TENTATIVE AGENDA
JUNE 10, 2026 6:00 P.M.
ARCHITECTURAL REVIEW BOARD

The Plan Commission meeting will immediately follow the Architectural Review Board Meeting

I. MEETING CALLED TO ORDER

II. ROLL CALL

III. APPROVAL OF MINUTES: MAY 13, 2026

IV. REVIEW OF PLANS FOR A GARAGE ADDITION, CHRIS AND TRACY LAWHORN, 17 EDWIN AVENUE

V. REVIEW OF PLANS FOR A NEW HOME, D&R BUILDING GROUP, 814 ALEXANDRA AVENUE

VI. REVIEW OF PLANS FOR A NEW HOME, JASON AND MICHELLE FANK, 785 BISMARK AVENUE

VII. MISCELLANEOUS

VIII. ADJOURNMENT

Gabrielle Macaluso
Community Engagement Officer

POSTED: 10:00 a.m., June 5, 2026

MINUTES
ARCHITECTURAL REVIEW BOARD MEETING
MAY 13, 2026 – 6:00 p.m.

CALL TO ORDER

A meeting of the Architectural Review Board (ARB) of the City of Glendale was held on Wednesday, May 13, 2026. Chairman Fernhoff presided and called the meeting to order at 6:00 p.m.

ROLL CALL

Members Present	Members Absent
Chairman Fernhoff	Jon Emert
Laura Switzer	Brad Weitekamp
Mike Moran	
Reed Voorhees	
John Falk	

Also present were Frank Johnson, City Administrator; Gabby Wesche, Community Engagement Officer; and Kate Henry, City Attorney.

APPROVAL OF MINUTES

Mr. Moran moved to approve the minutes from the April 8, 2026, meeting with two changes:

- Parkwood Ave. should be Parkland Ave. on page two, paragraph one in the architecture section.
- The reference to 47 feet on page three, paragraph five in the architecture section should state "47 square feet."

The motion was seconded by Mr. Voorhees and unanimously carried.

REVIEW OF PLANS FOR AN ADDITION – Jay and Gloria Jarvis, 305 N. Sappington Rd.

Chairman Fernhoff introduced the project at 305 N. Sappington Rd. and invited the applicant to present. The project was presented by the homeowners, Jay and Gloria Jarvis, and their architect.

Drainage

Mr. Falk noted the drainage report included in the application but asked for more details about the pump and storage tank. Mr. Jarvis said he didn't have the final details, but that it would be compliant with city standards.

The ARB members noted that they need to know the size and model of the tank, where the water flows in and out, the system's overall size and capacity, etc.

The ARB members also asked for greater clarity in the utility exhibit. They asked where the water that's collected in the trench drains to.

The Jarvises' neighbor at 309 N. Sappington Rd., John Steele, explained that he put in the trench on his property in the 1970s to handle

stormwater. It flows onto the MSD storm sewer. Mr. Steele is concerned about additional stormwater issues and would like to see mitigation measures in place for this new project.

The neighbors noted that the pipe flows from south to north, but Mr. Falk noted that the flow on the map doesn't show that. He noted that the map needs to reflect the current state of the property.

Mr. Falk asked the applicant what happens when there's a power outage. Mr. Jarvis explained that there's a backup battery for the sump pumps and a backup generator for the home.

Mr. Moran asked the applicant why they wouldn't pipe the water to the street. The owner said he didn't know he could do that. Mr. Falk noted that it would be better to pipe to the street than the neighbor's trench. He encouraged the applicant to ask his engineer to model discharging the water to the street.

Mr. Johnson clarified that the water can be discharged toward the street, but must be discharged no closer than 10 feet from the street or any property line.

The ARB members expressed concerns that the storage tanks and pumps may get overwhelmed during heavy rain events, especially if there's a power outage, or if the trench into which it is intended to discharge is full and backs up. They requested that some stormwater modeling occur so that they know what level of storm (ex. 100-year) the system is designed to withstand.

The ARB asked for additional details on the pump mechanics—is it a dual or single pump system?

The resident at 301 N. Sappington Rd., Mike Fagan, expressed concerns about stormwater displacement from this project. He has experienced a great increase of water draining into his yard after a different neighbor built an addition and channeled water toward his property.

Landscaping
The ARB members requested an overlay of the tree plan with utility plans. He noted that a couple of trees (10 and 12) are close to the water line.

The ARB also noted that utility operations and changes need to be shown on the civil plan.

Architecture
The ARB members noted that the addition is sympathetic to the house.

Mr. Voorhees confirmed that the house is below the maximum floor area ratio (FAR), but thinks the design is a little plain and boxy. Since the addition is on the rear of the home and won't be seen from the street, it is allowed.

Ms. Switzer noted that it would be nice to see the home's Tudor detailed carried onto the addition, but she wouldn't make it a requirement.

Public Comment
Additional comments received by the applicant's neighbors include:

- Mr. Steele noted that he doesn't want to look at a wall as his view from his property.
- Mr. Fagan asked the distance between the garage at 301 N. Sappington Rd. and the addition wall. Mr. Jarvis said 15 feet.
- Mr. Fagan noted that the page with photos of neighboring houses is mislabeled between 301 and 309 N. Sappington.
- Mr. Steele asked if there was any thought process of putting the channel under the ground and connecting to the trench? Mr. Jarvis said okay, but Mr. Moran advised him to discuss that with his civil engineer.

Mr. Falk moved to approve the applicant's design with the following conditions:

- Provide more detail regarding the storage tank design including its depth.
- Provide pump characteristics including whether it's a single or duplex pump station.
- Consult a civil engineer regarding pumping the storage tank overflow to the front yard.
- Provide a stormwater capture event assessment of the storage tank and pump—model the storm to determine the storm event for which this pump and storage capacity are being designed.
- Show any alterations to the rear yard water line on the civil plans.
- Reevaluate the location of trees 10 and 12 to increase the distance between the trees and the water lines.

The motion was seconded by Ms. Switzer. The motion passed with a vote of 5 "Aye," 0 "Nay," and 2 Absent. The vote was as follows:

Reed Voorhees	"Aye"
John Falk	"Aye"
Mike Moran	"Aye"

Brad Weitekamp	Absent
Jeff Fernhoff	"Aye"
Laura Switzer	"Aye"
Jon Emert	Absent

MISCELLANEOUS

Mr. Johnson provided updates to the ARB members including:

- 785 Bismark Ave. received variances from the Board of Adjustment, so the proposed home will go before the ARB for consideration in the near future.
- The Board of Aldermen approved changes to the ARB submittal fees to help pay for professional engineering and legal review as needed. The new rates include $500 for a new home construction and $250 for additions, plus a plan review fee.

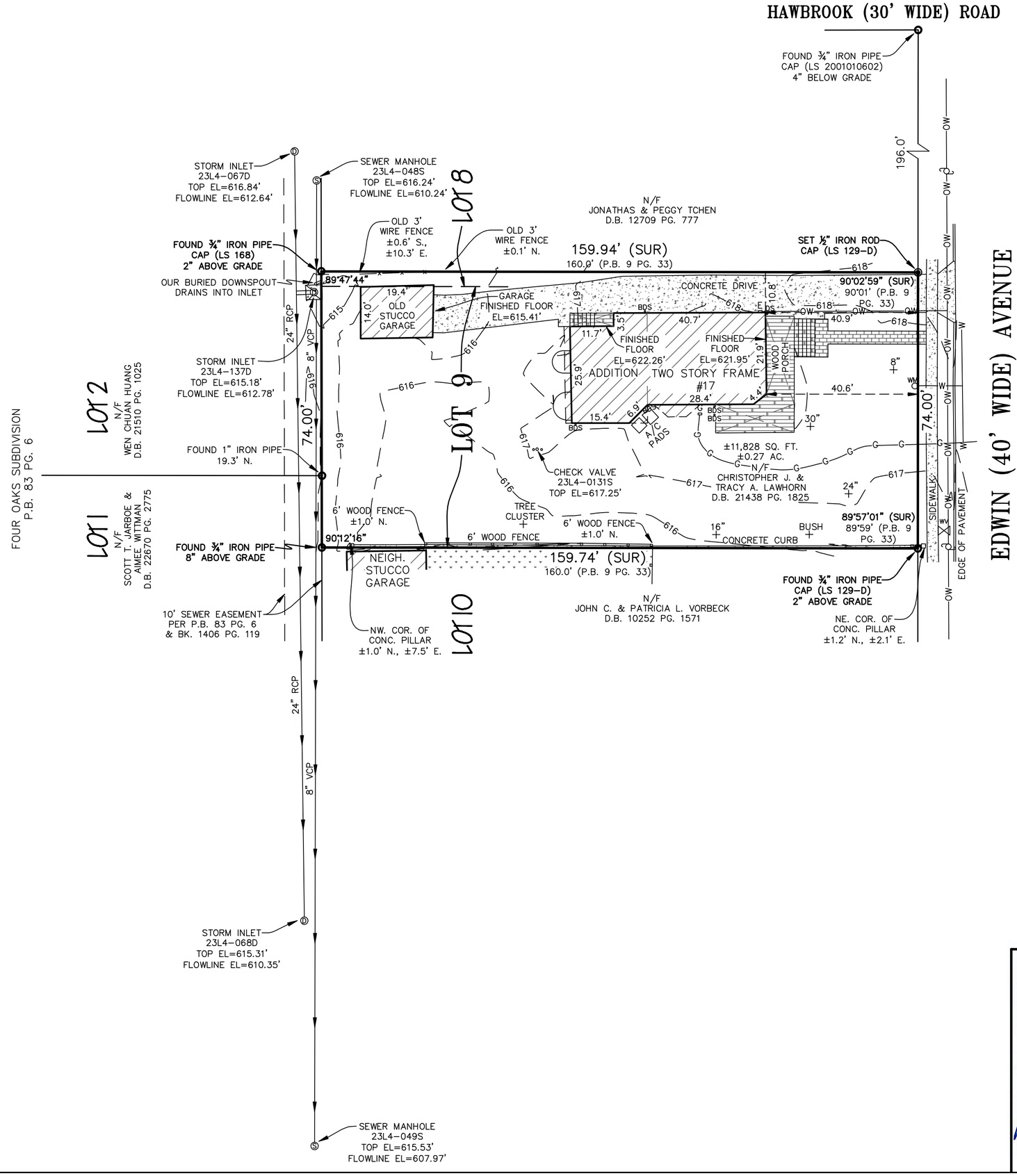
ADJOURN

Mr. Falk moved to adjourn the meeting at 7:40 p.m. The motion was seconded by Mr. Moran, and unanimously carried to adjourn the meeting.

ARB Project Submittal

Address/Project	17 Edwin Ave./Detached Garage Replacement
Applicant	Christopher & Tracy Lawhorn
Architect	N/A
Contractor	Upright Design and Consulting
Owner	Christopher & Tracy Lawhorn

PROPERTY BOUNDARY/TOPOGRAPHIC SURVEY



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND OF SYMBOLS

UTILITY POLE		GAS METER	
LIGHT POST		GAS VALVE	
FIRE HYDRANT		MANHOLE	
WATER VALVE		AREA INLET	
WATER METER	—G—	GAS LINE	
HANDICAPPED PARKING	—S—	SEWER LINE	
SATELLITE	—OW—	OVERHEAD WIRE	
SIGN	—W—	WATER LINE	
ELECTRIC METER	BDS	BURIED DOWNSPOUT	
	DS	DOWNSPOUT	
CONCRETE		ASPHALT	

VCP = VITRIFIED CLAY PIPE

RCP = REINFORCED CONCRETE PIPE

Source of Title: Lawyers Title Insurance Company – Commitment No. 236251, Dated February 25, 2004 at 8:00 AM
No easements shown thereon.

Benchmark – Elevations are based on GPS observations using the Missouri State Plane Coordinate System of 1983 – East Zone (2401), Grid North, NAVD 1988.

Utility location per "Missouri One Call" ticket #261120496.

The location of existing underground facilities, structures and utilities have been plotted from available surveys and records and do not necessarily reflect the actual existence, nonexistence, size, type, number or location, therefore these locations must be considered approximate only. There may be others, the existence of which is presently not known. The contractor shall be responsible for verifying the actual location of all utilities, shown or not shown, and said utilities shall be located in the field prior to any project construction.

This is to certify that we, James Surveying Company, at the request and for the exclusive use of **Christopher J. & Tracy A. Lawhorn** have on the 29th day of April, 2026, executed a Property Boundary Survey in accordance with the current Missouri Standards for Property Boundary Surveys as established by the Missouri Board for Architects, Professional Engineers, and Professional Land Surveyors and Landscape Architects, on a Tract of Land being **Lot 9 and the South 4 feet of Lot 8 of Elsa Place**, a subdivision in St. Louis County, Missouri, according to the plat thereof recorded in Plat Book 9, Page 33 of the St. Louis County Records, and that the results of said survey are represented upon this plat. The subject property is an URBAN property as defined in said Standards. This plat may not show current zoning setbacks. **This Property Boundary Survey is Non-Transferable.**

EXPIRES: DECEMBER 31, 2027

4/30/2026

STATE OF MISSOURI
PHILLIP JOSEPH WURM
NUMBER PLS-2278
PROFESSIONAL LAND SURVEYOR

Phillip J. Wurm
Professional Land Surveyor
Mo. Registration No. PLS-2278

PROPERTY BOUNDARY/ TOPOGRAPHIC SURVEY

James Surveying Company Professional Land Surveying Corporation
Original Certificate/License No. 000129

Project Address: 17 Edwin Avenue
Glendale, MO 63122

REV.	DATE	BY	DESCRIPTION

SUR. PAD

DRW. PAD CHK. PJW

SCALE: 1" = 20'

SURVEY NUMBER 201478-A

DATE PREPARED: April 30, 2026

SHEET 1 OF 1

JAMES SURVEYING COMPANY
LAND SURVEYORS
10811 BIG BEND BOULEVARD KIRKWOOD, MO. 63122
PHONE: (314) 822-1006 WEB: JAMES-SURVEYING.COM
EMAIL: INFO@JAMES-SURVEYING.COM

JENNIFER BROWN CIVIL ENGINEER
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515 ALPHONSE DR
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PHN: 314.495.9172
CERTIFICATE OF AUTHORITY: 2024046550
PLANNING, SITE DESIGN AND DEVELOPMENT, STORMWATER MANAGEMENT, WATER QUALITY, CONSTRUCTION MANAGEMENT

ISSUANCE:
STORMWATER MITIGATION PLANS

CHRISTOPHER J & TRACY A LAWHORN
NEW GARAGE AND STORAGE

SITE ADDRESS:
17 EDWIN
ST LOUIS MO 63122

REVISIONS/ ISSUANCE:

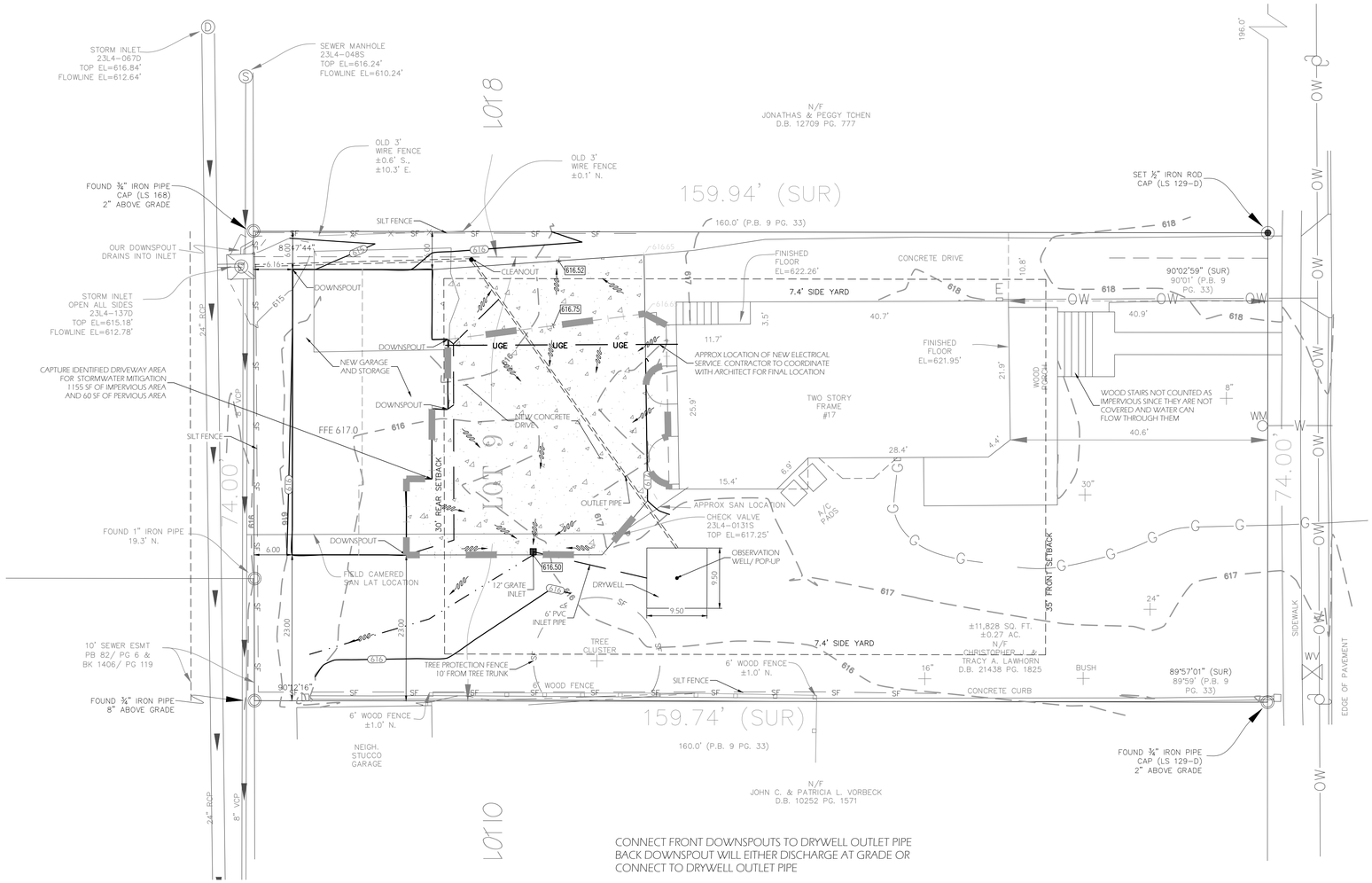
DATE	BY	DESCRIPTION
1 05/30/26	JB	ADDRESS CITY COMMENTS

SHEET TITLE:
DEMOLITION PLAN

DATE:	DESIGNER:	CHECKED BY:
05/30/2026	JB	JB

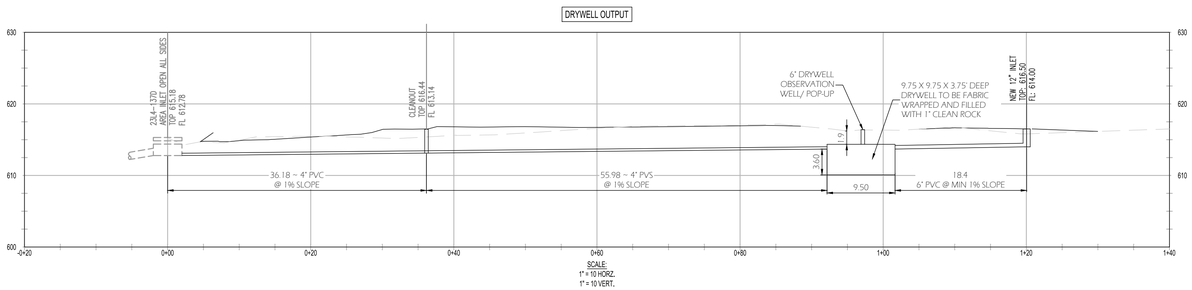
C1.0

5



CONNECT FRONT DOWNSPOUTS TO DRYWELL OUTLET PIPE BACK DOWNSPOUT WILL EITHER DISCHARGE AT GRADE OR CONNECT TO DRYWELL OUTLET PIPE

BMP DRAINAGE AREA



SITE IMPERVIOUSNESS
EXISTING = 27.7%
PROPOSED = 38.3%

Lot Area: 11828 SF or 0.27 ac

EXISTING	SF	AC	PI	Total Run-Off
Home	1,412	0.03	4.20	0.14
Garage	350	0.01	4.20	0.03
Pvmt/ Porches	1,863	0.04	3.54	0.15
Pervious	8,203	0.19	1.7	0.32
TOTAL EXISTING SITE RUNOFF				0.64

PROPOSED	SF	AC	PI	Total Run-Off
Home	1,412	0.03	4.20	0.14
Garage	1,149	0.03	4.20	0.11
Pvmt/ Porches	3,114	0.07	3.54	0.25
Pervious	6,153	0.14	1.7	0.24
TOTAL PROPOSED SITE RUNOFF				0.74

Exist Site % Imperviousness= 27.69%

Prop Site % Imperviousness= 38.27%

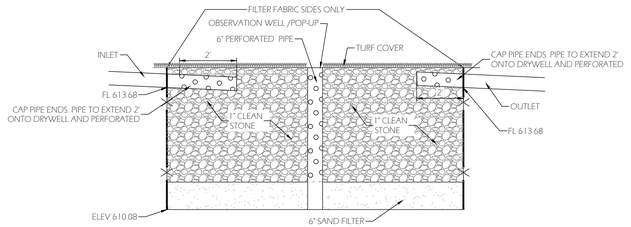
DIFFERENTIAL RUNOFF = 0.10 CFS

0.10 CFS X 60 SEC/MIN X 20 MIN = 118.44 CF

DRYWELL PIT
LENGTH 9.50 SF
WIDTH 9.50 SF
DEPTH 3.60 SF

VOLUME PROVIDED= 129.96 CF

AREA TO BE TREATED = 1155 SF 3.54 CFS/AC 0.11 CFS
58.00 SF 1.7 CFS/AC 60 SEC/MIN
20 MIN
VOLUME REQUIRED PER TRIBUTARY AREA TO DRYWELL 128.93 CF



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ISSUANCE:
STORMWATER MITIGATION PLANS

SITE ADDRESS:
CHRISTOPHER J & TRACY A LAWHORN
NEW GARAGE AND STORAGE
17 EDWIN
ST LOUIS MO 63122

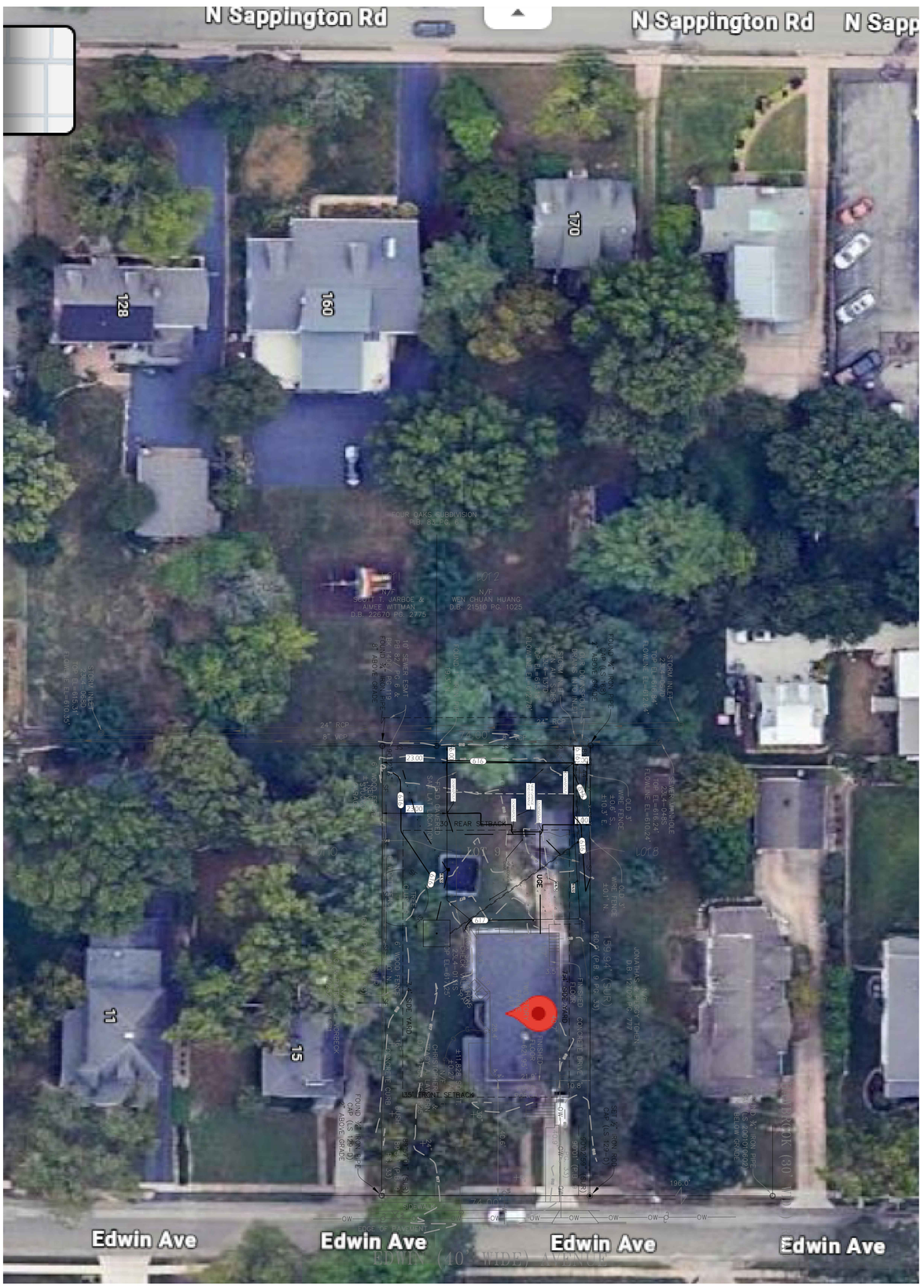
REVISIONS/ ISSUANCE:

DATE	BY	DESCRIPTION
1 05/30/26	JB	ADDRESS CITY COMMENTS

SHEET TITLE:
STORMWATER MITIGATION PLAN

DATE: 05/30/2026 DESIGNER: JB CHECKED BY: JB

C2.0



SCALE: 1" = 10'

SHEET TITLE:
ADJACENT PROPERTIES

SHEET NO.
C3.0

DATE: 05/30/2026
DESIGNER: JB
CHECKED BY: JB

REVISIONS/ ISSUANCE:

NO.	DATE	BY	DESCRIPTION
1	05/30/26	JB	ADDRESS CITY COMMENTS

SITE ADDRESS:
CHRISTOPHER J & TRACY A LAWHORN
NEW GARAGE AND STORAGE
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DATE: 05/30/2026
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STATE OF MISSOURI
JENNIFER BROWN
NUMBER PE-2010007564
PROFESSIONAL ENGINEER

BUILDING SPECIFICATIONS

GENERAL NOTES

PROJECT IS DESIGNED TO MEET IRC SECTION R602.10.5

1. Do not scale the drawings for construction. GC to verify all dimensions and notify the Architect of any discrepancies before proceeding.
2. All work shall conform to applicable local codes currently in effect.
3. Contractor shall obtain and pay fees incidental to all permits of any kind required by local or state municipalities.
4. GC and sub-contractors shall field-verify existing conditions and notify the Architect of any existing conditions that may affect the Contract.
5. Conduct demolition and construction in such a way as to insure minimal interference with daily operations. Including (but not limited to): parking, material transport, debris removal, toilet facilities, utilities, and temporary protection measures.
6. The GC is responsible for protecting all existing construction and the repair of any damage caused by new construction. All repairs shall aesthetically match all contiguous surfaces as approved by the Architect.
7. Certain portions of the work are to be performed on a design/ build basis. These portions of the work include: Plumbing, HVAC (Heating, Ventilation, & Air Conditioning), Fire Sprinkling, and Electrical work. The Contractors involved in these particular tasks are responsible for their own engineered designs, as well as the actual installation of the work. The Architect is not responsible and has not been retained for any design of the prior-stated work trades. Any architectural drawings relating to these aspects of the project shall be considered as informational only to assist the particular sub-contractor to proceed with their own actual design documents for purposes of obtaining permits and the actual construction phase of the project.
8. All construction work is to be performed in accordance with the highest of professional and construction standards. The Contractor shall deem themself responsible for the execution of the work in a timely manner. Should conditions arise during construction that are substantially different than stated or implied by these drawings, the Owner and/or Contractor shall consult with the Architect before proceeding further with the work. Failure to do so shall relieve the designer of any and all damages resulting from such failure to do so.
9. Smoke detectors are AC powered, battery back-up, and interconnected. Locate per local codes, ordinances, and fire district.
10. Coordinate construction with bath plans from the Owner.
11. HVAC work is design/build. HVAC Contractor to modify existing HVAC system to coordinate with new partition layout.
12. Mechanical work is design/build.
13. The plumbing sub-contractor will be responsible for selecting the correct size of the water service line to the structure.
14. Vent bathroom & dryer fans to the exterior. Min. fans: 50 cfm.
15. All electrical outlets at exterior, bathrooms, kitchen, & laundry rooms to be waterproof & GFCI rated.
16. All new interior partitions to be fire-stopped at midpoint.
17. Caulking and Sealants: Exterior joints around windows and door frames, between wall and foundation, between wall and roof, between wall panels, at penetrations or utility services through walls, floors and roofs, and all other openings in the exterior envelope shall be sealed in an approved manner.
18. All framing lumber shall be nailed in place per IRC Nailing Schedule. [See BUILDING CODE DATA]
19. All drywall installation must be in accordance with the Gypsum Association recommended practices. Thickness, nailing, taping, correct stud spacing, and fire-rated types must be installed according to test assemblies.
20. Use water-resistant drywall backer board at bathrooms and showers.
21. Lead solder required on all copper water supply piping.
22. Floor trusses shall be draft stopped at 500 sq. ft. intervals and parallel.
23. New windows to be wood interior and clad exterior. Double glazing required with insulated glass or storm windows. Match existing house.
24. Carbon monoxide detectors required in bedroom hallway. GC to coordinate.
25. New water line for house may be required. Contractor to coordinate.
26. Bury electrical wires underground. Contractor to coordinate.

HEATING AND AIR CONDITIONING

1. The heating contractor shall furnish an engineered heating layout in conformance with local codes, and shall install a complete heating and cooling system of the type selected by the Owner.
2. The heating and cooling system shall satisfy local weather conditions in accordance with the design practices recommended by "ASHRAE" and shall conform to the rules and regulations of "The Board of Underwriters" and any and all governing local and state codes.

CARPENTRY

1. Unless otherwise noted on drawings, provide:
   - Double header, joists, and trimmers at all floor openings where joists terminate.
   - An extra joist under all parallel partitions.
   - Double 2x10 headers with ½"rated plywood @ all door & window openings.
   - Minimum of one row of joist bridging per joist span.
2. Roof to be constructed of 210# min. asphalt shingles (adhesive type) or equal on 15# felt on ½" C-D exterior plywood sheathing on roof framing. Sheet metal flashing where roof abuts any vertical surface. Weather protection required per R903.
3. All roof underlayments to comply with section R905. All flashing to comply with section R905.2.8. Drip edge required at eaves and rake edges of shingle roof (R905.2.8.5).
4. Floors to be constructed of ¾" tongue & groove plywood, glued and nailed to floor joists.
5. Corner bracing to be ½" or ¾" x 48" wide C-D exterior grade plywood, both directions, at all corners, or approved diagonal corner bracing in both directions at all corners.
6. All interior walls and ceilings are to be covered with a min ½" gyp. board screwed with exterior corners metal reinforced. Surfaces to be taped, floated (3 coats), and sanded. Water resistant gypsum backer board required around bathtubs and showers.
7. Interior walls and ceiling of garage to be covered with a min ½" firecode gypsum board (R302.6). Doors leading from garage to living space shall be min. 1⅜" thick solid wood, min. 1⅜" thick solid or honeycomb-core steel, or 20 minute fire rated and self-closing (R302.5.1). Firestop all duct chases, bulkheads, laundry chutes, metal flues, and all shafts at each floor.
8. Cutting, notching, and/or boring holes in wood beams, joists, rafters, or studs shall not exceed limitations noted in St. Louis County. All Cutting, notching, and/or boring to comply with sections R502.8, R602.6, and R802.7). Reinforcement of studs shall be done in accordance with St. Louis County.
9. Nailing and fastening of floor, roof/ceiling, wall/roof sheathing, and gypsum construction shall be in accordance with St. Louis County.
10. Flame spread and smoke developed indexes for wall and ceiling finishes to comply with section R302.9. Interior wall and ceiling materials shall not have a flame spread index greater than 200 or a smoke development index greater than 450.
11. Top and bottom of all conventional double-stud and staggered-stud frame walls to be fireblocked. Fireblocking required at all soffits and dropped ceilings. Fireblocking required between stairway stringers at the top and bottom of the run. All fireblocking to comply with section R302.11.
12. Draft stopping to comply per section R302.12.
13. Any tub or shower area covered with ceramic tile needs to be backed with cement board.

INSULATION

1. Unless noted otherwise on the drawings, provide the following minimum R-values to comply with section N1102 (R402):
   - Min. R-20 or R-13+5ci batt insulation in all exterior walls.
   - Min. R-49 insulation in all attics and cathedral ceilings.
   - Min. R-19 insulation in all floors adjacent to exterior or unheated spaces.
2. Flame spread and smoke developed index for insulation to comply with section R302.10.
3. When using faced insulation, install 6 mil polyethylene vapor barrier against warm side of all insulation.
4. Vapor barrier to be installed at exterior walls (R703).
5. All exterior windows are to be insulating double glazed.
6. Caulk and seal at all windows, exterior doors, vents, pipe penetrations, bottom plates, and all electrical boxes mounted in exterior walls.
7. Install sill sealant between foundation wall and wood sill plates.
8. Building thermal envelope, including but not limited to, window U-value requirements and uninsulated basement wall exposure to comply with section N1102 (R402).
9. All materials, design, application, construction, and insulation of foam plastic materials to comply with section R316.

LIGHT AND VENTILATION

1. Roof vents and/or gable vents shall be used in conjunction with soffit vents to provide removal of summer heat as well as winter moisture.
2. Attics and spaces between roof and top floor ceilings shall have a min. one sq. inch free vent area for each sq. foot of ventilated space. This required vent area may be reduced by one half when at least 50% of the required vent area is provided by vents located in the upper portion of the space to be ventilated, with the remainder of the required ventilation provided by eave or cornice vents.
3. The space between the bottom of the floor joists and the earth (except where such space is occupied by a basement) shall have a min. clear height of 18" and a minimum net area of ventilation openings through the foundation of not less than one square foot for every 150 square feet of crawl space and within 36" of each corner.
4. Attic and enclosed rafter space ventilation (net free) area is to be at least 1/150 of the area served. Two remote vents required for each (min.). Where ridge or gable vents are used, ½ of the area to be provided by ridge or gable vents and ½ by eave or cornice vents.
5. Bathrooms with no operating windows shall have an exhaust fan (50 cfm min.) to the exterior. It is not permissable to discharge exhaust into garage or attic.
6. Kitchen range hoods: a 100 cfm (intermittent use) fan, or a 25 cfm (continuously exhausting) fan shall be installed. (Please note: exhaust hood fans cannot exceed 400 cfm.) Kitchen ranges without hoods: natural ventilation shall be provided through operable windows with a min vent area of 4% of the floor area being served.
7. All bedrooms and basement must have one window for emergency egress meeting the following minimums:
   - Maximum height to bottom of clear opening: 44"
   - Minimum clear opening width: 20"
   - Minimum clear opening height: 24"
   - Minimum net clear opening area: 5.7 sq. ft.

   The net clear opening dimension shall be obtained by the normal operation of the window from the inside. Emergency escape to comply with section R310.
8. Window wells to comply with section R310: horizontal area of window well shall be min. 9 square feet with min. 36" horizontal projection (R310.2.3). Window well with a vertical depth greater than 44" require a ladder to comply with section R310.2.3.1. Window well shall be designed for proper drainage by connecting to the building's foundation drainage system per R405.1 or another approved method (R310.2.3.2).

ELECTRICAL

1. All electrical work shall comply with all codes in effect in the local community. Where no codes exist, the work shall conform with the regulations of the NEC and the electric utility company in the area.
2. Bath vent minimum 50 CFM. Kitchen vent maximum 400 CFM. (See Plumbing section.)
3. Smoke detectors shall be U.L. listed, located on each floor in the vicinity of all bedroom entrance doors (bedroom hallway) and within each bedroom. Locate bedroom hallway detector upstream from or near return air grille. Floor levels that do not contain bedrooms shall have the detector at the ceiling near the stairway. Smoke detectors shall be interconnected, AC powered, and shall have battery back-up power. Installation shall meet NFPA 72. Comply with code section R314.3.1.
4. Carbon monoxide detectors are required; comply with section R315.1. Detector in the immediate vicinity of bedrooms.
5. The final electrical layout to be determined by Owner / Contractor. Compliance with all applicable electrical codes is the ultimate responsibility of the Contractor. Receptacles shall be installed so that no point measured horizontally along the floor line of any wall space is more than 6', from a receptacle outlet.
6. Ground Fault Circuit Interruption protection shall be provided for all 125 volt, single phase, 15 and 20 amp receptacles installed in the following locations:
   - Bathrooms
   - Garages (except ceiling garage door opener)
   - Unfinished basements and crawl spaces (except laundry and sump pump circuits)
   - Kitchen countertop surfaces.
   - Countertop surfaces within 6 feet of outside edge of wet bar sink
7. Illuminated light switch required at top and bottom of all stairs.
8. All bedroom, kitchen, and bathroom outlets shall be arc-fault interrupted.
9. Non-GFCI circuit required at sump pump single outlet.
10. Weatherproof covers required on all exterior GFCI.

DOORS, WINDOWS, FRAMES, & HARDWARE

1. Existing doors, frames, and hardware to remain as noted on plan.
2. Remove and relocate existing doors wherever possible.
3. Any new doors are to match existing. (GC to verify)
4. GC to match wood trim profile and door hardware.
5. All bedrooms and the basement must have one window for emergency escape meeting the following requirements:
   - Maximum height to bottom of clear opening: 44"
   - Minimum clear opening width: 20"
   - Minimum clear opening height: 24"
   - Minimum net clear opening area: 5.7 sq. ft.
6. The net clear opening dimension shall be obtained by the normal operation of the window from the inside.
7. All windows at bathrooms shall be tempered glass.
8. All windows over 6'-0" AFF must be at least 24" above the floor.

SAFETY GLAZING

1. Glazing installed shall be tested & labeled in accordance with CPSC CFR Part 1201 Standard Type II.
2. All safety glazing to comply with section R308.
3. HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS AND SHOWERS: Glazing in any portion of a building wall enclosing bathtubs, showers, hot tubs, etc. which is located less than 60" above a standing surface shall be safety glazing.
4. Any glazing material adjacent to a door, if the nearest vertical edge of the glazing material is within a 24" arc of either vertical edge of an operable door in a closed position and if the bottom edge of the glazing material is less than 60" above the floor, must be laminated safety glass, fully tempered glass, approved wired glass, or approved shatter-resistant, in accordance with CPSC 16 CFR Part 1201S tandard Type II.
   Exception: where there is an intervening wall or barrier to prevent a person from striking the glazing while approaching the door.
5. Safety glazing is required for fixed or operable panels that meet all of the following:
   - Individual pane greater than 9 square feet
   - Bottom edge less than 18" above floor
   - Top edge more than 36" above floor
   - Walking surface within 36" horizontally

   Except: all exceptions noted in section R308.4.

STAIRWAYS & EXITS

1. Locks with thumb turns on the inside are permitted. Inside key operation is permitted, provided the key cannot be removed from the lock when locked from the inside.
2. Stairways requirements to comply with section R311.7, including but not limited to the following:
   - Maximum 7 ¾" riser height (R311.7.5.1)
   - Minimum 10" tread depth (R311.7.5.2)
   - Nosing projection between ¾" and 1 ¼" on stairways with solid risers. Nosing not required for treads min. 11" depth (R311.7.5.3)
   - Minimum 36" width at all points above handrail height and below headroom height (R311.7.1)
   - Minimum 6'-8" headroom height (R311.7.2)
3. Handrails requirements to comply with section R311.7.8, including but not limited to the following:
   - Shall not project more than 4 ½" into the required stairway width
   - Minimum of 34" and maximum of 38" in height
   - Circular cross-section with min. diameter of 1¼" but not more than 2". Other approved shapes having a maximum allowable horizontal width of 2¼", maximum graspable perimeter dimension of 6¼", and a 4" minimum graspable perimeter
4. Guardrail requirements to comply with section R312, including but not limited to the following:
   - Minimum 36" in height
   - Required guards shall not have openings from the walking surface to the required guard height that allow the passage of a 4" sphere in diameter

PLUMBING

1. The Plumbing Contractor shall furnish and supply all soil, vent, and waste piping, hot and cold water supply system, plumbing fixtures and fittings, the connections to the potable water supply, and to the sewers directed.
2. Each gas appliance shall have a gas shut-off valve and ground joint union. A sediment trap is required at each appliance or group of appliances.
3. Gas piping shall be identified at intervals of no more than 5 feet. Steel pipe does not need label.
4. Water service pipe and the building sewer are to be a minimum of ten feet (10'-0") apart horizontally.
5. The minimum size of the water service line is one inch (1") up to the first branch. Plastic water service piping shall terminate a minimum of 10 feet (10'-0") outside the foundation wall and metallic piping brought into the building up to the outlet of the house valve, or the PRV outlet, whichever is further from the point of entrance into the building. Minimum water main pressure must be considered when sizing the water service piping.
6. Showers and bathtub / shower enclosures shall have walls constructed of smooth, non-corrosive, non-absorbent, and waterproof materials to a height of not less than 6 feet above finished floor.
7. Showers:
   - Compartments – Shall have a minimum dimension of 30"x 30" and minimum ceiling height of 70" measured from the drain outlet. Shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6' above the floor.
   - Hinged shower doors shall open outward.
   - All glass which encloses shall be safety glazed.
8. Fixture clearances – Toilets, sinks, and showers shall have the minimum clearances listed below:
   - 21" in front of sinks and toilets.
   - 30" in front of the shower stall openings.
   - 15" clearance from toilet's center to an adjacent fixture or wall on each side.
9. Shower floor surfaces to be constructed of smooth, non-corrosive, non-absorbent, and waterproof materials.
10. Provide gutters and downspouts on roof overhangs projecting less than 36". Downspouts are not to be connected to a sanitary sewer (P1103.2; P1103.3; SLCO Rev. Ord. P1101.12.1; SLCO Policy; IRC P2912).
11. Basement areaway drains and foundation drain tiles are not to be connected to a sanitary sewer.
12. Lead-free solder is required on all copper water supply piping.

MISCELLANEOUS

1. It is the responsibility of the Owner and the Contractor to verify with local building officials that details on these blueprints and specs comply with all applicable codes prior to beginning construction.
2. It is the responsibility of the Owner and the Contractor to obtain all necessary permits and inspections as required by state and local codes. All work shall be in accordance therewith.
3. Verify design loads with local codes and site conditions. Check with local building department officials for wind, seismic, snow, and other loading conditions.
4. Garages located beneath habitable rooms shall be separated from adjacent interior spaces by fire partitions and floor / ceiling assemblies:
   - Floor / ceiling assemblies to be U.L. Design #L502
   - Wall assemblies to be U.L. Design #U305
   - All structural members supporting a floor above the garage shall be protected by not less than 1-hour fire resistance rated construction. U.L. Design #U305.
5. The space between studs or joists utilized as a plenum for return air shall not be part of a required fire-resistant assembly. The garage separation walls are 1-hour rated construction when living space is above the garage. The return air ducts are not to be in rated walls or hard-ducted like supply ducts.
6. Openings for steel electrical outlet boxes in rated garage separation assemblies that do not exceed 16 sq. inches are permitted, provided that the area of such openings does not exceed 100 sq. inches per any 100 sq. feet of enclosed wall area. Outlet boxes on opposite sides of the assembly shall be separated by a horizontal distance not less than 24".
7. Recessed light fixtures installed in insulated ceilings and/ or attics shall be Type "I.C." Non "I.C." type recessed fixtures are not acceptable in an insulated ceiling.
8. Length of exhaust ducts used for dryer venting may be up to 55' max. when cleanouts and signage are provided in accordance with local codes. Contractor to follow as required.
9. Attic access panel to be a min. of 24" x 36" clear.

2015 IRC

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NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
2/12/25
CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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ISSUE / REVISION DESCRIPTIONS

NO.	DATE	REMARKS

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48 WEST SUNNY SIDE DRIVE
ST. PETERS, MO 63376
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UPRIGHT DESIGN & CONSULTING
Structural Solutions

DATE: 5/18/26
CHECKED: CCC
DRAWN: SK
SCALE: NOTED

NOTES

17 EDWIN AVE.
ST. LOUIS, MO 63122

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SHEET NO. S1

1 OF 8

DIVISION 1- GENERAL REQUIREMENTS

1. 1 CONSTRUCTION MEANS AND METHODS:

A. Contractor agrees that Contractor shall assume sole and complete responsibility for job site conditions during the course of the work, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that Contractor shall defend, indemnify, and hold Owner and Structural Engineer harmless from any and all liability, real or alleged, in connection with the performance of the Work on this Project, excepting for liability arising from the sole negligence of Owner or Structural Engineer.
B. The Contract Documents represent the finished structure. They do not include the method of construction. Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not be limited to: bracing, shoring for loads due to construction equipment, temporary structures, and partially completed work. Observation visits to the site by Structural Engineer shall not include inspection of the above items.
C. UPRIGHT DESIGN & CONSULTING shall not have control over, or charge of, and shall not be responsible in any way for construction means, methods, techniques, sequences, or procedures, or for safety or safety precautions and programs in connection with any construction activities, since these are solely Contractor's responsibility under the Contract.
D. UPRIGHT DESIGN & CONSULTING shall not be responsible for contractor's schedule or failures to carry out any construction activities in accordance with the Contract Documents. UPRIGHT DESIGN & CONSULTING shall not have control over or charge of actions of Contractor, Subcontractor, or any of their Agents, or employees, or any other persons performing portions of any construction activities.
E. The structure is stable only in its completed form. Temporary supports required for stability of the structure during all intermediate stages of construction shall be designed and provided by Contractor.

1. 2 SUBMITTALS:

A. Submittals prepared by Subcontractors shall be reviewed by Contractor prior to submitting to Architect.
B. Reproduction of the Contract Documents for Shop Drawings is not permitted. Electronic drawing files will not be provided to Contractor.
C. Contractor shall verify the structurally supported equipment weights, opening sizes, and locations indicated on the Structural Drawings with Documents from other disciplines and notify Architect of any discrepancies.
D. Contractor shall submit Shop Drawings showing size, method of anchorage, weight, openings, and locations of equipment not indicated on the Structural Drawings prior to ordering for review by Structural Engineer to determine adequacy of the structure.
E. All submittals reviewed by Structural Engineer are reviewed for general conformance with design concept only and does not relieve the fabricator/vendor of responsibility for conformance with design drawings and Specifications, all of which have priority over submittals.
F. Submittals shall be reviewed within 10 working days after being received by Structural Engineer.

1. 3 QUALITY REQUIREMENTS:

A. Reference to standard specifications or codes of any technical society, organization, or association or to codes of local or state authorities, shall mean the standards in effect as of date of the Contract Documents, unless otherwise noted.
B. Contract Documents shall govern in the event of a conflict with standard specifications or codes of any technical society, organization, or association.
C. No provision of any referenced standard specification or code, whether or not specifically incorporated by reference in the Contract Documents, shall be effective to change the duties and responsibilities of Owner, Architect, Structural Engineer, Contractor, or any of their Consultants, Agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Structural Engineer or any of Structural Engineer's Consultants, Agents, or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibilities contrary to the provisions of the Contract Documents.
D. Structural Documents are being released prior to Documents of other disciplines. Contractor shall coordinate Structural Documents with other portions of the Contract Documents as they are released. Report any discrepancy or omission to Architect.
E. All omissions and conflicts within the Contract Documents shall be brought to the attention of Architect prior to proceeding with the Work.
F. Contractor shall verify dimensions and conditions at the job site. Any discrepancies between the conditions found and those indicated in the Contract Documents shall be brought to the attention of Architect prior to proceeding with the Work.
G. See Documents by other disciplines for floor, wall, and roof openings, trenches, pits, pipe sleeves, equipment pads, metal pan stairs, miscellaneous iron, etc.
H. No pipes, ducts, chases, etc. shall be placed in structural beam and column members nor shall any structural member be cut for pipes, ducts, etc., unless noted otherwise. Notify Structural Engineer when Documents by other disciplines show openings, pockets, etc. not indicated in the Structural Drawings, but are located in structural members. Contractor shall obtain prior approval from Structural Engineer for installation of such pipes, ducts, chases, etc.
I. Details labeled 'Typical' on the Structural Drawings apply to all situations occurring on Project that are the same or similar to those locations specifically indicated. Where a detail is not indicated, the detail shall be the same as for other similar conditions.
J. Contractor designed elements shall be designed by licensed Professional Engineers registered in the State where Project is located. Contractor shall submit Shop Drawings, design load data, support reactions, and certification that elements were designed for loads specified in the Contract Documents or in the Building Code. All documents noted shall be sealed by the licensed Engineer. If criteria indicated are not sufficient, submit a written request for additional information to Architect. The following elements and their connections shall be Contractor designed:
   1. Structural steel connections, if altering design shown on the Structural Drawings
   2. Open web steel joists and joist girders
   3. Window and curtain wall systems
   4. Skylights

1. 4 SPECIAL INSPECTIONS:

A. Special inspections shall be in accordance with the Building Code.
B. Special inspection reports shall be furnished to Building Official, Owner, Architect, Structural Engineer, and Contractor. Discrepancies shall be brought to the attention of Contractor, and if not corrected, shall be reported to Building Official, Owner, Architect, and Structural Engineer.
C. The Special Inspector shall submit a final report stating that the structural work was, to the best of the Special Inspector's knowledge, performed in accordance with the Contract Documents.
D. The following types of work require Special Inspections: (Refer to the Building Code and Specifications for detailed inspection requirements.)
   1. Prepared Fill
   2. Concrete Construction
   3. Steel Construction
   4. Sprayed Fire resistive Materials

1. 5 DESIGN CRITERIA:

A. The structure is designed in accordance with the International Residential Code, 2015 Edition.
B. No Provisions have been made for future building horizontal or vertical expansion.
C. Gravity Loads:
   1. Roof Load:
      a. Live = 20 psf
      b. Dead = 15 psf
   2. Floor Live Load:
      a. Sleeping Rooms: 30 psf
      b. Rooms Other Than Sleeping Rooms: 40 psf
      c. Stairs: 40 psf
      d. Decks: 40 psf
      e. Balconies Smaller than 100sf: 60 psf
   3. Floor Dead Load
      a. 10 psf
   4. Ground Snow Load:
      a. p_g=20 psf
D. Lateral Loads:
   1. Wind Load:
      a. Basic Wind Speed: 90 MPH
      b. Wind Exposure: Category B
   2. Seimic Load:
      a. Seismic Design Category C
      b. Site Class D

DIVISION 2- FOUNDATION

2. 1 GENERAL:

A. Construct non-basement floor slabs on the granular fill layer required by the plan notes. Granular fill shall be placed on an 18" layer of non-expansive soil.
B. Backfill basements and retaining walls with ASTM 448 No. 57 stone or equivalent approved by the Structural Engineer. Extend stone from the base of the walls outward at a 45 degree angle to the vertical and provide toe drain wrapped in filter fabric.
C. Backfilling:
   1. Do not Backfill basement wall and grade beams until bracing floors are in place and adequate temporary bracing is installed.
   2. Backfill in even lifts alternating from side to side with 2'-0" maximum difference in lifts
   3. Backfill under foundations with concrete or as approved by Soils Engineer
D. Earth Trenches may be used for forming footings only, in accordance with the above referenced soils report.
E. Finish Grades: At building to be min. 8" below to of Foundation at frame or frame with brick veneer and 6" min. below full masonry walls. Slope grade away from building min. 1" per foot for a distance of 8'-0" or to a swale.
F. Groundwater: An evaluation of the soil for the presence or absence of ground water is required prior to the pouring of concrete. If groundwater is present provide drain tile inside and outside of foundation and waterproof with an approved 'waterproofing' system. Joints to be lapped and sealed per manufactures installation instructions. All joints in wall and floors to be water tight.
G. Refer to architectural drawings for waterproofing and drainage at foundation.

2. 2 FOOTINGS:

A. Total load soil bearing pressure used in design: 1500 psf, Assumed
B. Coefficient of horizontal friction between concrete and soil = 0.35, Assumed.
C. Minimum depth from exterior ground surface to bottom of Foundations = 30 inches.
D. Equiv. Fluid pressure of soil against walls connected to supporting floors top and bottom = 100 pcf.
E. Bottom of all footings and pads to be set on virgin soil. Piers to extend a minimum of 24" into solid undisturbed virgin soil. Both shall be a minimum of 30" below grade.

DIVISION 3- CONCRETE

3. 1 GENERAL:

A. SUBMITTALS:
   1. Submit a copy of each concrete mixture, including data and submittals to comply with the requirements in ACI 301.
B. QUALITY ASSURANCES:
   1. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C requirements for production facilities and equipment.
   2. Source Limitations: Obtain each type of cement of the same brand from the same manufacturer's plant, obtain aggregates from one source, and obtain admixtures through one source from a single manufacturer.
   3. Comply with ACI 301-99, 'Specifications for Structural Concrete.'
   4. Comply with ACI 117-90, 'Specifications for Tolerances for Concrete Construction and Materials.'
   5. Locate Construction Joints as shown or noted and to least impair strength of structure. Construction Joints not shown on the Structural Drawings are Subject to approval by the Structural Engineer.
C. Horizontal Joints:
   1. Locate in Walls and Columns at the underside of the lowest Slab, Beam, Joist or Girder intersecting each Wall or Column.
   2. Unless noted otherwise, roughen entire Joint Surface to 1/2" amplitude using a hand rake before Concrete sets or, if sets, mechanically roughen to expose course aggregate and to achieve 1/4" amplitude roughness.
   3. At Bentonite waterstops leave a smooth troweled path between roughened areas to the width of the waterstop. horizontal Joints not permitted within the height of: Footings, Caps, Tie Beams, Grade Beams, Stem Walls, Beams, Girders, Joists, Slabs, or in Columns and Walls between levels.
D. Vertical Joints:
   1. Locate at midspan of Slab, Joists, Beams, and Girders
   2. Make Joints perpendicular to main reinforcing.
   3. If Members intersect at midspan, Offset Joint by twice the width of the wider member.
   4. In Joists, Beams, and Girders use 3 1/2" high horizontal keys across the width of the member spaced 8' vert. leave gap in keys at water stops.
   5. At Metal Deck Slabs, Generally layout Joints midway between Beams and 5 feet before Girders. Submit proposed layout for approval by owner.
E. Floor Slab Control Joints:
   1. Maximun joint spacing = 2 x Slab Thickness x 1 ft/12 in.
   2. Sawcut or Tool joints in square pattern in each direction.
   3. Extend control joints to corners.

3. 2 REINFORCING:

A. Reinforcing steel shall be ASTM A615 Grade 60, deformed bars, unless noted otherwise. Welding of ASTM A615, grade 60 reinforcing is not allowed.
B. Reinforcing Steel to be welded shall be ASTM 706, Grade 60, deformed bars.
C. Welded Wire Fabric shall be ASTM A185 and shall be contact lap spliced two full wire spaces.
D. All Reinforcing bars shall be detailed, fabricated, supported and placed in accordance with ACI 315"Details and Detailing of Concrete Reinforcement" and CRSI's 'Manual of Standard Practice'
E. Reinforcing, including dowels, shall be securely tied and cast with the lower member. Placing reinforcing after concrete has been placed is not permitted.
F. Field bending of reinforcing partially embedded in concrete is not allowed unless specifically noted in the Structural Documents or approved by the Structural Engineer.
G. Provide corner bars to match horizontal reinforcing at corners and intersections.
H. Provide dowels from foundation of the same grade, size, and number as vertical wall or column reinforcing, unless noted otherwise.
I. Adhesive for reinforcing dowels into existing concrete shall be HILTI HIT 150 or approved equal. Minimum embedment length shall be 12 bar diameter, unless noted otherwise.
L. All reinforcing shall be contact lap spliced or doweled as follows:

Unless lap length is given, splice #11 and smaller bars with contact laps selected from schedules below, including locations where 'A' or 'B' laps are noted on Structural Drawings.

1. Top bars are horizontal or sloping bars with more than 12" of fresh concrete cast below them.
2. Case 1 may be used when both spacing between bars is not less than 2 bar diameters and clear cover is not less than 1 bar diameter, otherwise use case 2.
3. For lightweight concrete, multiply lengths in tables by 1.3
4. For epoxy coated reinforcement, multiply lengths in tables by 1.5.

f'_c=3,000 psi SPLICE LENGTH (ft-in)

BAR	TOP BARS		OTHER BARS	
SIZE	CASE 1	CASE 2	CASE 1	CASE 2
#3	2'-4"	3'-6"	1'-10"	2'-9"
#4	3'-2"	4'-8"	2'-5"	3'-7"
#5	3'-11"	5'-10"	3'-0"	4'-6"
#6	4'-8"	7'-0"	3'-7"	5'-5"
#7	6'-9"	10'-2"	5'-3"	7'-10"
#8	7'-9"	11'-7"	6'-0"	8'-11"
#9	8'-9"	13'-1"	6'-9"	10'-1"
#10	9'-10"	14'-9"	7'-7"	11'-4"
#11	10'-11"	16'-4"	8'-5"	12'-7"

For bar embedment and for extension beyond corners use top bar case 1

3. 3 CAST-IN-PLACE CONCRETE:

A. MATERIALS:
   1. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:
   2. Portland Cement: ASTM C 150, Type I. Supplement with the following as necessary:
      a. Fly Ash: ASTM C 618, Class C or F.
   3. Normal-Weight Aggregate: ASTM C 33, graded, 1-inch nominal maximum aggregate size
   4. Lightweight Aggregate: ASTM C 330, 3/4-inch nominal maximum aggregate size.
   5. Water: ASTM C 94/C 94M; potable.
   6. Air-Entraining Admixture: ASTM C 260.
   7. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
      a. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
      b. Retarding Admixture: ASTM C 494/C 494M, Type B.
      c. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
      d. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F. High-Range,
      e. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
      f. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

B. RELATED MATERIALS:
   1. Vapor Retarder: Multi-ply reinforced polyethylene sheet, ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 MILS thick.
   2. Vapor Barrier: 10 mil polyethylene film is required under all interior concrete slabs. Overlap seams a minimum of 6" and seal.
   3. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

C. CURING MATERIALS:
   1. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
   2. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry. 3. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
   3. Water: Potable.
   4. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

D. Reinforced concrete shall have the following minimun 28-day compressive strengths:
   1. 2500 psi - basement slabs and interior slabs except garage slabs.
   2. 3000 psi - foundation and basement walls, footings and piers.
   3. 3500 psi - porches, walks, patios, steps, garage slabs, and driveways.

E. All concrete to have the following unit weights (+/- 3 pcf):
   1. Normal weight concrete: plastic = 145 pcf
   2. Lightweight: plastic = 117 pcf, air-dried = 110 pcf
   3. Max. slump 4"G. All concrete exposed to freezing and thawing and deicer chemicals shall have 6% (+1%/-1.5%) air entrainment. Do not air entrain concrete Floors to be trowel finished.

F. All concrete shall have a maximum water-cement ratio of 0.45 for all concrete cast against or permanently exposed to soil or weather, 0.50 for all other concrete.
G. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
   1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
   2. Do not add water to concrete during delivery, at Project site, or during placement.
H. Provide concrete cover for reinforcing as follows:
   1. Concrete cast against and permanently exposed to earth.....3"
   2. Concrete exposed to earth or weather.....2"
   3. Concrete not exposed to weather or in contact with ground:
      a. Slabs and walls.....3/4"
      b. Beams and columns.....1-1/2"
I. Concrete Foundation height limits:
   1. Max. 8 Foot pour height - 8" thick wall.
   2. Max. 9 Foot pour height - 10" thick wall.
   3. Max. 10 Foot pour height - 12" thick wall.
J. Contractor shall not backfill until concrete Foundation has cured for a minimun of 10 days.
K. For concrete cast on metal deck, concrete thickness indicated is nominal. Contractor shall allow for the deflection of the floor assembly due to the wet weight of the concrete when calculating concrete quantity.
L. Provide construction or control joints in slab-on-grade as indicated in the Structural Drawings. If joint pattern is not indicated, provide joints at 15 feet (+/-) in both directions and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays, etc.).
M. Interface of construction joints shall be roughened to a full amplitude of 1/4". Surface of construction joints shall be clean and free of laitance. Immediately before new concrete is placed, construction joints shall be wetted and standing water removed.
N. Provide compressible filler and sealant in slab-on-grade and wall and column interfaces that are not doweled together u.n.o.
O. All column pockets shall be filled with concrete after column is erected.
P. Conduit and pipes embedded in walls, beams, or slabs shall be no larger in outside dimension than 1/3 the overall member thickness or 2" maximum, and shall be placed no closer than 3 diameters or widths on center.
Q. At floor drains, locally slope floor towards drain. See Documents from other disciplines for drain locations.
R. Provide 3/4"Chamfers at all Columns, Beams, Walls, and Slab edges that are exposed to view in the finished structure.
S. See Architectural Drawings for Door and Window openings, Drip Slots, Reglets, Masonry Anchors, Precast Bearing Ledges, and for miscellaneous embedded Plates, Bolts Anchors, Etc.
T. Refer to Architectural Drawings for concrete Finishes. Where Finish is not specified, Conform to requirements of ACI 301 as modified by the specifications.
U. Select Formwork to produce the finish specified. Where Finish is not specified, exposed surfaces shall be ACI 347R class C. A surface is considered exposed if the concrete texture can be seen by anyone in the completed structure.
V. Unless noted, splice continuous top and bottom bars as follows: Top bars at midspan, Bottom bars over support.

3. 4 TESTING AND INSPECTING:

A. Owners will engage a qualified testing agency to perform field test and inspection and to prepare reports. A Special Inspector shall be retained where required by Division 1 and the Building Codes.
   1. INSPECTIONS:
      a. Steel reinforcement placement.
      b. Steel reinforcement welding.
      c. Headed bolts and studs.
      d. Verification of use of required design mixtures.
      e. Concrete placement, including conveying and depositing.
      f. Curing procedures and maintenance of curing temperatures.
   2. TESTS: Performed according to ACI 301
      a. Testing frequency: One composite sample for each day's pours of each concrete mix exceeding 5 cu. yd., but less than 25 cu.yd., plus one set for each additional 50 cu. yd. or fraction there of.

3. 5 REPAIR:

A. Remove and replace concrete that does not comply with the requirements mentioned above.

DIVISION 4 - CONCRETE MASONRY

4. 1 GENERAL:

A. This section specifies requirements for construction of masonry unit walls.
B. Shop Drawings: Submit shop drawings for fabrication, bending, and placement of reinforcing bars. Comply with ACI 315. Show bar schedules, diagrams of bent bars, lateral ties and other arrangements and assemblies as required for fabrication and placement of reinforcement for unit masonry work. Submittal shall also show method of hanging soffit or lintel masonry and reinforcing masonry for embedment of anchors for hung fixtures.
Water penetration testing is required.

4. 2 REINFORCING:

A. Reinforcing steel shall be ASTM A615 Grade 60 deformed bars, unless noted otherwise. Welding of ASTM A615 Grade 60 reinforcing is not allowed.
B. Joint reinforcing shall be truss type conforming to ASTM A951, with prefabricated corner and tee units at corners and intersections.
C. Dowels to supporting structure shall be of the same grade, size, and number as vertical reinforcing.
D. Provide corner bars to match horizontal reinforcing at corners and intersections.
E. Vertical reinforcing shall be centered in all Walls (u.n.o.).
F. Reinforce 8" concrete masonry vertically with #5 rebar full height at 32" o.c. unless noted otherwise. Reinforce 12" concrete masonry vertically with #6 rebar full height at 32" o.c. unless noted otherwise.
G. Reinforce 8" bond beams with 2-#5 rebars continuous, unless noted otherwise. Reinforce 12" bond beams with 2-#6 rebars continuous, unless noted otherwise.
H. Space joint reinforcement at 16" o.c. vertically typical and at 8" o.c. vertically at parapets and cantilevered walls, unless noted otherwise.
I. Coordinate layout of dowels from concrete on Shop Drawings.
J. Provide bond beams at Base of Wall, Sill Lines, Head Lines bottom edge of openings (extend minimun of 2'-0" past opening), top of walls, floor lines, roof lines, top of parapets and at 10 Feet (1.C. maximun in between bond beam shall be continuous (u.n.o.).
K. Provide vertical wall reinforcing, same size as adjacent bars, At: Corners, ends, jambs, each side of opening and each side of control and expansion joints.
L. Continue vertical reinforcing floor to floor (or roof) and extended to top of parapet.
M. Continue reinforcing through Construction Joints, Control joints in and around corners unless noted otherwise.
N. Provide standard hooks on bars terminating into masonry face:
   1. In walls at openings, Heads, Jambs, expansion joints, ends.
   2. In Beams at top, bottom and ends.
O. Splice continuous top bars at midspan and bottom bars over support. Splice vertical reinforcing at floor and roof lines. Other splice locations subject to approval.
P. Grout cell solid at: Reinforcing, bond beams, inserts, anchors, elevator guide rails, and 24" below bearing points of steel sections and 12" to each side below grade.

BAR SPLICING TABLES FOR REINFORCED MASONRY:

f'm=2,000 psi SPLICE LENGTH (ft-in) - BAR CENTERED

BAR	NOMINAL WALL THICKNESS			
SIZE	6"	8"	10"	12"
#3	1'-4"	1'-4"	1'-4"	1'-4"
#4	1'-10"	1'-10"	1'-10"	1'-10"
#5	3'-0"	2'-3"	2'-3"	2'-3"
#6	5'-10"	3'-9"	3'-9"	3'-9"
#7	-	5'-9"	4'-5"	4'-5"
#8	-	8'-2"	6'-3"	5'-5"
#9	-	-	8'-1"	6'-6"

f'm=2,000 psi SPLICE LENGTH (ft-in) - BAR OFFSET

BAR	NOMINAL WALL THICKNESS			
SIZE	6"	8"	10"	12"
#3	-	1'-6"	1'-4"	1'-4"
#4	-	2'-7"	2'-5"	2'-5"
#5	-	4'-0"	3'-9"	3'-6"
#6	-	8'-1"	7'-7"	7'-1"
#7	-	-	10'-3"	9'-7"
#8	-	-	-	13'-5"
#9	-	-	-	-

4. 3 CONCRETE MASONRY UNIT:

A. Concrete Masonry units shall be ASTM C90, lightweight (105 pcf), Grade N, Type 1-2 cell units.
B. Provide concrete masonry that develops the following minimun net-area compressive strength (f'_m) at 28 days: 2000 psi. Mortar shall be of the following types:
   Walls below grade: Type M
   Bearing walls: Type M or S
C. Grout shall conform to ASTM C476. Grout shall be proportioned with a slump of 8" to 11" using 3/8" nominal maximum size course aggregate. Grout strength at 28 days, f'_m 2000 psi.
D. Conduits, pipes, and sleeves shall be no closer than 3 diameters on center.
E. Maximum area of vertical conduits, pipes, or sleeves placed in columns or pilasters shall not displace more than 2 percent of the net cross section.
F. Special Inspections Level 2 as defined in the building code.
G. Prism testing is required.

DIVISION 5 - METALS

5. 1 STRUCTURAL STEEL:

A. GENERAL:
   1. Structural steel shall be fabricated and erected in accordance with the AISC 'Load and Resistance Factor Design Specification for Structural Steel Buildings,' 1993 with Supplement No. 1.
   2. All steel permanently exposed to view shall be designated as architecturally exposed structural steel.
   3. Materials shall conform to the following, unless noted otherwise.

a. W's and WT's	ASTM A992
b. Plates & other shapes	ASTM A36
c. HSS: Sq. & Rect.	ASTM A500, Grade B
d. Pipe	ASTM A53, Type E or S, Grade B
e. Bolts, hex head	ASTM A325, 3/4" diameter (min.),
f. Anchor Rods and heavy hex nuts	ASTM F1554, Grade 36 with A36 washers
g. Threaded Rod	ASTM A36
h. Headed Studs	AWS D1.1, Type B
i. Electrodes	Matching strength, 70 ksi min. (60 ksi min. for welding light gauge)

   4. Detail steel beam connections as simple span beams, unless noted otherwise.
   5. Beam connections not fully detailed shall be designed by Contractor for service forces indicated on the Structural Drawings considering the forces to be acting simultaneously. If no reaction is shown, design connection for minimum reaction.
      a. Minimum beam shear reaction is 10 kips.
   6. All bolted connections shall be designed as snug-tight bearing connections with threads included in the shear plane, unless noted otherwise.
   7. Where items are to be anchored to concrete, except at column baseplates, use standard sized holes in steel member, unless noted otherwise.
   8. Use pre-qualified welded joints in accordance with AISC and AWS D1.1-2000. Non-prequalified joints shall be qualified prior to fabrication.

B. SUBMITTALS:
   1. Shop and Erection Drawings detailing all information necessary for the fabrication and erection of structural steel components.
      a. No Contract Document in any form shall be used as a background for a Shop Drawing or erection drawing.
      a. Include details of cuts, connections, splices, camber, holes, stiffeners, doubler plates, and other pertinent data, such as surface preparation. Include setting drawings, templates, and directions for installation of embedded items to be installed by others
      b. Indicate welds by standard AWS symbols as given in AWS 2.4 'Standard Symbols for Welding, Brazing, and Nondestructive Testing,' distinguishing between shop and field welds, and show size, length, and type of each weld. Identify welds by WPS number.
      d. Include design calculations for all fabricator designed connections. Calculations shall be signed and sealed by a qualified professional engineer responsible for preparation.
         1) Calculations are for informational purposes only and will not be reviewed or returned to the fabricator.
         2) Welding certificates.
         3) Welding procedure specifications (WPS) per AWS D1.1 for each weld.
         4) Qualification Data: For fabricator, professional engineer, and testing agency.
   2. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:
      a. Structural steel including chemical and physical properties.
      b. Bolts, nuts, and washers including mechanical properties and chemical analysis.
      c. Shop primers.
      d. Nonshrink grout.

C. QUALIFICATIONS:
   1. Erector Qualifications: Engage an experienced Erector who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
   2. Fabricator Qualifications: A qualified Fabricator who participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category Sbd.
   3. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with structural steel framing that are similar to that indicated for this Project in material, design, and extent.
   4. Welding: Comply with applicable provisions of AWS D1.1-2000, 'Structural Welding

2015 IRC

GEORGE CORY CALKINS
NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
2/12/25
CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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UPRIGHT DESIGN & CONSULTING
Structural Solutions

DATE: 5/18/26
CHECKED: GCC
DRAWN: SK
SCALE: NOTED

SHEET NO. S2

NOTES

17 EDWIN AVE.
ST. LOUIS, MO 63122

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2 OF 8

Code--Steel.'
a. Present evidence that each welder has current AWS qualifications for the work.
5. Comply with applicable provisions of the following specifications and documents:
a. AISC's 'Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings,' 1993 with Supplement No. 1.
b. AISC's 'Specification For the Design of Steel Hollow Structural Sections,' 1997.
c. AISC's 'Specification For Load and Resistance Factor Design of Single-Angle Members,' 1992.
d. ASTM A 6 'Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use.'
e. Research Council on Structural Connections' (RCSC) 'Specification for Structural Joints Using ASTM A 325 or A 490 Bolts,' 2000.
f. AISC's 'Code of Standard Practice for Steel Buildings and Bridges'. 2000
6. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
a. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.
7. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.
8. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

D. QUALITY CONTROL - SOURCE:
1. Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.
a. Testing agency will conduct and interpret tests and state in each report whether test specimens comply with or deviate from requirements.
b. Provide testing agency with access to places where structural-steel this work is being fabricated or produced to perform tests and inspections.
2. Correct deficiencies in or remove and replace Work that test reports and inspections indicate does not comply with the Contract Documents.
3. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
4. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's 'Specification for Structural Joints Using ASTM A 325 or A 490 Bolts.'
5. In addition to visual inspection, 15 percent of fillet shop-welded connections and 100 percent of complete and partial joint penetration shop-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
a. Liquid Penetrant Inspection: ASTM E 165.
b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
c. Ultrasonic Inspection: ASTM E 164.
d. Radiographic Inspection: ASTM E 94.
6. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:
a. Bend tests will be performed if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
b. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

E. QUALITY CONTROL - FIELD:
1. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds.
a. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from requirements.
2. Welded Connections: Field welds will be visually inspected according to AWS D1.1.
3. In addition to visual inspection, 15 percent of fillet Field-welded connections and 100 percent of complete and partial joint penetration Field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
a. Liquid Penetrant Inspection: ASTM E 165.
b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
c. Ultrasonic Inspection: ASTM E 164.
d. Radiographic Inspection: ASTM E 94.
4. In addition to visual inspection, field-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:
a. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connector.
1. If two or more shear connectors fail the visual inspection, then all shear connectors on that beam shall have bend tests performed.
b. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.
5. Correct deficiencies in or remove and replace Work that test reports and inspections indicate does not comply with the Contract Documents.
6. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

F. ERECTION:
1. Set structural steel accurately in locations and to elevations indicated and according to AISC's 'Code of Standard Practice for Steel Buildings and Bridges' and 'Load and Resistance Factor Design Specification for Structural Steel Buildings.'
2. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
a. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
b. Weld plate washers to top of base plate.
c. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout.
d. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
3. Maintain erection tolerances of structural steel within AISC's 'Code of Standard Practice for Steel Buildings and Bridges.'
4. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
a. Level and plumb individual members of structure.
b. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
5. Splice members only where indicated.
6. Do not use thermal cutting during erection.
7. Finish thermally cut sections within smoothness limits in AWS D1.1
8. Thermal cutting torches may be used in the field for correcting fabrication errors in structural framing only with the approval of the Architect. When thermal cutting is permitted, cutting shall be done only with a mechanically guided torch or a torch controlled using a guide bar, except as permitted below. Cuts shall be smooth and regular in contour, and free of notches. The radius of reentrant corners shall be no less than one-half inch. Cuts performed to modify beam copes may be made with a smaller radius, but shall not be cut square.
a. Thermal-cut edges that are not welded and will be free of substantial stresses, as determined by the Architect, may be cut manually with an unguided torch provided the specified AISC edge distances to holes are maintained.
b. Other thermal-cut edges and edges to be welded may be cut manually with an unguided torch to a line within 1/8 inch of the finished dimension, with final removal of material completed by chipping or grinding to produce a surface quality equal to that of the base metal edges.
9. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
10. Shear Connectors: Verify steel surfaces have been prepared as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's printed instructions.ati
a. All welding ferrules for shear connectors shall be removed prior to placement of concrete.

G. FIELD CONNECTIONS
1. High-Strength Bolts: Shop install high-strength bolts according to RCSC's 'Specification for Structural Joints Using ASTM A 325 or A 490 Bolts' for type of bolt and type of joint specified.
2. Joint Type: Snug tightened.
3. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
a. Comply with AISC's 'Code of Standard Practice for Steel Buildings and Bridges' and 'Load and Resistance Factor Design Specification for Structural Steel Buildings' for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
b. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
c. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's 'Code of Standard Practice for Steel Buildings and Bridges' for mill material.
d. Grind all exposed welds to a smooth profile. Dress exposed welds.

H. ANCHORS TO CONCRETE AND MASONRY
1. Anchors shall be as indicated on the drawings.
2. Expansion anchors shall be Hilti Kwik Bolt II anchors or approved equal. Anchors shall be plain, uncoated except provide stainless steel anchors where supported item is galvanized.
3. Adhesive anchors shall be Hilti HIT HY adhesive anchors or approved equal. Use HY 150 adhesive when anchoring into concrete or grouted concrete masonry base material.
4. When installing anchors, do not cut existing reinforcing. Install anchors to accommodate the standard hole size in steel.
5. Expansion anchor embedment depth shall be as follows, unless noted otherwise: ct.
3/8" diam. : 2-1/2" embedment
1/2" diam. : 3-1/2" embedment
5/8" diam. : 4" embedment
3/4" diam. : 4-3/4" embedment
1" diam. : 6" embedment
6. Adhesive anchor embedment depth shall be as follows, unless noted otherwise:
3/8" diam. : 3-1/2" embedment
1/2" diam. : 4-1/4" embedment
5/8" diam. : 5" embedment
3/4" diam. : 6-5/8" embedment
1" diam. : 8-1/4" embedment

DIVISION 6-WOOD

6.1 ROUGH CARPENTRY
A. Provide dressed lumber, S4S, 19 percent maximum moisture content for 2-inch nominal thickness lumber.
B. Preservative treated materials shall be AWPA C2 lumber and AWPA C9 plywood. Treated wood members in contact with masonry at concrete, wood members exposed to the exterior, as indicated.
C. Framing to be in accordance with the 'National Forest Products Manual for Wood Frame Construction.'
D. Provide dimension lumber for load bearing framing as follows:
1. 2x4 and 2x6: Spruce-Pine-Fir No. 2
2. 2x8, 2x10, 2x12: Southern Pine No. 1
3. 6x6 or 8x8 posts: Douglas Fir-South #1
E. Laminated Veneer Lumber (LVL) shall be manufactured with exterior-type adhesive complying with ASTM D2559 and allowable stress determined according to ASTM D5456.
1. Allowable Flexural Stress, Fb = 2600 psi for 12-inch deep members.
2. Modules of Elasticity, E = 1,900,000 psi.
F. Parallel Strand Lumber (PSL) shall be manufactured with exterior-type adhesive complying with ASTM D2559 and allowable stress determined according to ASTM D5456.
1. Allowable Flexural Stress, Fb = 2900 psi for 12-inch deep members.
2. Modules of Elasticity, E = 2,000,000 psi.
G. 2x12 floor joists to be grade-marked a minimum of 1000 psi, 2x10 floor joists to be grade-marked a minimum of 1050 psi. Single member use, u.n.o. Substructure exposed to exterior to be pressure treated.
H. Posts: (3) 2x to be interpreted as (2) 2x 'cripples', glued and nailed, plus a minimum (1) full height unbroken stud. All posts to be blocked solid to top of structure below. Studs used as posts to be Spruce-pine-fir. Minimum 2-2xWall thickness post size typical under all beams and headers, unless noted otherwise.
I. Exterior walls and interior partitions to be framed with a minimum 2x4 studs at 16" o.c. unless noted otherwise.
J. Headers: min. 2-2x10's u.n.o. Glue and nail at multiple member beams, typ at all doors and windows.
K. Sheathing:
1. Sub-floor: APA rated Sturd-i-floor, (23/32) tongue and groove plywood, 3/4" nominal, exposure 1, glued and nailed to joists.
2. Exterior wall: APA rated sheathing exposure 1, span rating 24/16 (7/16" OSB) or 32/16 (15/32" plywood) 1/2" nominal. Bracing shall comply with 2015 International Residential Code.
3. Roof sheathing: APA rated sheathing exposure 1, minimum span rating 32/16 (15/32") 1/2" nominal with ply clips and without edge support or minimum (23/32) 3/4" thick plywood or 24/16 7/16" OSB with edge supports. Edge supports shall be tongue and groove edges, panel edge clips (midpoint of span between each support), or 2x blocking.
L. Bolts shall be ASTM A307.
M. Use Simpson or similar metal framing anchors and connectors as noted and as required For wood-to-wood, wood-to-concrete, and wood-to-masonry connections. Connectors shall be hot-dip galvanized steel of structural capacity.
N. Adhesives for field gluing panels to framing shall conform to APA AFG-01.
O. Nailing to be in accordance with Table R602.3 (1) of the 2015 International Residential Code. Nails called out on drawings shall be 10d common unless noted otherwise
P. Fire-blocking: Top and bottom of all conventional, double stud, and staggered stud frame walls to be fire-blocked.
Q. Double Floor joists around stair openings, fireplace hearths, at corners of cantilevered bays and under parallel partitions. (Typical at all openings, u.n.o.) Bearing partitions and post shall be unbroken (run continuous) from bearing to structure below.
R. Cutting, notching, and/or boring of holes in wood beams, joists, rafters or studs, shall not exceed the limitations noted in Chapter 9 of the 2015 International Residential Code. Reinforcement of studs shall be done in accordance with the IRC. Install 1x4 each side of steel beam nailed to Floor joist, or ramset 2x4 to top of beam and toe nail joists, or block solid between joists over beam.
S. Lateral bracing: All exterior walls shall be braced in accordance with Section R602.10 wall bracing per 2015 International Residential Code.
T. Roof Overframing: Min. 2x6's at 16" o.c. unless noted otherwise on plans. All overframing to bear at a 30 degree angle fro the perpendicular at all roof framing. (max 10'-0" span).
U. Truss Requirements:
1. Trusses to be designed by others. Comply with AFPA NDS-2005 and TPI 1-2007 Fabricators responsibilities include but are not limited to designing all connections and truss to truss connections. All trusses must be designed to resist horizontal thrust. No horizontal thrust shall be applied to any walls. All trusses to be two (2) point bearing unless noted otherwise. Trusses to be designed to minimize total deflection. Compound deflection must be taken into account when designing truss system. Total load deflection of truss system no to exceed L/360. Scissor trusses with horizontal movement greater than 1/2" to be anchored with TC Simpson anchors on one end, or approved equal. Truss supplier to provide shop drawings, product data for all truss components, stress diagrams (which have been signed and sealed by a structural engineer licensed to practice structural engineering in Missouri) and a truss layout plan showing all truss locations, hangers, connectors, spacing, pitch, girders and cross bracing. Fabricator shall coordinate his/her work with the architectural plans and notify the architect of variations prior to fabrication. General contractor is responsible for checking and coordination truss drawings. General contractor shall submit truss drawings to the engineer for review for general conformance with the construction documents. All variations must be brought to the attention and approved by the engineer.
2. Minimun load requirements:

Top Chord:	20 lb/sqft Live Load
Bottom Chord:	10 lb/sqft Dead Load
Bottom Chord of Attic Trusses:	40 lb/sqft Live Load
Bottom Chord @ Storage Areas:	20 lb/sqft Live Load

(To be applied when the truss has a web configuration that allows a rectangular space of 24" horizontal X 42" vertical between the webs and bottom chord.)
Exception: The bottom chord 20 lb L.L. design criteria may be deleted for house and/or garage attics accessible only through 22"x30" attic scuttle (no pull down stair, etc.) and complying with the following:
Garage areas: Warning signage (each side) plus a barrier obstruction railing on each side of scuttle.
House areas: Warning signage (each side)
The sign shall be metal and be a minimum of 40 square inches with a 1" minimum letters in distinguishable colors and shall be fastened to a truss web at 36" directly above or within 18" of the edge of the scuttle opening. The sign shall read 'WARNING - TRUSSES NOT DESIGNED FOR ATTIC STORAGE.' A sign is required on both sides of scuttle opening. The obstruction railing (garage attics) shall be a minimum of 1x4, 2x4 or 3/8" x 6' plywood railing securely fastened to the trusses on each side of the scuttle opening at 24" to 30" above the bottom chord. This may be done by the truss fabricator in the shop or a field installation by the contractor.
V. I-Joists System: PRI (performance rated I-Joists) with APA EWS Trademark. Reference drawings for size and location. Use 40 lb Live Load and 10 lb Dead Load with L/480 total load. At tile and marble flooring, use 22 lb Dead Load and L/600. Comply with manufactures details including but not limited to bearing, blocking, rim boards, bracing and metal hangers, etc. Glue and nail all multiple ply beams and headers minimum 2 rows at 12" o.c. and per manufactures recommendations. Use screw shank nails. Do not use ring shank nails. General contractor shall provide shop drawings at 1/4" = 1'-0" scale for engineers review for general conformance with the structural drawings before ordering. General contractor is responsible for reviewing and coordination shop drawings. All variations must be brought to the attention of and approved by the structural engineer. Structural engineer does not take responsibility for the I-Joist shop drawings. (Disregard to conventional 2x floor joist notes above.)

DIVISION 7-MISCELLANEOUS

A. GENERAL:
1. Become thoroughly familiar with the contract documents during the bid period. resolve apparent deficiencies, omissions, contradictions, inconsistencies and ambiguities in contract documents with architect/engineer during the bid period. if any such condition cannot be resolved during the bid period, submit bid using the interpretation resulting in the greatest cost and resolve such items prior to beginning the work.
2. Prior to starting construction, excavation, shop drawings, and prior to ordering materials:
a. Check dimensions and elevations shown on structural drawings against architectural drawings. secure direction concerning missing or or conflicting information from owner's authorized representative
b. Survey and report floor and roof elevations of the existing building(s) with connections to this building.
c. Field verify dimensions and elevations relating to existing conditions. adjustments to plan dimensions and elevations of less than 6" to accommodate existing conditions shall be included in the contractor's bid and will not be considered a change in the work.
3. Use structural drawings with other contract documents, including those issued before and after the structural documents, and combine requirements into shop drawings and work.
4. Typical details, typical notes and general notes are applicable to all occurrences of the conditions depicted in the details or described in the notes unless other details or notes are provided for the condition.
5. No repair, correction, modification, or alteration, shall be made without prior review and acceptance of the structural engineer. Submit details and calculations prepared by a professional engineer registered in the state where the project is located and employed by contractor. A/E review is contractor's expense.
6. The structure is designed to function as a unit upon the completion of construction for the entire project and then only to support the design loads indicated. Contractor is responsible for determining loadings occurring during construction, and for coordinating loadings with other contractors, and for determining and not exceeding the capacity of the structure at any time prior to completion of the entire project. Contractor is responsible for procedures, means, methods and sequences of construction. Design and provide all temporary bracing. shoring, and/or support(s).
7. Review by owner's authorized representative of redundant submittals from backup, second source or replacement suppliers/contractors is contractor's expense.
8. A/E services related to substitutions or changes proposed by the contractor are the contractor's expense. Do not rely on acceptance in preparing bids. The A/E may reject these without cause.

B. OPENINGS:
1. Openings not shown on the structural drawings are subject to approval by the structural engineer. Contractor is responsible for the cost of re-routing systems to acceptable opening locations.
2. Permitted openings in new concrete shall be formed. Permitted openings in new steel shall be shop fabricated. Trade contractors shall not rely on core drilling or cutting of openings in new construction.
3. For new openings in existing concrete construction, locate existing embedments and secure architect/engineer approval prior to cutting.
4. Do not cut beyond edges or corners of new openings in existing construction. Do not cut deeper than required. Where saw cutting is used, do not over run corners - chip out corners manually.
5. Locations:
a. Openings in columns are not permitted.
b. Openings in girders, beams, and joists are permitted where shown on the Structural Drawings.
c. Openings through slabs between girders, beams and joists are generally permitted with the addition of reinforcing indicated in concrete notes on this drawing and the framing shown in the typical opening details. Submit locations for approval.

C. ANCHORING:
1. Do not cut reinforcing bars or damage other embedments. Repair of damaged concrete, reinforcing and other embedments is the expense of trade contractor installing the anchor.
2. Cast in anchors shall not change the cover between formwork and reinforcing.
3. Installer of anchor is responsible for determining if the structure can develop the capacity of the anchor.

D. EMBEDDED ITEMS:
1. Do not embed pipes, tubes, wires, conduits, ducts. or cavity creating non-structural items in concrete.
2. Permitted embedments are limited to reinforcing, connection plates and anchors.

E. SUPPORT AND BRACING OF WORK NOT SHOWN ON STRUCTURAL DRAWINGS::
1. Do not induce loads on or hang loads from deck, unless shown on drawings, including but not limited to these items: ceilings, pipes, ducts, equipment, etc. Contractor or sub-contractor installing such items shall provide sub-framing to transfer load to the structure supporting deck.
2. Do not suspend point loads from slabs totaling more than 500 lbs within any 50 square feet of continuous floor slab area. Engineer and provide sub-framing and bracing to transfer such loads to joists, beams, or girders at the expense of trade contractor suspending loads.
3. Supports, bracing, sub-framing, light gage framing, miscellaneous steel, bracket connectors and attachments not shown on the structural drawings are the contractor's responsibility and shall be engineered and provided by the trade contractor with items being supported or braced at the trade contractor's expense.
4. If structural drawings are referenced by other drawings for items not fully defined on Structural Drawings (and associated specifications) then engineer and provide such items on a performance basis in compliance with the governing building code. all costs shall be born by the trade contractor attaching to or bearing upon such items.
5. Support and bracing systems shall not transmit lateral loads to columns between floors or to the bottoms or sides of steel beams or joists. If other contract drawings indicate bracing or attachment details which would result in lateral loads being transmitted to the sides of columns between floors or to the bottoms or sides of beams or joists then the trade contractor responsible for the items transmitting such lateral loads shall include the cost in the bid for engineering and providing bracing from the point of attachment to the top of the next adjacent beam or joist.
6. Facade and wall system attachments to the structure: (Excluding stone panel systems and sculptures where indicated):
a. Shall not assume the structure provides moment resistance at the point of attachment.
b. Shall be to the edge of the floor slab or roof deck only unless noted on the Structural Drawings.
c. Shall not restrict independent vertical or lateral movement of the building levels.
7. Where dimensions or weights of equipment or systems are variable from manufacturer to manufacturer, verify dimensions and weights shown on drawings with selected manufacturer prior to ordering materials. Notify structural engineer of discrepancies.
8. Do not place equipment when shipping or operating weight exceeds weight indicated on Structural Drawings.
9. Contractor is responsible for all costs associated with adapting structure to accommodate selected elevator manufacturer's equipment, loadings and other requirements. Submit details and calculations prepared by a professional engineer registered in the state where the project is to be constructed and employed by contractor. The contractor is responsible for the means and methods of hoisting elevator equipment into place including hoist beams, whether or not shown or noted on any contract document.
10. Where engineering is required, the service shall be provided by an Engineer, registered in the state where the project is to be constructed.

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NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
2/12/25
CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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UPRIGHT DESIGN & CONSULTING
Structural Solutions

DATE: 5/18/26
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SCALE: NOTED

SHEET NO. S3 3 OF 8

NOTES

17 EDWIN AVE.
ST. LOUIS, MO 63122

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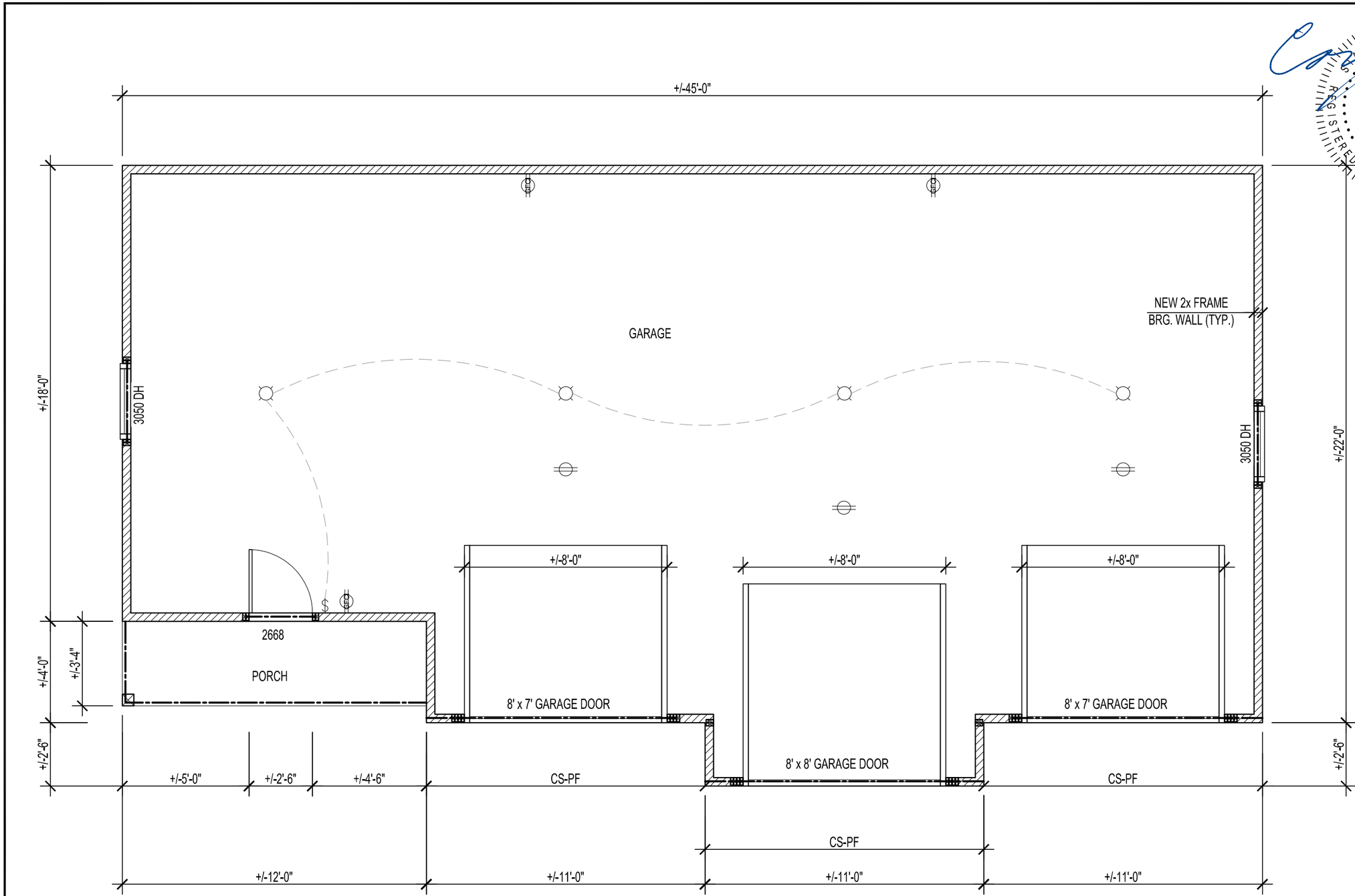

NORTH

GARAGE FLOOR PLAN

SCALE: ¼"=1'-0"

2015 IRC

STATE OF MISSOURI
GEORGE CORY CALKINS
NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER

3/20/26

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GARAGE FLOOR PLAN

17 EDWIN AVE.
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SHEET NO. 1

1 OF 1

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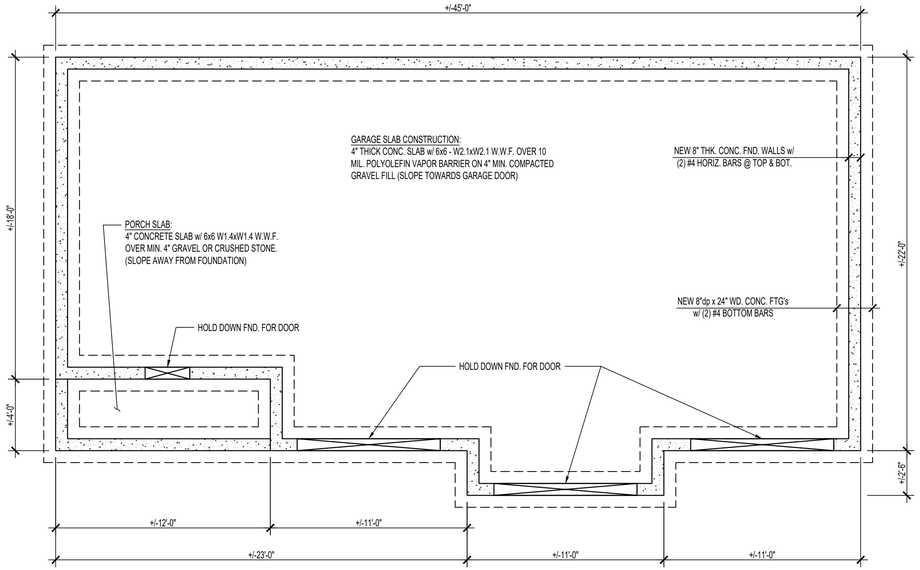
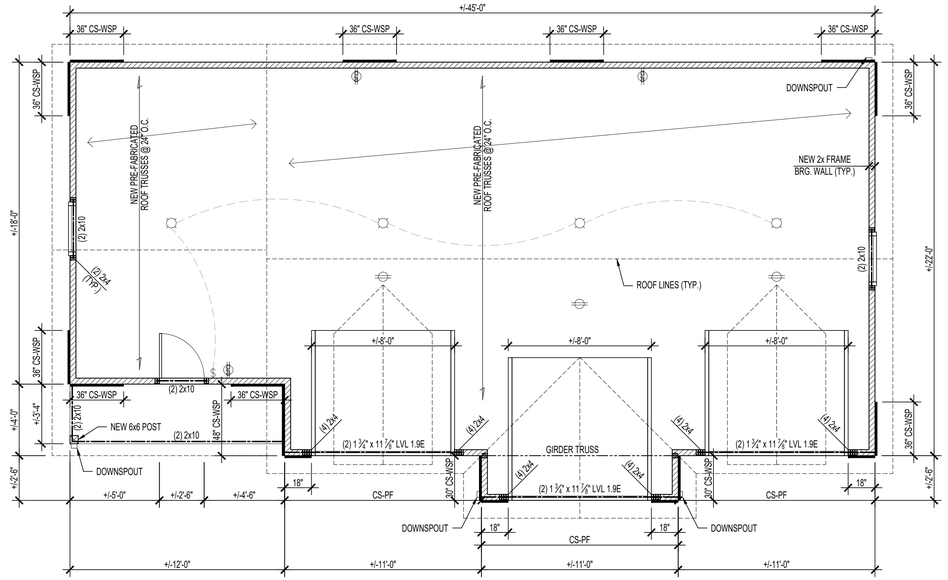


NORTH

NEW FOUNDATION PLAN

SCALE: ¼"=1'-0"



NORTH

NEW ROOF FRAMING PLAN

SCALE: ¼"=1'-0"

NOTE: TEMPORARILY SUPPORT EXISTING FRAMING UNTIL ALL STRUCTURAL FRAMING MEMBERS HAVE BEEN INSTALLED.

GENERAL FOUNDATION NOTES

1. FOUNDATION CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS W/ 3-5% AIR ENTRAINMENT.
2. REINFORCING STEEL TO BE ASTM A615, GRADE 60.
3. WELDED WIRE FABRIC TO BE ASTM A185. LAP FABRIC 6" MINIMUM.
4. REINFORCING SHALL BE CONTINUOUS WHEREVER POSSIBLE. SPLICES AND LAPS SHALL CONFORM TO ACI 318-08 REQUIREMENTS.
5. DOWELS IN FOOTINGS, WALLS AND DRILLED PIERS MUST BE POSITIONED BEFORE PLACING CONCRETE. PUSHING DOWELS INTO FRESHLY PLACED CONCRETE IS NOT ACCEPTABLE.
6. PROVIDE THE FOLLOWING ADDITIONAL REINFORCING UNLESS OTHERWISE CALLED FOR ON STRUCTURAL PLANS.
   A) 2-#4 BARS EACH SIDE OF OPENINGS 1'-0" OR LARGER IN SLABS OR WALLS.
   B) 2'-0" X 2'-0" CORNER BARS IN OUTER FACE OF ALL WALLS TO MATCH SIZE AND SPACING OF HORIZONTAL REINFORCING BARS IN WALLS.
7. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE.
   A) UNFORMED CONCRETE SURFACE IN CONTACT W/ EARTH: 3"
   B) FORMED SURFACES EXPOSED TO GROUND OR WEATHER: 2"
   C) FORMED SURFACES NOT EXPOSED TO GROUND OR WEATHER.
      I. WALLS, SLAB: ¾"
      II. BEAMS, COLUMNS: 1 1/2"
8. ALL ABUTTING CONCRETE MEMBERS SHALL BE DOWELED TOGETHER UNLESS POURED MONOLITHICALLY. DOWELS SHALL BE EQUAL IN SIZE AND SPACING TO THE BARS IN THE ADJACENT WALLS.
9. PROVIDE 3/4" CHAMFERS AT ALL EDGES THAT ARE EXPOSED TO VIEW IN THE FINISHED SURFACE.

FLOOR & ROOF FRAMING NOTES

1. ROOF CONSTRUCTION: ½" PLYWOOD WITH METAL PLY CLIPS OVER PREFABRICATED ROOF TRUSSES w/ 8d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.
2. ALL ROOF FRAMING TO BE SPACED AT 24" O.C. MAXIMUM.
3. FLOOR CONSTRUCTION: ¾" T.&G. PLYWOOD GLUED AND FASTENED TO FLOOR JOISTS W/ 8d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.
4. ALL FLOOR FRAMING TO BE SPACED AT 16" O.C. MAXIMUM.
5. BEAMS & HEADERS: 2-2x10s UNLESS NOTED OTHERWISE.
6. POSTS: 2-2x STUDS FOR OPENINGS 3'-6" OR LESS, 3-2x STUDS FOR OPENINGS 3'-6" TO 6'-6" UNLESS NOTED OTHERWISE.
7. EXTERIOR STUD WALL CONSTRUCTION: ½" PLYWOOD OR OSB SHEATHING FASTENED TO 2x6 STUDS @ 16" O.C. w/ 8d NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS (UNLESS NOTED OTHERWISE).
8. PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS.
9. PROVIDE SOLID WOOD BLOCKING THROUGH FLOOR AT ALL POSTS ABOVE.
10. BRICK LINTELS: 4"x4"x5/16" STEEL ANGLE GALVANIZED WITH 4" MIN. BEARING UNLESS NOTED OTHERWISE
11. WOOD SPECIES: LVL MINIMUM 1.9E & PSL MINIMUM 2.0E
    #1 SOUTHERN PINE: 2x6, 2x8, 2x10, 2x12 FRAMING MEMBERS
    #2 SPRUCE-PINE-FIR: 2x4, 2x6 STUDS
    #1 DOUGLAS FIR-SOUTH: 6x6 OR 8x8 POSTS
12. STEEL DESIGNATIONS: A36: PLATES, STRUCTURAL ANGLES
    A500 Gr. B: HSS STRUCTURAL TUBES
    A992: W-SHAPES

TRUSS NOTES

TRUSSES SHALL COMPLY WITH NFoPA NDS-2024 & TPI 1-2022.

ALL ROOF FRAMING SHALL BE DESIGNED TO SUPPORT THE FOLLOWING MINIMUMS:

TOP CHORD OR ROOF RAFTERS	D.L.	10 lb/sq.ft.
TOP CHORD OR ROOF RAFTERS	L.L.	20 lb/sq.ft.
BOTTOM CHORD OR CEILING JOISTS	D.L.	10 lb/sq.ft.
BOTTOM CHORD OF ATTIC TRUSSES	L.L.	40 lb/sq.ft.
BOTTOM CHORD @ STORAGE AREAS	L.L.	20 lb/sq.ft.

(TO BE APPLIED WHEN THE TRUSS HAS A WEB CONFIGURATION THAT ALLOWS A RECTANGULAR SPACE OF 24" HORIZ. x 42" VERT. BETWEEN THE WEBS AND BOTTOM CHORD.)

EXCEPTION: THE BOTTOM CHORD 20lb. L.L. DESIGN CRITERIA MAY BE OMITTED FOR HOUSE AND/OR GARAGE ATTIC ACCESSIBLE ONLY THROUGH A 22"x30" ATTIC ACCESS OPENING IN THE DRYWALLED CEILING, WITH NO PULL DOWN STAIRS, AND COMPLYING WITH:

A) GARAGE AREAS: WARNING SIGNAGE (EACH SIDE) PLUS BARRIER OBSTRUCTION EACH SIDE OF ATTIC ACCESS.

B) HOUSE (HABITABLE) AREA: WARNING SIGNAGE (EACH SIDE).

WARNING SIGN:

THE SIGN SHALL BE METAL AND BE A MIN. SIZE OF 40 SQUARE INCHES WITH ⅜" MIN. HIGH LETTERS ON A CONTRASTING BACKGROUND THAT READS "WARNING - TRUSSES NOT DESIGNED FOR ATTIC STORAGE." THE SIGN SHALL BE FASTENED TO A TRUSS WEB MIN. 36" ABOVE THE BOTTOM CHORD AND WITHIN 18" OF THE EDGE OF THE OPENING. A SIGN IS REQUIRED ON BOTH SIDES OF THE ATTIC ACCESS.

OBSTRUCTION RAILING:

THE OBSTRUCTION RAILING (REQUIRED AT GARAGE ATTICS) SHALL BE A MIN. OF 1x4, 2x4, OR ⅜"x6" PLYWOOD RAILING SECURELY FASTENED TO THE TRUSSES ON EACH SIDE OF THE ATTIC ACCESS OPENING AT LEAST 24", AND NOT MORE THAT 36" ABOVE THE BOTTOM CHORD. THIS MAY BE DONE BY THE TRUSS FABRICATOR IN THE SHOP OR AS A FIELD INSTALLATION BY THE CONTRACTOR.

TRUSS DIMENSIONS AND SIZES ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE TRUSS MANUFACTURER. DRAWINGS PROVIDED BY THE TRUSS MANUFACTURER SHALL BE REVIEWED BY THE GENERAL CONTRACTOR BEFORE ORDERING TRUSSES.

ALL TRUSS CONNECTORS SHALL BE SIZED BY THE TRUSS MANUFACTURER.

ALL TRUSSES SHOWN SHALL BE END-BEARING UNLESS NOTED OTHERWISE.

NOTE: OVERFRAMED AREAS SHALL BE CONSTRUCTED WITH 2x6'S @ 24" O.C., BLOCKED SOLID TO TRUSSES BELOW AT SPANS OVER 4'-0" (TYPICAL).

TRUSS MANUFACTURER TO COORDINATE WITH E.O.R. SHOULD TRUSS LAYOUT DIFFER FROM PROPOSED LAYOUT.

ANY ALTERATIONS TO THE PROPOSED LAYOUT OR GIRDER TRUSS LOCATIONS SHALL BE APPROVED BY THE ENGINEER OF RECORD BEFORE COMMENCING CONSTRUCTION.

2015 IRC

STATE OF MISSOURI
GEORGE CORY CALKINS
NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
2/12/25

CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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UPRIGHT DESIGN & CONSULTING
Structural Solutions

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SCALE: NOTED

FOUNDATION & FRAMING PLANS & NOTES

17 EDWIN AVE.
ST. LOUIS, MO 63122

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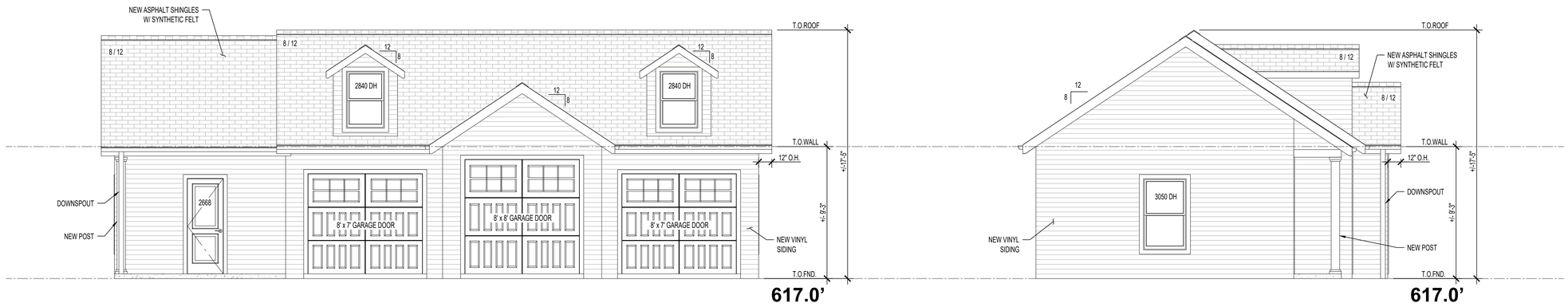
SHEET NO. S5

5 OF 8



FRONT ELEVATION

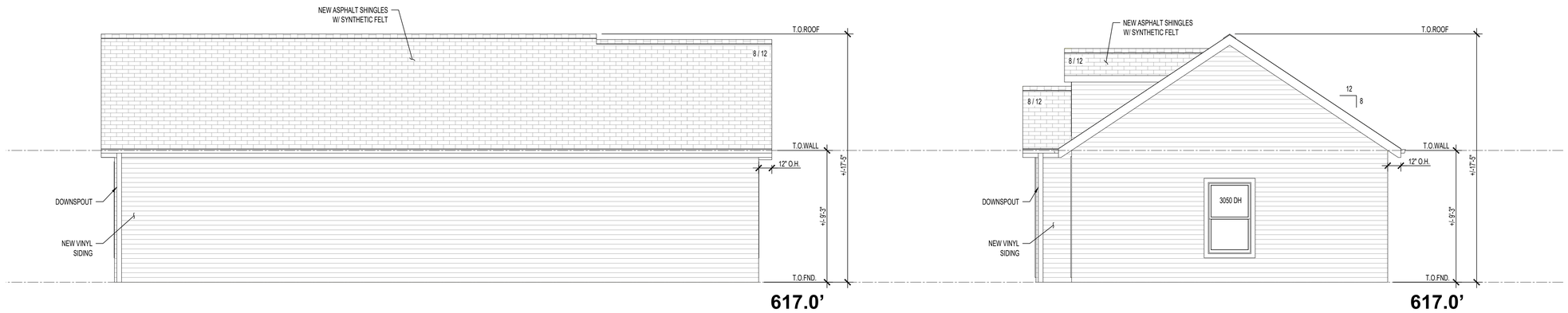
SCALE: ¼"=1'-0"

NORTH ELEVATION

SCALE: ¼"=1'-0"

WINDOW & DOOR KEY	FEET	INCHES	FEET	INCHES	
DIMENSIONS	3	0	5	0	TYPE

*ADD FOR ROUGH PER MANUFACTURE
*VERIFY EXACT SIZES ON SITE BEFORE ORDER



BACK ELEVATION

SCALE: ¼"=1'-0"

SOUTH ELEVATION

SCALE: ¼"=1'-0"

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NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
2/12/25

CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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SHEET NO. S6

ELEVATIONS

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ST. LOUIS, MO 63122

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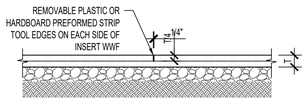
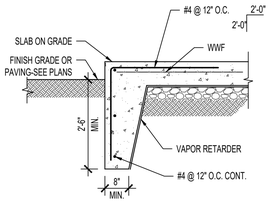
6 OF 8



NOTE:
1) FILL JOINT WITH SEALANT AFTER SLAB HAS BEEN CURED.
2) CONSTRUCTION JOINTS MAY REPLACE CONTROL JOINTS.
3) SEE SEQUENCE OF PLACING SLAB ON GRADE FOR LOCATION OF JOINTS.
4) SAWCUT JOINTS ARE PERMITTED WITH THE APPROVAL OF THE OWNERS PROJECT MANAGER ONLY. IF APPROVED, SAWCUT JOINTS USING A "SOFT-CUT" MACHINE OR EQUAL IMMEDIATELY AFTER FINISHING SLAB.

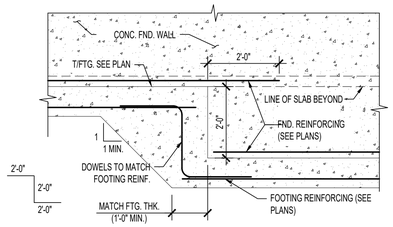
SLAB ON GRADE CONTROL JOINT

SCALE: ½"=1'-0"



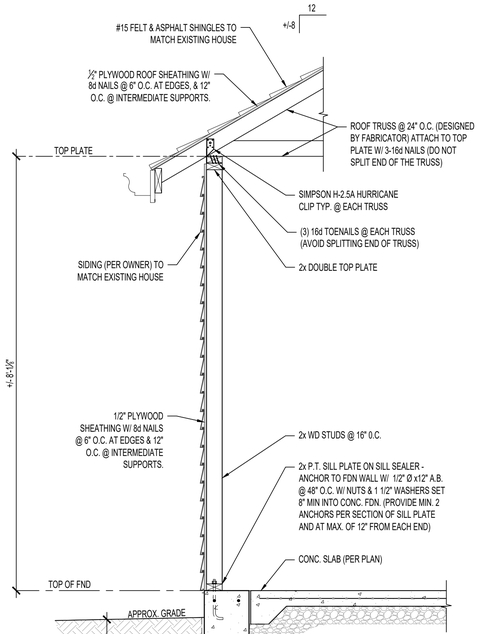
EXTERIOR TURN-DOWN SLAB EDGE

SCALE: ½"=1'-0"



TYPICAL FOOTING STEP DETAIL

SCALE: ½"=1'-0"



1/S7 TYPICAL FOUNDATION & FRAME WALL SECTION

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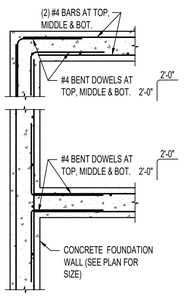
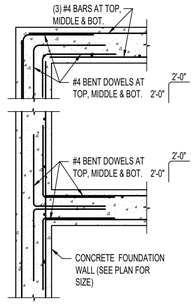


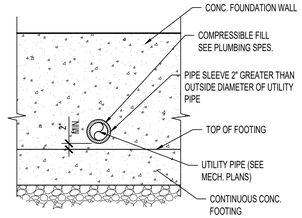
REINFORCING AT INTERSECTING WALLS & CORNERS @ 8" & 10" THICK CONC. FND. WALLS

SCALE: ½"=1'-0"



REINFORCING AT INTERSECTING WALLS & CORNERS @ 12" THICK CONC. FND. WALLS

SCALE: ½"=1'-0"



TYPICAL UTILITY PIPE THRU FND WALL

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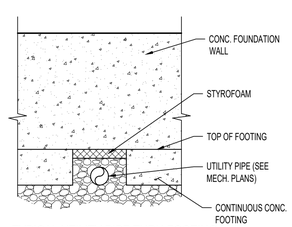

TYPICAL UTILITY PIPE THRU FOOTING

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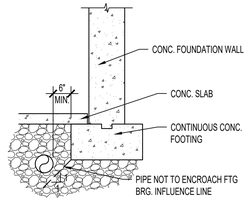
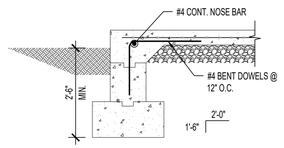


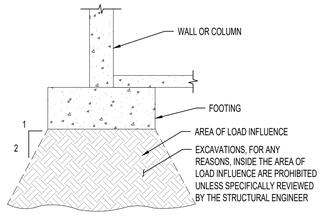
TYPICAL PIPE AT FOOTING DETAIL

SCALE: ½"=1'-0"



TYP. SLAB ON GRADE OVER FND. WALL DETAIL

SCALE: ½"=1'-0"



TYPICAL PERMITTED EXCAVATIONS AT FND.

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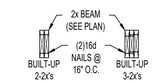
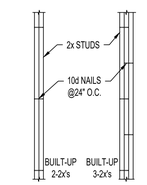


BUILT UP HEADER DETAIL

SCALE: ½"=1'-0"



BUILT UP POST DETAIL

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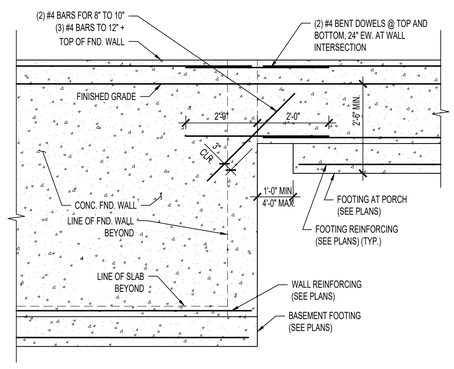

TYPICAL FULL HT. FND. & SLAB ON GRADE FND. CONNECTION

SCALE: ½"=1'-0"

2015 IRC

GEORGE CORY CALKINS
NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
2/12/25
CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE # PE-2022019812

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ISSUE / REVISION DESCRIPTIONS

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UPRIGHT DESIGN & CONSULTING
Structural Solutions

DATE: 5/19/26
CHECKED: GCC
DRAWN: SK
SCALE: NOTED

FOUNDATION DETAILS & WALL SECTIONS

17 EDWIN AVE.
ST. LOUIS, MO 63122

C:\Users\scala\UDC\Upright Design Cloud\Jobs\26077 Home Matters – 17 Edwin Ave\26077 Home Matters – 17 Edwin Ave.dwg Plotted Date: 5/19/26 Time: 7:25:51 PM

SHEET NO.
S7
7 OF 8

2015 I.R.C. TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a,b,c]	SPACING OF FASTENERS
	ROOF		
1	BLOCKING BETWEEN CEILING JOISTS OR RAFTERS TO TOP PLATE	4-8d BOX (2 1/2"x0.113"), OR 3-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128"), OR 3-3"x0.131" NAILS	TOE NAIL
2	CEILING JOISTS TO PLATE	4-8d BOX (2 1/2"x0.113"), OR 3-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128"), OR 3-3"x0.131" NAILS	PER JOIST, TOE NAIL
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTERS, LAPS OVER PARTITIONS. (SEE SECTION R802.3.1, R802.3.2 AND TABLE R802.5.1 (9)	4-10d BOX (3"x0.128"): OR 3-16d COMMON (3 1/2"x0.162"): OR 4-3"x 0.131" NAILS	FACE NAIL
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOIST) PARTITIONS. (SEE SECTION R802.3.1, R802.3.2 AND TABLE R802.5.1 (9)	TABLE R802.5.1 (9)	FACE NAIL
5	COLLAR TIE RAFTER, FACE NAIL OR 1 1/4" X 20 GAGE RIDGE STRAP TO RAFTER	4-10d BOX (3"x0.128"): OR 3-10d COMMON (3 1/2"x0.148"): OR 4-3"x 0.131" NAILS	FACE NAIL EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	3-16d COMMON (3 1/2"x0.135"): OR 3-10d (3 1/2"x0.148"): OR 4-10d BOX (3"x0.128"): OR 4-3"x 0.131" NAILS	2 TOE NAILS ON ONE SIDE & 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR RAFTER TO MINIMUM 2" RIDGE BEAM	4-16d (3"x0.135"): OR 3-10d COMMON (3 1/2"x0.148"): OR 4-10d BOX (3"x0.128"): OR 4-3"x 0.131" NAILS	TOE NAIL
		3-16d BOX (3 1/2"x0.135"): OR 2-16d COMMON (3 1/2"x0.162"): OR 3-10d (3 1/2"x0.128"): OR 3-3"x0.131" NAILS	END NAIL
	WALL		
8	STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3"x0.162")	24" o.c. FACE NAIL
		10d BOX (3"x0.128"): OR 3"x0.131" NAILS	16" o.c. FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTION WALL CORNERS (AT BRACED WALL PANELS)	16d BOX (3 1/2"x0.135"): OR 3"x0.131 NAILS	12" o.c. FACE NAIL
		16d COMMON (3 1/2"x0.162")	16" o.c. FACE NAIL
10	BUILT-UP HEADER (2" TO 2" WITH 1/2" SPACER)	16d COMMON (3 1/2"x0.162")	16" o.c. EACH EDGE FACE NAIL
		16d BOX (3 1/2"x0.135")	12" o.c. EACH EDGE FACE NAIL
11	CONTINUED HEADER TO STUD	5-8d BOX (2 1/2"x0.113"): OR 4-8d COMMON (2 1/2"x0.131"): OR 4-10d BOX (3" x0.128")	TOE NAIL
12	TOP PLATE TO TOP PLATE	16d COMMON (3 1/2"x0.162")	16" o.c. FACE NAIL
		10d BOX (3"x0.128"): OR 3"x0.131" NAILS	12" o.c. FACE NAIL
13	DOUBLE TOP PLATE SLICE FOR SDCs A-D2 WITH SEISMIC BRACED WALL LINE SPACING LESS THAN 25'	8-16d COMMON (3 1/2"x0.162"), OR 12-16d BOX (3 1/2"x0.135"): OR 12-10d BOX (3"x0.128"): OR 12-3"x0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOIST (MINIMUM 24" LAP SPLICE -
	DOUBLE TOP PLATE SLICE FOR SDCs D0,D1, OR D2 WITH SEISMIC BRACED WALL LINE SPACING GRATER THAN OR EQUAL TO 25'	12-16d (3 1/2"x0.135")	LENGTH EACH SIDE OF END JOINT)
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3 1/2"x0.162")	16" o.c. FACE NAIL
		16d BOX (3 1/2"x0.135"): OR 3"x0.131" NAILS	12" o.c. FACE NAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (AT BRACED WALL PANELS)	3-16d BOX (3 1/2"x0.135"): OR 2-16d COMMON (3 1/2"x0.162"): OR 4-3"x0.131" NAILS	3 EACH 16" o.c. FACE NAIL 2 EACH 16" o.c. FACE NAIL 4 EACH 16" o.c. FACE NAIL
16	TOP OR BOTTOM PLATE TO STUD	4-8d BOX (2 1/2"x0.113"): OR 3-16d BOX (3 1/2"x0.135"): OR 4-8d COMMON (2 1/2"x0.131"): OR 4-10d BOX (3" x0.128"): OR 4-3"x0.131" NAILS	TOE NAIL
		3-16d BOX (3 1/2"x0.135"): OR 2-16d COMMON (3 1/2"x0.162"): OR 3-10d BOX (3"x0.128"): OR 3-3"x0.131" NAILS	END NAIL
17	TOP PLATES, LAP AT CORNERS AND INTERSECTIONS	3-10d BOX (3"x0.128"): OR 2-16d COMMON (3 1/2"x0.162"): OR 3-3"x0.131" NAILS	FACE NAIL
18	1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2 1/2"x0.113"): OR 2-8d COMMON (2 1/2"x0.131"): OR 2-10d BOX (3"x0.128") NAILS	FACE NAIL
19	1" X 6" SHEATHING TO EACH BEARING	3-8d BOX (2 1/2"x0.113"): OR 2-8d COMMON (2 1/2"x0.131"): OR 2-10d BOX (3"x0.128") NAILS	FACE NAIL
20	1" X 8" & WIDER SHEATHING TO EACH BEARING	3-8d BOX (2 1/2"x0.113"): OR 3-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128") NAILS	FACE NAIL
		WIDER THAN 1"x8" 4-8d BOX (2 1/2"x0.113"): OR 3-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128") NAILS	
	FLOOR		
21	JOISTS TO SILL, TOP PLATE, OR GIRDER	4-8d BOX (2 1/2"x0.113"): OR 3-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128"): OR 3-3"x0.131" NAILS	TOE NAIL
22	RIM JOISTS, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATION ALSO)	8d BOX (2 1/2"x0.113") NAILS	4" o.c. TOE NAIL
		8d COMMON (2 1/2"x0.131"): OR 10d BOX (3"x0.128"): OR 3"x0.131" NAILS	6" o.c. TOE NAIL
23	1" x 6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2 1/2"x0.113"): OR 2-8d COMMON (2 1/2"x0.131"): OR 3-10d BOX (3"x0.128") NAILS	FACE NAIL
24	2" SUBFLOOR TO JOIST OR GIRDER	3-16d BOX (3 1/2"x0.135"): OR 2-16d COMMON (3 1/2"x0.162") NAILS	BLIND AND FACE NAIL
25	2" PLANKS (PLANK & BEAM, FLOOR & ROOF)	3-16d BOX (3 1/2"x0.135"): OR 2-16d COMMON (3 1/2"x0.162") NAILS	AT EACH BEARING, FACE NAIL
26	BAND OR RIM JOIST TO JOIST	3-16d COMMON (3 1/2"x0.162"): OR 4-10d BOX (3"x0.128"): OR 4-3"x0.131" NAILS	END NAIL
27	BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	20d COMMON (4"x0.192"): OR	NAIL EACH LAYER AS FOLLOWS: 32" o.c. AT TOP AND BOTTOM AND STAGGERED
		10d BOX (3"x0.128"): OR 3"x0.131" NAILS	24" o.c. FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES
		AND: 2-20d COMMON (4"x0.192"): OR 3-10d BOX (3"x0.128"): OR 3-3"x0.131" NAILS	FACE NAIL AT END AND AT EACH SPLICE
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3 1/2"x0.135"): OR 3-16d COMMON (3 1/2"x0.162"): OR 4-10d BOX (3"x0.128"): OR 4-3"x0.131" NAILS	FACE NAIL AT EACH JOIST OR RAFTER
29	BRIDGING TO JOIST	2-10d BOX (3"x0.128")	TOE NAIL AT EACH END

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER[a,b,c]	SPACING OF FASTENERS: EDGES (INCHES)[h]	SPACING OF FASTENERS: INTERMEDIATE SUPPORTS (INCHES)[c,e]
	WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING, AND PARTICLEBOARD WALL SHEATHING TO FRAMING			
30	3/8" - 1/2"	6d COMMON (2"x0.113") NAIL (SUBFLOOR, WALL)[i] 8d COMMON (2 1/2"x0.131") NAIL (ROOF)	6	12[f]
31	19/32" - 1"	8d COMMON (2 1/2"x0.131") NAIL	6	12[f]
32	1 1/8" - 1 1/4"	10d COMMON (3"x0.148") NAIL OR 8d (2 1/2"x0.131") DEFORMED NAIL	6	12
	OTHER WALL SHEATHING[g]			
33	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 1/2" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1" CROWN STAPLE 16ga., 1 1/4" LONG	3	6
34	25/32" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 3/4" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1" CROWN STAPLE 16ga., 1 1/2" LONG	3	6
35	1/2" GYPSUM SHEATHING	1 1/2" GALVANIZED ROOFING NAIL, STAPLE GALVANIZED, 1 1/2" LONG, 1 1/4" SCREWS, TYPE W OR S	7	7
36	5/8" GYPSUM SHEATHING	1 3/4" GALVANIZED ROOFING NAIL, STAPLE GALVANIZED, 1 5/8" LONG, 1 5/8" SCREWS, TYPE W OR S	7	7
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
37	3/4" AND LESS	6d DEFORMED (2"x0.120") NAIL: OR 8d COMMON (2 1/2"x0.131") NAIL	6	12
38	7/8" - 1"	8d COMMON (2 1/2"x0.131") NAIL: OR 8d DEFORMED (2 1/2"x0.120") NAIL	6	12
39	1 1/8" - 1 1/4"	10d COMMON (3"x0.148") NAIL: OR 8d DEFORMED (2 1/2"x0.120") NAIL	6	12

For SI: 1 inch = 25.4 mm, 1 foot=304.8mm, 1 mile per hour=6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80ksi for shank diameter of 0.192 inch (20d common nail), 90ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100ksi for shank diameters of 0.142 inch or less.
b. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
c. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.
d. Spacing of fasteners not included in this table shall be based on Table R602.3(2)
e. Where the ultimate design wind speed of 130mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. Where the ultimate design wind speed is greater than 130 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls, and 4 inches on center to gable end wall framing.
f. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
g. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and require blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
h. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to the top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

2015 I.R.C. TABLE R602.3(3) REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES[a,b,c]

MINIMUM NAIL: SIZE	MINIMUM NAIL: PENETRATION (INCHES)	MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (INCHES)	MAXIMUM WALL STUD SPACING (INCHES)	PANEL NAIL SPACING: EDGES (INCHES O.C.)	PANEL NAIL SPACING: FIELD (INCHES O.C.)	ULTIMATE DESIGN WIND SPEED V^{ult} (mph), WIND EXPOSURE CATEGORY: B	C	D
6d COMMON (2.0"x0.113")	1.5	24/0	3/8	16	6	12	140	115	110
8d COMMON (2.5"x0.131")	1.75	24/16	7/16	16	6	12	170	140	135
				24	6	12	140	115	110

For SI: 1 Inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

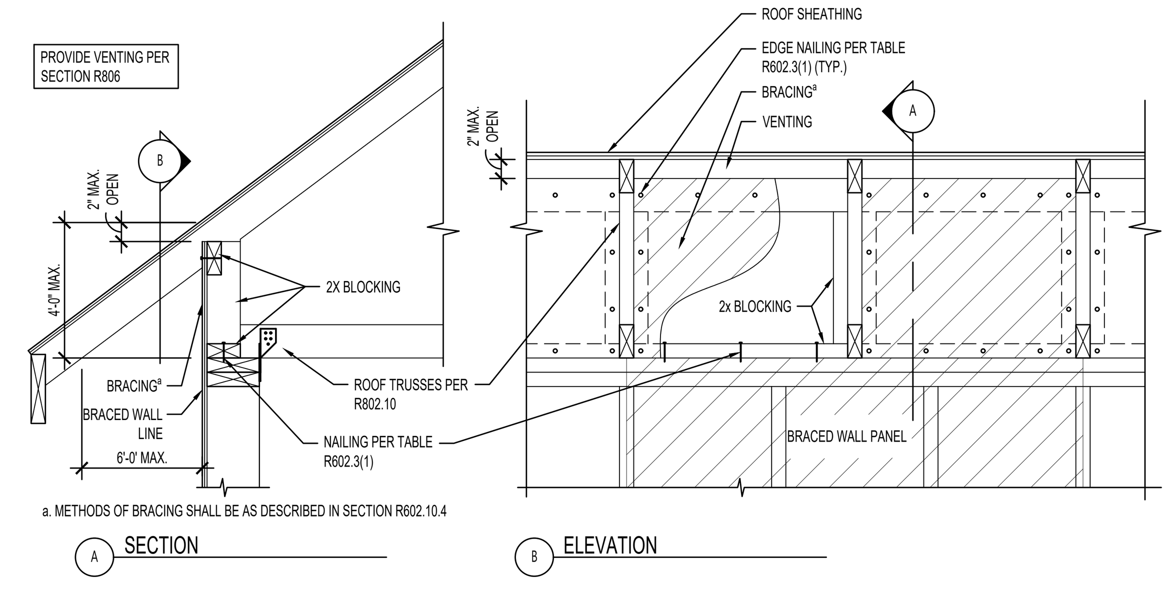
a. Panel strength axis parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more that 16 inches on center shall be applied with panel strength axis perpendicular to supports.
b. Table is based on wind pressures acting toward and away from building surfaces per section R301.2. Lateral bracing requirements shall be in accordance with R602.10.
c. Wood structural panels with span rating of Wall-16 or Wall-24 shall be permitted as an alternative to panels with a 24/0 span rating. Plywood siding rated 16oc or 24oc shall be permitted as an alternative to panels with a 24/16 span rating. Wall-16 and Plywood siding 16oc shall be used with studs spaced a maximum of 16 inches on center.

2015 I.R.C. TABLE R702.3.5 MINIMUM THICKNESS AND APPLICATION OF GYPSUM BOARD

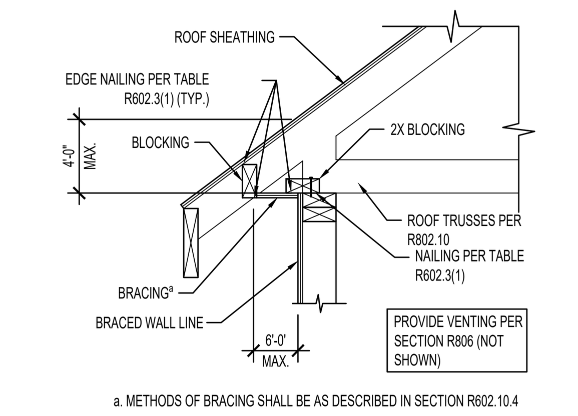
THICKNESS OF GYPSUM BOARD OR GYPSUM PRODUCTS (inches)	APPLICATION	ORIENTATION OF GYPSUM BOARD OR GYPSUM PRODUCTS TO FRAMING	MAXIMUM SPACING OF FRAMING MEMBERS (inches o.c.)	MAXIMUM SPACING OF FASTENERS (inches): NAILS[a]	SCREWS[b]	SIZE OF NAILS FOR APPLICATION TO WOOD FRAMING[c]
		APPLICATION WITHOUT ADHESIVE				
3/8	CEILING[d]	PERPENDICULAR	16	7	12	13 GAGE, 1 1/4" LONG, 19/64" HEAD. 0.098" DIAMETER, 1 1/4" LONG, ANNULAR-RINGED. OR 4d COOLER NAIL, 0.080" DIAMETER, 1 3/8" LONG, 7/32" HEAD.
	WALL	EITHER DIRECTION	16	8	16	
1/2	CEILING	EITHER DIRECTION	16	7	12	13 GAGE, 1 3/8" LONG, 19/64" HEAD. 0.098" DIAMETER, 1 1/4" LONG, AMMULAR-RINGED. 5d COOLER NAIL, 0.086" DIAMETER, 1 5/8" LONG, 15/64" HEAD. OR GYPSUM BOARD NAIL, 0.086" DIAMETER, 1 5/8" LONG, 9/32" HEAD.
	CEILING[d]	PERPENDICULAR	24	7	12	
	WALL	EITHER DIRECTION	24	8	12	
	WALL	EITHER DIRECTION	16	8	16	
5/8	CEILING	EITHER DIRECTION	16	7	12	13 GAGE, 1 5/8" LONG, 19/64" HEAD. 0.098" DIAMETER, 1 3/8" LONG, AMMULAR-RINGED. 6d COOLER NAIL, 0.092" DIAMETER, 1 7/8" LONG, 1/4" HEAD. OR GYPSUM BOARD NAIL, 0.0915" DIAMETER, 1 7/8" LONG, 19/64" HEAD.
	CEILING	PERPENDICULAR	24	7	12	
	TYPE X AT GARAGE CEILING BENEATH HABITABLE ROOMS	PERPENDICULAR	24	6	6	1 7/8" LONG 6d COATED NAILS OR EQUIVALENT DRYWALL SCREWS. SCREWS SHALL COMPLY WITH SECTION R702.3.5.1
	WALL	EITHER DIRECTION	24	8	12	13 GAGE, 1 5/8" LONG, 19/64" HEAD. 0.098" DIAMETER, 1 3/8" LONG, AMMULAR-RINGED. 6d COOLER NAIL, 0.092" DIAMETER, 1 7/8" LONG, 1/4" HEAD. OR GYPSUM BOARD NAIL, 0.0915" DIAMETER, 1 7/8" LONG, 19/64" HEAD.
	WALL	EITHER DIRECTION	16	8	16	
		APPLICATION WITH ADHESIVE				
3/8	CEILING[d]	PERPENDICULAR	16	16	16	SAME AS ABOVE FOR 3/8" GYPSUM BOARD AND GYPSUM PANEL PRODUCTS.
	WALL	EITHER DIRECTION	16	16	24	
1/2 or 5/8	CEILING	EITHER DIRECTION	16	16	16	SAME AS ABOVE FOR 1/2" AND 5/8" GYPSUM BOARD AND GYPSUM PANEL PRODUCTS, RESPECTIVELY
	CEILING[d]	PERPENDICULAR	24	12	16	
	WALL	EITHER DIRECTION	24	16	24	
Two 3/8 layers	CEILING	PERPENDICULAR	16	16	16	BASE PLY NAILED AS ABOVE FOR 1/2" GYPSUM BOARD AND GYPSUM PANEL PRODUCTS: FACE PLY INSTALLED WITH ADHESIVE.
	WALL	EITHER DIRECTION	24	24	24	

For SI: 1 inch = 25.4 mm

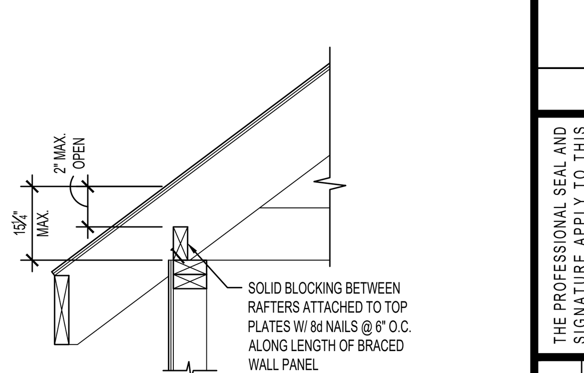
a. For application without adhesive, a pair of nails spaced not less than 2 inches apart or more than 2 1/2 inches apart shall be permitted to be used with the pair of nails spaced 12 inches on center.
b. Screws shall be in accordance with Section R702.3.6. Screws for attaching gypsum board or gypsum panel products to structural insulation panels shall penetrate the wood structural panel facing not less than 7/16 inch.
c. Where cold-formed steel framing is used with a clinching design to receive nails by two edges of metal, the nails shall not be less than 5/8 inch longer than the gypsum board or gypsum panel product thickness and shall have ringed shanks. Where the cold-formed steel framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d, 13 1/2 gage, 1 5/8 inched long 15#64-inch head for 1/2 -inch gypsum board or gypsum panel product: and 6d, 13 gage, 1 7/8 inches long, 15/16-inch head for 5/8 -inch gypsum board or gypsum panel product.
d. Three-eighths-inch-thick single-ply gypsum board shall not be used on a ceiling where a water-based textured finish is to be applied, or where it will be required to support insulation above a ceiling. On ceiling applications to receive a water-based textured material, either hand or spray applied, the gypsum board or gypsum panel product shall be applied perpendicular to framing. Where applying a water-based texture material, the minimum gypsum board thickness shall be increased from 3/8 inch to 1/2 inch for 16 inches on center framing, and from 1/2 inch to 5/8 inch for 24-inch on center framing or 1/2-inch sag-resistant gypsum ceiling board shall be used.



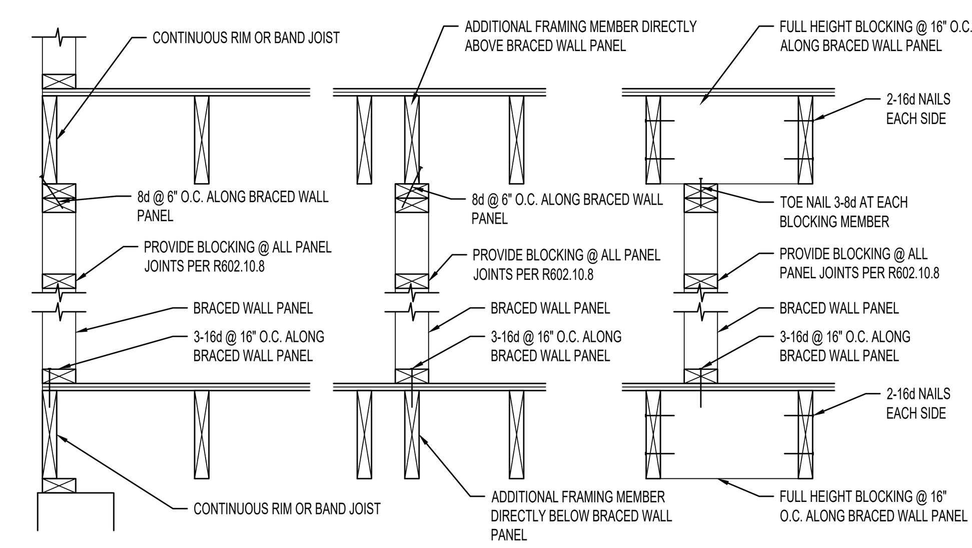
1/S8 BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES
SCALE: N.T.S. FIGURE R602.10.8.2(3)



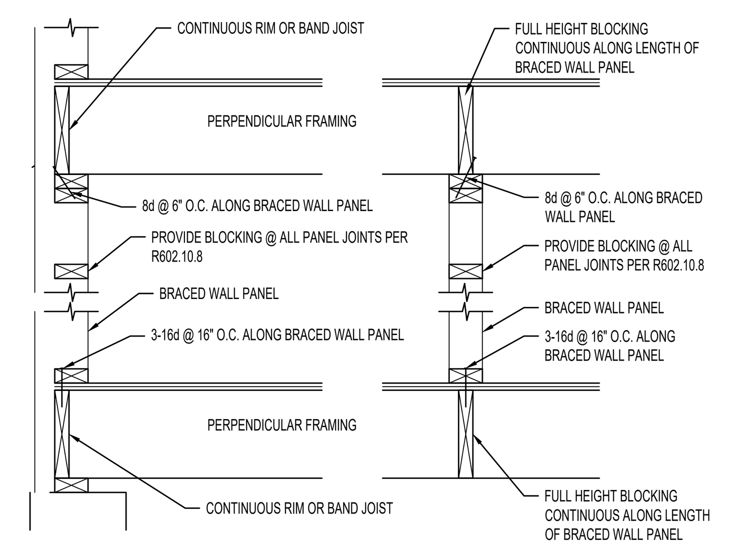
2/S8 BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES
SCALE: N.T.S. FIGURE R602.10.8.2(2)



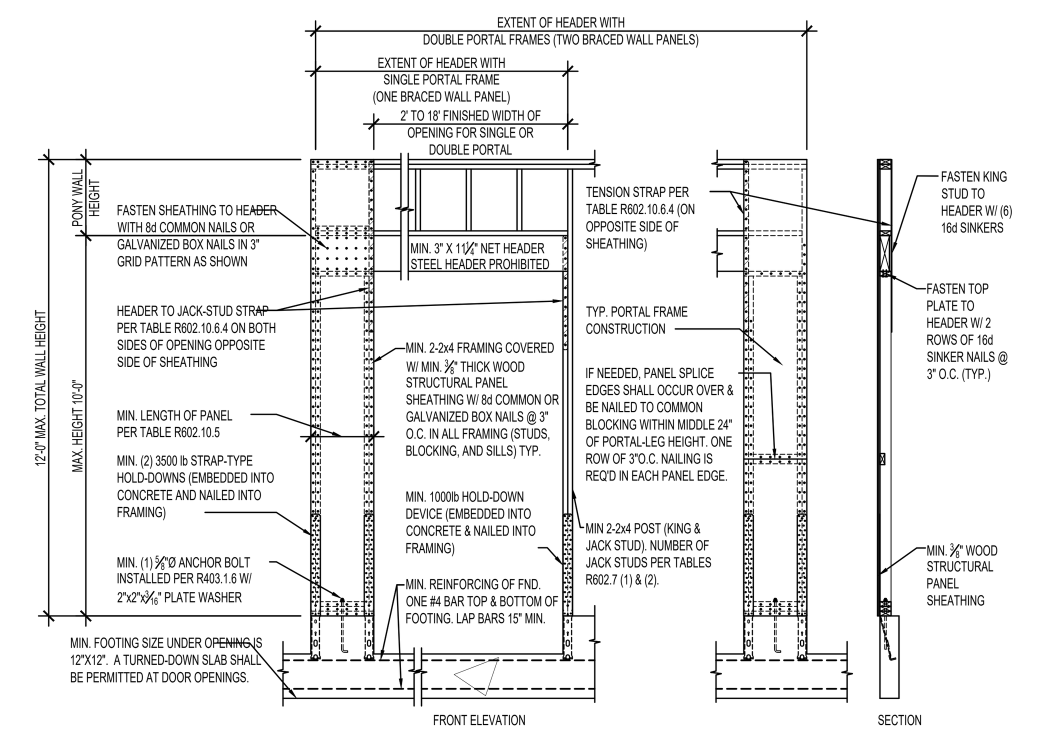
3/S8 BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS
SCALE: N.T.S. FIGURE R602.10.8.2(1)



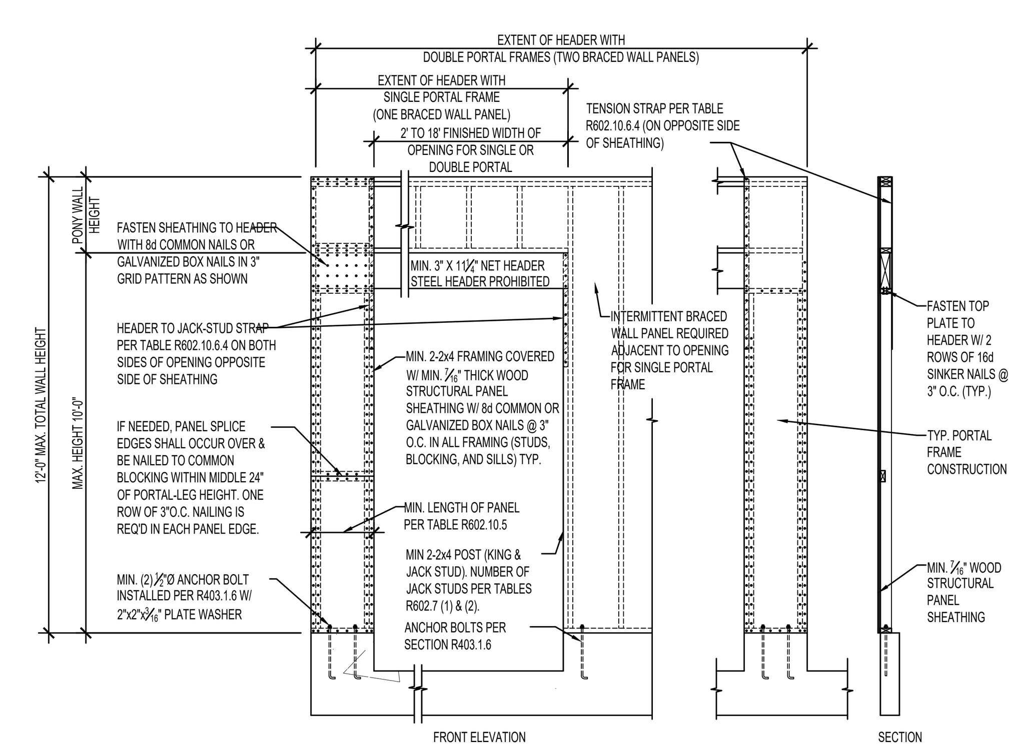
4/S8 BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING
SCALE: N.T.S. FIGURE R602.10.8(2)



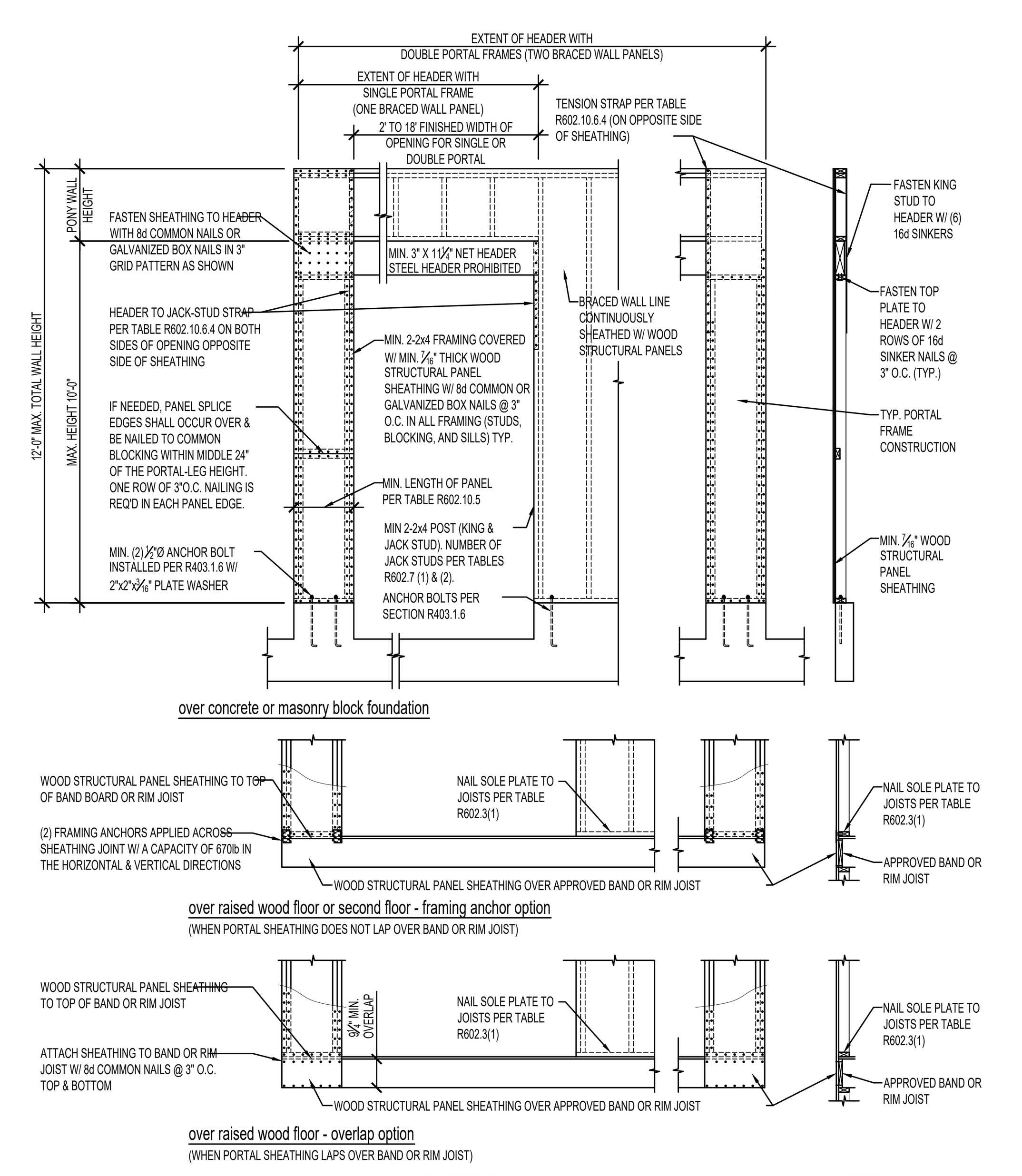
5/S8 BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING
SCALE: N.T.S. FIGURE R602.10.8(1)



6/S8 METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS
SCALE: N.T.S. FIGURE R602.10.6.2



7/S8 METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS
SEISMIC DESIGN CATEGORIES A, B, & C SCALE: N.T.S. FIGURE R602.10.6.3



8/S8 METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION
SCALE: N.T.S. FIGURE R602.10.6.4

2015 IRC

STATE OF MISSOURI
GEORGE CORY CALKINS
NUMBER PE-2022019812
REGISTERED PROFESSIONAL ENGINEER
2/12/25

CORY CALKINS, PROFESSIONAL ENGINEER
LICENSE #: PE-2022019812

THE PROFESSIONAL SEAL AND SIGNATURE APPLY TO THIS DOCUMENT TO WHICH THEY ARE AFFIXED AND ONLY FOR STRUCTURAL ENGINEERING AS APPLICABLE. THE PROFESSIONAL EXPRESSLY DISCLAIMS ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS, RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS DOCUMENT REFERS. © COPYRIGHT 2025 UPRIGHT DESIGN & CONSULTING LLC

NO.	DATE	REMARKS

ISSUE / REVISION DESCRIPTIONS

UPRIGHT DESIGN & CONSULTING LLC
48 WEST SUNNY SIDE DRIVE
ST. PETERS, MO 63376
PHONE: 314-808-5105

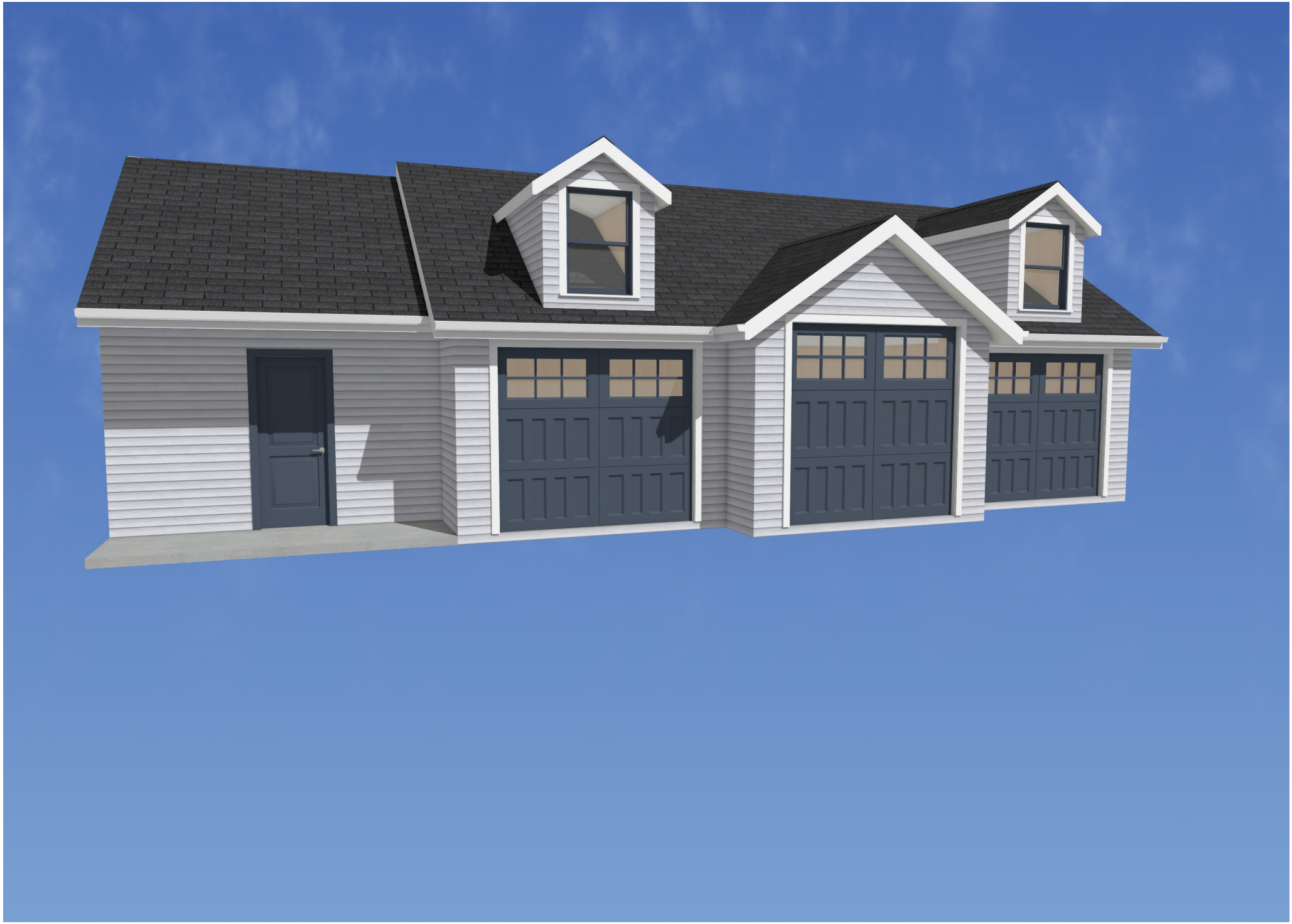
Structural Solutions

DATE: 5/18/26
CHECKED: GCC
DRAWN: SK
SCALE: NOTED

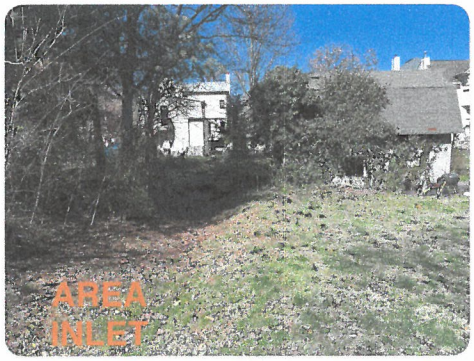
NOTES & FRAMING DETAILS
17 EDWIN AVE.
ST. LOUIS, MO 63122

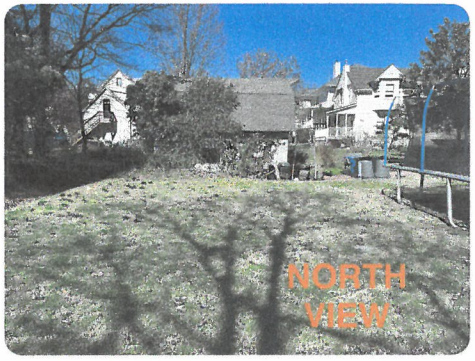
C:\Users\sadie\UDC\Upright Design Cloud\jobs\26077 Home Matters – 17 Edwin Ave\26077 Home Matters – 17 Edwin Ave.dwg Plotted Date: 5/18/2 Time: 12:36 PM

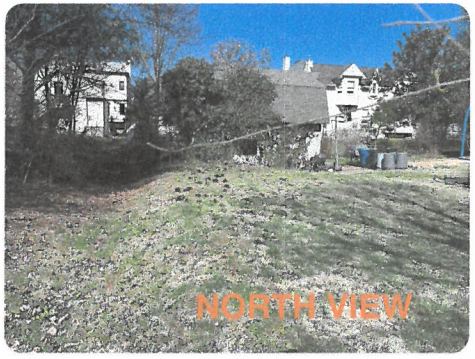
SHEET NO.
S8
8 OF 8



17 EDWIN AVENUE, 63122







ARB Project Submittal

Address/Project	814 Alexandra Ave./New Home
Applicant	Srote & Company, LLC.
Architect	Srote & Company, LLC.
Contractor	D&R Building Group
Owner	Jolen Investments, LLC.

SITE PLAN

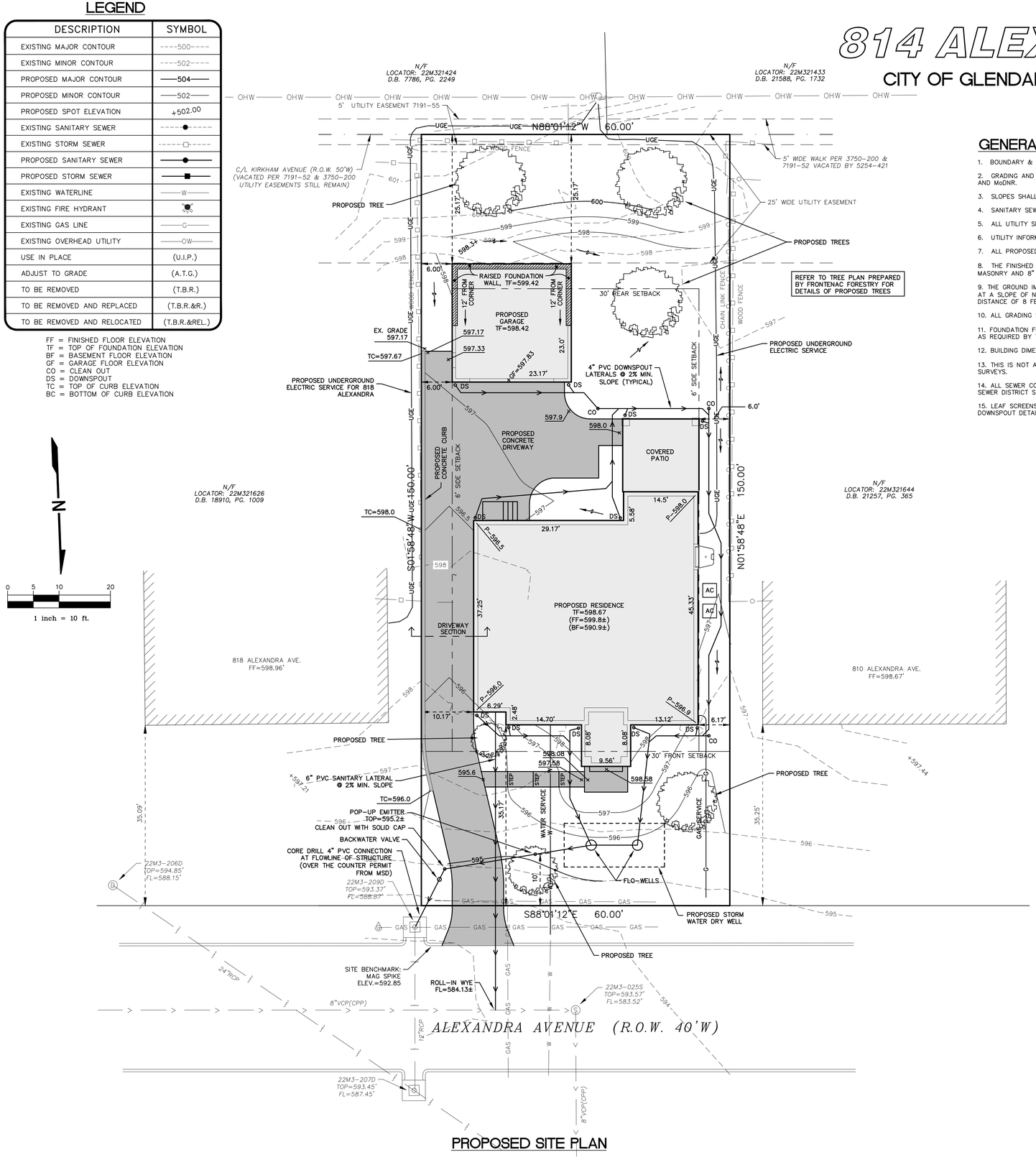
814 ALEXANDRA AVE.

CITY OF GLENDALE, ST. LOUIS COUNTY, MISSOURI

LEGEND

DESCRIPTION	SYMBOL
EXISTING MAJOR CONTOUR	----500----
EXISTING MINOR CONTOUR	----502----
PROPOSED MAJOR CONTOUR	——504——
PROPOSED MINOR CONTOUR	——502——
PROPOSED SPOT ELEVATION	+502.00
EXISTING SANITARY SEWER	----●----
EXISTING STORM SEWER	----□----
PROPOSED SANITARY SEWER	——●——
PROPOSED STORM SEWER	——■——
EXISTING WATERLINE	——W——
EXISTING FIRE HYDRANT	
EXISTING GAS LINE	——G——
EXISTING OVERHEAD UTILITY	——OW——
USE IN PLACE	(U.I.P.)
ADJUST TO GRADE	(A.T.G.)
TO BE REMOVED	(T.B.R.)
TO BE REMOVED AND REPLACED	(T.B.R.&R.)
TO BE REMOVED AND RELOCATED	(T.B.R.&REL.)

FF = FINISHED FLOOR ELEVATION
TF = TOP OF FOUNDATION ELEVATION
BF = BASEMENT FLOOR ELEVATION
GF = GARAGE FLOOR ELEVATION
CO = CLEAN OUT
DS = DOWNSPOUT
TC = TOP OF CURB ELEVATION
BC = BOTTOM OF CURB ELEVATION



PROPOSED SITE PLAN

GENERAL NOTES

1. BOUNDARY & IMPROVEMENT SURVEY PROVIDED BY ALTEA SURVEYING.
2. GRADING AND STORMWATER DRAINAGE TO CONFORM TO THE STANDARDS OF THE CITY OF GLENDALE, MSD, AND MoDNR.
3. SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL.
4. SANITARY SEWERS TO MEET THE CITY OF GLENDALE AND M.S.D. STANDARDS ON SITE.
5. ALL UTILITY SERVICES SHALL BE UNDERGROUND.
6. UTILITY INFORMATION PER SURVEY PROVIDED AND AVAILABLE RECORDS.
7. ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO THE CITY OF GLENDALE STANDARDS.
8. THE FINISHED GRADE LEVEL AT THE BUILDING TO BE MINIMUM OF 6" BELOW TOP OF FOUNDATION FOR MASONRY AND 8" FOR FRAME AND BRICK VENEER.
9. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (1:12) FOR A MINIMUM DISTANCE OF 8 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL.
10. ALL GRADING SHALL CONFORM TO THE APPROVED GRADING PLAN.
11. FOUNDATION FOOTINGS SHALL BE CONSTRUCTED SO AS TO MAINTAIN A 2'6" DEPTH OF EARTH COVER OR AS REQUIRED BY THE LOCAL BUILDING CODES.
12. BUILDING DIMENSIONS ARE TO BE VERIFIED WITH ARCHITECT PRIOR TO EXCAVATION OR CONSTRUCTION.
13. THIS IS NOT A SURVEY AND DOES NOT MEET THE "MISSOURI MINIMUM STANDARDS FOR BOUNDARY SURVEYS.
14. ALL SEWER CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009.
15. LEAF SCREENS ARE RECOMMENDED ON ALL DOWNSPOUTS THAT ARE PIPED TO STORM WATER BMP. SEE DOWNSPOUT DETAIL

SITE COVERAGE

	AREA (S.F.)	AREA (AC.)	PERCENTAGE
TOTAL SITE	9,000	0.207	
EXISTING IMPERVIOUS	1,736	0.040	19.3%
PROPOSED IMPERVIOUS	4,247	0.097	47.2% *
CHANGE	+2,511	+0.057	+245%
FRONT YARD SETBACK	1,800	0.041	
EXISTING IMPERVIOUS	293	0.007	16.3%
PROPOSED IMPERVIOUS	439	0.010	24.4% **
CHANGE	+146	+0.003	+150%

* NO MORE THAN 55% ALLOWABLE PER SECTION 3B
** NO MORE THAN 45% ALLOWABLE PER SECTION 3B

PROPOSED BUILDINGS (2,614 S.F.) (ROOFS = 2,965 S.F.)

PROPOSED PAVEMENT (1,633 S.F.) AND WALLS

DIFFERENTIAL RUNOFF

DESIGN STORM: 15-YEAR 20-MINUTE
4.20 CFS/AC ROOF SURFACE
3.54 CFS/AC. PAVED SURFACE
1.70 CFS/AC. PERVIOUS SURFACE

EXISTING CONDITIONS:
HOUSE – 1,247 S.F. x 4.20 / 43,560 = 0.120
PAVED – 489 S.F. x 3.54 / 43,560 = 0.040
OPEN – 7,264 S.F. x 1.70 / 43,560 = 0.283
TOTAL Q = 0.44 CFS

PROPOSED CONDITIONS:
HOUSE – 2,319 S.F. x 4.20 = 0.223
GARAGE – 646 S.F. x 4.20 = 0.062
PAVED – 1,633 S.F. x 3.54 = 0.133
OPEN – 4,402 S.F. x 1.70 = 0.172
TOTAL Q = 0.59 CFS

NET INCREASE OF 0.15 CFS

STORM WATER CALCULATIONS

DESIGN STORM: 15-YEAR 20-MINUTE
4.20 CFS/AC. ROOF SURFACE
3.54 CFS/AC. PAVED SURFACE
1.70 CFS/AC. PERVIOUS SURFACE

FOR NEW CONSTRUCTION, THE RUNOFF FROM THE ENTIRE ROOF AREA IS TO BE COLLECTED AND DETAINED.

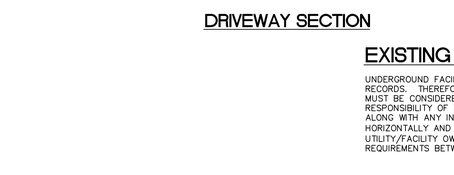
PROPOSED ROOF AREA: HOUSE = 2,319 S.F.
GARAGE = 646 S.F.
TOTAL = 2,965 S.F.

RUNOFF = 2,965 S.F. x 4.20 CFS/AC. / 43,560 = 0.286 CFS

RUNOFF VOLUME TO BE DETAINED:
0.286 CFS x 60 S/MIN x 20 MIN = 343 C.F.

VOLUME OF PROPOSED DRY WELL:
19.5' x 8.5' x 5' x 40% VOIDS = 331 C.F.
PLUS FOUR 50 GAL FLO-WELLS x 60% = 16 C.F.

TOTAL VOLUME PROVIDED = 347 C.F.

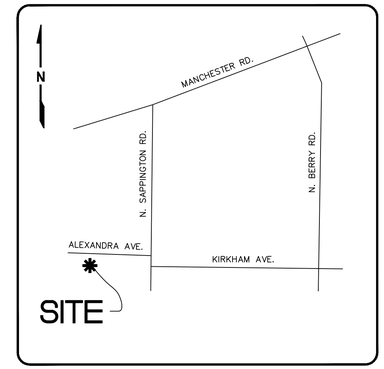


DRIVEWAY SECTION

EXISTING UTILITY NOTE

BEFORE YOU DIG – DRILL – BLAST
1-800-344-7483
(TOLL FREE)
MISSOURI ONE CALL SYSTEM, INC.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THEREFORE, THE LOCATIONS OF ANY UNDERGROUND FACILITIES SHOWN HEREON MUST BE CONSIDERED APPROXIMATE. PRIOR TO BEGINNING WORK ON THE SITE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF THESE FACILITIES, ALONG WITH ANY IN EXISTENCE THAT ARE NOT SHOWN; TO VERIFY THEIR LOCATION BOTH HORIZONTALLY AND VERTICALLY (IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY/FACILITY OWNER); AND TO VERIFY THAT MINIMUM CLEARANCES AND COVER REQUIREMENTS BETWEEN THE EXISTING FACILITIES AND THE PROPOSED WORK WILL BE MET.



LOCATION MAP

N.T.S.

PROJECT DATA

LOCATOR NO.	: 22M321635
ADDRESS	: 814 ALEXANDRA AVE. GLENDALE, MO 63122
OWNER	: JOLEN INVESTMENTS LLC
AREA OF TRACT	: 9,000 S.F. (0.207AC.)
PRESENT ZONING	: R-2
PRESENT USAGE	: SINGLE FAMILY RESIDENCE
PROPOSED USAGE	: SINGLE FAMILY RESIDENCE
SCHOOL DISTRICT	: KIRKWOOD
FIRE DISTRICT	: GLENDALE
WATERSHED(S)	: RIVER DES PERES
FIRM PANEL	: 29189C0307K
UTILITIES	: MISSOURI-AMERICAN WATER CO. : METRO. ST. LOUIS SEWER DIST. : SPIRE / LACLEDE GAS COMPANY : AT&T TELEPHONE COMPANY : AMEREN UE

YARD SETBACK REQUIREMENTS

FRONT: 35.17' (AVERAGE OF ADJACENT HOUSES)
(30' MINIMUM)
SIDE: 6'
REAR: 30'

ACCESSORY BUILDINGS: 6' FROM SIDE & REAR

THE WORK PREPARED BY OR UNDER THE DIRECTION OF THE ENGINEER AND ILLUSTRATED BY THIS DRAWING AND DATED BELOW IS LIMITED TO SITEWORK ITEMS AS DEFINED BY GRADING, DRAINAGE, PAVING, SEWERS, AND OTHER RECOMMENDATIONS, IF ANY, AS PERMITTED PURSUANT TO 327.411 RSMo. NO ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, OR OTHER RECOMMENDATIONS, UTILITY DISTRIBUTION SYSTEMS, OR OTHER SIMILAR DESIGN ELEMENTS (INCLUDING RETAINING WALLS) ARE INCLUDED IN THIS WORK. ANY SUCH ITEMS NOT RENDERED, INCLUDING, BOUNDARY SURVEYS, ARE SPECIFICALLY EXCLUDED. THE METHODS AND SEQUENCING, IF ANY, AND ALL OTHER REPORTS, PLANS, OR DESIGNS CONTAINED OR REFERENCED HEREIN ARE INCOMPLETE WITHOUT THE AUTHENTICATING SIGNATURE, AND SEAL OF THE ENGINEER.

D & R Building Group
814 Alexandra Avenue
Glendale, MO 63122

Vance Engineering, Inc.
10537 Lackland Road
St. Louis, MO 63114
P: 314.427.1800
VANCE ENGINEERING, INC.
MISSOURI STATE CERTIFICATE OF AUTHORITY NO. 2003022194

814 ALEXANDRA AVENUE

SITE PLAN

STATE OF MISSOURI
MICHAEL CLAY VANCE
NUMBER
E-25616
REGISTERED PROFESSIONAL ENGINEER

6/2/2026
MICHAEL CLAY VANCE
PROFESSIONAL ENGINEER
MISSOURI LIC NO E-25616

REVISED

06/01/26	CITY

26048

05/14/26

1 / 2

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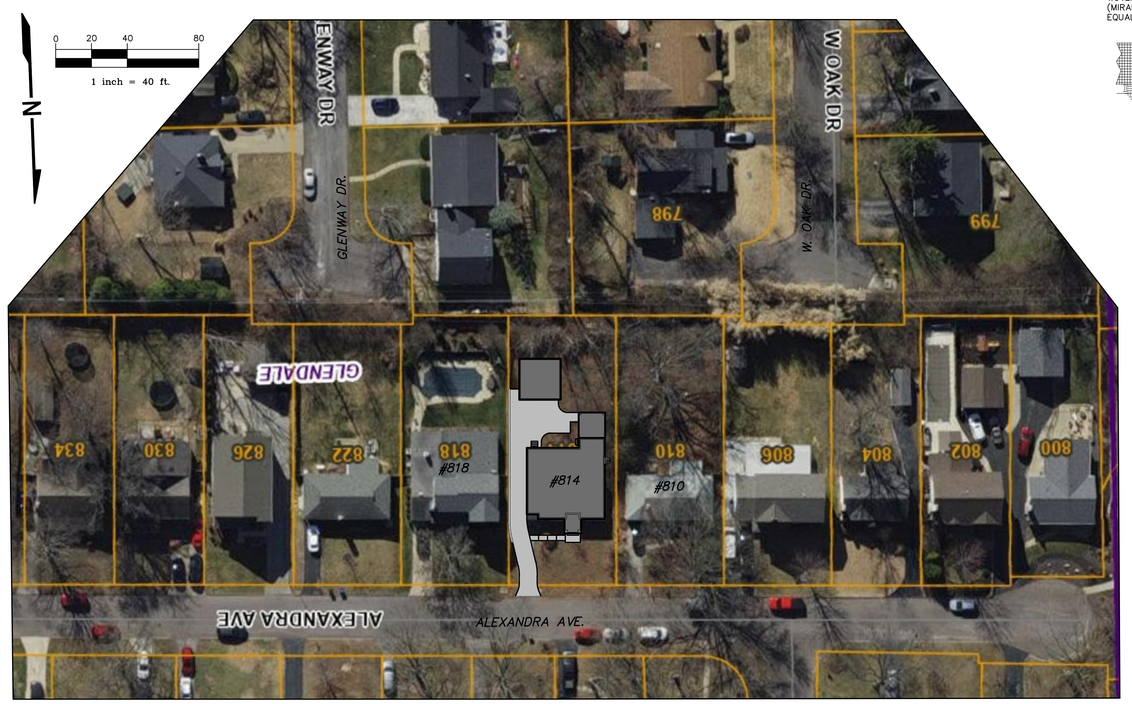
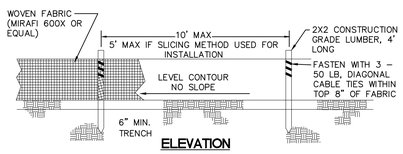
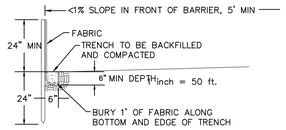


AERIAL - ADJOINING PROPERTIES



ELEVATION



SECTION

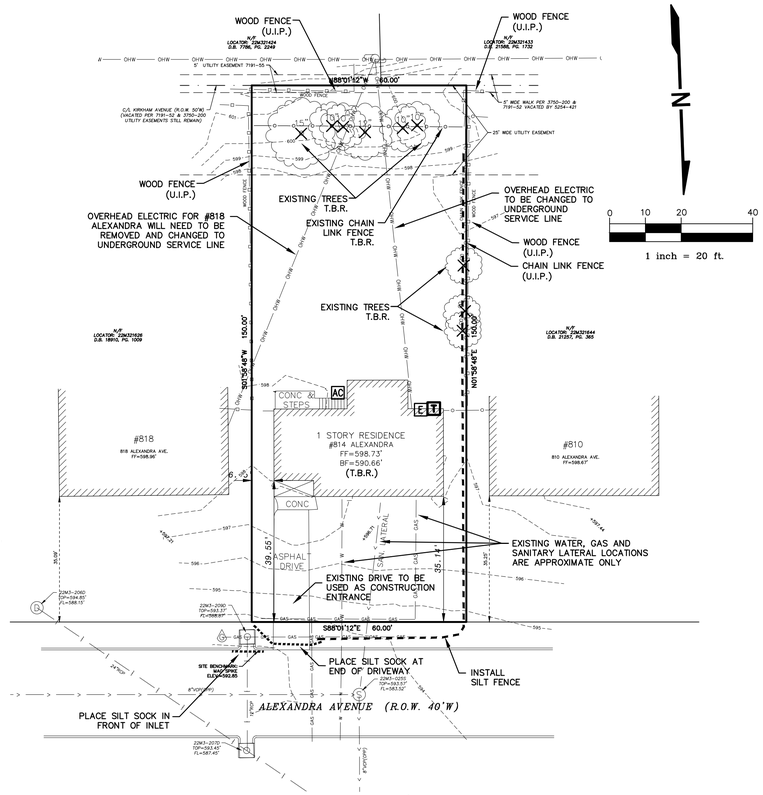
NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED

MAXIMUM SPACING ALONG SLOPES

3:1 SLOPES	30' FENCE TO FENCE
3:1 TO 10:1 SLOPES	50' FENCE TO FENCE
SLOPES <10%	100' FENCE TO FENCE

NOTES:
1. SEE PLAN FOR INITIAL INSTALLATION LOCATION.
2. INSTALL SILT FENCE PRIOR TO DISTURBANCE OF NATURAL VEGETATION AND AT APPROPRIATE INTERVALS DURING CONSTRUCTION OF FILL SLOPES.
3. INSPECT & MAINTAIN FENCE AFTER EVERY RAINSTORM OR MINIMUM 2 WEEK INTERVALS DURING DRY PERIODS.
4. SILT IS TO BE REMOVED WHEN DEPTH ALONG THE FENCE REACHES 12" OR 1/2 THE FENCE HEIGHT.
5. REPAIR / REPLACE TORN OR CLOGGED FABRIC, LOOSE FABRIC, BROKEN POSTS, ETC. TO MAINTAIN INTERGRITY OF SILT FENCE THOUGHOUT CONSTRUCTION.
6. STABILIZE ANY AREAS SUSCEPTIBLE TO UNDERMINING AS SOON AS THEY ARE NOTICED.
7. EXTEND/ADD FENCE AS NECESSARY TO MAINTAIN/PROVIDE ADEQUATE PROTECTION.
8. UPON ESTABLISHMENT OF ADEQUATE VEGETATION, REMOVE FENCE, REGRADE AND VEGETATE TRENCH AREA.

SILT FENCE DETAIL
N.T.S.



EXISTING CONDITIONS / DEMO PLAN

THE WORK PREPARED BY OR UNDER THE DIRECTION OF THE ENGINEER AND APPEARING ON THIS DOCUMENT, DATED AND BEARING THE ENGINEER'S SEAL AND SIGNATURE, IS LIMITED TO SITEWORK ITEMS AS DESCRIBED IN THE SPECIFICATIONS, PAVING, SEWERS, AND OTHER ENGINEERING ITEMS AS SHOWN ON THE PLANS. PURSUANT TO 327.411 RSMo, NO RESPONSIBILITY IS ASSUMED FOR SERVICES NOT RENDERED, INCLUDING, BOUNDARY SURVEYS, ARCHITECTURAL PLANS, RECOMMENDATIONS, UTILITY DISTRIBUTION OR LOCATION, CONSTRUCTION AIDS, METHODS AND SCHEDULING, ANY AND ALL ITEMS, PLANS, OR DOCUMENTS NOT SEALED OR REPORTED BY ENGINEER LISTED BELOW. ALL THE ENGINEER'S SIGNATURE, AND SEAL APPEAR ON THE DOCUMENTS.

D & R Building Group
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VANCE ENGINEERING, INC.
MISSOURI STATE CERTIFICATE OF AUTHORITY NO. 2003022194

814 ALEXANDRA AVENUE

SITE PLAN

BACKWATER VALVES

Quick View Backwater Valves with Extension Kit to Premade Lengths
Socket Valve with complete Extension Assembly in precut lengths.

Valve x Extension Size[1]	Socket Valve With Extension	Valve x Extension Size[1]	Socket Valve With Extension	Pressure Rating
2 x 12HT	S275P-120	4 x 12HT	S475P-120	43 psi (100 feet of head)
2 x 16HT	S273P-160	4 x 16HT	S473P-160	
2 x 20HT	S275P-200	4 x 20HT	S475P-200	
2 x 24HT	S275P-240	4 x 24HT	S475P-240	
2 x 36HT	S275P-360	4 x 36HT	S475P-360	
2 x 48HT	S275P-480	4 x 48HT	S475P-480	
3 x 12HT	S375P-120	6 x 12HT	S675P-120	
3 x 16HT	S373P-160	6 x 16HT	S673P-160	
3 x 20HT	S375P-200	6 x 20HT	S675P-200	
3 x 24HT	S375P-240	6 x 24HT	S675P-240	
3 x 36HT	S375P-360	6 x 36HT	S675P-360	
3 x 48HT	S375P-480	6 x 48HT	S675P-480	

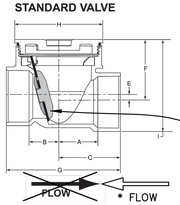
1 - Size designates nominal valve size x extension height (HT-top of valve to top of extension, inches).

Quick View Service Access Extension Kit Only In Premade Lengths (valve not included)
Extension Assembly in precut lengths. Use exiting valve top Access Plug.

Size[1]	Premade Extension	Size[1]	Premade Extension	Pressure Rating
2 x 12HT	SAEK-020-120	4 x 12HT	SAEK-040-120	43 psi (100 feet of head)
2 x 16HT	SAEK-020-160	4 x 16HT	SAEK-040-160	
2 x 20HT	SAEK-020-200	4 x 20HT	SAEK-040-200	
2 x 24HT	SAEK-020-240	4 x 24HT	SAEK-040-240	
2 x 36HT	SAEK-020-360	4 x 36HT	SAEK-040-360	
2 x 48HT	SAEK-020-480	4 x 48HT	SAEK-040-480	
3 x 12HT	SAEK-030-120	6 x 12HT	SAEK-060-120	
3 x 16HT	SAEK-030-160	6 x 16HT	SAEK-060-160	
3 x 20HT	SAEK-030-200	6 x 20HT	SAEK-060-200	
3 x 24HT	SAEK-030-240	6 x 24HT	SAEK-060-240	
3 x 36HT	SAEK-030-360	6 x 36HT	SAEK-060-360	
3 x 48HT	SAEK-030-480	6 x 48HT	SAEK-060-480	

1 - Size designates nominal valve size x extension height (HT-top of valve to top of extension, inches). All extension kits can be cut shorter in the field for custom fits.

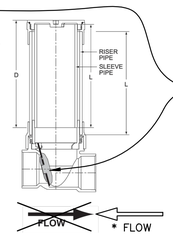
STANDARD VALVE



Standard Valve Dimensions (Inches)

Size	A	B	C	E	F	G	H	I
2	1-13/16	1-3/4	2-5/8	5/16	3-1/4	5-9/32	4-3/16	4-9/16
3	2-5/8	2	4-3/16	13/32	4-1/8	7-3/4	6	6-1/8
4	3-5/8	3-3/4	5-7/16	23/32	5-7/16	10-15/16	8-1/4	7-15/16
6	4-3/4	4-5/8	7-3/4	13/16	7-3/16	15-3/8	11-1/4	10-13/16

VALVE WITH EXTENSION KIT



Valve with Extension Kit Dimensions (Inches)

HEIGHT-D	Valve Size 2	3	4	6
	L	L	L	L
12	10-3/4	10-7/8	10-1/4	10-1/4
16	14-3/4	14-7/8	14-1/4	14-1/4
20	18-3/4	18-7/8	18-1/4	18-1/4
24	22-3/4	22-7/8	22-1/4	22-1/4
36	34-3/4	34-7/8	34-1/4	34-1/4
48	46-3/4	46-7/8	46-1/4	46-1/4

D = Top of plug Standard Valve to top of plug with Extension

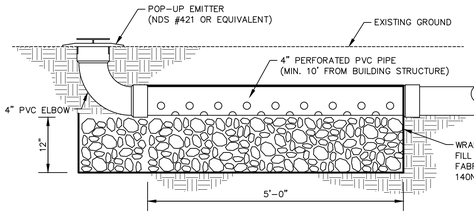
Note: Riser Pipe & Sleeve Pipe are the same length.

VALVE TO FUNCTION AS OUTFALL ORIFICE. SEE OUTFALL ORIFICE NOTE.

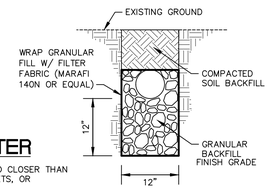
OUTFALL ORIFICE NOTE:

HOLES TO BE DRILLED IN THE FLAPPER VALVE TO SERVE AS THE OUTFALL ORIFICE. FLAPPER VALVE TO HAVE FOUR (4) 1/2" DIA. HOLES DRILLED EVENLY SPACED. REMOVE ANY RUBBER FROM THE FLAPPER AROUND WHERE THE HOLES ARE DRILLED. BACKWATER VALVE NOT TO BE INSTALLED UNTIL AFTER FIRST RAINFALL AFTER STORAGE BASIN HAS BEEN CONSTRUCTED.

* INSTALL IN REVERSE DIRECTION FROM MANUFACTURER'S DETAIL

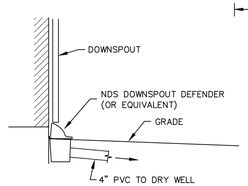


NOTES:
1. GRANULAR FILL SHALL BE 1" MIN. CLEAN DRAINAGE ROCK.
2. COMPACT SOIL MATERIAL UNDER LAWNS TO 85% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST. (ASTM D 1557)



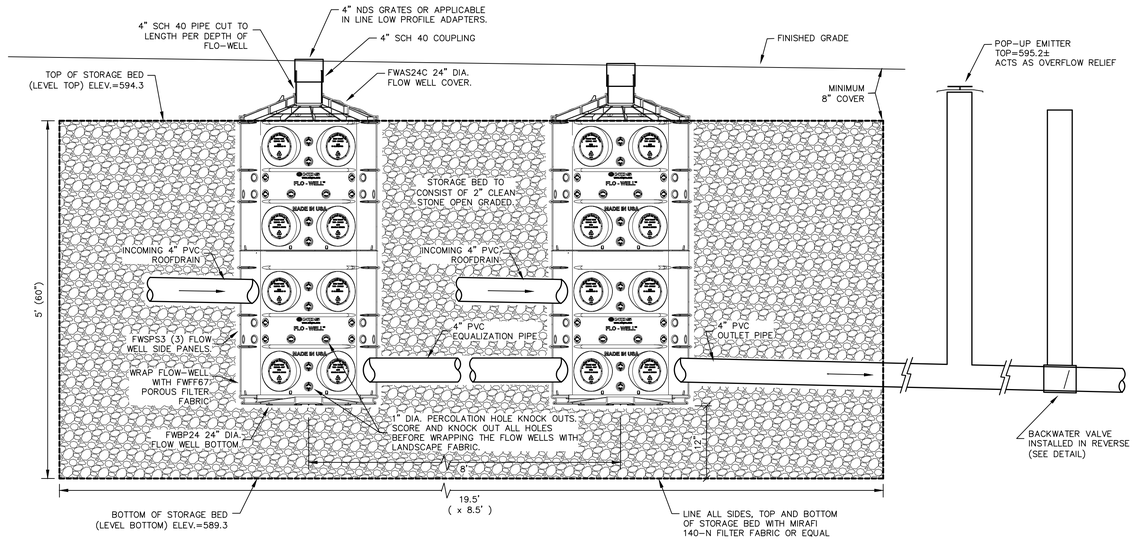
POP-UP EMITTER

POP-UP EMITTERS TO BE LOCATED NO CLOSER THAN 10 FEET TO PUBLIC SIDEWALKS, STREETS, OR NEIGHBORING PROPERTY LINES.



DOWNSPOUT DETAIL

FOR DOWNSPOUTS THAT ARE PIPED TO DRY WELL



STORM WATER STORAGE BED (DRY WELL) with NDS FLO-WELL

NOT TO SCALE

NOTE:
CONTRACTOR SHALL REFER TO AND FOLLOW THE INSTALLATION PROCEDURES PROVIDED IN THE MANUFACTURERS INSTALLATION GUIDE.

EXISTING UTILITY NOTE

BEFORE YOU DIG - DRILL - BLAST
1-800-344-7483
(TOLL FREE)
MISSOURI ONE CALL SYSTEM, INC.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THEREFORE, THE LOCATIONS OF ANY UNDERGROUND FACILITIES SHOWN HEREON MUST BE CONSIDERED APPROXIMATE. PRIOR TO BEGINNING WORK ON THE SITE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF THESE FACILITIES, ALONG WITH ANY IN EXISTENCE THAT ARE NOT SHOWN; TO VERIFY THEIR LOCATION BOTH HORIZONTALLY AND VERTICALLY (IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY/FACILITY OWNER); AND TO VERIFY THAT MINIMUM CLEARANCES AND COVER REQUIREMENTS BETWEEN THE EXISTING FACILITIES AND THE PROPOSED WORK WILL BE MET.

STATE OF MISSOURI
MICHAEL CLAY VANCE
NUMBER E-25616
PROFESSIONAL ENGINEER

6/2/2026
MICHAEL CLAY VANCE
PROFESSIONAL ENGINEER
MISSOURI LIC NO E-25616

REVISED

06/01/26	CITY

26048

05/14/26

2 / 2

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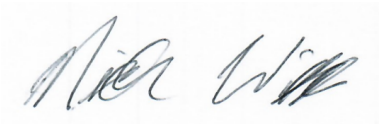
FRONTENAC FORESTRY

Install and maintain tree protection fence as indicated on preservation plan for all trees marked save. Silt protection shall be installed in a trenchless manner within the critical root zone of any tree to be SAVED. (I.E. woodchips, wattles, and hay bales)

I hereby certify that I have viewed the premises and provided this professional opinion regarding the survivability of significant trees on this site and abutting the site. Attached is a site plan illustrating the recommended location of tree protection fencing. This fence is to remain erect throughout the construction project . All tree inspections were performed from the ground and are limited in scope. Tree and utility locations are approximate and locations of utilities are subject to change.



Nick Wibbenmeyer
I.S.A. Certified Arborist
MW 6357A

CERTIFIED ARBORIST ISA

TREE STUDY
SITE PLAN REVIEW
5/18/2026
5/22/2026

PROPERTY LOCATION: 814 Alexandra

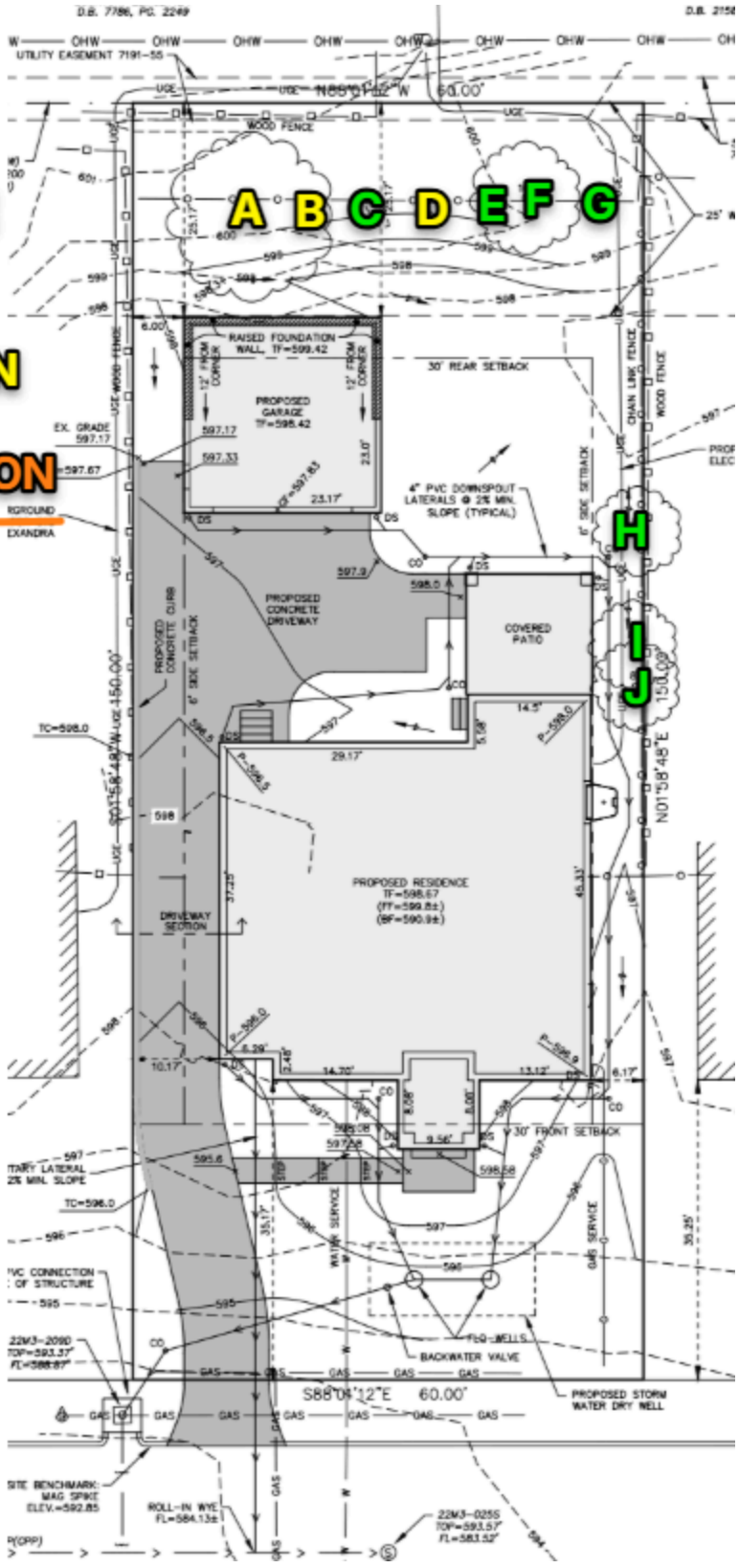
#	TREE SPECIES	BOTANICAL/ LATIN	D B H	PRESERVE/ TBR/ INSTALL	COMMENTS	CONDITION
A	black locust	*Robinia pseudoacacia*	15"	TBR	involved with fence, vines, exfoliating bark, deadwood **GRADING/CONDITION**	Poor
B	black locust	*Robinia pseudoacacia*	6"	TBR	broken leader **GRADING/CONDITION**	Poor
C	black locust	*Robinia pseudoacacia*	9"	TBR	phototropic, deadwood **GRADING**	Fair
D	black locust	*Robinia pseudoacacia*	9"	TBR	utility topped leader, deadwood **GRADING/CONDITION**	Poor
E	black oak	*Quercus velutina*	13"	TBR	involved with fence, lean, deadwood **GRADING**	Fair
F	black locust	*Robinia pseudoacacia*	9"	TBR	deadwood **GRADING**	Fair
G	black locust	*Robinia pseudoacacia*	8"	TBR	co-dominant top **GRADING**	Fair
H	American elm	*Ulmus americana*	7"	TBR	phototropic, minor deadwood **FOUNDATION/ UTILITIES**	Fair
I	red mulberry	*Morus rubra*	8"	TBR	phototropic, involved with fence **FOUNDATION/ UTILITIES**	Fair
J	red mulberry	*Morus rubra*	8"	TBR	phototropic, involved with fence **FOUNDATION/ UTILITIES**	Fair
1	Eastern redbud	*Cercis canadensis*	3”	INSTALL	installed replacement tree	
2	saucer magnolia	*Magnolia soulangeana*	3”	INSTALL	installed replacement tree	
3	little leaf linden	*Tilia cordata*	3”	INSTALL	installed replacement tree	
4	flowering dogwood	*Cornus florida*	3”	INSTALL	installed replacement tree	
5	white oak	*Quercus alba*	3”	INSTALL	installed replacement tree	
6	post oak	*Quercus stellata*	3”	INSTALL	installed replacement tree	
A	5 x Inkberry Holly	***Ilex glabra***	5 Gal	INSTALL		
B	5 x Azalea	Rhododendron	5 Gal	INSTALL		
	Hardwood mulch		2 yds	INSTALL		

TOTAL TREES **(** @ or above 6" DBH **)**	TOTAL VIABLE TREES	TREES REMOVED	DEAD/DYING/ DISEASED REMOVE	VIABLE TREES REMOVED	# OF VIABLE INCHES REMOVED	# OF 2.5" CALIPER REPLACEMENT TREES REQUIRED (1 per 10" removed)	OR REPLACEMENT COST @ $120 PER CALIPER INCH
10	**7**	**10**	**3**	**7**	**62**	**6**	**$2400**

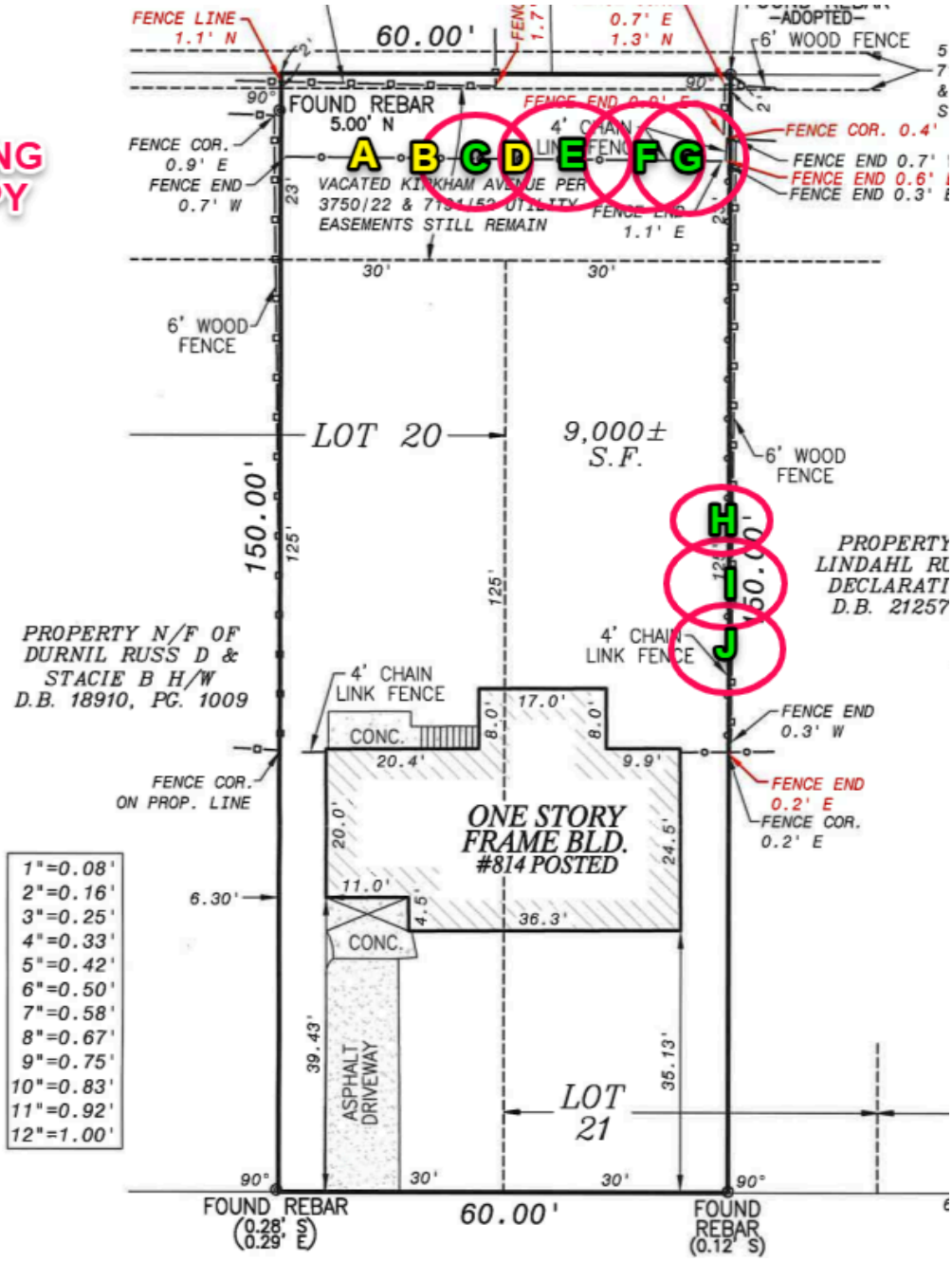
PRESERVE

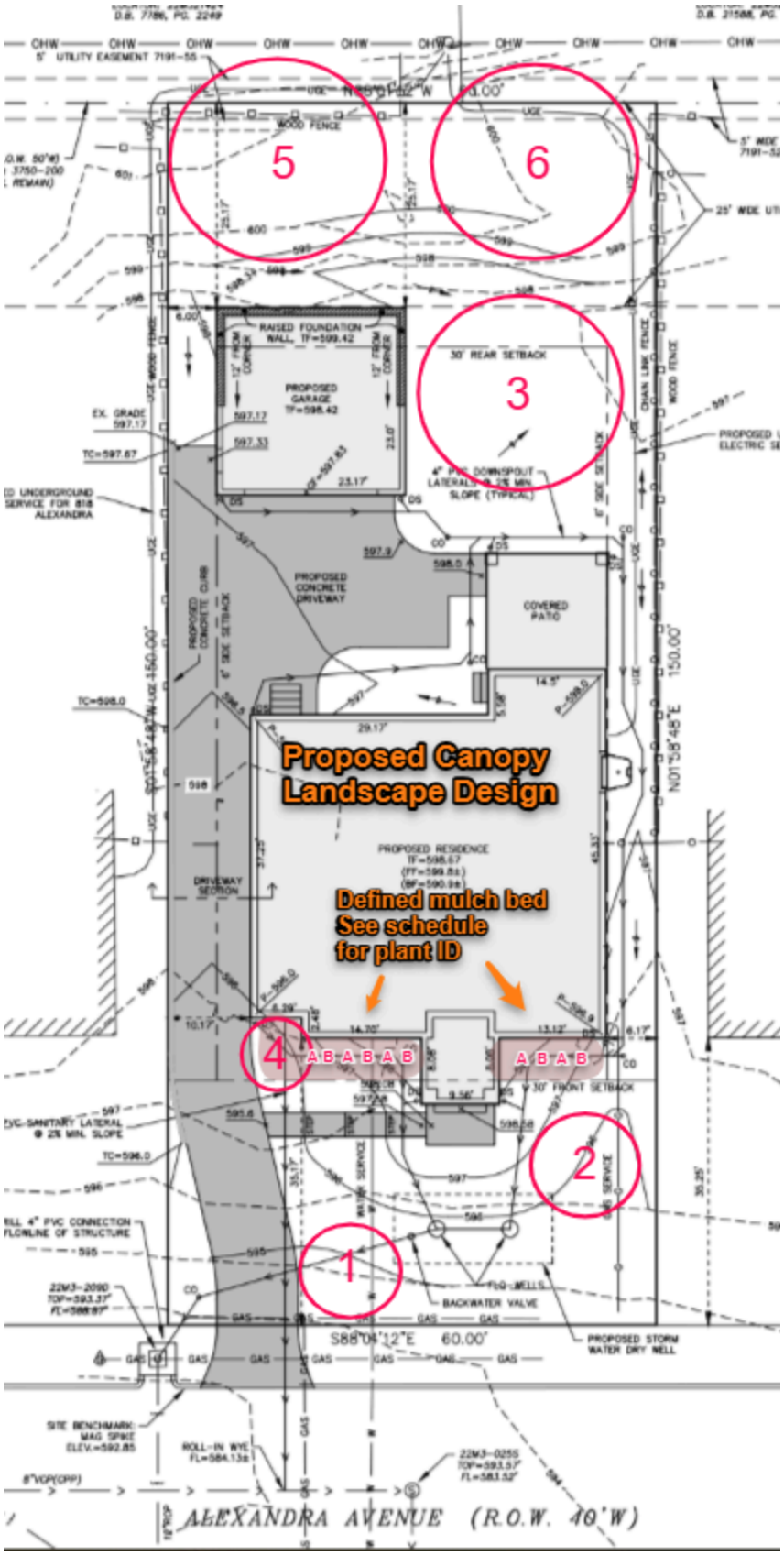
TBR

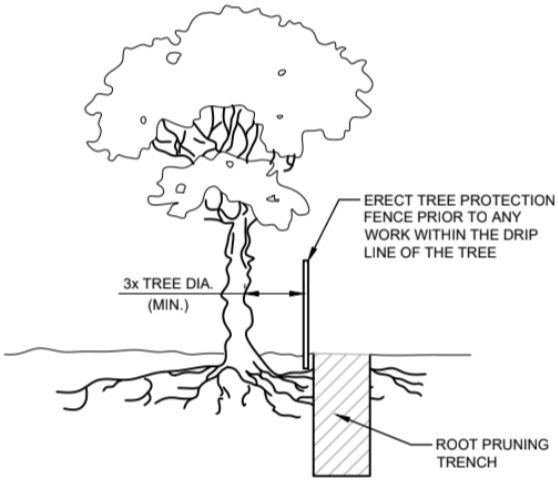
POOR CONDITION TREE PROTECTION FENCE



EXISTING CANOPY




Proposed Canopy
Landscape Design
Defined mulch bed
See schedule
for plant ID
5
6
3
4
2
1
A B A B A B
A B A B
RAISED FOUNDATION WALL, TF=599.42
PROPOSED GARAGE TF=598.42
30' REAR SETBACK
PROPOSED CONCRETE DRIVEWAY
COVERED PATIO
PROPOSED RESIDENCE
TF=598.67
(TF=599.8±)
(BF=590.9±)
30' FRONT SETBACK
N01°58'48"E 150.00'
S88°08'12"E 60.00'
ALEXANDRA AVENUE (R.O.W. 40'W)
BACKWATER VALVE
PROPOSED STORM WATER DRY WELL
SITE BENCHMARK
MAG SPIKE
ELEV.=592.85
5' UTILITY EASEMENT 7191-55
WOOD FENCE
CHAIN LINK FENCE
EX. GRADE
597.17
TC=597.67
TC=598.0
597.12
597.33
597.9
598.0
PROPOSED CONCRETE D/W
6' SIDE SETBACK
DRIVEWAY SECTION
4" PVC DOWNSPOUT LATERALS @ 2% MIN. SLOPE (TYPICAL)
PVC-SANITARY LATERAL @ 2% MIN. SLOPE
FILL 4" PVC CONNECTION FLOWLINE OF STRUCTURE
22M3-2090
TOP=593.37'
FL=588.87'
22M3-0255
TOP=593.57'
FL=583.32'
ROLL-IN WYE
FL=584.13±
8"VCP(OPP)
GAS
UGE
OHW
DS
CO
SS
W
23.17'
29.17'
35.17'
35.25'
65.33'
14.70'
13.12'
9.56'
6.39'
10.17'
6.17'
14.5'
5.08'
6.48'



NOTES:

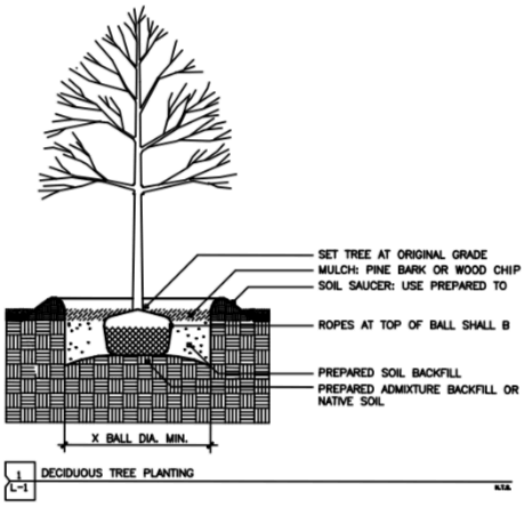
1. ROOT PRUNING SHALL BE DONE WHENEVER THERE WILL BE GRADING, CUTTING OR COMPACTION DISTURBANCE UNDERNEATH THE DRIP LINE OF A TREE. PRIOR TO ANY WORK WITHIN DRIP LINE, THE CONTRACTOR SHALL ERECT A TREE PROTECTION FENCE AND CONTACT AN ISA CERTIFIED ARBORIST TO COORDINATE WORK. NO DISTURBANCE SHALL BE DONE WITHIN A DISTANCE OF 3X THE DIAMETER OF THE TREE, DUE TO STABILITY CONCERNS.
2. ROOT PRUNING SHALL BE DONE WITH A SHARP TOOL, IN SUCH A WAY THAT DOES NOT PULL ON THE ROOTS, BUT LEAVES SMOOTH CUTS. DO NOT TEAR ROOTS WITH EXCAVATION EQUIPMENT. IT IS PREFERABLE TO EXPOSE THE ROOTS PRIOR TO ROOT PRUNING. AFTER PRUNING, FILL THE AREA WITH QUALITY TOPSOIL AND WATER UNTIL THOROUGHLY SOAKED.
3. ONCE EXPOSED, ROOTS MUST BE COVERED WITHIN 8 HOURS. IF ROOTS WILL BE LEFT EXPOSED FOR LONGER THAN 8 HOURS, THEY MUST BE KEPT MOIST. ONE OPTION IS TO PUT MOIST BURLAP OVER THE EXPOSED ROOTS.

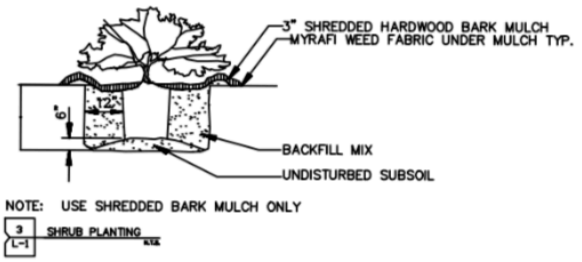
NOTES (CONT.):

4. ROOT PRUNING SHALL MEET OR EXCEED ANSI A300 OR APPROVED TREE CARE INDUSTRY STANDARDS.

DIGGING PROCESS

1. THE PRUNING TRENCH SHOULD BE CLEARED IN A WAY THAT EXPOSES THE ROOTS WHILE LEAVING THEM INTACT.
   1.1. USE HAND TOOLS OR AN AIR KNIFE II) DO NOT USE AN EXCAVATOR, AS THIS WILL PULL ON THE ROOTS AND POSSIBLY DAMAGE THE TRUNK III) IF A ROOT LARGER THAN 2" IS EXPOSED, LEAVE THIS ROOT INTACT AND CONTACT LANDSCAPE SERVICES
2. ONCE THE ROOTS ARE EXPOSED, USE A SHARP TOOL TO CLEANLY CUT ALL ROOTS WHICH ARE BETWEEN 1-2" DIAMETER, TO THE DEPTH OF THE PROPOSED DISTURBANCE
   2.1. APPROPRIATE TOOLS INCLUDE SHARP LOPPING SHEARS, HANDSAWS, A SHARPENED AXE, A ROOT PRUNER GRINDER, A RECIPROCATING SAW AND ANY OTHER SHARP TOOL WHICH LEAVES A CLEAN CUT
   2.2. YOU MAY NOT USE A CHAINSAW OR CHAIN TRENCHER TO MAKE THE FINAL CUTS
   2.3. ALL ROOTS SHALL BE LEFT WITH A CLEAN, SMOOTH ENDS AND NO RAGGED EDGES
3. POST PRUNING
   3.1. TREE ROOTS MUST BE KEPT MOIST. IF ROOTS ENDS WILL BE LEFT EXPOSED FOR MORE THAN 8 HOURS, COVER THE HOLE WITH MOIST BURLAP.
   3.2. FILL THE HOLE WITH HIGH QUALITY TOP SOIL, MULCH THE AREA WITH TRIPLE SHREDDED HARDWOOD TO A DEPTH OF 3", AND WATER WELL.





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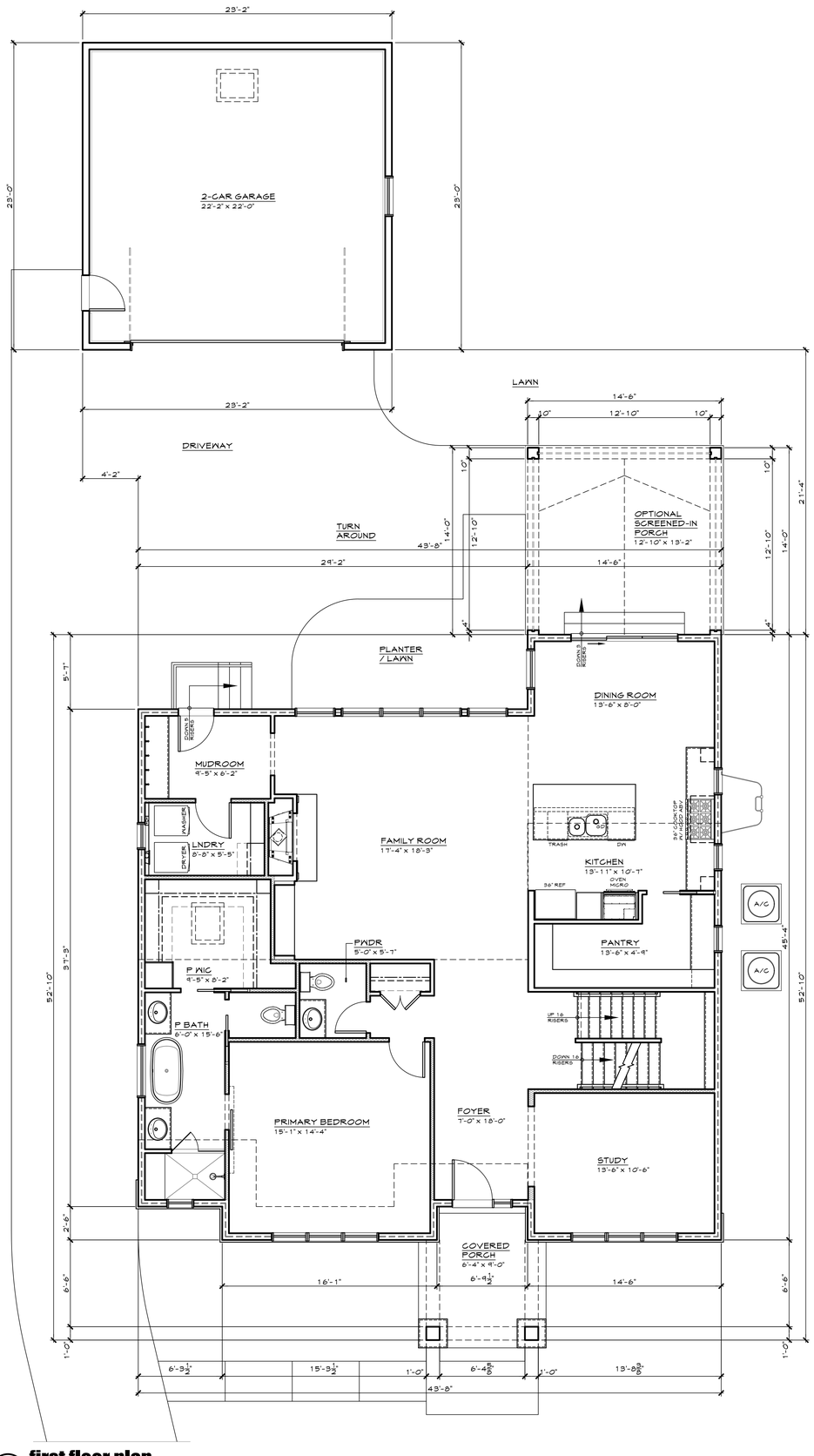
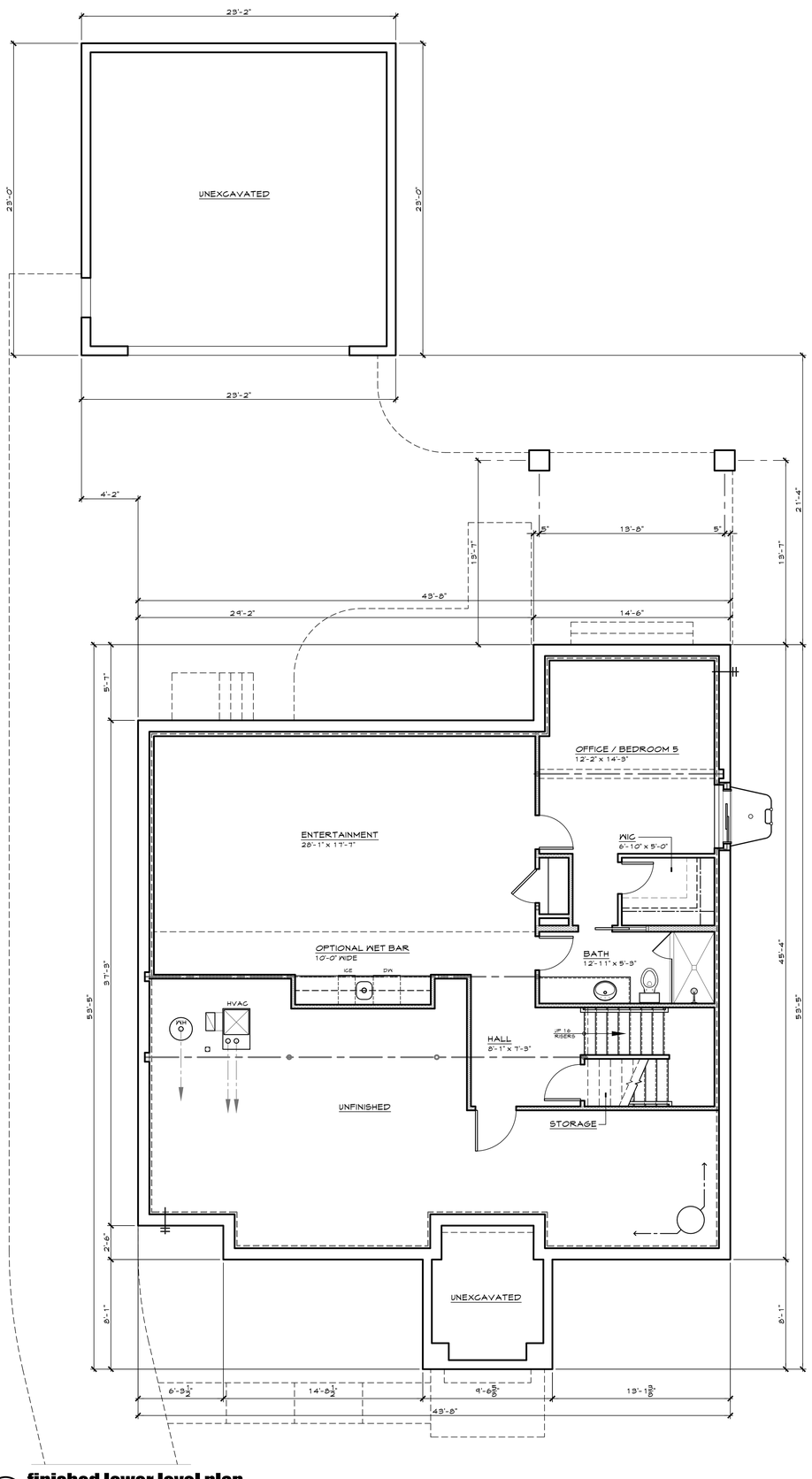


2 first floor plan

scale: 1/4" = 1'-0"



1 finished lower level plan

scale: 1/4" = 1'-0"

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63144

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toll free: 855.359.3516
website: www. sroteco.com

srote & company, llc
missouri certificate of authority
2013000205

project / location:

a new single family residence

814 alexandra avenue
glendale, missouri
63122

owner:

builder / developer:

D&R Building Group

1917 rutger street
saint louis, missouri 63104

tel: 314.602.9361
email: leonard@dandr.net

no.	date / description

issue date: may 20, 2026

phase: design development

sheet title: finished lower level plan and first floor plan

drawn by: jvs / acb

checked by: jvs

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sheet no: **A-1**

project number: 26-025

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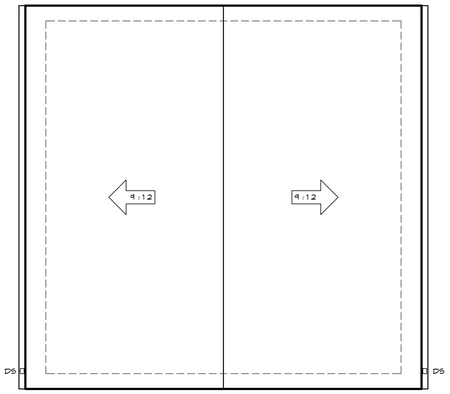
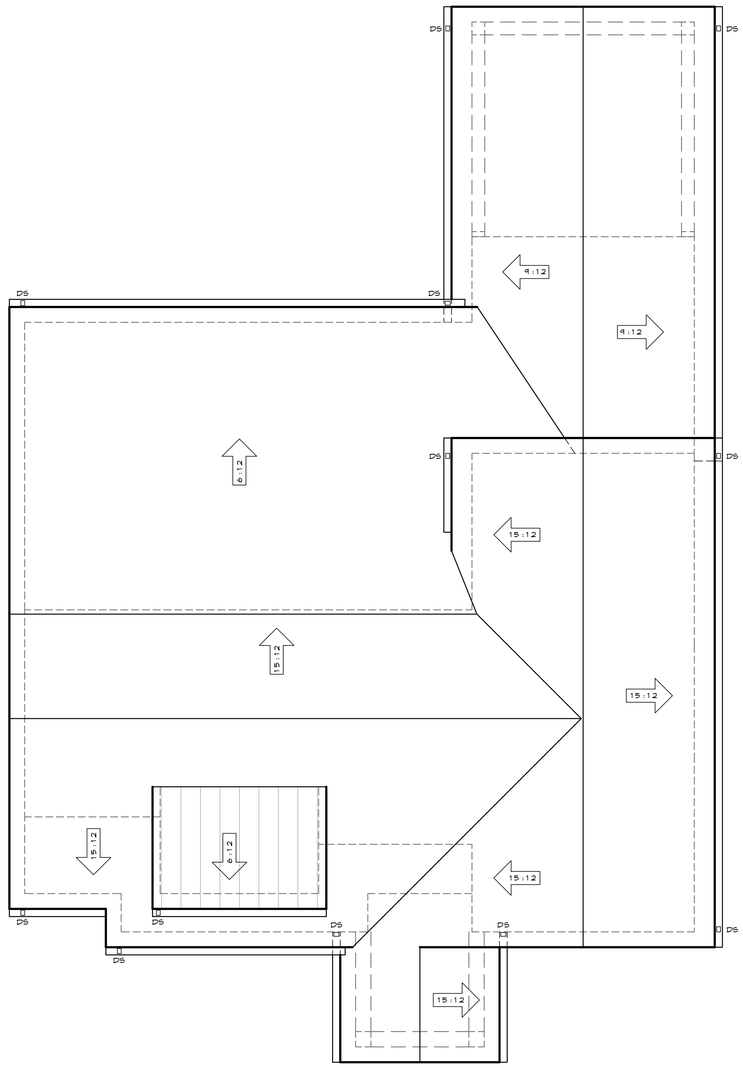
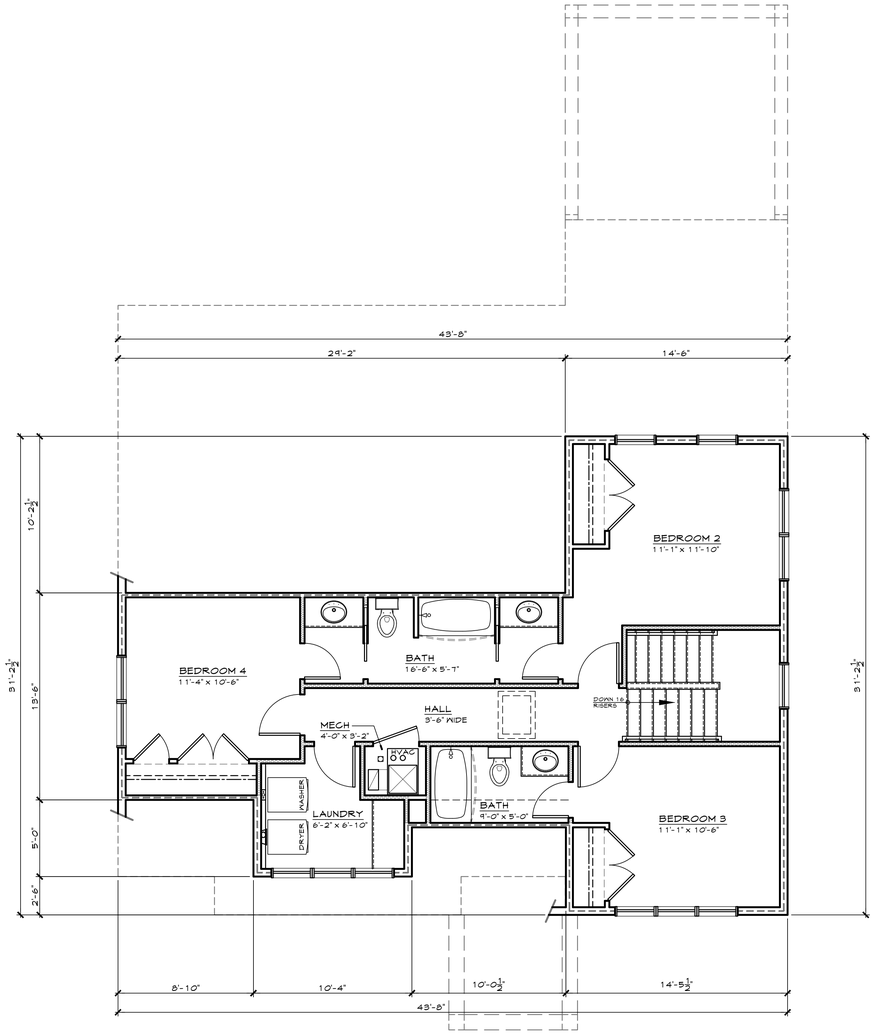




2 roof plan

scale: 1/4" = 1'-0"



1 second floor plan

scale: 1/4" = 1'-0"

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no.	date / description

issue date: may 20, 2026

phase: design development

sheet title: second floor plan and roof plan

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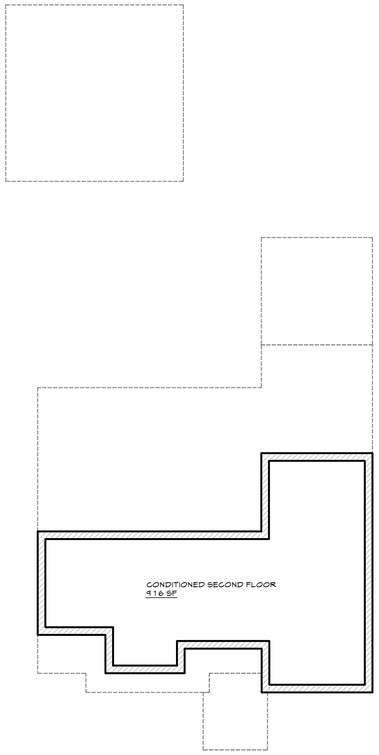
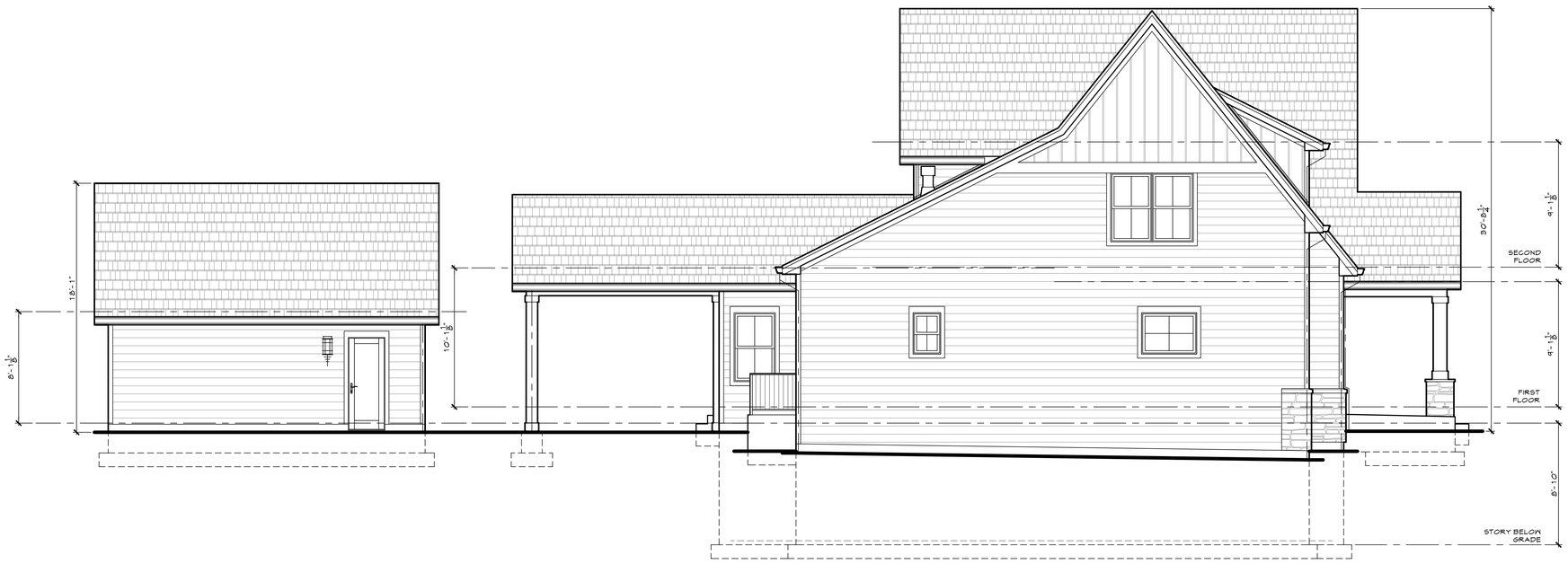
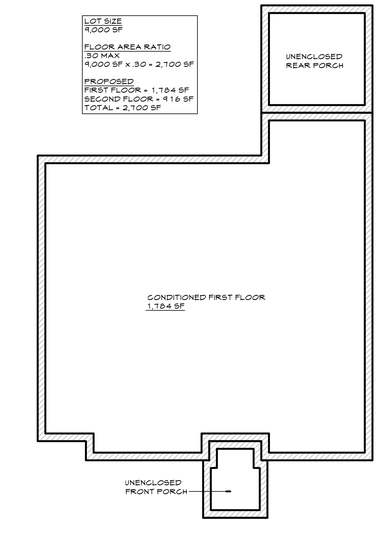




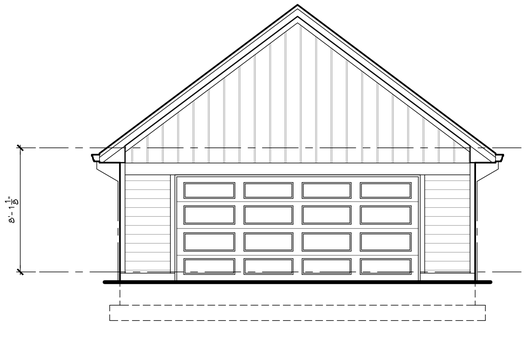
3 left side elevation

scale: 1/4" = 1'-0"



4 floor area ratio

scale: 1/8" = 1'-0"



2 detached garage front elevation

scale: 1/4" = 1'-0"

1 front elevation

scale: 1/4" = 1'-0"

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tel: 314.602.9361
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no.	date / description

issue date: may 20, 2026

phase: design development

sheet title: front and left side elevations, and FAR

drawn by: jvs / acb

checked by: jvs

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project number: 26-025

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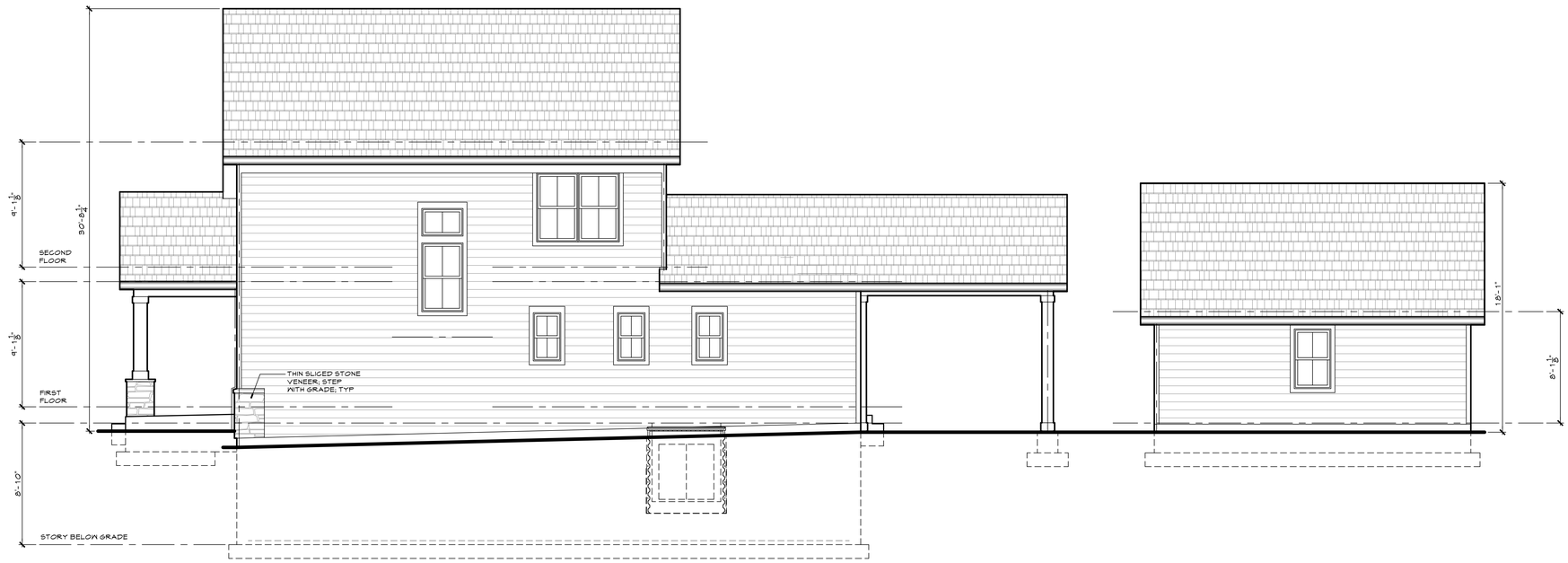
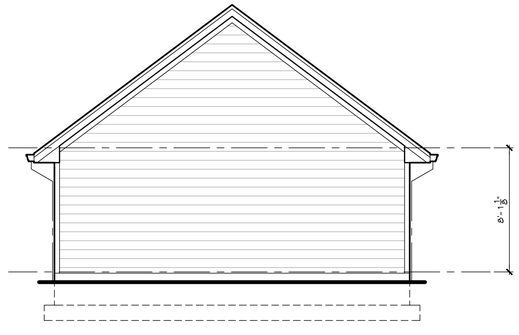


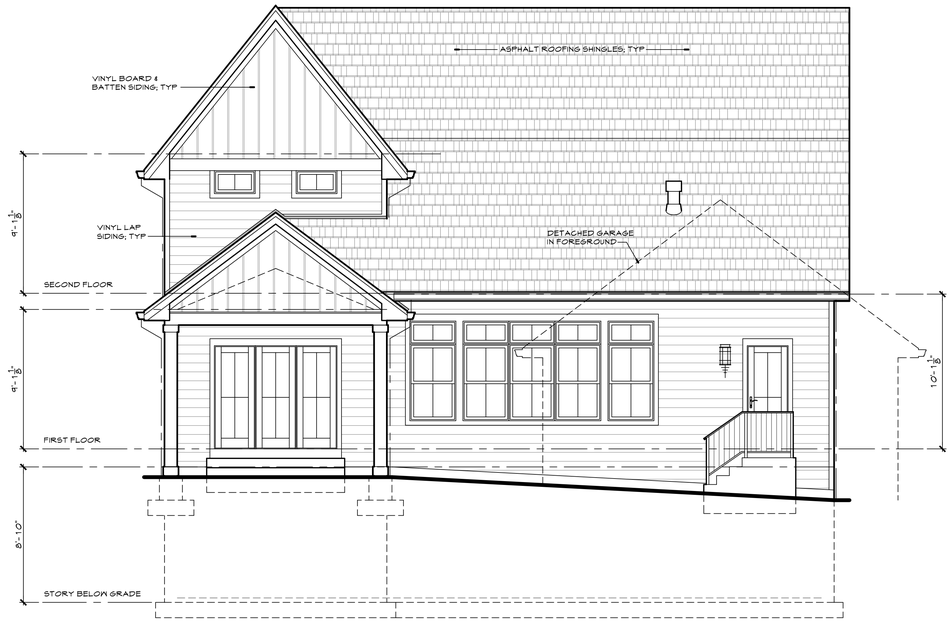
3 right side elevation

scale: 1/4" = 1'-0"



2 detached garage rear elevation

scale: 1/4" = 1'-0"



1 rear elevation

scale: 1/4" = 1'-0"

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email: leonard@dandr.net

no.	date	description

issue date: may 20, 2026

phase: design development

sheet title: rear and right side elevations

drawn by: jvs / acb

checked by: jvs

total pages in set: 5

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project number: 26-025

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807 alexandra avenue

811 alexandra avenue

815 alexandra avenue

819 alexandra avenue

806 alexandra avenue

810 alexandra avenue - FF = 598.67'

814 alexandra avenue - FF = 599.8'

818 alexandra avenue - FF = 598.96'

822 alexandra avenue

aerial photo

scale: 1/32" = 1'-0"

814 alexandra avenue - existing front

814 alexandra avenue - existing rear

architect's rendering

scale: 1/4" = 1'-0"

srote & CO
ARCHITECTS | PLANNERS | INTERIORS

2900 south brentwood blvd
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63144

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toll free: 855.359.3516
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srote & company, llc
missouri certificate of authority
2013000205

project / location:

a new single family residence

814 alexandra avenue
glendale, missouri
63122

owner:

builder / developer:

D&R Building Group

1917 rutger street
saint louis, missouri 63104

tel: 314.602.9361
email: leonard@dandr.net

no.	date / description

issue date: may 20, 2026

phase: design development

sheet title: rendering, aerial photo, and streetscape

drawn by: jvs / acb

checked by: jvs

total pages in set: 5

architect's seal:

preliminary - not for construction

the professional architect's seal affixed to this sheet applies only to the material and items shown on this sheet. all drawings, specifications, and documents prepared by srote & company, llc are considered prepared by this architect, and this architect expressly disclaims any and all responsibility for such plans, drawings or documents not sealed by him and

sheet no: A-5

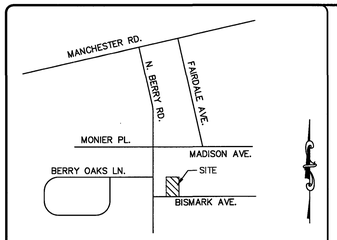
project number: 26-025

NOTIFY THE ARCHITECT IN EVENTS OF DISCREPANCIES, OMISSIONS, AND / OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHOULD BE IMMEDIATELY DIRECTED TO THE ARCHITECT.

ARB Project Submittal

Address/Project	785 Bismark Ave./New Home
Applicant	NJL Custom Homes
Architect	Tim Hollerbach Designs
Contractor	NJL Custom Homes
Owner	Jason & Michelle Fank

A TRACT OF LAND BEING ALL OF LOTS 197, 198, 199, 200 & PART OF VACATED ALLEY OF "ALGONQUIN VIEW" (P.B. 22 PG. 28) LOCATED IN SECTION 29, 30 & 32, TOWNSHIP 45 NORTH, RANGE 6 EAST, CITY OF GLENDALE, ST. LOUIS COUNTY, MISSOURI.



LOCATION MAP

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

CALL BEFORE YOU DIG!
1-800-DIG-RITE

MISSOURI ONE CALL SYSTEM, INC. 1-800-344-7483 STOP! CALL BEFORE YOU DIG!

LEGEND:

- TREE LINE
- STILT FENCE
- x — x — x — FENCE LINE
- C — UNDERGROUND CATV LINE
- E — UNDERGROUND ELECTRIC LINE
- W — UNDERGROUND WATER LINE
- T — UNDERGROUND TELEPHONE LINE
- G — UNDERGROUND GAS LINE
- OE — OVERHEAD ELECTRIC
- OHW — OVERHEAD WIRE
- UNDERGROUND SEWER LINE
- BUILDING
- LIGHT STANDARD
- YARD LIGHT
- UTILITY POLE
- UTILITY POLE W/ LIGHT
- UTILITY POLE W/ TRANSFORMER
- GUY WIRE
- TRAFFIC SIGNAL
- WATER SPIGOT
- ELECTRIC METER
- WATER METER
- GAS METER
- WATER VALVE
- GAS VALVE
- GAS DRIP
- ELECTRIC BOX
- CABLE TV BOX
- TELEPHONE BOX
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- STREET/ROAD SIGN
- MISC. POLE/POST
- PARCEL TIE (SAME OWNER)
- FIRE HYDRANT
- UTILITY MANHOLE
- MAIL BOX
- A/C UNIT
- SANITARY MANHOLE
- SANITARY CLEANOUT
- STORM MANHOLE
- CURB INLET / AREA INLET
- GRATE MANHOLE
- GRATE INLET
- BUSH/SHRUB
- TREE
- SURFACE FLOW
- SURFACE FLOW WITH SLOPE
- DENOTES PERMANENT MONUMENT TO BE PLACED UPON COMPLETION OF GRADING AND ROADWAY IMPROVEMENTS 5/8"x24" REBAR WITH METAL CAP STAMPED LS 307-D.
- DENOTES SEMI-PERMANENT MONUMENT TO BE SET
- FOUND IRON PIPE
- CONC. MON./ STONE
- CROSS
- CROSS WITH ANCHOR
- CONC. PAVEMENT
- ASPHALT PAVEMENT
- BRICK PAVERS
- GRAVEL

ABBREVIATIONS:

CONC.	–	CONCRETE
N/F	–	NOW OR FORMERLY
P.B.	–	PLAT BOOK
D.B.	–	DEED BOOK
D.D	–	DEED DOCUMENT
PG.	–	PAGE
SQ. FT.	–	SQUARE FEET
(R)	–	RECORD
(S)	–	SURVEY
FF	–	FINISH FLOOR
TF	–	TOP FOUNDATION
BF	–	BASEMENT FLOOR

SITE INFO:

N/F FOUNDATION UP
D.D. 2023090800502
LOC.# 22L511255
#785 BISMARK AVE.
25,984 SQ. FT. OR 0.597 AC.±

ZONING INFO:

"R-1" SINGLE FAMILY RESIDENTIAL DISTRICT
FRONT: AVERAGE OF ADJACENT HOMES
(45.85'+39.15'=85.00'/2=42.50')
FRONT: 30' SETBACK PER PLAT
SIDE: 10' SETBACK
REAR: 30' SETBACK
HEIGHT: 35' OR 2 1/2 STORIES.

ABBREVIATIONS:

CONC.	–	CONCRETE
N/F	–	NOW OR FORMERLY
P.B.	–	PLAT BOOK
D.B.	–	DEED BOOK
D.D.	–	DEED DOCUMENT
PG.	–	PAGE
SQ. FT.	–	SQUARE FEET
(R)	–	RECORD
(S)	–	SURVEY
RAD.	–	RADIAL
FF	–	FINISH FLOOR
TF	–	TOP FOUNDATION
BF	–	BASEMENT FLOOR
UIP	–	USE IN PLACE
TBR	–	TO BE REMOVED
DS	–	DOWNSPOUT
F/P	–	FIREPLACE
W/W	–	WINDOW WELL
APPRO.	–	APPROXIMATE

EXISTING UTILITIES NOTES

1. ALL DESTRUCTION OF EXISTING UTILITY TAPS SHALL BE IN ACCORDANCE WITH EACH UTILITY PROVIDER'S SPECIFICATIONS, INCLUDING FEDERAL, STATE, AND LOCAL REGULATIONS.
2. CONTRACTOR IS RESPONSIBLE TO CONTACT AND IDENTIFY ALL UTILITIES AND PERFORM WORK IN A SAFE AND RESPONSIBLE MANNER.
3. THE SERVICEABILITY OF ALL UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR / HOMEBUILDER. ANY AND ALL REQUIREMENTS FOR EXISTING OR PROPOSED FLOW RATES, FIRE PROTECTION, CONNECTION FEES OR REQUIRED STUDIES ARE NOT THE RESPONSIBILITY OF THE STERLING COMPANY.
4. THE STERLING COMPANY ASSUMES NO RESPONSIBILITY FOR CONTRACTOR'S WORK OR FOR ANY WORK NOT SPECIFICALLY MENTIONED.

THE UNDERGROUND UTILITIES SHOWN HEREON WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMo

SITE BENCHMARK:

IRON ROD WITH CAP: 544.23' (NAVD88)
FOUND IRON ROD AT THE SOUTHWEST CORNER OF THE SUBJECT TRACT AS SHOWN HEREON.

BENCHMARK:

ST. LOUIS COUNTY BENCHMARK
BENCHMARK: 14331: ELEVATION: 564.24' (NAVD88)
"L" ON TOP CONCRETE RETAINING WALL AT SOUTH SIDE OF STEPS AT HOUSE #1364 BERRY ROAD; 20' EAST OF CENTERLINE OF BERRY ROAD.

NOTES FOR GROUND WATER:

1. THE GROUNDWATER LEVEL DEPENDS ON SEASONAL AND CLIMATIC VARIATIONS AND MAY BE PRESENT AT DIFFERENT DEPTHS IN THE FUTURE.
2. IF GROUND WATER IS ENCOUNTERED DURING BASEMENT EXCAVATION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENGAGE A GEOTECHNICAL ENGINEER TO PROPERLY ADDRESS THE CONDITION AND ABIDE BY THEIR RECOMMENDATIONS.
3. IF GROUND WATER IS ENCOUNTERED DURING THE EXCAVATION FOR BMP CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENGAGE A GEOTECHNICAL ENGINEER TO DETERMINE THE ACCURATE GROUNDWATER TABLE AND PROVIDE THE GROUNDWATER TABLE INFORMATION TO THE STERLING COMPANY TO REDESIGN THE STORM WATER BMPS AS APPROPRIATE BASED ON GEOTECHNICAL ENGINEER'S RECOMMENDATION.

SURVEYOR'S NOTES

1. THIS TRACT CONTAINS 25,984 SQUARE FEET OR 0.597 ACRES MORE OR LESS.
2. BASIS OF BEARING: THE BEARINGS ARE BASED ON THE RECORD PLAT OF "ALGONQUIN VIEW" AS RECORDED IN PLAT BOOK 22 PAGE 28 OF THE ST. LOUIS COUNTY, MISSOURI RECORDS.
3. SOURCE OF RECORD TITLE: FOUNDATION UP IS DESCRIBED AS THE OWNER AS RECORDED IN DEED DOCUMENT 202309080502 OF THE ST. LOUIS COUNTY, MISSOURI RECORDS.
4. THE PROFESSIONAL WHOSE SEAL AND SIGNATURE APPEARS BELOW ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) ANY RESPONSIBILITY FOR PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT FOR WHICH THIS PAGE REFERS.

NOTES FOR THE DEPTH TO WATER TABLE:

ACCORDING TO NRCS WEB SOIL SURVEY, THE DEPTH TO WATER TABLE ON THE PROPERTY IS APPROXIMATE 1.6 FEET TO 4.2 FEET BELOW GRADE. CONTRACTOR TO ENGAGE A GEOTECHNICAL ENGINEER TO VERIFY THE SITE SOIL CONDITION AND WATER TABLE.

TITLE NOTES

A CURRENT TITLE COMMITMENT OF THE SUBJECT TRACT HAS NOT BEEN PROVIDED TO THE SURVEYOR. IT IS POSSIBLE THERE ARE EASEMENTS AND OTHER INSTRUMENTS OF RECORD THAT AFFECT THE SUBJECT TRACT THAT WOULD BE EXPOSED IN THE TITLE COMMITMENT REPORT AND ARE UNKNOWN TO THE SURVEYOR AT THE TIME OF SURVEY WAS EXECUTED AND THEREFORE NOT PLOTTED HEREON. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR. BUILDING LINES OF THE SUBJECT TRACT ARE SHOWN PER PLAT BOOK 22 PAGE 28. ADDITIONAL BUILDING LINES ARE SHOWN FROM THE CURRENT ZONING CODE OF GLENDALE.

Plot Plan Prepared by
THE STERLING COMPANY (314) 487-0440
Notes:
1. Finished grades at the building to be a minimum of 8 inches below top of foundation for wood frame and 6 inches below for wood frame with brick veneer.
2. All wood framing members that rest on top of the foundation located less than 8 inches above the exposed ground and all other wood less than 6 inches from the ground shall be pressure treated in accordance with section R319.1.
3. Grade shall be noted to slope away from foundation a minimum of a 6 inch drop or min. 5% within the first 10 feet or to a swale.
4. Foundation footings shall be constructed so as to maintain a 2' 6" depth of earth cover or as required by local building codes.
5. This plot plan conforms to "GLENDALE CODE".
6. Elevation Examples: 714.0(E)=Existing Elevation, 714.0(P)=Proposed Elevation.

THIS IS NOT A SURVEY AND DOES NOT MEET THE "MISSOURI STANDARDS FOR PROPERTY BOUNDARY SURVEYS" IN EFFECT AS OF THE DATE OF THIS PLOT PLAN.

THE STERLING COMPANY
MO. REG. 307-D

JAMEY A. HENSON, P.L.S. – VICE PRESIDENT — DATE
MO. REG. L.S. #2007017963

STATE OF MISSOURI — JAMEY A. HENSON — NUMBER PLS-2007017963 — PROFESSIONAL LAND SURVEYOR

ISSUE	REMARKS/DATE
1	Update House/Garage Plan - 10/06/25
2	Update Stormwater Calcs and Plan - 11/10/25
3	BOA Variance Comments - 01/16/26
4	Client Comments - 03/11/26
5	Client Comments - 04/14/26
6	City Comments - 05/27/26
7	City Comments - 06/04/2026

NJL Custom Homes
#556 Leffingwell Ave.
Kirkwood, MO 63122
(314) 575-7481

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph. 314-487-0440, Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

#785 BISMARK AVENUE
GLENDALE, MISSOURI 63122

EXISTING CONDITIONS / DEMOLITION PLAN

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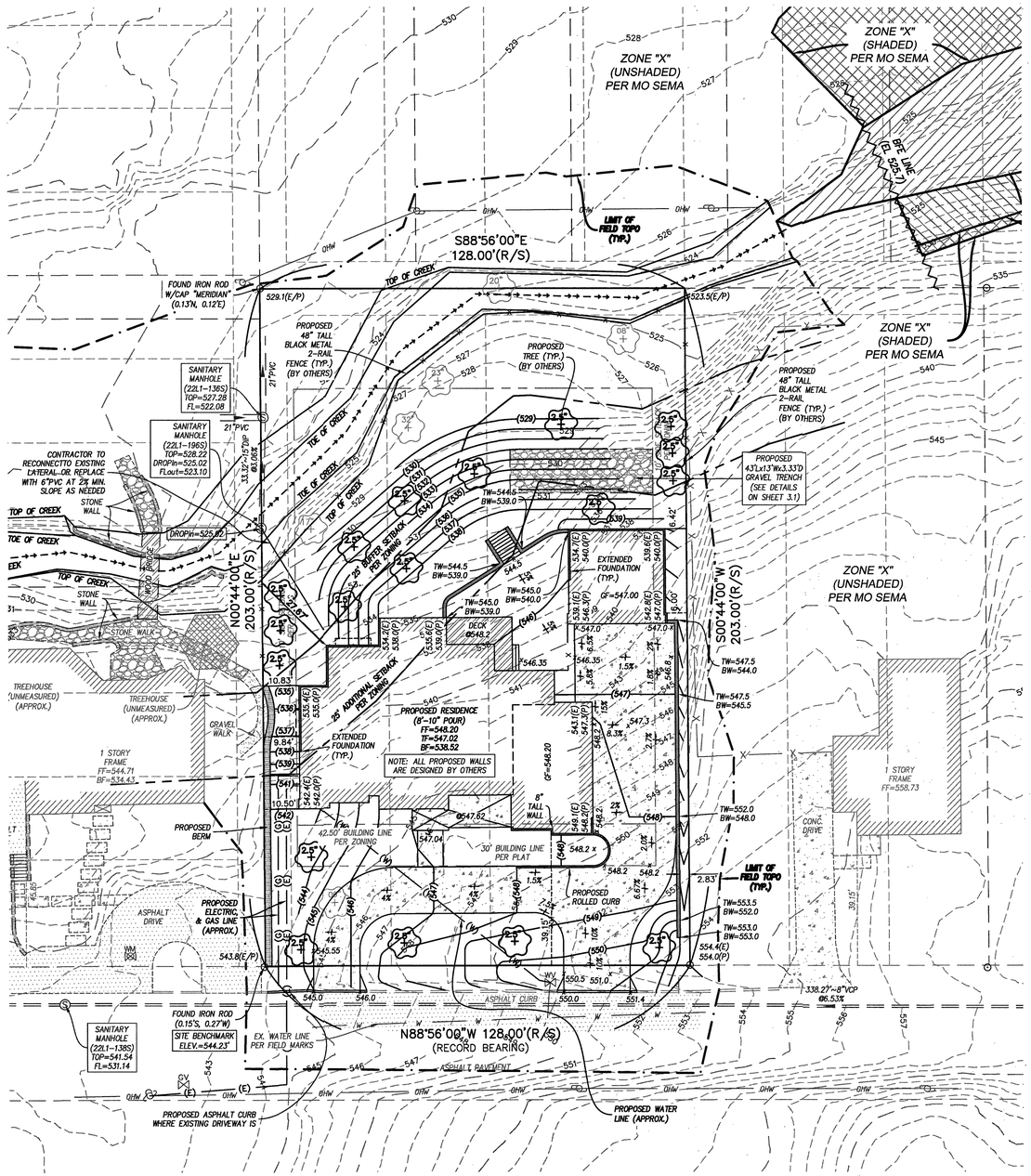
STATE OF MISSOURI — HENRY H. HUYNH — NUMBER 2020036627 — PROFESSIONAL ENGINEER

Date: 06/04/2026
Henry H. Huynh, PE
License # PE-2020036627
Professional Engineer

Job Number	25-03-063
Date	06/04/2026
Designed: HHH	Sheet 1.1
Drawn: HHH	
Checked: MGB	IMP

Drawing name: V:\25303063 785 Bismark Ave\Drawings\Surveying\Plot Plan\25030363 Site Plan - Final.dwg Plotted on: Jun 04, 2026 - 2:31pm Plotted by: hhuynh



GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)
1 inch = 20 ft.

NOTES FOR THE DEPTH TO WATER TABLE:

ACCORDING TO NRCS WEB SOIL SURVEY, THE DEPTH TO WATER TABLE ON THE PROPERTY IS APPROXIMATE 1.6 FEET TO 4.2 FEET BELOW GRADE. CONTRACTOR TO ENGAGE A GEOTECHNICAL ENGINEER TO VERIFY THE SITE SOIL CONDITION AND WATER TABLE.

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SITE NOTES:

1. PROPOSED WATER SERVICE CONNECTION: 1 1/4" TAP
2. CONTRACTOR TO VERIFY THE SEWER CONNECTION WILL HAVE POSITIVE FLOW TO THE MAIN PRIOR TO STARTING CONSTRUCTION.
3. THE UTILITY CONNECTION LOCATION AND COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE EXISTING SANITARY CONNECTION LOCATION IS ASSUMED AND SHALL BE VERIFIED BY THE CONTRACTOR FOR THE USABILITY OF THE CONNECTION.
5. ALL PROPOSED WALLS ARE DESIGNED BY OTHERS:
6. ALL PROPOSED TREES ARE DESIGNED BY OTHERS. SEE TREE STUDY.

F-A-R CALCULATIONS

LOT AREA	25,984	SQ.FT.
HOUSE FIRST FLOOR	3,214	SQ.FT.
HOUSE SECOND FLOOR	1,582	SQ.FT.
HOUSE TOTAL	4,796	SQ.FT.
ATTACHED GARAGE	760	SQ.FT.
ATTACHED GARAGE (50%)	380	SQ.FT.
TOTAL FLOOR AREA	5,176	SQ.FT.
FLOOR AREA RATIO	0.20	

MAXIMUM FAR IS 0.30

PER ARCHITECTURAL PLAN

GREEN SPACE CALCULATIONS

LOT AREA = 25,984 S.F.
TOTAL IMPROVEMENTS = 9,688 S.F.
TOTAL PERVIOUS AREA = 16,296 S.F.

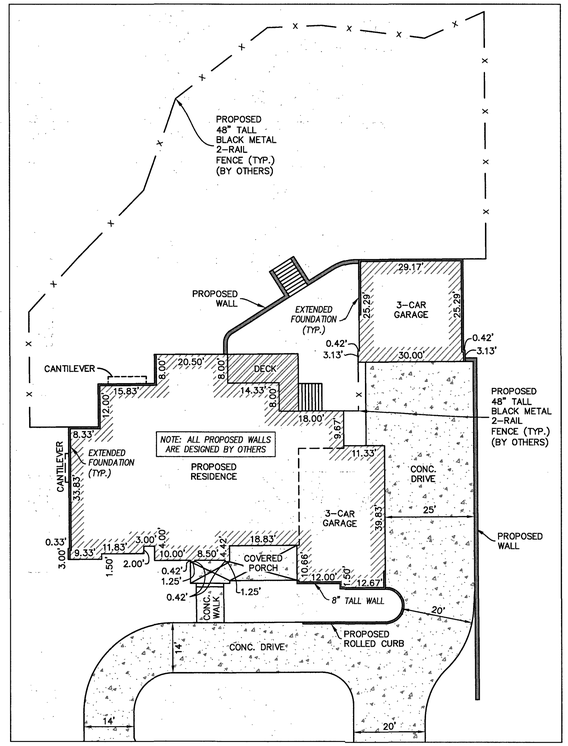
GREEN SPACE AREA = 62.72%

DISTURBANCE LIMITS:

TOTAL DISTURBANCE = 18,555 S.F. OR 0.426 AC.
TOTAL DISTURBANCE WITHIN 25' BUFFER SETBACK = 990 S.F. OR 0.023 AC.
TOTAL DISTURBANCE WITHIN 25' ADDITIONAL SETBACK = 4,278 S.F. OR 0.098 AC.

TOTAL INTRUSION LENGTH AND AREA:

TOTAL INTRUSION AREA WITHIN 25' BUFFER SETBACK = 990 S.F. OR 0.023 AC.
TOTAL INTRUSION LENGTH WITHIN 25' BUFFER SETBACK = 88 FT.
TOTAL INTRUSION AREA WITHIN 25' ADDITIONAL SETBACK = 3,335 S.F. OR 0.077 AC.
TOTAL INTRUSION LENGTH WITHIN 25' ADDITIONAL SETBACK = 152 FT.



HOUSE DETAILS
1" = 20'

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ISSUE	REMARKS/DATE
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www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

#785 BISMARK AVENUE
GLENDALE, MISSOURI 63122
OPTION #1
SITE / GRADING PLAN

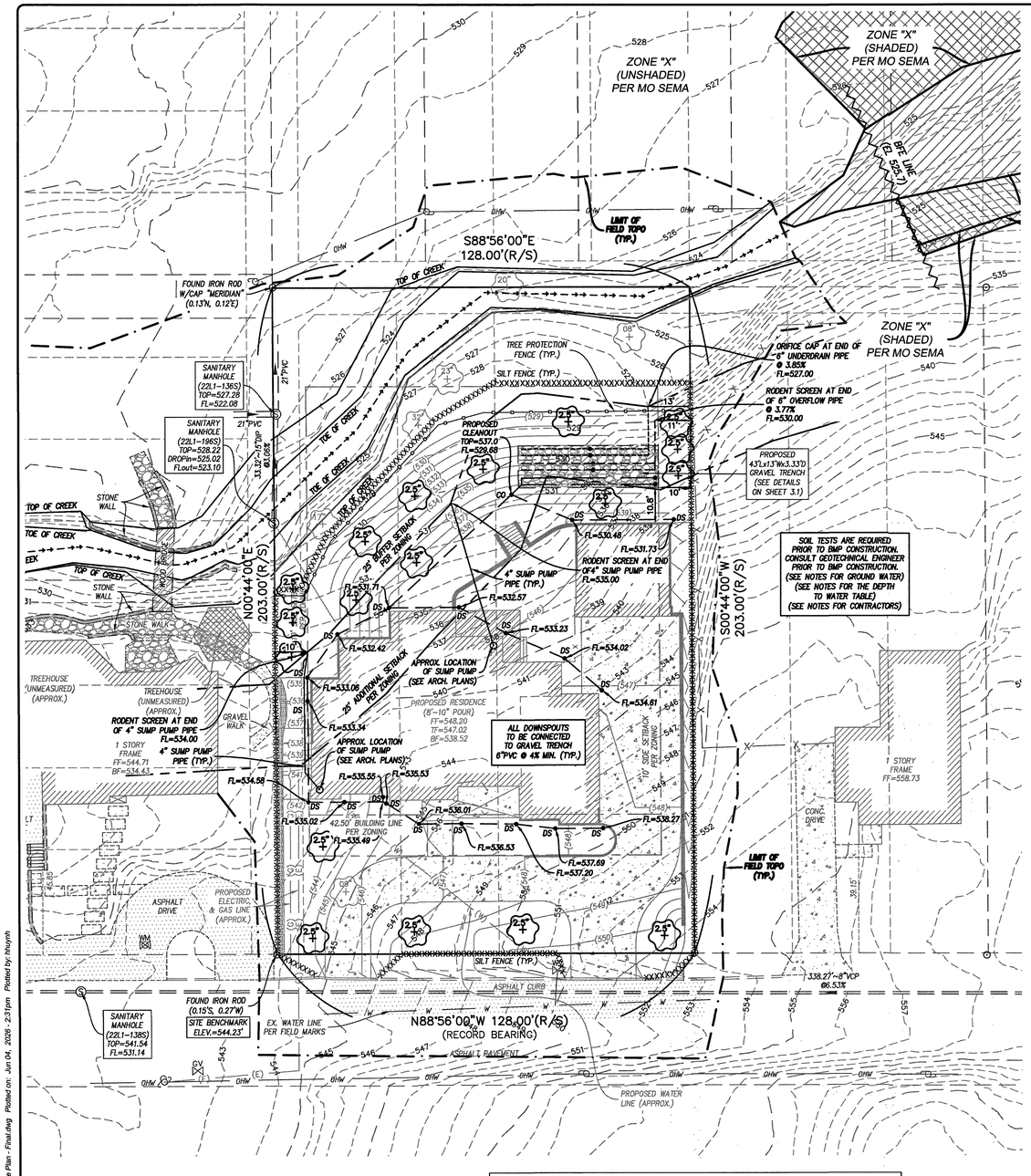
The Professional Engineer's seal and signature affixed to this shoot cover page is to be used only for plans shown on this sheet. All drawings, instruments or other documents not exhibiting this seal and signature shall not be considered prepared by this engineer, and the engineer expressly disclaims any and all responsibility for such plans, drawings or documents not exhibiting this seal and signature.

STATE OF MISSOURI HENRY H. HUYNH NUMBER PE-2022030627 PROFESSIONAL ENGINEER

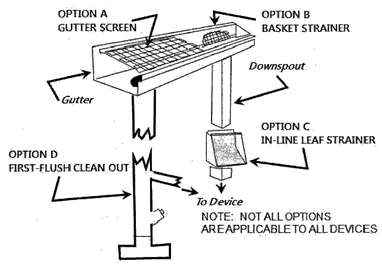
Date: 06/04/2026
Henry H. Huynh, PE
License # PE-2022030627
Professional Engineer

Job Number	25-03-063
Date	06/04/2026
Designed: HHH	Sheet 2.1
Drawn: HHH	
Checked: MGB	IMP

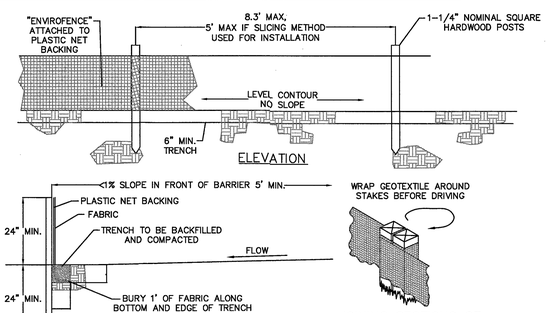
Drawing name: V:\25\03\063 785 Bismark Ave\Drawings\Surveying\Plot Plan\25030363 Site Plan - Final.dwg Plotted on: Jun 04, 2026 - 2:31pm Plotted by: hhuynh



CIRCLE ONE OR MORE OPTIONS USED: Ⓐ B C D

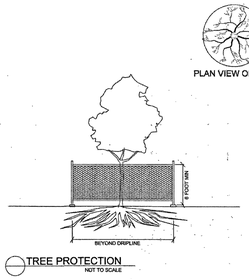


PRETREATMENT OPTIONS DETAIL



NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT NEEDED.

SILT FENCE DETAIL

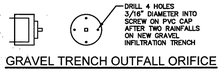


ALL EXISTING TREES ARE TO REMAIN UNLESS NOTED OTHERWISE, TREE PROTECTION IS TO BE INSTALLED TO ENSURE THAT THE TREES REMAIN UNHARMED DURING CONSTRUCTION. THE TREE PROTECTION FENCE SHALL BE EITHER CHAIN LINK OR PLASTIC LINK PER CITY STANDARDS.

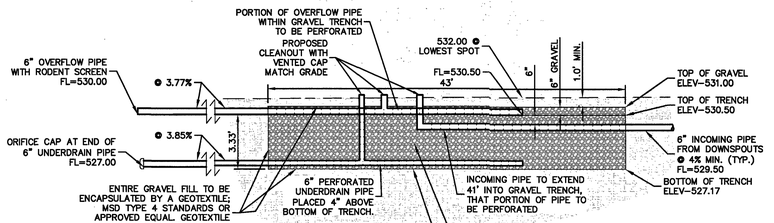
NOTES

1. ALL GUTTERS SHALL CONNECT TO GRAVEL TRENCH UNLESS NOTED OTHERWISE.
2. THE PLACEMENT OF POP-UP EMITTERS TO BE DETERMINED IN THE FIELD. POP-UP EMITTERS SHALL BE LOCATED MINIMUM 10' FROM PROPERTY LINE AND PUBLIC SIDEWALKS/STREETS, AND SHALL NOT DISCHARGE FLOW OVER SIDEWALKS.
3. THE CONTRACTOR IS TO MAINTAIN THE SHEET FLOW FOR THE STORM WATER AND SHALL NOT CONCENTRATE RUNOFF ONTO ADJACENT PROPERTIES.
4. THE POINT OF STORMWATER DISCHARGE SHALL BE AT LEAST 10 FEET FROM ANY PROPERTY LINE.
5. DO NOT CONNECT WINDOW WELL DRAINS TO THE DOWNSPOUT PIPING.

For WQv less than value below (cf)	4 holes of this diameter required
350	1/8"
800	3/16"
1500	1/4"
3300	3/8"
6000	1/2"
9075	5/8"



GRAVEL TRENCH OUTFALL ORIFICE
N.T.S.

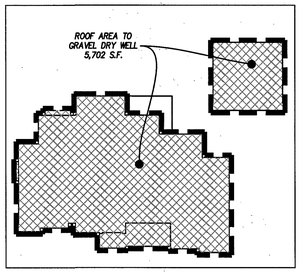


SOIL TESTS ARE REQUIRED PRIOR TO BMP CONSTRUCTION. (SEE NOTES FOR GROUND WATER) (SEE NOTES FOR THE DEPTH TO WATER TABLE) (SEE NOTES FOR CONTRACTORS)

WATER TABLE OR BEDROCK SHALL BE MINIMUM 2 FEET BELOW THE BOTTOM OF NDS FLO-WELL GRAVEL SYSTEM (SEE NOTES FOR NOTES FOR CONTRACTORS)

GRAVEL INFILTRATION TRENCH SECTION
N.T.S.

1. ALL PIPES TO BE SDR-35 OR SCHEDULE 40 PVC OR EQUIVALENT.
2. MSD TYPE 4 STANDARDS LAP SPLICE MINIMUM LENGTH = 18 INCHES.
3. ALL PIPE TERMINATING INSIDE GRAVEL TRENCH SHALL HAVE ENDS CAPPED.
4. PVC STANDPIPE
   A. REST STANDPIPE ON CONCRETE BLOCK OR PAD
   B. ANCHOR PIPE INTO ROCK
5. PERFORATED PIPE SHALL BE WRAPPED WITH POLYESTER FILTER SOCK.
6. LIMESTONE SHALL NOT BE USED IN GRAVEL INFILTRATION TRENCH



ROOF CONTRIBUTORY MAP
1" = 30'

DIFFERENTIAL RUNOFF CALCULATIONS

PREDEVELOPED
ROOF AREA 1,334 S.F. = 0.031 AC. X 4.20 = 0.130 cfs
IMPERVIOUS AREA 1,430 S.F. = 0.033 Ac. X 3.54 = 0.117 cfs
PERVIOUS AREA 23,220 S.F. = 0.533 Ac. X 1.70 = 0.906 cfs
0.597 Ac. 1.153 cfs

POSTDEVELOPED
ROOF AREA 5,702 S.F. = 0.131 AC. X 4.20 = 0.550 cfs
IMPERVIOUS AREA 3,986 S.F. = 0.092 Ac. X 3.54 = 0.326 cfs
PERVIOUS AREA 16,296 S.F. = 0.374 Ac. X 1.70 = 0.636 cfs
0.597 Ac. 1.512 cfs

CONCLUSION FOR PROPOSED DEVELOPMENT

DIFFERENTIAL STORM WATER RUNOFF (BASED ON 15-YEAR 20-MINUTE STORM)
DIFFERENTIAL RUNOFF = PROPOSED RUNOFF - EXISTING RUNOFF
= 1.512 CFS - 1.153 CFS
= 0.359 CFS (INCREASE IN IMPERVIOUS AREA)

STORM WATER DESIGN CALCULATIONS

TOTAL PROPOSED ROOF AREA = 5,702 S.F. = 0.131 Ac.

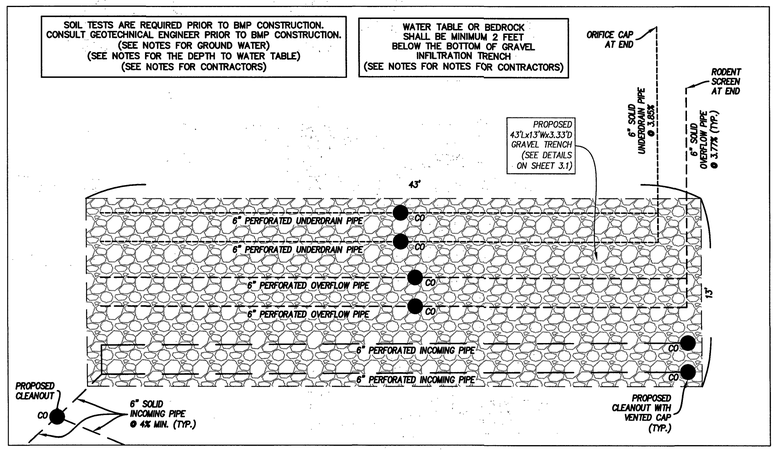
15 YEAR 20 MINUTE RUNOFF = 0.131 Ac. (4.20) = 0.550 CFS

THE REQUIRED VOLUME = 0.550 x 1200 = 660.00 C.F.

43'L x 13'W x 3.33'D GRAVEL INFILTRATION TRENCHES ARE PROPOSED TO PROVIDE THE ATTENUATION. ASSUMING 40% VOIDS IN THE GRAVEL 670.80 C.F. OF VOLUME IS PROVIDED

670.80 C.F. TOTAL VOLUME IS PROVIDED > 660.00 C.F. IS REQUIRED

(ALL DOWNSPOUTS FROM ROOF AREA TO BE CONNECTED TO GRAVEL TRENCH)



GRAVEL INFILTRATION TRENCH DETAIL
1" = 5'

GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

THE UNDERGROUND UTILITIES SHOWN HEREON WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMo

NOTES FOR THE DEPTH TO WATER TABLE:

ACCORDING TO NRCS WEB SOIL SURVEY, THE DEPTH TO WATER TABLE ON THE PROPERTY IS APPROXIMATE 1.6 FEET TO 4.2 FEET BELOW GRADE. CONTRACTOR TO ENGAGE A GEOTECHNICAL ENGINEER TO VERIFY THE SITE SOIL CONDITION AND WATER TABLE.

NOTES FOR GROUND WATER:

1. THE GROUNDWATER LEVEL DEPENDS ON SEASONAL AND CLIMATIC VARIATIONS AND MAY BE PRESENT AT DIFFERENT DEPTHS IN THE FUTURE
2. IF GROUND WATER IS ENCOUNTERED DURING BASEMENT EXCAVATION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENGAGE A GEOTECHNICAL ENGINEER TO PROPERLY ADDRESS THE CONDITION AND ABIDE BY THEIR RECOMMENDATIONS.
3. IF GROUND WATER IS ENCOUNTERED DURING THE EXCAVATION FOR BMP CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENGAGE A GEOTECHNICAL ENGINEER TO DETERMINE THE ACCURATE GROUNDWATER TABLE AND PROVIDE THE GROUNDWATER TABLE INFORMATION TO THE STERLING COMPANY TO REDESIGN THE STORM WATER BMPS AS APPROPRIATE BASED ON GEOTECHNICAL ENGINEER'S RECOMMENDATION.

NOTES FOR CONTRACTORS:

CONSULT GEOTECHNICAL ENGINEER PRIOR TO GRAVEL INFILTRATION TRENCH INSTALLATION. GEOTECHNICAL ENGINEER TO MODIFY GRAVEL INFILTRATION TRENCH CAPACITY AS NEEDED BASED ON CLAY CONTENT OF SURROUNDING SOILS AND THE AVAILABLE ABSORPTION RATE. GEOTECHNICAL ENGINEER TO CONFIRM THAT WATER TABLE OR BEDROCK SHALL BE MINIMUM 2 FEET BELOW THE BOTTOM OF GRAVEL INFILTRATION TRENCH.

ISSUE	REMARKS/DATE
1	Update House/Garage Plan - 10/06/25
2	Update Stormwater Calcs and Plan - 11/10/25
3	BOA Variance Comments - 01/16/26
4	Client Comments - 03/11/26
5	Client Comments - 04/14/26
6	City Comments - 05/27/26
7	City Comments - 06/04/2026

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#785 BISMARK AVENUE
GLENDALE, MISSOURI 63122
STORM WATER PLAN

The Professional Engineer's seal and signature affixed to this sheet applies only to the material and items shown on this sheet. Any use of this sheet without the seal affixed or exhibiting this seal and signature shall not be considered as prepared by this engineer, and the engineer expressly disclaims any and all responsibility for such plans, drawings or documents not exhibiting this seal and signature.

STATE OF MISSOURI HENRY H. HUYNH NUMBER PE-2022036627 PROFESSIONAL ENGINEER

Date: 06/04/2026
Henry H. Huynh, PE
License # PE-2022036627
Professional Engineer

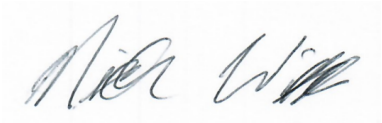
Job Number	25-03-063
Date	06/04/2026
Designed: HHH	Sheet 3.1
Drawn: HHH	
Checked: MGB	IMP

Drawing name: V:\25\063 785 Bismark Ave\Drawings\Surveying\Plot Plan\25030363 Site Plan - Final.dwg Plotted on: Jun 04, 2026 - 2:31pm Plotted by: hhuynh

FRONTENAC FORESTRY

Install and maintain tree protection fence as indicated on preservation plan for all trees marked SAVE.
Silt protection shall be installed in a trenchless manner if introduced within the critical root zone of any tree to be PRESERVED. (I.E. woodchips, wattles, and hay bales)

I hereby certify that I have viewed the premises and provided this professional opinion regarding the survivability of significant trees on this site and abutting the site. Attached is a site plan illustrating the recommended location of tree protection fencing. This fence is to remain erect throughout the construction project . All tree inspections were performed from the ground and are limited in scope. Tree and utility locations are approximate and locations of utilities are subject to change.



Nick Wibbenmeyer
I.S.A. Certified Arborist
MW 6357A

CERTIFIED ARBORIST ISA

FrontenacForestry@gmail.com ~ 2460 Driftwood Ln. St. Louis, MO. 63146 ~ 314-496-2020

TREE STUDY
SITE PLAN REVIEW
5/18/2026

PROPERTY LOCATION: 785 Bismark

#	TREE SPECIES	DBH	PRESERVE/ TBR	ADJOINING LOT	COMMENTS	CONDITION
A	white oak	5"	TBR	CITY	phototropic, minor deadwood **GRADING**	75
B	white oak	5"	TBR	CITY	phototropic, minor deadwood **GRADING**	75
C	white oak	7"	TBR	CITY	co-dominant top, minor deadwood **GRADING**	75
D	American elm	8"	TBR		sucker growth, co-dominant at 12', epicormic growth, deadwood **DRIVEWAY**	65
E	American elm	12"	TBR		5"x4"x3", sucker growth, included bark, deadwood **DRIVEWAY**	59
F	American elm	8"	TBR		6"x2", epicormic growth, deadwood **DRIVEWAY**	58
G	white oak	36"	TBR		vines on trunk, compartmentalized wounds on trunk, branch dieback throughout **CONDITION**	38
H	mimosa	7"	TBR		dead central leader **CONDITION**	25
I	honey locust	14"	TBR	SHARED	shared with city, epicormic growth, one-sided, deadwood **UTILITIES/GRADING**	59
J	shingle oak	26"	TBR		vines on trunk, co-dominant at 30', deadwood, exposed root collar **GRADING**	55
K	American elm	9"	TBR	CITY	heavy lean, phototropic, vines on trunk **GRADING**	56
L	mimosa	14"	TBR	SHARED	shared with city, multi-stemmed, vines throughout, storm damaged leader **GRADING**	51
M	eastern redbud	6"	TBR	SHARED	lean, co-dominant at 8', minor deadwood **PROPOSED BERM**	68
N	American elm	8"	TBR	SHARED	epicormic growth, lean, phototropic, deadwood **GRADING**	59

O	red mulberry	6"	TBR		heavy lean, epicormic growth, deadwood **FOUNDATION**	57
P	American elm	10"	TBR		vines on trunk, co-dominant at 20', deadwood, phototropic **FOUNDATION**	62
Q	black walnut	15"	TBR		lean, phototropic, minor deadwood **FOUNDATION**	63
R	white oak	25"	TBR		vines on trunk, wound on trunk, co-dominant at 35', slight lean **FOUNDATION**	69
S	white oak	44"	TBR		bifurcations at 30', improper pruning cuts, branch dieback, large deadwood **CONDITION**	39
T	American elm	20"	TBR		vines on trunk, co-dominant at 30', minor deadwood **FOUNDATION**	66
U	white oak	35"	TBR		basal wounds, storm damage, deadwood **FOUNDATION**	67
V	American elm	14"	KEEP	SHARED	branch dieback, exfoliating bark, dead leader **NOT TBR PER REQUEST OF NEIGHBOR**	37
W	shagbark hickory	8"	TBR		strong central leader, minor deadwood **DRIVEWAY**	70
X	shingle oak	21"	TBR		compartmentalized basal wound, vines on trunk, deadwood **GARAGE**	49
Y	American elm	6"	TBR		co-dominant at 12', minor epicormic growth **GARAGE**	71
Z	shingle oak	19"	TBR		epicormic growth, vines, deadwood, phototropic **GRADING**	65
A1	shagbark hickory	17"	PRESERVE		partial root washout, co-dominant top	72
B1	white oak	17"	TBR		phototropic, minor epicormic growth, minor deadwood **GRADING**	71
C1	American elm	32"	PRESERVE		bifurcations at 4', compartmentalized wound on stem, managed vines, phototropic	67
D1	hackberry	23"	PRESERVE		vines on trunk, partial root washout, deadwood	59
E1	dead	12"	TBR		dead **CONDITION**	5
F1	hackberry	20"	PRESERVE		co-dominant at 5', minor deadwood	72
G1	mockernut hickory	8"	PRESERVE		lean, co-dominant at 6'	71

H1	white oak	12"	TBR		vines on trunk, phototropic, deadwood **PROPOSED GRAVEL TRENCH**	66
I1	shingle oak	28"	TBR		compartmentalized basal wound, lean, vines on trunk **GARAGE**	47
1	flowering dogwood	2.5”	INSTALL		installed replacement tree	
2	Eastern redbud	2.5”	INSTALL		installed replacement tree	
3	American elm	2.5”	INSTALL		installed replacement tree	
4	sweetbay magnolia	2.5”	INSTALL		installed replacement tree	
5	Eastern redbud	2.5”	INSTALL		installed replacement tree	
6	evergreen tree	2.5”	INSTALL		installed replacement tree	
7	evergreen tree	2.5”	INSTALL		installed replacement tree	
8	evergreen tree	2.5”	INSTALL		installed replacement tree	
9	swamp white oak	2.5”	INSTALL		installed replacement tree	
10	flowering dogwood	2.5”	INSTALL		installed replacement tree	
11	post oak	2.5”	INSTALL		installed replacement tree	
12	American elm	2.5”	INSTALL		installed replacement tree	
13	bur oak	2.5”	INSTALL		installed replacement tree	
14	mockernut hickory	2.5”	INSTALL		installed replacement tree	
15	shagbark hickork	2.5”	INSTALL		installed replacement tree	
16	evergreen tree	2.5”	INSTALL		installed replacement tree	
17	evergreen tree	2.5”	INSTALL		installed replacement tree	
18	evergreen tree	2.5”	INSTALL		installed replacement tree	

***** It is my professional opinion that this lot has been replanted to the limit of its capacity. I have recommended 18 install trees, along with the paying the maximum replacement cost of $2,400**

TOTAL TREES **(** @ or above 6" DBH **)**	TOTAL VIABLE TREES	TREES REMOVED	DEAD/DYING/ DISEASED REMOVE	VIABLE TREES REMOVED	# OF VIABLE INCHES REMOVED	# OF 2.5" CALIPER REPLACEMENT TREES REQUIRED (1 per 10" removed)	OR REPLACEMENT COST @ $120 PER CALIPER INCH
35	**30**	**29**	**4**	**25**	**354"**	**35**	**$2,400**

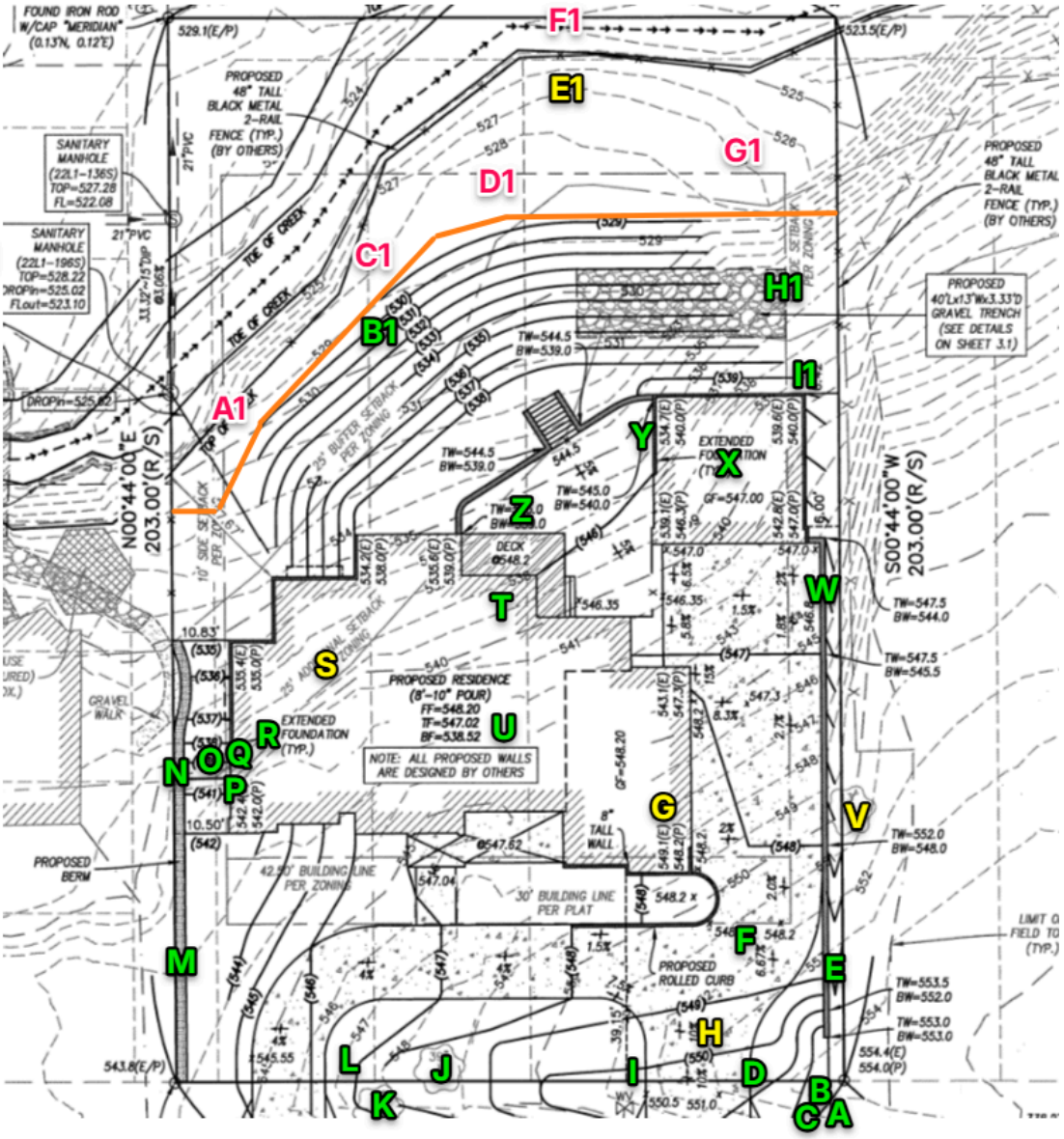
# OF 2.5 CALIPER REPLACEMENT TREES INSTALLED	REPLACEMENT COST PAID
18	**$2,400**

PRESERVE

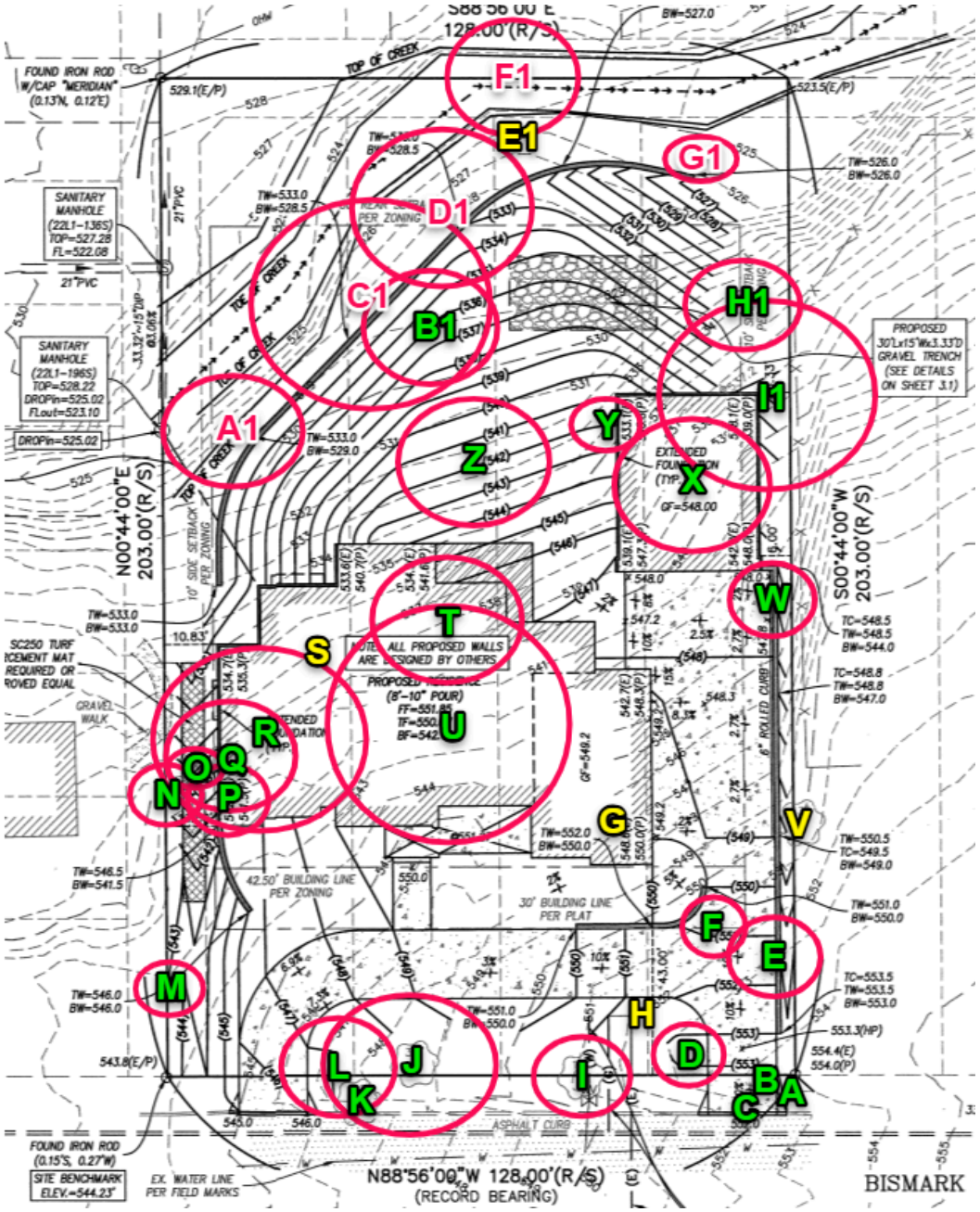
TBR

POOR CONDITION TREE

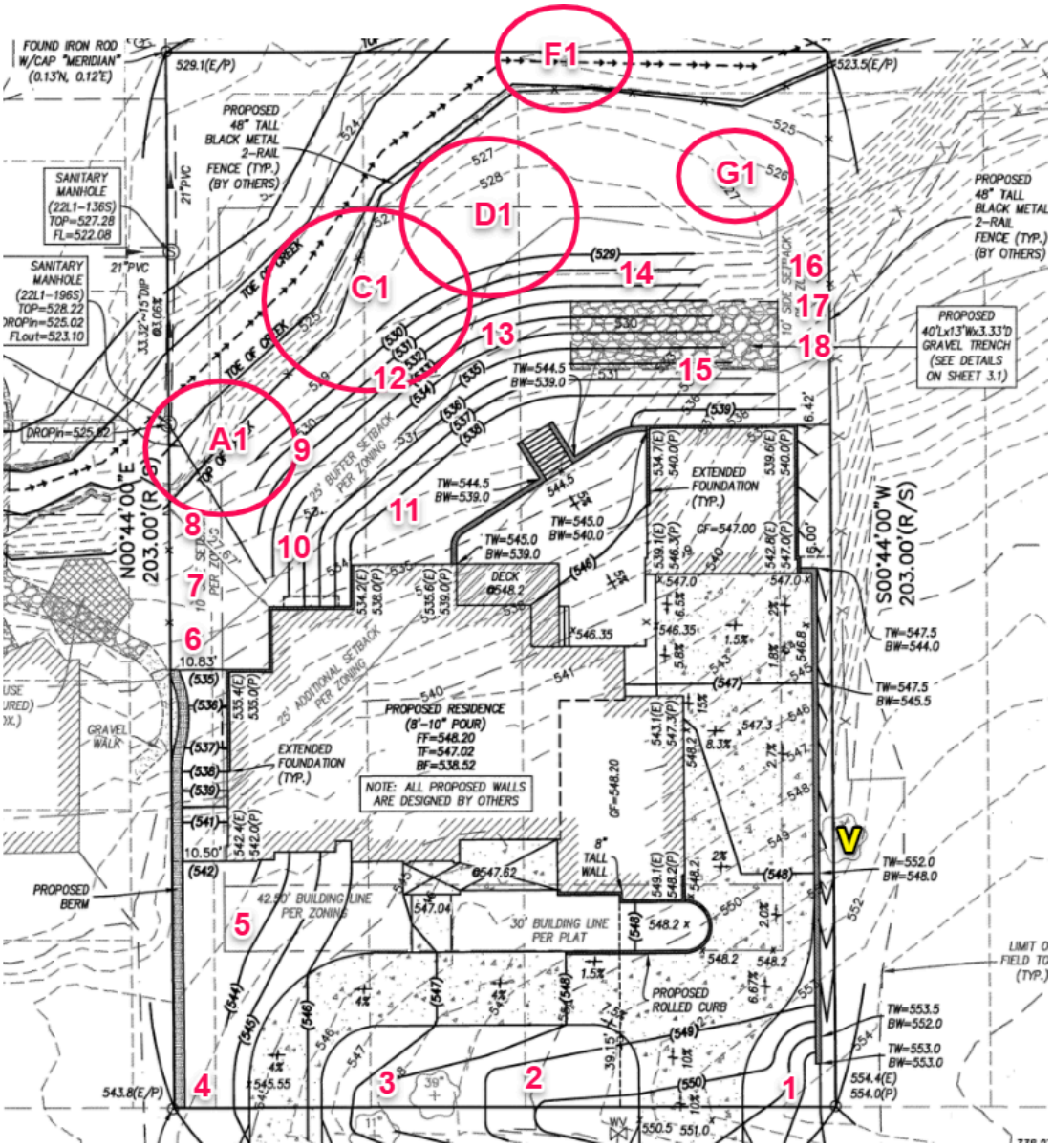
PROTECTION FENCE

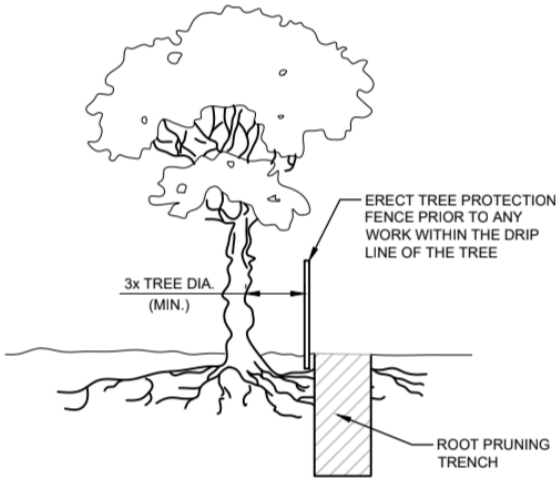


EXISTING CANOPY



PROPOSED CANOPY





NOTES:

1. ROOT PRUNING SHALL BE DONE WHENEVER THERE WILL BE GRADING, CUTTING OR COMPACTION DISTURBANCE UNDERNEATH THE DRIP LINE OF A TREE. PRIOR TO ANY WORK WITHIN DRIP LINE, THE CONTRACTOR SHALL ERECT A TREE PROTECTION FENCE AND CONTACT AN ISA CERTIFIED ARBORIST TO COORDINATE WORK. NO DISTURBANCE SHALL BE DONE WITHIN A DISTANCE OF 3X THE DIAMETER OF THE TREE, DUE TO STABILITY CONCERNS.
2. ROOT PRUNING SHALL BE DONE WITH A SHARP TOOL, IN SUCH A WAY THAT DOES NOT PULL ON THE ROOTS, BUT LEAVES SMOOTH CUTS. DO NOT TEAR ROOTS WITH EXCAVATION EQUIPMENT. IT IS PREFERABLE TO EXPOSE THE ROOTS PRIOR TO ROOT PRUNING. AFTER PRUNING, FILL THE AREA WITH QUALITY TOPSOIL AND WATER UNTIL THOROUGHLY SOAKED.
3. ONCE EXPOSED, ROOTS MUST BE COVERED WITHIN 8 HOURS. IF ROOTS WILL BE LEFT EXPOSED FOR LONGER THAN 8 HOURS, THEY MUST BE KEPT MOIST. ONE OPTION IS TO PUT MOIST BURLAP OVER THE EXPOSED ROOTS.

NOTES (CONT.):

4. ROOT PRUNING SHALL MEET OR EXCEED ANSI A300 OR APPROVED TREE CARE INDUSTRY STANDARDS.

DIGGING PROCESS

1. THE PRUNING TRENCH SHOULD BE CLEARED IN A WAY THAT EXPOSES THE ROOTS WHILE LEAVING THEM INTACT.
   1.1. USE HAND TOOLS OR AN AIR KNIFE II) DO NOT USE AN EXCAVATOR, AS THIS WILL PULL ON THE ROOTS AND POSSIBLY DAMAGE THE TRUNK III) IF A ROOT LARGER THAN 2" IS EXPOSED, LEAVE THIS ROOT INTACT AND CONTACT LANDSCAPE SERVICES
2. ONCE THE ROOTS ARE EXPOSED, USE A SHARP TOOL TO CLEANLY CUT ALL ROOTS WHICH ARE BETWEEN 1-2" DIAMETER, TO THE DEPTH OF THE PROPOSED DISTURBANCE
   2.1. APPROPRIATE TOOLS INCLUDE SHARP LOPPING SHEARS, HANDSAWS, A SHARPENED AXE, A ROOT PRUNER GRINDER, A RECIPROCATING SAW AND ANY OTHER SHARP TOOL WHICH LEAVES A CLEAN CUT
   2.2. YOU MAY NOT USE A CHAINSAW OR CHAIN TRENCHER TO MAKE THE FINAL CUTS
   2.3. ALL ROOTS SHALL BE LEFT WITH A CLEAN, SMOOTH ENDS AND NO RAGGED EDGES
3. POST PRUNING
   3.1. TREE ROOTS MUST BE KEPT MOIST. IF ROOTS ENDS WILL BE LEFT EXPOSED FOR MORE THAN 8 HOURS, COVER THE HOLE WITH MOIST BURLAP.
   3.2. FILL THE HOLE WITH HIGH QUALITY TOP SOIL, MULCH THE AREA WITH TRIPLE SHREDDED HARDWOOD TO A DEPTH OF 3", AND WATER WELL.

kyle's landscape service

PL 128.00'

F1

G1

D1

C1

14

16

17

18

13

12

15

PROPOSED GRAVEL TRENCH
40'L x 13'W x 3.33' D

TOE OF CREEK

TOE OF CREEK

25' BUFFER SETBACK PER ZONING

A1

9

11

8

10

7

6

5

4

3

2

1

25' ADDITIONAL SETBACK PER ZONING

GARAGE

SOD

DECK

DRIVEWAY

785 BISMARK AVE

N

GAS METER

ELECTRIC METER

PORCH

42.5' BUILDING LINE PER ZONING

30' BUILDING LINE PER PLAT

PL 203.00'

PL 203.00'

PL 128.00'

CO

DS

S

WV

ALL FUTURE TREES TO BE PLANTED AWAY FROM UTILITY LINES, DOWNSPOUT LINES, SUMP PUMP LINES, AND GRAVEL TRENCH

TOTAL DISTURBANCE LIMITS:
TOTAL DISTURBANCE = 18,555 S.F. OR 0.426 AC.
TOTAL DISTURBANCE WITHIN 25' BUFFER SETBACK = 990 S.F. OR 0.023 AC.
TOTAL DISTURBANCE WITHIN 25' ADDITIONAL SETBACK = 4,278 S.F. OR 0.098 AC.

PLOT LEGEND

- GAS LINE
- ELECTIRCAL LINE
- WATER LINE
- SUMP PUMP PIPE
- DOWNSPOUT LINE
- SANITARY LINE
- PROPOSED FENCE LINE
- PROPOSED BERM

PRESERVED TREES

- A1 Shagbark Hickory 17"
- F1 Hackberry 20"
- C1 American Elm 32"
- G1 Mockernut Hickory 8"
- D1 Hackberry 23"

PROPOSED REPLACEMENT TREES

1 Flowering Dogwood 2.5"	4 Sweetbay Magnolia 2.5"	7 Evergreen Tree 2.5"	10 Flowering Dogwood 2.5"	13 Bur Oak 2.5"	16 Evergreen Tree 2.5"
2 Eastern Redbud 2.5"	5 Eastern Redbud 2.5"	8 Evergreen Tree 2.5"	11 Post Oak 2.5"	14 Mockernut Hickory 2.5"	17 Evergreen Tree 2.5"
3 American Elm 2.5"	6 Evergreen Tree 2.5"	9 Swamp White Oak 2.5"	12 American Elm 2.5"	15 Shagbark Hickory 2.5"	18 Evergreen Tree 2.5"

kyle's landscape service

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.

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(314)-487-0440 FAX 487-8944
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M.S.D.

DRAWN: H.H.H.
DESIGNED:
CHECKED:

PROJECT: #785 BISMARK AVENUE

SHEET TITLE: AERIAL PHOTO PLAN

NO.		
25	03	063

ISSUE

SHEET 1 OF 1

785 Bismark Avenue – Streetscape

Photo 1 –757 Bismark Ave

3 Homes down on the right side of the property

Photo 2 – 761 Bismark Ave

2 Homes down on the right side of the property

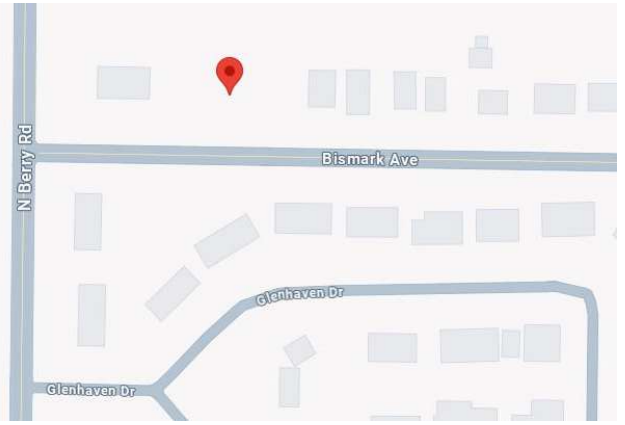
Photo 3 – 765 Bismark Ave

Home directly on the right side of the property

Photo 4 – Subject Property 785 Bismark Ave

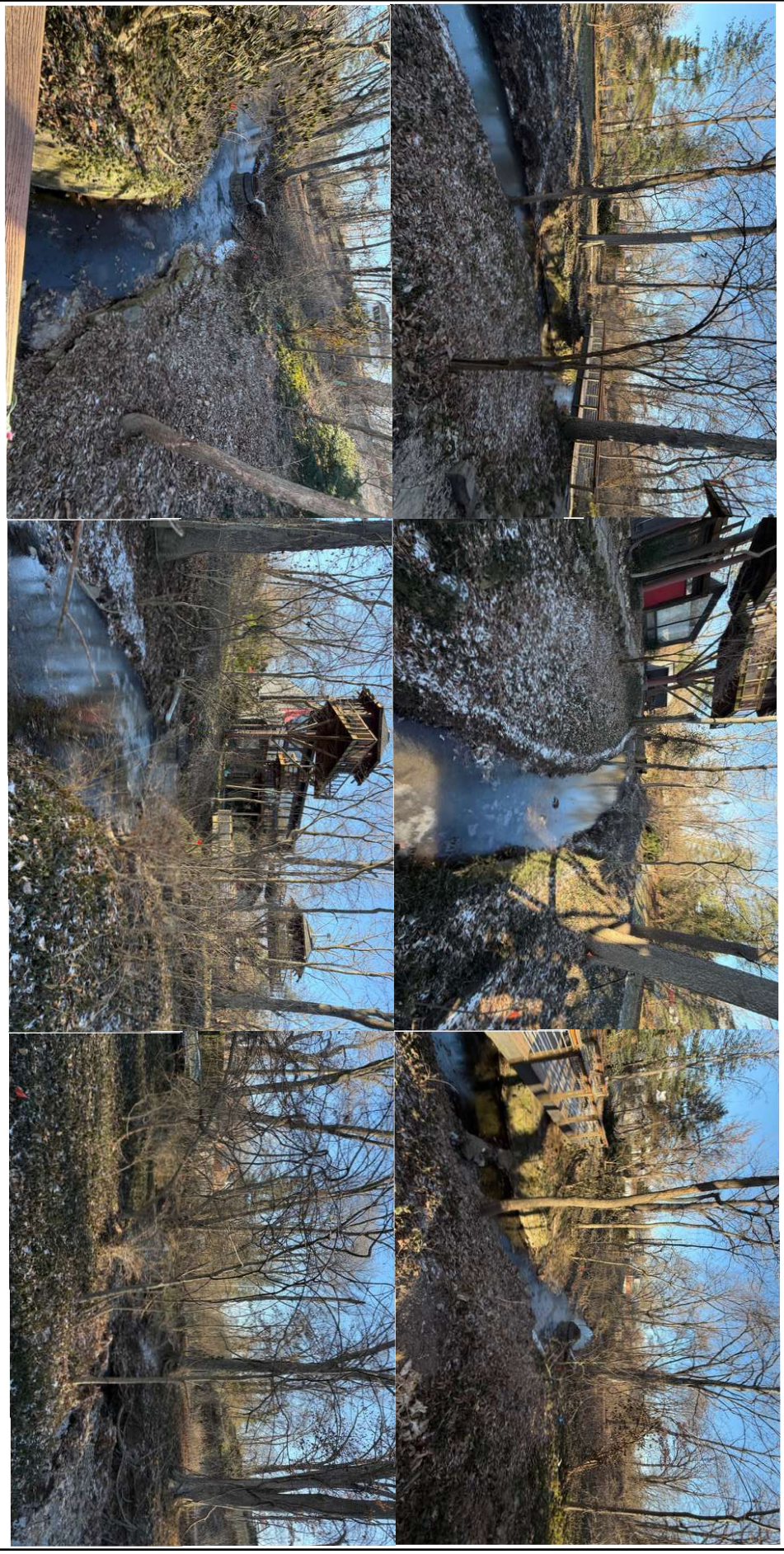
Photo 5 – 791 Bismark Ave

Home Directly next to the subject property on the left side, end of Bismark Avenue.



No homes across the street from the subject property, the street backs to the back of homes on Glenhaven Drive.

Drawing name: C:\Users\hhuynh\appdata\local\temp\AcPublish_7772\2503063 Site Plan.dwg Plotted on: Jan 25, 2026 - 11:56am Plotted by: hhuynh



Job Number	25-03-063
Date	01/25/2026
Designed	HHH
Drawn	HHH
Checked	MIB
Sheet	5.1
	IMP

NOT APPROVED FOR CONSTRUCTION! FOR REVIEW ONLY

Date
Date Report Rec'd
Licensed State Engineer

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#785 BISMARK AVENUE

GLENDALE, MISSOURI 63122

PHOTOS OF THE STREAM BED AREA

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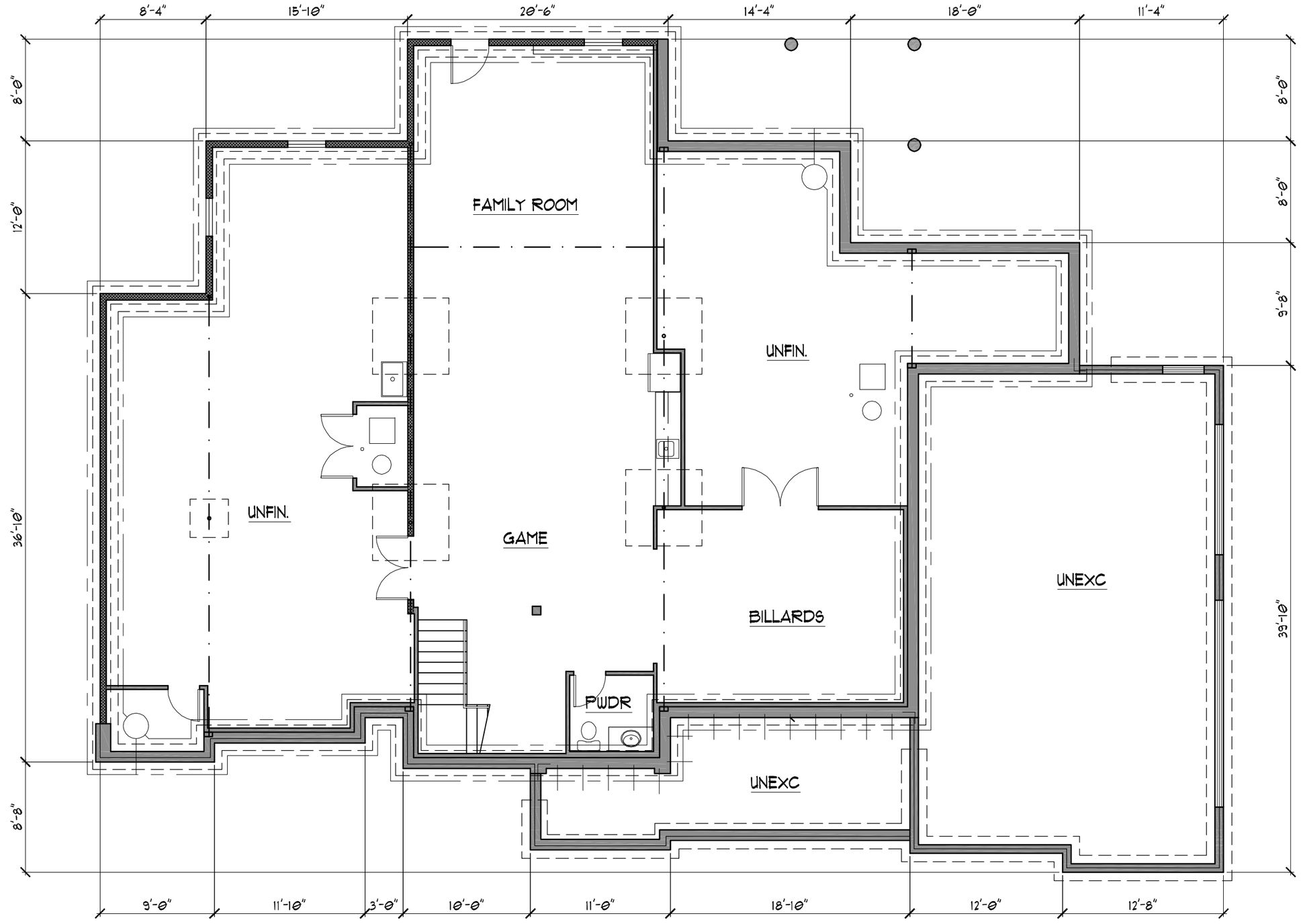

785 BISMARK
GLENDALE, MO

LOWER LEVEL PLAN

SCALE: 1/8" = 1'-0"

NJL CUSTOM HOMES

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MAIN LEVEL PLAN

SCALE: 1/8" = 1'-0"

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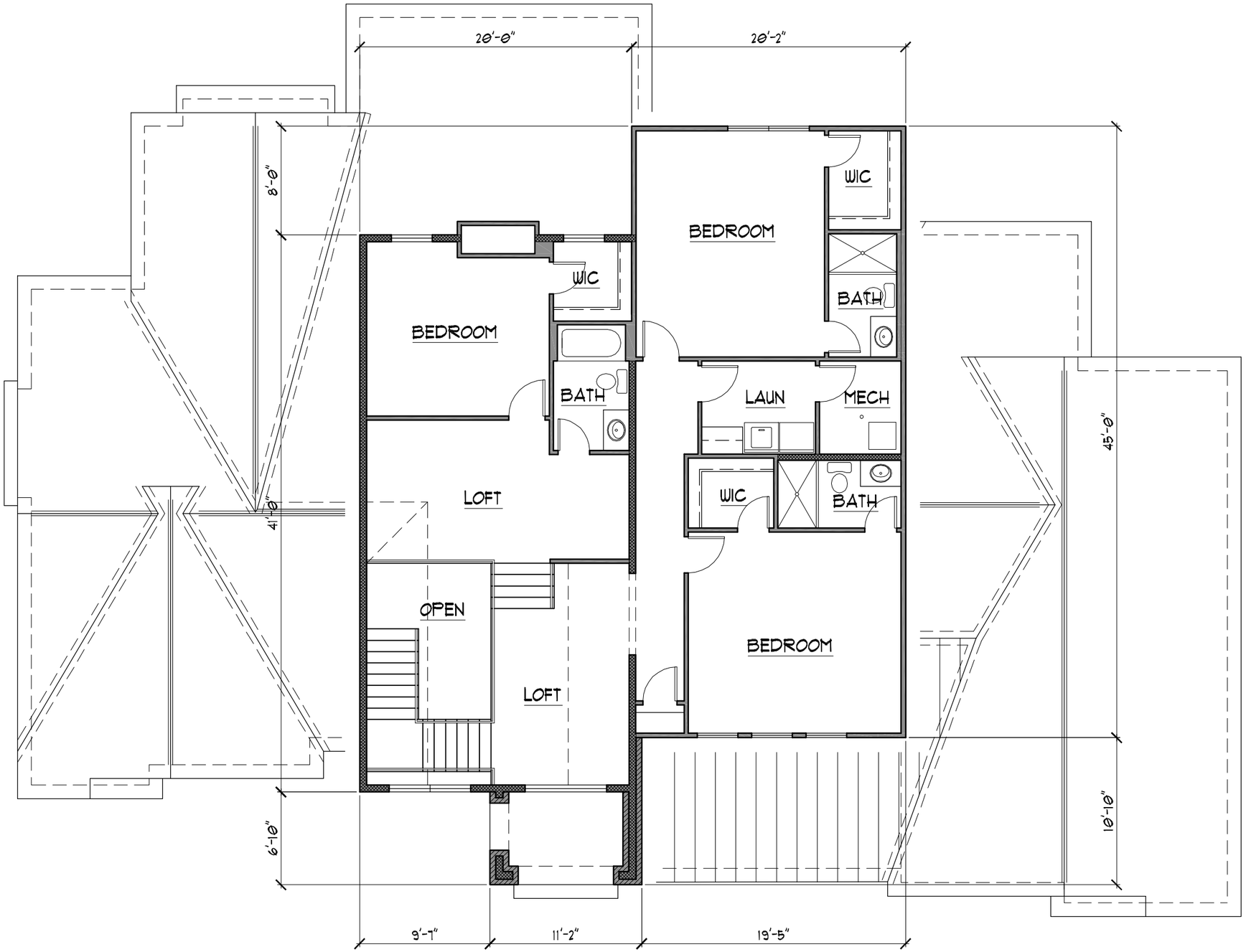

NJL CUSTOM HOMES

785 BISMARK
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SECOND LEVEL PLAN

SCALE: 1/8" = 1'-0"

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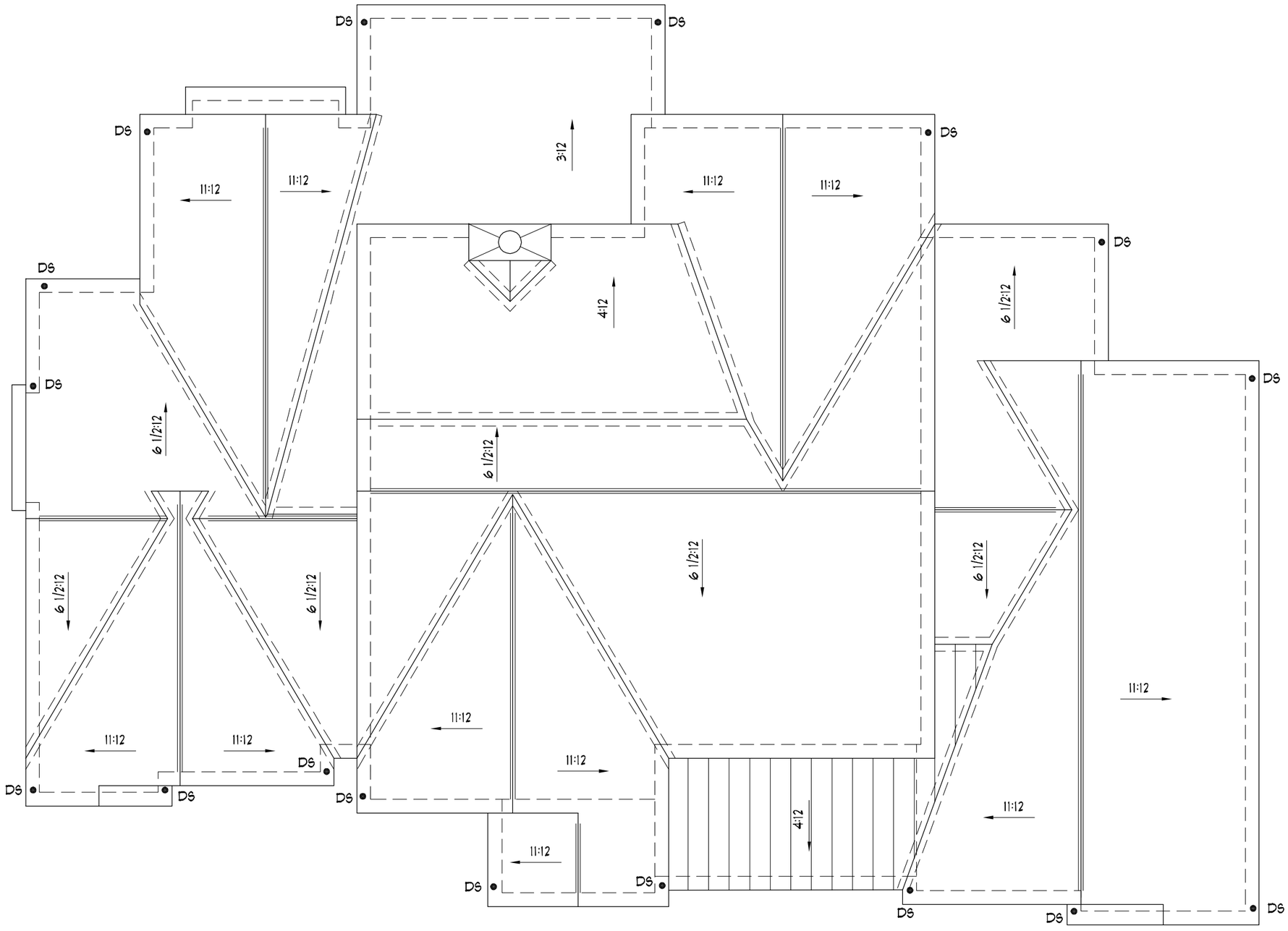

NJL CUSTOM HOMES

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GLENDALE, MO

ROOF PLAN

SCALE: 1/8" = 1'-0"

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FRONT ELEVATION

SCALE: 1/8" = 1'-0"

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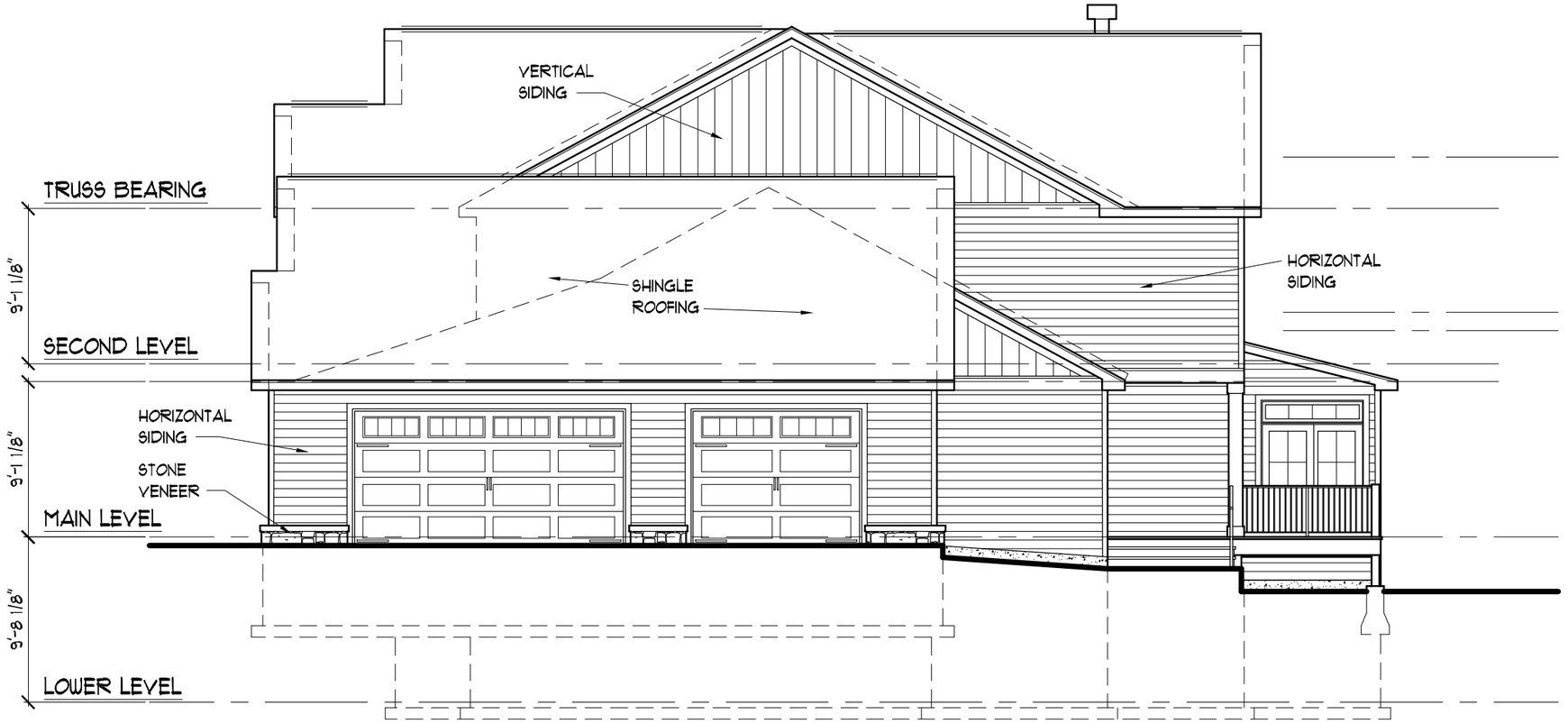

RIGHT SIDE ELEVATION

SCALE: 1/8" = 1'-0"

NJL CUSTOM HOMES

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GLENDALE, MO

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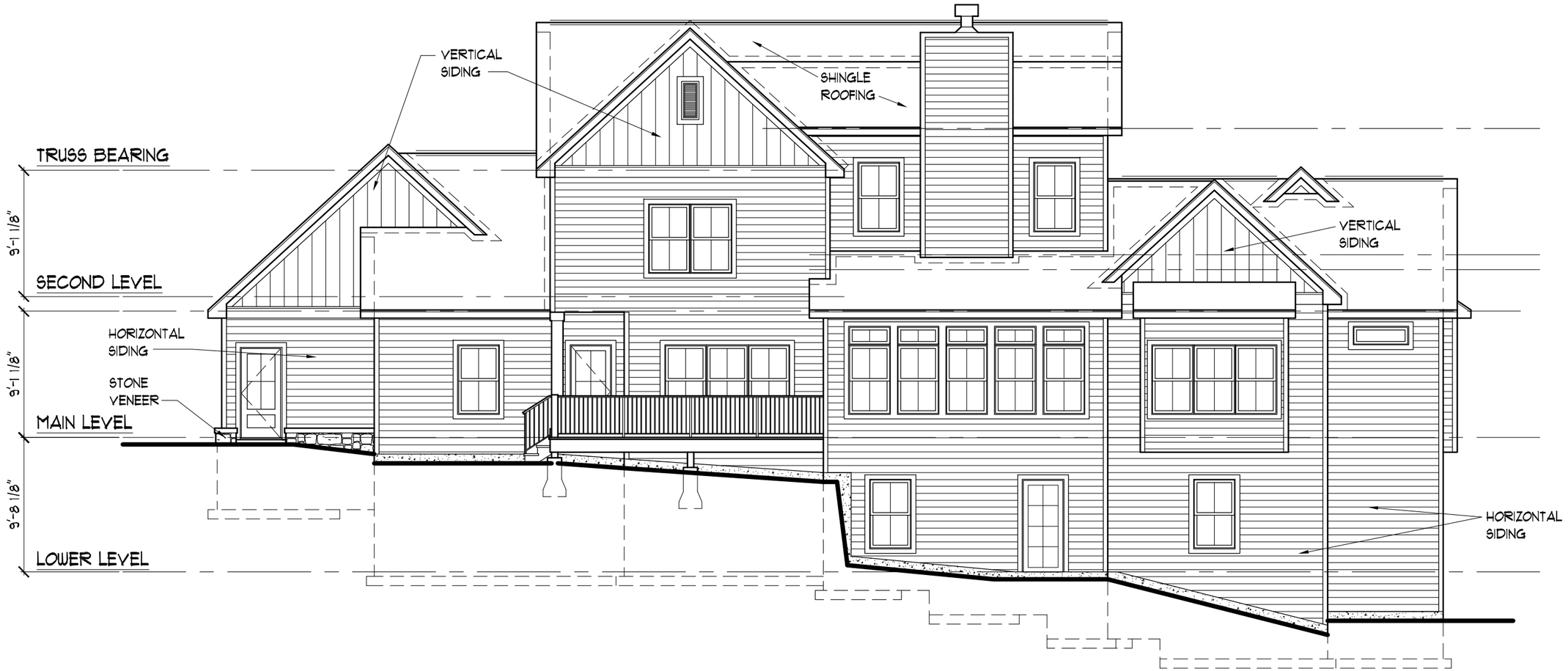

REAR ELEVATION

SCALE: 1/8" = 1'-0"

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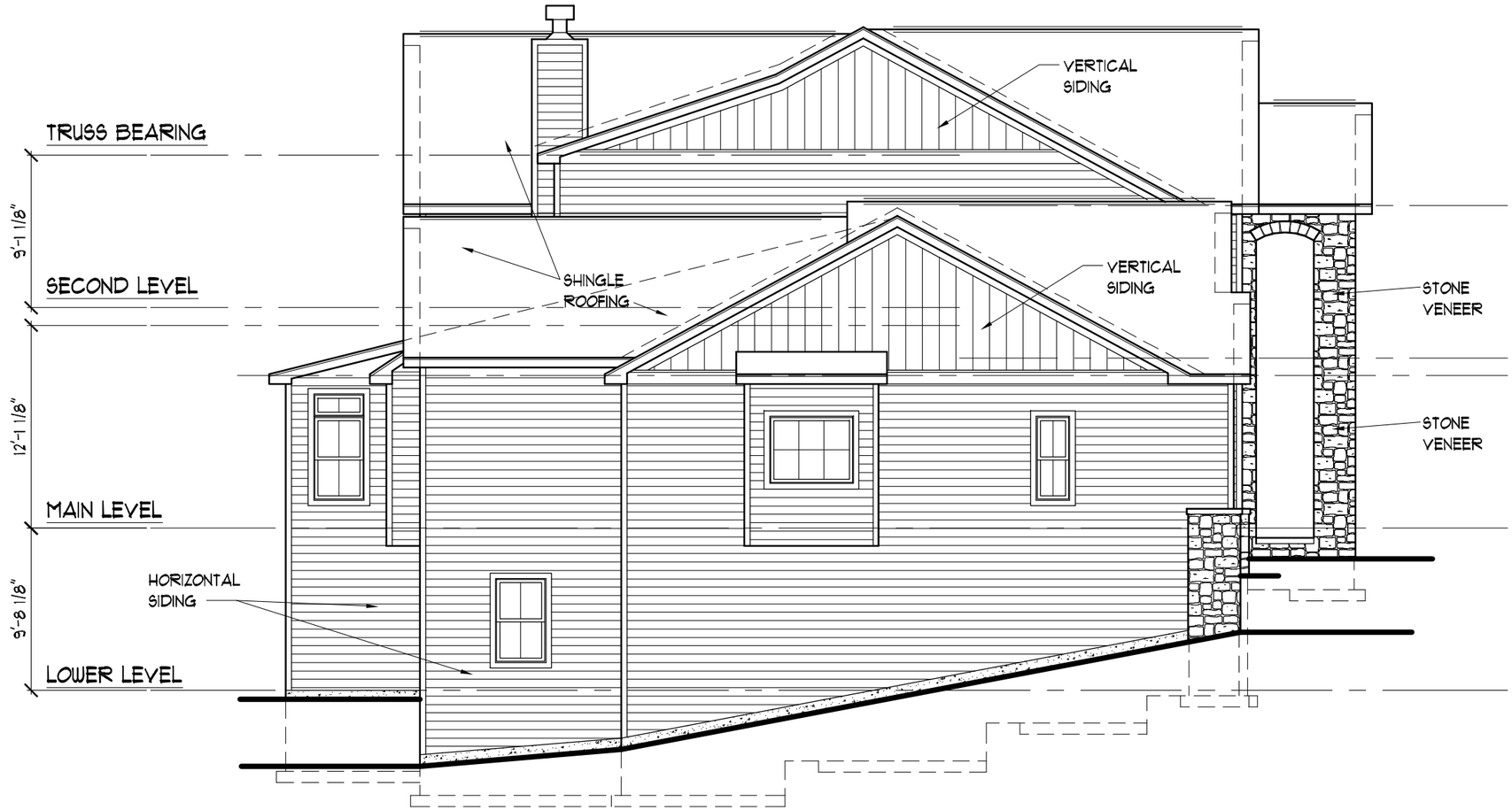

LEFT SIDE ELEVATION

SCALE: 1/8" = 1'-0"

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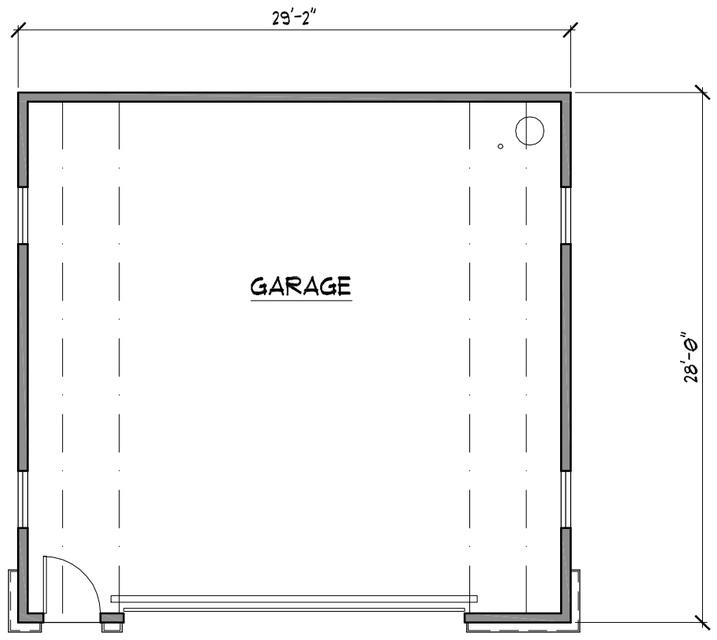

DETACHED GARAGE PLAN

SCALE: 1/8" = 1'-0"

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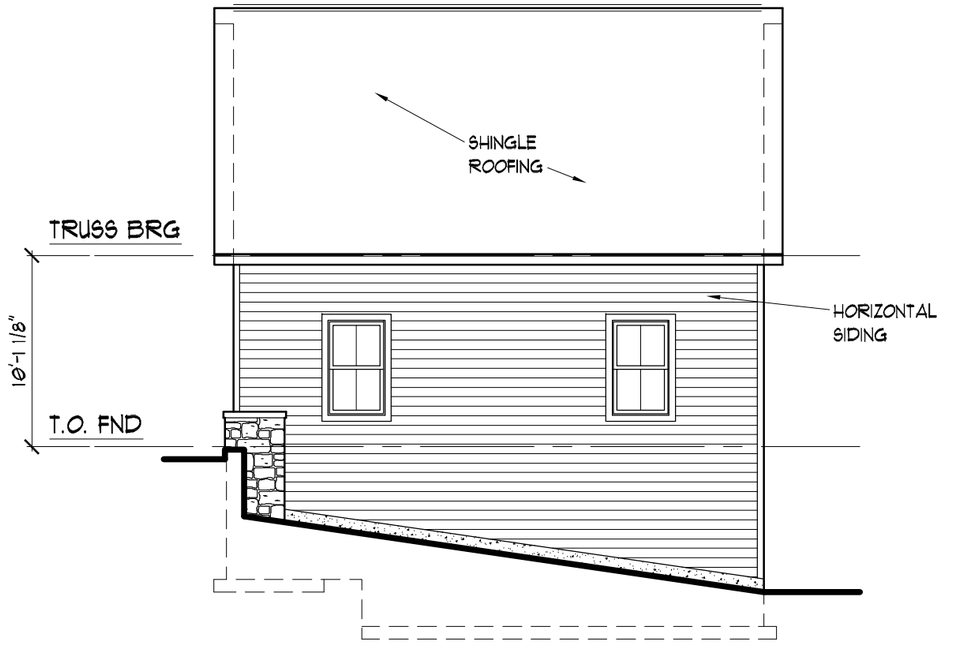
DETACHED GARAGE FRONT ELEV

SCALE: 1/8" = 1'-0"



DETACHED GARAGE RIGHT ELEV

SCALE: 1/8" = 1'-0"

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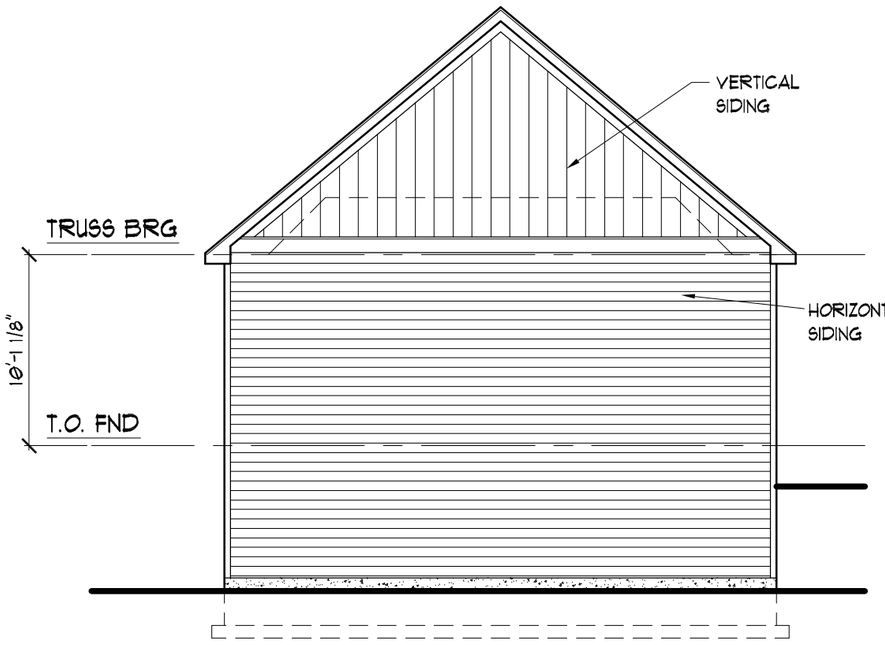
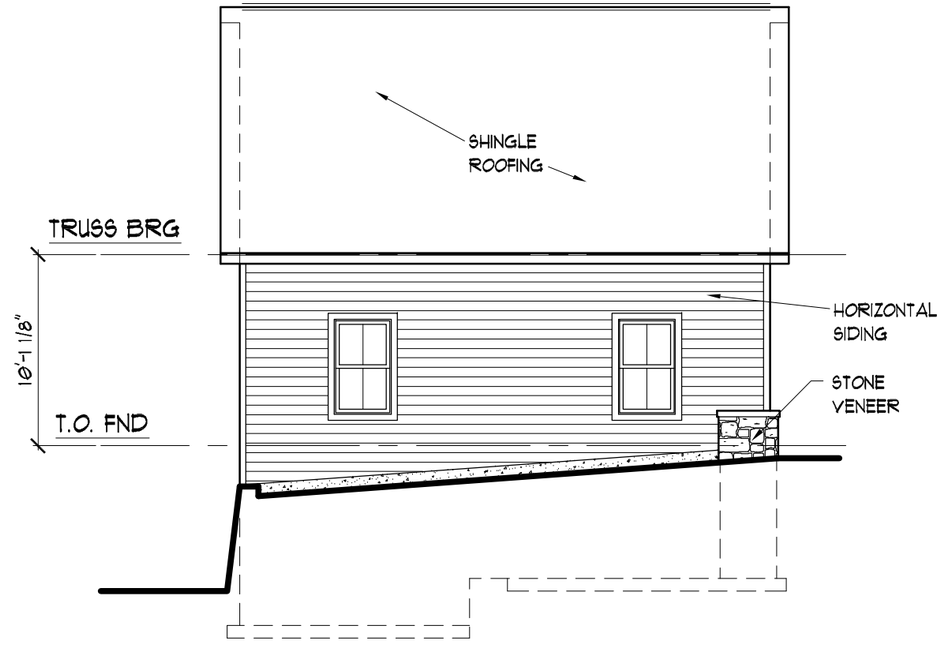


DETACHED GARAGE REAR ELEV

SCALE: 1/8" = 1'-0"



DETACHED GARAGE LEFT ELEV

SCALE: 1/8" = 1'-0"

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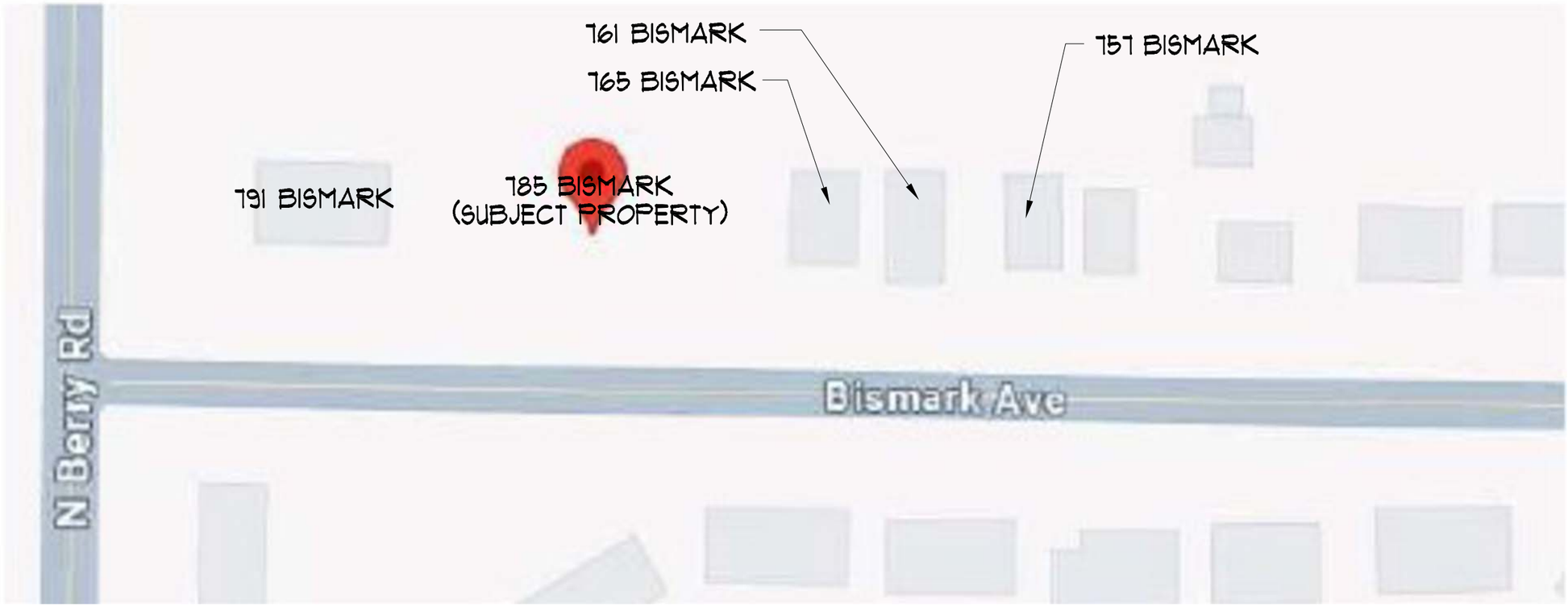

791 BISMARK
544.74 FFE

785 BISMARK
(SUBJECT PROPERTY)
548.20 FFE

765 BISMARK
558.73 FFE

761 BISMARK

757 BISMARK

COMPOSITE STREET ELEVATION

SCALE: N.T.S.

785 BISMARK
GLENDALE, MO

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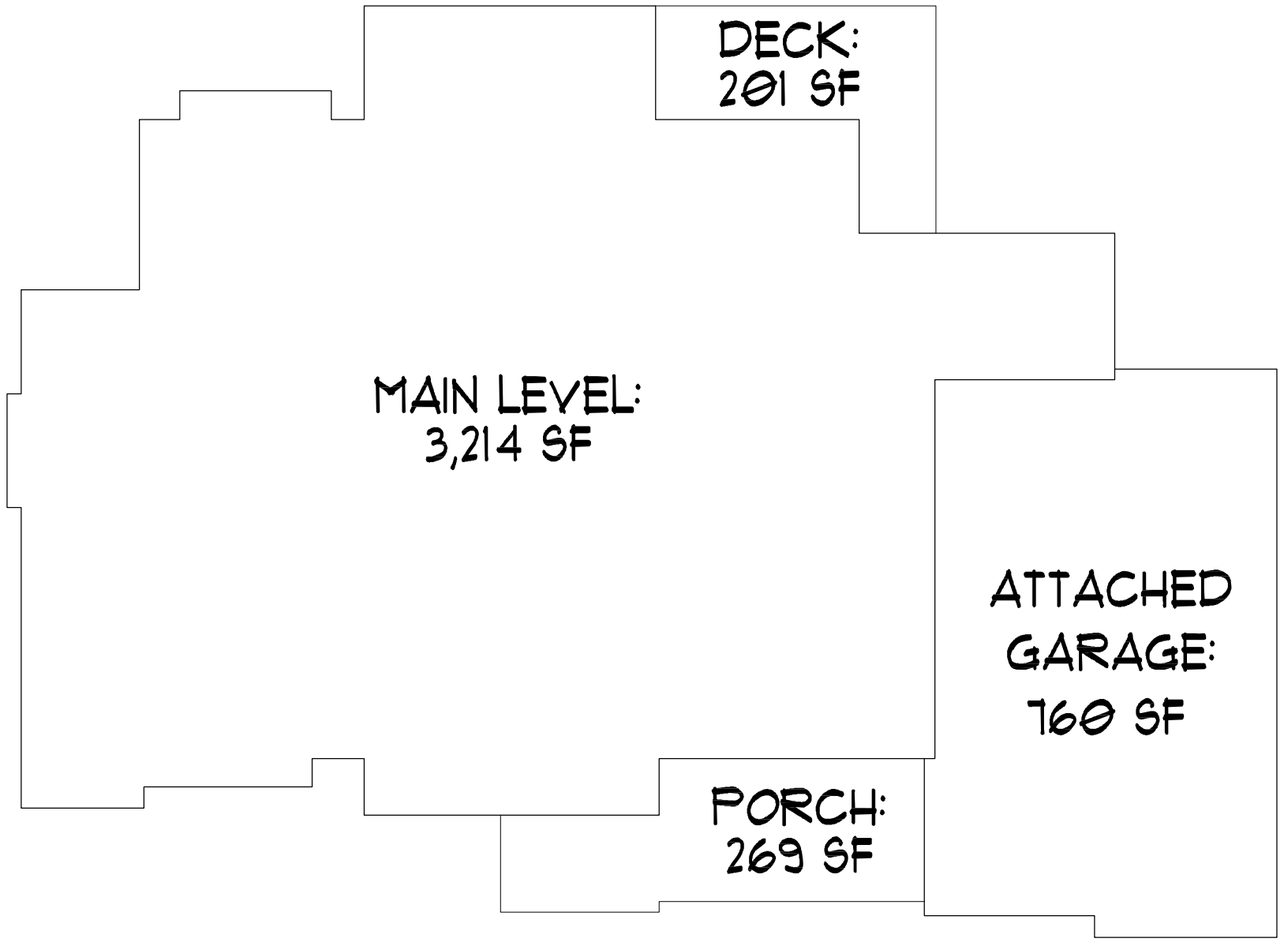

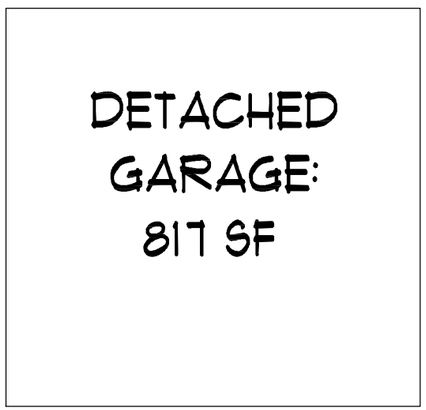

FAR EXHIBIT

SCALE: 3/16" = 1'-0"

FLOOR AREA RATIO:

LOT AREA:	25,984 SF
HOUSE FIRST FLOOR:	3,214 SF
HOUSE SECOND FLOOR:	1,582 SF
HOUSE TOTAL:	4,796 SF
ATTACHED GARAGE:	760 SF (380 SF 50%)
TOTAL FLOOR AREA:	5,176 SF
FLOOR AREA RATIO:	20 %

MAXIMUM FAR IS 30%

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