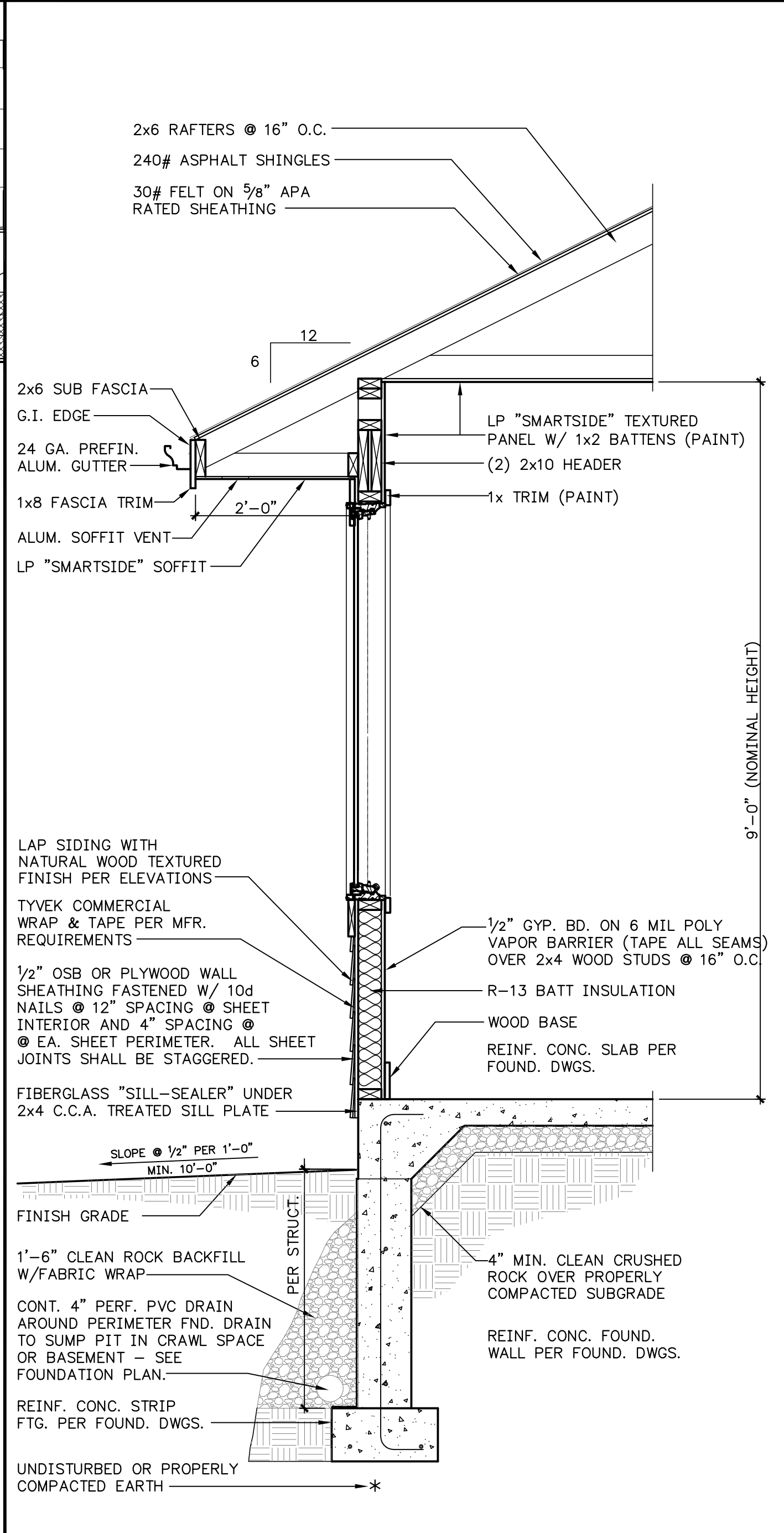
**6 WALL SECTION • GARAGE**  
A5.01 SCALE : 3/4" = 1'-0"



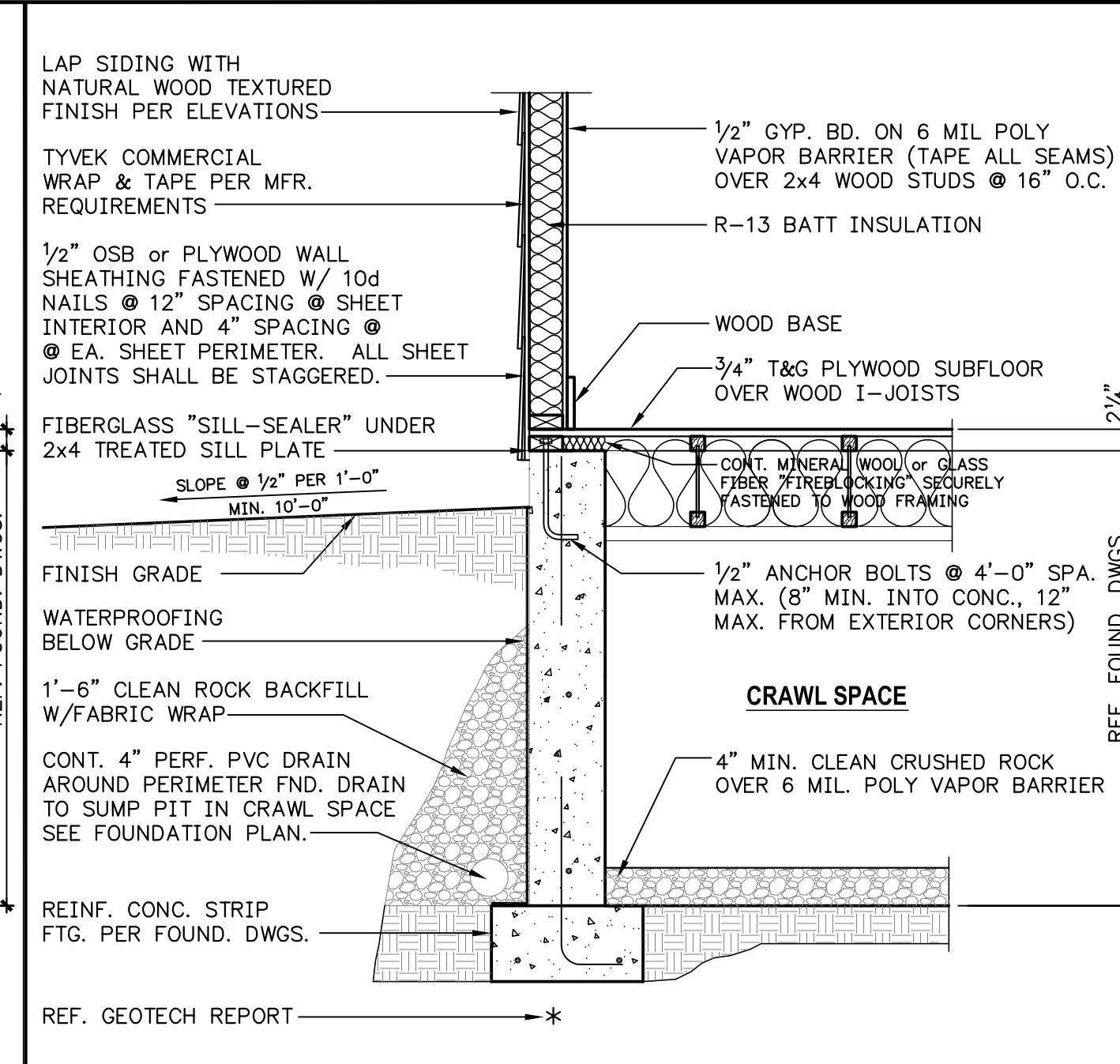
**5 WALL SECTION • FRONT PORCH**  
A5.01 SCALE : 3/4" = 1'-0"



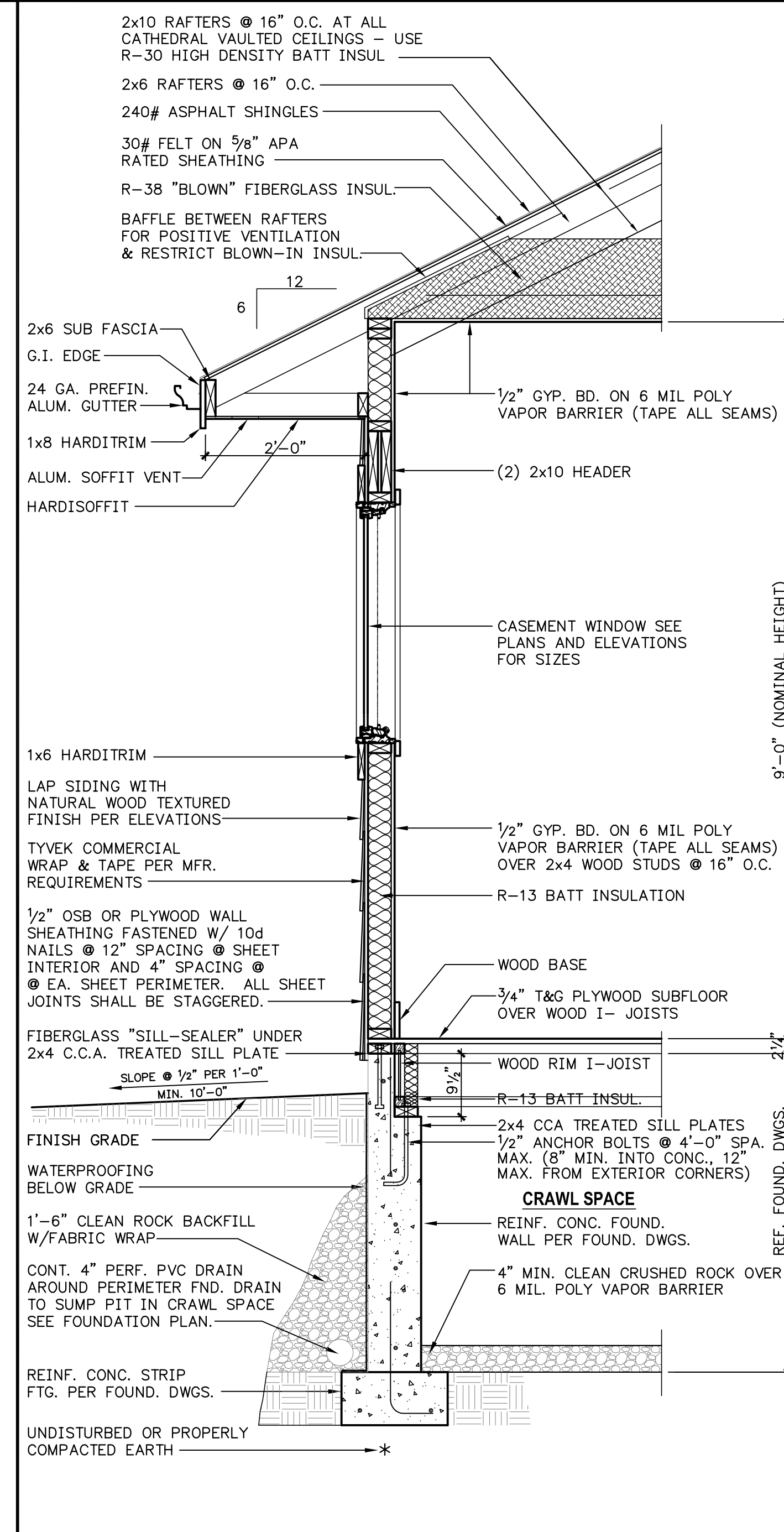
**4 WALL SECTION • GARAGE**  
A5.01 SCALE : 3/4" = 1'-0"



**3 WALL SECTION • SCREENED PORCH**  
A5.01 SCALE : 3/4" = 1'-0"



**2 WALL SECTION • CRAWL SPACE**  
A5.01 SCALE : 3/4" = 1'-0"



**1 WALL SECTION • CRAWL SPACE**  
A5.01 SCALE : 3/4" = 1'-0"

New Single Family Homes Located At

**John Knox Village**

DUPLEX UNIT  
626 - 628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS		
No.	Date	Description

REGISTRATION



PROJECT TEAM

ARCHITECT FINKLE+WILLIAMS ARCHITECTURE  
CIVIL BHC RHODES  
STRUCTURAL BSE STRUCTURAL ENGINEERS



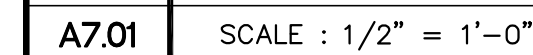
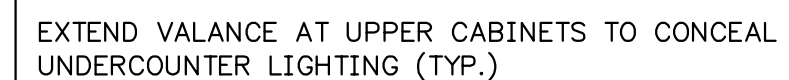
FINKLE + WILLIAMS  
ARCHITECTURE

8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

SHEET NUMBER

**A5.01**  
REVISIONS  
AS NOTED SUPPLIES REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021





05/04/20





Project No: 20056  
Date: 02.22.21  
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REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



FINKLE + WILLIAMS  
ARCHITECTURE

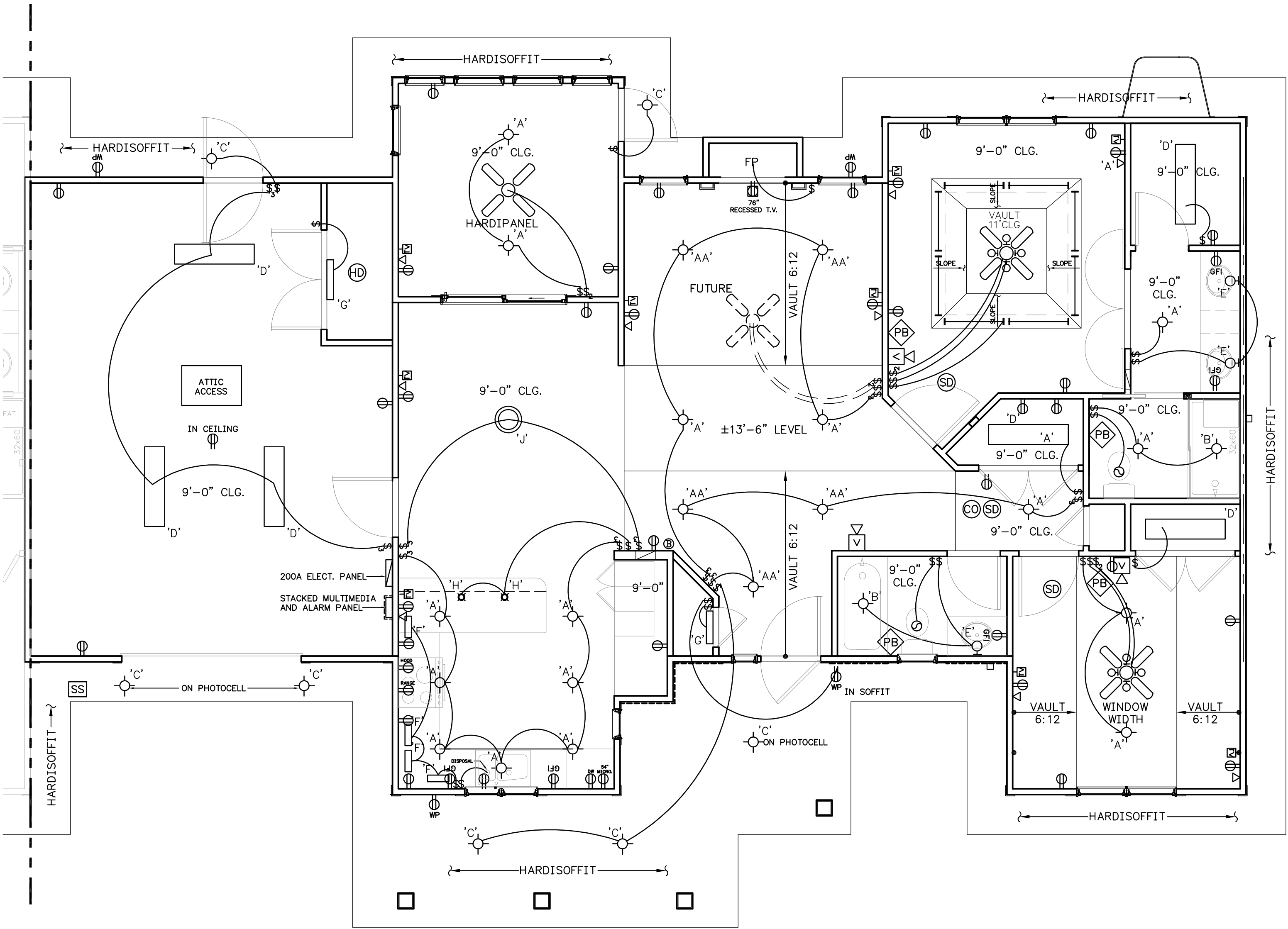
8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

SHEET NUMBER

CEILING/ELECTRICAL LEGEND

- ⌚ DUPLEX RECEPTACLE
- ⌚ GROUND-FAULT PROTECTED DUPLEX RECEPTACLE
- ⌚ WATERPROOF GROUND-FAULT PROTECTED DUPLEX RECEPTACLE
- ⌚ CABLE TELEVISION OUTLET
- ⌚ PHONE/DATA OUTLET
- ⌚ SINGLE POLE SWITCH: EQ. TO LEVITON WHITE DECORA ROCKER SWITCH (MODEL 5601-2W)
- ⌚ SINGLE POLE FAN CONTROL SWITCH: EQ. TO LEVITON WHITE DECORA ROCKER SLIDE SWITCH (MODEL DSM-10 OR APPROVED EQ.)
- ⌚ 3-WAY SWITCH: EQ. TO LEVITON WHITE DECORA ROCKER SWITCH (MODEL 5601-2W)
- ⌚ EMERGENCY "PUSH BUTTON" CALL SWITCH: EQ. TO TEKSTONE (MODEL SF154B)
- ⌚ SMOKE DETECTOR
- ⌚ CARBON MONOXIDE DETECTOR
- ⌚ HEAT DETECTOR
- ⌚ DOOR BELL CHIME
- ⌚ EXHAUST FAN
- ⌚ RECESSED CAN LIGHT: TO BE SELECTED BY OWNER
- ⌚ RECESSED CAN LIGHT: TO BE SELECTED BY OWNER
- ⌚ RECESSED CAN LIGHT: TO BE SELECTED BY OWNER
- ⌚ RECESSED CAN LIGHT: TO BE SELECTED BY OWNER
- ⌚ SURFACE MOUNTED FLUORESCENT FIXTURE W/ WRAP-AROUND LENS: TO BE SELECTED BY OWNER
- ⌚ WALL MOUNTED SCONCE: TO BE SELECTED BY OWNER
- ⌚ UNDERCABINET LOW PROFILE FLUORESCENT LIGHT FIXTURE: TO BE SELECTED BY OWNER
- ⌚ SURFACE MOUNTED FLUORESCENT FIXTURE: TO BE SELECTED BY OWNER
- ⌚ DECORATIVE PENDANT LIGHT FIXTURE: TO BE SELECTED BY OWNER
- ⌚ PENDANT LIGHT FIXTURE: TO BE SELECTED BY OWNER
- ⌚ CEILING FAN TO BE SELECTED BY OWNER
- 3' DOWN-ROD AT VAULTED CEILINGS  
1' DOWN-ROD AT 9'-0" CEILINGS  
"WET RATED" FAN & BLADES AT EXTERIOR PATIOS AND/OR PORCHES
- ⌚ CEILING FAN TO BE SELECTED BY OWNER
- 2' DOWN-ROD AT VAULTED BEDROOM CEILINGS  
1' DOWN-ROD AT 9'-0" CEILINGS
- ⌚ SIREN/STROBE (EXTERIOR)
- ⌚ HORN/STROBE (INTERIOR)

- NOTE:
1. NO SWITCHED OUTLETS UNLESS NOTIFIED BY JKV
  2. MAINTAIN MINIMUM RECEPTACLE SPACING AS PER 2005 NEC.
  3. ALL STANDARD OUTLETS TO BE LOCATED 18" A.F.F.
  4. ALL FLUORESCENT FIXTURES SHALL BE SELECTED BY OWNER.
  5. ALL LIGHT FIXTURE LOCATIONS ARE APPROXIMATE. COORDINATE WITH FIELD CONDITIONS TO PROVIDE A SYMMETRICAL LAYOUT.
  6. ELECTRICAL CONTRACTOR TO PROVIDE (2) LIGHT FIXTURES IN THE CRAWL SPACE SWITCHED AT ENTRANCE.
  7. ELECTRICAL CONTRACTOR TO PROVIDE (1) DUPLEX GFCI IN THE CRAWL SPACE (COORDINATE LOCATION W/ JKV)
  8. ELECTRICAL CONTRACTOR TO PROVIDE (2) LIGHT FIXTURES IN THE ATTIC SPACE SWITCHED AT ENTRANCE.
  9. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL (2) 1" CONDUIT (EMT OR PVC) FROM SERVICE PANEL IN GARAGE TO ATTIC FOR FUTURE USE.
  10. CEILING FANS WITH LIGHT KITS SHALL HAVE SEPARATE SWITCHES FOR THE FAN AND THE LIGHT.
  11. PROVIDE DEDICATED CIRCUIT AND SINGLE RECEPTACLE IN THE CRAWL SPACE FOR THE SUMP PUMP.



PLAN NORTH



John Knox  
Village

DUPLEX UNIT  
626 - 628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS	
No.	Date Description
1	3.22.21 CITY COMMENTS

REGISTRATION



PROJECT TEAM

ARCHITECT	FINKE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



FINKLE + WILLIAMS  
ARCHITECTURE

8787 Renner Blvd, Suite 100  
Lenexa, Kansas 66219  
913 + 498 - 1550

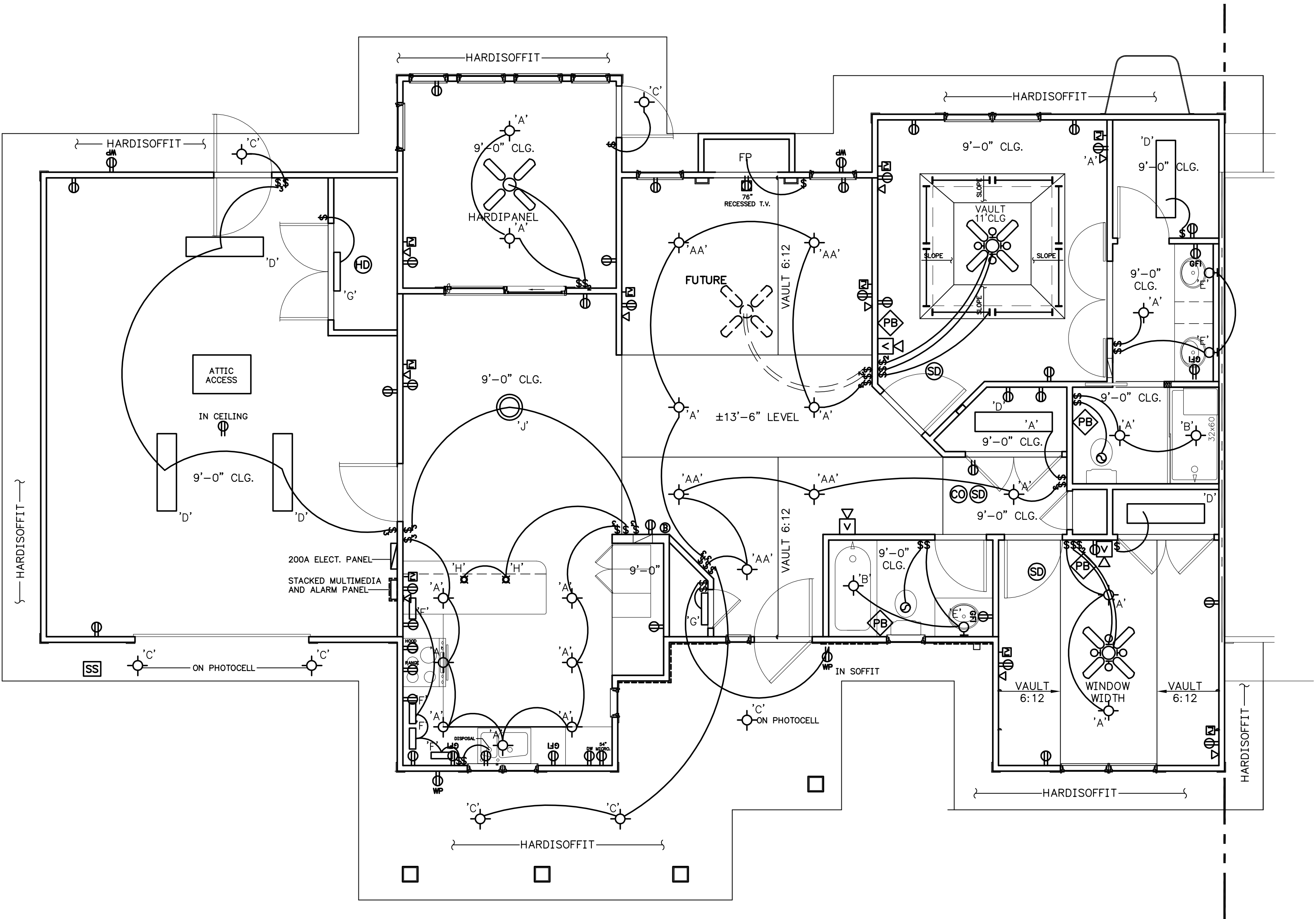
SHEET NUMBER



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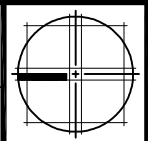
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PLAN NORTH

1 CEILING PLAN - POWER

A9.01 SCALE : 1/4" = 1'-0"





GENERAL NOTES - STRUCTURAL

Design Specifications: ACI 318-14, AISC-15th Edition, ASCE 7-16

Governing Building Code: IBC 2018

Design Loading:

Roof Dead Load = 10 psf (top chord)  
=6 psf (bott. chord)

Roof Live Load (Snow) = 20 psf

\*Snow drift loading in accordance with governing building code

Floor Dead Load = 10 psf

Floor Live Load = 40 psf

Seismic Loads:

Ss = 0.121

S1 = 0.060

Wind Loads:

Velocity = 115 mph

Exposure = B

General:

1. The Contractor shall notify the Engineer of any observed discrepancies in dimensions, detailing, or other items as shown on the plans or specified prior to proceeding with work relating to said discrepancies.

2. The Contractor shall not alter or modify work shown on the structural drawings without receiving written approval from the Engineer.

3. The Contractor shall be responsible for supplying shop drawings for wood joists & trusses, structural steel, reinforcing steel, and concrete mix designs. Shop drawings must be reviewed for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of the Contractor, and shall be stamped "approved" by the Contractor prior to submittal. Shop drawings submitted without the Contractor's stamped approval will be returned rejected. All shop drawings shall be reviewed by the Structural Engineer prior to construction.

Slab On Grade:

1. Refer to foundation plan for slab on grade requirements.

Foundations:

1. Foundations for this project have been designed without a Geotechnical report. Continuous and individual foundations have been designed for an allowable bearing capacity of 2000 psf. coordinate with final Geotechnical instructions and report to Structural Engineer for final analysis.

2. Anchor bolts shall conform to ASTM F1554 and shall be located by means of a template. Provide a nut above and below template to assure proper vertical alignment.

3. All foundations shall be square and level.

4. Grout below column base plates. Grout shall be dry and stiff to prevent shrinkage, with a minimum compressive strength of 4000 psi. Thoroughly compact grout beneath base plate.

Concrete and Reinforcing Steel:

1. Concrete mix designs shall meet the following requirements:  
(Taken from ACI Manual of Concrete-1990, 211.1)

Location	Minimum Compressive Strength (psi)	Maximum Aggregate Size	Min. Lbs. Cement	Maximum Water/Cement Ratio	Slump (in.)	Air Entrainment Percent (%)
Foundations	3000	1"	517	.50	4 ± 1	6 ± 1
Interior Slab	4000	3/4"	564	.48	4 ± 1	0

2. Fly ash shall not be used unless approved in writing by the Engineer. Fly ash, if approved, shall conform to ASTM C618 and shall not exceed 15% of the total cement volume.

3. All concrete is reinforced unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas.

4. Construction joints in grade beams shall be at midspan unless noted otherwise. Reinforcing steel shall be continuous through construction joints unless noted otherwise.

5. No aluminum items shall be embedded in any concrete or placed in contact with concrete.

6. Reinforcing bars #4 and larger (except ties and stirrups) shall meet ASTM A615 with Supplementary Requirements (S1), Grade 60. Smaller bars shall be Grade 40.

7. Concrete coverage of reinforcement shall have the following clear distances unless noted otherwise on the drawings:

Cast against earth	3"
Formed concrete exposed to earth to weather	2"
Not exposed to earth or weather	1" Slabs, 1-1/2" Beams and columns

8. Embedded and all reinforcing bars marked continuous shall be embedded to develop the full tensile capacity of the bar. Laps shall be Class B tension laps unless specified otherwise on the drawings. Unless shown otherwise, splice top bars near midspan and splice bottom bars over supports.

9. Supply corner bars 4'-0" long (min. 2'-0" in each direction) in outside face of wall at corners of all walls and grade beams, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face of wall, supply three (3)-#4 vertical support bars for corner bars.

10. All bars are to be supported in forms and spaced with wire bar supports per ACI "Manual of Standard Practice for Detailing Concrete Structures" (latest edition). Bars shall be securely wired per the latest edition of CRSI's "Recommended Practice for Placing Reinforcing Bars." Accessories for exposed concrete shall be plastic or shall have plastic-tipped feet.

11. Concrete placed during **cold weather** shall conform to the requirements of ACI 306R-88. Cold weather is defined as a period when, for more than 3 successive days, the mean daily temperature drops below 40°F.

12. Concrete placed during **hot weather** shall conform to the requirements of ACI 305R-91. Hot weather is defined as that combination of air temperature, concrete temperature, relative humidity and wind speed that will cause a rate of evaporation of 0.2 lb/sq.ft./hr. or more as defined by Figure 2.1.5 of ACI 305R-91.

13. Do not add water to concrete during delivery, at Project Site, or during placement, unless approved by the Engineer.

Structural Steel:

1. All structural steel shall conform to the following:

Structural Steel Wide Flanges	- ASTM A992
Miscellaneous Steel	- ASTM A36
Structural Tubing	- ASTM A500, Grade B (Fy = 46 ksi)
Steel Pipe	- ASTM A53, Type E or S, Grade B

2. Connections not shown shall be designed by the fabricator. Non-composite beam connections shall develop 50% of the total uniform load capacity as given in the tables for "Allowable Loads on Beams," for given size, span and grade of the connected member, unless noted otherwise. Composite beam connections shall develop 75% of the uniform load capacity for the given size, span and grade of the connected member, unless noted otherwise. Bolts shall be as follows:

Connection Bolts	- ASTM A325
Anchor Bolts	- ASTM A307 or ASTM A325
Shear Stud Connectors	- ASTM A108, Grade 1015 through 1020

3. Welding shall conform to the latest publication of applicable codes set forth by the American Welding Society. Welding electrodes shall be E70XX.

4. All steel stairs shall be designed by the steel stair manufacturer in compliance with the governing building code to meet 100 psf design live load.

Rough Carpentry:

1. All roof, floor and wall sheathing shall be APA rated, with exterior glue. Roof sheathing shall have a panel identification index of 24/16. Floor sheathing shall have an identification index of 48/24.

2. Plywood sheathing shall be attached to framing members as described below:

Location	Plywood Thickness	Tongue and Groove?	Nail Size	Nail Type	Min. Penetration Support	Nail Spacing @ Panel Edges	Nail Spacing @ Inter. Support	Nail Spacing @ Diaph. Bound.	Blocked?
Roof	7/16"	Y	8d	--	1 1/2"	6"	12"	6"	N
Floors	3/4"	Y	10d	--	1 1/2"	6"	12"	6"	N
Walls	7/16"	N	8d	--	1 1/2"	6"	6"	--	N

Dwelling unit separation walls shall be sheathed with 2 layers of 5/8" type X gypsum board ea. side per arch. drawings. Fasters shall be 6d minimum cooler nails @ 4" spacing typical at interior and exterior edges of each sheet.

3. All dimension lumber used in load-bearing walls, floor and ceiling joists, roof rafters, exterior lintels, interior lintels, all bearing and jamb studs, columns and beams, shall have the following minimum design values:

Fb	=875 psi
Fv	=95 psi
Fc (perp)	=625 psi
Fc	=1,300 psi
E	=1,600,000 psi

These values are based on allowable stresses provided in the NDS (2005) and do not include adjustment Factors.

The following species and commercial grades conform to the above minimum design values:

Douglas Fir - Larch	- No. 2
Southern pine	- No. 2, or approved equal
Spruce-Pine-Fir	- No. 2, or approved equal

4. All dimension lumber used for non-load bearing walls shall have the following minimum design values:

Fb	=675 psi
Fv	= 70 psi
Fc (perp)	=425 psi
Fc	=675 psi
E	=1,200,000 psi

These values are based on allowable stresses provided in the NDS (2005) and do not include adjustment factors.

5. Treated lumber shall be used in all locations where lumber is exposed to weather, moisture, or is in contact with concrete.

Prefabricated Wood Trusses:

1. Roof trusses- if used shall be factory-manufactured wood trusses using steel connector plates. Trusses shall be designed for the loads shown on the construction drawings. Truss manufacturers shall provide design calculations, shop drawings and erection drawings for review by the Engineer prior to construction. Contractor shall install all blocking, load transfer assemblies, hangers, accessories, etc. as recommended by the truss manufacturer, the Truss Plate Institute, or these construction drawings.

2. Floor joists shall be factory-manufactured solid web joists. Joist manufacturers shall provide design calculations, shop drawings and erection drawings for review by the Engineer prior to construction. Joist designations are indicated on the floor framing plan. Contractor shall install all blocking, load transfer assemblies, hangers, accessories, etc. as recommended by the joist manufacturer.

3. Roof trusses- if used- shall be designed by a Professional Engineer. All calculations and shop drawings shall bear the seal of a Professional Engineer registered in the state in which the trusses are to be used. Floor joist shop drawings shall be submitted for review and approval by the Engineer/Architect.

ABBREVIATIONS LIST

& AND

@ AT

° DEGREES

= EQUALS

' FEET

> GREATER THAN

> GREATER THAN OR EQUAL TO

" INCHES

< LESS THAN

< LESS THAN OR EQUAL TO

- MINUS, NEGATIVE

+ PLUS

± PLUS OR MINUS

A.F.F. ABOVE FINISHED FLOOR

ALT. ALTERNATE

ARCH. ARCHITECT

BLDG. BUILDING

BM. BEAM

B.O.S. BOTTOM OF STEEL

BOT. BOTTOM

C.I. CONTROL/CONSTRUCTION JOINT

C.L. CENTER LINE

C.M.U. CONCRETE MASONRY UNIT

CLG. CEILING

CLR. CLEAR

COL. COLUMN

CONC. CONCRETE

CONT. CONTINUOUS

COORD. COORDINATE

CTR. CENTER

DIA. DIAMETER

DN. DOWN

DWG. DRAWING

E.J. EXPANSION JOINT

E.O.R. ENGINEER OF RECORD

EA. EACH

EL. ELEVATION

ELEV. ELEVATION

ENG. ENGINEER

EQ. EQUAL

EQUIP. EQUIPMENT

ET CETERA

EXIST. EXISTING

EXT. EXTERIOR

F.A. FACE

F.B.E. FOOTING BEARING ELEVATION

F.F.E. FINISHED FLOOR ELEVATION

F.S. FAR SIDE

FT. FOOT/FEET

FTG. FOOTING/FOUNDATION

G.C. GENERAL CONTRACTOR

GALV. GALVANIZED

GYP. GYPSUM

HORIZ. HORIZONTAL

IN INCHES

J.B.E. JOIST BEARING ELEVATION

JT. JOINT

L.F. LINEAR FEET

LB. POUND

LLH LONG LEG HORIZONTAL

LLV LONG LEG VERTICAL

M.B.M. METAL BUILDING MANUFACTURER

M.E.P. MECHANICAL ELECTRICAL PLUMBING

MAX. MAXIMUM

MIN. MINIMUM

MISC. MISCELLANEOUS

N.A. NOT APPLICABLE

N.S. NEAR SIDE

N.T.S. NOT TO SCALE

Ø DIAMETER

P.E.M.B. PRE-ENGINEERED METAL BUILDING

PL. PLATE

PSF POUNDS PER SQUARE FOOT

PSI POUNDS PER SQUARE INCH

R RADIUS

REQ. REQUIRED

SF SQUARE FEET

SIM. SIMILAR

SPA. SPACING

SPEC. SPECIFICATION

SQ. SQUARE

T.O.C. TOP OF CONCRETE

T.O.F. TOP OF FOOTING

T.O.S. TOP OF STEEL

T.O.W. TOP OF WALL

THRU. THROUGH

TYP. TYPICAL

U.N.O. UNLESS NOTED OTHERWISE

VERT. VERTICAL

W.W.F. WELDED WIRE FABRIC

WT. WEIGHT

W/ WITH

W/O WITHOUT

SHEET LIST

Sheet Number

Sheet Name

S0 GENERAL NOTES

S1.1 FOUNDATION PLAN - UNIT 2

S1.2 FOUNDATION PLAN -FULL BUILDING

S2.1 ROOF FRAMING PLAN -UNIT 2

S2.2 ROOF FRAMING PLAN -FULL BUILDING

S3 FOUNDATION DETAILS

S4 TYPICAL FOUNDATION DETAILS

MATERIALS LEGEND

ALUMINIUM

CONCRETE

EARTH

GRAVEL

GROUT

GYPSUM

INSULATION - RIGID

MASONRY - BRICK

MASONRY - CMU

PLYWOOD

STEEL

TILT / PRE-CAST

SYMBOLS LEGEND

01  
S1.0

DETAIL

DRAWING NUMBER

SHEET NUMBER

AREA OF DETAIL

01  
S1.0

ELEVATION

DRAWING NUMBER

SHEET NUMBER

01  
S1.0

SECTION

DRAWING NUMBER

SHEET NUMBER

TYP.

W16x26(12)  
c=3/4

BEAM DESIGNATION

CAMBER OF BEAM IN INCHES

SHEAR STUD COUNT

BEAM TYPE & SIZE

W5x8x6(16)

COLUMN DESIGNATION

COLUMN SIZE

COLUMN TYPE

F1  
F.B.E. +06.30

FOOTING DESIGNATION

FOOTING MARK

BEARING ELEVATION

P1  
T.O.P. +06.30

PIER DESIGNATION

FOOTING MARK

TOP OF PIER ELEVATION

8.8

COLUMN GRID

GRID DESIGNATION

N

MOMENT CONNECTION

N

NORTH ARROW

1

REVISION DESIGNATION

<###'-##">

JOIST BEARING ELEVATION

SLAB THICKNESS TRANSITION

John Knox Village

Duplex Unit

626-628 WILLOW LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056

Date: 02.22.21

Issued For: PERMIT

REVISIONS

No. Date Description

1 3.29.21 CITY COMMENTS

REGISTRATION

STEVEN N. BUSEY

NUMBER E-25462

02-22-21

PROJECT TEAM

ARCHITECT FINKLE+WILLIAMS ARCHITECTURE

CIVIL BHC RHODES

STRUCTURAL BSE STRUCTURAL ENGINEERS

1132 WEST 79th STREET  
Lenexa, Kansas 66214  
Phone 913.492.7400  
www.BSEstructural.com  
Project Number 21-024

SHEET NUMBER

So

PLEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW

DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

05/04/2021

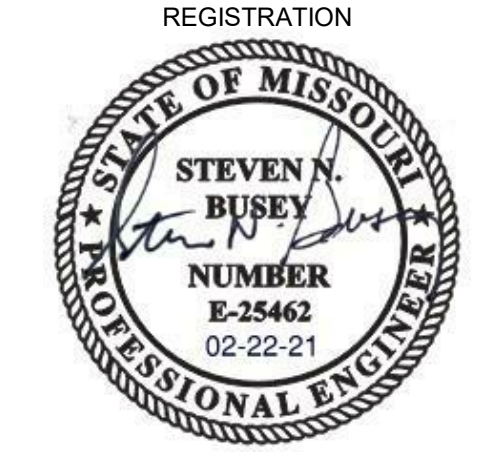


John Knox  
Village

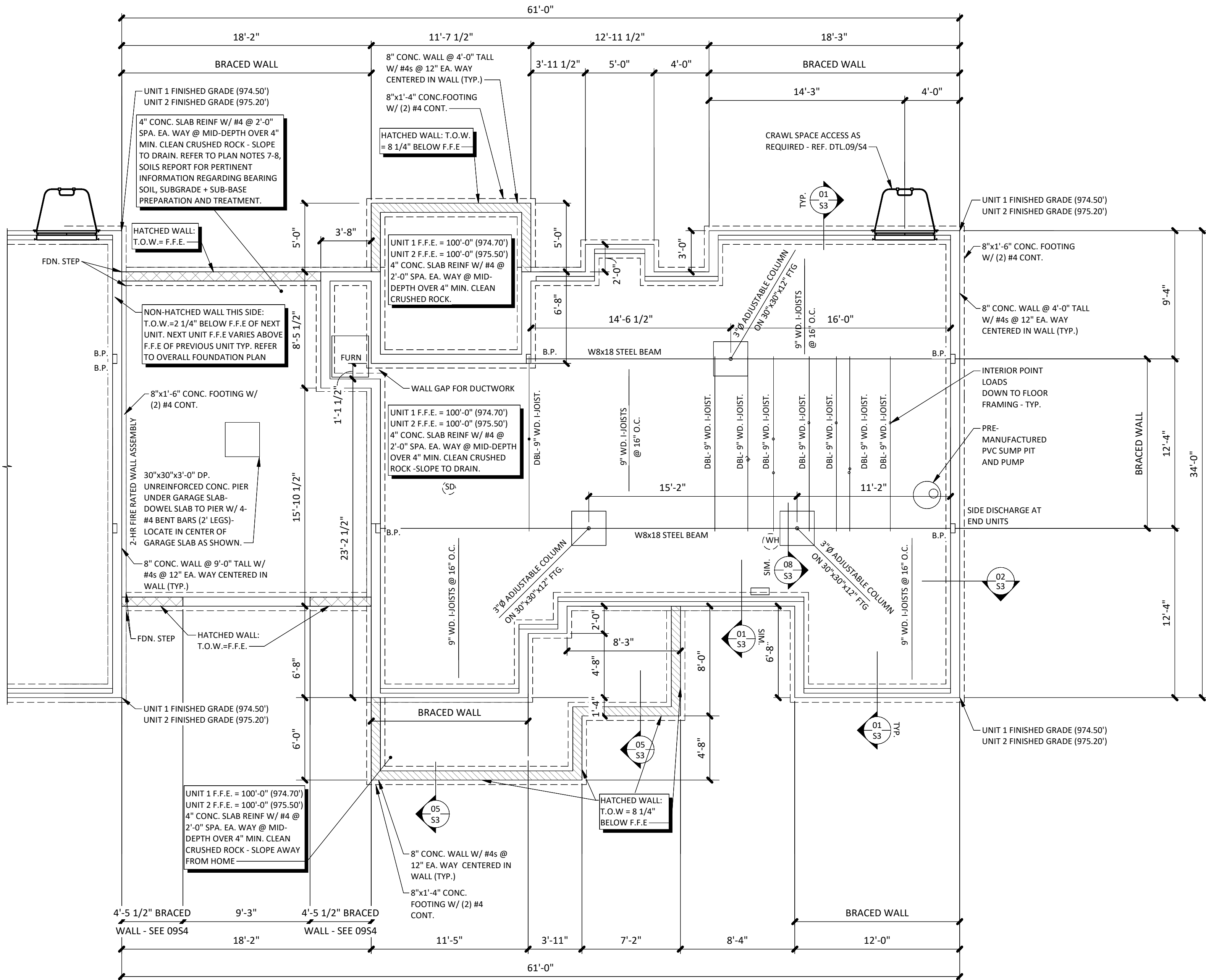
Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS		
No.	Date	Description
1	3.29.21	CITY COMMENTS



PROJECT TEAM	
ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



FOUNDATION PLAN - UNIT 2 | 01  
3/16" = 1'-0" | S1.1

NOTES:

1. Refer to Arch drawings for all opening locations and sizes.
2. F.B.E. - Denotes Footing Bearing Elevation
3. C.J. - Denotes control joint or construction joint. Refer to sheet S4 for typical details.
4. See sheet S0 for General Notes.
5. Locate man doors per Arch drawings.
6. Refer to Arch drawings for all interior wall locations and dimensions.
7. Footings should bear on approved engineered fill or stiff native clay soils. If uncontrolled fill materials or soft native clay soils are encountered in foundation excavations, the unsuitable materials should be overexcavated. Foundations could bear directly on suitable materials at the lower level or on lean concrete backfill extended down to approved bearing materials. Lean concrete backfill should have a minimum 28-day compressive strength of 1,500 psi.
8. As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, state, and federal safety regulations. Construction site safety is the sole responsibility of the contractor who shall also be solely responsible for the means, methods, and sequencing of the construction operations.
9. Locations defined as "Braced Walls" on plan shall be sheathed with 7/16" OSB exterior sheathing per details sheet S4 and general notes. Boundary conditions of these walls shall be double stud w/ Simpson, or equal, HDU2-sds2.5 Hold-Down Device installed per mfr. rec. - typ.



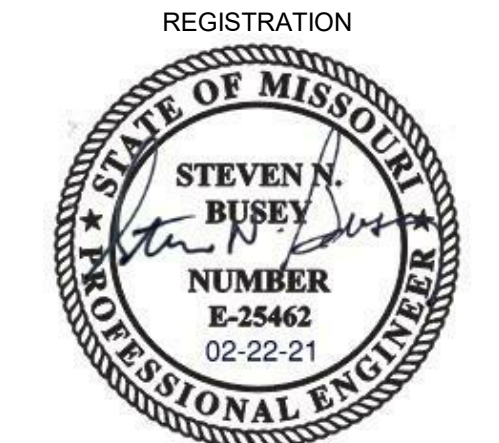
1132 WEST 79th STREET  
Lenexa, Kansas 66214  
Phone 913.492.7400  
www.BSEstructural.com  
Project Number 21-024

SHEET NUMBER

S1.1  
RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
06/04/2021



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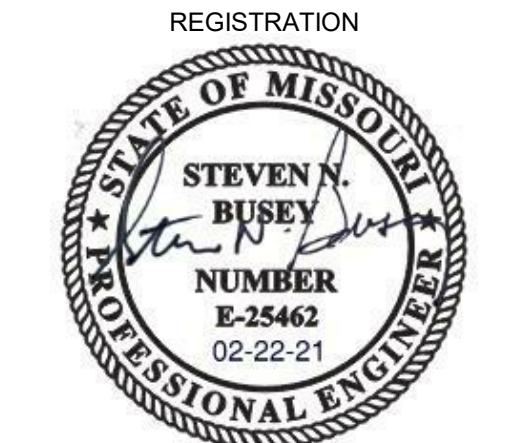


John Knox  
Village

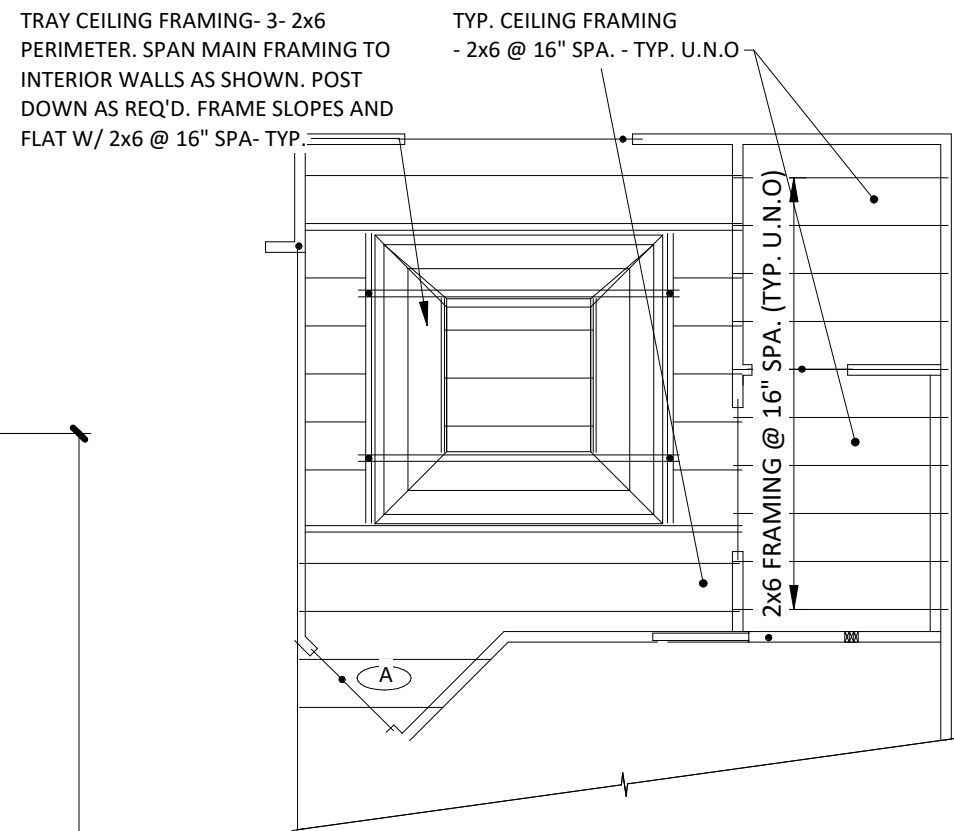
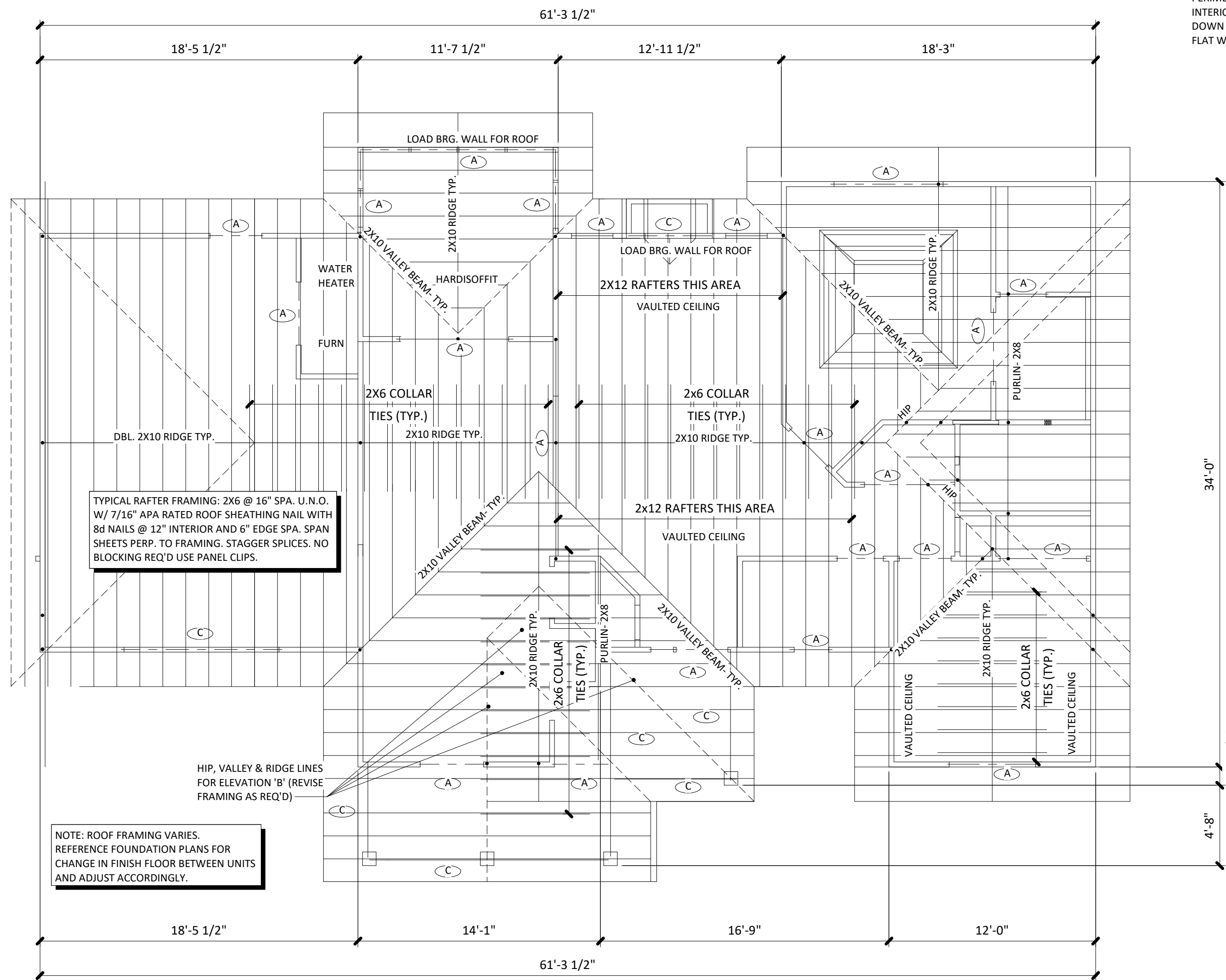
Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
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PROJECT TEAM	
ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS

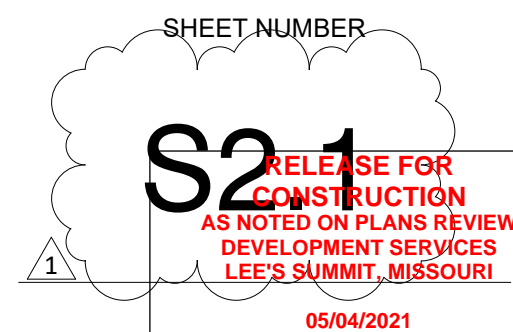
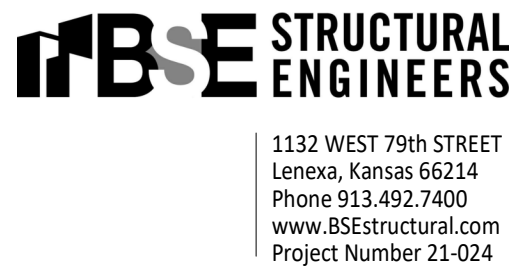


PARTIAL CEILING FRAMING PLAN - BEDROOM  
TYP. CEILING FRAMING SHALL BE 2x6 @ 16" SPA.  
UNLESS NOTED OTHERWISE

- NOTES:  
REFER TO ARCHITECTURAL FLOOR PLANS FOR DIMENSIONS.
- ALL FRAMING USED SHALL BE SPF- #2 OR BETTER.
- USE PRESSURE TREATED MATERIAL WHERE FRAMING COMES IN CONTACT WITH CONCRETE OR STONE FOUNDATIONS.
- REFER TO S0 GENERAL NOTES FOR FLOOR DECK INFO.
- REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE AND LOCATIONS FOR ALL WALL OPENINGS. ALL HEADERS TO BE TYPE A U.N.O.
- A** = (2) 2x10 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 2 KING AND 2 CRIPPLES EA. END TYP.
- B** = (2) 2x6 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 1 KING AND 1 CRIPPLE EA. END TYP.
- C** = (2) 1 3/4" x11 1/4" LVL BEAM. PROVIDE 3 STUD SUPPORT @ ENDS.
- = (2) 2x4 POST DOWN LOCATION FROM ROOF FRAMING ABOVE -REFER TO PLAN FOR LOCA - TYP.

LATERAL BUILDING BRACING- PER SECTION 2308.9 OF THE 2006 IBC- BUILDING SHALL BE BRACED WITH INTERIOR AND EXTERIOR SHEAR WALLS AS FOLLOWS:

EXTERIOR SHEAR WALLS- ALL EXTERIOR WALLS ARE 2x4 @ 16" SPACING W/ 7/16" OSB SHEATHING. REFERENCE DETAILS S4 AND GENERAL NOTES- S0 FOR FASTENER INFORMATION. REFER TO PLAN S1 FOR BRACED WALL BOUNDARIES AND HOLD-DOWN REQUIREMENTS.





John Knox  
Village

Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

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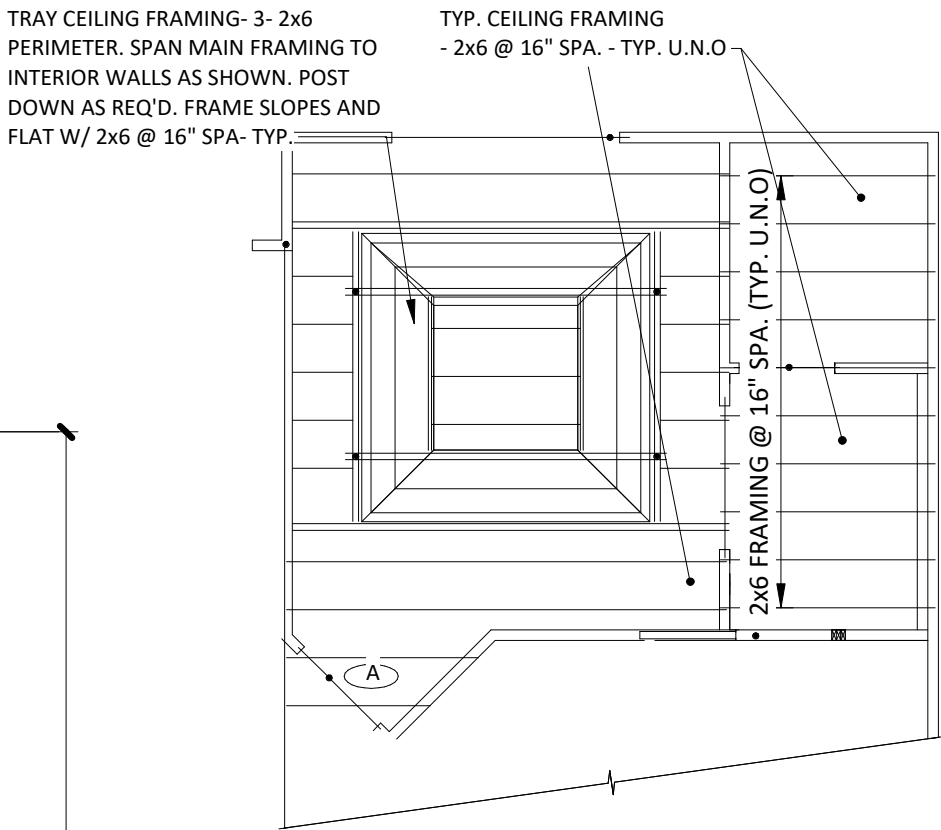
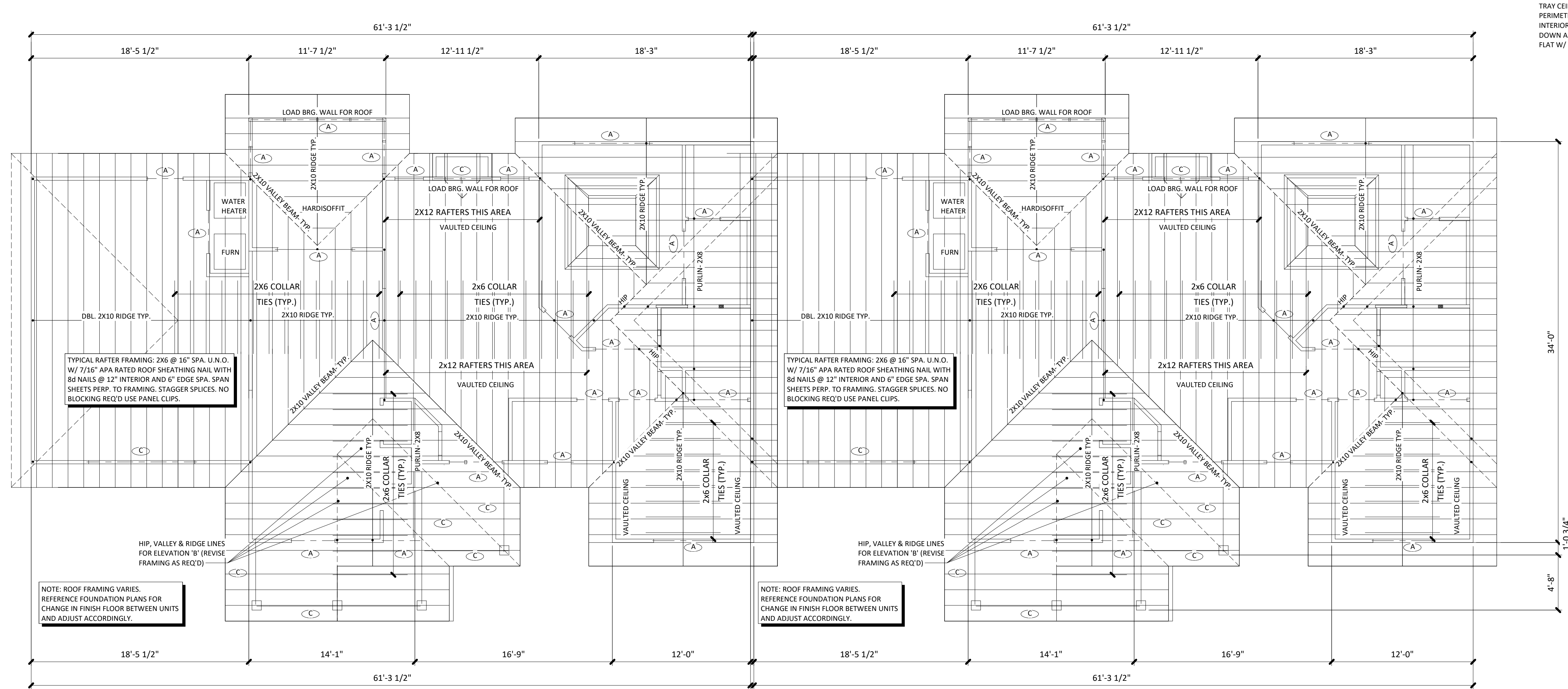
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REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE-WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



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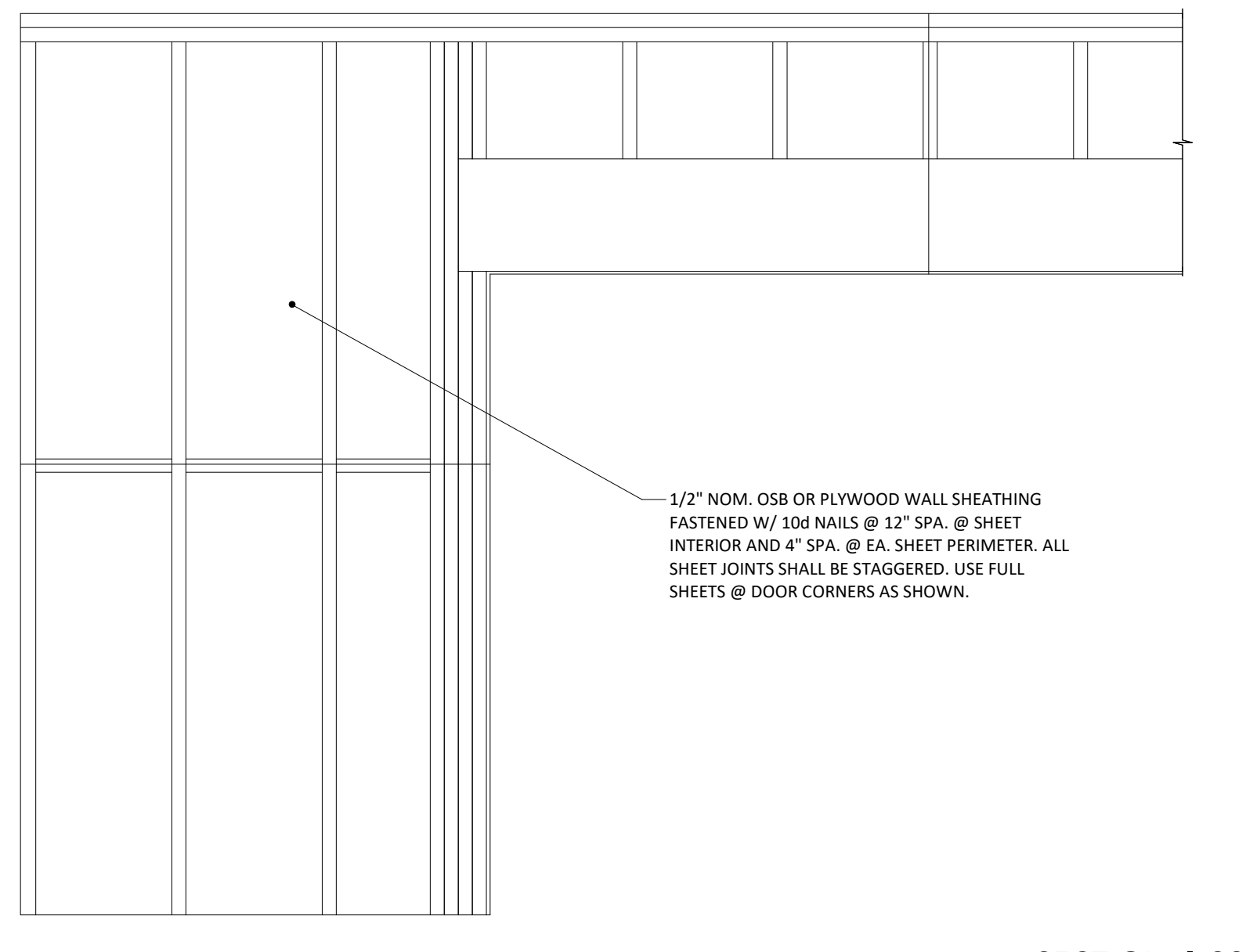
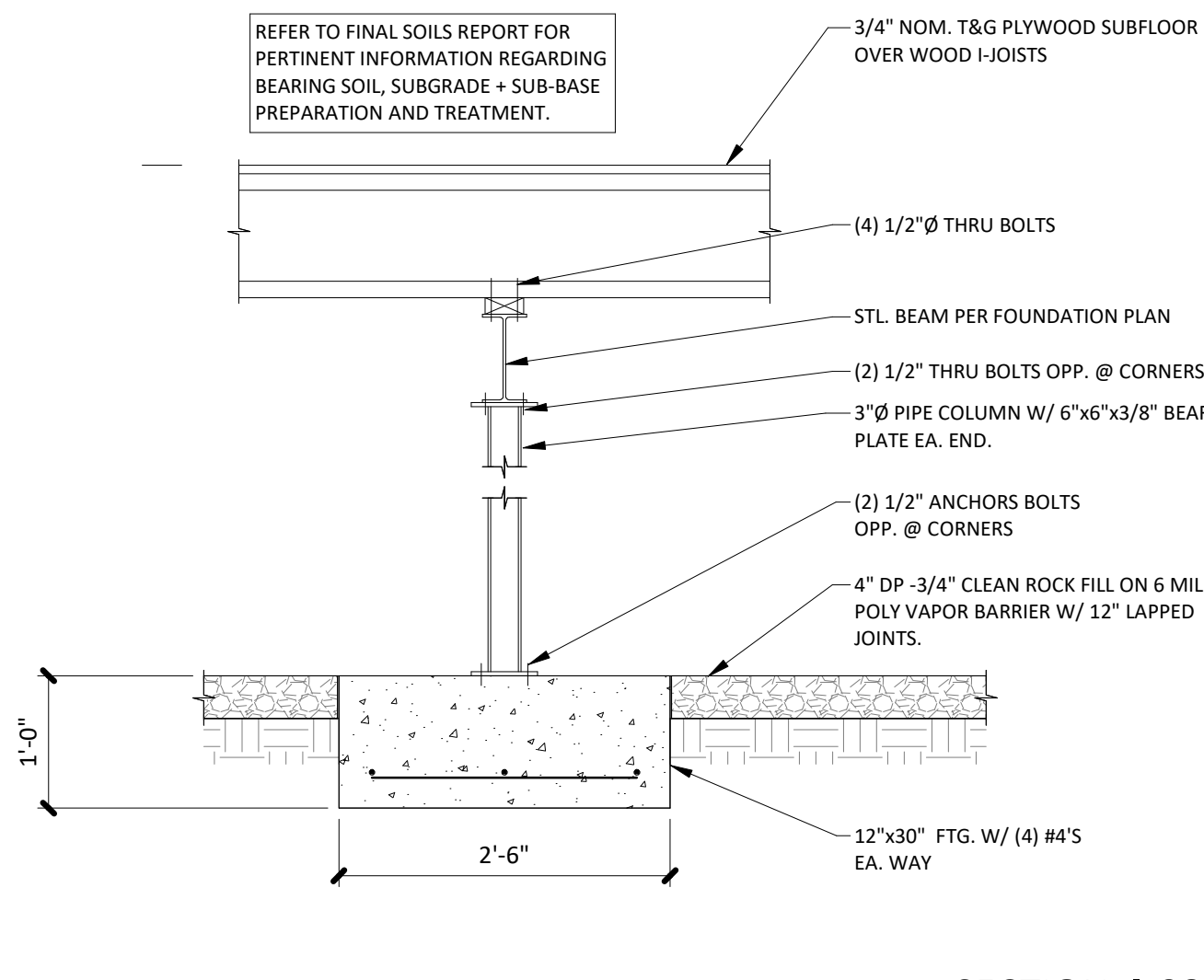
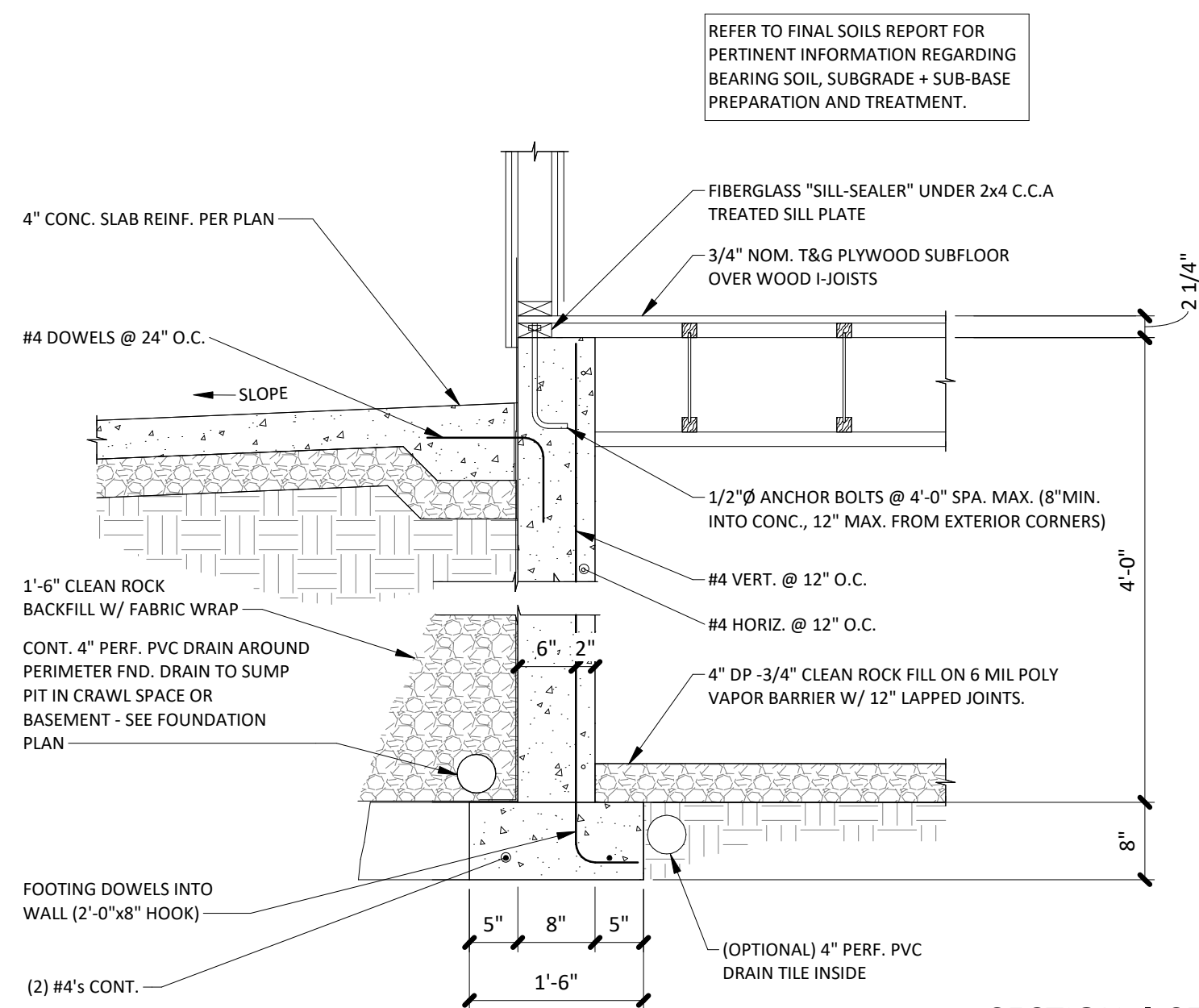
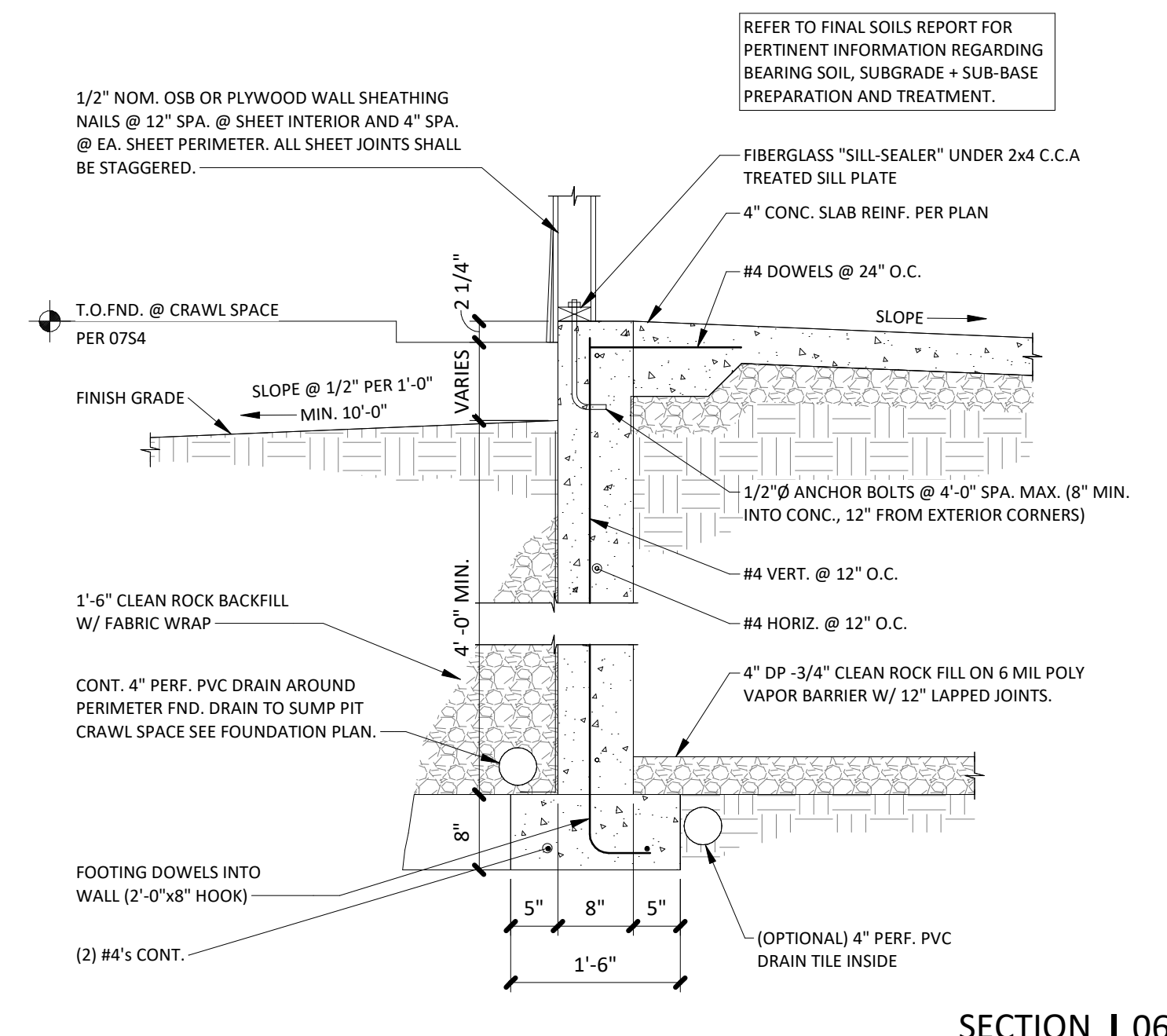
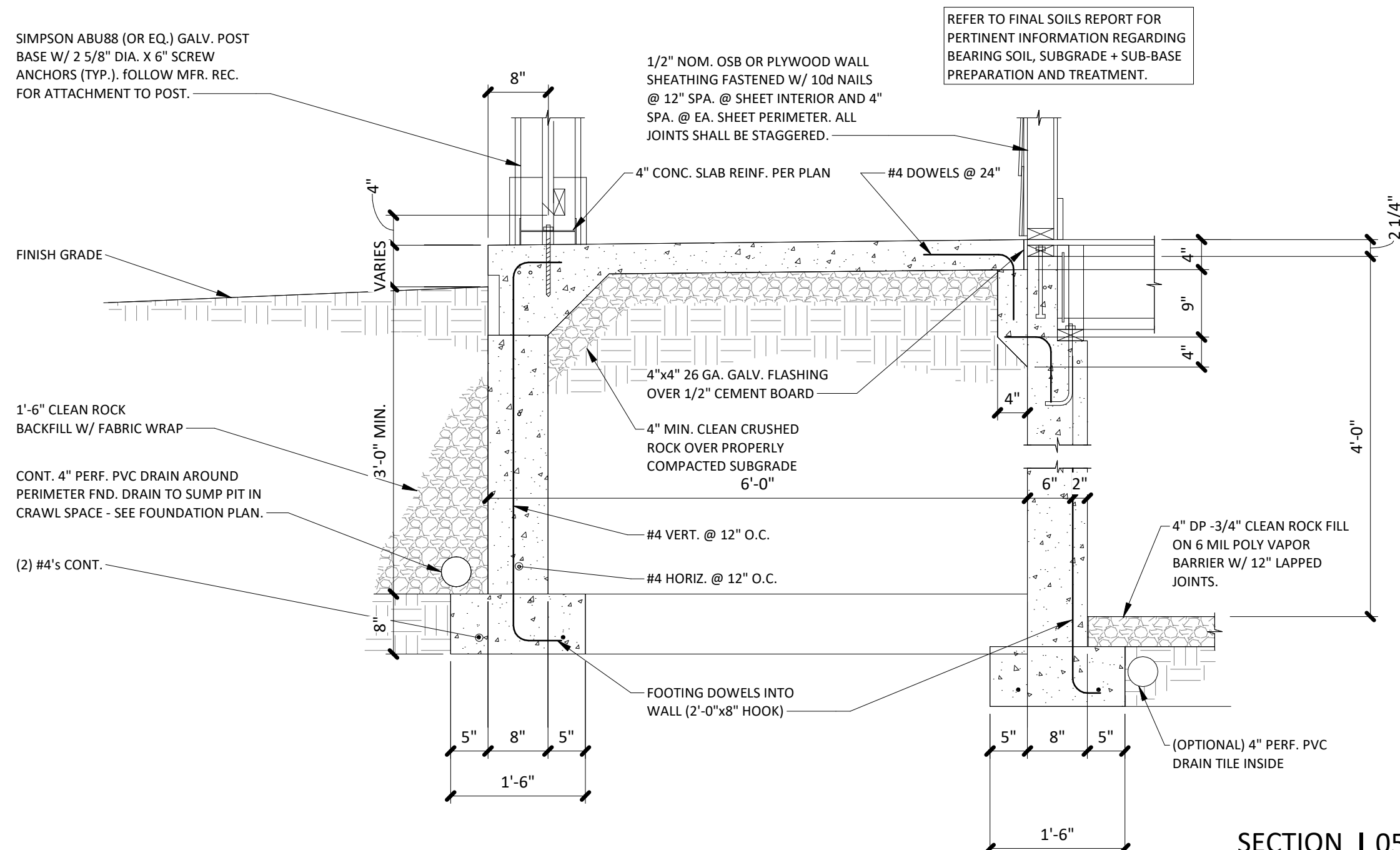
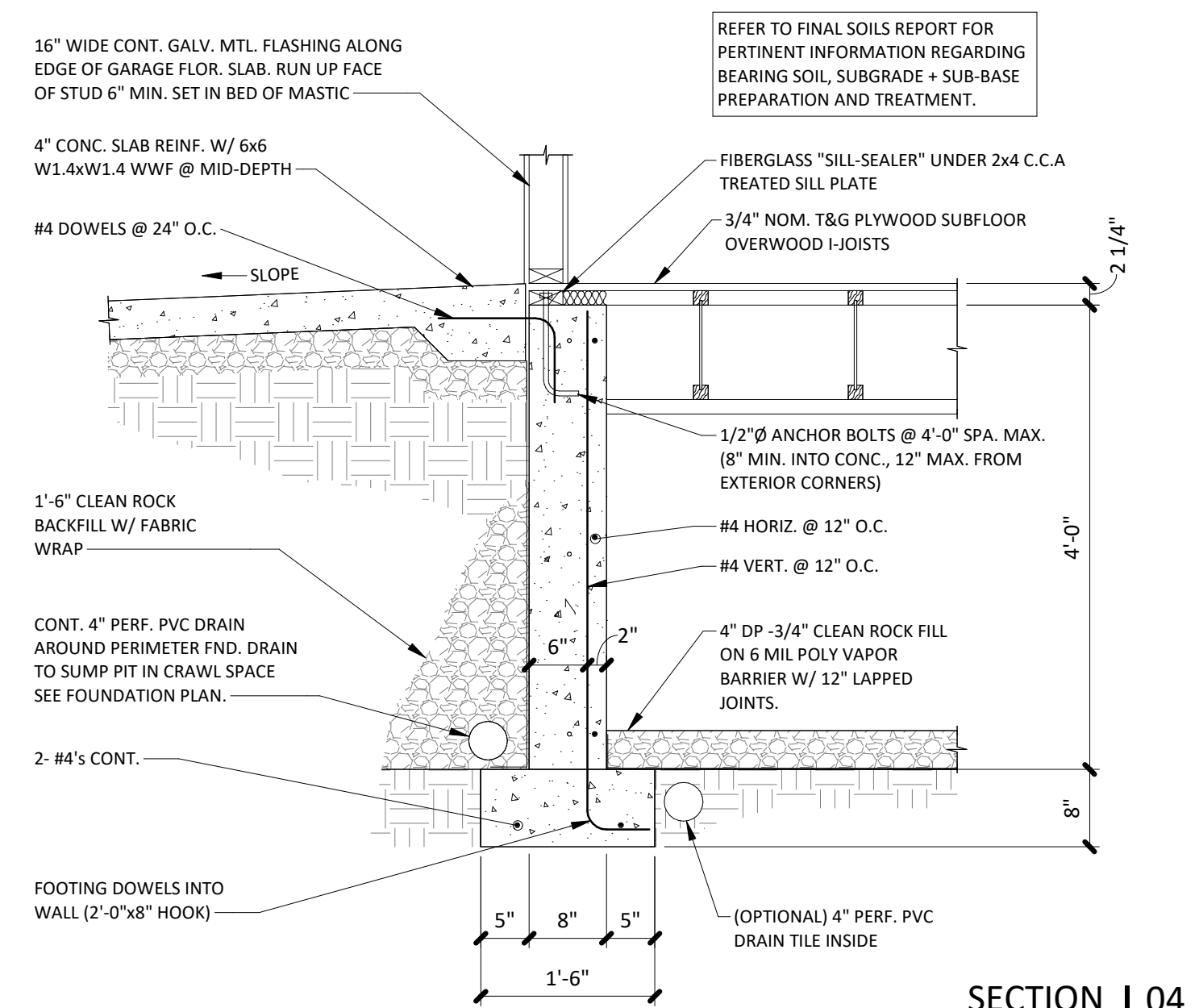
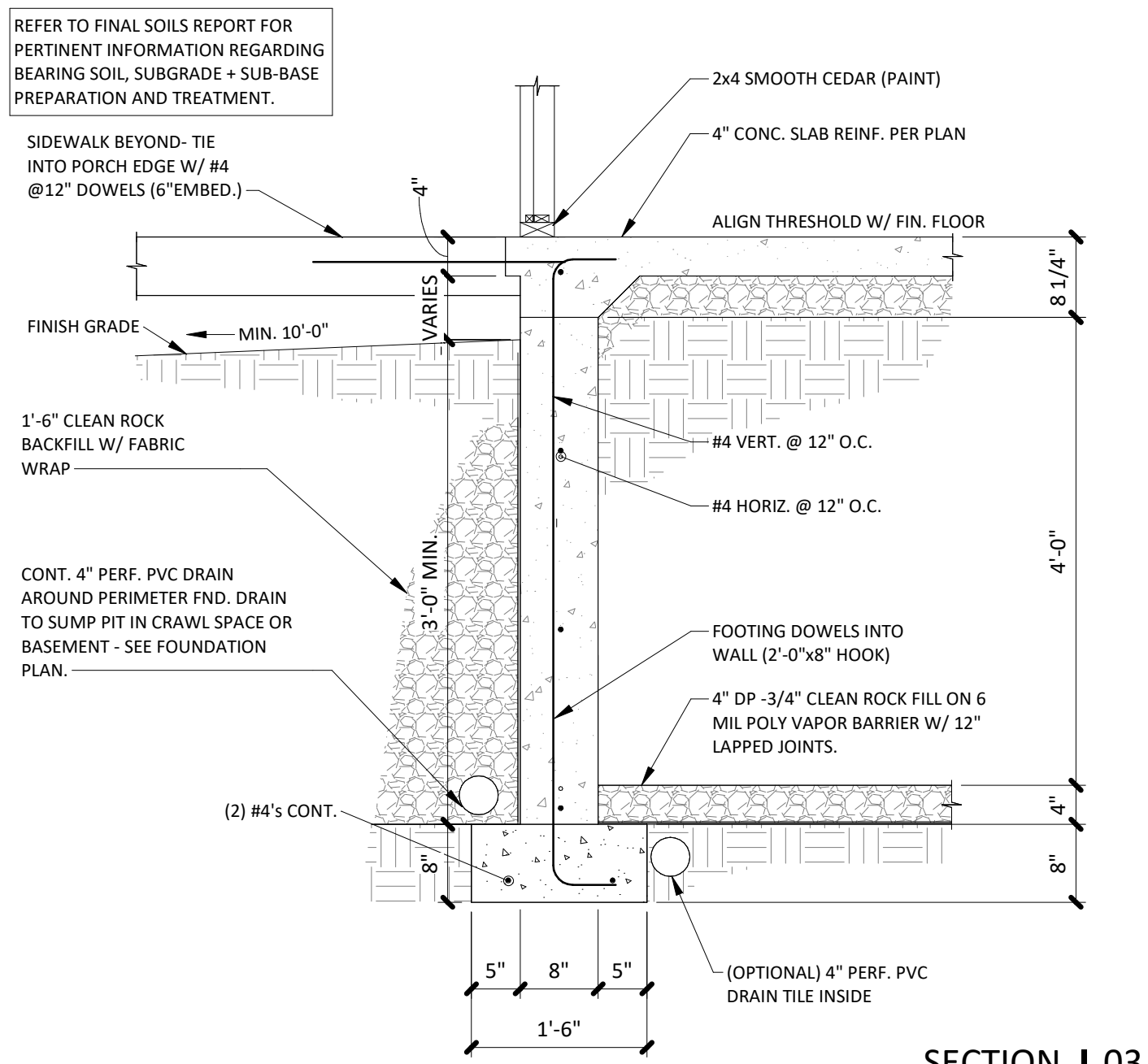
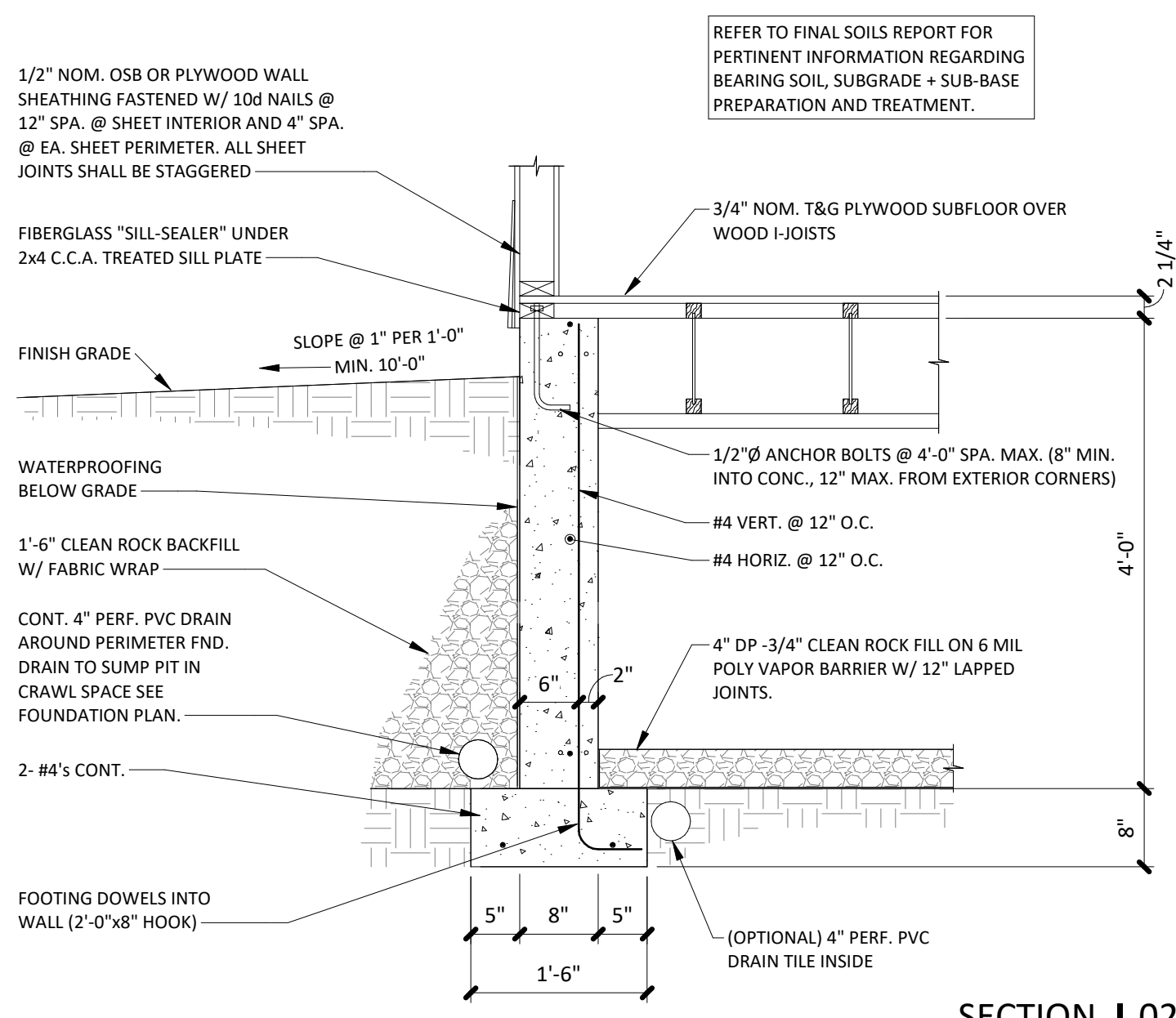
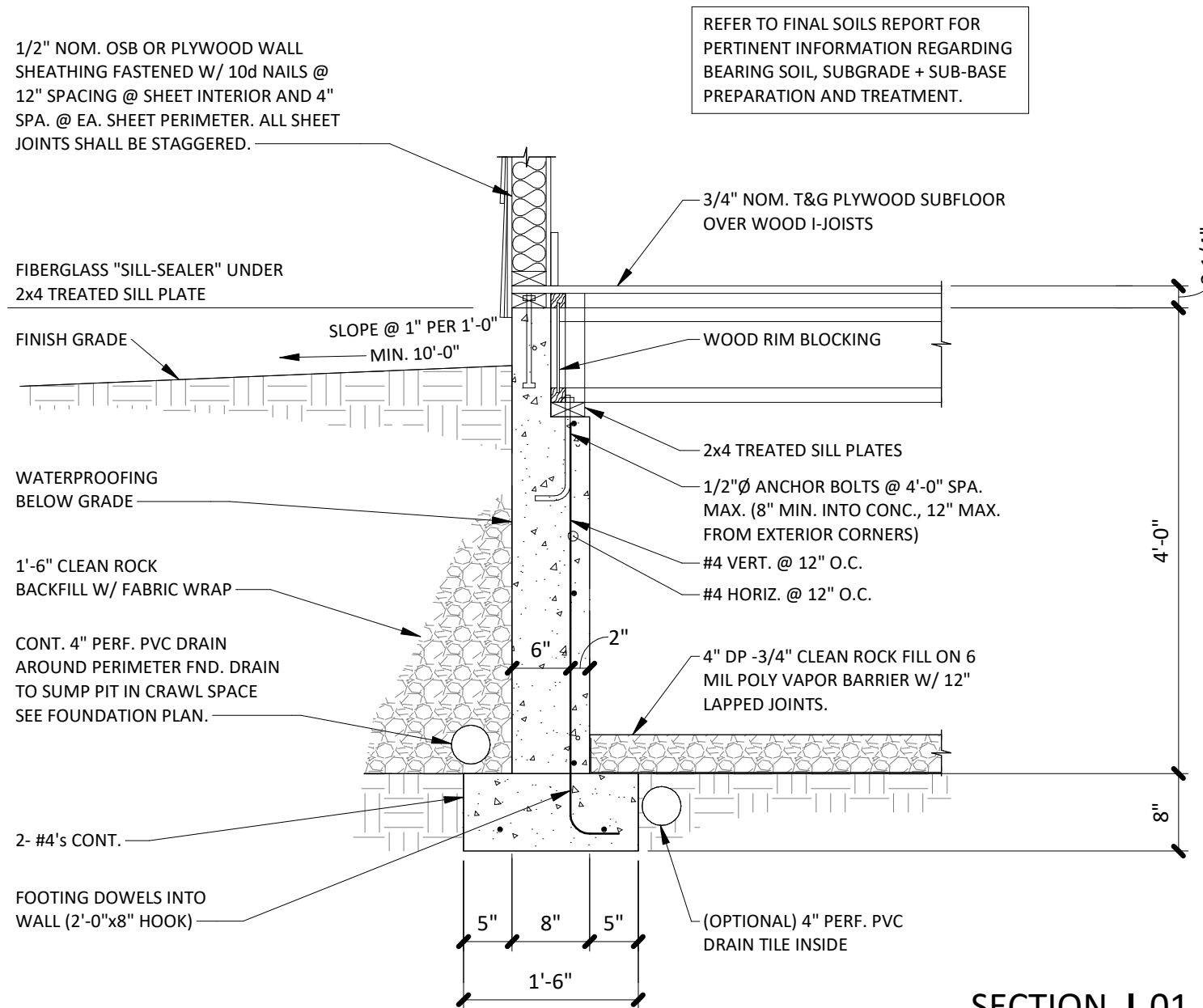


1132 WEST 79th STREET  
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Project Number 21-024

SHEET NUMBER

1  
S2.2  
RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



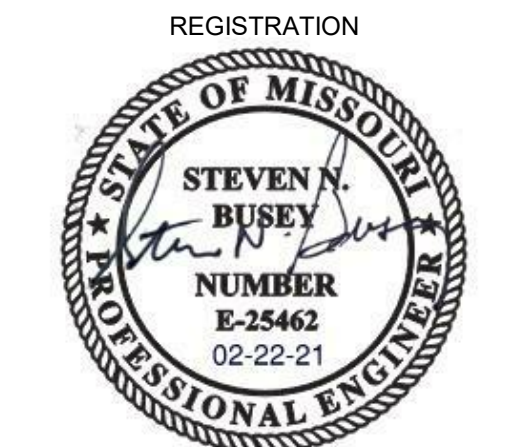


# John Knox Village

Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
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PROJECT TEAM

ARCHITECT FINKLE+WILLIAMS ARCHITECTURE

CIVIL BHC RHODES

STRUCTURAL BSE STRUCTURAL ENGINEERS

**BSE STRUCTURAL ENGINEERS**

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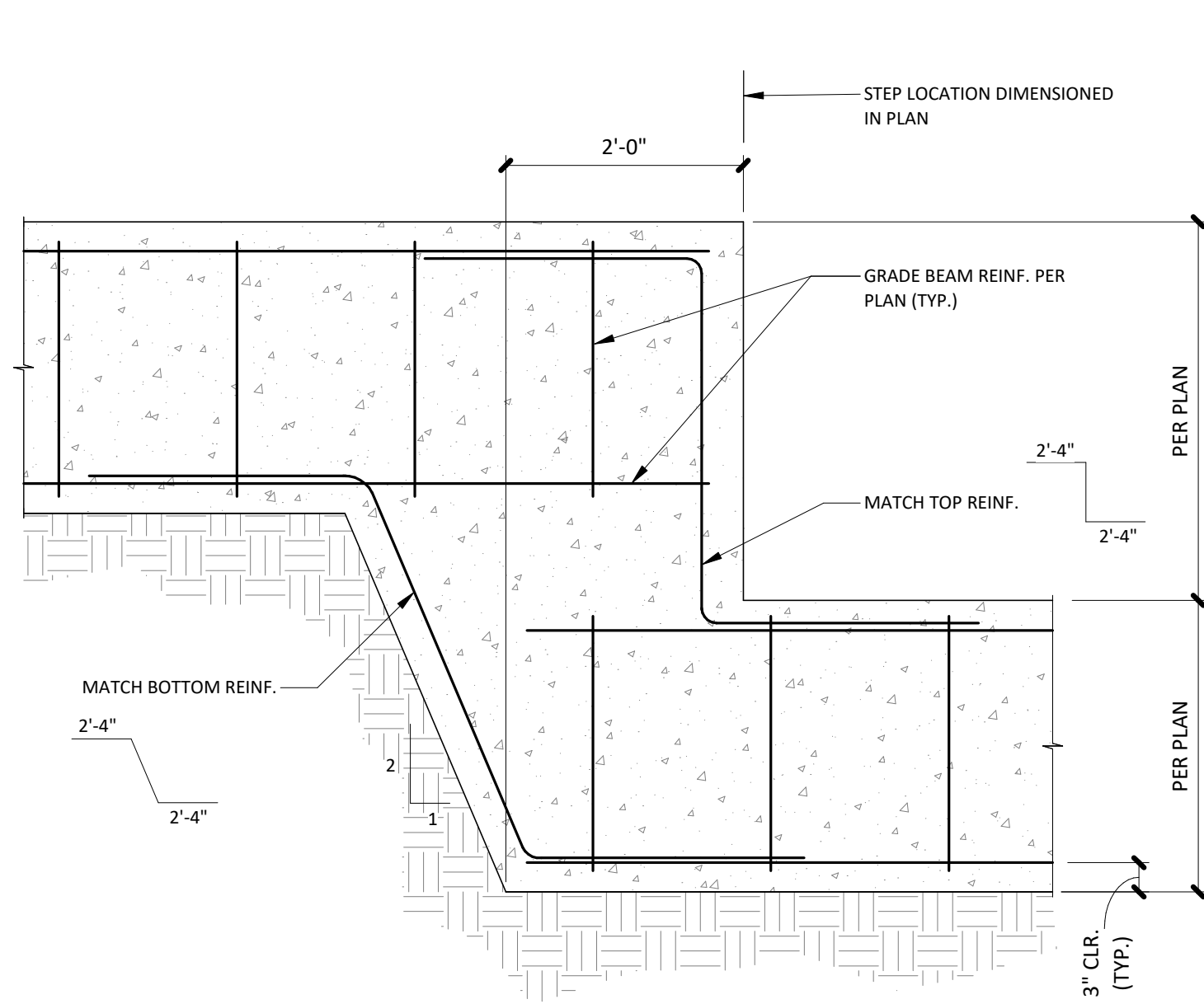
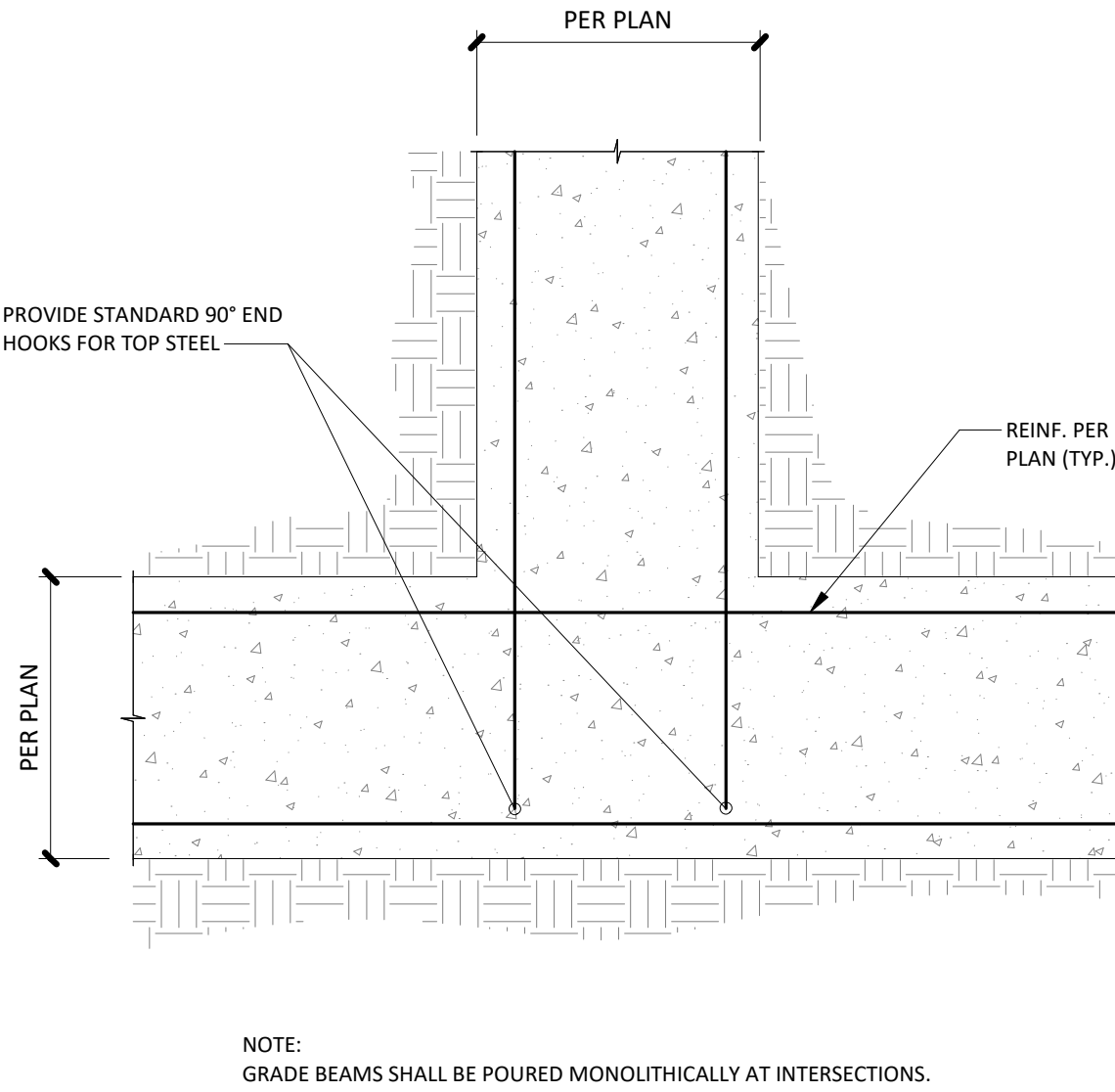
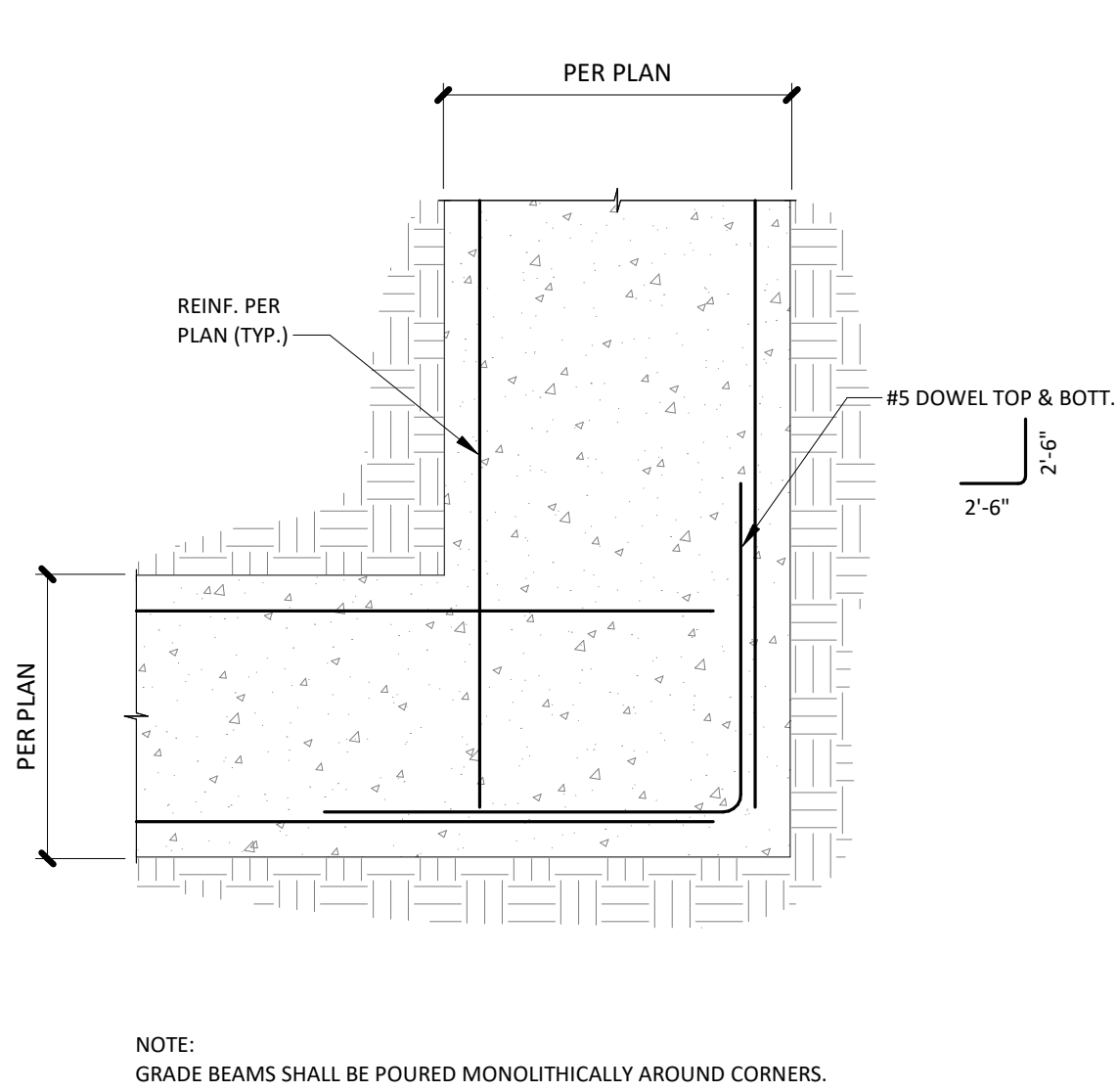
**So** PLEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 05/04/2021



TENSION LAP SPLICE LENGTHS (in) GRADE 60 UNCOATED BARS f'c=3000 psi					
BAR SIZE	LAP CLASS	TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	22	32	17	25
	B	28	42	22	32
#4	A	29	43	22	33
	B	37	56	29	43
#5	A	36	54	28	41
	B	47	70	36	54
#6	A	43	64	33	50
	B	56	84	43	64
#7	A	63	94	48	72
	B	81	122	63	94
#8	A	72	107	55	82
	B	93	139	72	107
#9	A	81	121	62	93
	B	105	157	81	121
#10	A	91	136	70	105
	B	118	177	91	136
#11	A	101	151	78	116
	B	131	196	101	151

NOTES:

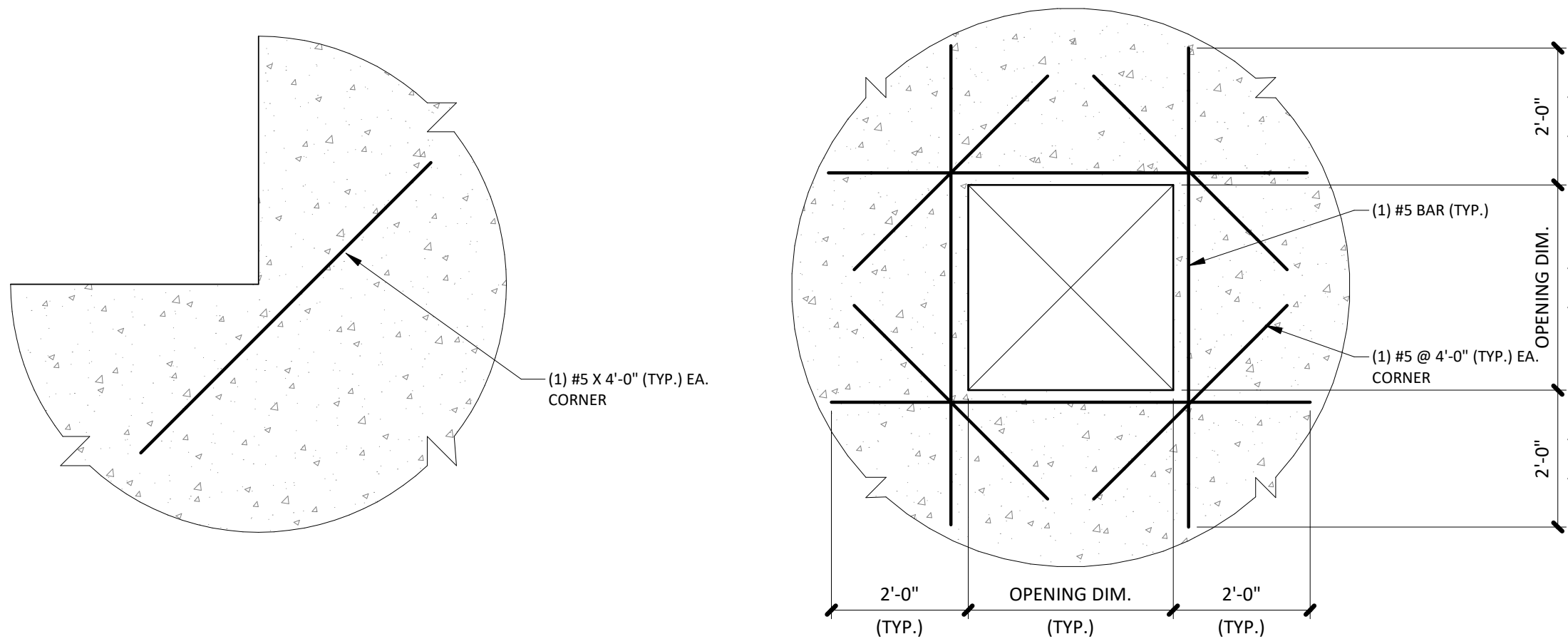
- TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
- TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPLICE LENGTHS ARE BASED ON ACI 318-02, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY.
- TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS. LENGTHS ARE IN INCHES.  
  
4. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED AS:  
  
BEAMS OR COLUMNS:  
CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (2) BAR DIAMETERS  
  
CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (2) BAR DIAMETERS  
  
ALL OTHERS:  
CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (3) BAR DIAMETERS  
  
CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (3) BAR DIAMETERS
- LAP CLASS A VALUES ARE THE REQUIRED TENSION DEVELOPMENT LENGTHS, l<sub>d</sub>; LAP SPLICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS A - 1.0l<sub>d</sub> AND CLASS B = 1.3l<sub>d</sub> (ACI 318-02, SECTION 12.15.1)
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.



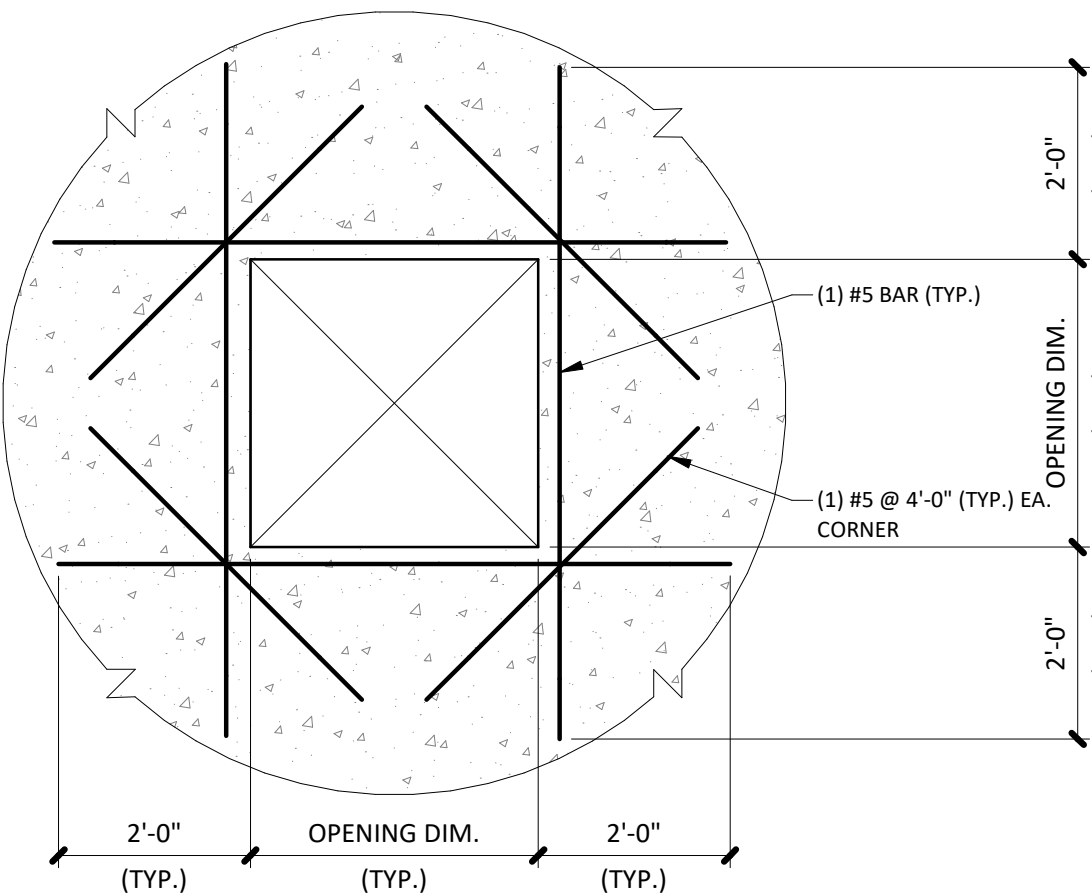
LAP SPLICE LENGTHS f'c=3000 psi | 01  
1/2" = 1'-0" | S4

TYP. GRADE BEAM DETAILS | 02  
3/4" = 1'-0" | S4

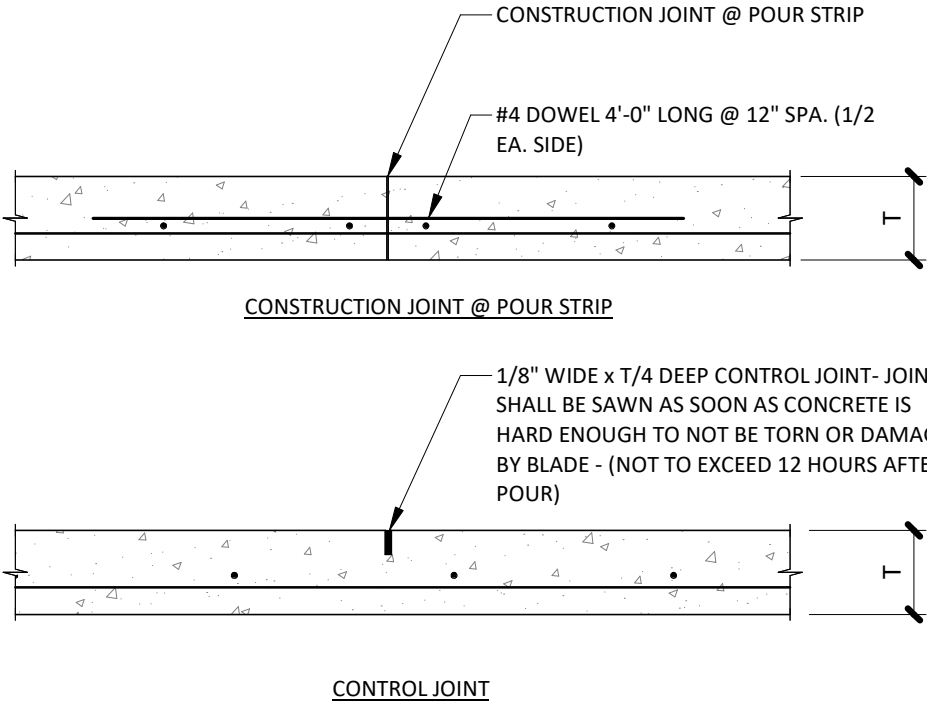
TYP. FOOTING STEP DETAIL | 03  
3/4" = 1'-0" | S4



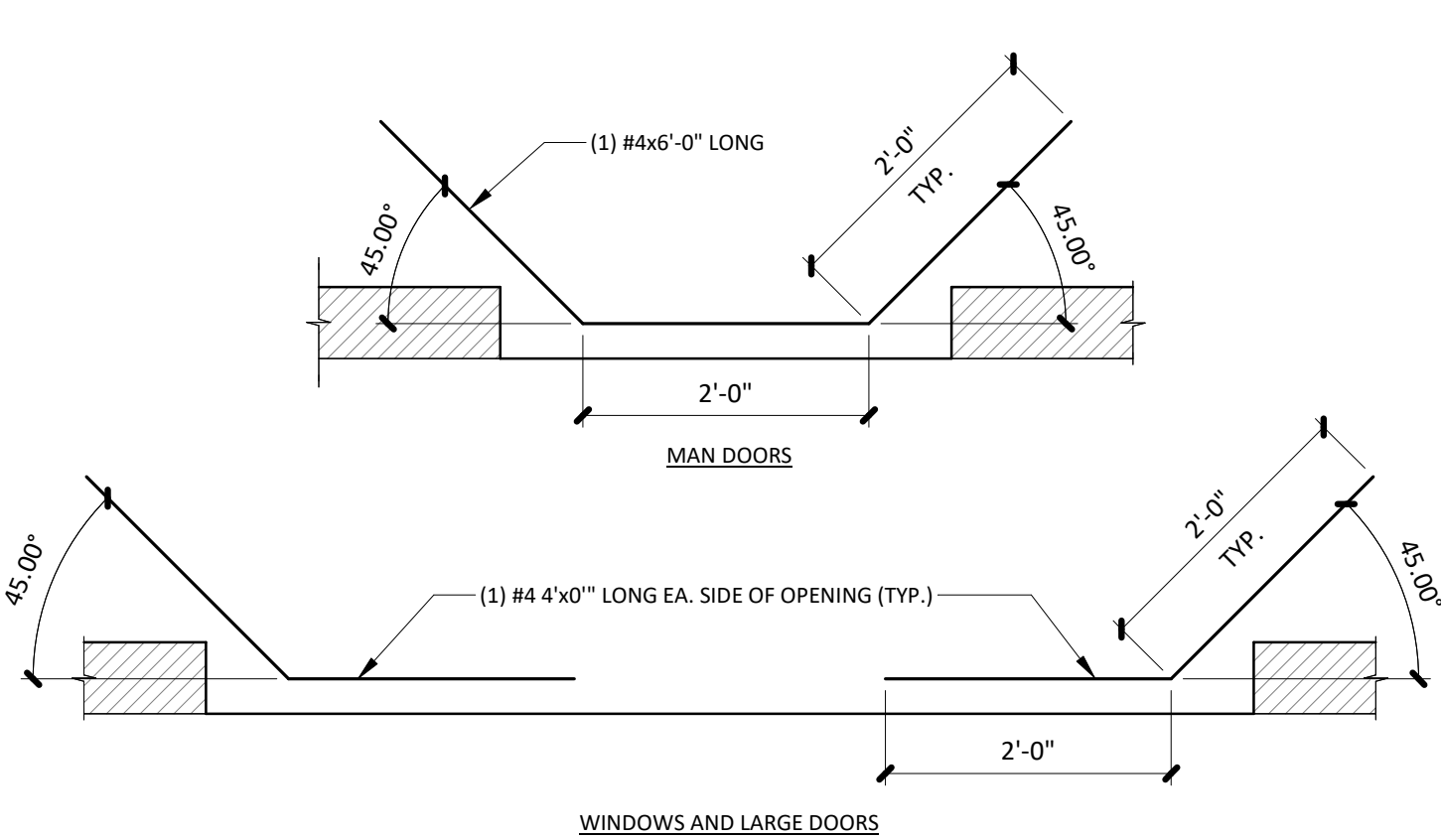
TYP. RE-ENTRANT CORNER REINF. DETAIL | 04  
3/4" = 1'-0" | S4



TYP. SLAB OPENING DETAIL | 05  
1/2" = 1'-0" | S4



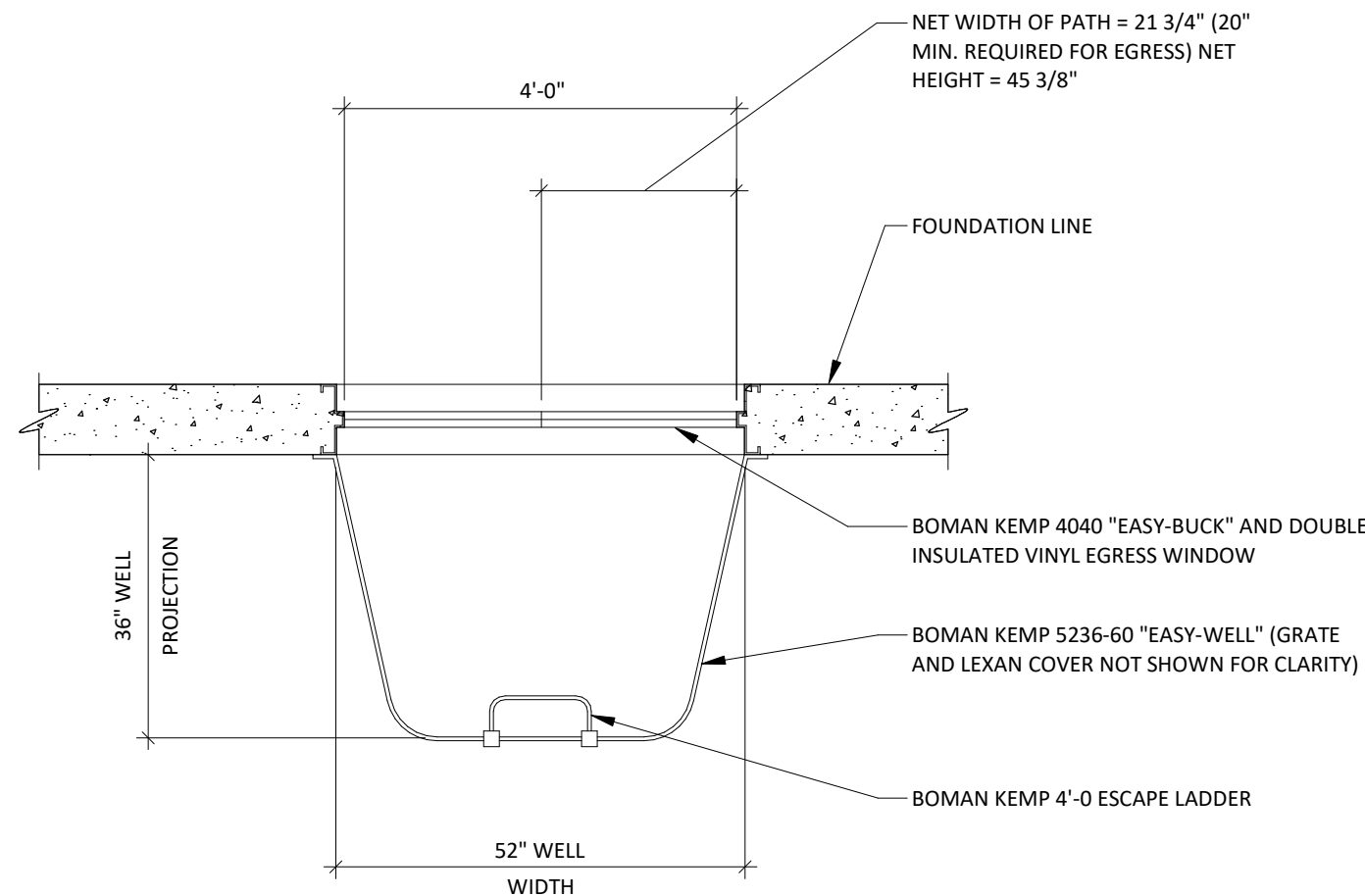
TYP. CONTROL & CONST. JOINT DETAIL | 06  
3/4" = 1'-0" | S4



TYP. SLAB REINF. @ DOOR DETAIL | 07  
3/4" = 1'-0" | S4

STANDARD HOOK TABLE	
BAR SIZE	HOOK
#4	8 in.
#5	10 in.
#6	12 in.
#7	14 in.
#8	16 in.

STANDARD 90° HOOK TABLE | 08  
12" = 1'-0" | S4



TYPICAL EGRESS WINDOW WELL DETAIL | 09  
1/2" = 1'-0" | S4

John Knox  
Village

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**S4**  
PLEASE FOR  
CONSTRUCTION  
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DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021







DIVISION 23 – MECHANICAL

Part I – General

- 1.1 Submittals: Contractor must submit shop drawings, product data (with capacities), and installation drawings for owners approval U.N.O.
- 1.2 Scope: The work included in this contract consists of the contractor providing all labor, materials, tools, transportation, services, etc. necessary to complete the installation of the heating, ventilating, and air condition system(s) and other items herein listed, as described in these specifications, or as directed by the owner. HVAC work is comprised of but not limited to the following principal items: air conditioning equipment (including condensing unit, evaporator coil, line set, etc.), heating equipment (furnace), humidification device (humidifier), system of supply and return ductwork, grilles, registers, including all necessary insulation, temperature control, bathroom exhaust fans, and any miscellaneous equipment/material necessary for the complete working installation of a residential heating and air conditioning system.
- 1.3 Intent: Work indicated in this portion of the drawings is shown to document the intent of the architect and/or where minimum standards shall be exceeded. These systems shall be designed, documented and submitted for building permit and constructed by the general contractor or his agent. This work must meet or exceed the applicable codes, ordinances and regulations, the International Mechanical Code, and meet with approval of the authority having jurisdiction.
- 1.4 Warranties: Submit a written warranty executed by the manufacturer agreeing to repair or replace furnaces that fail in materials or workmanship within ten (10) years of substantial completion.
- 1.5 Conflicts: The contractor shall coordinate with other trades to avoid conflicts with duct, piping, wiring, etc. to minimize construction time.
- 1.6 Criteria: The HVAC system shall:
- A. Be properly sized to provide correct airflow, and meet room–by–room calculated heating and cooling loads,
  - B. Be installed so that the static air pressure drop across the air handler (furnace) is within manufacturer and design specifications to have the capacity to meet calculated loads,
  - C. Have sealed supply ductwork that will provide proper airflow,
  - D. Be installed with a return system sized to provide proper correct return airflow,
  - E. Have sealed return ductwork that will provide proper airflow to the fan, and avoid air entering the HVAC system from polluted sources (e.g., fumes from autos and stored chemicals, attics, and crawlspaces),
  - F. Have balanced airflow between supply and return systems to maintain a neutral pressure in living areas,
  - G. Minimize duct air temperature gain/loss between the air handler (furnace) and room registers and between return grilles and the air handler (furnace) by insulation requirements listed in this specification,
  - H. Be properly charged with refrigerant,
  - I. Have proper burner operation and proper draft.

Part II – Execution

- 2.1 Loads and CFM Calculation:
- A. ACCA Manual "J" or Manual "N" Load Calculation, or one of the procedures listed in the 2001 ASHRAE Handbook of Fundamentals to be used.
  - B. Outdoor design temperatures to be based from the 2001 ASHRAE Handbook of Fundaments (Chapter 27) with the .4% values used for cooling and the 99.6% values used for heating.
  - C. Indoor design temperatures based on a 75 degree dry bulb temperature with a relative humidity of 50% to 60% for summer, and a 70 degree dry bulb temperature with a relative humidity of 30% for winter.
  - D. Calculate heat loss/gain for each room.
  - E. Determine summation of room–by–room loads plus ventilation requirements to acquire total system capacities.
  - F. Size duct system according to ACCA Manual D calculation procedures (or substantially equivalent).
  - G. Calculate correct CFM for reach room and total for building for both supply and return air.

2.2 Air Distribution System:

- A. Layout duct system on floor plan drawing accounting for the direction of joists, roof hips, firewalls, and other potential obstructions. Determine register and grille locations, duct lengths, and connections required to produce layout give construction constraints
- B. Duct paths to provide minimal length and turns in direction to provide optimal airflow.
- C. Flex duct paths must be planned to avoid sharp turns that may kink duct.
- D. Provide a copy of the duct layout drawing to owner for approval prior to installation. Review proposed duct, register and grille locations with JKV project coordinator.
- E. Registers and grilles to be sized and located to optimize air distribution and static pressure
- F. Seal all metal duct joints and seams with mastic or pressure sensitive tape approved for use by the duct manufacturer and meeting UL 181 specifications (approved tape), this includes around junctions or collars to distribution boxes, boots and plenums.
- G. All sealants to be used in strict accordance with manufacturer's installation instructions and within sealants moisture and temperature limitations.
- H. All tapes or mastics used to seal ducts should be applied to clean dry surfaces.
- I. Upon installation all floor registers shall be covered by contractor to protect from debris during construction.
- J. Flexible ducts shall be joined by a metal sleeve, collar, coupling, or coupling system. At least two inches of the beaded sleeve, collar, or coupling must extend into the inner core while allowing a one inch attachment area on the sleeve, collar, or coupling for the application of a worm drive hose clamp or U.V.–resistant nylon duct tie. The inner core shall be fastened to all fitting by use of draw–bands or nylon ties.
- K. Flexible duct suitable for attic installations only.
- L. All metal round pipes up to 12" in diameter shall be secured using 3 equally spaced #8 screws. All metal pipes with a diameter of 12" and above should have five equally spaced screws.
- M. All duct supports and hangers to meet requirements of the IMC.
- N. All duct systems to meet installation requirements set forth by the IMC (International Mechanical Code), and SMACNA (Sheet Metal Air Conditioning Contractors Association).
- O. Install all vents, and piping terminating outdoors to protect against birds and insects.
- P. All ducts in attics, crawlspaces, and unconditioned areas, shall be externally wrapped with an insulation type mentioned in this specification.

2.3 Equipment Installation:

- A. Install and connect gas–fired furnaces and associated fuel and vent features and systems according to the IMC, International Fuel Gas Code, all applicable codes and regulations, and manufacturers written installation instructions.
- B. Install split system air conditioning systems according to the manufacturer's installation instructions and all applicable codes.
- C. Evacuate refrigerant system to within 500 microns to ensure no non–condensable reside in the system.
- D. Provide level base for condensing unit.
- E. Secure all base mounted units to substrate.
- F. Provide and connect PVC condensate piping for all condensate drainage. Extend to nearest equipment drain or floor drain.
- G. Thermostats and humidistats to be mounted at a height of 48" AFF. Review location with JKV project coordinator.
- H. Seal all penetrations to the exterior of the structure with mastic or caulking.
- I. Provide for adequate access for the replacement of the furnace filter. Furnace filter to be located in return air drop – NOT in furnace.
- J. Contractor required to replace dirty filters during construction as directed by JKV project coordinator. Contractor required to clean all ductwork at completion to include new pleated filter at time of turnover.

Part III – Equipment and Materials

3.1 Equipment:

- A. The HVAC equipment shall consist of a natural gas fired furnace with electric split system condensing unit and evaporator coil.
- B. Minimum efficiencies shall be 92% AFUE for the natural gas fire furnace, and 16 S.E.E.R. for the condensing unit/evaporator coil combination.
- C. The condensing unit/evaporator coil system shall utilize R–410A (Puron) refrigerant.
- D. HVAC equipment shall be RUUD and shall be furnished by the HVAC contractor.
- E. From load calculations mentioned in this specification, and ACCA Manual "D" CFM, determine appropriate equipment sizes.
- F. At bid, provide owner with submittal data including model numbers and BTUH capacities.
- G. At completion of installation and after all system commissioning, provide owner with 1 set of operation and maintenance (O&M) manual per unit.
- H. Furnish and instal a bypass type humidifier by RUUD, April–Air, General, or approved equal.
- I. Furnish and install in every bathroom an exhaust fan by Broan or approved equal.

3.2 Materials:

- A. All materials shall have minimum performance temperature ratings per UL181 and have a flame spread rating of no more than 25 and a maximum smoke developed rating of 50 (ASTM E 84).
- B. All pressure sensitive tapes and mastics used in the manufacture of flexible ducts shall be UL181B (tape) or UL181 BM (mastic) listed.
- C. Sealants for exterior applications shall pass ASTM tests C731, C732 (artificial weathering test), and D2202.
- D. Draw bands used to attach flexible ducts to collars and sleeves shall be either stainless–steel worm–drive hose clamps or UV–resistant nylon duct ties. E. Draw–bands to have a minimum performance temperature rating of 165 degrees F. (continuous, per UL181A–type test) and a minimum tensile strength rating of 50 pounds and shall be tightened with an adjustable tensioning tool.
- E. Duct insulation shall be a minimum of 1" foil–backed flexible fiberglass blanket duct wrap meeting ASTM C 553 Types I, II, and III, and ASTM C 1290, and have a maximum service temperature of 250 degrees F.
- F. Duct insulation shall have a minimum "K" value (based on ASTM C177) of .29 @ 75 degrees F. The vapor–retarding jacket shall conform to ASTM C 1136 Type II.

Part IV – System Commissioning

- A. Ensure room–by–room airflows are correct and total supply.
- B. Each register airflow should be within 10% of Manual "D" design airflow and the entire supply for the system should be within 5% of Manual "D" design airflow.
- C. Total return air to equal total supply air.
- D. Ensure tightness in ducts, plenum, and air–handling equipment.
- E. Measure air–handler (furnace) airflow and static pressure across fan; ensure that total is within 5% of design and manufacturers specifications at a static pressure within 0.1" w.g. of design.
- F. Test static pressure drop across blower to ensure that it is within 0.1" w.g. of design and manufacturers specifications.
- G. After proper airflows are determined, check air conditioning charge and furnace operation.
- H. Charge air conditioning systems with fixed metering devices, use evaporator superheat method, and for systems with a thermostatic expansion valve, use sub–cooling method of charging.
- I. Set furnace manifold natural gas pressure to manufacturers specifications.
- J. Check furnace for correct flame at each burner chamber and check vent for proper draft.

DIVISION 26 – ELECTRICAL

Part I – General

- 1.1 Submittals: Contractor to provide shop drawings upon request, product data (with capacities), and installation drawings for owner's approval.
- 1.2 Scope: The work included in this contract consists of the contractor providing all labor, materials, tools, transportation, services, etc. necessary to complete the installation of the electrical system(s), and other items herein listed, as shown on the drawings, described in these specifications, or as directed by the owner. Electrical work is comprised of but not limited to the following principal items: electrical system power for service to include 1 meter with 3 disconnects, load–centers, panel–boards, etc. System of conductors, boxes, receptacles, switches and light fixtures. Telephone, CATV, data outlets and wiring. Fire alarm system with related components and doorbell system with related components.
- 1.3 Intent: Work indicated in this portion of the drawings is shown to document the intent of the architect and/or where minimum standards shall be exceeded. These systems shall be designed, documented and submitted for building permit and constructed by

the general contractor or his agent. This work must meet or exceed the applicable codes, ordinances and regulations, the National Electric Code, and meet with approval of the authority having jurisdiction.

- 1.4 Warranties: Submit written warranties executed by the manufacturers of all electrical products and devices installed agreeing to repair or replace the materials that fail in materials or workmanship within the period recognized by the manufacturer.

- 1.5 Conflicts: The contractor shall coordinate with other trades to avoid conflicts with wiring, box locations, piping, and ductwork etc. to minimize construction time.

Part II – Execution

2.1 General:

- A. Review actual box and device locations with JKV project coordinator prior to installation.
- B. Electrical panel will have (1) one and one half inch (1–1/2") conduit to the attic for future use.
- C. Each attic space shall have two (2) one and one half inch (1–1/2") conduit from attic to basement for future use. Location to be approved by owner.
- D. Use new materials only for construction.
- E. Exposed wiring and conductors is unacceptable. Conceal and protect all wiring and conductors.
- F. All 120–volt circuits to be a minimum of twenty (20)–amp circuits with exception of lighting, which may be fifteen (15)–amp.
- G. Where wire is installed in bored holes, they should be placed at the approximate center of the wood member so that the edge of the hole is no closer than 1 ¼ inches from the edge. If the wire is required to be closer than 1 ¼ inches to the edge, the cable must be protected by a steel plate. (Verify with Truss Joist Mfr. regarding allowable penetrations).
- H. All circuit breakers to be clearly labeled to identify purpose.

2.2 Receptacles:

- A. Receptacles must be no more than 12 feet apart and no more than 6 feet from a door or entry–way, plugs located behind a stationary appliance do not count when considering plug spacing.
- B. Any wall space, which is 2 feet or more in width, must have a receptacle.
- C. Every basement, crawspace, attic, and garage must have one receptacle that is GFCI protected.
- D. Every hallway ten (10) feet or more in length must have at least one receptacle
- E. There shall be at least one GFCI receptacle located outdoors near every exterior door at a height of eighteen (18) inches AFF.
- F. There shall be at least two (2) dedicated twenty (20)–amp circuits for kitchen counter top receptacles with not more than four openings per local ordinance.
- G. All kitchen counter top receptacles to be GFCI protected.
- H. All outlets must be pigtailed. No back "stabbed" wiring.
- I. Provide a dedicated twenty (20)–amp circuit for the garage receptacles. Reference electrical drawing for locations.
- J. Provide service outlet for the a/c condensing unit and furnace within 6 ft. of previous mentioned equipment.

2.3 Appliances:

- A. There shall be a dedicated twenty (20)–amp circuit for each of the following appliances: refrigerator, microwave, and dishwasher/disposal.
- B. All 240–volt appliances must be on their own dedicated circuit.
- C. Cooktops and oven units shall be four (4)–wire with a four (4)–wire plug as per the NEC and AHJ, or as specified by manufacturer's recommendations.
- D. There shall be a dedicated twenty (20)–amp circuit for a sump pump.

2.4 Lighting:

- A. Review proposed ceiling fan, lighting, and switch locations with JKV project coordinator.
- B. Center fixtures in middle of ceiling, soffit, or wall, as shown on the drawings or unless otherwise instructed by owner. Switches shall be "Decora" design and outlets shall be standard non–Decora design.
- C. Gang mount multiple switches as much as possible. Align adjacent devices, outlets, etc. at same elevations. Switches, controls etc. typically at 40" AFF, unless located above countertops.
- D. All switched ceiling boxes to be double switched.
- E. Switches to be pigtailed. No back "stabbed" wiring.
- F. There shall be a minimum of two (2) lights in attics and crawlspaces switched at the entrance and (6) lights in basements switched at the entrance.
- G. Every room, hallway, stairway, attached garage and outdoor entrance shall have at least one light fixture controlled by a wall switch.
- H. Hallways greater than four feet in length shall have three way switches at both points of entry controlling hall lighting.
- I. Every closet shall have a light fixture (LED) controlled by a wall switch.
- J. Exterior cans located by front entry and above overhead garage door shall be controlled by photo cell.
- K. All ceiling fans shall have a wall mounted fan speed selector switch and a separate switch for lighting. (Cut off exposed fan chains except on 3–season room)
- L. All bulbs to be LED (2700K) and manufacturers are restricted to GE, Phillips, Sylvania, and Cree U.N.O.

2.5 Telephone and Cable TV:

- A. There shall be one connection point inside garage (adjacent to fire alarm control panel) with one cable TV feed and one telephone feed from cable and telephone company.
- B. All internal telephone and cable TV "home runs" shall be brought to the central connection box.
- C. There shall be one and one half inch (1–1/2") PVC conduit to be installed to attic from the connection box (multimedia panel) for future use.
- D. Multimedia panel to be mounted at a height of forty–eight (48) inches to the bottom of panel from finish floor.
- E. Ground "multimedia" panel to the electrical system ground
- F. Provide one dedicated twenty (20)–amp, 120 volt circuit to a duplex receptacle for multimedia panel and fire alarm panel components power supply.

- G. Receptacle shall be mounted within twelve (12) inches of panel.
- H. Run single CAT–5 cable from telephone interface to multimedia panel. All interior telephone and cable home runs to terminate in multimedia panel with 30' of wire inside panel.
- I. There shall be at least two (2) combination telephone/CATV jacks in each bedroom, living room, and within two (2) feet of an electrical outlet.
- J. There shall be one (1) telephone/CATV jack in kitchen area.
- K. There shall be one (1) CATV "home run" to each bedroom, living room, dining room, and kitchen area. Secondary CATV jacks in same room to be looped to jack containing "home run".
- L. There shall be one (1) telephone "home run" to bedroom jacks and one to living room, dining room/kitchen jacks with the first two pairs linked to all jacks.

2.6 Fire Alarm/Security System:

- A. Install owner furnished "dial up" fire alarm/security system/notification devices.
- B. Contact JKV fire alarm service personnel for specific details pertaining to installation.
- C. Alarm components from dial–up alarm system to be mounted in multimedia panel.
- D. Smoke detectors shall be installed in every bedroom and in the hall outside of every bedroom.
- E. Every basement shall have a smoke detector.
- F. All sump pumps to be alarmed with water level sensor.
- G. Audio/visual devices (horn/strobes) shall be installed in every bedroom, hall adjacent to living room, and basement.
- H. Specify on product technical literature where the physical location of end–of–line resistors are located and address of panel and leave in multimedia panel with alarm system.

Part III – Equipment and Materials

3.1 Electrical Service:

- A. One meter per structure with individual disconnects, load centers, etc. per unit.
- B. Breaker panel shall be steel, enamel finish inside and out with continuous hinged cover as manufactured by General Electric, model #TM4020CCU with main breaker, 40 circuit spaces, and copper bus.
- C. Circuit breakers shall be sized as required for circuit; breakers shall be manufactured by General Electric for panel listed above.
- D. One meter with 3 disconnects load–centers, panel–boards, etc. per structure.

3.2 Wire, Boxes, and Devices:

- A. Outlet boxes, junction boxes, and device boxes unless otherwise noted can be nonmetallic as permitted by the NEC and the AHJ.
- B. For boxes mounted in exterior walls intended for outdoor use, and for boxes mounted in damp locations (basement) provide gasket covers.
- C. All ceiling mounted boxes shall be fan rated.
- D. Coordinate with JKV project coordinator on the color and type of cover plates. Wire shall have a minimum insulating rating of 600 volts, except wire used for 50 volts or less applications, which shall be 300 volt minimum insulation rating
- E. All conductors to be electrical grade annealed copper and fabricated in accordance with ASTM standards. Minimum size–#12 for branch circuits ad #14 for lighting circuits.
- F. All phone wiring to be CAT5 cable.
- G. All receptacles to be Leviton or approved equal.
- H. Multimedia panel to be Leviton, cat. no. 47605–28W, SAN 102 with a box dimension of 28"x 14 3/8"x 3 5/8".
- I. Phone punch down block to be manufactured by Leviton, cat. no. 47689–B.
- J. TV splitter(s) to be Leviton cat. No. 47690–8C.

3.3 Lighting:

- A. Provide light fixtures per specifications.
- B. All fixtures shall be LED (2700K).

Part IV – Commissioning

- A. Ensure all circuits are clearly labeled at each end
- B. Ensure all breakers are labeled
- C. Test all receptacles for proper voltage and polarity.
- D. Ensure all light fixtures work and are controlled properly via correct switching.
- E. Ensure all ceiling fans work and multi–speed switching is correct for fan speeds
- F. Test all Phone/TV jacks for continuity.
- G. Perform a test of the fire alarm system by testing each device.
- H. Ensure during fire alarm test that all audio–visual devices (horns/strobes) activate.

New Single Family Homes Located At

John Knox  
Village

Phase 7  
JKV SPECIFICATIONS

LEE'S SUMMIT, MISSOURI 64081

Project No:	20056
Date:	02.22.21
Issued For:	PERMIT

REVISIONS		
No.	Date	Description

REGISTRATION

Architect of Record

Engineer of Record





GENERAL NOTES - STRUCTURAL

Design Specifications: ACI 318-14, ASCE 15th Edition, ASCE 7-16

Governing Building Code: IBC 2018 & 2019 IRC- BUILDING

Design Loading:

Roof Dead Load = 10 psf (top chord)  
= 6 psf (bott. chord)

Roof Live Load (Snow) = 20 psf

\*Snow drift loading in accordance with governing building code

Floor Dead Load = 10 psf  
Floor Live Load = 40 psf

Seismic Loads:

Ss = 0.121  
S1 = 0.060

Wind Loads:

Velocity = 115 mph  
Exposure = B

General:

- The Contractor shall notify the Engineer of any observed discrepancies in dimensions, detailing, or other items as shown on the plans or specified prior to proceeding with work relating to said discrepancies.
- The Contractor shall not alter or modify work shown on the structural drawings without receiving written approval from the Engineer.
- The Contractor shall be responsible for supplying shop drawings for wood joists & trusses, structural steel, reinforcing steel, and concrete mix designs. Shop drawings must be reviewed for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of the Contractor, and shall be stamped "approved" by the Contractor prior to submittal. Shop drawings submitted without the Contractor's stamped approval will be returned rejected. All shop drawings shall be reviewed by the Structural Engineer prior to construction.

Slab On Grade:

- Refer to foundation plan for slab on grade requirements.

Foundations:

- Foundations for this project have been designed without a Geotechnical report. Continuous and individual foundations have been designed for an allowable bearing capacity of 2000 psf. coordinate with final Geotechnical instructions and report to Structural Engineer for final analysis.
- Anchor bolts shall conform to ASTM F1554 and shall be located by means of a template. Provide a nut above and below template to assure proper vertical alignment.
- All foundations shall be square and level.
- Grout below column base plates. Grout shall be dry and stiff to prevent shrinkage, with a minimum compressive strength of 4000 psi. Thoroughly compact grout beneath base plate.

Concrete and Reinforcing Steel:

- Concrete mix designs shall meet the following requirements:  
(Taken from ACI Manual of Concrete-1990, 211.1)

Location	Minimum Compressive Strength (psi)	Maximum Aggregate Size	Min. Lbs. Cement	Maximum Water/Cement Ratio	Slump (in.)	Air Entrainment Percent (%)
Foundations	3000	1"	517	.50	4 ± 1	6 ± 1
Interior Slab	4000	3/4"	564	.48	4 ± 1	0

- Fly ash shall not be used unless approved in writing by the Engineer. Fly ash, if approved, shall conform to ASTM C618 and shall not exceed 15% of the total cement volume.
- All concrete is reinforced unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas.
- Construction joints in grade beams shall be at midspan unless noted otherwise. Reinforcing steel shall be continuous through construction joints unless noted otherwise.
- No aluminum items shall be embedded in any concrete or placed in contact with concrete.
- Reinforcing bars #4 and larger (except ties and stirrups) shall meet ASTM A615 with Supplementary Requirements (S1), Grade 60. Smaller bars shall be Grade 40.
- Concrete coverage of reinforcement shall have the following clear distances unless noted otherwise on the drawings:

Cast against earth	3"
Formed concrete exposed to earth to weather	2"
Not exposed to earth or weather	1" Slabs, 1-1/2" Beams and columns
- Embedded and all reinforcing bars marked continuous shall be embedded to develop the full tensile capacity of the bar. Laps shall be Class B tension laps unless specified otherwise on the drawings. Unless shown otherwise, splice top bars near midspan and splice bottom bars over supports.
- Supply corner bars 4'-0" long (min. 2'-0" in each direction) in outside face of wall at corners of all walls and grade beams, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face of wall, supply three (3)-#4 vertical support bars for corner bars.
- All bars are to be supported in forms and spaced with wire bar supports per ACI "Manual of Standard Practice for Detailing Concrete Structures" (latest edition). Bars shall be securely wired per the latest edition of CRSI's "Recommended Practice for Placing Reinforcing Bars." Accessories for exposed concrete shall be plastic or shall have plastic-tipped feet.
- Concrete placed during **cold weather** shall conform to the requirements of ACI 306R-88. Cold weather is defined as a period when, for more than 3 successive days, the mean daily temperature drops below 40°F.
- Concrete placed during **hot weather** shall conform to the requirements of ACI 305R-91. Hot weather is defined as that combination of air temperature, concrete temperature, relative humidity and wind speed that will cause a rate of evaporation of 0.2 lb/sq.ft./hr. or more as defined by Figure 2.1.5 of ACI 305R-91.
- Do not add water to concrete during delivery, at Project Site, or during placement, unless approved by the Engineer.

Structural Steel:

- All structural steel shall conform to the following:

Structural Steel Wide Flanges	- ASTM A992
Miscellaneous Steel	- ASTM A36
Structural Tubing	- ASTM A500, Grade B (Fy = 46 ksi)
Steel Pipe	- ASTM A53, Type E or S, Grade B

- Connections not shown shall be designed by the fabricator. Non-composite beam connections shall develop 50% of the total uniform load capacity as given in the tables for "Allowable Loads on Beams," for given size, span and grade of the connected member, unless noted otherwise. Composite beam connections shall develop 75% of the uniform load capacity for the given size, span and grade of the connected member, unless noted otherwise. Bolts shall be as follows:

Connection Bolts	- ASTM A325
Anchor Bolts	- ASTM A307 or ASTM A325
Shear Stud Connectors	- ASTM A108, Grade 1015 through 1020

- Welding shall conform to the latest publication of applicable codes set forth by the American Welding Society. Welding electrodes shall be E70XX.
- All steel stairs shall be designed by the steel stair manufacturer in compliance with the governing building code to meet 100 psf design live load.

Rough Carpentry:

- All roof, floor and wall sheathing shall be APA rated, with exterior glue. Roof sheathing shall have a panel identification index of 24/16. Floor sheathing shall have an identification index of 48/24.

- Plywood sheathing shall be attached to framing members as described below:

Location	Plywood Thickness	Tongue and Groove?	Nail Size	Nail Type	Min. Penetration Support	Nail Spacing @ Panel Edges	Nail Spacing @ Inter. Support	Nail Spacing @ Diaph. Bound.	Blocked?
Roof	7/16"	Y	8d	--	1 1/2"	6"	12"	6"	N
Floors	3/4"	Y	10d	--	1 1/2"	6"	12"	6"	N
Walls	7/16"	N	8d	--	1 1/2"	6"	6"	--	N

Dwelling unit separation walls shall be sheathed with 2 layers of 5/8" type X gypsum board ea. side per arch. drawings. Fasters shall be 6d minimum cooler nails @ 4" spacing typical at interior and exterior edges of each sheet.

- All dimension lumber used in load-bearing walls, floor and ceiling joists, roof rafters, exterior lintels, interior lintels, all bearing and jamb studs, columns and beams, shall have the following minimum design values:

Fb	=875 psi
Fv	=95 psi
Fc (perp)	=625 psi
Fc	=1,300 psi
E	=1,600,000 psi

These values are based on allowable stresses provided in the NDS (2005) and do not include adjustment Factors.

The following species and commercial grades conform to the above minimum design values:

Douglas Fir - Larch	- No. 2
Southern pine	- No. 2, or approved equal
Spruce-Pine-Fir	- No. 2, or approved equal

- All dimension lumber used for non-load bearing walls shall have the following minimum design values:

Fb	=675 psi
Fv	= 70 psi
Fc (perp)	=425 psi
Fc	=675 psi
E	=1,200,000 psi

These values are based on allowable stresses provided in the NDS (2005) and do not include adjustment factors.

- Treated lumber shall be used in all locations where lumber is exposed to weather, moisture, or is in contact with concrete.

Prefabricated Wood Trusses:

- Roof trusses- if used shall be factory-manufactured wood trusses using steel connector plates. Trusses shall be designed for the loads shown on the construction drawings. Truss manufacturers shall provide design calculations, shop drawings and erection drawings for review by the Engineer prior to construction. Contractor shall install all blocking, load transfer assemblies, hangers, accessories, etc. as recommended by the truss manufacturer, the Truss Plate Institute, or these construction drawings.
- Floor joists shall be factory-manufactured solid web joists. Joist manufacturers shall provide design calculations, shop drawings and erection drawings for review by the Engineer prior to construction. Joist designations are indicated on the floor framing plan. Contractor shall install all blocking, load transfer assemblies, hangers, accessories, etc. as recommended by the joist manufacturer.
- Roof trusses- if used- shall be designed by a Professional Engineer. All calculations and shop drawings shall bear the seal of a Professional Engineer registered in the state in which the trusses are to be used. Floor joist shop drawings shall be submitted for review and approval by the Engineer/Architect.

ABBREVIATIONS LIST

&	AND
@	AT
°	DEGREES
=	EQUALS
'	FEET
>	GREATER THAN
>=	GREATER THAN OR EQUAL TO
"	INCHES
<	LESS THAN
<=	LESS THAN OR EQUAL TO
-	MINUS, NEGATIVE
+	PLUS
±	PLUS OR MINUS
A.F.F.	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
ARCH.	ARCHITECT
BLDG.	BUILDING
BM.	BEAM
B.O.S.	BOTTOM OF STEEL
BOT.	BOTTOM
C.I.	CONTROL/CONSTRUCTION JOINT
C.L.	CENTER LINE
C.M.U.	CONCRETE MASONRY UNIT
CLG.	CEILING
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
COORD.	COORDINATE
CTR.	CENTER
DIA.	DIAMETER
DN.	DOWN
DWG.	DRAWING
E.J.	EXPANSION JOINT
E.O.R.	ENGINEER OF RECORD
EA.	EACH
EL.	ELEVATION
ELEV.	ELEVATION
ENG.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
ETC.	ET CETERA
EXIST.	EXISTING
EXT.	EXTERIOR
F.A.	FACE
F.B.E.	FOOTING BEARING ELEVATION
F.F.E.	FINISHED FLOOR ELEVATION
F.S.	FAR SIDE
FT.	FOOT/FEET
FTG.	FOOTING/FOUNDATION
G.C.	GENERAL CONTRACTOR
GALV.	GALVANIZED
GYP.	GYPSUM
HORIZ.	HORIZONTAL
IN	INCHES
J.B.E.	JOIST BEARING ELEVATION
JT.	JOINT
L.F.	LINEAR FEET
LB.	POUND
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
M.B.M.	METAL BUILDING MANUFACTURER
M.E.P.	MECHANICAL ELECTRICAL PLUMBING
MAX.	MAXIMUM
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.A.	NOT APPLICABLE
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
Ø	DIAMETER
P.E.M.B.	PRE-ENGINEERED METAL BUILDING
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REQ.	REQUIRED
SF	SQUARE FEET
SIM.	SIMILAR
SPA.	SPACING
SPEC.	SPECIFICATION
SQ.	SQUARE
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
THRU.	THROUGH
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W.W.F.	WELDED WIRE FABRIC
WT.	WEIGHT
W/	WITH
W/O	WITHOUT

SHEET LIST

Sheet Number	Sheet Name
S0	GENERAL NOTES
S1.1	FOUNDATION PLAN - UNIT 2
S1.2	FOUNDATION PLAN - FULL BUILDING
S2.1	ROOF FRAMING PLAN - UNIT 2
S2.2	ROOF FRAMING PLAN - FULL BUILDING
S3	FOUNDATION DETAILS
S4	TYPICAL FOUNDATION DETAILS

MATERIALS LEGEND

ALUMINIUM	
CONCRETE	
EARTH	
GRAVEL	
GROUT	
GYPSUM	
INSULATION - RIGID	
MASONRY - BRICK	
MASONRY - CMU	
PLYWOOD	
STEEL	
TILT / PRE-CAST	

SYMBOLS LEGEND

	<b>DETAIL</b> DRAWING NUMBER SHEET NUMBER AREA OF DETAIL
	<b>ELEVATION</b> DRAWING NUMBER SHEET NUMBER
	<b>SECTION</b> DRAWING NUMBER SHEET NUMBER
	<b>BEAM DESIGNATION</b> CAMBER OF BEAM IN INCHES BEAM TYPE & SIZE
	<b>COLUMN DESIGNATION</b> COLUMN SIZE COLUMN TYPE
	<b>FOOTING DESIGNATION</b> FOOTING MARK BEARING ELEVATION
	<b>PIER DESIGNATION</b> FOOTING MARK TOP OF PIER ELEVATION
	<b>COLUMN GRID</b> GRID DESIGNATION
	<b>MOMENT CONNECTION</b>
	<b>NORTH ARROW</b>
	<b>REVISION DESIGNATION</b>
	<b>JOIST BEARING ELEVATION</b>
	<b>SLAB THICKNESS TRANSITION</b>

John Knox  
Village

Duplex Unit

626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS

No.	Date	Description
1	3.29.21	CITY COMMENTS

REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



1132 WEST 79th STREET  
Lenexa, Kansas 66214  
Phone 913.492.7400  
www.BSEstructural.com  
Project Number 21-024

SHEET NUMBER

So  
PLEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



John Knox  
Village

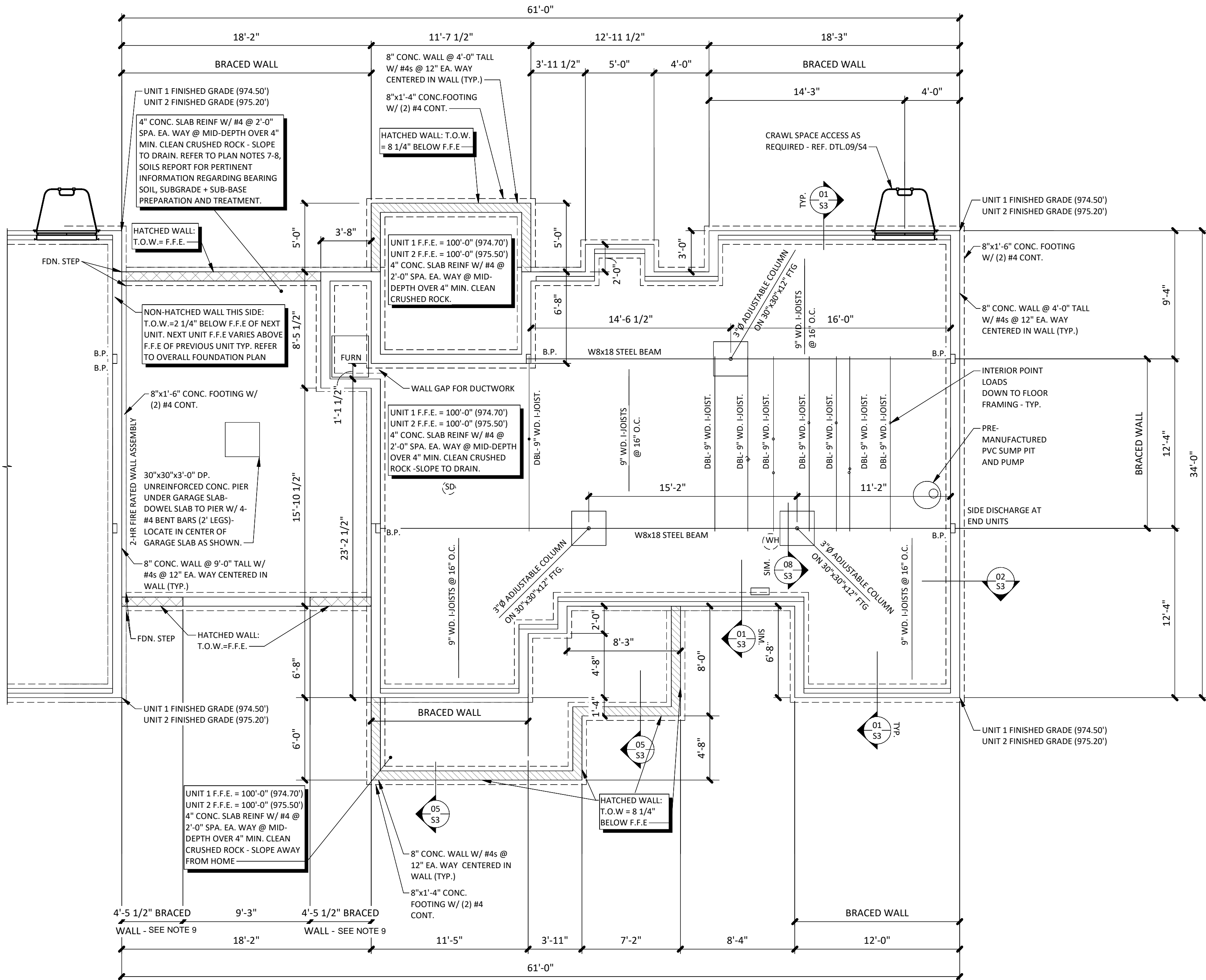
Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS		
No.	Date	Description
1	3.29.21	CITY COMMENTS



PROJECT TEAM	
ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



FOUNDATION PLAN - UNIT 2 | 01  
3/16" = 1'-0" | S1.1

- NOTES:
1. Refer to Arch drawings for all opening locations and sizes.
  2. F.B.E. - Denotes Footing Bearing Elevation
  3. C.J. - Denotes control joint or construction joint. Refer to sheet S4 for typical details.
  4. See sheet S0 for General Notes.
  5. Locate man doors per Arch drawings.
  6. Refer to Arch drawings for all interior wall locations and dimensions.
  7. Footings should bear on approved engineered fill or stiff native clay soils. If uncontrolled fill materials or soft native clay soils are encountered in foundation excavations, the unsuitable materials should be overexcavated. Foundations could bear directly on suitable materials at the lower level or on lean concrete backfill extended down to approved bearing materials. Lean concrete backfill should have a minimum 28-day compressive strength of 1,500 psi.
  8. As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, state, and federal safety regulations. Construction site safety is the sole responsibility of the contractor who shall also be solely responsible for the means, methods, and sequencing of the construction operations.
  9. Locations defined as "Braced Walls" on plan shall be sheathed with 7/16" OSB exterior sheathing per details sheet S4 and general notes. Boundary conditions of these walls shall be double stud w/ Simpson, or equal, HDU2-sds2.5 Hold-Down Device installed per mfr. rec. - typ.

**BSE** STRUCTURAL  
ENGINEERS  
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www.BSEstructural.com  
Project Number 21-024

SHEET NUMBER

**S1.1**  
RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
06/04/2021



John Knox  
Village

Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS		
No.	Date	Description
1	3.29.21	CITY COMMENTS

REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS

FOUNDATION PLAN -FULL BUILDING | 01

3/16" = 1'-0" S1.2

NOTES:

- Refer to Arch drawings for all opening locations and sizes.
- F.B.E. - Denotes Footing Bearing Elevation
- C.J. - Denotes control joint or construction joint. Refer to sheet S4 for typical details.
- See sheet S0 for General Notes.
- Locate man doors per Arch drawings.
- Refer to Arch drawings for all interior wall locations and dimensions.
- Footings should bear on approved engineered fill or stiff native clay soils. If uncontrolled fill materials or soft native clay soils are encountered in foundation excavations, the unsuitable materials should be overexcavated. Foundations could bear directly on suitable materials at the lower level or on lean concrete backfill extended down to approved bearing materials. Lean concrete backfill should have a minimum 28-day compressive strength of 1,500 psi.
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- Locations defined as "Braced Walls" on plan shall be sheathed with 7/16" OSB exterior sheathing per details sheet S4 and general notes. Boundary conditions of these walls shall be double stud w/ Simpson, or equal, HDU2-sds2.5 Hold-Down Device installed per mfr. rec. -typ.

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SHEET NUMBER

S1.2

RELEASE FOR  
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LEE'S SUMMIT, MISSOURI  
06/04/2021



John Knox  
Village

Duplex Unit  
626-628 WILLOW  
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Project No.: 20056  
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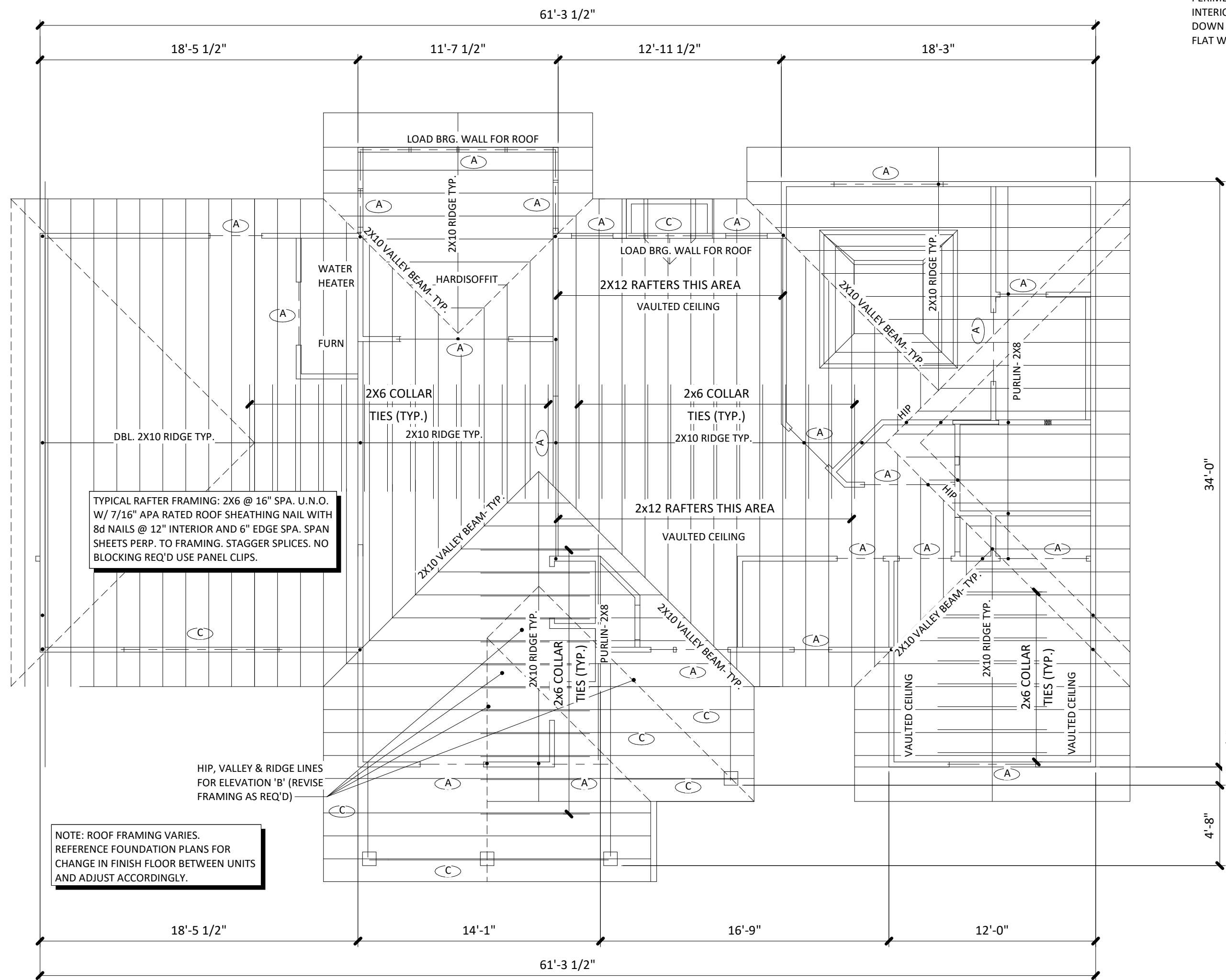
REVISIONS		
No.	Date	Description
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REGISTRATION

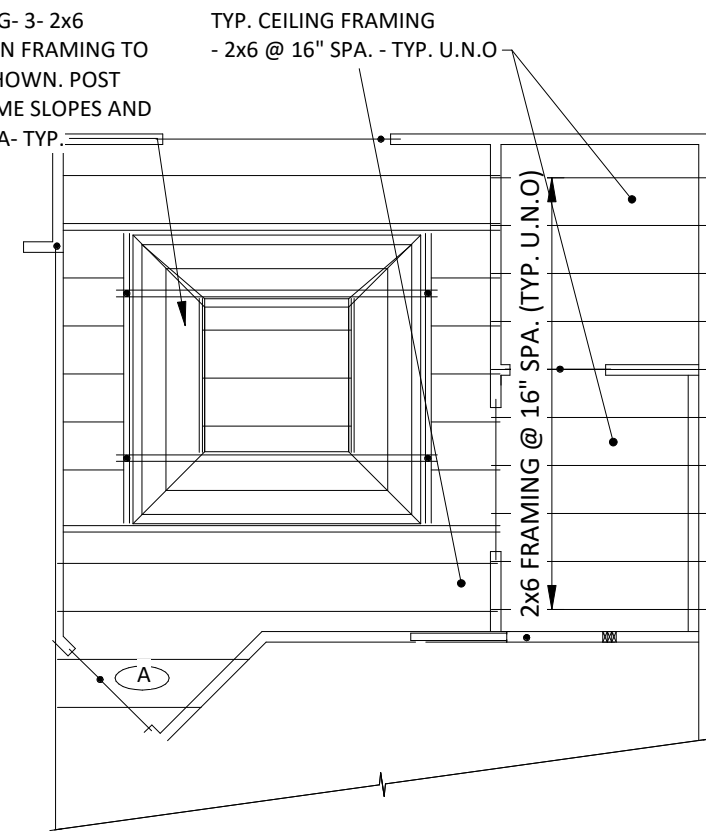


PROJECT TEAM

ARCHITECT	FINKLE+WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



TRAY CEILING FRAMING- 3- 2x6  
PERIMETER. SPAN MAIN FRAMING TO  
INTERIOR WALLS AS SHOWN. POST  
DOWN AS REQ'D. FRAME SLOPES AND  
FLAT W/ 2x6 @ 16" SPA- TYP.



PARTIAL CEILING FRAMING PLAN - BEDROOM  
TYP. CEILING FRAMING SHALL BE 2x6 @ 16" SPA.  
UNLESS NOTED OTHERWISE

- NOTES:  
REFER TO ARCHITECTURAL FLOOR PLANS FOR DIMENSIONS.
- ALL FRAMING USED SHALL BE SPF- #2 OR BETTER.
- USE PRESSURE TREATED MATERIAL WHERE FRAMING COMES IN CONTACT WITH CONCRETE OR STONE FOUNDATIONS.
- REFER TO S0 GENERAL NOTES FOR FLOOR DECK INFO.
- REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE AND LOCATIONS FOR ALL WALL OPENINGS. ALL HEADERS TO BE TYPE A U.N.O.

- A** = (2) 2x10 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 2 KING AND 2 CRIPPLES EA. END TYP.
- B** = (2) 2x6 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 1 KING AND 1 CRIPPLE EA. END TYP.
- C** = (2) 1 3/4" x11 1/4" LVL BEAM. PROVIDE 3 STUD SUPPORT @ ENDS.
- = (2) 2x4 POST DOWN LOCATION FROM ROOF FRAMING ABOVE -REFER TO PLAN FOR LOCA - TYP.

LATERAL BUILDING BRACING- PER SECTION 602.10 2018 IRC- BUILDING  
SHALL BE BRACED WITH INTERIOR AND EXTERIOR SHEAR WALLS AS FOLLOWS:  
EXTERIOR SHEAR WALLS. REFER TO S0.0 GENERAL NOTES, AND S1.1, S1.2  
PLAN NOTES FOR "BRACED WALL" DESCRIPTION. REFER TO PLANS FOR  
"BRACED WALL" LOCATIONS AND DIMENSIONAL LIMITATIONS.



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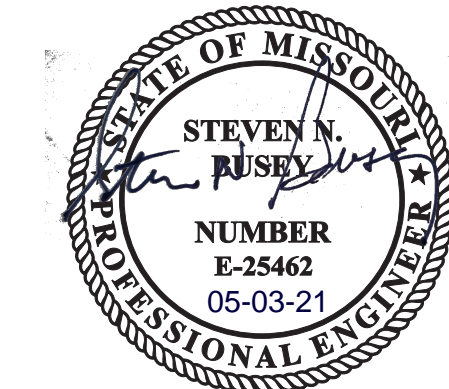
John Knox  
Village

Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
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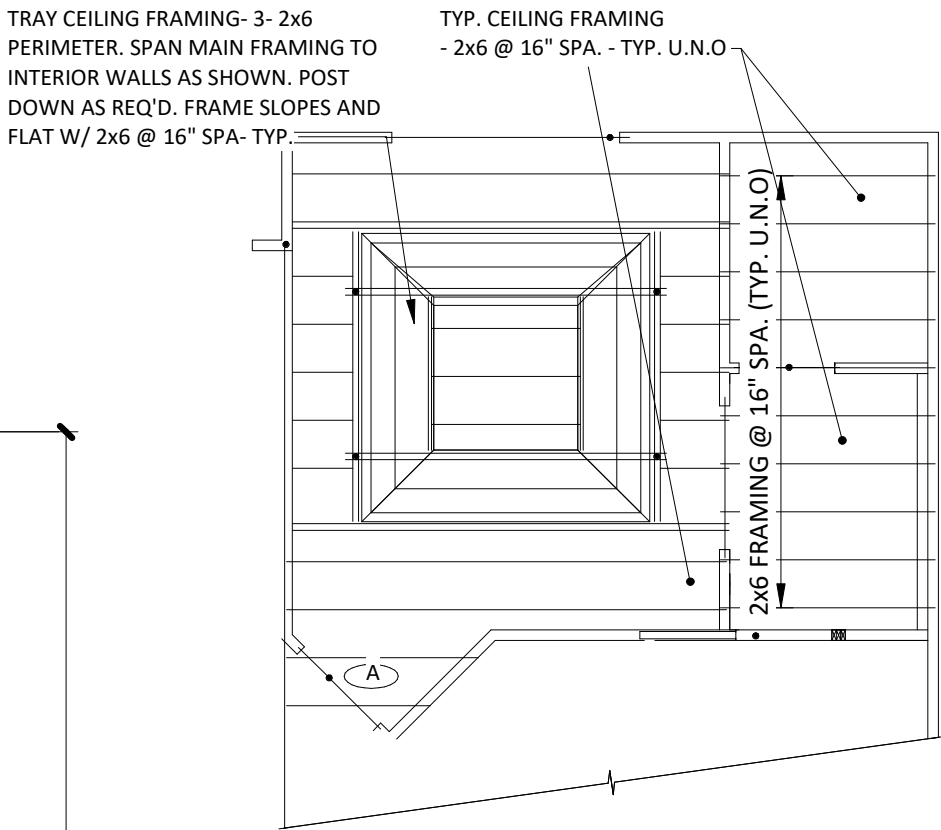
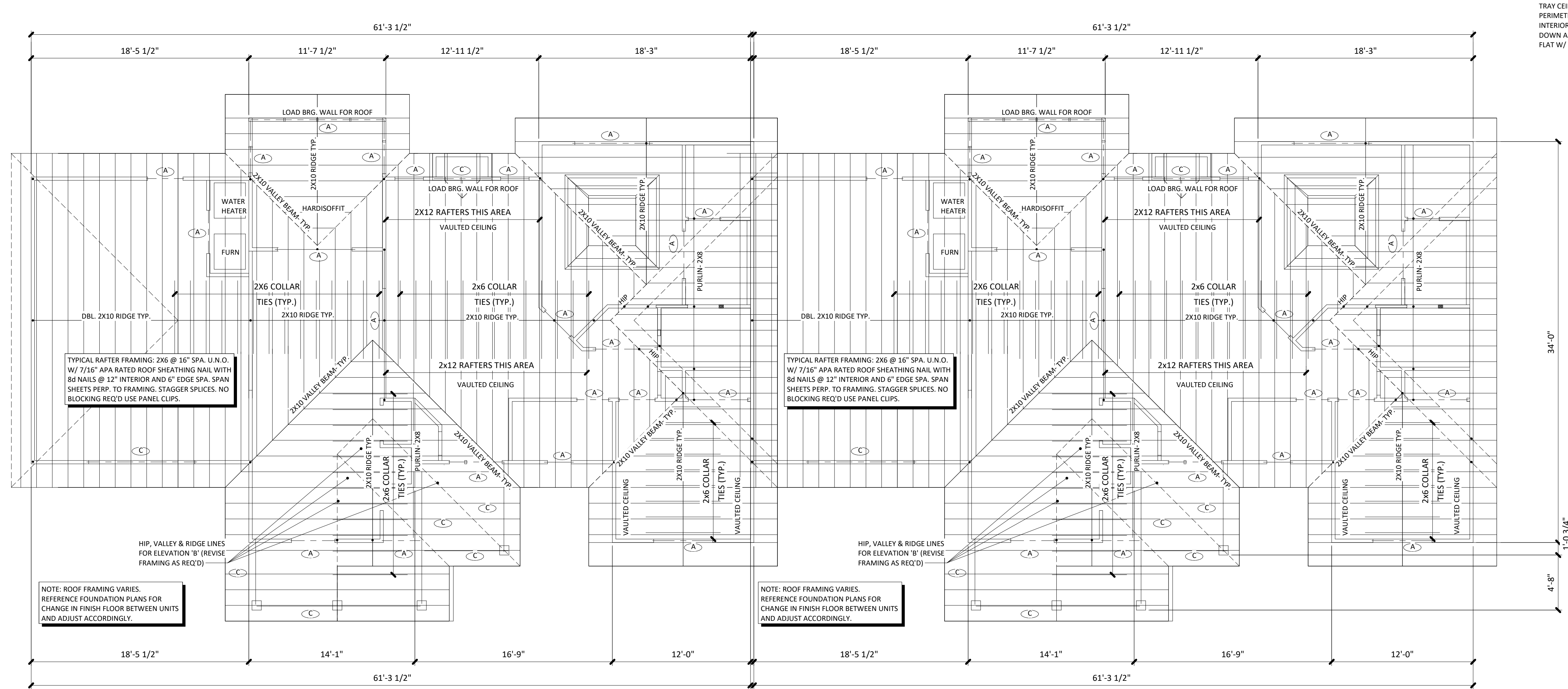
REVISIONS		
No.	Date	Description
1	3.29.21	CITY COMMENTS

REGISTRATION



PROJECT TEAM

ARCHITECT	FINKLE-WILLIAMS ARCHITECTURE
CIVIL	BHC RHODES
STRUCTURAL	BSE STRUCTURAL ENGINEERS



PARTIAL CEILING FRAMING PLAN - BEDROOM  
TYP. CEILING FRAMING SHALL BE 2x6 @ 16" SPA.  
UNLESS NOTED OTHERWISE

NOTES:  
REFER TO ARCHITECTURAL FLOOR PLANS FOR DIMENSIONS.

ALL FRAMING USED SHALL BE SPF- #2 OR BETTER.

USE PRESSURE TREATED MATERIAL WHERE FRAMING COMES IN CONTACT WITH CONCRETE OR STONE FOUNDATIONS.

REFER TO SD GENERAL NOTES FOR FLOOR DECK INFO.

REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE AND LOCATIONS FOR ALL WALL OPENINGS. ALL HEADERS TO BE TYPE A U.N.O.

- (A) = (2) 2x10 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 2 KING AND 2 CRIPPLES EA. END TYP.
- (B) = (2) 2x6 LINTEL WITH 1/2" PLYWOOD PLATE. PROVIDE 1 KING AND 1 CRIPPLE EA. END TYP.
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LATERAL BUILDING BRACING- PER SECTION 602.10 2018 IRC- BUILDING SHALL BE BRACED WITH INTERIOR AND EXTERIOR SHEAR WALLS AS FOLLOWS:  
EXTERIOR SHEAR WALLS. REFER TO SD.0 GENERAL NOTES, AND S1.1, S1.2 PLAN NOTES FOR "BRACED WALL" DESCRIPTION. REFER TO PLANS FOR "BRACED WALL" LOCATIONS AND DIMENSIONAL LIMITATIONS.

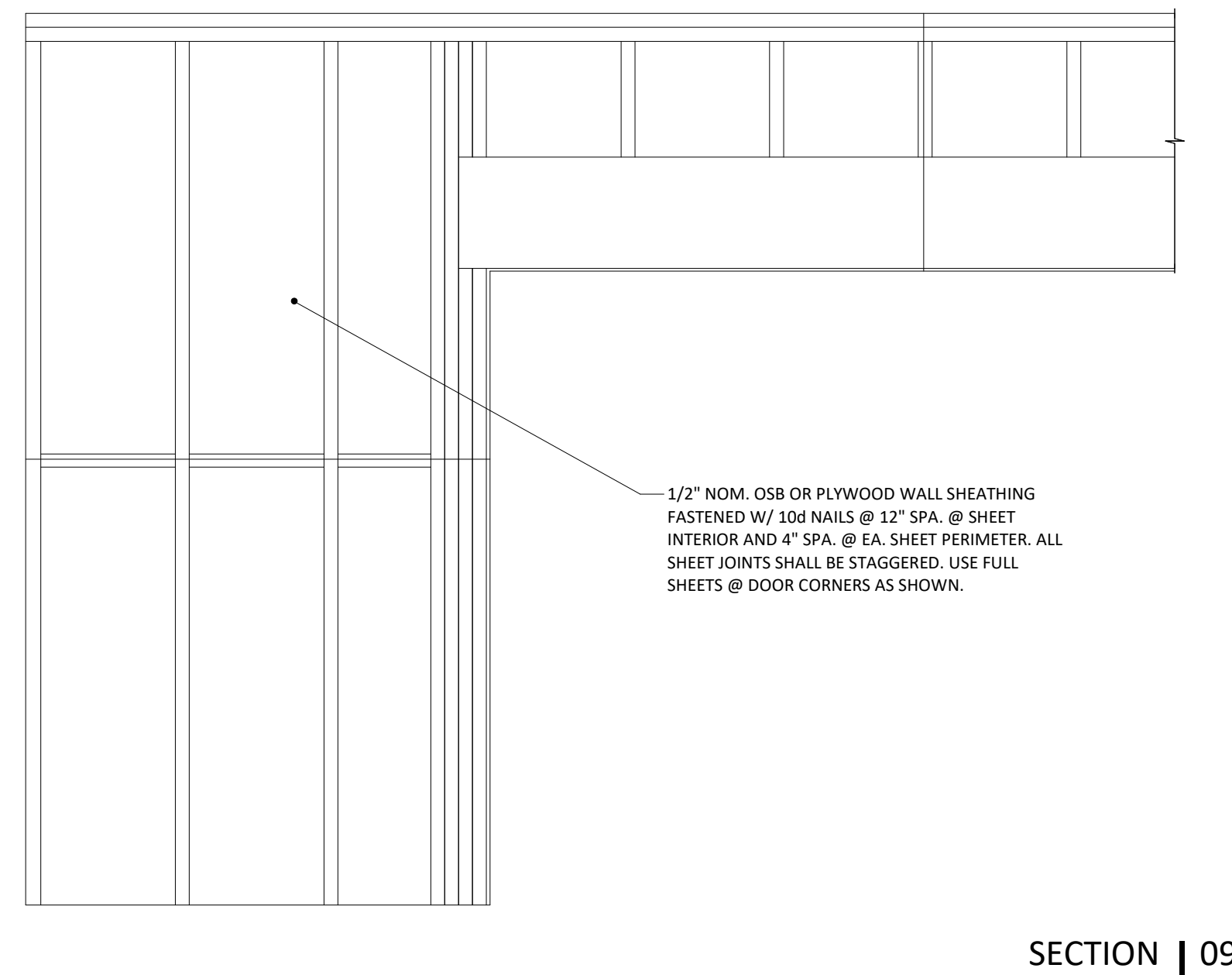
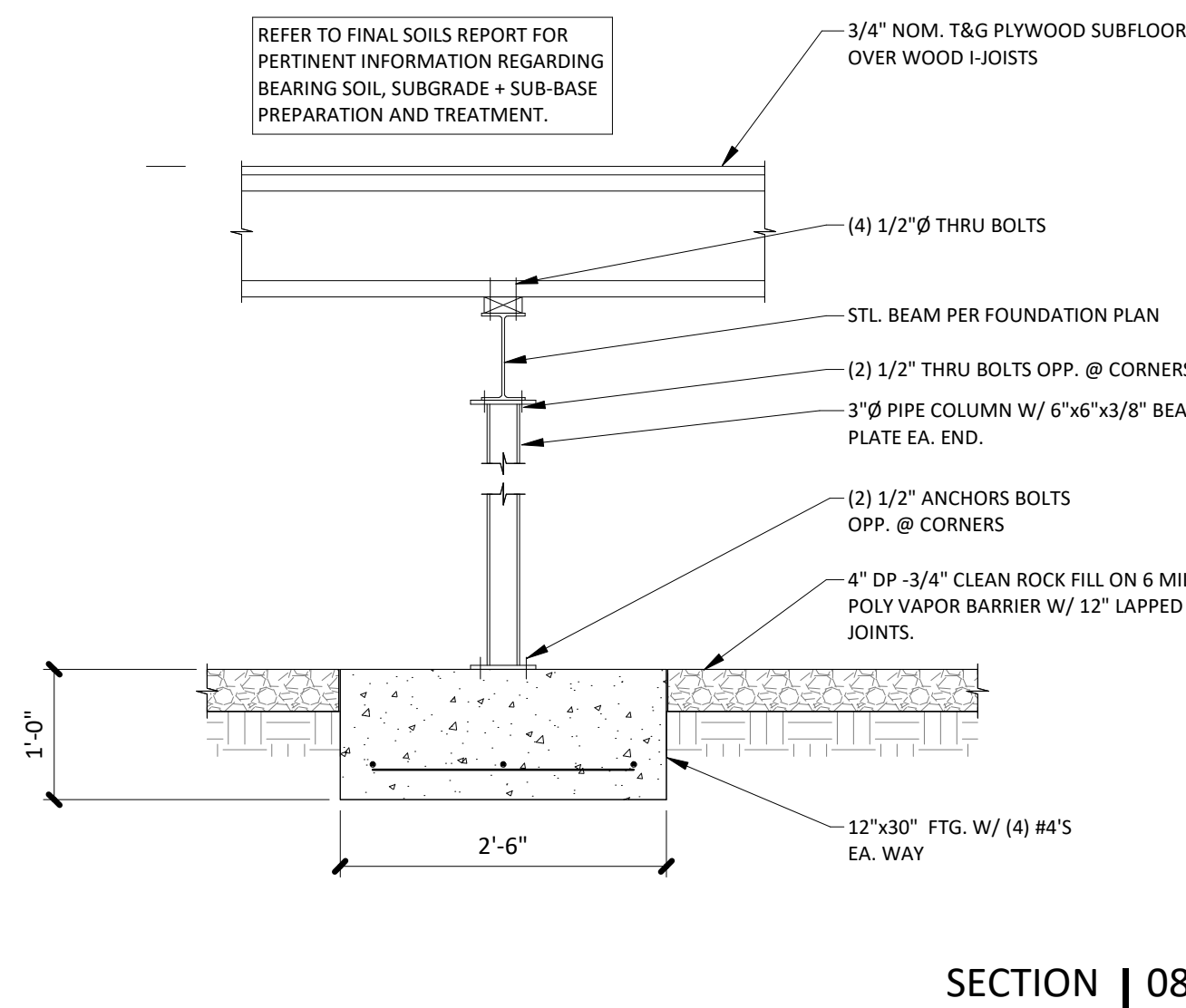
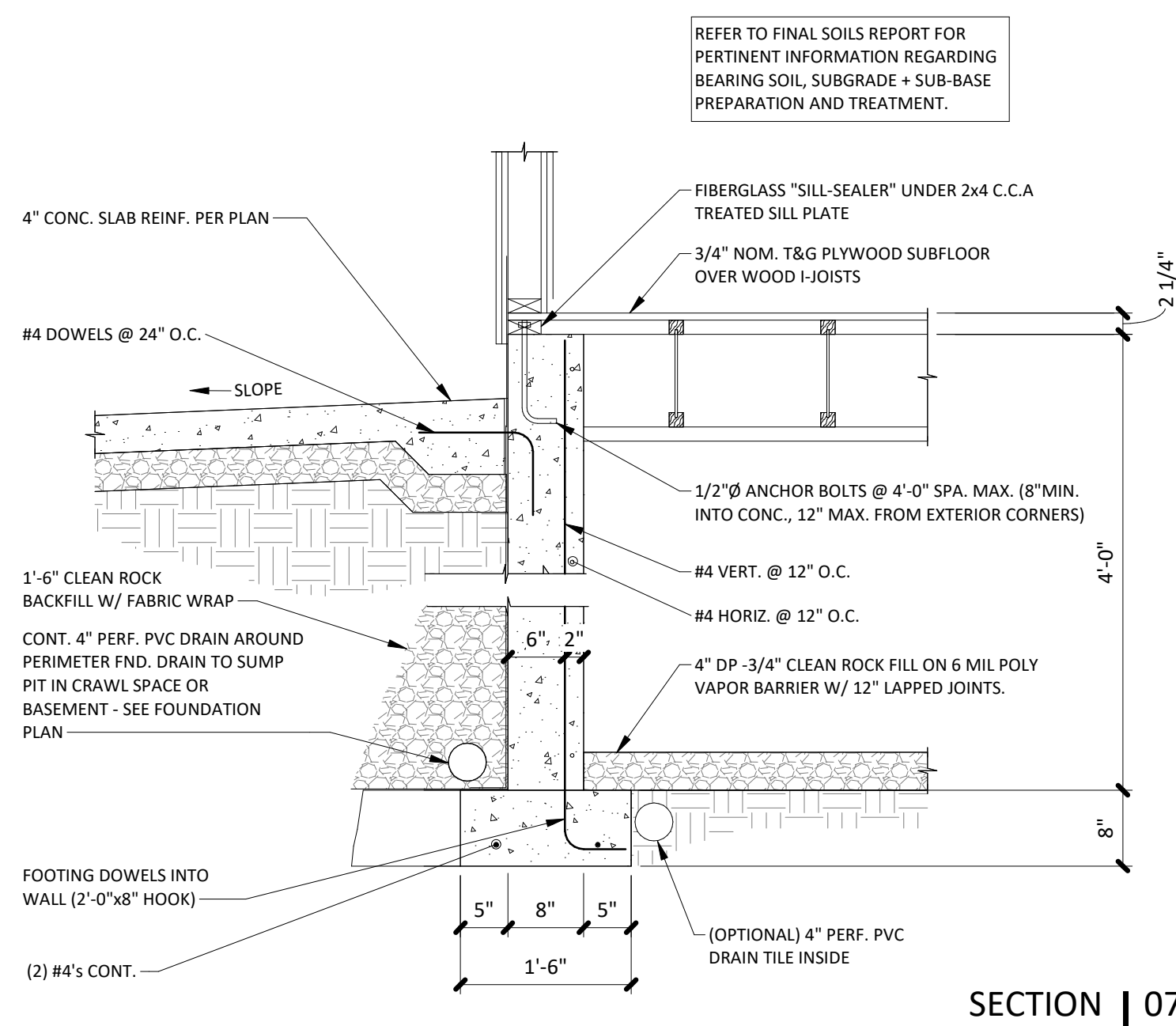
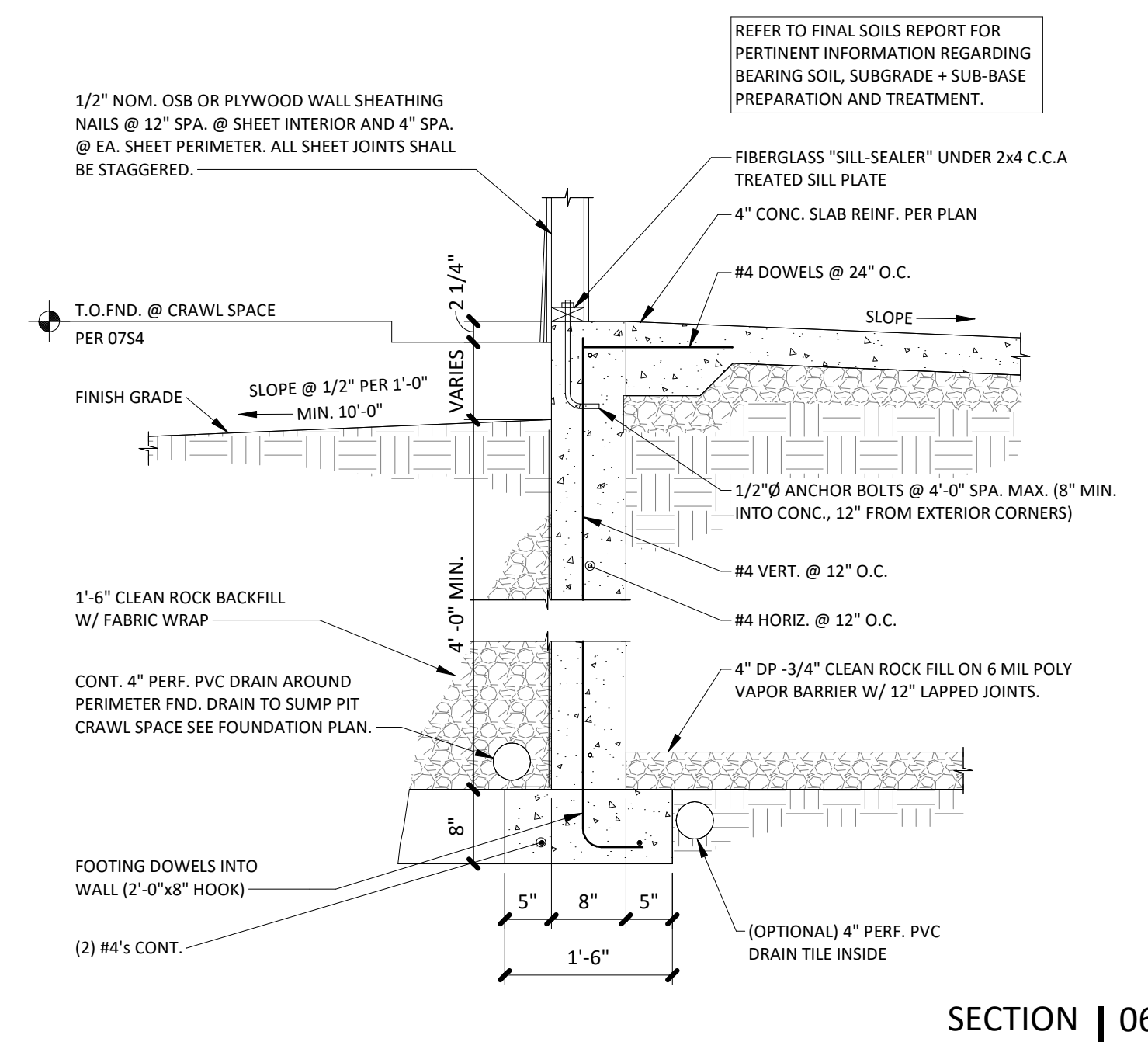
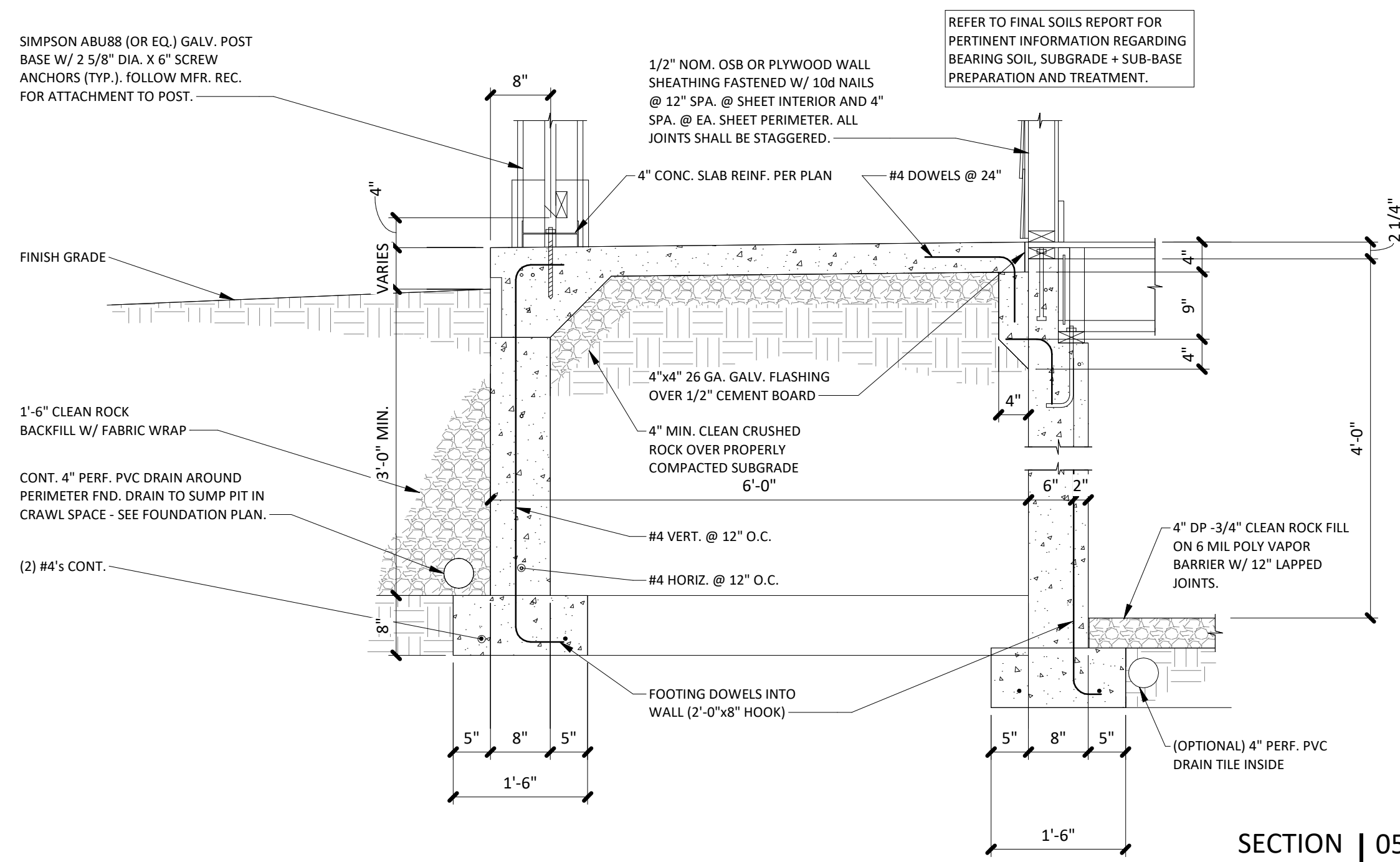
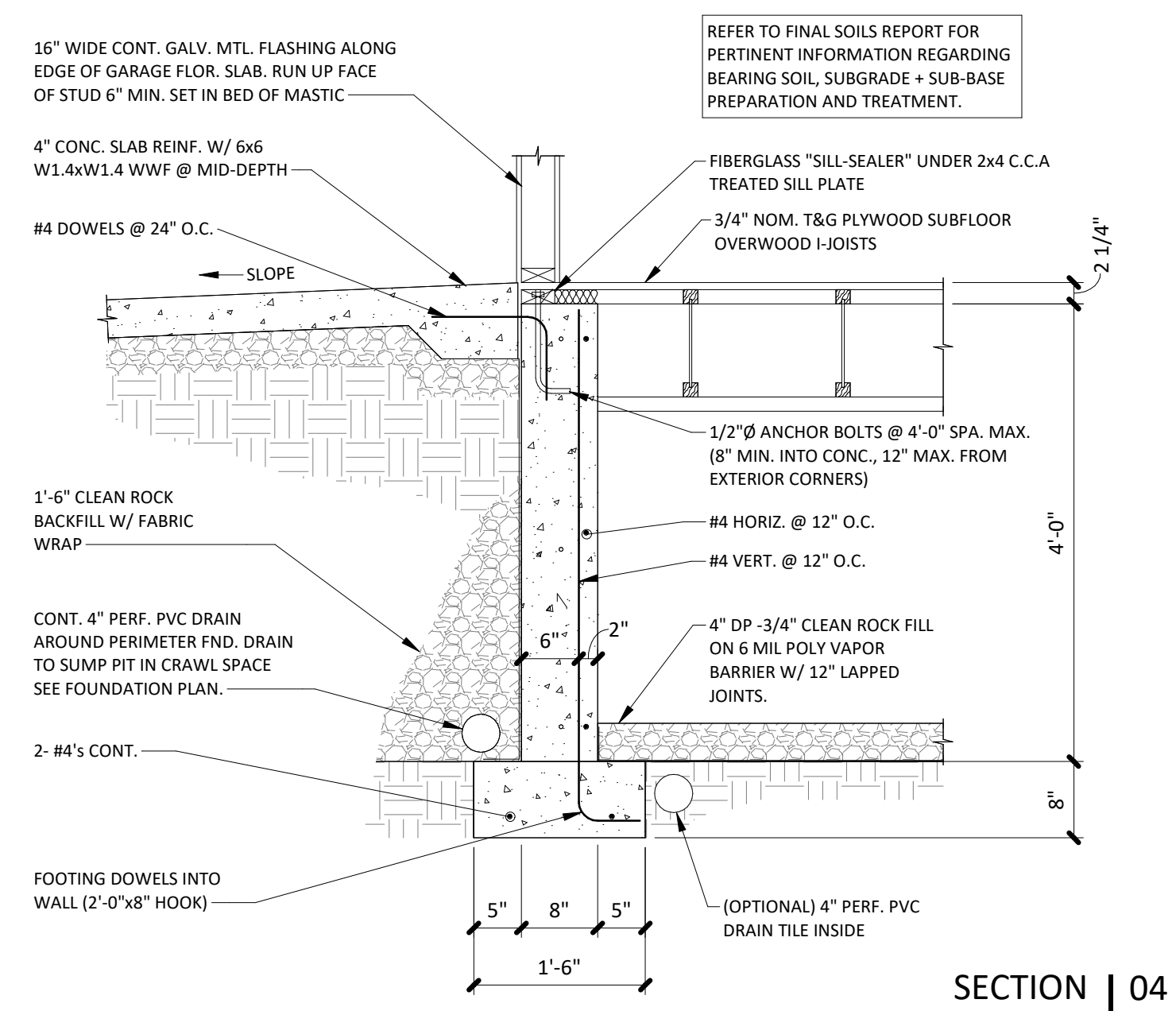
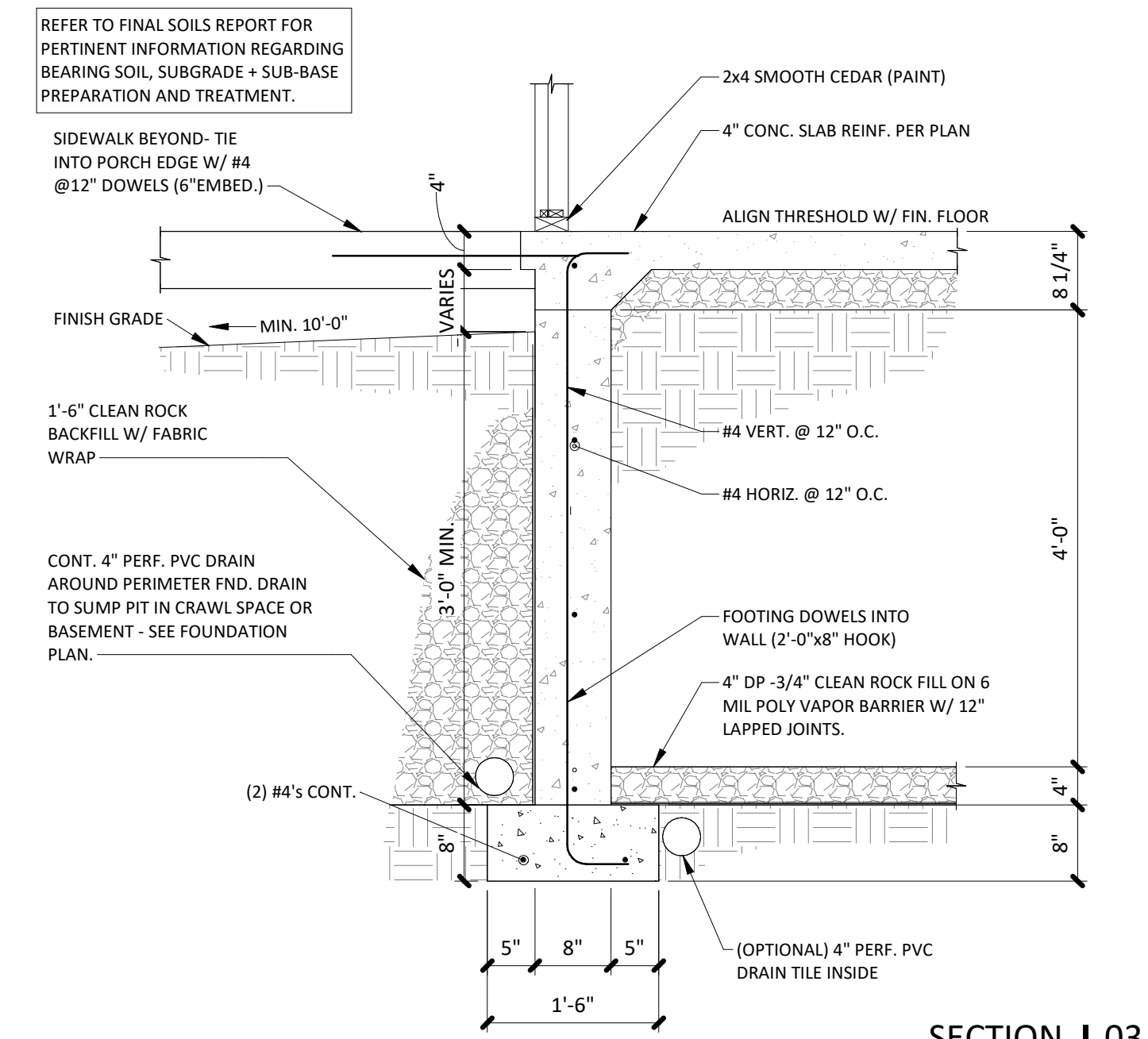
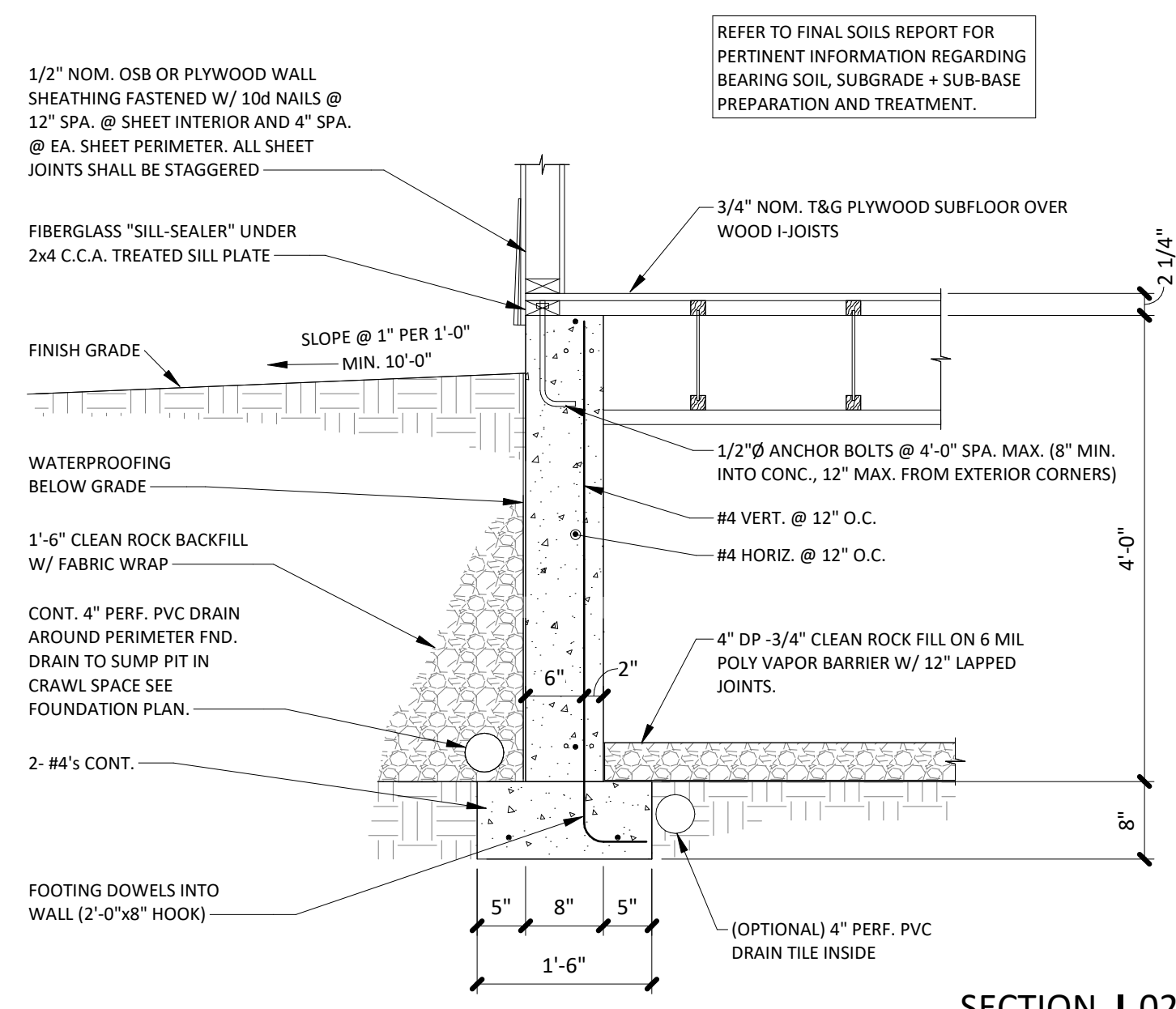
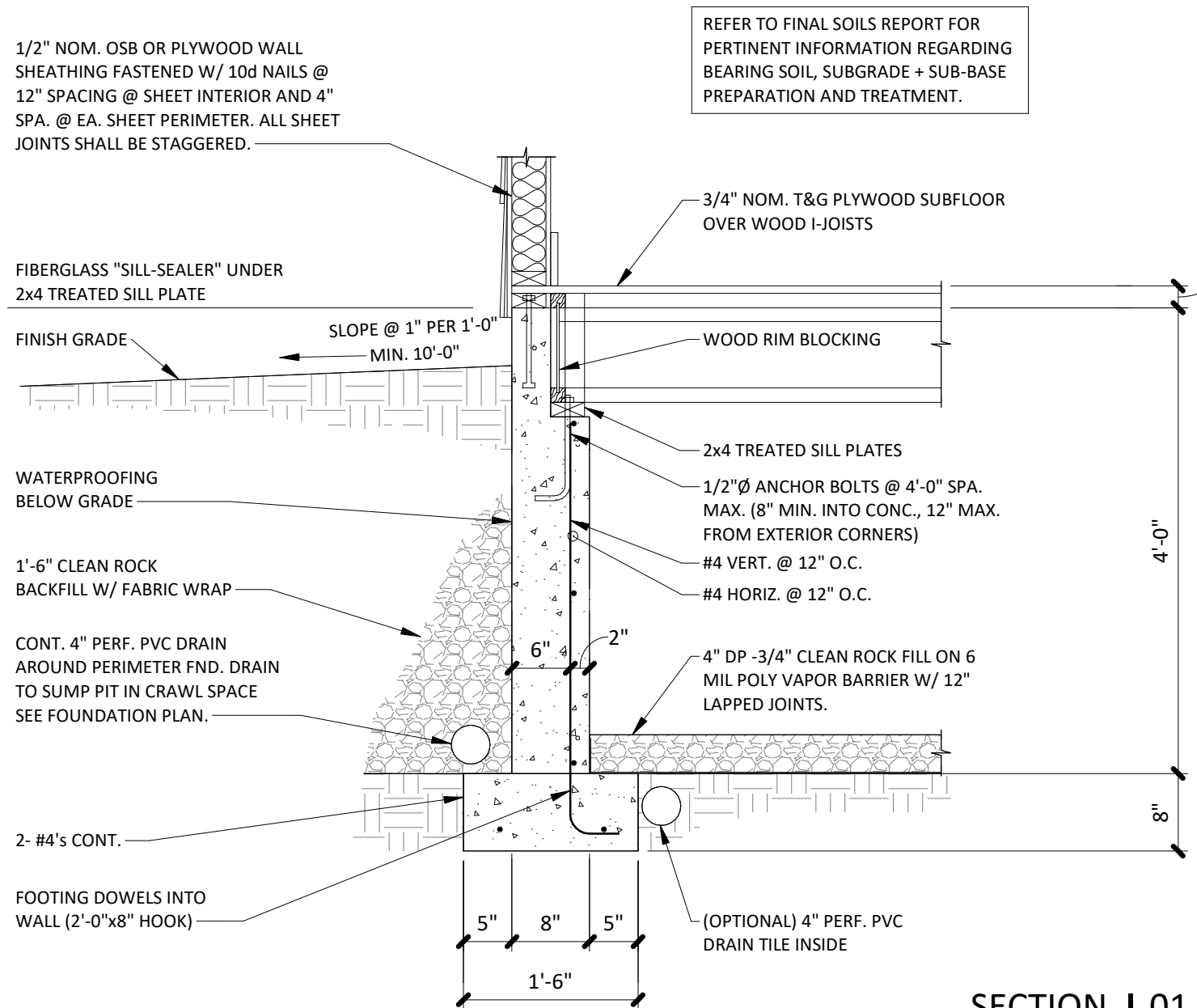


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SHEET NUMBER

1  
S2.2  
RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021



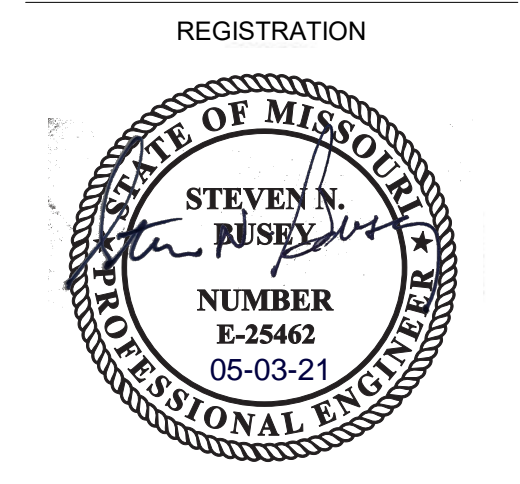


# John Knox Village

Duplex Unit  
626-628 WILLOW  
LEE'S SUMMIT, MISSOURI 64081

Project No.: 20056  
Date: 02.22.21  
Issued For: PERMIT

REVISIONS		
No.	Date	Description
1	3.29.21	CITY COMMENTS



PROJECT TEAM

ARCHITECT FINKLE+WILLIAMS ARCHITECTURE

CIVIL BHC RHODES

STRUCTURAL BSE STRUCTURAL ENGINEERS

**BSE STRUCTURAL ENGINEERS**

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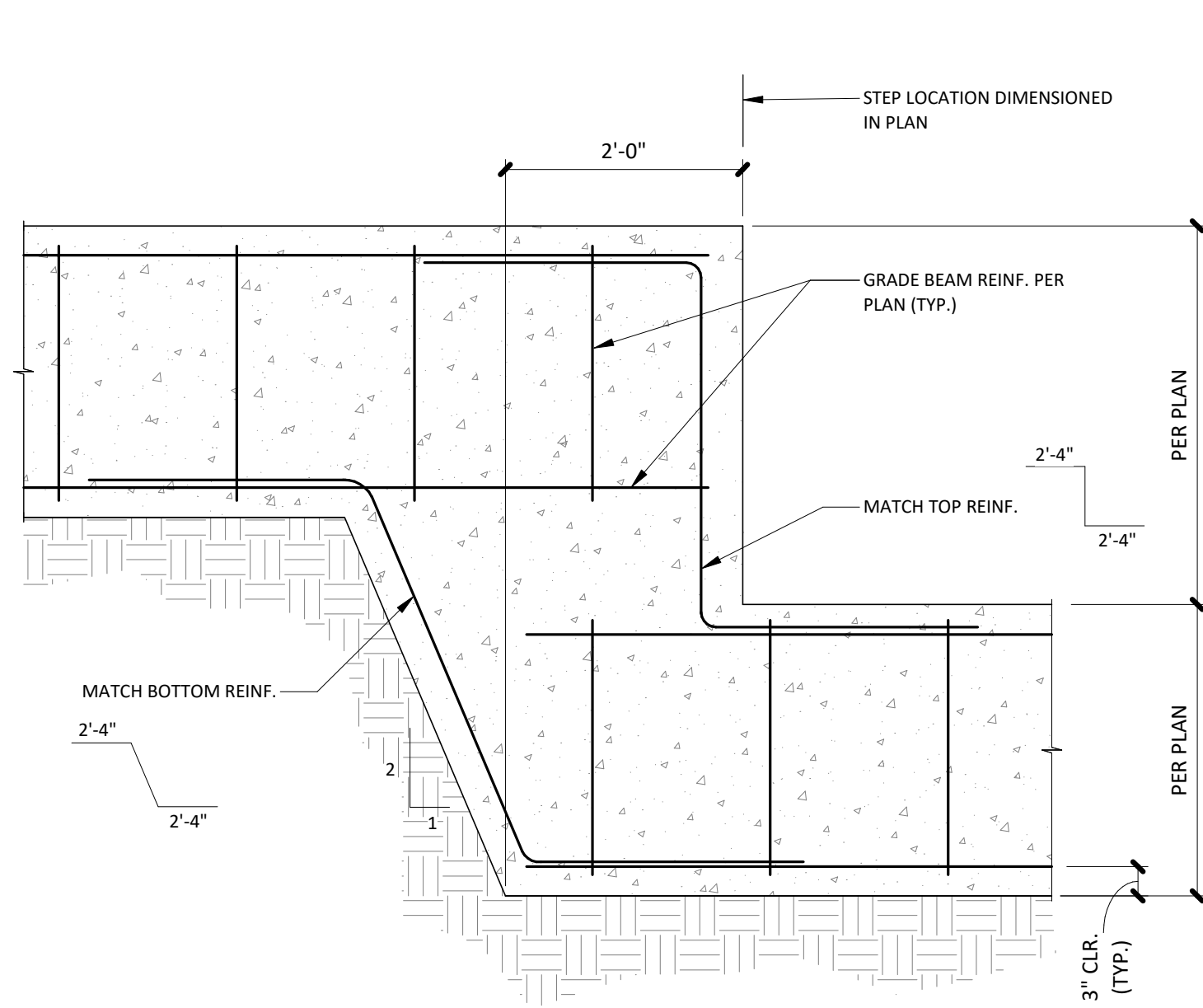
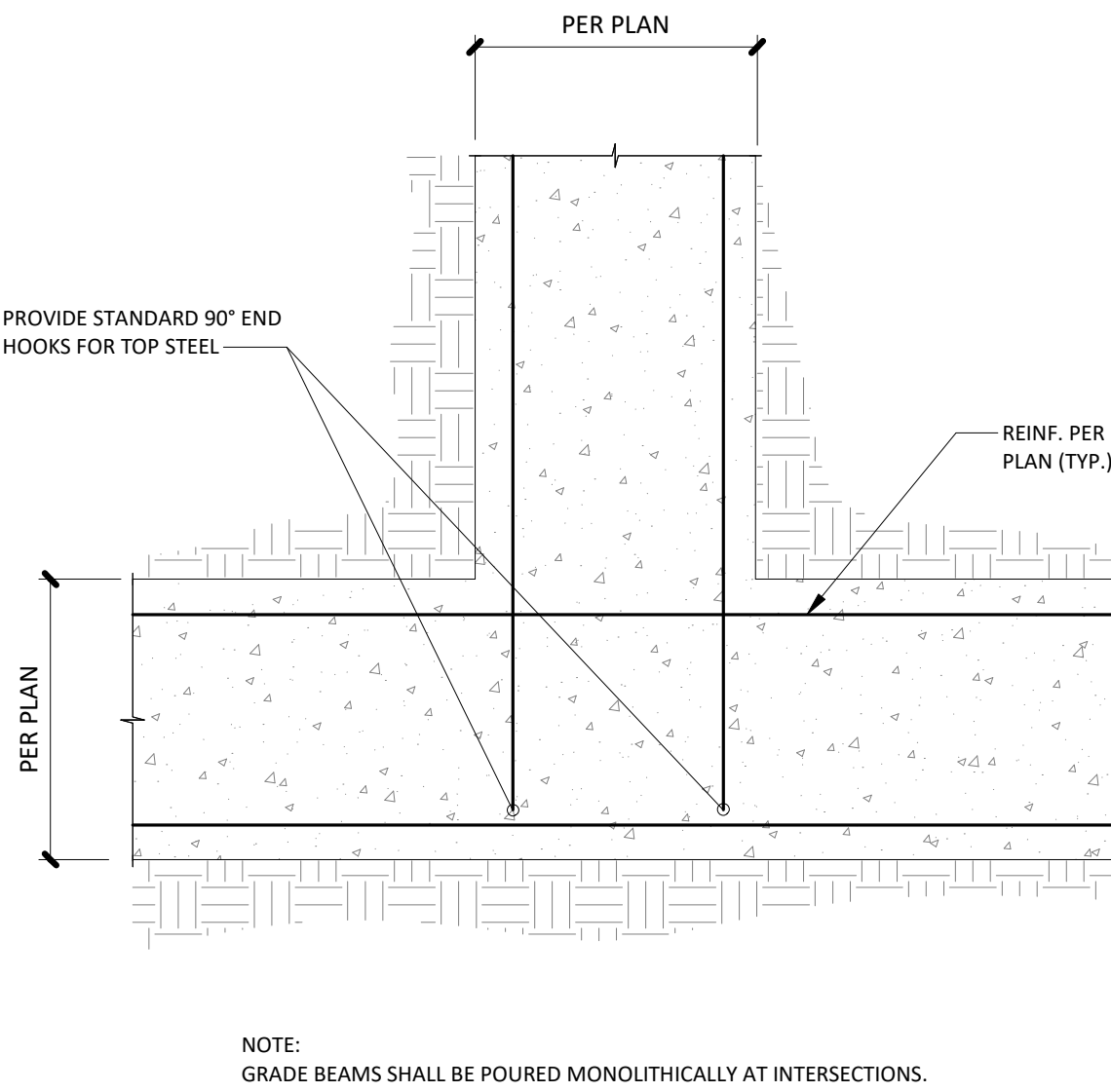
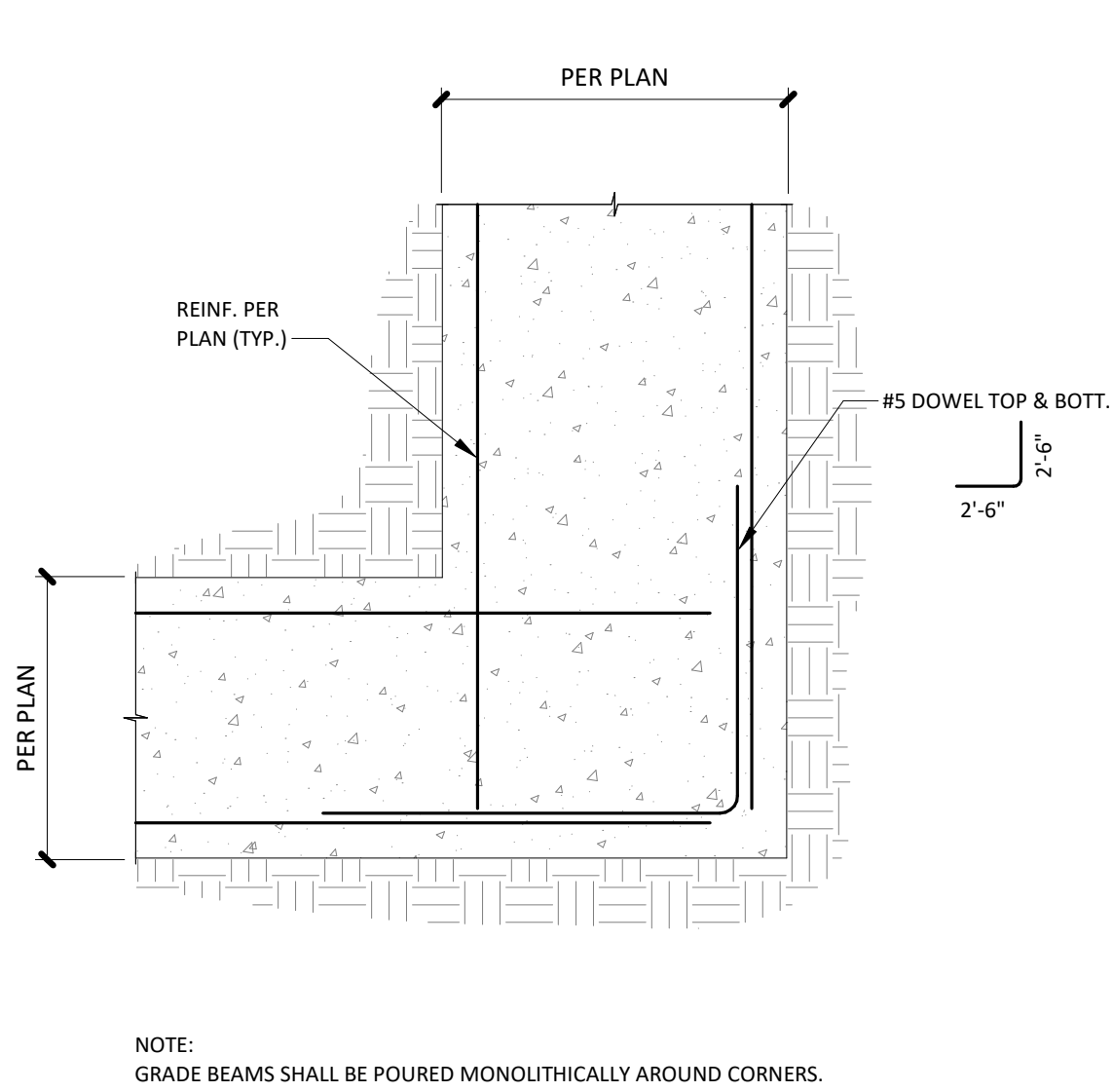
**Se** PLEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 05/04/2021



TENSION LAP SPLICE LENGTHS (in) GRADE 60 UNCOATED BARS f'c=3000 psi					
BAR SIZE	LAP CLASS	TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	22	32	17	25
	B	28	42	22	32
#4	A	29	43	22	33
	B	37	56	29	43
#5	A	36	54	28	41
	B	47	70	36	54
#6	A	43	64	33	50
	B	56	84	43	64
#7	A	63	94	48	72
	B	81	122	63	94
#8	A	72	107	55	82
	B	93	139	72	107
#9	A	81	121	62	93
	B	105	157	81	121
#10	A	91	136	70	105
	B	118	177	91	136
#11	A	101	151	78	116
	B	131	196	101	151

NOTES:

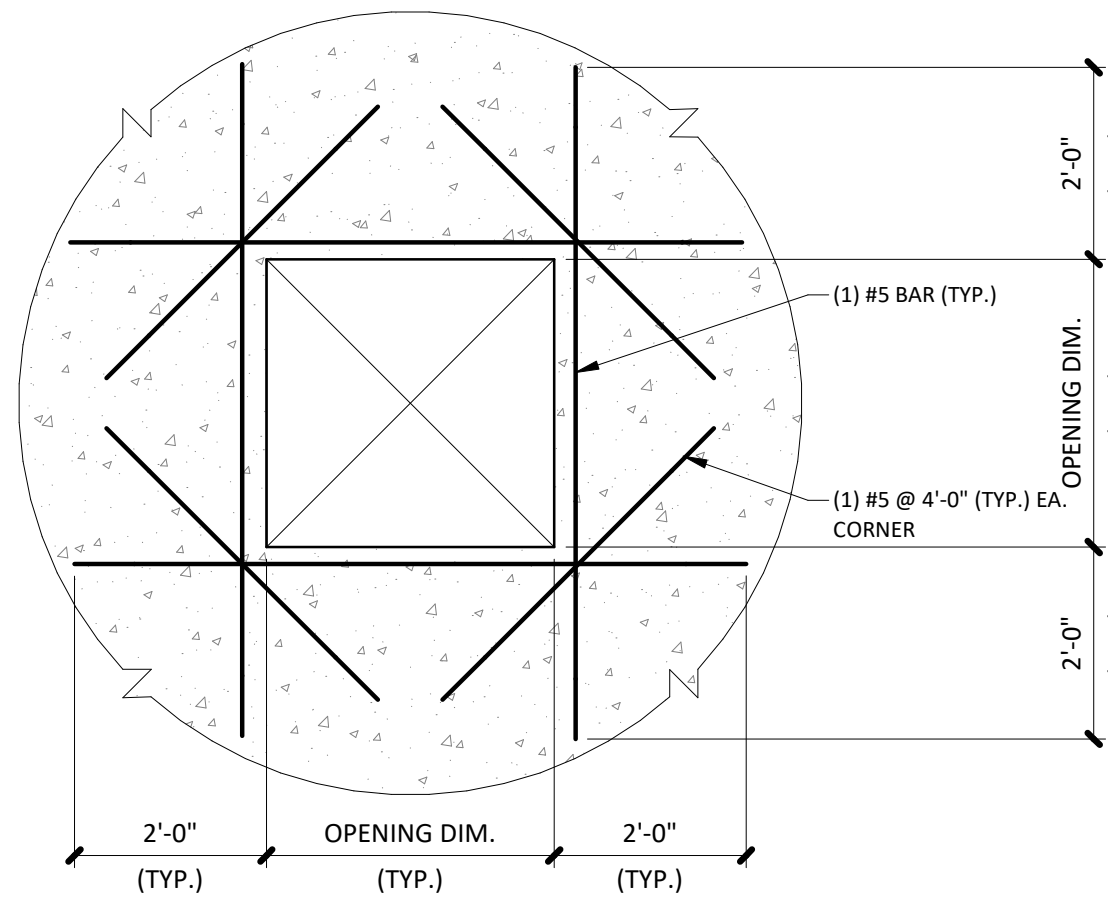
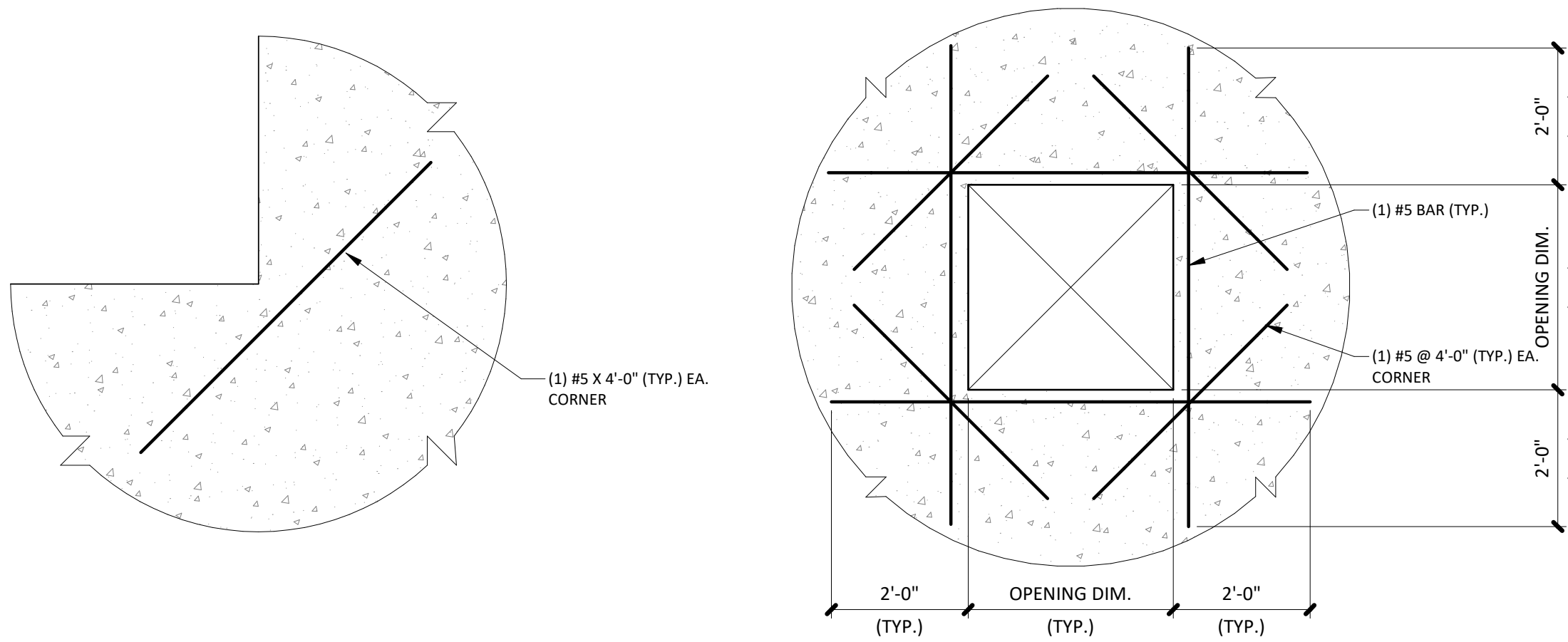
- TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
- TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPLICE LENGTHS ARE BASED ON ACI 318-02, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY.
- TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS. LENGTHS ARE IN INCHES.  
  
4. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED AS:  
  
BEAMS OR COLUMNS:  
CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (2) BAR DIAMETERS  
  
CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (2) BAR DIAMETERS  
  
ALL OTHERS:  
CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (3) BAR DIAMETERS  
  
CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (3) BAR DIAMETERS
- LAP CLASS A VALUES ARE THE REQUIRED TENSION DEVELOPMENT LENGTHS, l<sub>d</sub>; LAP SPLICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS A - 1.0l<sub>d</sub> AND CLASS B = 1.3l<sub>d</sub> (ACI 318-02, SECTION 12.15.1)
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.



LAP SPLICE LENGTHS f'c=3000 psi | 01  
1/2" = 1'-0" | S4

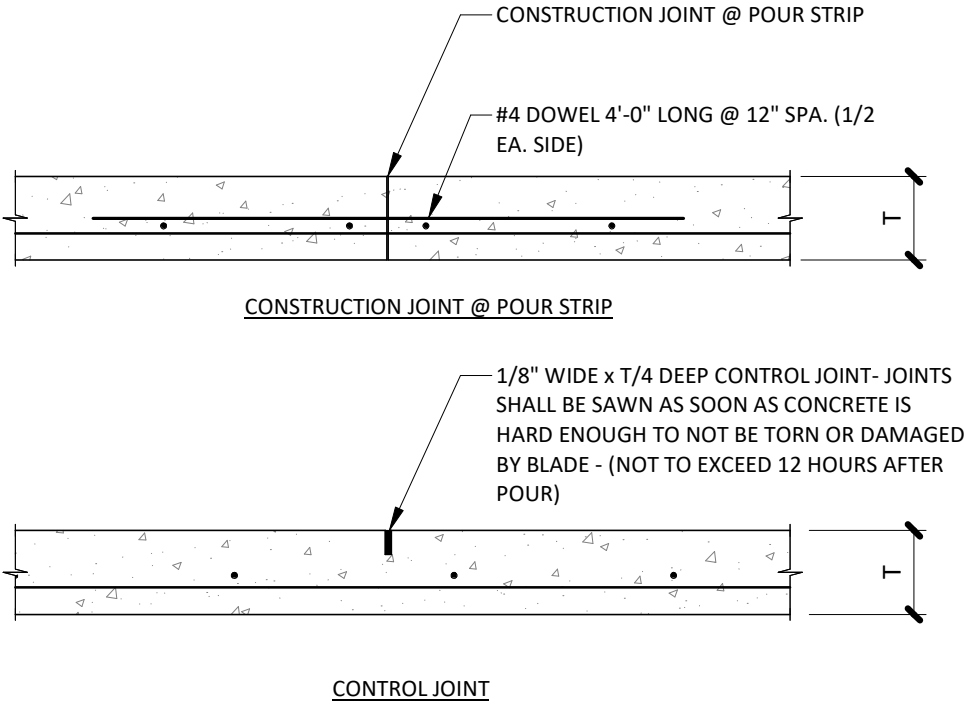
TYP. GRADE BEAM DETAILS | 02  
3/4" = 1'-0" | S4

TYP. FOOTING STEP DETAIL | 03  
3/4" = 1'-0" | S4

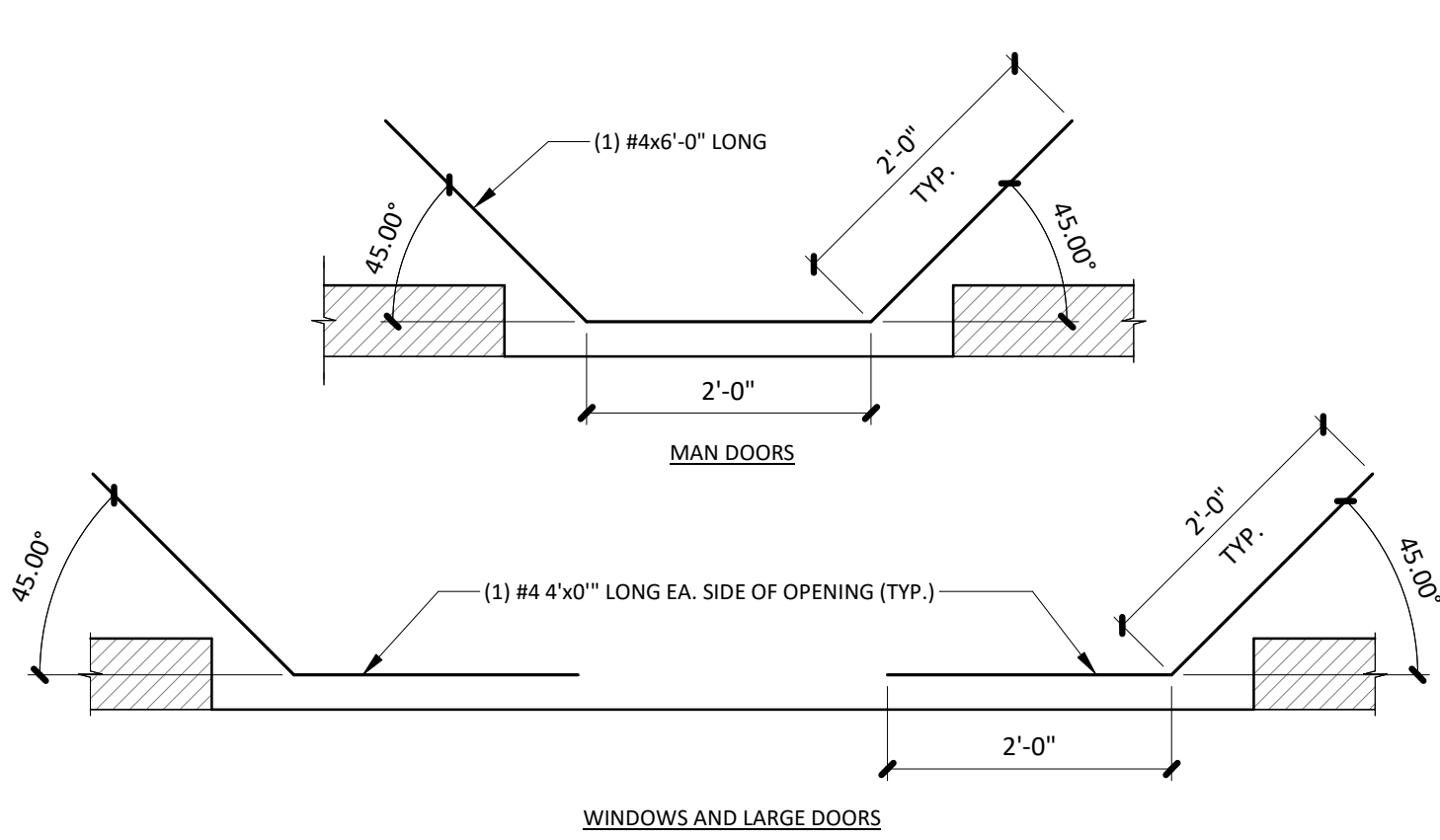


TYP. RE-ENTRANT CORNER REINF. DETAIL | 04  
3/4" = 1'-0" | S4

TYP. SLAB OPENING DETAIL | 05  
1/2" = 1'-0" | S4



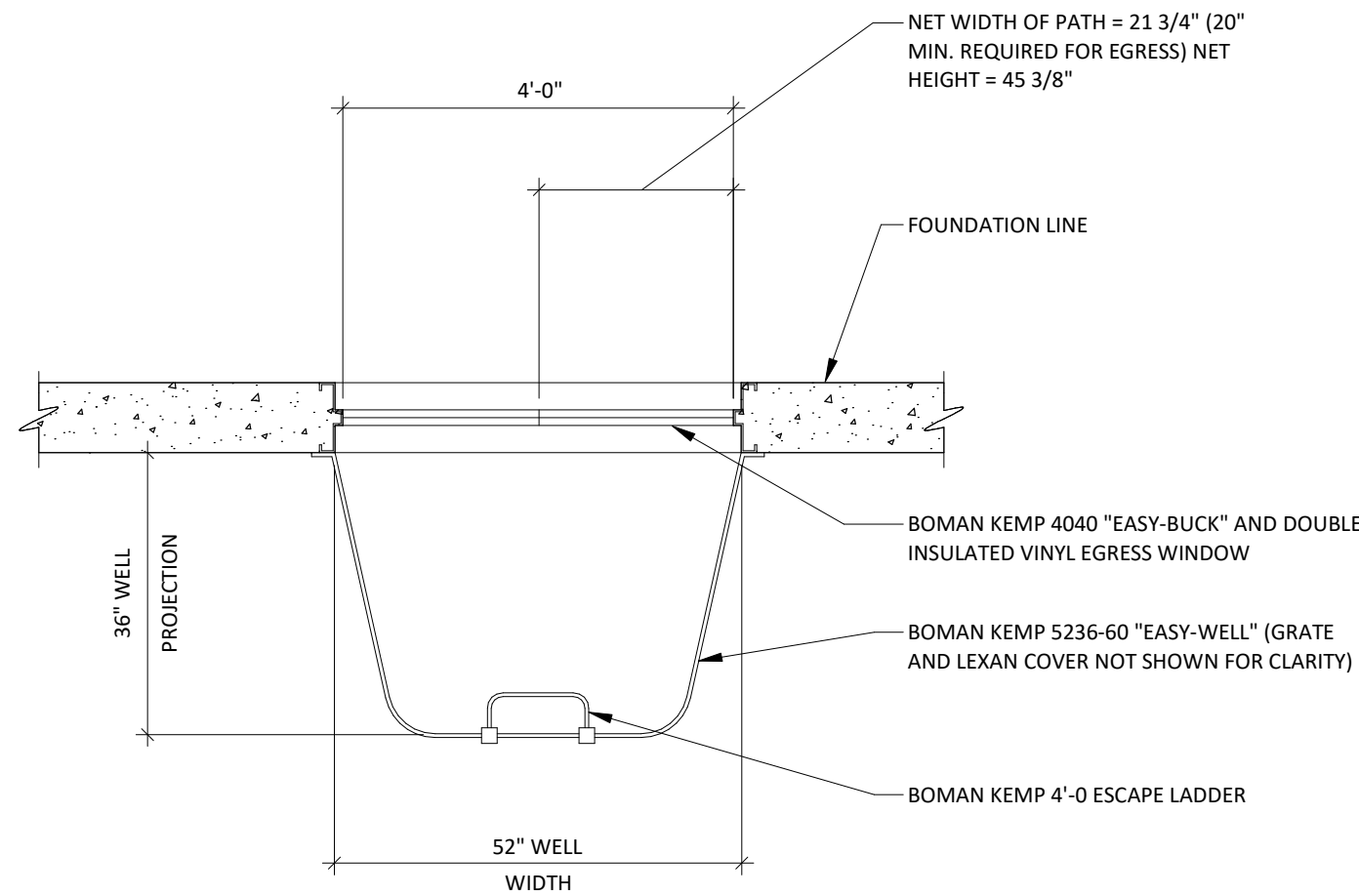
TYP. CONTROL & CONST. JOINT DETAIL | 06  
3/4" = 1'-0" | S4



TYP. SLAB REINF. @ DOOR DETAIL | 07  
3/4" = 1'-0" | S4

STANDARD HOOK TABLE	
BAR SIZE	HOOK
#4	8 in.
#5	10 in.
#6	12 in.
#7	14 in.
#8	16 in.

STANDARD 90° HOOK TABLE | 08  
12" = 1'-0" | S4



TYPICAL EGRESS WINDOW WELL DETAIL | 09  
1/2" = 1'-0" | S4

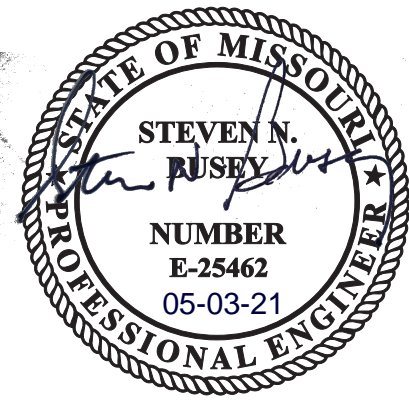
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STRUCTURAL	BSE STRUCTURAL ENGINEERS

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S4  
PLEASE FOR  
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DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
05/04/2021