

2/26/2025 5:11:23 PM



# NEW CONSTRUCTION FOR TAKE 5 OIL CHANGE

400 NE M STATE ROUTE 291  
LEE'S SUMMIT, MISSOURI 64086

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2 Take 5 Perspective

## GENERAL NOTES:

- THE GENERAL CONTRACTOR IS RESPONSIBLE TO SUPPLY ALL SUBCONTRACTORS WITH CONSTRUCTION DRAWINGS AND SPECIFICATIONS NECESSARY TO BID AND/OR CONSTRUCT THIS PROJECT.
- ALL DIMENSIONS ON THE FLOOR PLANS, UNLESS OTHERWISE NOTED, ARE TAKEN FROM FACES OF STUDS OF EXTERIOR WALLS AND INTERIOR WALLS.
- THE OWNER SHALL BE RESPONSIBLE FOR NOTIFYING THE GENERAL CONTRACTOR OF ANY ADDITIONAL ITEMS TO BE INSTALLED THAT ARE NOT SHOWN ON THE DRAWINGS.
- ANY PENETRATIONS OF, OR MODIFICATIONS TO CONCRETE MUST BE COORDINATED WITH ARCHITECT PRIOR TO CONSTRUCTION.
- IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO INSURE THE SAFETY OF THE PUBLIC AND/OR WORK PERSONS ON THE JOB AND TO PREVENT ACCIDENTS OR INJURY TO ANY PERSON ON, ABOUT OR ADJACENT TO THE PREMISES. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, CODES, RULES AND REGULATIONS RELATIVE TO SAFETY AND THE PREVENTION OF ACCIDENTS.
- WHETHER OR NOT SPECIFICALLY INDICATED ON THE DRAWINGS, ALL CONTRACTORS SHALL BE RESPONSIBLE FOR REMOVING OR DEMOLISHING EXISTING CONSTRUCTION (INCLUDING UTILITIES) WHICH WILL INTERFERE WITH NEW WORK.
- PRIOR TO THE SHUT-DOWN OR TYING INTO ANY UTILITY, APPROVAL SHALL BE OBTAINED FROM THE OWNER'S REPRESENTATIVE.
- COORDINATE WITH OWNER'S REPRESENTATIVE, LOCATION OF CONTRACTORS' EQUIPMENT AND MATERIAL STORAGE.
- ALL MECHANICAL WORK SHALL BE PERFORMED BY A LICENSED MECHANICAL CONTRACTOR AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.
- ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR ALL IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.
- ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.
- ALL STRUCTURAL FRAMING WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.

## PROJECT INFORMATION:

OCCUPANCY CLASSIFICATION: S1  
IBC: REPAR GARAGE  
NFPA:  
TYPE OF CONSTRUCTION: VB  
NUMBER OF STORIES: 1 STORY  
BUILDING HEIGHT: 20'-0"  
TOTAL BUILDING AREA: 1,415 S.F.  
OCCUPANCY LOAD: 14 (S-1 = 100 sq ft/ person)

## PROJECT DESCRIPTION:

This project involves:  
New site work and a wood framed building for a Take 5 Oil change center.  
Proper adherence to all state and local codes and provisions shall be followed.

## PROFESSIONAL OF RECORD

### Fusion Architects

3488 Brentwood Drive, Suite 101  
Baton Rouge, LA 70809  
P 225.766.4848 F 225.766.4724

Contact: Matt Daigrepont, AIA  
matt@fusionbcb.com

## DEVELOPER / OWNER

### Driven Assets LLC

6335 Markita Avenue  
TX, Dallas 75214

Contact: Hank Hopkins  
hank@drivenassets.com

## GENERAL CONTRACTOR

### Marquez Construction Inc.

1850 Tennyson Road  
Kansas City, KS 66104  
P 913.275.3090

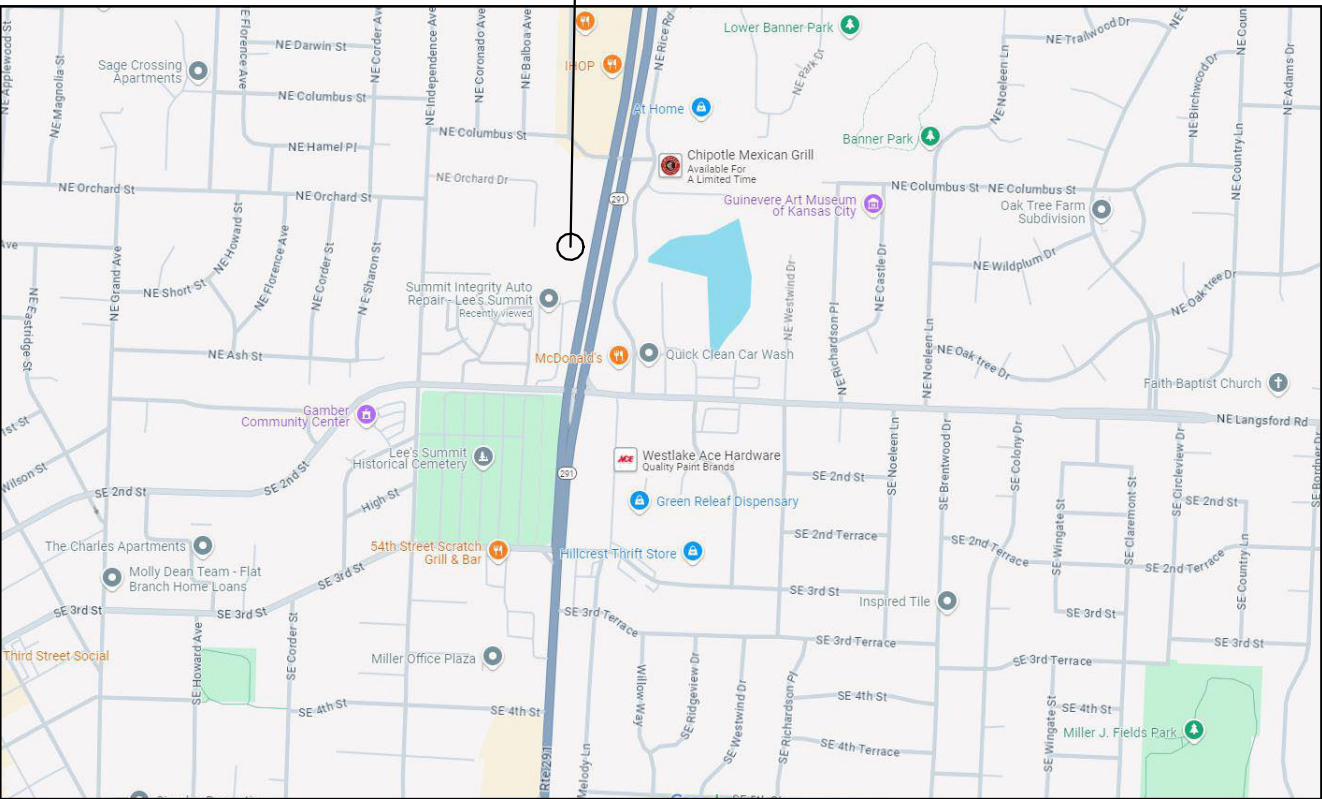
Contact: Jamie Marquez  
jmarquezconst@gmail.com

## APPLICABLE BUILDING CODES AND STANDARDS:

- International Building Code - 2018 Edition
- International Mechanical Code - 2018 Edition
- International Plumbing Code - 2018 Edition
- International Fuel Gas Code - 2018 Edition
- International Fire Code - 2018 Edition
- National Electric Code - 2017 Edition
- Americans with Disabilities Act Accessibility Guidelines (ADA-AG September 1994)
- ICC/ANSI A117.1-2009 as amended and adopted by the City of Lee's Summit

## VICINITY MAP:

PROJECT SITE  
400 NE M STATE ROUTE 291  
LEE'S SUMMIT, MISSOURI 64086



## SYMBOLS LEGEND:

XXX	ROOM NUMBER	DETAIL TAG	X	KEY NOTE
XXX	DOOR NUMBER	PHOTO TAG	P-X	PARTITION TAG
X	WINDOW TAG	KEY NOTE		
XX	COLUMN GRID TAG	KEY NOTE		
X-XX	ELEVATION TAG	KEY NOTE		
X-XX	SECTION TAG	KEY NOTE		

## CONSULTANTS:

### CIVIL

### High Tide Consultants, LLC

434 Columbia Street - Suite 200A  
Covington, LA 70433  
P 985.446.1110 Ext: 1005  
hightidela.com  
Contact: Richard "Ricky" Galloway, P.E.  
ricky@hightidela.com  
C 985.227.5462

### LANDSCAPE

### McKnight Landscape Architects

688 S. Foster Drive, Suite 101  
Baton Rouge, LA 70806  
P 225.924.1265 F 225.709.0748  
mcknight-la.com  
Contact: Wesley Wilkerson PLA, ASLA  
wes@mcknight-la.com

### STRUCTURAL

### Salas O'Brien

541 Julia St., Suite 200  
New Orleans, LA, 70124  
P 225.266.0619  
salasobrien.com  
Contact: Brad Carville, PE  
brad.carville@salasobrien.com

### MECHANICAL ELECTRICAL & PLUMBING

### Thompson Luke & Assoc. LLC

10705 Rieger Road - Suite 101  
Baton Rouge, LA 70809  
P 225.293.9474  
www.tlaeng.com  
Contact: Kyle Baudoin, E.I.  
Kyle@tlaeng.com

## HATCH LEGEND:

PLAN:	SPANDREL GLASS	PLYWOOD
NEW WALL	SECTION:	RIGID INSULATION
BRICK	BRICK	GYP. BD / M.D.F. / SAND
ELEVATION:	C.M.U.	EARTH
GYP. BD./STUCCO	CONCRETE	
CLEAR GLASS	STEEL	

## New Construction For Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086



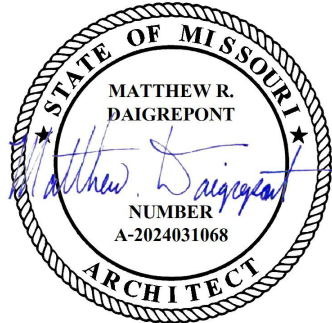
PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD

## TITLE SHEET

SHEET NO.

**G1.00**

OF



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Scales as stated hereon are valid on the original drawing only.

These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.

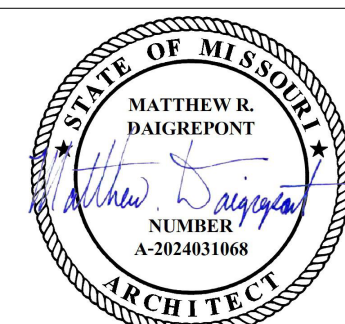
By: Matthew Daigrepont

**FUSION**  
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RELEASED FOR  
CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025

11/22/2024  
Revised P City Comment  
REVISION  
1  
No.





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These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes.

By: Matthew Digniat



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# New Construction For Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086



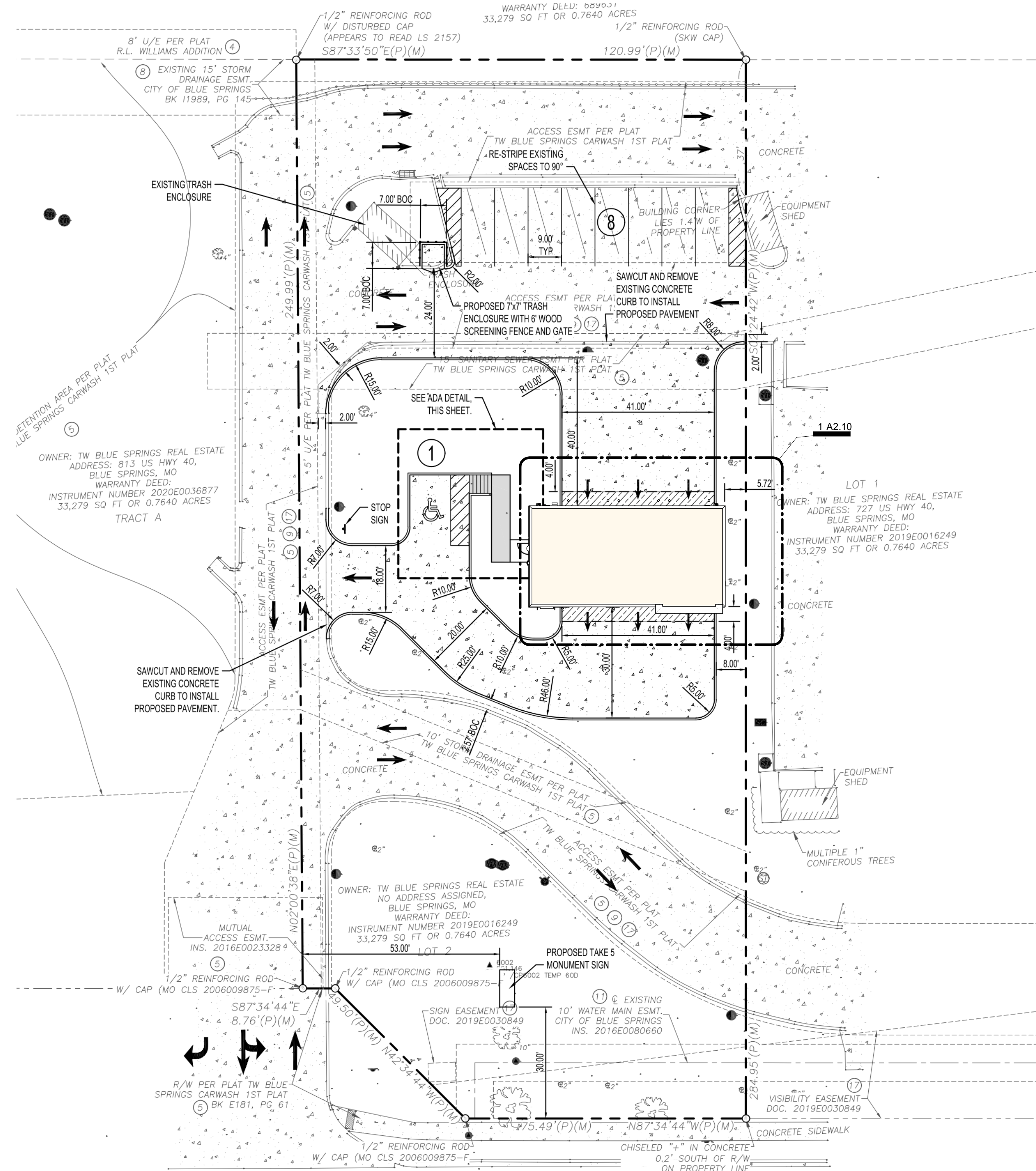
PROJECT NO:	33-006-2
PHASE:	Final Dev. Submittal
DATE:	8 July, 2024
PROJ. ARCHITECT:	MRD

CIVIL COVER SHEET

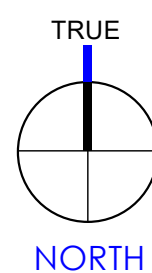
SHEET NO.

# COVER

OF



U.S. HIGHWAY 40



① SITE PLAN  
1" = 20'-0"

— HIGHWAY 40 FEATURES  
SHOWN ARE  
APPROXIMATE







C:\Users\djensen\Documents\33- Lee's Summit, MO (24) Central Model - djensen\G52.vrt 2/26/2025 5:11:24 PM

Structural Spec Cast In Place Concrete:

SECTION 03 33 00 - CAST-IN-PLACE CONCRETE  
This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.  
Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.  
PART 1 - GENERAL  
1.1 RELATED DOCUMENTS  
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.  
1.2 SUMMARY  
A. This Section specifies cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:  
1. Grade Beams  
2. Slabs-On-Grade  
1.3 DEFINITIONS  
Definition in paragraph below refers to those materials that make up the cementitious component of the water-cementitious materials ratio.  
A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.  
1.4 SUBMITTALS  
A. Product Data: For each type of product indicated.  
B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather test results, or other circumstances warrant adjustments.  
1. Indicate amounts of mixing water to be withheld for later addition at Project site.  
C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hook spacing, and supports for concrete reinforcement.  
Delete first paragraph and subparagraph below if not required.  
D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.  
Delete subparagraph below if no shoring and reshoring are required.  
Retain paragraph below if procedures for welder certification are retained in "Quality Assurance" Article.  
Coordinate paragraph below with qualification requirements in Division 1 Section "Quality Requirements" and as supplemented in "Quality Assurance" Article.  
E. Qualification Data: For testing agency.  
Delete paragraph and subparagraph below if material test reports are not required.  
F. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:  
Retain option in subparagraph below if retaining service record data with "Normal-Weight Aggregates" Paragraph in Part 2 "Concrete Materials" Article.  
1. Aggregates.  
Delete paragraph and subparagraphs below if material certificates are not required.  
G. Material Certificates: For each of the following, signed by manufacturers:  
Edit list to suit Project.  
1. Cementitious materials.  
2. Admixtures.  
3. Form materials and form-release agents.  
4. Steel reinforcement and accessories.  
5. Waterstops.  
6. Curing compounds.  
7. Floor and slab treatments.  
8. Bonding agents.  
9. Adhesives.  
10. Vapor retarders.  
11. Semirigid joint filler.  
12. Joint-filler strips.  
13. Repair materials.  
Retain paragraph below if Contractor engages testing agency for measuring floor surface flatness and levelness.  
Retain paragraph below if Contractor is responsible for field quality-control testing and inspections other than special inspections.  
H. Field quality-control test and inspection reports.  
Delete paragraph below if no preinstallation conference.  
1.5 QUALITY ASSURANCE  
Delete first paragraph below if not required. See Division 1 Section "Quality Requirements" for general installer qualifications. Verify availability of qualified personnel with a local ACI chapter or concrete contractors. These desirable programs may have limited grass-roots penetration.  
A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.  
B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.  
Delete subparagraph below if not required.  
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."  
Retain paragraph below if Contractor or manufacturer selects testing agency for concrete mixture design, material test reports, or field quality control. Retain option if field quality-control testing agency employed by Contractor must be approved by authorities having jurisdiction.  
C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.  
Retain subparagraph below, required by ACI 301 and ASTM C 311/C 31M, if emphasis is needed. ASTM C 1077 notes relevant field or laboratory technician certification by ACI, NRMCA, and PCA, or the National Institute for Certification in Engineering Technologies may demonstrate evidence of competence.  
Retain subparagraph below if requiring minimum qualifications for laboratory personnel performing testing and for laboratory supervisor.  
D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.  
Delete first paragraph below if no welding. Retain "Welding certificates" Paragraph in "Submittals" Article if retaining below. AWS states that welding qualifications remain in effect indefinitely unless welding personnel have not welded for more than six months or there is a specific reason to question their ability.  
E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:  
Retain second option in first subparagraph below if ACI 301, Section 7, for structural lightweight concrete is applicable.  
1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.  
F. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."  
Delete paragraph below if requiring minimum qualifications for laboratory personnel performing testing and to design concrete mixtures.  
Delete paragraph and subparagraphs below if not required. If retaining, indicate location, concrete type, and other details of mockups on Drawings or by inserts. Revise wording if only one mockup is required or if mockup of concrete in another location in a building is required.  
Revise size of panel in subparagraph below if required. Panel for slab-on-grade may need to be enlarged if powered riding trowels will be used and if it could be a portion of the floor slab.  
1.6 DELIVERY, STORAGE, AND HANDLING  
Retain option in first paragraph below if zinc- or epoxy-coated steel reinforcement is required.  
A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.  
B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.  
PART 2 - PRODUCTS  
2.1 MANUFACTURERS  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products.  
Edit this Article with Part 2 articles in which manufacturers and products, or manufacturers only, are named. See Division 1 Section "Product Requirements" for an explanation of the terms "Available Products," "Products," "Available Manufacturers," and "Manufacturers" and the effect these terms have on "Comparable Product" and "Product Substitution" requirements.  
A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:  
1. Products: Subject to compliance with requirements, provide one of the products specified.  
2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.  
2.2 FORM-FACING MATERIALS  
A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.  
1. Plywood, metal, or other approved panel materials.  
Retain subparagraph above if generic specification is enough; revise if necessary. Retain subparagraph below if plywood selection is required. If Finish overlaid birch plywood is required, add below and delete DOC PS 1 and other four choices of plywood.  
B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.  
Forms in first paragraph below leave joint impressions in spiral or straight lines. Limit types of forms if a particular pattern of joint is required. Different release treatments of forms also affect appearance of as-cast surfaces.  
Retain void forms, sometimes called "carton forms," in paragraph below if required for expansive soils or block outs.  
C. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.  
Delete first paragraph below if chamfering is not permitted.  
D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.  
E. Rustication Strips: Wood, metal, PVC, or rubber strips, keyed for ease of form removal.  
F. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.  
1. Formulate form-release agent with rust inhibitor for steel form-facing materials.  
G. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.  
Delete or revise three subparagraphs below to suit Project.  
2.3 STEEL REINFORCEMENT  
Delete or revise this Article to suit steel reinforcement requirements.  
A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.  
Retain paragraph below for reinforcement that is welded or if added ductility is sought.  
Retain paragraph below for galvanized steel reinforcement. Select type of reinforcement from first set of options and zinc coating class from second set. Class I has at least 50 percent more zinc weight than Class II.  
B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES  
Add other products for dowels or dowel sleeves if required. These include circular and rectangular plastic dowel sleeves, square dowels, and plastic-surfaced or reinforced-paper-covered dowels.  
A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.  
B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:  
Delete or revise three subparagraphs below to suit Project.  
1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.  
Add mechanical splices and connections for steel reinforcement here if required.  
2.5 CONCRETE MATERIALS  
A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project: Select type and color of portland cement from options in subparagraph below.  
1. Portland Cement: ASTM C 150, Type III, gray. Supplement with the following at contractor's discretion:  
Select supplementary cementing materials from two subparagraphs below if permitted. Ready-mix concrete manufacturer blends these materials with portland cement. Fly ash, slag, or pozzolanic materials may slow rate of concrete strengthening and affect color uniformly. Availability of Class F fly ash predominates over Class C fly ash.  
a. Fly Ash: ASTM C 618, Class F.  
b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.  
Retain subparagraph below if factory-blended hydraulic cement is permitted; verify availability of options before specifying. Fly ash, slag, or pozzolanic materials in the nonportland cement part of blended hydraulic cement may slow rate of concrete strengthening and affect color uniformly.  
Silica fume below is most often used in high-strength concrete and in special applications such as bridge decks to enhance durability by lowering permeability of concrete. ACI 301 identifies silica fume as a cementitious material.  
Select class of aggregate from options in paragraph below or revise to suit Project. ASTM C 33 limits deleterious substances in coarse aggregate depending on climate severity and in-service location of concrete. Classes in first set of options are ASTM C 33 default classes for concrete exposed to weather for Severe, Moderate, and Negligible weathering regions, respectively. Revise first two options to Class AS or Class 45 or 4M for wetting. Retain last option if damage caused by carbonate reaction is anticipated.  
B. Normal-Weight Aggregates: ASTM C 33, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source.  
Select coarse-aggregate size from three options in subparagraph below; add gradation requirements if preferred. Aggregate size limits relate to spacing of steel reinforcement, depth of slab, or thickness of concrete member.  
1. Maximum Coarse-Aggregate Size: Per ACI 318 limitations related to spacing of steel reinforcement, depth of slab or thickness of concrete member.  
Retain subparagraph below if optional restriction for fine aggregate in ASTM C 33 is required.  
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.  
C. Lightweight Aggregate: ASTM C 330, 1/2-inch nominal maximum aggregate size.  
Retain first paragraph below if using lightweight aggregate for structural lightweight concrete. Select size limit from four options below.  
D. Water: ASTM C 94/C 94M and potable.  
2.6 ADMIXTURES  
If subparagraphs titled "Available Products," "Products," "Available Manufacturers," or "Manufacturers" are retained in this Article, coordinate with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.  
A. Air-Entraining Admixture: ASTM C 260.  
B. 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.  
Select one or more chemical admixtures from six subparagraphs below.  
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.  
2. Retarding Admixture: ASTM C 494/C 494M, Type B.  
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.  
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.  
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.  
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II. Micro Fiber Reinforcement required at all conventionally reinforced concrete exposed to view as a final product.  
7. Shrinkage Inhibiting Admixture (SRA): SRA shall be Master Life SRA 20 manufactured by BASF Corporation or approved equal. Dosage rate shall bein accordance with the manufacturer's recommendations for the designated usage with a maximum shrinkage allowance of 0.025% but not less than 1.5gal/yd.  
Retain paragraph and subparagraphs below if set-accelerating corrosion inhibitors are required. Set-accelerating products are usually calcium nitrite-based admixtures and comply with ASTM C 494/C 494M, Type C.  
Retain paragraph and subparagraphs below if corrosion inhibitors that do not affect concrete setting time are required.  
Retain paragraph and subparagraphs below for integrally colored concrete.  
Add other admixtures, such as integral waterproofing admixtures, if required.  
2.7 WATERSTOPS  
If subparagraphs titled "Available Products," "Products," "Available Manufacturers," or "Manufacturers" are retained in this Article, coordinate with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.  
Retain one of three paragraphs and associated subparagraphs below if flexible waterstops produced from rubber, thermoplastic elastomer rubber, or PVC are required.  
A. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch (10 by 19 mm).  
1. Products:  
a. Deneef Construction Chemicals; Swellselc.  
b. Greenstreak; Hydrotite.  
c. Mitsubishi International Corporation; Adeka Ultra Seal.  
d. Progress Unlimited, Inc.; Superstop.  
2.8 VAPOR RETARDERS  
If subparagraphs titled "Available Products" or "Products" are retained in this Article, coordinate with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.  
Retain one of three paragraphs and associated subparagraphs below if plastic vapor water retarders are required. ASTM E 1745 sets three performance classes for plastic vapor vapor retarders: Classes A, B, and C. The water-vapor permeance value is the same for each class. Class A sets the highest tensile-strength and puncture-resistance requirements, while Class C sets the lowest. Thickness is not governed by ASTM E 1745.  
A. Plastic Vapor Retarder: Refer to architectural specifications.  
Retain option in paragraph below if generic polyethylene is permitted. Minimum thickness recommended by ACI 302.1R for polyethylene film used as a vapor retarder is 10 mils (0.25 mm).  
Delete two paragraphs below if not using a granular course over vapor retarder. Products are based on ACI 302.1R descriptions of granular materials.  
Retain paragraph below for a "crusher-run" course at least 4 inches (100 mm) thick.  
2.9 CURING MATERIALS  
If subparagraphs titled "Available Products" or "Products" are retained in this Article, coordinate with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.  
Evaporation retarder in paragraph below temporarily reduces moisture loss from concrete surfaces awaiting finishing in hot, dry, and windy conditions. Evaporation retarders are not curing compounds.  
A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.  
1. Products:  
a. Axim Concrete Technologies; Cimfilm.  
b. Burke by Edco; Spartan Cote WB II.  
c. ChemMasters; Spray-Film.  
d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; AquaFilm.  
e. Dayton Superior Corporation; Sure Film.  
f. Euclid Chemical Company (The); Eucobar.  
g. Kauffman Products, Inc.; Vapor Aid.  
h. Lambert Corporation; Lambco Skin.  
i. L&M Construction Chemicals, Inc.; E-Con.  
j. MBT Protection and Repair, Div. of ChemRex; Confilm.  
k. Meadows, W. R., Inc.; Sealtight Evapre.  
l. Metacrete Industries; Waterhold.  
m. Nox-Crete Products Group, Kinsman Corporation; MonoFilm.  
n. Sika Corporation, Inc.; SikaFilm.  
o. Symons Corporation, a Dayton Superior Company; Finishing Aid.  
p. UniteX; Pro-Film.  
q. US Mix Products Company; US Spec MonoFilm ER.  
r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.  
Select curing aids and materials from remaining paragraphs.  
B. Water: Potable.  
Retain paragraph and subparagraphs below if a dissipating-type, waterborne, membrane-forming curing compound with a higher solids content is required. This product will partially seal the concrete. Although the EPA mandates maximum VOC emissions of 350 g/L for curing compounds, verify VOC emission limits of authorities having jurisdiction. Retain option if applicable.  
C. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor coverings.  
Verify with manufacturer that selected products have been tested against interference with bonding of floor covering.  
1. Products:  
a. Anti-Hydro International, Inc.; AH Clear Cure WB.  
b. Burke by Edco; Spartan Cote WB II.  
c. ChemMasters; Safe-Cure & Seal 20.  
d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Cure and Seal WB.  
e. Dayton Superior Corporation; Safe Cure and Seal (J-18).  
f. Euclid Chemical Company (The); Aqua Cure VOX.  
g. Kauffman Products, Inc.; Cure & Seal 309 Emulsion.  
h. Lambert Corporation; Glazecrete Sealer-20.  
i. L&M Construction Chemicals, Inc.; Dress & Seal WB.  
j. Meadows, W. R., Inc.; Vocomp-20.  
k. Metacrete Industries; Metcure.  
l. Nox-Crete Products Group, Kinsman Corporation; Cure & Seal 150E.  
m. Symons Corporation, a Dayton Superior Company; Cure & Seal 18 Percent E.  
n. Tamms Industries, Inc.; Clearseal WB 150.  
o. UniteX; Hydro Seal.  
p. US Mix Products Company; US Spec Hydrasheen 15 percent  
q. Vexcon Chemicals, Inc.; Starseal 309.

Retain paragraph and subparagraphs below if a nondissipating-type, waterborne, membrane-forming curing compound with a higher solids content is required. This product will partially seal the concrete. Although the EPA mandates maximum VOC emissions of 350 g/L for curing compounds, verify VOC emission limits of authorities having jurisdiction. Retain option if applicable.  
2.10 RELATED MATERIALS  
Select one or all options in paragraph below. Joint-filler strips are used in floor isolation joints.  
A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.  
Select one of two options in paragraph below if semirigid joint filler is required to fill joints and support edges of trafficked contraction and construction joints.  
B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, per ASTM D 2240.  
Bonding agent in first paragraph below may be used directly from container or as an admixture in cement or sand-cement slurries and rubbing grout.  
C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.  
Retain first paragraph below if reglets are not specified elsewhere. Coordinate product requirements with Division 7 Section "Sheet Metal Flashing and Trim" or "Manufactured Roof Specialties" or in other Sections where reglets are supplied as auxiliary products with waterproofing or roofing membrane flashings.  
D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.  
Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.  
2.11 CONCRETE MIXTURES, GENERAL  
A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.  
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.  
B. Limit the water-cementitious materials (w/cm) ratio in concrete for floors to receive moisture-sensitive flooring to no higher than 0.45.  
Retain paragraph and subparagraphs below if limiting percentage of cementitious material that can replace portland cement. Neither ACI 301 nor ACI 318 (ACI 318M) limit amount of cementitious material that can replace portland cement unless concrete is exposed to deicing chemicals. Identify parts of building or structure affected by these limits unless extending them to all concrete.  
C. Cementitious Materials: Percentages, by weight, of cementitious materials other than portland cement in concrete shall be determined by the concrete supplier to maximize the amount of recycled material in the concrete while controlling workability, setting time, rate of strength gain, and other properties to facilitate construction operations.  
Percentages in subparagraphs below repeat ACI 301 limits for concrete exposed to deicing chemicals. Revise to suit Project.  
1. Cementitious materials other than portland cement shall make up a minimum of 15 percent of the total cementitious materials in any mix.  
2. Limit cementitious materials other than portland cement to no more than 20 percent of the total cementitious materials in floor slabs to receive moisture-sensitive flooring.  
Delete three subparagraphs below if no silica fume is permitted. Limits of silica fume alone or in combination with other cementitious materials below are based on ACI 301 and ACI 318 (ACI 318M).  
Retain appropriate option in first paragraph below for chloride limits. Identify portions of building with different limits if required. Percentages below repeat ACI 301 limits, respectively, for prestressed (post-tensioned) concrete, reinforced concrete exposed to chloride, reinforced concrete that will not be dry or protected from moisture, and reinforced concrete that will be dry or protected from moisture. ACI 301 and ACI 318 (ACI 318M) express this percentage by weight of cement, not cementitious material.  
D. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.  
E. Admixtures: Use admixtures according to manufacturer's written instructions.  
Delete or revise four subparagraphs below to suit Project.  
1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.  
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.  
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.  
4. Interior and Exterior structural concrete slabs exposed to view as a final product (including sealed concrete) shall contain a Shrinkage Reducing Admixture (SRA) and microfiber reinforcement.  
Add locations and dosage of corrosion-inhibiting admixture to subparagraph below if required.  
2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS  
This Article contains examples of building elements that often need different concrete mixtures. Revise, consolidate, or add other building elements if more concrete mixtures are required.  
A. Refer to the Structural Notes on the Structural Drawings for Usage, Concrete 28-day Compressive Strength, Slump, Air Content, and Maximum Aggregate Size.  
Select strength from five options in subparagraph below or revise to suit Project. Coordinate compressive strength with water-cementitious materials ratio if concrete will be subject to special exposure conditions or sulfate exposure as identified in ACI 318 (ACI 318M).  
Retain one or more of first three subparagraphs below. Percentages in options in first two subparagraphs are default air contents required by ACI 301 for concrete exposed to view.  
Air Content: Insert water-cementitious materials ratio here if elevated slabs will be subject to special exposure conditions.  
Delete subparagraph below if no steel-fiber reinforcement. Indicate location, on Drawings, of concrete using steel fiber. Revise application rate to suit Project.  
Delete paragraph and subparagraphs below if normal-weight structural concrete is used. Coordinate requirements with lightweight aggregate supplier, structural engineer, and other project participants.  
Retain first paragraph and subparagraphs below for concrete toppings or concrete underberds on a base concrete slab or on structural precast concrete.  
2.13 FABRICATING REINFORCEMENT  
A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."  
2.14 CONCRETE MIXING  
Retain option in paragraph below if steel or synthetic fibers are required.  
A. 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 between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.  
Delete paragraph and subparagraphs below if Project-site mixing is not permitted. ACI 301 applies measuring, batching, and mixing requirements from ASTM C 94/C 94M to Project-site mixing.  
PART 3 - EXECUTION  
3.1 FORMWORK  
A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.  
B. Form vertical faces of all footings, stem walls and pilasters.  
C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.  
D. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:  
Select surface classes, usually two or more, from two subparagraphs below. See discussion in "Formwork" Article in the Evaluations. Coordinate with rough- and smooth-form finishes in "Finishing Formed Surfaces" Article.  
1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.  
2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.  
E. Construct forms tight enough to prevent loss of concrete mortar.  
F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.  
1. Install keyways, reglets, recesses, and the like, for easy removal.  
2. Do not use rust-stained steel form-facing material.  
G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.  
H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.  
Retain one of two options in first paragraph below. ACI 301 requires chamfers, unless otherwise specified.  
I. Chamfer exterior corners and edges of permanently exposed concrete.  
J. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.  
K. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.  
L. Realign forms and braces before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.  
M. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.  
3.2 EMBEDDED ITEMS  
Specify embedded items and anchorage devices for other work attached to or supported by cast-in-place concrete. Add specific requirements for installing embedded items, if any, that are part of the Work.  
A. Place an

RELEASED FOR  
Lee's Summit, Missouri  
As Noted on Plans Review  
03/12/2025

Development Services Department

PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 04/13/21  
PROJ. ARCHITECT: Designer

CONCRETE SPECIFICATIONS  
SHEET NO.  
G1.21  
OF

STATE OF MISSOURI  
MATTHEW N. BAIGREPOST  
NUMBER A-262403086  
ARCHITECT

This drawing is the property of FUSION ARCHITECTS and is not to be reproduced or copied in whole or in part unless authorization given by FUSION ARCHITECTS. It is only to be used for the project and site specifically identified herein.  
Scales as stated hereon are valid on the original drawing only.  
These plans were prepared in the office under our personal supervision, and to the best of our knowledge comply with state and local codes. We will generally administer construction.  
By: Matthew Baigrepost

FUSION ARCHITECTS  
3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
P. 225.766.4848 F. 225.766.4724  
tusionapp.com



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Structural Spec Rough Carpentry:

SECTION 06 10 00  
ROUGH CARPENTRY  
This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.  
Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

- PART 1 - GENERAL**  
1.1 RELATED DOCUMENTS  
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.  
1.2 SUMMARY  
A. This Section includes the following:  
Adjust list below to suit Project.  
1. Framing with dimension lumber.  
Retain first subparagraph below for timber incidental to conventional framing. For extensive timber framing, use Division 6 Section "Heavy Timber Construction."  
2. Framing with engineered wood products.  
Delete first subparagraph below if bases and curbs are exclusively metal.  
3. Wood blocking and nailers.  
4. Wood furring.  
5. Wood sleepers.  
6. Plywood backing panels.  
B. Related Sections include the following:  
List below only products and construction that the reader might expect to find in this Section but are specified elsewhere.  
Borate treatment in Section referenced in first subparagraph below may be an acceptable substitute for borate-treated wood specified in this Section. Delete if borate treatment is specified in this Section.  
1. Division 2 Section "Termite Control" for site application of borate treatment to wood framing.  
2. Division 6 Section "Sheathing."  
3. Division 6 Section "Metal-Plate-Connected Wood Trusses."  
4. Division 6 Section "Wood Deck"

- 1.3 DEFINITIONS  
Delete first paragraph below if no exposed framing.  
A. Exposed Framing: Framing not concealed by other construction.  
B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.  
Delete first paragraph below if no timber.  
C. Timber: Lumber of 5 inches nominal or greater in least dimension.  
Delete paragraph and list below if lumber grading agencies are not referenced with products.  
D. Lumber grading agencies, and the abbreviations used to reference them, include the following:  
Coordinate list below with product lists; delete those not required. See Evaluations.  
1. NELMA: Northeastern Lumber Manufacturers' Association.  
2. NLGA: National Lumber Grades Authority.  
3. RIS: Redwood Inspection Service.  
4. SPB: The Southern Pine Inspection Bureau.  
5. WCLB: West Coast Lumber Inspection Bureau.  
6. WWP: Western Wood Products Association.

- 1.4 SUBMITTALS  
A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.  
1. Include data for wood-preserved treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.  
Delete subparagraph below if fire-retardant-treated wood is not required.  
Delete first subparagraph below if not applicable.  
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.  
3. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.  
4. For fire-retardant treatments specified to be High-Temperature (HT) type, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.  
5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.  
Delete first paragraph below if no exposed framing or if fastener patterns are shown on Drawings.  
Retain paragraph below if applicable; delete if species and grade are indicated for each use.  
B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.  
Insert specific model code organization in paragraph below or revise if report must be from another source.  
C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:  
Edit list below to retain only those products retained in Part 2.  
1. Wood-preserved-treated wood.  
2. Engineered wood products.  
3. Fire-retardant-treated wood.  
4. Power-driven fasteners.  
5. Powder-actuated fasteners.  
6. Expansion anchors.  
7. Metal framing anchors.

- 1.5 QUALITY ASSURANCE  
A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.  
Paragraph and subparagraphs below may be retained to specify lumber and other wood products made from certified wood for LEED Credit MR 7, which requires that a minimum of 50 percent of wood-based materials be certified. An alternative method of meeting LEED Credit MR 7 requirement is to retain requirement in Division 1 Section "LEED Requirements" that gives Contractor option and responsibility for determining how LEED Credit MR 7 requirement will be met.  
B. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria."  
Coordinate list below with products retained in Part 2. Delete items not required to be made from certified wood; verify that certified wood is available for each item before retaining.  
1. Dimension lumber framing.  
2. Laminated veneer lumber.  
3. Parallel-strand lumber.  
4. Miscellaneous lumber.  
1.6 DELIVERY, STORAGE, AND HANDLING  
A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

- PART 2 - PRODUCTS**  
2.1 WOOD PRODUCTS, GENERAL  
A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.  
1. Factory mark each piece of lumber with grade stamp of grading agency.  
Select only first option in subparagraph below if authorities having jurisdiction require grade stamps on all materials.  
In DOC PS 20, dressed sizes of green lumber are larger than dry lumber.  
Revise subparagraph below if rough lumber is acceptable for all work.  
2. Provide dressed lumber, S4S, unless otherwise indicated.  
Delete paragraph and subparagraph below if engineered wood products are not used.  
B. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.  
1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.  
2.2 WOOD-PRESERVATIVE-TREATED LUMBER  
Delete this Article if not applicable. See Evaluations for discussion of formulations.  
A. Preservative Treatment by Pressure Process: AWWA C2.  
See Evaluations for information about treatment chemicals.  
1. Preservative Chemicals: Acceptable to authorities having jurisdiction.  
Delete subparagraph below if no exposed framing or if considered unnecessary.  
B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.  
C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.  
Select only first option in subparagraph below if authorities having jurisdiction require quality mark on all materials.  
Select first option in paragraph below and delete subparagraphs if total treatment is required; otherwise, select second option and retain appropriate subparagraphs.  
D. Application: Treat the following:  
Retain subparagraph below if Project includes wood adjacent to roofing or waterproofing.  
1. 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.  
Retain applicable items below. Insert other items that require treatment but are not likely to be indicated on Drawings.  
2. Wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.  
3. Wood floor plates that are installed over concrete slabs-on-grade.

- 2.3 FIRE-RETARDANT-TREATED MATERIALS  
Delete this Article if not applicable.  
A. General: Comply with performance requirements in AWWA C20 (lumber) and AWWA C27 (plywood).  
Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.  
1. Use Exterior type for exterior locations and where indicated.  
Delete first subparagraph below if not applicable. Revise description of locations to suit Project requirements.  
2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.  
3. Use Interior Type A, unless otherwise indicated.  
B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.  
Select only first option in subparagraph below if authorities having jurisdiction require classification marking on all materials.  
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.  
Delete or revise paragraph below if no exposed framing or if staining will hide colorants.  
C. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.  
Select first option in paragraph below and delete subparagraphs if all wood is required to be fire-retardant treated; otherwise, select second option and retain appropriate subparagraphs.  
D. Application: Treat items indicated on Drawings.  
Edit list below suit local code and Project.  
2.4 DIMENSION LUMBER FRAMING  
Select one of five options in paragraph below, or delete paragraph if green lumber is acceptable in all thicknesses. Verify availability of lumber with 15 percent maximum moisture content before retaining. Lumber more than 2 inches nominal (38 mm actual) in thickness is often shipped green. See Evaluations.  
A. Maximum Moisture Content: 19 percent.  
1. First 10 paragraphs below provide several choices for specifying different categories of framing. Edit to retain no more than four paragraphs (usually two or three), and select paragraph titles so that together they describe all the framing required. For simple projects, two paragraphs titled "Interior Partitions" and "Framing Other Than Interior Partitions" might be retained; for other projects, three paragraphs titled "Non-Load-Bearing Interior Partitions," "Exterior and Load-Bearing Walls," and "Joists, Rafters, and Other Framing Not Listed Above" might be retained. If retaining titles that refer to non-load-bearing or load-bearing construction, indicate load-bearing walls and framing on Drawings. In each paragraph where grade designations are used, grades are listed in order of decreasing quality (and cost).  
B. Non-Load-Bearing Interior Walls: Grade and species per plans.  
Delete paragraph above or below. Select one of three options for grade or revise to suit Project; verify with structural requirements.  
If retaining paragraph below, select one of three options for grade or revise to suit Project; verify with structural requirements.  
C. Exterior and Load-Bearing Walls: Grade and species per plans.  
Edit list below; usually retain all species that meet requirements except those not available in Project's location. Species groups are listed in order of decreasing strength (extreme fiber in bending).  
Paragraph below is an example for machine stress-rated lumber that can be used instead of paragraph above. If retaining, select one of two titles and select or insert a grade to suit structural requirements of Project. Three grades listed are most commonly available.  
2.5 ENGINEERED WOOD PRODUCTS  
Paragraphs and subparagraphs in this Article are examples of descriptive and property requirements based on product data of various manufacturers. Verify that current products comply or revise. See Evaluations. Retain option in paragraph below if low-emitting materials are required for LEED Credit EQ 4.4. Laminated-veneer lumber usually contains no urea formaldehyde.  
A. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. Retain one of first two subparagraphs and list of manufacturers below. See Division 1 Section "Product Requirements."  
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:  
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:  
a. Boise Cascade Corporation.  
b. RedBuilt.  
c. Finnforest USA.  
d. Georgia-Pacific.  
e. Louisiana-Pacific Corporation.  
f. Pacific Woodtech Corporation.  
g. Roseburg Forest Products Co.  
h. Weldwood of Canada Limited; Subsidiary of International Paper Corporation.  
i. Weyerhaeuser Company.

3. Extreme Fiber Stress in Bending, Edgewise: Refer to Drawings.  
4. Modulus of Elasticity, Edgewise: Refer to Drawings.  
Insert other properties of laminated veneer lumber here if critical. Retain option in paragraph below if low-emitting materials are required for LEED Credit EQ 4.4. Structural composite lumber usually contains no urea formaldehyde.  
B. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. Retain one of first two subparagraphs and list of manufacturers below. See Division 1 Section "Product Requirements."  
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:  
2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:  
a. Weyerhaeuser Company.  
3. Extreme Fiber Stress in Bending, Edgewise: Refer to Drawings.  
4. Modulus of Elasticity, Edgewise: Refer to Drawings.  
Insert other properties of parallel-strand lumber here if critical.  
2.6 MISCELLANEOUS LUMBER  
A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:  
1. Blocking.  
2. Nailers.  
Delete subparagraph below if prefabricated metal units are used. Prefabricated metal units may still require blocking or nailers.  
Delete subparagraph below if roof membrane used does not require cants or if cants of another material are used.

- Delete any or all of three items below if not required.  
4. Furring.  
B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber with 19 percent maximum moisture content of any species.  
Delete paragraph above or below. Select one of two options for grade in either paragraph. 19 percent moisture is usually adequate for untreated support and attachment items. Select 15 percent if required and available.  
Delete first paragraph below if not acceptable.  
C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.  
D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.  
E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.  
2.7 PLYWOOD BACKING PANELS  
A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.  
2.8 FASTENERS  
A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.  
1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153.  
B. Nails, Brads, and Staples: ASTM F 1667.  
Standard in first paragraph below covers power-driven staples, nails, P-nails, and allied fasteners.  
C. Power-Driven Fasteners: NES NER-272.  
D. Wood Screws: ASME B18.6.1.  
E. Lag Bolts: ASME B10.2.1.  
F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.  
G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.  
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

- Subparagraph above and below are examples only. Above protects against corrosion in an indoor atmosphere; revise to suit other service conditions after verifying availability of thicker coatings.  
2.9 METAL FRAMING ANCHORS  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. If naming manufacturers or products, retain one of three, retain one of three subparagraphs and list of manufacturers below. Refer to Division 1 Section "Product Requirements."  
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:  
B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:  
C. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable products by one of the following:  
1. Alpine Engineered Products, Inc.  
2. Cleveland Steel Specialty Co.  
3. Harlen Metal Products, Inc.  
4. KC Metals Products, Inc.  
5. Simpson Strong-Tie Co., Inc.  
6. Southeastern Metals Manufacturing Co., Inc.  
7. USP Structural Connectors.  
If retaining first option in first paragraph below, indicate design loads for metal framing anchors on Drawings.  
D. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653, G60 coating designation.  
1. Use for interior locations where stainless steel is not indicated.  
Paragraph above is typical for most manufacturers and is suitable for most applications. Delete paragraph and subparagraph below if not required. Type 304 is usually standard for stainless steel; Type 316 gives better corrosion resistance for exposed applications in coastal environments.  
12 paragraphs below are examples only. Revise to suit Project or delete all if "Basis-of-Design Products" Paragraph is used and they are not needed to provide salient characteristics for products.

- 2.10 MISCELLANEOUS MATERIALS  
A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; or closed-cell neoprene foam, selected from manufacturer's standard widths to suit width of sill members indicated.  
B. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.  
Retain subparagraph below if low-emitting materials are required for LEED Credit EQ 4.1. VOC limit is that for multipurpose construction adhesives in South Coast Air Quality Management District Rule #1168.  
1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D.  
EPA Method 24.

- Treatment below is for exposed ends of posts and beams, not for treating cuts in preservative-treated lumber.  
C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.  
**PART 3 - EXECUTION**  
3.1 INSTALLATION, GENERAL  
A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.  
B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.  
Delete paragraph below if engineered wood products are not used.  
C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.  
Delete first paragraph below if metal framing anchors are not used.  
D. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.  
E. Do not splice structural members between supports, unless otherwise indicated.  
F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.  
1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.  
G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated on Drawings.  
Delete first subparagraph below if no furred walls.  
H. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.  
I. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.  
1. Use inorganic boron for items that are continuously protected from liquid water.  
2. Use copper naphthenate for items not continuously protected from liquid water.  
J. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:  
If retaining subparagraph below, verify that this is acceptable to authorities having jurisdiction. Also retain one of the other subparagraphs that references a model code fastener schedule complying with local requirements. Fasteners covered by NES NER-272 are manufactured by member companies of the International Staple, Nail and Tool Association.  
Retain one of six subparagraphs below, with or without subparagraph above, as required to comply with requirements of Project and local codes.  
2. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.


- Revise paragraph below to include other kinds of nails if required.  
K. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.  
Delete paragraph and subparagraphs below if no exposed framing.  
Indicate locations of other fasteners, such as wood screws, bolts, and lag screws, on Drawings.  
3.2 WOOD BLOCKING AND NAILER INSTALLATION  
A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.  
B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.  
Retain paragraph below for conventional, not veneer, plaster.  
Insert other specific requirements as needed for work.  
3.3 WOOD FURRING INSTALLATION  
A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.  
Retain applicable types from two paragraphs below; revise if closer spacing is required for material fastened.  
B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal-size furring horizontally and vertically at 24 inches o.c.  
C. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal-size furring vertically at 16 inches o.c.  
If framing is minor in scope and importance, delete remaining framing installation articles. Review framing requirements for compliance with local building code.  
3.4 WALL AND PARTITION FRAMING INSTALLATION  
A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction, unless otherwise indicated.  
Select one of two stud sizes and one of four spacings in subparagraph below; third and fourth stud spacings are for metric module.  
B. Construct corners and intersections with three or more studs.  
C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs.  
Support headers on jamb studs.  
Two subparagraphs below refer to load-bearing and non-load-bearing construction. Designate load-bearing walls on Drawings if retaining this distinction.  
1. For non-load-bearing partitions, provide double-jamb studs and headers of depth indicated.  
Retain paragraph above or below if applicable. Revise if single-jamb studs are acceptable.  
2. For load-bearing walls, provide double-jamb studs for openings 60 inches and less in width, and triple-jamb studs for wider openings. Provide headers of depth indicated.  
Retain paragraph below unless sheathing provides required bracing. If retaining second option below, indicate locations on Drawings. Change "bracing" to "wind bracing," "seismic bracing," etc., to match term used in code, where applicable.  
Insert requirements for framing gables, bays, and other special conditions or show on Drawings.  
3.5 PROTECTION  
Delete this Article if site-applied boron treatment is specified in Division 2 Section "Termite Control."  
Delete paragraph below if option allowing inorganic boron treatment is not retained in Part 2.  
A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.  
Retain paragraph below instead of above if boron-treated wood is not used, but borate treatment of wood that has become wet is used to help prevent mild and mildew. Delete if site-applied boron treatment is specified in Division 2 Section "Termite Control."  
B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.  
END OF SECTION 06 10 00

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025

DATE

REVISION

No.




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Scales as stated hereon are valid on the original drawing only.

These plans were prepared in the office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.

By: *Matthew Baigrepost*

New Construction For Take 5 Oil Change



400 NE M State Route 291  
Lee's Summit, Missouri 64086

3488 BRENTWOOD DRIVE  
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PROJECT NO: 33-006-22

PHASE: Final Dev. Submittal

DATE: 04/13/21

PROJ. ARCHITECT: Designer

CARPENTRY SPECIFICATIONS

SHEET NO.  
**G1.22**  
OF







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Structural Metal Plate Connected Wood Trusses:

SECTION 06 17 00  
METAL-PLATE-CONNECTED WOOD TRUSSES  
This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.  
Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.  
PART 1 - GENERAL  
1.1 RELATED DOCUMENTS  
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.  
1.2 SUMMARY  
A. This Section includes the following:  
Adjust list below to suit Project.  
1. Wood roof trusses.  
2. Wood girder trusses.  
3. Wood truss bracing.  
4. Metal truss accessories.  
B. Related Sections include the following:  
List below only products and construction that the reader might expect to find in this Section but are specified elsewhere.  
Borate treatment in Section referenced in first subparagraph below may be an acceptable substitute for borate-treated wood specified in this Section. Delete if borate treatment is specified in this Section.  
1. Division 2 Section "Termite Control" for site application of borate treatment to wood trusses.  
2. Division 6 Section "Wood Decking."  
3. Division 6 Section "Sheathing" for roof sheathing.  
Retain paragraph below if an allowance is specified for permanent bracing. If retaining below, indicate in Division 1 Section "Allowances" that allowance includes installation as well as materials. Delete if bracing is shown on Drawings.  
C. Allowances: Provide wood truss bracing under the Metal-Plate-Connected Truss Bracing Allowance as specified in Division 1 Section "Allowances."  
1.3 DEFINITIONS  
Retain abbreviations and terms that remain after this Section has been edited.  
A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assembled before delivery to Project site.  
B. Metal-Plate-Connected Timber Trusses: Planar structural units consisting of metal-plate-connected members fabricated from timber and cut and assembled before delivery to Project site.  
C. TPI: Truss Plate Institute, Inc.  
Delete paragraph and list below if lumber grading agencies are not referenced with products.  
D. Lumber grading agencies, and the abbreviations used to reference them, include the following:  
Coordinate list below with product lists; delete those not required. See Evaluations.  
1. NELMA: Northeastern Lumber Manufacturers' Association.  
2. NLGA: National Lumber Grades Authority.  
3. SPIB: The Southern Pine Inspection Bureau.  
4. WCLIB: West Coast Lumber Inspection Bureau.  
5. WWPFA: Western Wood Products Association.  
1.4 PERFORMANCE REQUIREMENTS  
Retain this Article if delegating any part of design responsibility for trusses to fabricator. Coordinate with Part 2. Insert other performance and design criteria below to suit Project or add to Drawings. AIA Document A201 requires Owner or Architect to specify performance and design criteria to be satisfied.  
A. Structural Performance: Provide metal-plate-connected wood trusses capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1 unless more stringent requirements are specified below.  
Tabulate minimum load requirements here or on Drawings. Revise first subparagraph below when design loads are included here. Include applicable live, dead, snow, collateral, seismic, wind, and uplift loads, and load combinations.  
1. Design Loads: As indicated.  
2. Maximum Deflection Under Design Loads:  
Select deflection limits from options in subparagraph below or insert others as appropriate for floor, roof, and ceiling materials.  
a. Roof Trusses: Vertical deflection of 1/240 of span.  
Insert a subparagraph for horizontal (longitudinal) deflection limits of scissor trusses if they are used.  
1.5 SUBMITTALS  
A. Product Data: For metal-plate connectors, metal truss accessories, and fasteners.  
Delete subparagraph below if preservative-treated wood is not required.  
B. Shop Drawings: Prepared by or under the supervision of a qualified professional engineer. Show fabrication and installation details for trusses.  
1. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.  
2. Indicate sizes, stress grades, and species of lumber and timber.  
According to TPI 1, building designer is responsible for design of "permanent lateral bracing as specified by the truss designer, to prevent buckling of the individual truss members due to design loads." This bracing must be anticipated and detailed on Drawings, subject to possible revision when truss Shop Drawings are received, or an Allowance for it must be included in the Contract Sum if a Change Order is to be avoided. See Evaluations.  
3. Indicate locations of permanent bracing required to prevent buckling of individual truss members due to design loads.  
4. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.  
5. Show splice details and bearing details.  
Retain subparagraph below if products are required to withstand specific design loads and design responsibilities have been delegated to Contractor or if structural data are required as another way to verify products' compliance with performance requirements. Professional engineer qualifications are specified in Division 1 Section "Quality Requirements."  
C. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss fabricating firm.  
Coordinate paragraph below with qualification requirements in Division 1 Section "Quality Requirements" and as supplemented in "Quality Assurance" Article.  
D. Qualification Data: For Fabricator and Installer.  
Retain paragraph below if applicable; delete if species and grade are indicated for each use.  
E. Material Certificates: For dimension lumber and timber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.  
Insert specific model code organization in paragraph below or revise if report must be from another source.  
F. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:  
Edit list below to retain only those products retained in Part 2.  
1. Metal-plate connectors.  
2. Metal truss accessories.  
1.6 QUALITY ASSURANCE  
A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.  
Delete first subparagraph below if truss design is not delegated to manufacturer.  
1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.  
2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.  
TPI 1 added specific requirements for fabricator quality-assurance programs in the 2002 version, but does not require third-party inspection. Verify that local truss fabricators participate in third-party inspection programs; many do not.  
B. Fabricator Qualifications: Shop that participates in a recognized quality-assurance program that complies with quality-control procedures in TPI 1 and that involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction.  
C. Source Limitations for Connector Plates: Obtain metal connector plates from a single manufacturer.  
D. Comply with applicable requirements and recommendations of the following publications:  
TPI publications below are listed by title without alphanumeric designations in which the number represents year of issue. Designations in effect when this Section was updated appear in "Referenced Standards" Article in the Evaluations.  
1. TPI 1, "National Design Standard for Metal Plate Connected Wood Truss Construction."  
2. TPI DBS, "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses."  
3. TPI HIB, "Commentary and Recommendations for Handling, Installing & Bracing Metal Plate Connected Wood Trusses."  
E. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."  
Retain paragraph below if wood for trusses is required to be certified for LEED Credit MR 7, which requires that a minimum of 50 percent of wood-based materials be certified. See Evaluations.  
F. Forest Certification: Provide metal-plate-connected wood trusses produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria."  
1.7 DELIVERY, STORAGE, AND HANDLING  
A. Handle and store trusses to comply with recommendations of TPI HIB, "Commentary and Recommendations for Handling, Installing & Bracing Metal Plate Connected Wood Trusses."  
1. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.  
2. Protect trusses from weather by covering with waterproof sheeting, securely anchored.  
3. Provide for air circulation around stacks and under coverings.  
B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.  
1.8 COORDINATION  
A. Time delivery and erection of trusses to avoid extended on-site storage and to avoid delaying progress of other trades whose work must follow erection of trusses.  
PART 2 - PRODUCTS  
2.1 DIMENSION LUMBER  
A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.  
1. Factory mark each piece of lumber with grade stamp of grading agency.  
Delete first subparagraph below if authorities having jurisdiction require grade stamps on all materials.  
2. Provide dressed lumber, S4S.  
Select one of two options in subparagraph below. Verify availability of lumber with 15 percent maximum moisture content before retaining.  
3. Provide dry lumber with 19 percent maximum moisture content at time of dressing.  
Retain one of first three paragraphs and associated subparagraphs below. Usually retain first if truss fabricator provides truss design. First gives truss fabricator the greatest flexibility in lumber selection, but can only be used if fabricator provides truss design.

B. Grade and Species: For truss chord and web members, provide dimension lumber of any species, graded visually or mechanically, and capable of supporting required loads without exceeding allowable design values according to AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."  
Retain paragraph and applicable subparagraphs below if truss designs are shown on Drawings and if specifying lumber by grade and species. If fabricator provides truss design, below can also be retained instead of paragraph above to specify minimum acceptable grades. Verify availability of selections.  
Retain first paragraph below if truss fabricator designs trusses and requirement for minimum chord sizes is needed to provide stiffer members for nailing.  
C. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Division 6 Section "Rough Carpentry."  
2.2 TIMBER  
Delete this Article if not applicable. Preservative treatment is usually limited to wood exposed in wet and humid locations or geographical areas where termite infestation is extensive. See the Evaluations in Division 6 Section "Rough Carpentry" for discussion of treatment chemicals; some treatment chemicals increase rate of corrosion of galvanized truss plates.  
A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.  
1. Factory mark each piece of lumber with grade stamp of grading agency.  
Delete first subparagraph below if authorities having jurisdiction require grade stamps on all materials.  
2. Provide dressed lumber, S4S.  
Select one of two options in subparagraph below. Verify availability of lumber with 15 percent maximum moisture content before retaining.  
3. Provide dry lumber with 19 percent maximum moisture content at time of dressing.  
Retain one of first three paragraphs and associated subparagraphs below. Usually retain first if truss fabricator provides truss design. First gives the truss fabricator the greatest flexibility in lumber selection, but can only be used if fabricator provides truss design.  
B. Grade and Species: For truss chord and web members, provide dimension lumber of any species, graded visually or mechanically, and capable of supporting required loads without exceeding allowable design values according to AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."  
Retain paragraph and applicable subparagraphs below if truss designs are shown on Drawings and if specifying lumber by grade and species. If fabricator provides truss design, below can also be retained instead of paragraph above to specify minimum acceptable grades. Verify availability of selections.  
Retain first paragraph below if truss fabricator designs trusses and requirement for minimum chord sizes is needed to provide stiffer members for nailing.  
C. Permanent Bracing: Provide wood bracing that complies with requirements for miscellaneous lumber in Division 6 Section "Rough Carpentry."  
2.3 METAL CONNECTOR PLATES  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. Retain one of first two paragraphs and list of manufacturers below. See Division 1 Section "Product Requirements."  
A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:  
1. Alpine Engineered Products, Inc.  
2. Cherokee Metal Products, Inc.; Masengill Machinery Company.  
3. CompuTrus, Inc.  
4. Eagle Metal Products.  
5. Jager Building Systems, Inc.  
6. MiTek Industries, Inc.; a subsidiary of Berkshire Hathaway Inc.  
7. Robbins Engineering, Inc.  
8. TEE-LOK Corporation; a subsidiary of Berkshire Hathaway Inc.  
9. Truswal Systems Corporation.  
B. General: Fabricate connector plates to comply with TPI 1.  
Retain one or more of two paragraphs and associated subparagraph below.  
C. Hot-Dip Galvanized Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G60 (Z180) coating designation; and not less than 0.036 inch (0.9 mm) thick.  
Use for interior locations where for dimensional lumber and timber trusses.  
Type 304 stainless steel is usually standard; Type 316 gives better corrosion resistance for exposed applications in coastal environments.  
2.4 FASTENERS  
A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.  
B. Nails, Brads, and Staples: ASTM F 1667.  
Standard in paragraph below covers power-driven staples, nails, P-nails, and allied fasteners.  
C. Power-Driven Fasteners: NES NER-272.  
Delete remaining fastener types not required. Screws may be needed to assemble multi-ply girder trusses; bolts are generally only required for fastening to masonry or steel, expansion anchors for fastening to masonry.  
D. Wood Screws: ASME B18.5.1.  
E. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.  
1. Use for exposed timber trusses.  
2.5 METAL TRUSS ACCESSORIES  
See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. If naming manufacturers or products, retain one of three paragraphs and list of manufacturers below. Refer to Division 1 Section "Product Requirements."  
A. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Drawings or comparable products by one of the following:  
1. Cleveland Steel Specialty Co.  
2. Harlen Metal Products, Inc.  
3. KC Metals Products, Inc.  
4. Simpson Strong-Tie Co., Inc.  
5. Southeastern Metals Manufacturing Co., Inc.  
6. USP Structural Connectors.  
If retaining first option in first paragraph below, indicate design loads for metal truss accessories on Drawings.  
B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.  
C. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.  
Paragraph above is typical for most manufacturers and is suitable for most applications. Delete paragraph and subparagraph below if not required. Type 304 is usually standard for stainless steel; Type 316 gives better corrosion resistance for exposed applications in coastal environments.  
First five paragraphs below are examples only. Revise to suit Project or delete all if "Basis-of-Design Products" Paragraph is used and they are not needed to provide salient characteristics for products.  
First paragraph below, including option, is based on Simpson Strong-Tie's "H-2."  
D. Truss Tie-Downs (Hurricane or Seismic Ties): Bent strap tie for fastening roof trusses to wall studs below, 2-1/4 inches (57 mm) wide by 0.062 inch (1.6 mm) thick. Tie fits over top of truss and fastens to both sides of truss, top plates, and one side of stud below.  
Description in paragraph above is based on Simpson Strong-Tie's "H-7"; paragraph below, on Simpson Strong-Tie's "H-15."  
E. Roof Truss Clips: Angle clips for bracing bottom chord of roof trusses at non-load-bearing walls, 1-1/4 inches (32 mm) wide by 0.050 inch (1.3 mm) thick. Clip is fastened to truss through slotted holes to allow for truss deflection.  
Description in paragraph below is based on MiTek's "Stabilizer."  
F. Roof Truss Bracing/Spacers: U-shaped channels, 1-1/2 inches (38 mm) wide by 1 inch (25 mm) deep by 0.040 inch (1.0 mm) thick, made to fit between 2 adjacent trusses and accurately space them apart, and with tabs having metal teeth for fastening to trusses.  
2.6 MISCELLANEOUS MATERIALS  
A. Galvanizing Repair Paint: SSPC-Paint 20, with dry film containing a minimum of 94 percent zinc dust by weight.  
Retain paragraph below if protective coating of exposed face of connectors is required (for galvanized plates used with chemically treated wood or in unusual environmental conditions or exposed to weather). Select one system below or retain both if both are acceptable. Coatings are based on TPI 1 recommendations. Consider using stainless-steel connector plates instead.  
2.7 FABRICATION  
A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.  
B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.  
C. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated. Manufacturing tolerances permitted by TPI 1 vary according to length and height of trusses as follows. Length: 1/2 inch (13 mm) up to 30 feet (9.14 m) long, thereafter 3/4 inch (19 mm). Height: 1/4 inch (6.4 mm) up to 60 inches (1524 mm) high, thereafter 1/2 inch (13 mm).  
1. Fabricate wood trusses within manufacturing tolerances in TPI 1.  
D. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.  
PART 3 - EXECUTION  
3.1 INSTALLATION  
A. Install wood trusses only after supporting construction is in place and is braced and secured.  
B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.  
C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.  
D. Install and brace trusses according to TPI recommendations and as indicated.  
E. Install trusses plumb, square, and true to line and securely fasten to supporting construction.  
F. Space trusses as indicated, adjust and align trusses in location before permanently fastening.  
G. Anchor trusses securely at bearing points; use metal truss tie-downs or floor truss hangers as applicable. Install fasteners through each fastener hole in truss accessories according to manufacturer's fastening schedules and written instructions.  
Retain first paragraph and subparagraph below if built-up girder trusses are required. TPI 1 states it is truss designer's responsibility to design truss-to-girder connection.  
H. Securely connect each truss ply required for forming built-up girder trusses.  
1. Anchor trusses to girder trusses as indicated.  
I. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.  
1. Install bracing to comply with Division 6 Section "Rough Carpentry."  
Retain subparagraph below if floor trusses below are required.  
TPI 1 permits out-of-plumb tolerance of the lesser of D/50 or 2 inches (50 mm) maximum. Out-of-plane tolerances or bow is limited to the lesser of L/200 or 2 inches (50 mm) maximum. Location variances of 1/4 inch (6.4 mm) and a top-chord bearing gap of 1/2 inch (13 mm) for parallel-chord trusses are also permitted.  
J. Install wood trusses within installation tolerances in TPI 1.  
K. Do not cut or remove truss members.  
L. Replace wood trusses that are damaged or do not meet requirements.  
1. Do not alter trusses in field.

3.2 REPAIRS AND PROTECTION  
Delete paragraph below if option allowing inorganic boron treatment is not retained in Part 2 or if wood-preservative-treated lumber is not used.  
Retain first paragraph below instead of above if boron-treated wood is not used, but borate treatment of wood that has become wet is used to help prevent mold and mildew. Delete if site-applied boron treatment is specified in Division 2 Section "Termite Control."  
A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.  
B. Repair damaged galvanized coatings on exposed surfaces with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.  
Retain paragraph and subparagraph below if an added corrosion-resistant coating of metal connector plates is required.  
C. Protective Coating: Clean and prepare exposed surfaces of metal connector plates. Brush apply primer, when part of coating system, and one coat of protective coating.  
1. Apply materials to provide minimum dry film thickness recommended by coating system manufacturer.  
END OF SECTION 06 17 00

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025

DATE

REVISION

No.

STATE OF MISSOURI  
MATTHEW K. BAIGREPOST  
Matthew K. Baigrepost  
NUMBER  
A-2024031006  
ARCHITECT

This drawing is the property of FUSION ARCHITECTS and is not to be reproduced or copied in whole or in part unless authorization given by FUSION ARCHITECTS. It is only to be used for the project and site specifically identified herein.  
Scales as stated hereon are valid on the original drawing only.  
These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. We will generally administer construction.  
By: *Matthew Baigrepost*

New Construction For Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086

3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
P. 225.706.4048 F. 225.706.4724  
tusionapp.com

PROJECT NO: 33-006-22

PHASE: Final Dev. Submittal

DATE: 04/13/21

PROJ. ARCHITECT: Designer

WOOD TRUSS SPECIFICATIONS

SHEET NO.  
G1.24  
OF







# PROPOSED TAKE 5 OIL CHANGE

## RTE 291 @ SE LANGSFORD RD LEE'S SUMMIT, MISSOURI



VICINITY MAP  
N.T.S

- NOTE:
- THIS PROJECT IS TO BE CONSTRUCTED WITHIN THE JURISDICTIONAL BOUNDARIES OF THE CITY OF LEE'S SUMMIT, MO.
  - UNLESS OTHERWISE NOTED ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF LEE'S SUMMIT, MO STANDARD SPECIFICATIONS AND DRAWINGS.

### SHEET INDEX

CIVIL		
1.	COVER	COVER SHEET
2.	SURVEY	
3.	ES-1	EROSION CONTROL PLAN
4.	ES-2	EROSION CONTROL DETAILS
5.	C-1	SITE PLAN
6.	C-1.1	JOINT LAYOUT PLAN
7.	C-2	GRADING PLAN
8.	C-2.1	PROFILES
9.	C-2.2	DETENTION BASIN PLAN
10.	C-3	UTILITY PLAN
11.	C-4.1	SITE DETAILS
12.	C-4.2	SITE DETAILS
13.	C-4.3	SITE DETAILS
14.	C-4.4	DRAINAGE DETAILS
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17.	C-4.7	UTILITY DETAILS
18.	C-4.8	UTILITY DETAILS
19.	C-4.9	UTILITY DETAILS

LANDSCAPE		
20.	L-1.0	LANDSCAPE PLAN
21.	L-1.2	LANDSCAPE DETAILS

### DEVELOPER

DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302



RELEASED FOR CONSTRUCTION As Noted on Plans Review		
REVISION	10/24/2024	KRG
	REVISED PER CITY	

HIGH TIDE  
CONSULTANTS LLC

434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com

SIGNATURE

OCTOBER 24, 2024  
DATE

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN KRG
CHECKED RCG
ISSUED DATE 07/30/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 COVER

SHEET  
COVER



# TOPOGRAPHIC SURVEY

## SURVEY PREPARED FOR

DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO. 80302  
TODD MINIS, MANAGING PARNTER  
todd@drivenassets.com

## SURVEY NOTES

- INFORMATION AS SHOWN FOR UNDERGROUND UTILITIES HAS BEEN COMPILED FROM THE RECORDS OF VARIOUS UTILITY COMPANIES CONCERNED, AND AS MARKED IN THE FIELD BY THE MISSOURI ONE CALL SYSTEM, 1 (800) 344-7483. WHEN PRECISE LOCATIONS OF UNDERGROUND UTILITIES ARE NEEDED PRIOR TO EXCAVATION OR CONNECTIONS, THE VARIOUS UTILITY COMPANIES CONCERNED ARE TO FURNISH A CREW TO POINT OUT THE LOCATIONS AT THE JOB SITE. Missouri One Call Ticket #232351453.
- CONTOURS SHOWN HEREON ARE 1 FOOT INTERVALS AND BASED NAVD88.
- BASIS OF BEARINGS: MISSOURI STATE PLANE, WEST ZONE.
- CLASS OF SURVEY: URBAN
- WE HAVE REVIEWED THE "FLOOD INSURANCE RATE MAP", COMMUNITY PANEL NO. 29095C0436G HAVING AN EFFECTIVE JANUARY 20, 2017 AS PUBLISHED BY FEDERAL EMERGENCY MANAGEMENT AGENCY. OUR REVIEW OF THIS MAP INDICATES THAT THIS PARCEL OF LAND LIES WITHIN ZONE X OTHER FLOOD AREAS, WHICH IS "AREAS OF 0.2%; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FORM 1% ANNUAL CHANCE FLOOD."

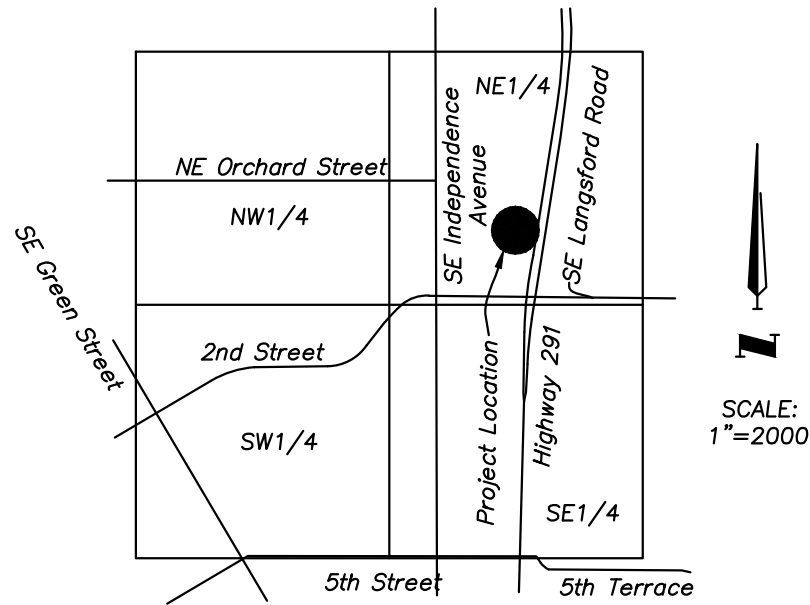
## LEGAL DESCRIPTION PER TITLE COMMITMENT

### TRACT I:

THE SOUTH 150 FEET OF THE EAST 150 FEET OF THE NORTH 300 FEET OF THE SOUTH 902 FEET OF THE EAST 880 FEET OF THE WEST ONE HALF OF THE NORTHEAST QUARTER OF SECTION 5, TOWNSHIP 47, RANGE 31, IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID SECTION 5, TOWNSHIP 47, RANGE 31; THENCE SOUTH 89 DEGREES, 22 MINUTES, 09 SECONDS EAST ALONG THE SOUTH LINE OF THE WEST ONE HALF OF SAID QUARTER SECTION, A DISTANCE OF 1321.26 FEET TO THE SOUTHEAST CORNER OF SAID WEST ONE HALF; THENCE NORTH 00 DEGREES, 40 MINUTES, 00 SECONDS EAST ALONG THE EAST LINE OF SAID WEST ONE HALF, A DISTANCE OF 602.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES, 22 MINUTES, 09 SECONDS EAST, PARALLEL WITH THE SOUTH LINE OF SAID WEST ONE HALF, A DISTANCE OF 150.00 FEET; THENCE NORTH 00 DEGREES, 40 MINUTES, 00 SECONDS EAST, PARALLEL WITH THE EAST LINE OF SAID WEST ONE HALF, A DISTANCE OF 150.00 FEET; THENCE SOUTH 89 DEGREES, 22 MINUTES, 09 SECONDS EAST, PARALLEL WITH THE SOUTH LINE OF SAID WEST ONE HALF, A DISTANCE OF 150.00 FEET TO A POINT ON THE EAST LINE OF SAID WEST ONE HALF, THENCE SOUTH 00 DEGREES, 40 MINUTES, 00 SECONDS WEST ALONG SAID EAST LINE, A DISTANCE OF 150.00 FEET TO THE POINT OF BEGINNING.

### TRACT II:

COMMENCING AT THE SOUTHWEST CORNER OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 5, TOWNSHIP 47, RANGE 31, LEE'S SUMMIT, JACKSON COUNTY, MISSOURI; THENCE ALONG THE WEST LINE OF SAID 1/2 OF 1/4 SECTION NORTH 2 DEGREES, 33 MINUTES, 49 SECONDS EAST 602 FEET TO THE TRUE POINT OF BEGINNING OF THIS TRACT; THENCE ALONG SAID WEST LINE NORTH 2 DEGREES, 33 MINUTES, 49 SECONDS EAST 478.79 FEET; THENCE SOUTH 88 DEGREES, 27 MINUTES, 48 SECONDS EAST 152.53 FEET TO A POINT ON THE WEST LINE OF THE RIGHT-OF-WAY OF M-291; THENCE ALONG SAID RIGHT-OF-WAY LINE AS FOLLOWS: SOUTH 16 DEGREES, 32 MINUTES, 36 SECONDS WEST 73.03 FEET TO A POINT 135 FEET OPPOSITE CENTER LINE STATION 117+00; THENCE SOUTH 11 DEGREES, 23 MINUTES, 57 SECONDS WEST 200 FEET TO A POINT 135 FEET OPPOSITE CENTER LINE STATION 119+00; THENCE SOUTH 1 DEGREE, 11 MINUTES, 44 SECONDS WEST 101.61 FEET TO A POINT 117 FEET OPPOSITE CENTER LINE STATION 120+00; THENCE PARALLEL TO SAID CENTER LINE SOUTH 11 DEGREES, 23 MINUTES, 57 SECONDS WEST 50 FEET; THENCE SOUTH 64 DEGREES, 21 MINUTES, 40 SECONDS WEST 66.40 FEET TO A POINT 170 FEET OPPOSITE CENTER LINE STATION 120+90; THENCE PARALLEL TO SAID CENTER LINE SOUTH 11 DEGREES, 23 MINUTES, 57 SECONDS WEST 31.03 FEET; THENCE LEAVING SAID RIGHT-OF-WAY NORTH 87 DEGREES, 26 MINUTES, 43 SECONDS WEST 35.61 FEET TO THE TRUE POINT OF BEGINNING



VICINITY MAP  
5-47-31

## LEGEND

- GA = GUY ANCHOR
- MS = METAL SIGN
- PP = POWER POLE
- SSMH = SANITARY SEWER MANHOLE
- Δ = SECTION CORNER
- SCO = SEWER CLEAN OUT
- W = WATER MARKER
- WV = WATER VALVE
- WS = WOOD SIGN
- B = BOLLARD
- PM = GAS METER
- LP = LIGHT POLE w/CONC. BASE

CP 50  
1/2" IRON BAR WITH SKW TRAVERSE CAP  
1. NORTH 3.0 FEET TO THE SOUTH EDGE OF AN ASPHALT ENTRANCE.  
2. SOUTHWEST 8.5 FEET TO THE WEST CURB RETURN.  
3. SOUTHEAST 24.0 FEET TO THE SOUTH END OF AN 18" CMP.

CP 51  
1/2" IRON BAR WITH SKW CAP  
1. EAST 10.50 FEET TO THE WEST EDGE OF HIGHWAY 291.  
2. WEST 15.5 FEET TO THE EAST EDGE OF A CONCRETE FLUME.

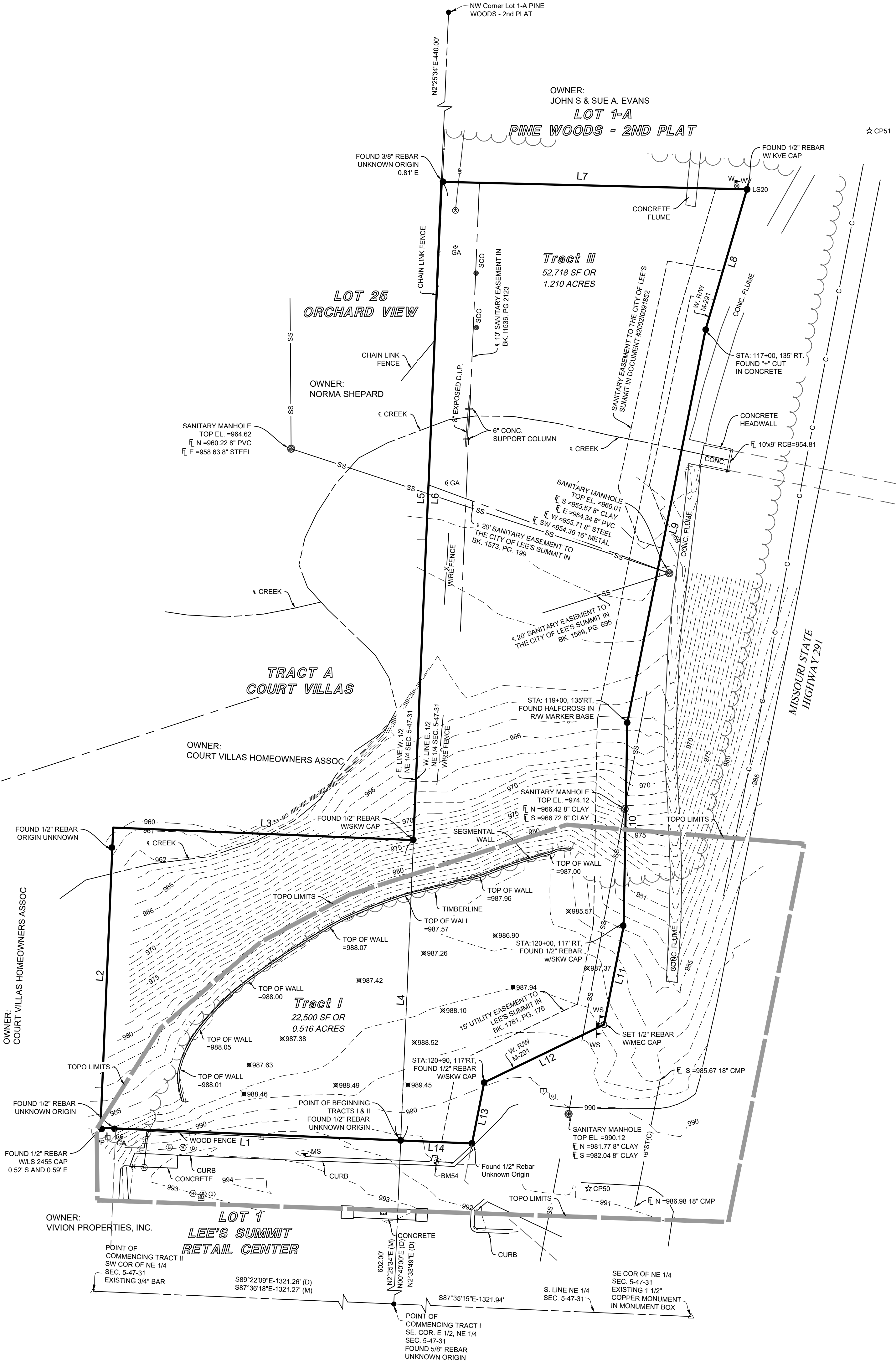
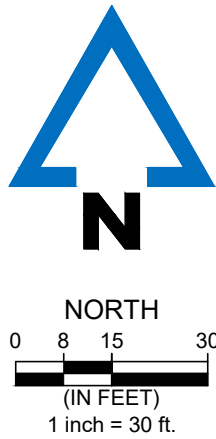
CP 52  
MAG & SHINER IN THE TOP OF A CURB AT THE NORTH END OF YELLOW NO PARKING.  
1. WEST 28.0 FEET TO THE EAST END OF AN ISLAND.  
2. EAST 41.8 FEET TO THE WEST EDGE OF HIGHWAY 291.  
3. SOUTH 36.8 FEET TO A FIRE HYDRANT.

BENCHMARK 53  
ELEV.: 994.99  
SET + CUT THE NORTH BOLT TOP FLANGE OF A FIRE HYDRANT ±150' SOUTHEAST OF THE SOUTHEAST CORNER OF THIS SURVEY.

BENCHMARK 54  
ELEV.: 991.62  
EXISTING SQUARE CUT ON BACK OF CURB 50'± EAST NORTHEAST OF THE NORTHEAST CORNER OF MEINEKE ON THE NORTH SIDE DRIVE AT THE FLUME.

PROJECT CONTROL POINTS TABLE				
CP#	NORTHING	EASTING	ELEV.	DESCRIPTION
50	1002321.14'	2828279.79'	990.78'	CP 50
51	1002848.95'	2828419.99'	979.14'	CP 51
52	1001994.38'	2828211.00'	997.15'	CP 52
53	1002195.40'	2828248.41'	994.99'	BM 53
54	1002334.35'	2828203.90'	991.68'	BM 54

LINE TABLE		
LINE NO.	BEARING	DISTANCE
L1	N87°36'18"W (M) N89°22'09"E (D)	150.00'
L2	N2°25'34"E (M) N00°40'00"E (D)	150.00'
L3	S89°22'09"E (D) S87°36'18"E (M)	150.00'
L4	N00°40'00"E (D) N2°25'34"E (M)	150.00'
L5	N2°33'48"E (D) N2°25'34"E (M)	328.79'
L6	N2°33'48"E (D) N2°25'34"E (M)	478.79'
L7	S88°27'48"E (D) S89°38'03"E (M)	152.53'
L8	S16°24'21"W (M) S16°32'38"W (D)	73.03'
L9	N11°15'42"W (M) S11°23'57"W (D)	200.00'
L10	S11°11'44"W (D) S10°32'29"W (D)	101.61'
L11	S11°15'42"W (M) S11°23'57"W (D)	50.00'
L12	S64°13'25"W (M) S64°21'40"W (D)	66.40'
L13	S11°15'42"W (M) S11°23'57"W (D)	31.03'
L14	N87°34'58"W (M) N87°26'43"W (D)	35.61'



## UTILITY WARNING

THE UTILITIES DEPICTED ON THIS DOCUMENT HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

## TOPOGRAPHIC SURVEY

ENGINEER: J. BURNETTE  
SURVEYOR: S. WHITAKER  
DRAWN BY: J. BURNETTE  
CREW CHIEF:  
REVISIONS:  
LEE'S SUMMIT, JACKSON CO. MISSOURI  
SEC. 5-47-R31  
20230124B-000  
9/13/2023  
SHEET NO. 01/01






1	10/24/2024	KRG
2	12/16/2024	KRG
3	1/17/2025	KRG
4	1/31/2025	KRG

**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



  
SIGNATURE  
JANUARY 31, 2025  
DATE  
B. SHANE  
ENGINEER  
NUMBER  
202100076  
STATE OF MISSOURI  
PROFESSIONAL ENGINEER

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN  
KRG  
CHECKED  
RCG  
ISSUED DATE  
07/30/2024  
ISSUED FOR  
PERMITTING  
PROJECT NO.  
22-218  
FILE  
22-218 ES-1 Erosion Control Plan  
SHEET  
ES-1

EROSION CONTROL NOTES:


- SEDIMENT AND EROSION CONTROL FACILITIES AND STORM DRAINAGE FACILITIES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN EROSION CONTROL FACILITIES DURING THE ENTIRE CONSTRUCTION PERIOD. FACILITIES ARE NOT TO BE REMOVED UNTIL COMPLETION OF THE PROJECT.
- ADDITIONAL EROSION CONTROL BMP'S MAY BE REQUIRED AS DEEMED NECESSARY BY GOVERNING AUTHORITIES.
- SILT FENCES SHALL BE CLEANED OR REPLACED WHEN SILT BUILDS UP TO 1/2 THE HEIGHT OF THE FENCE.
- EROSION CONTROL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EACH RAINFALL AND REPAIRED AS NECESSARY.
- ALL GRADED AREAS SHALL BE STABILIZED WITH A PERMANENT FAST GROWING COVER AND/OR MULCH UPON COMPLETION OF GRADING OPERATIONS. COMPLETION OF GRADING OPERATIONS DOES NOT MEAN AT THE END OF THE PROJECT. AS SOON AS FINAL GRADES ARE ESTABLISHED IN AN UNPAVED AREA, THE CONTRACTOR SHALL STABILIZE WITH A TEMPORARY GRASS OR PERMANENT SOD. IF A TEMPORARY GRASS IS APPLIED, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO APPLY A PERMANENT SEED OR SOD AT THE PROPER TIME OF YEAR.
- FILL SLOPES SHOULD BE PLANTED AS SOON AS AN AREA OF THE SITE IS BROUGHT TO FINAL GRADE. SURFACE RUNOFF SHALL BE INTERCEPTED AT THE TOP OF TEMPORARY AND PERMANENT SLOPES DURING CONSTRUCTION SO THAT WATER IS NOT ALLOWED TO FLOW OVER THE SLOPE FACE.
- THE GENERAL CONTRACTOR AND THE GRADING CONTRACTOR SHALL REVIEW THEIR GRADING SEQUENCE TO INSURE THAT THE LEAST AMOUNT OF LAND POSSIBLE AT ANY ONE TIME IS DISTURBED WITHOUT PERMANENT STABILIZATION.
- CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION ENTRANCES PRIOR TO ANY EARTHWORK OPERATIONS.
- CONTRACTOR SHALL MAINTAIN SILT FENCE FOR THE DURATION OF THE PROJECT UNTIL ACCEPTED BY THE OWNER AT NO EXPENSE TO OWNER.
- CONTRACTOR SHALL INSPECT ON A DAILY BASIS FOR NEEDED REMOVAL OF ANY ACCUMULATED SILTS, DEBRIS, OR REPAIR OF DAMAGED SILT FENCE AT NO ADDITIONAL EXPENSE TO OWNER.
- PRIOR TO CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN HEREON SHALL BE IN PLACE. CLEARING AND GRUBBING OPERATIONS WILL BE ENGAGED IN ONLY AS NECESSARY TO ALLOW THE PLACEMENT OF EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN HEREON UNTIL ALL SUCH MEASURES ARE IN PLACE.
- THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH ALL MISSOURI DEPT. OF NATURAL RESOURCES NPDES STORM WATER GENERAL PERMIT REQUIREMENTS THROUGHOUT THE DURATION OF CONSTRUCTION.
- CONTRACTOR SHALL UPDATE MAP AS NEEDED DURING CONSTRUCTION TO INDICATE LOCATIONS OF PORTABLE TOILETS, MATERIAL STORAGE AREAS, CONCRETE WASHOUTS, ETC. AND TO DOCUMENT BMP INSTALLATION AND CHANGES.


BMP MAINTENANCE EROSION NOTES:

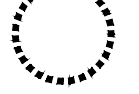
ALL MEASURES STATED ON THIS SITE MAP SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION & SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, & REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

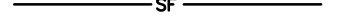
- INLET PROTECTION DEVICES & BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
- ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, & RESEEDED AS NEEDED.
- SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
- THE CONSTRUCTION ENTRANCE / EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS AS CONDITIONS DEMAND.
- THE TEMPORARY PARKING & STORAGE AREA PROVIDED BY CONTRACTOR SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING & STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
- PRIOR TO LEAVING THE SITE, ALL VEHICLES SHALL BE CLEANED OF DEBRIS. ANY DEBRIS &/OR SEDIMENT REACHING THE PUBLIC STREET SHALL BE CLEANED IMMEDIATELY BY A METHOD OTHER THAN FLUSHING.


EROSION CONTROL LEGEND

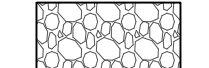
 CONSTRUCTION ENTRANCE

 INLET PROTECTION

 OUTLET CONTROL PROTECTION

 TEMPORARY SILT FENCE

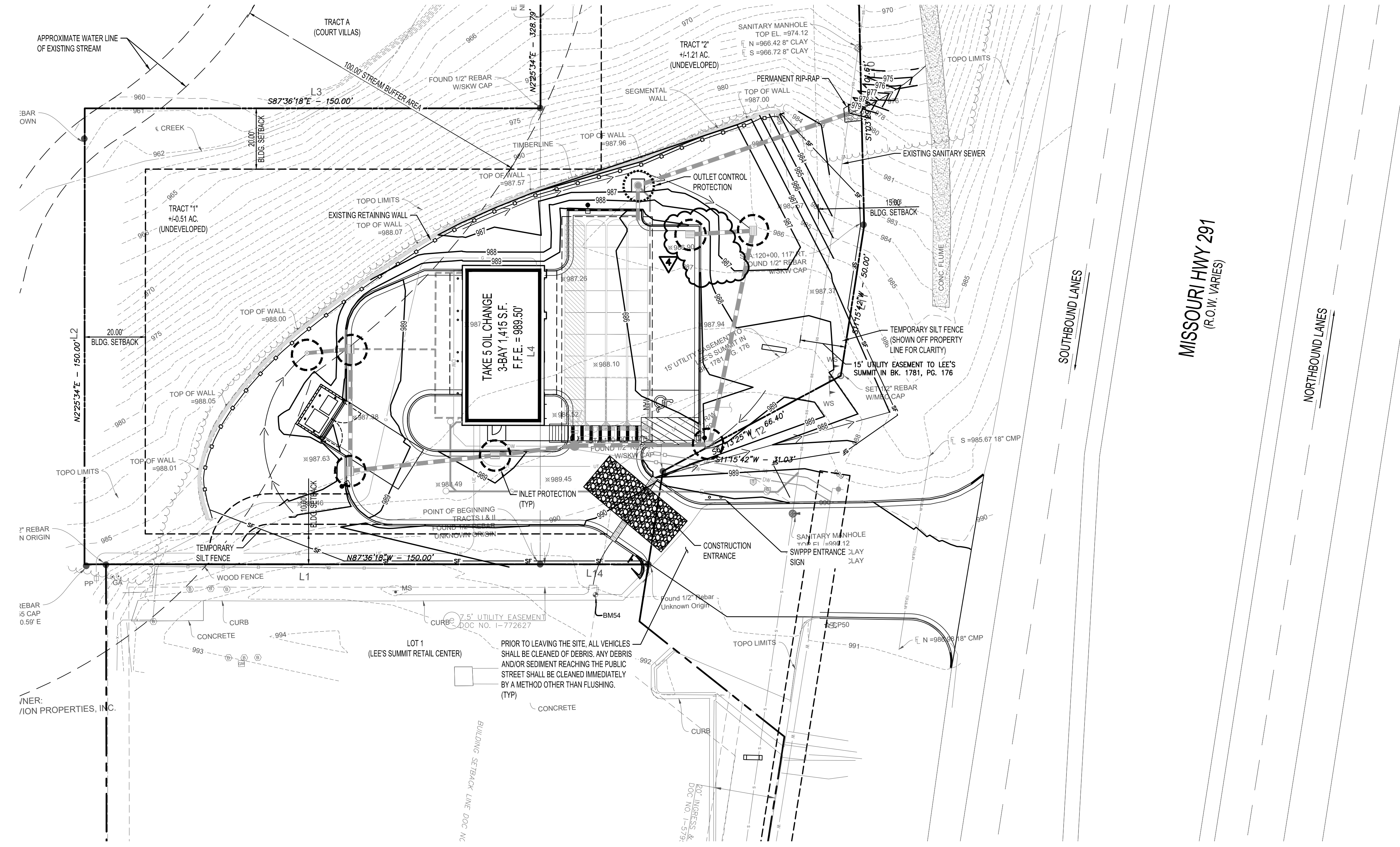
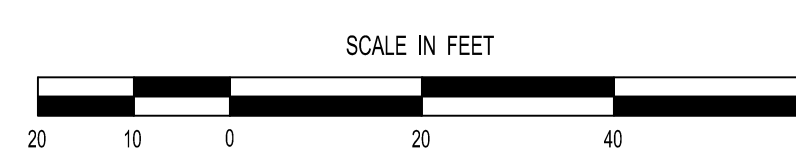
 STORM DRAIN PIPE

 PERMANENT RIP-RAP

REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES



EROSION  
CONTROL PLAN



ACCORDING TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES GIS MAP, NO EXISTING OIL AND GAS WELLS ARE LOCATED ON SITE.



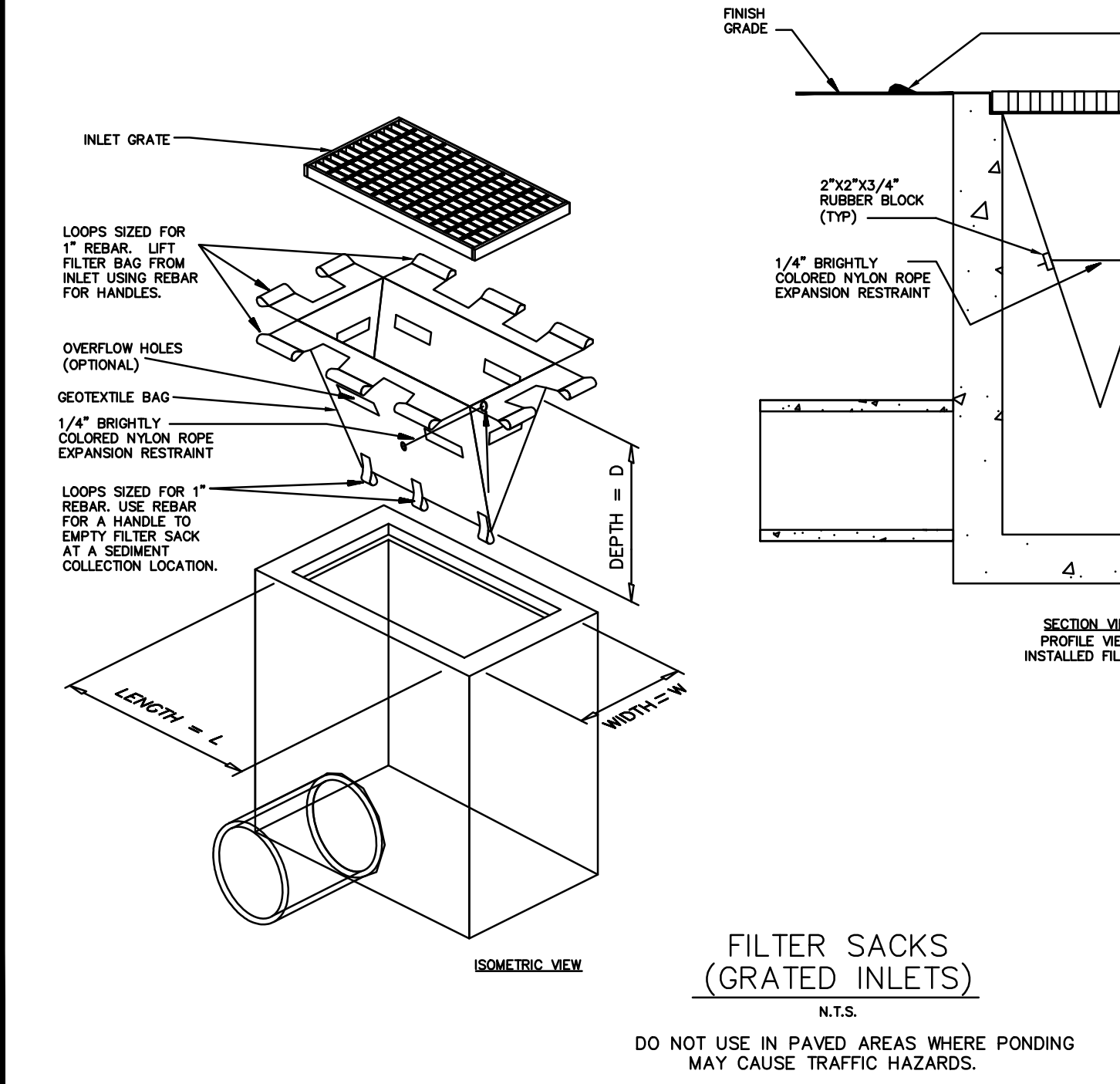
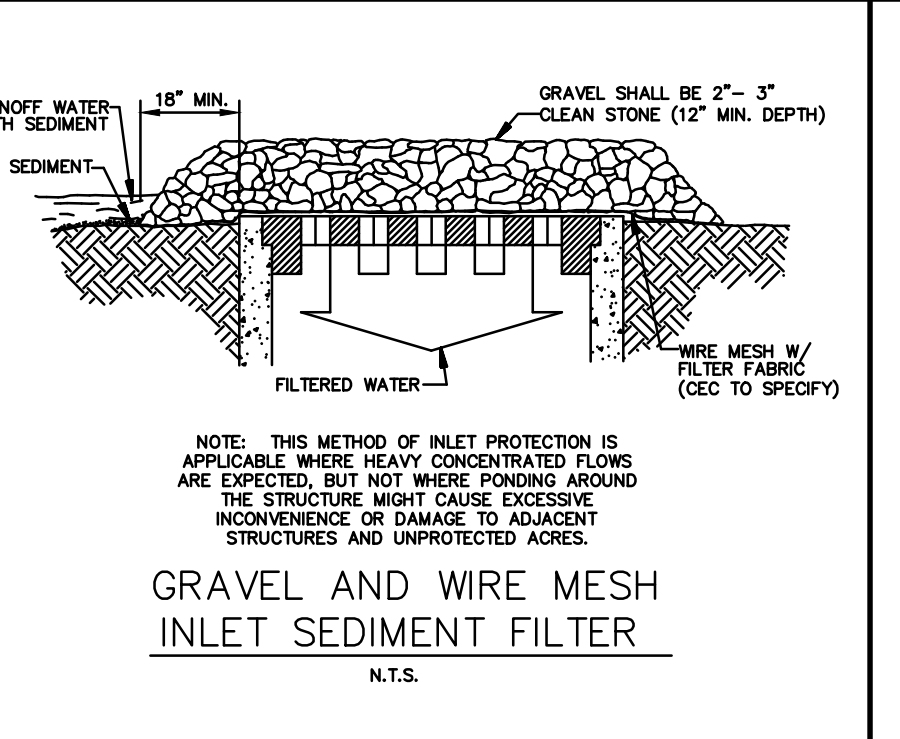
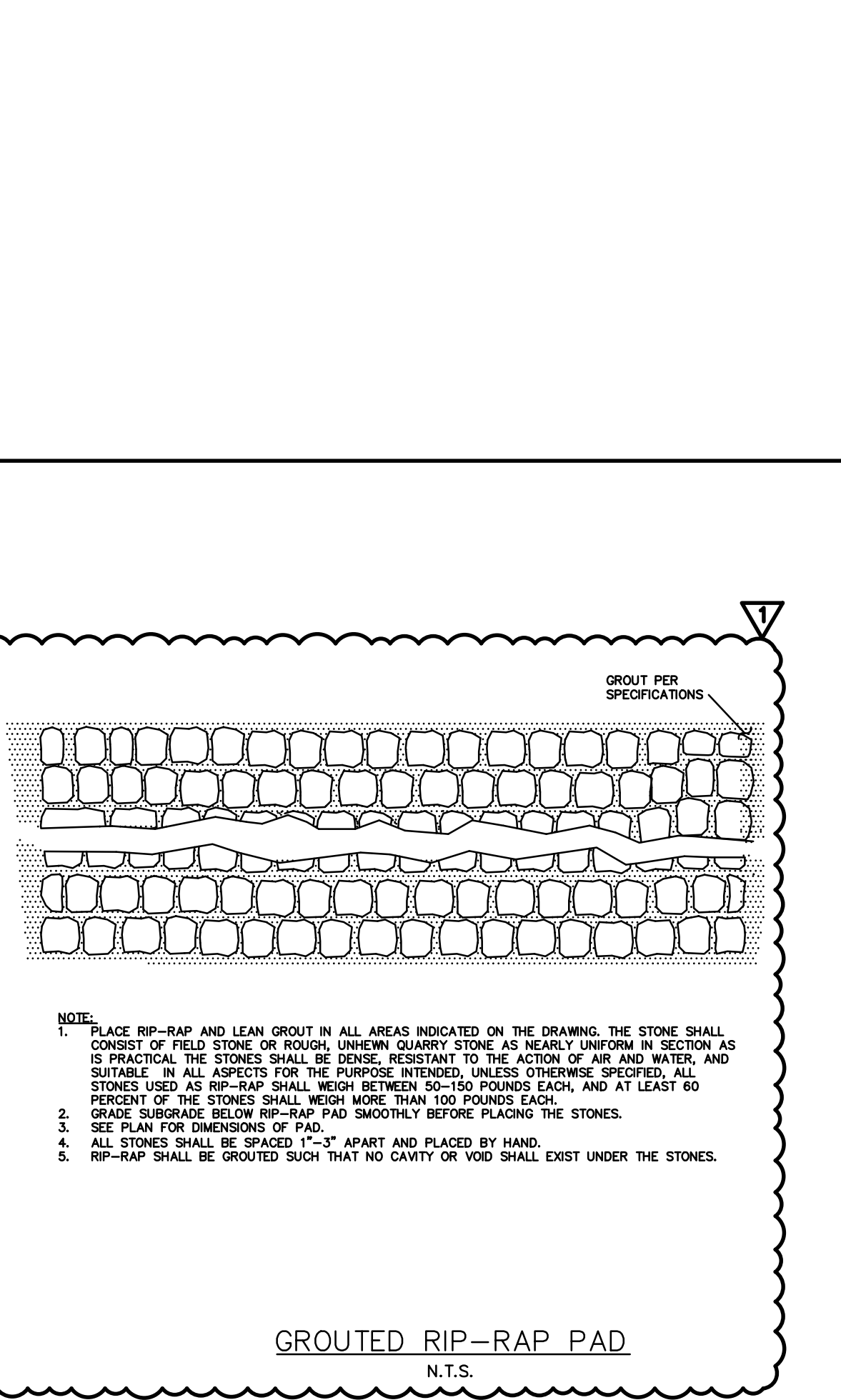
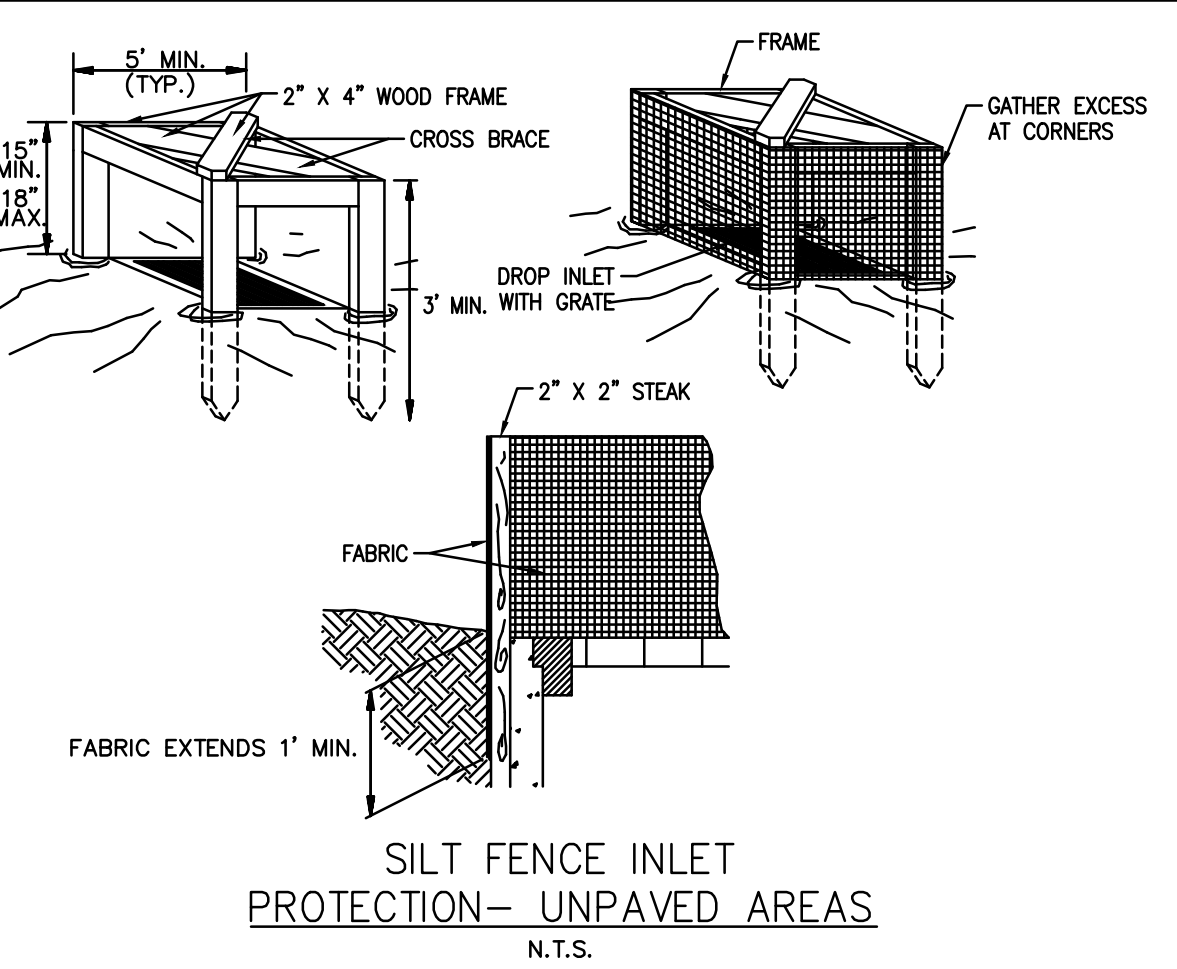
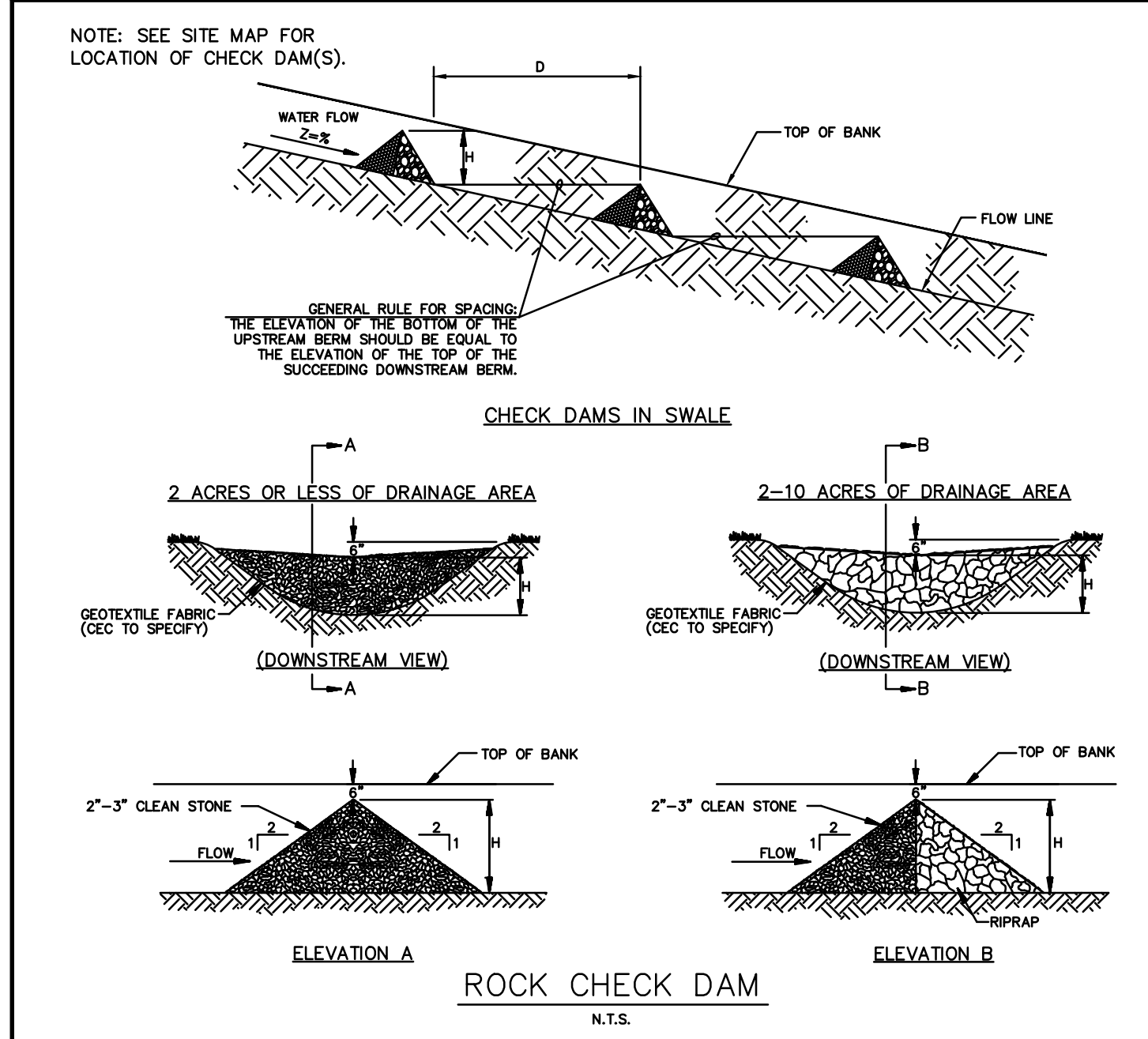
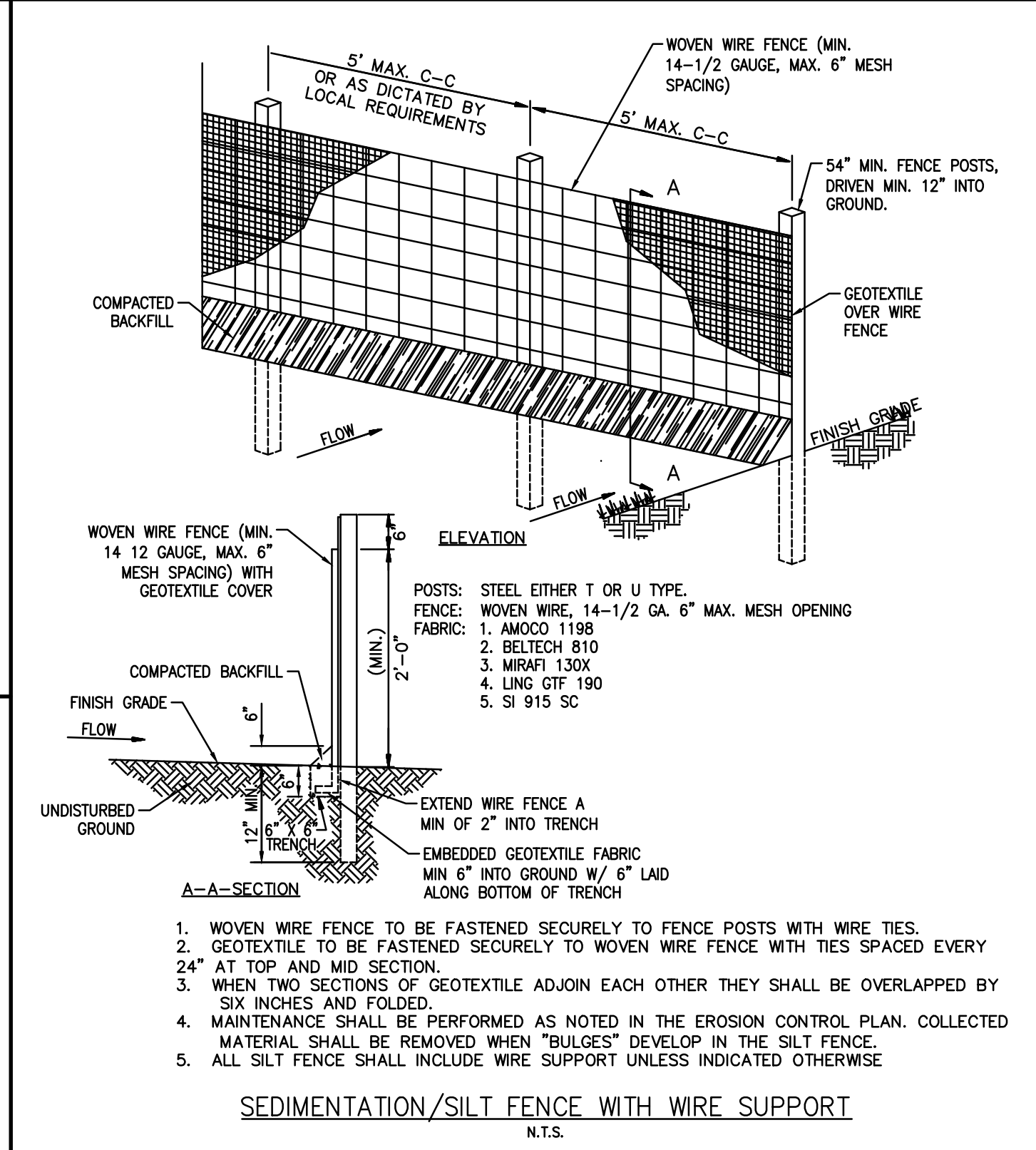
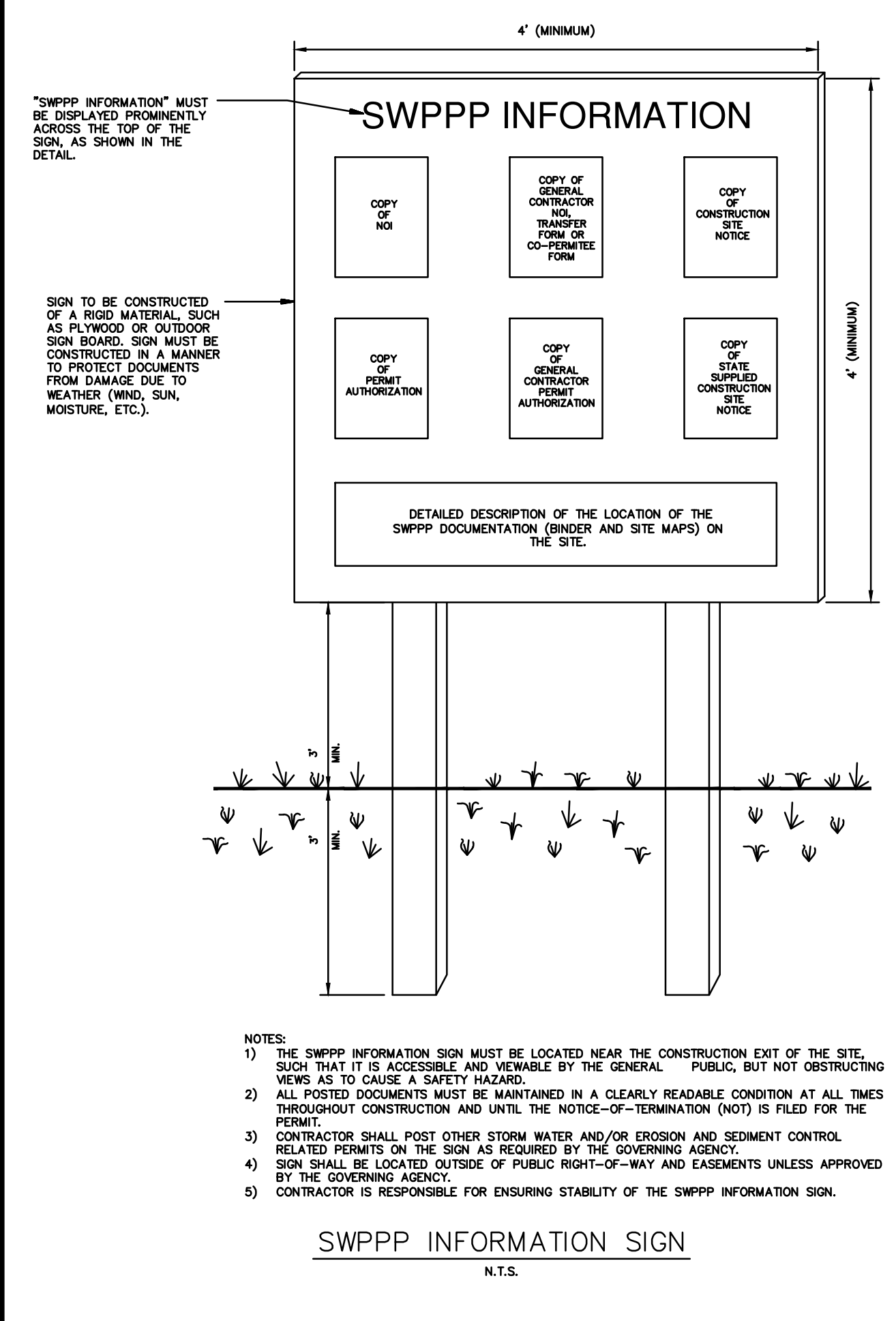
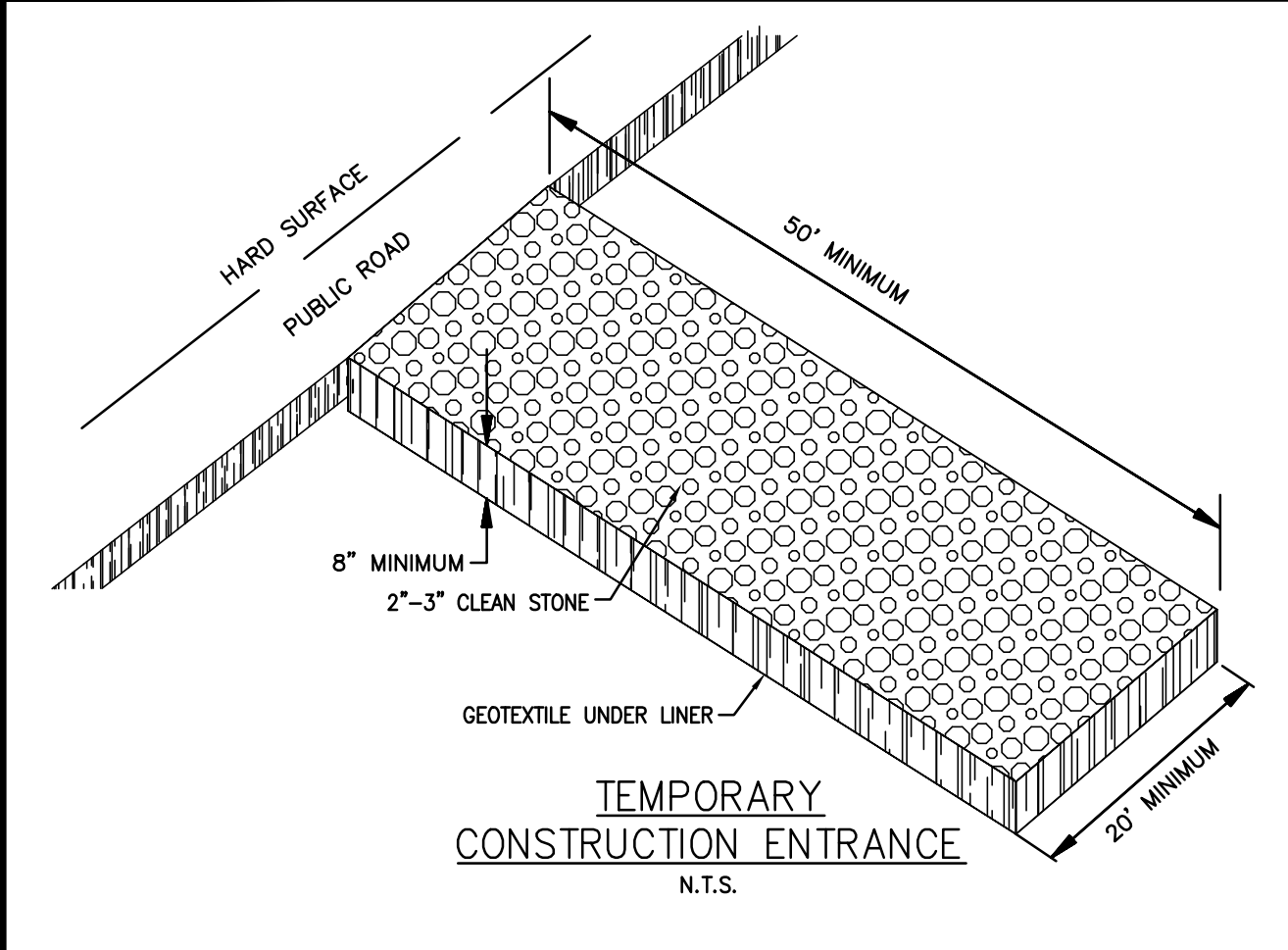
**HIGH TIDE CONSULTANTS LLC**  
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COVINGTON, LA 70433  
www.hightidela.com



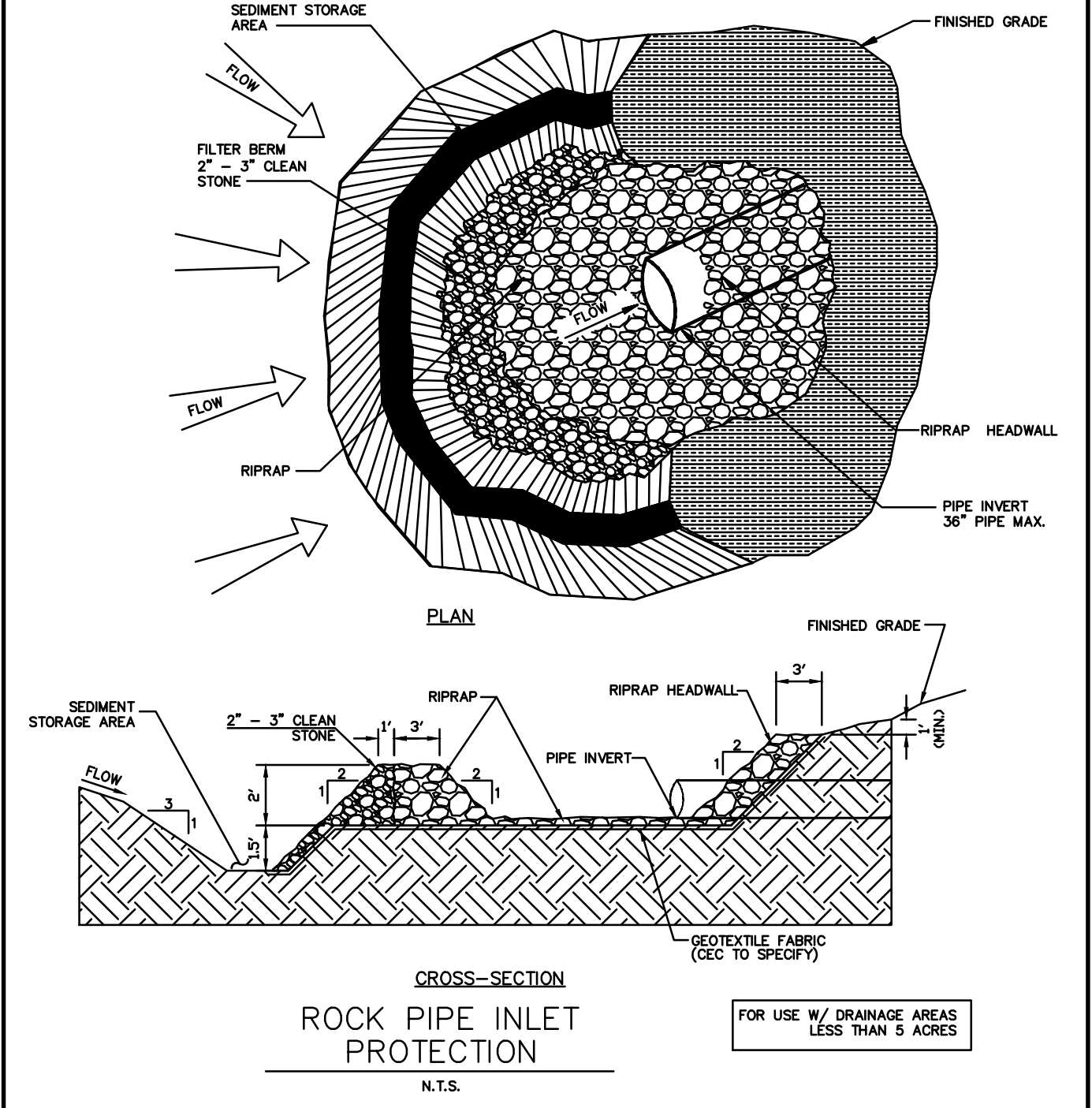
**PROFESSIONAL ENGINEER**  
B. SHANE GUIN  
NUMBER 202100076  
DATE: OCTOBER 24, 2024

**PROPOSED TAKE 5**  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER CO 80302

DRAWN KRG  
CHECKED RCG  
ISSUED DATE 07/30/2024  
ISSUED FOR PERMITTING  
PROJECT NO. 22-218  
FILE 22-218 C-4 Details  
SHEET ES-2



LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE			
PROPERTIES	TEST METHOD	UNITS	
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS	
GRAB TENSILE ELONGATION	ASTM D-4632	20 %	
PUNCTURE	ASTM D-4633	120 LBS	
MULLEN BURST	ASTM D-3786	800 PSI	
TRAPEZOID TEAR	ASTM D-4633	120 LBS	
UV RESISTANCE	ASTM D-4355	80 %	
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE	
FLOW RATE	ASTM D-4491	40 GAL/MIN/50 FT	
PERMITTIVITY	ASTM D-4491	0.55 SEC -1	
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE			
PROPERTIES	TEST METHOD	UNITS	
GRAB TENSILE STRENGTH	ASTM D-4632	285 LBS	
GRAB TENSILE ELONGATION	ASTM D-4632	20 %	
PUNCTURE	ASTM D-4633	135 LBS	
MULLEN BURST	ASTM D-3786	420 PSI	
TRAPEZOID TEAR	ASTM D-4633	45 LBS	
UV RESISTANCE	ASTM D-4355	80 %	
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE	
FLOW RATE	ASTM D-4491	200 GAL/MIN/50 FT	
PERMITTIVITY	ASTM D-4491	1.5 SEC -1	

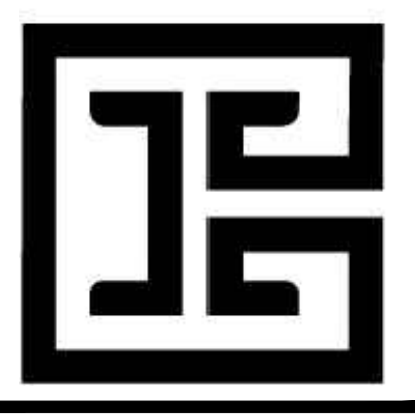



## EROSION CONTROL DETAILS



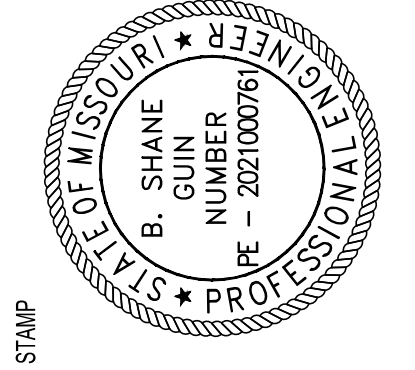
REVISION		
1	10/24/2024	KRG
2	12/17/2024	KRG
3	2/10/2025	KRG

**HIGH TIDE CONSULTANTS LLC**  
434 N. COLUMBIA ST., SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



  
SIGNATURE

FEBRUARY 10, 2025  
DATE

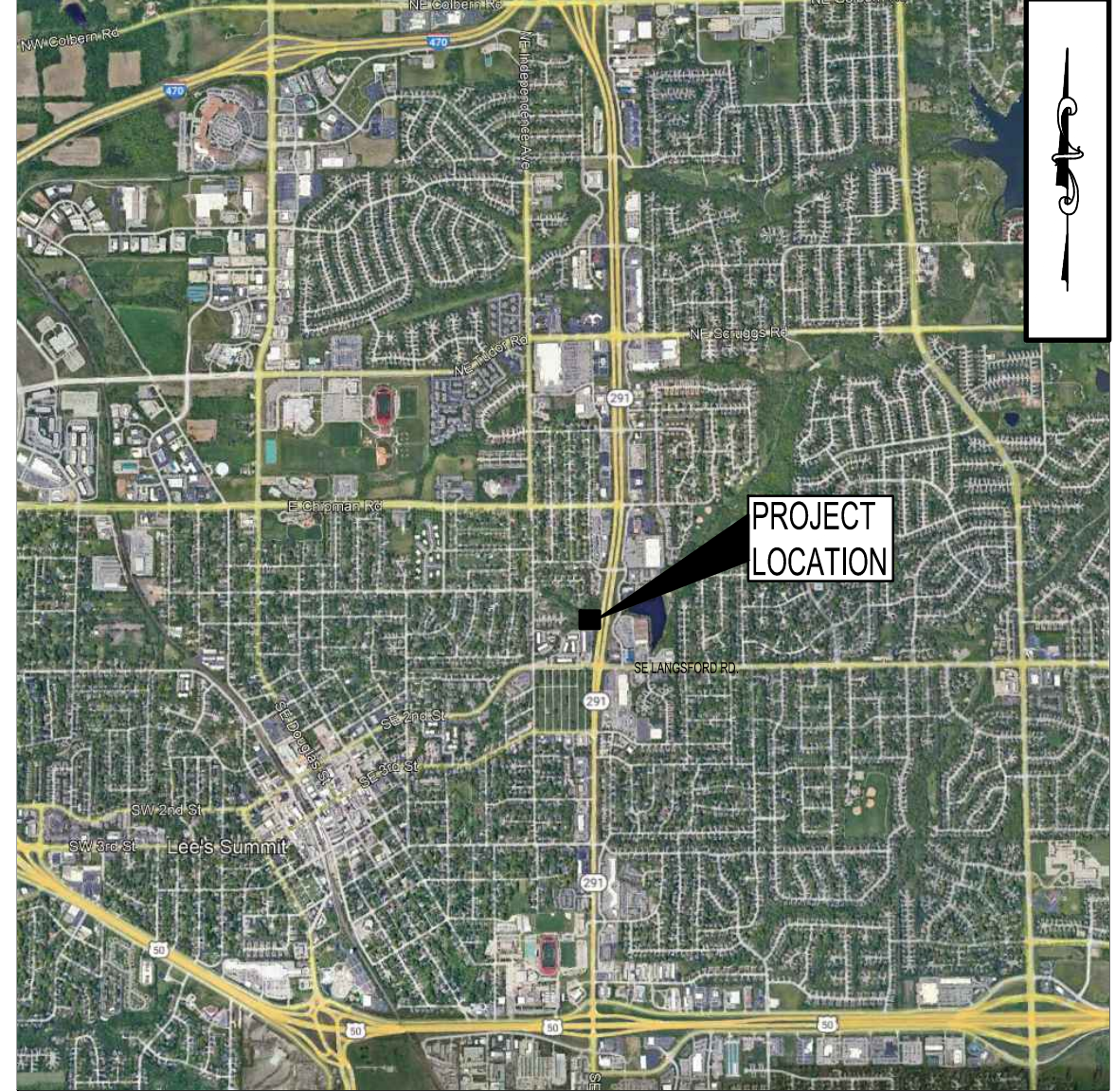
  
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PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN	KRG
CHECKED	RCG
ISSUED DATE	07/30/2024
ISSUED FOR	PERMITTING
PROJECT NO.	22-218
FILE	22-218 C-1 Site Plan

SHEET  
**C-1**




VICINITY MAP  
NTS


PARKING ANALYSIS

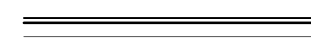
TAKE 5 OIL	+/- 1,415 S.F.
PARKING REQUIRED	10 SPACES
PARKING PROVIDED	10 SPACES (INCLUDING 3 BAYS)


\*CITY PARKING REQUIREMENT  
3 SPACES PER BAY, BAYS MAY BE COUNTED AS A PARKING SPACE


LEGEND


 PROPERTY LINE

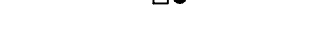
 PROPOSED BUILDING


 CG-1 CONCRETE CURB


 CG-1 CONCRETE CURB  
w/ PAVEMENT TURN DOWN


 PARKING COUNT


 SITE LIGHTING FIXTURE


 REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES

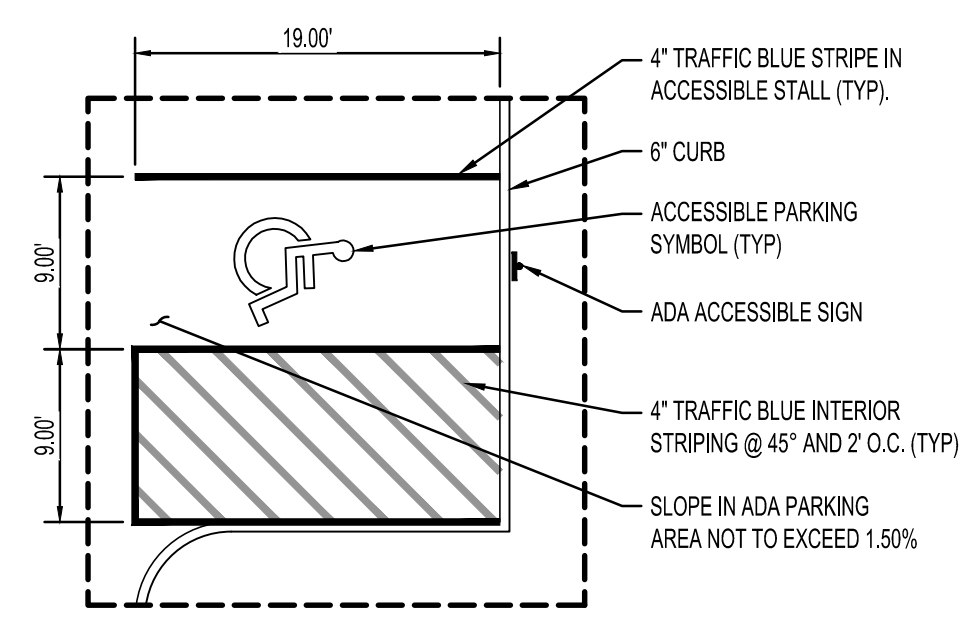
 STANDARD DUTY CONCRETE PAVEMENT

 HEAVY DUTY CONCRETE PAVEMENT

 HEAVY DUTY REINFORCED CONCRETE  
DUMPSTER PAD

 STAINED CONCRETE

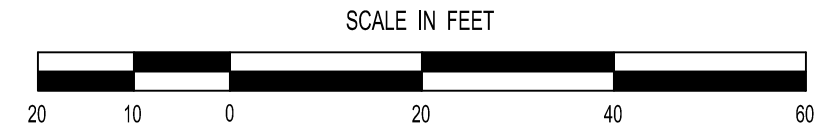
 SIDEWALK



ADA DETAIL  
N.T.S.

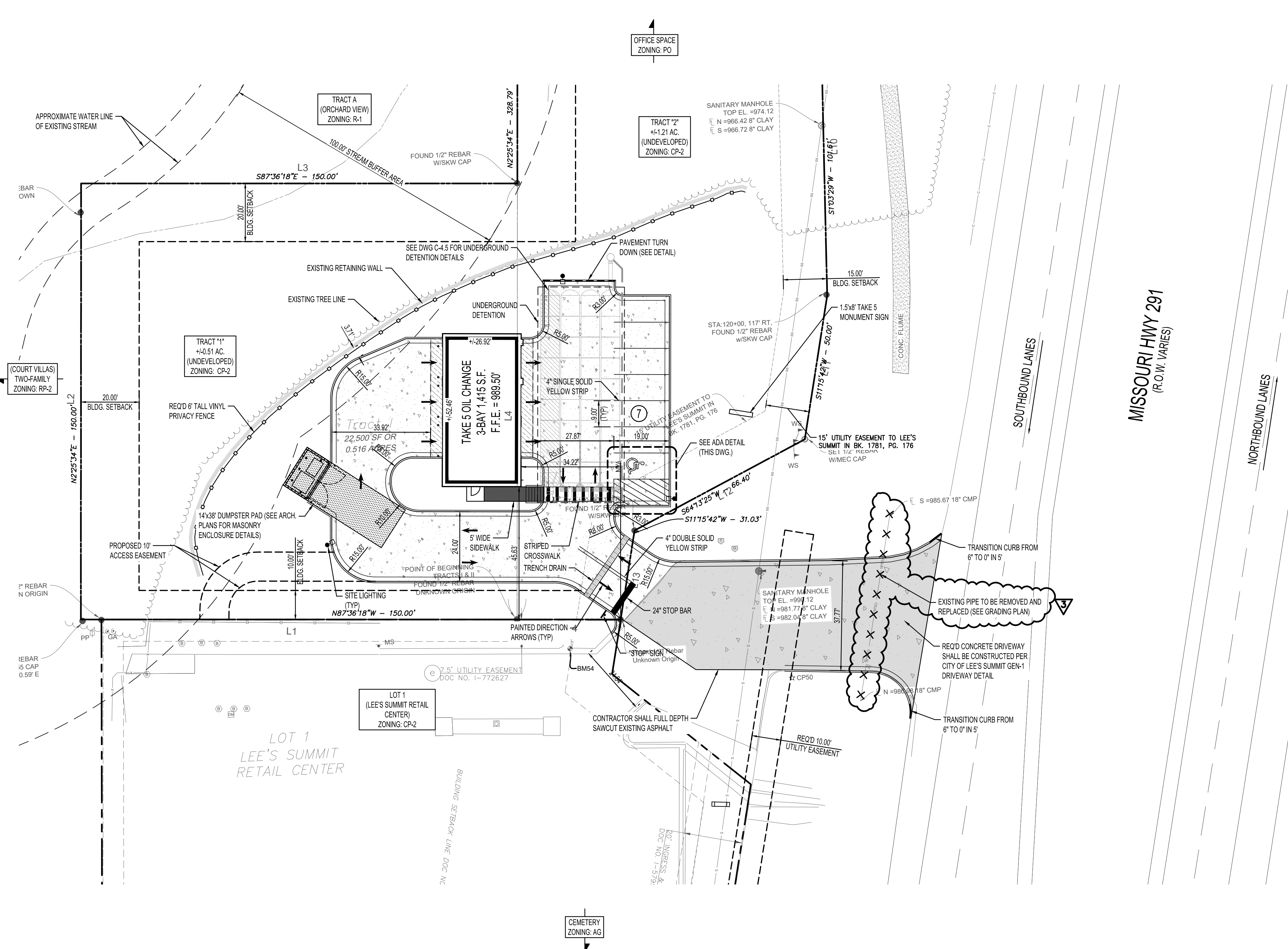


SITE PLAN



SITE DATA SUMMARY	
ZONING	CP-2
PROPOSED USE	AUTOMOBILE SERVICE
BUILDING AREA (GROSS SQUARE FOOTAGE)	1,415 S.F.
LAND AREA	21,501.56 S.F.
IMPERVIOUS SURFACE	10,042.20 S.F.
FLOOR AREA RATIO (FAR)	1,415/20,501 = 0.07 < 0.55 MAX

FLOOD NOTE:  
THIS PROPERTY LIES WITHIN FLOOD ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE LIMITS OF THE 0.2% ANNUAL CHANCE FLOOD PLANE, AND OTHER FLOOD AREAS AS SHOWN ON THE FLOOD INSURANCE RATE MAP PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, COMMUNITY NO. 29 174 0436G AND DATED JANUARY 20, 2017



ACCORDING TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES GIS MAP, NO EXISTING OIL AND GAS WELLS ARE LOCATED ON SITE.



GENERAL PAVING NOTES

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY OF LEE'S SUMMIT AND MCDOT REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING BENCHMARK.
- ALL NECESSARY PERMITS AND APPROVALS FROM AGENCIES GOVERNING THE CONSTRUCTION OF THIS WORK SHALL BE SECURED PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL AREAS INDICATED TO REMAIN UNDISTURBED OR TO REMAIN AS BUFFERS, ALL PROPERTY CORNERS, AND REPLACING ALL PINS DAMAGED OR ELIMINATED DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OR DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
- ANY WORK IN THE RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT'S STANDARD DRAWINGS AND SPECIFICATIONS.
- PAVEMENT JOINTS SHOWN HEREIN ARE PROVIDED FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE PAVEMENT JOINT DETAILS PROVIDED IN THE DETAIL SHEETS.
- PAVEMENT JOINTS SHALL BE SAWCUT AS SOON AS THE CONCRETE HAS REACHED SUFFICIENT STRENGTH TO SUPPORT THE SAWING EQUIPMENT AND TEARING OF CONCRETE DOES NOT OCCUR.
- JOINTS SHALL BE SEALED WITH APPROVED EXTERIOR PAVEMENT JOINT SEALANTS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. JOINTS SHALL BE CELAN AND DRY PRIOR TO THE APPLICATION OF THE SEALANT.
- CONSTRUCT EXPANSION, WEAKENED PLANE CONTROL (CONTRACTION), AND CONSTRUCTION JOINTS STRAIGHT WITH FACE PERPENDICULAR TO THE CONCRETE SURFACE.

JOINT LAYOUT NOTES

- A SUGGESTED JOINT LAYOUT PLAN HAS BEEN PROVIDED. THE CONTRACTOR SHALL ADJUST THE JOINT LAYOUT AS REQUIRED TO MEET ALL SPACING REQUIREMENTS AND ADJUST TO CONSTRUCTION SEQUENCING.
- TRANSVERSE JOINTS SHALL BE PLACED PERPENDICULAR TO THE LONGITUDINAL JOINTS SHOWN AT A SPACING NO LARGER THAN 1.3 TIMES THE SPACING OF THE LONGITUDINAL JOINT. FOR EXAMPLE, IF THE SPACING BETWEEN THE LONGITUDINAL JOINTS IS 10 FEET, THE MAXIMUM SPACING FOR THE ASSOCIATED TRANSVERSE JOINT SHALL BE 13 FEET.
- IN THE AREAS WITH HORIZONTAL CURVES, THE LONGITUDINAL JOINTS SHALL BE TRUE OFFSETS OF THE CURVES. THE TRANSVERSE JOINTS SHALL BE RADIAL TO THAT HORIZONTAL CURVE. SEE THE LAYOUT SHOWN AND APPLY THE SAME PRINCIPAL TO THE REMAINDER OF THE SITE.
- WHERE JOINTS DO NOT FALL PERPENDICULAR TO A PAVEMENT EDGE, A TWO FOOT MINIMUM LENGTH OF JOINT SHALL BE TURNED PERPENDICULAR TO THE PAVEMENT EDGE TO AVOID "POINTS" IN PANELS.
- SMOOTH BARS IN RACKS SHALL BE HORIZONTAL AND PERPENDICULAR TO THE JOINT.
- CRACKED PANELS OR SPALLS AT JOINT OR PAVEMENT EDGES SHALL BE REPAIRED OR THE PANEL COMPLETELY REMOVED AND REPLACED AT THE COMPLETE DISCRETION OF THE ENGINEER. THE GENERAL LOGIC TO BE USED BY THE ENGINEER FOLLOWS FPA ADVISORY CIRCULAR 180-5370-10F DATED 9/30/2011 UNDER SECTIONS 501.4.19 AND 501.4.20 BUT THE FINAL CRITERIA IS LEFT UP TO THE ENGINEER. ANY REQUIRED REPAIRS INCLUDING COMPLETE REMOVAL OF THE PANEL SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO PAVING DETAIL SHEET FOR JOINT DETAILS.
- JOINTS SHALL BE 90° AT THE FACE OF CURB.
- NO PANEL SHALL BE SMALLER THAN 4' IN ANY DIRECTION. FOR RECTANGULAR PANELS, THE LENGTH OF THE LONG SIDE SHALL NOT EXCEED TWICE THE LENGTH OF THE SHORT SIDE.
- AVOID IRREGULAR SHAPES.
- USE SELF LEVELING SILICONE SEALANT. COLOR TO MATCH PAVEMENT.
- ALL EARTHWORK, SITE PREPARATION, AND PAVEMENT CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS.
- JOINT LAYOUT SHALL BE ADJUSTED IN THE FIELD AS NECESSARY TO ACCOMMODATE EXACT LOCATIONS OF STRUCTURES INCLUDING MANHOLES, CATCH BASINS, FLUMES, STOOPS, ETC.

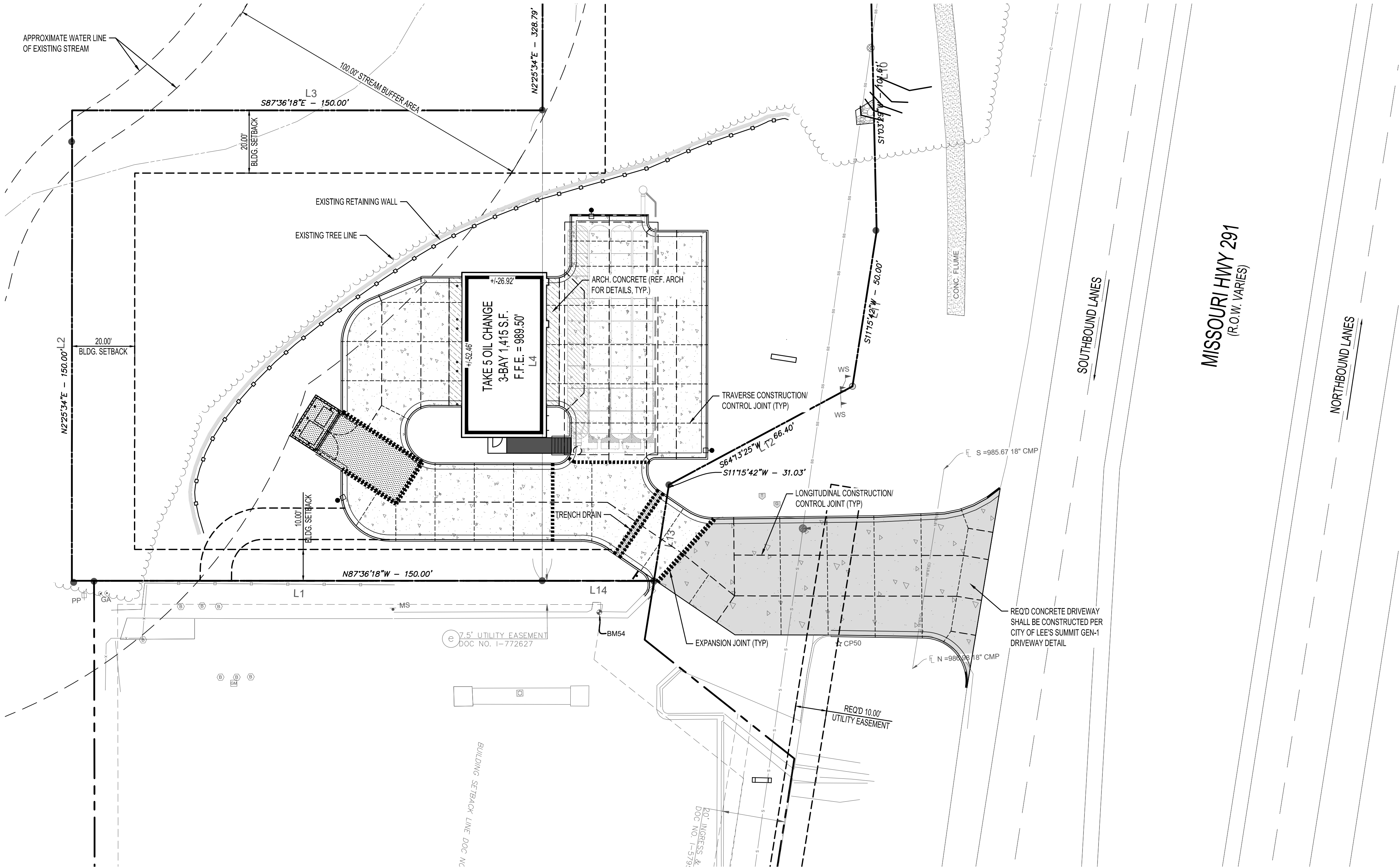
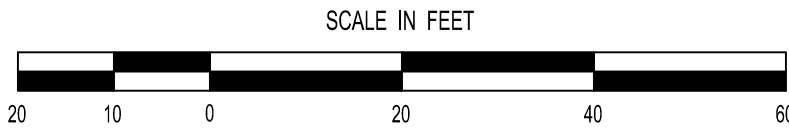
LEGEND

	PROPERTY LINE		STANDARD DUTY CONCRETE PAVEMENT (12.5' MAX JOINT SPACING)
	PROPOSED BUILDING		HEAVY DUTY CONCRETE PAVEMENT (15.0' MAX JOINT SPACING)
	CG-1 CONCRETE CURB		HEAVY DUTY REINFORCED CONCRETE DUMPSTER PAD
	CG-1 CONCRETE CURB w/ PAVEMENT TURN DOWN		STAINED CONCRETE
	SITE LIGHTING FIXTURE		SIDEWALK
			LONGITUDINAL CONSTRUCTION/CONTROL JOINT
			TRAVERSE CONSTRUCTION/CONTROL JOINT
			EXPANSION JOINT

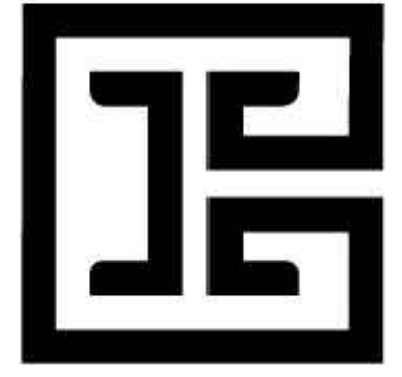
REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES.



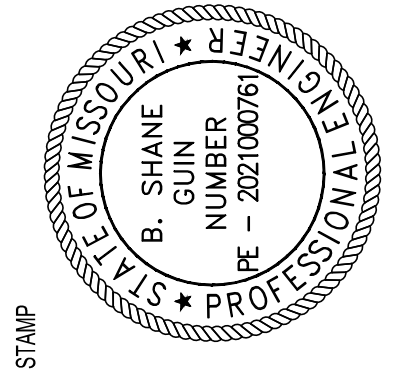
JOINT LAYOUT  
PLAN



HIGH TIDE  
CONSULTANTS LLC  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



SIGNATURE  
B. SHANE  
JANUARY 31, 2025  
DATE



PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN  
KRG  
CHECKED  
RCG  
ISSUED DATE  
07/30/2024  
ISSUED FOR  
PERMITTING  
PROJECT NO.  
22-218  
FILE  
22-218 C-1.1 Joint Layout Plan

SHEET  
C-1.1



**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



**PROFESSIONAL ENGINEER**  
B. SHANE  
G. SHANE  
NUMBER  
202100076  
DATE  
FEBRUARY 14, 2025  
SIGNATURE  
DATE

**PROPOSED TAKE 5**  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN  
KRG  
CHECKED  
RCG  
ISSUED DATE  
07/30/2024  
ISSUED FOR  
PERMITTING  
PROJECT NO.  
22-218  
FILE  
22-218 C-2 Grading Plan

SHEET  
**C-2**

**GRADING NOTES**

- CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING FEATURES, INCLUDING REMOVAL OF ANY EXISTING UTILITIES UNLESS OTHERWISE NOTED ON THE PLANS. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY LIMITS.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- PRECAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.
- EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- IF ANY EXISTING STRUCTURES SHOWN TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY MCCLURE. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
- ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS ESTABLISHED.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARD OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES.
- ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
- ALL PIPES AND STRUCTURES WITHIN THE STREET RIGHT-OF-WAY SHALL BE PER MISSOURI DEPARTMENT OF TRANSPORTATION STANDARDS & SPECIFICATIONS, LATEST EDITION AND MODOT STANDARD DETAILS.
- DRAINAGE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH SPECIFICATIONS PROVIDED. REFER TO DETAIL SHEETS FOR DETAILS OF AREA INLETS AND MANHOLES. ALL INLET FRAMES AND GRATES SHALL BE VULCAN FOUNDRY CORP. CATALOG # V-4863 OR EQUAL.

**SITE AND PAD PREPARATION NOTES**

- ALL EARTHWORK, PAD AND SITE PREPARATION SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING SERVICES REPORT PREPARED BY TERRACON CONSULTANTS, INC., DATED NOVEMBER 2, 2023, TERRACON PROJECT NO. 0222528.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT FROM THE OWNER, BECOME FAMILIAR WITH THE REPORT AND RECOMMENDATIONS AND SHALL FOLLOW THE RECOMMENDATIONS AND REQUIREMENTS OF THE REPORT.
- SITE PREPARATION SHALL INCLUDE THE STRIPPING OF EXISTING PAVEMENT SECTIONS, VEGETATION, ORGANICS, SILTY SOILS, AND LOOSE, SOFT OR OTHERWISE UNSUITABLE MATERIAL. COMPLETE STRIPPING OF THE ROOT MAT SHALL BE PERFORMED IN THE PROPOSED BUILDING AND PAVEMENT AREAS. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE WASTED OFF SITE. THE ACTUAL STRIPPING AND UNDERCUTTING DEPTHS SHALL BE DETERMINED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION.
- THE SOILS WITHIN THE PLANNED BUILDING AREA SHALL BE FURTHER UNDERCUT AS NECESSARY TO ACCOMMODATE PLACEMENT OF THE RECOMMENDED 24-INCH THICK LVC LAYER BELOW FLOOR SLABS. THE UNDERCUT AREAS SHALL EXTEND A MINIMUM OF 5 FEET LATERALLY OUTSIDE THE BUILDING WALL LINES.
- FOLLOWING INITIAL STRIPPING AND ANY NECESSARY UNDERCUTTING, THE EXPOSED SOILS SHALL BE PROOFROLLED. A TERRACON REPRESENTATIVE SHOULD OBSERVE THE PROOFROLLING. PROOFROLLING CAN BE ACCOMPLISHED USING A LOADED TANDEM-AXLE DUMP TRUCK WITH A GROSS WEIGHT OF AT LEAST 20 TONS, OR SIMILARLY LOADED EQUIPMENT. AREAS THAT DISPLAY EXCESSIVE DEFLECTION (PUMPING) OR RUTTING DURING PROOFROLL OPERATIONS SHOULD BE IMPROVED BY SCARIFICATION/COMPACTION OR BY REMOVAL AND REPLACEMENT WITH ENGINEERED FILL.
- SEE GEOTECHNICAL REPORT FOR FILL MATERIAL TYPES, ACCEPTABLE LOCATION FOR PLACEMENT, AND FILL COMPACTION REQUIREMENTS.
- ALL GRADES MUST PROVIDE EFFECTIVE DRAINAGE AWAY FROM THE BUILDING DURING AND AFTER CONSTRUCTION AND SHOULD BE MAINTAINED THROUGHOUT THE LIFE OF THE STRUCTURE.
- THE CONSTRUCTION PHASE DRAINAGE SHOULD BE CONSIDERED IN THE DEVELOPMENT OF THE PROJECT OVERALL GRADING AND DRAINAGE PLAN. THE POSSIBLE POOR DRAINAGE CONDITIONS CAN LEAD TO INSTABILITY IN THE AREAS AROUND THE BUILDING AND HAMPER CONSTRUCTION PROGRESS. THE SITE GRADING AND GENERAL CONTRACTOR SHOULD CONSIDER THEIR MEANS AND METHODS TO MAINTAIN DRAINAGE DURING THE CONSTRUCTION PHASE.
- EXPOSED SUBGRADES SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE SO THAT SATURATION OF THE SUBGRADES IS AVOIDED. SURFACE WATER SHALL NOT BE PERMITTED TO ACCUMULATE ON THE SITE.
- UPON COMPLETION OF FILLING AND GRADING, CARE SHOULD BE TAKEN TO MAINTAIN THE SUBGRADE WATER CONTENT PRIOR TO CONSTRUCTION OF FLOOR SLABS.
- CONSTRUCTION TRAFFIC OVER THE COMPLETED SUBGRADES SHOULD BE AVOIDED TO THE EXTENT PRACTICAL.
- THE SITE SHOULD ALSO BE GRADED TO PREVENT PONDING OF SURFACE WATER ON THE PREPARED SUBGRADES OR IN EXCAVATIONS. WATER COLLECTING OVER, OR ADJACENT TO, CONSTRUCTION AREAS SHOULD BE REMOVED. IF THE SUBGRADE DESICCATES, SATURATES, OR IS DISTURBED, THE AFFECTED MATERIAL SHOULD BE REMOVED, OR THE MATERIALS SHOULD BE SCARIFIED, MOISTURE CONDITIONED, AND RECOMPACTED, PRIOR TO FLOOR SLAB CONSTRUCTION.
- AS A MINIMUM, EXCAVATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH OSHA 29 CFR, PART 1926, SUBPART P, "EXCAVATIONS" AND ITS APPENDICES, AND IN ACCORDANCE WITH ANY APPLICABLE LOCAL, AND/OR STATE REGULATIONS.

SEE TERRACON GEOTECHNICAL REPORT  
DATED 11/2/2023 FOR ALL SITE AND PAD  
PREPARATION REQUIREMENTS.

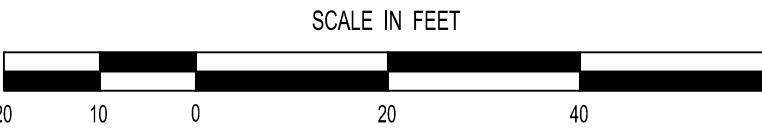
**LEGEND - PROPOSED IMPROVEMENTS**

	PROPERTY LINE	975	CONTOUR
	PROPOSED BUILDING	X 900.00'	SPOT ELEVATION
	CG-1 CONCRETE CURB	TOP = TOP OF PAVEMENT TOW = TOP OF WALL TOC = TOP OF CURB	
	CG-1 CONCRETE CURB w/ PAVEMENT TURN DOWN	S	SLOPE ARROW
	STORM DRAIN PIPE	DW	DOMESTIC WATER LINE
	DOWNSPOUT COLLECTOR N-12 PIPE (12" TRUNK W/ 8" LATERAL CONNECTIONS)	S	SANITARY SEWER LINE
	SINGLE GRATE INLET	G	GAS LINE
	HIGH POINT / GRADE BREAK	UT	UNDERGROUND TELEPHONE LINE
		UE	UNDERGROUND ELECTRICAL LINE

REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES

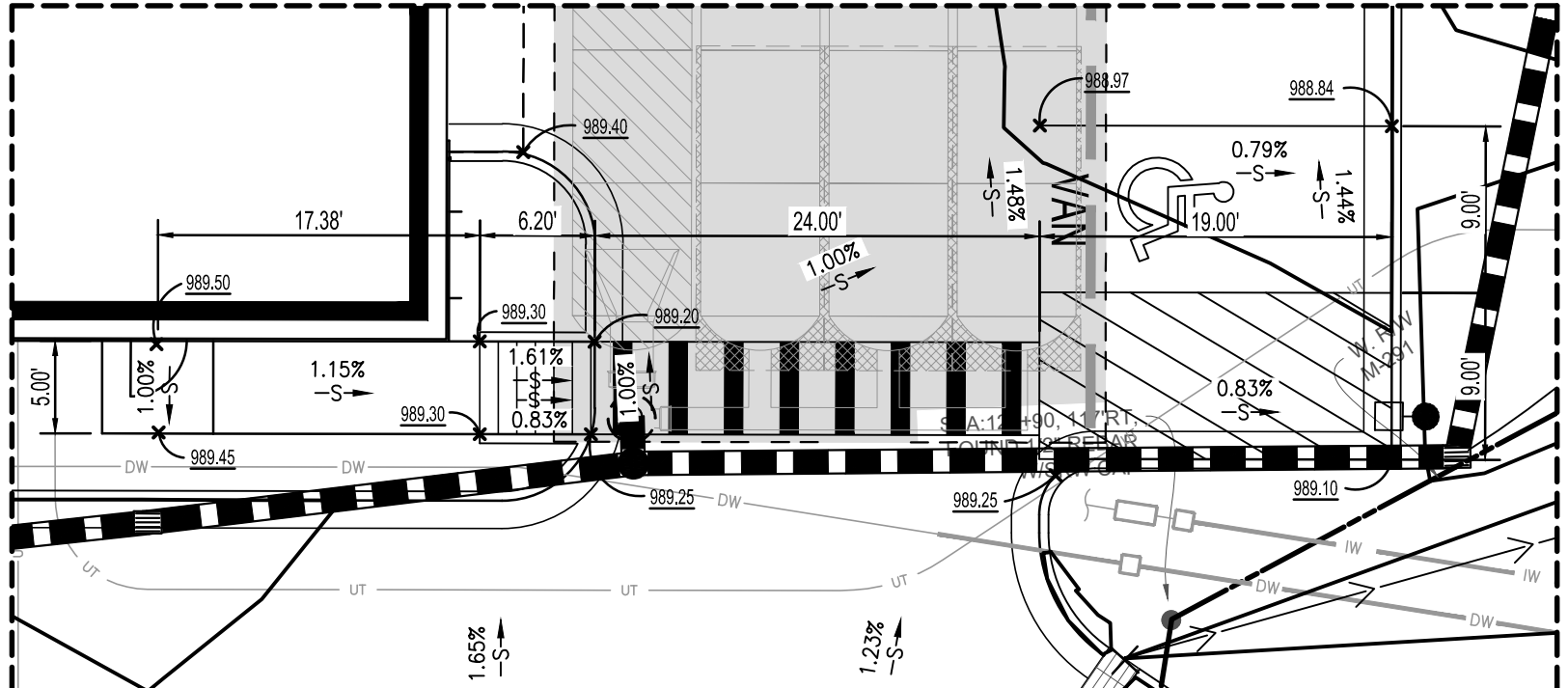
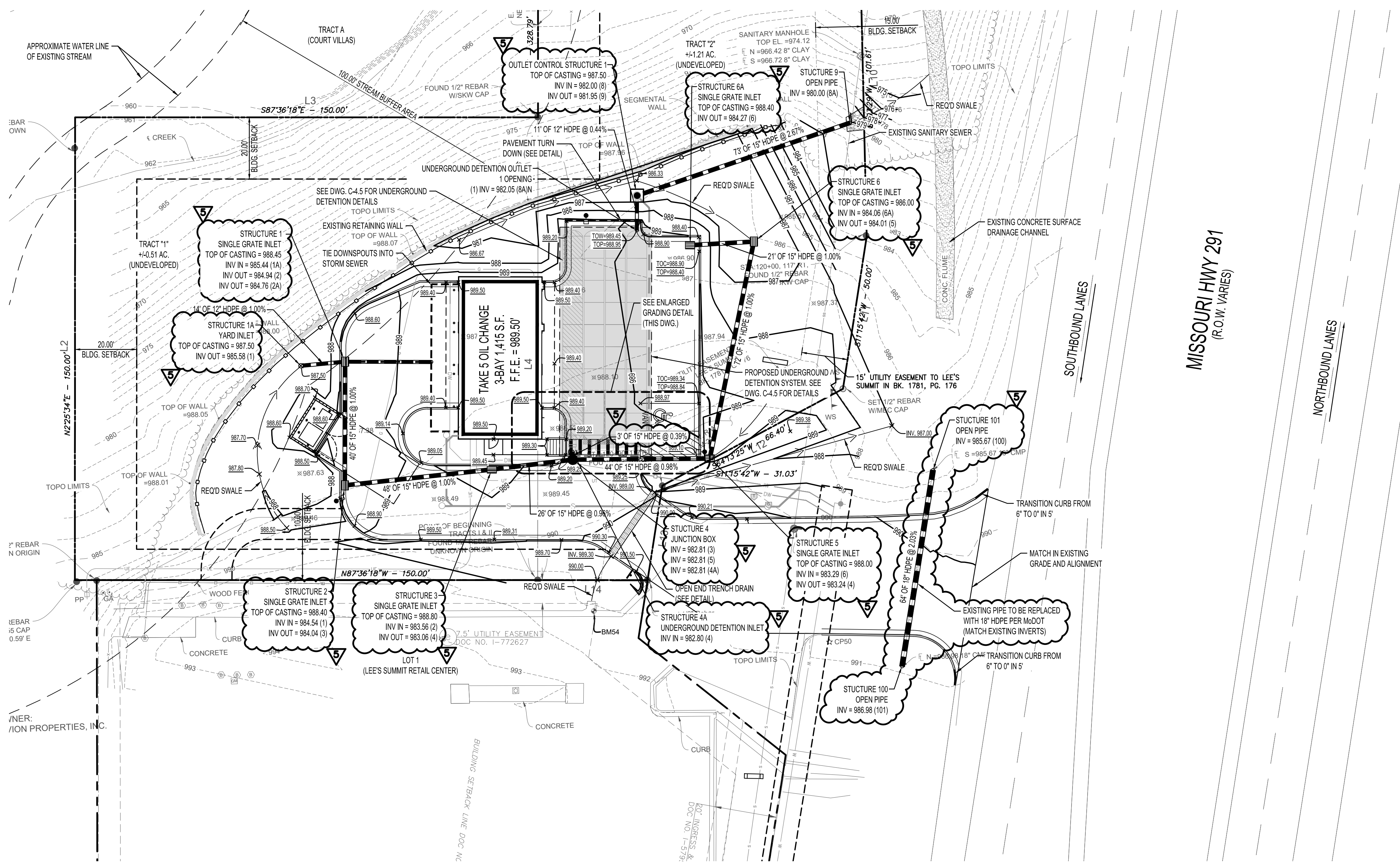


**GRADING PLAN**



**NOTE:**  
THIS SITE IS LOCATED WITHIN THE WEST PRAIRIE LEE WATERSHED

**FLOOD NOTE:**  
THIS PROPERTY LIES WITHIN FLOOD ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE LIMITS OF THE 0.2% ANNUAL CHANCE FLOOD PLANE, AND OTHER FLOOD AREAS AS SHOWN ON THE FLOOD INSURANCE RATE MAP PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, COMMUNITY NO. 29 174 0436G AND DATED JANUARY 20, 2017



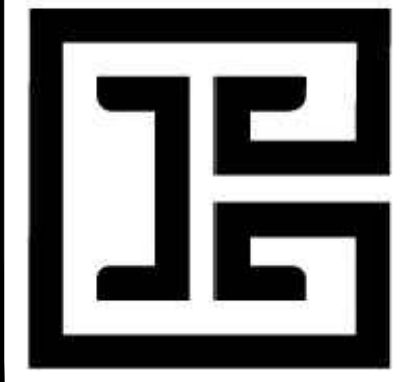
**ENLARGED GRADING DETAIL**  
N.T.S

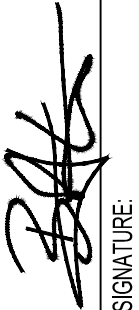
ACCORDING TO THE MISSOURI DEPARTMENT OF  
NATURAL RESOURCES GIS MAP, NO EXISTING OIL  
AND GAS WELLS ARE LOCATED ON SITE.



REVISION		
1	12/16/2024 REVISED PER CITY	KRG
2	1/17/2025 REVISED PER CITY	KRG
3	1/31/2025 REVISED PER CITY	KRG
4	2/14/2025 REVISED PER CITY	KRG

**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
[www.hightidelc.com](http://www.hightidelc.com)



  
SIGNATURE

FEBRUARY 14, 2025  
DATE

STATE OF MISSOURI  
B. SHANE GUIN  
NUMBER  
202100076  
ENGINEER  
PROFESSIONAL

STAMP

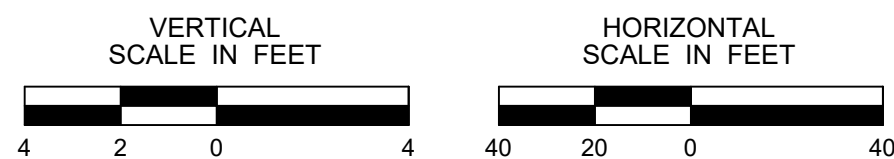
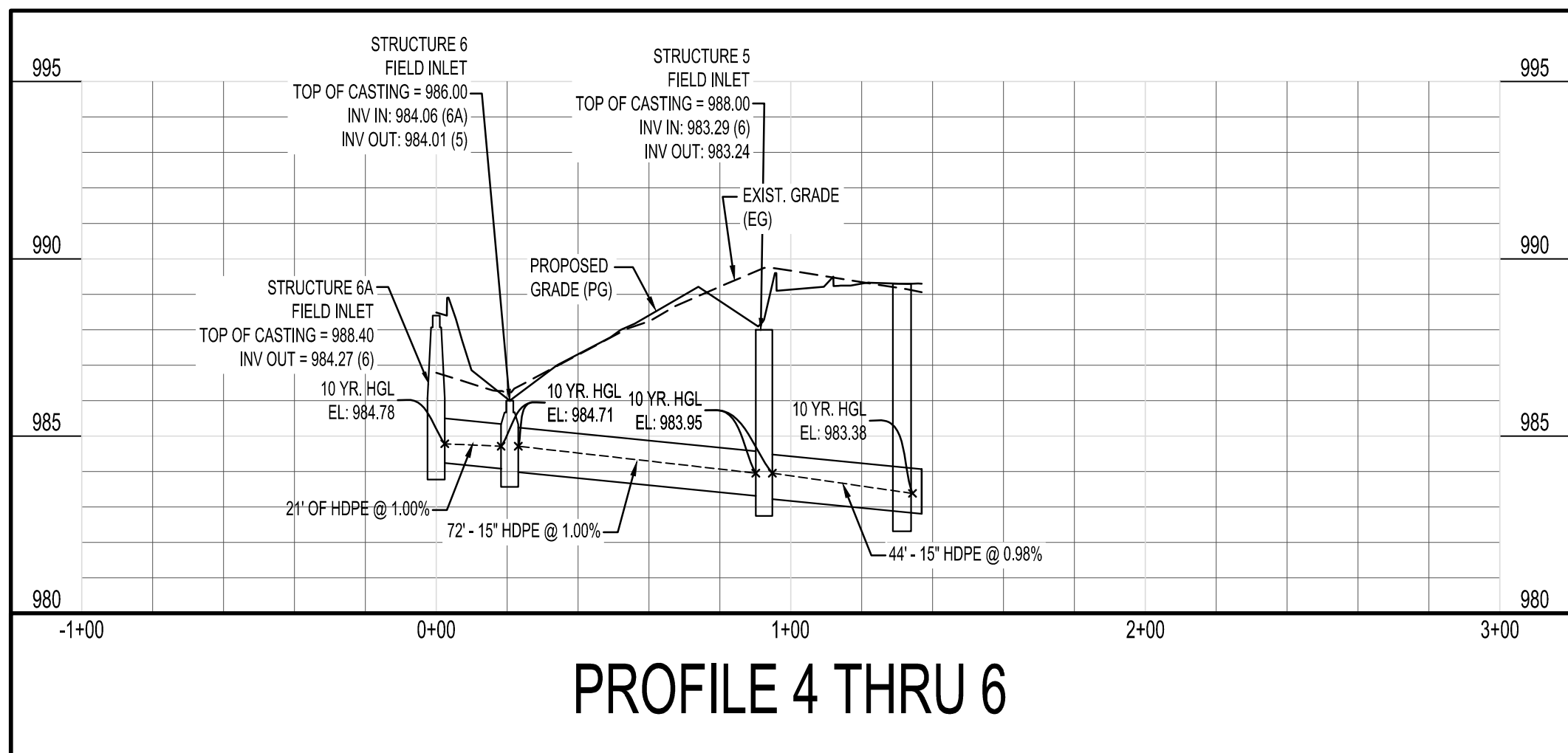
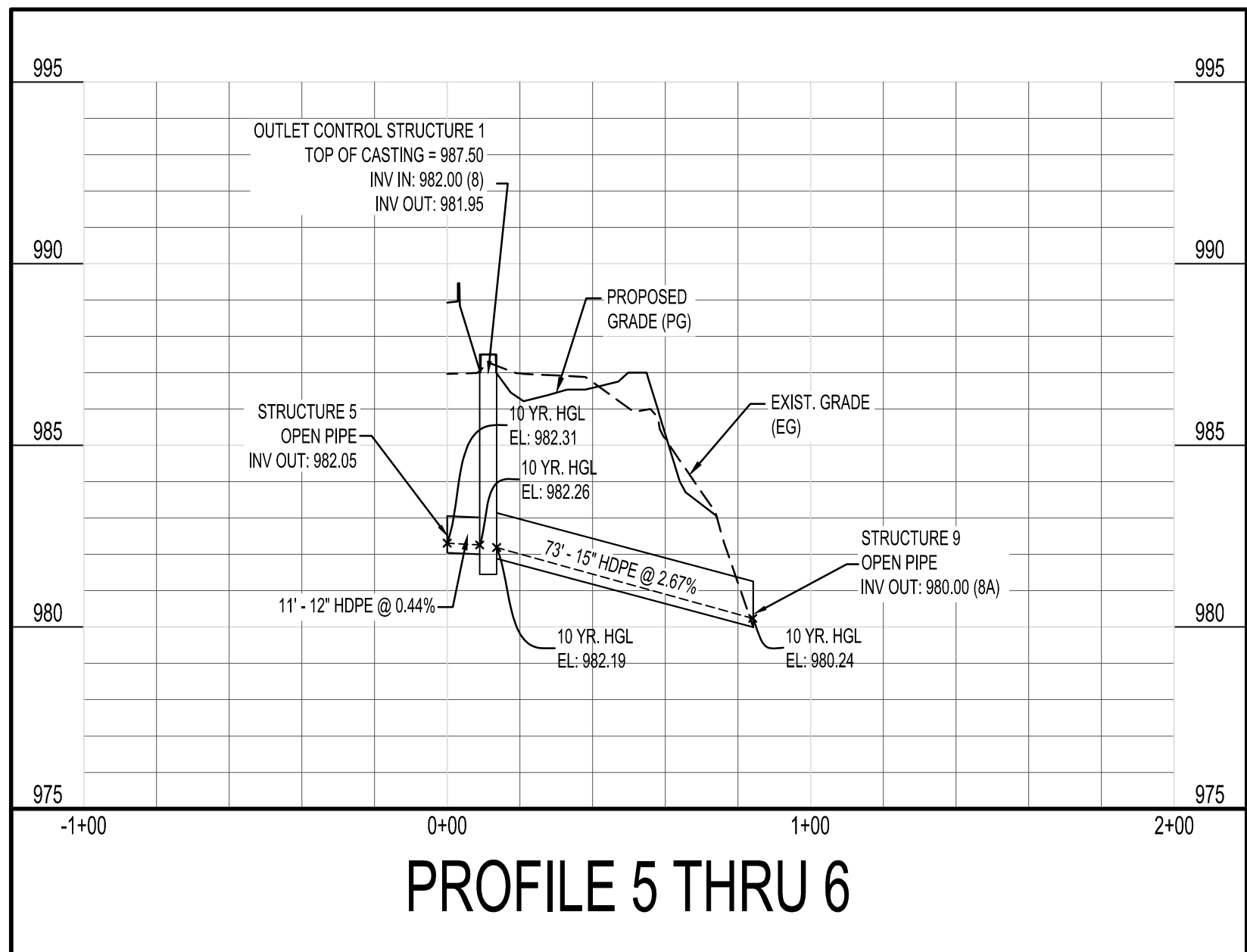
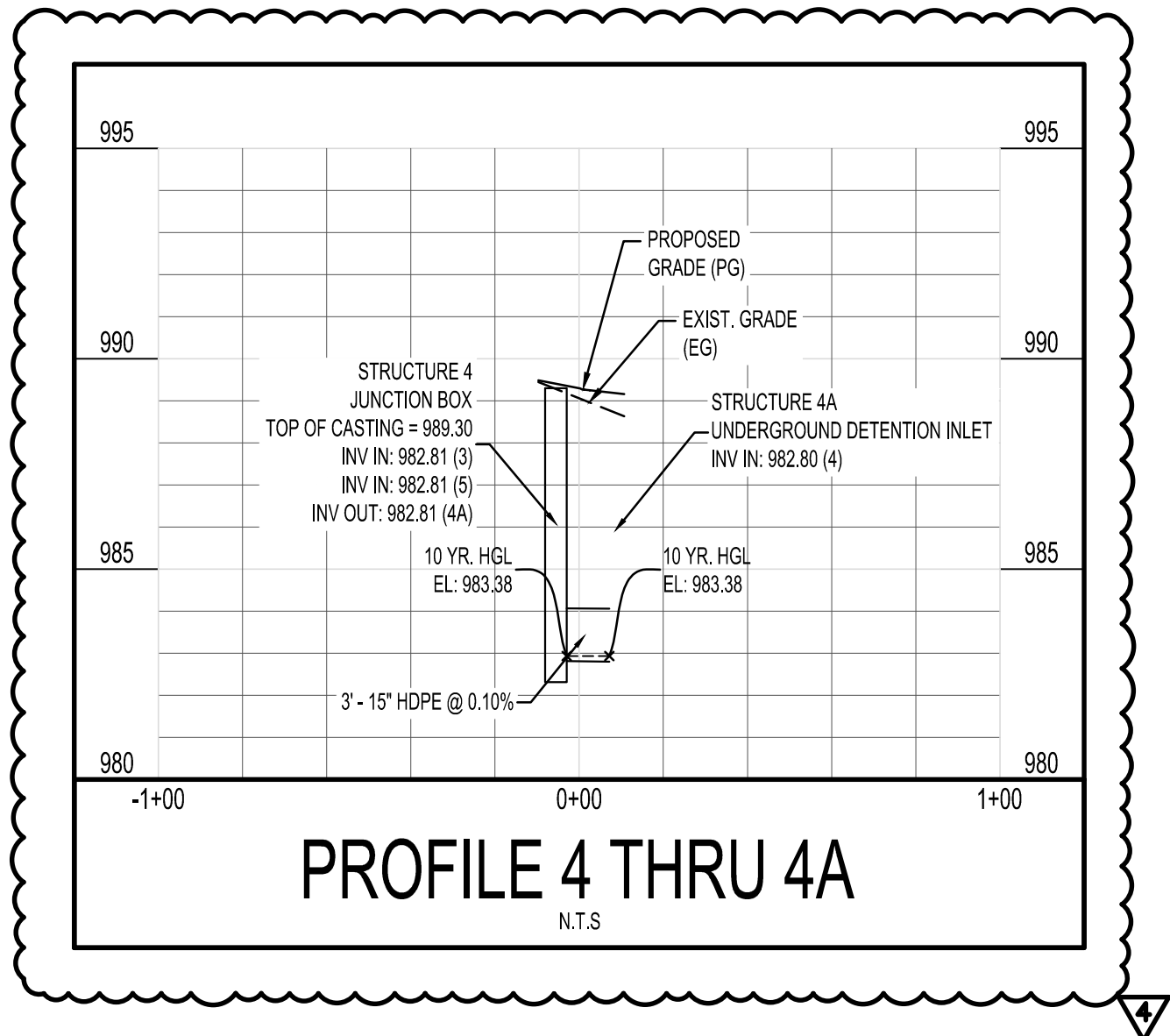
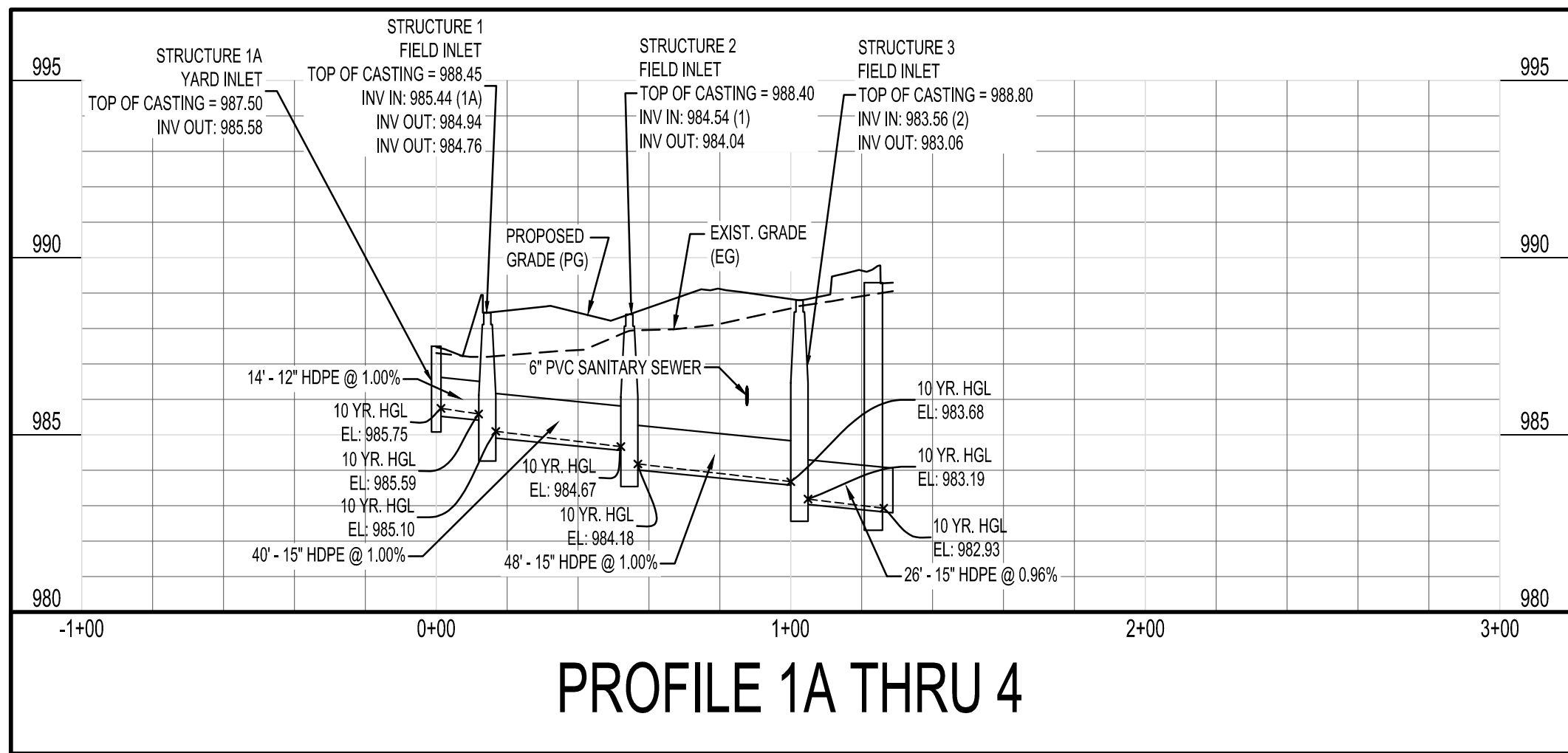
PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN KRG
CHECKED RCG
ISSUED DATE 10/24/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 X-Layout

SHEET

C-2.1





REVISION		
1	12/16/2024	KRG
2	1/17/2025	KRG
3	1/31/2025	KRG
4	2/14/2025	KRG

**HIGH TIDE**  
CONSULTANTS LLC  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



SIGNATURE: *[Signature]* DATE: FEBRUARY 14, 2025

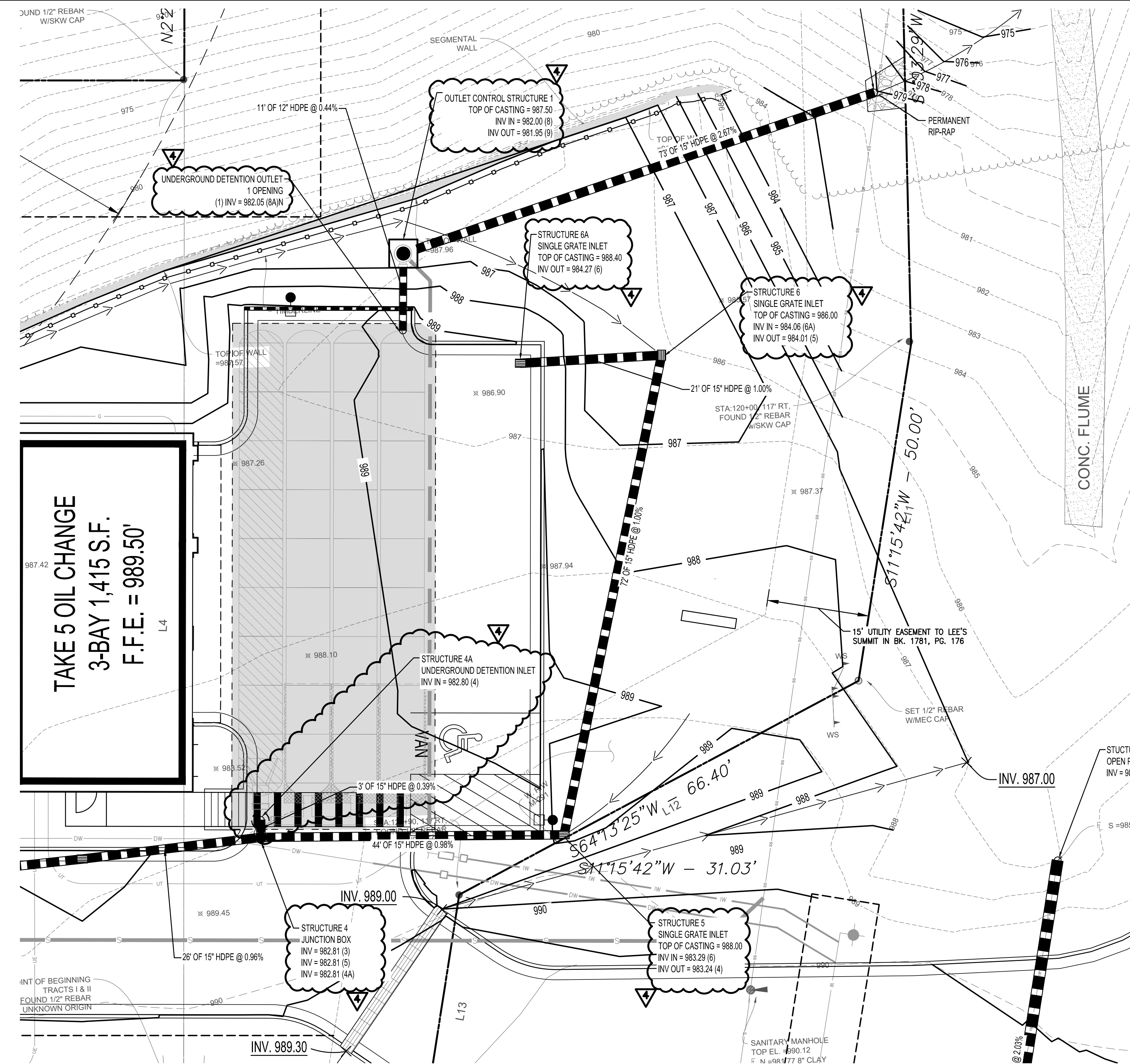
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B. SHANE GUN  
NUMBER 202100076

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN	KRG
CHECKED	RCG
ISSUED DATE	10/24/2024
ISSUED FOR	PERMITTING
PROJECT NO.	22-218
FILE	22-218 C-2 Grading Plan

SHEET  
**C-2.2**



100 YEAR DESIGN STORAGE  
VOLUME = 5,488 CF

REFER TO ADS STORM TECH DETAILS ON  
SHEET C-4.5 FOR UNDERGROUND  
DETENTION SECTIONS AND DETAILS

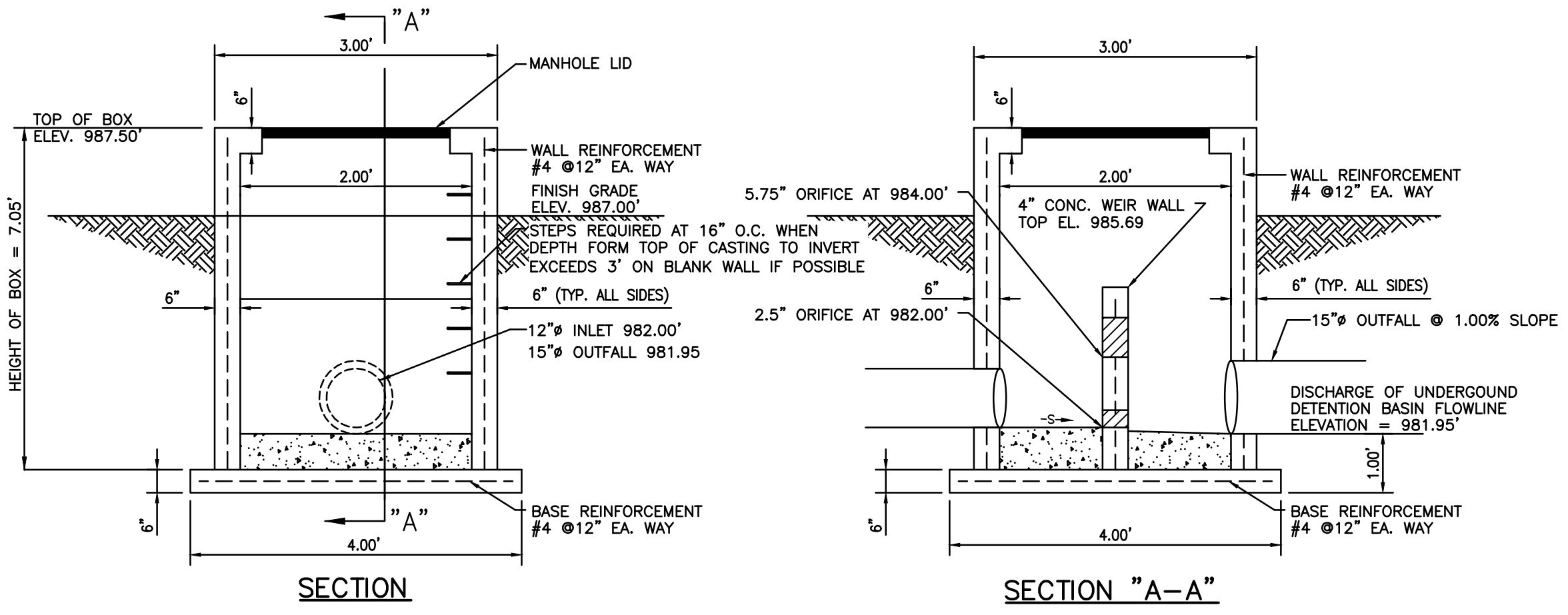
NOTE:  
DETENTION BASIN SHALL BE CONSTRUCTED  
PRIOR TO ALL OTHER WORK EXCEPT FOR  
EROSION AND SEDIMENT CONTROL

NOTE:  
AN AS-GRADED AND AS BUILT RECORD  
DRAWINGS SHALL BE SUBMITTED AND  
ACCEPTED BY THE CITY PRIOR TO ANY  
CERTIFICATE OF OCCUPANCY BY THE CITY

LEGEND - PROPOSED IMPROVEMENTS

- PROPERTY LINE
- PROPOSED BUILDING
- CG-1 CONCRETE CURB
- CG-1 CONCRETE CURB  
w/ PAVEMENT TURN DOWN
- STORM DRAIN PIPE
- DOWNSPOUT COLLECTOR  
N-12 PIPE (12" TRUNK W/ 8"  
LATERAL CONNECTIONS)  
SINGLE  
GRATE  
INLET
- 975 CONTOUR
- SLOPE ARROW

REFER TO SURVEY SHEETS FOR  
LEGEND OF EXISTING FEATURES

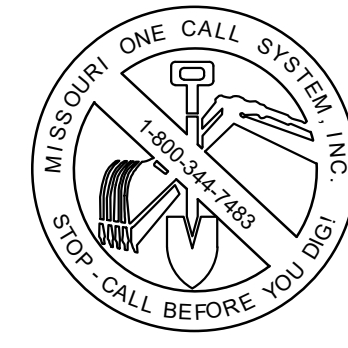


OUTLET CONTROL STRUCTURE 1  
N.T.S.

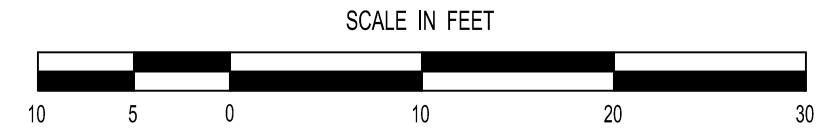
ACCORDING TO THE MISSOURI DEPARTMENT OF  
NATURAL RESOURCES GIS MAP, NO EXISTING OIL  
AND GAS WELLS ARE LOCATED ON SITE.

NOTE:  
THIS SITE IS LOCATED WITHIN THE WEST PRAIRIE LEE WATERSHED

FLOOD NOTE:  
THIS PROPERTY LIES WITHIN FLOOD ZONE X, DEFINED AS AREAS DETERMINED TO BE  
OUTSIDE THE LIMITS OF THE 0.2% ANNUAL CHANCE FLOOD PLANE, AND OTHER FLOOD  
AREAS AS SHOWN ON THE FLOOD INSURANCE RATE MAP PREPARED BY THE FEDERAL  
EMERGENCY MANAGEMENT AGENCY FOR THE CITY OF LEE'S SUMMIT, JACKSON  
COUNTY, MISSOURI, COMMUNITY NO. 29 174 0436G AND DATED JANUARY 20, 2017



**DETENTION  
BASIN PLAN**






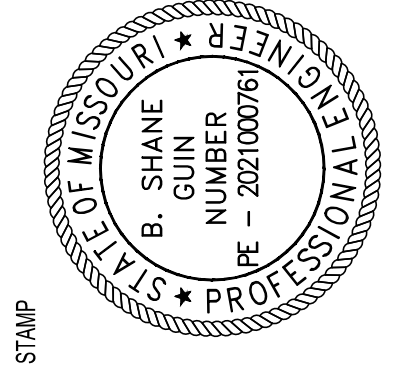
REVISION			
1	10/24/2024	REVISED PER CITY	KRG
2	12/16/2024	REVISED PER CITY	KRG
3	1/16/2025	REVISED PER CITY	KRG

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SIGNATURE

JANUARY 31, 2025  
DATE

  
B. SHANE  
ENGINEER  
NO. 202100076  
STATE OF MISSOURI

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
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ISSUED FOR	PERMITTING
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FILE	22-218 C-3 Utility Plan

SHEET  
**C-3**

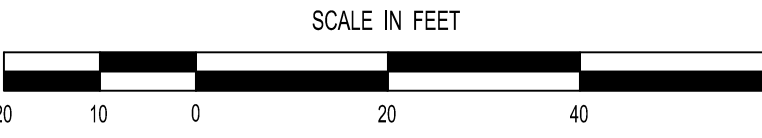
### UTILITY NOTES

- ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- ALL SEWER UTILITY WORK SHALL BE DONE TO THE CITY OF LEE'S SUMMIT STANDARDS AND SPECIFICATIONS. ALL WATER UTILITY WORK SHALL BE DONE TO LEE'S SUMMIT WATER UTILITIES STANDARDS AND SPECIFICATIONS. ALL ELECTRICAL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL STANDARDS AND SPECIFICATIONS. ALL GAS UTILITY WORK SHALL BE DONE TO LOCAL GAS STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- SANITARY SEWER PIPE SHALL BE AS FOLLOWS:
  - 6" PVC SCHEDULE 40
- WATER LINES SHALL BE AS FOLLOWS:
  - WATER SERVICE LINES GREATER THAN 1", BUT LESS THAN 4"
    - FROM THE CITY'S MAIN TO THE CURB VALVE SHALL BE FLEXIBLE OR RIGID TYPE "K" COPPER.
  - FROM THE CURB VALVE TO 10' BEYOND THE METER WELL SHALL BE FLEXIBLE OR RIGID TYPE "K" OR "L" COPPER. ALSO, COPPER MUST BE USED OUTSIDE THE BUILDING WALL OF THE PREMISES SERVED, A MINIMUM OF 10'
- MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
- ON COPPER WATER SERVICE LINE, JOINTS (EXCLUDING JOINTS ON PRE-PURCHASED "METER SETTER") SHALL BE FLARED, COMPRESSION, OR BRAZED. USE OF ANY OTHER TYPE OF JOINT IS PROHIBITED, UNLESS SPECIFICALLY AUTHORIZED BY THE CITY.
- ALL WATER AND SANITARY SEWER UTILITIES SHOULD MAINTAIN A MINIMUM TEN (10') OF HORIZONTAL SEPARATION OR, WHEN CROSSING, 18" OF VERTICAL SEPARATION (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4'-0" COVER ON ALL WATER LINES.
- IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOINTS AT LEAST 10 FEET ON BOTH SIDES OF CROSSING. THE WATER LINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE. MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-151) (CLASS 50).
- LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
- TOPS OF EXISTING MANHOLES SHALL BE ADJUSTED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS. IN UNPAVED AREAS, EXISTING MANHOLE TOPS SHALL BE 6" ABOVE FINISHED GROUND ELEVATIONS AND CONTAIN WATER TIGHT LIDS.
- ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I. REFER TO ARCHITECTURAL AND MEP DRAWINGS FOR EXACT BUILDING TIE-IN LOCATIONS OF ALL UTILITIES.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES. THIS AND THE FINAL CONNECTIONS OF THE SERVICE SHALL BE COMPLETED 30 DAYS PRIOR TO BUILDING OCCUPANCY.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
- REFER TO BUILDING PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
- CONTRACTOR SHALL COORDINATE WITH THE CITY OF LEE'S SUMMIT PUBLIC WORKS FOR TIE-IN LOCATIONS TO PUBLIC UTILITIES PRIOR TO COMMENCEMENT OF WORK.
- EXISTING PUBLIC WATER LINE SHOWN IS BASED ON APPROXIMATE LOCATION PER MAP PROVIDED BY LEE'S SUMMIT WATER UTILITIES. EXACT SIZE AND LOCATION SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.
- TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY McCURE DATED 13 SEPTEMBER 2023. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.

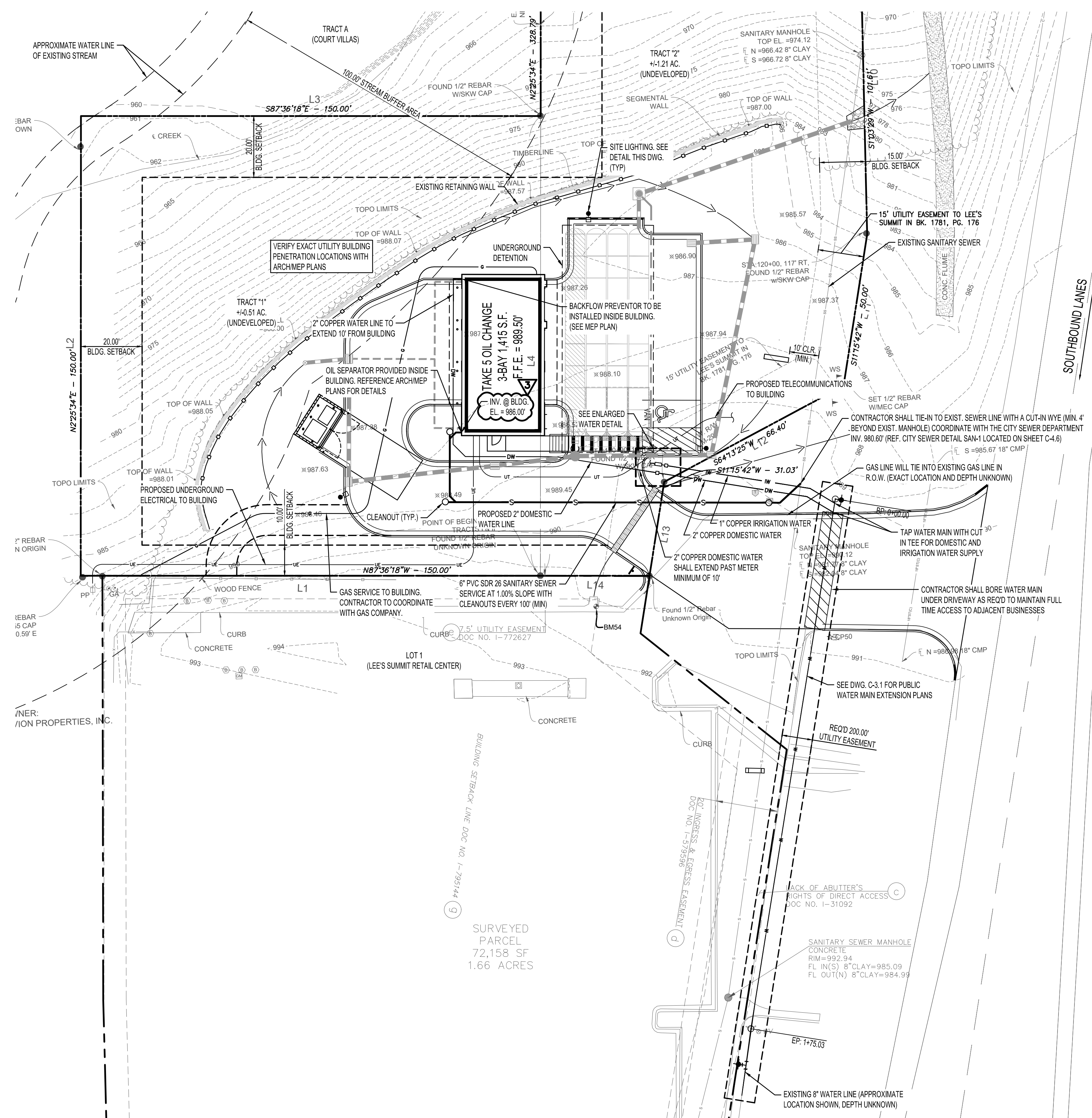
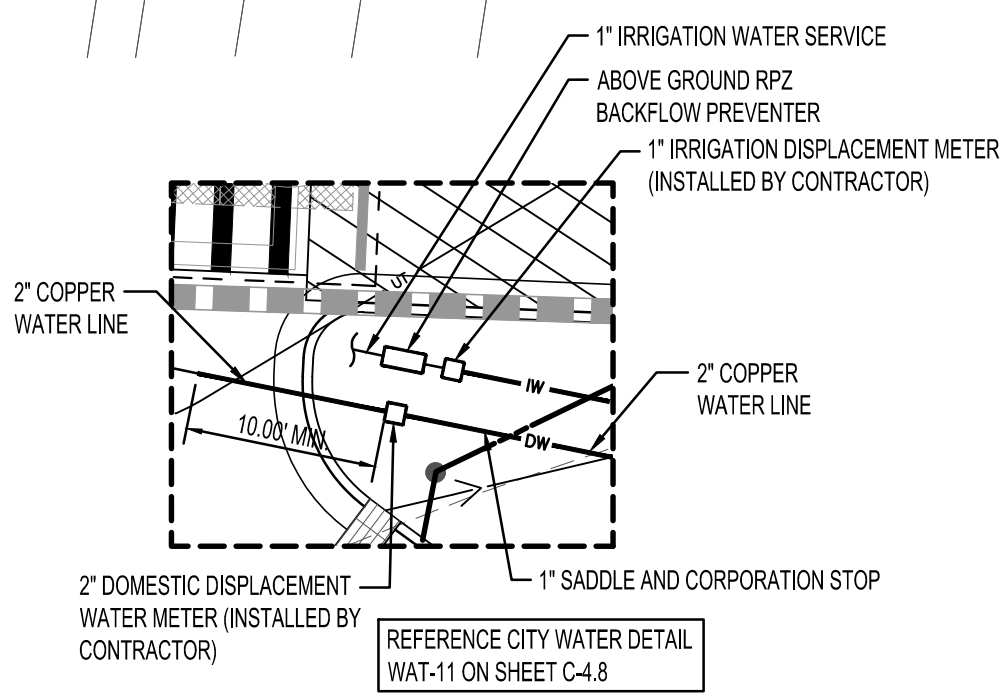
### LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- CG-1 CONCRETE CURB
- STORM DRAIN PIPE
- DOMESTIC WATER LINE
- SANITARY SEWER LINE
- GAS LINE
- UNDERGROUND TELEPHONE LINE (4" CONDUIT)
- UNDERGROUND ELECTRICAL LINE
- CLEANOUT
- SITE LIGHTING FIXTURE

## UTILITY PLAN



### ENLARGED WATER DETAIL



ACCORDING TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES GIS MAP, NO EXISTING OIL AND GAS WELLS ARE LOCATED ON SITE.



1	12/16/2024	REVISED PER CITY	KRG
2	1/17/2025	REVISED PER CITY	KRG

HIGH TIDE


CONSULTANTS LLC

434 N. COLUMBIA ST, SUITE 200A

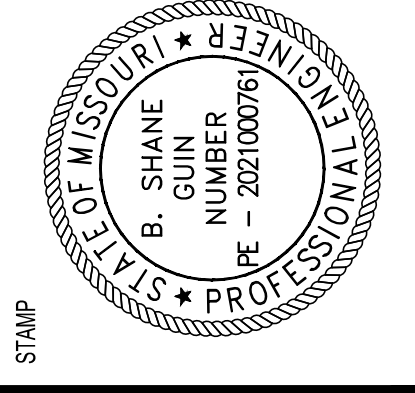
COVINGTON, LA 70433

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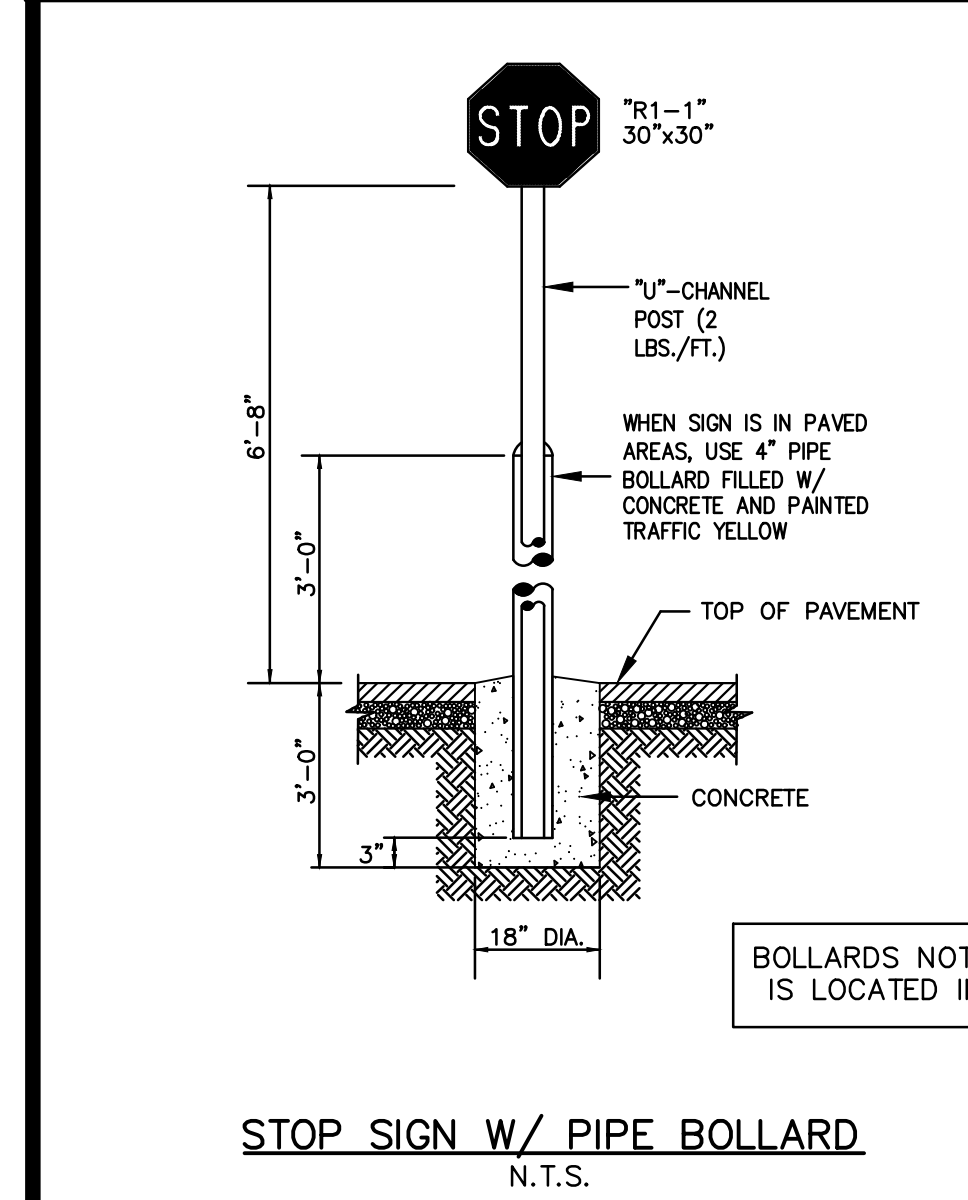
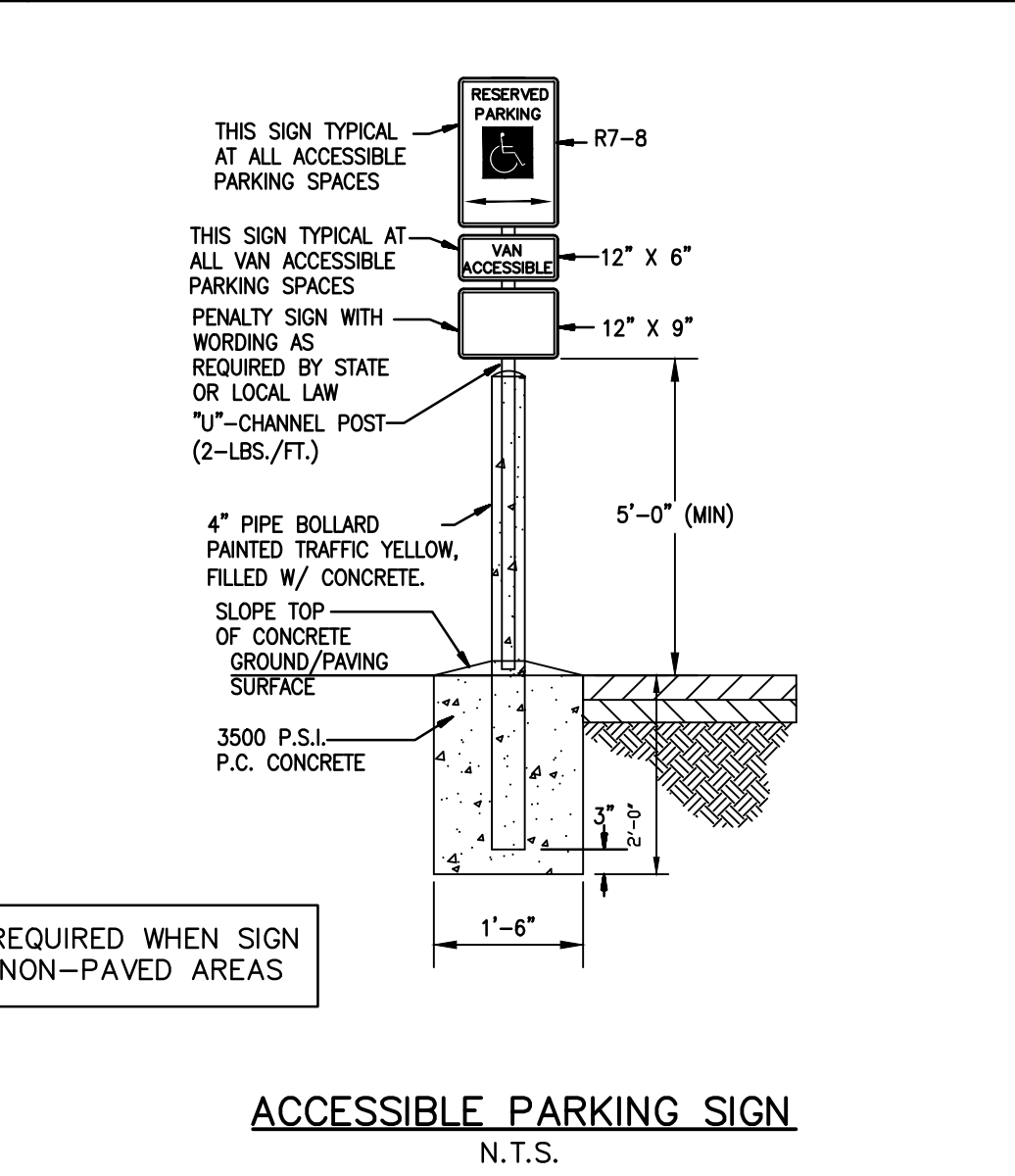
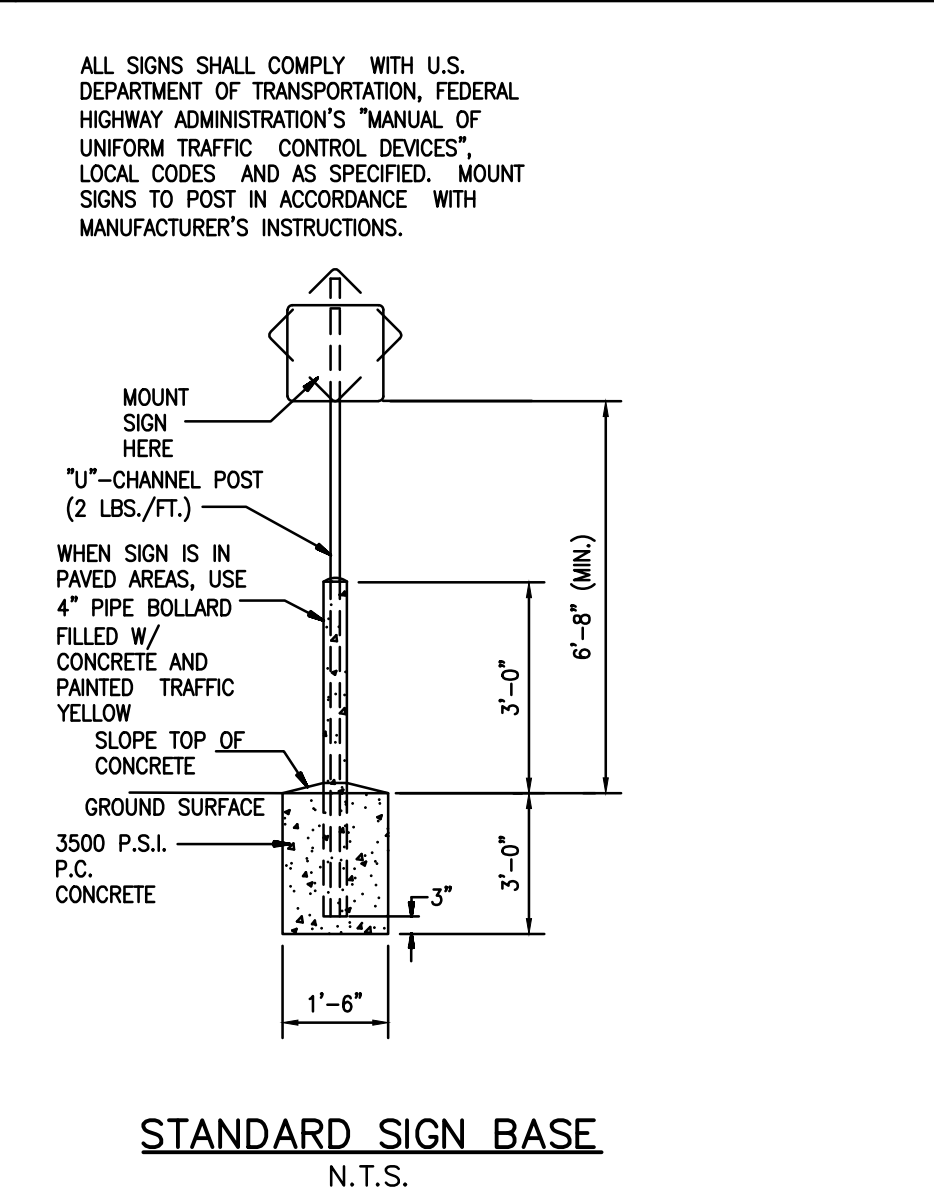
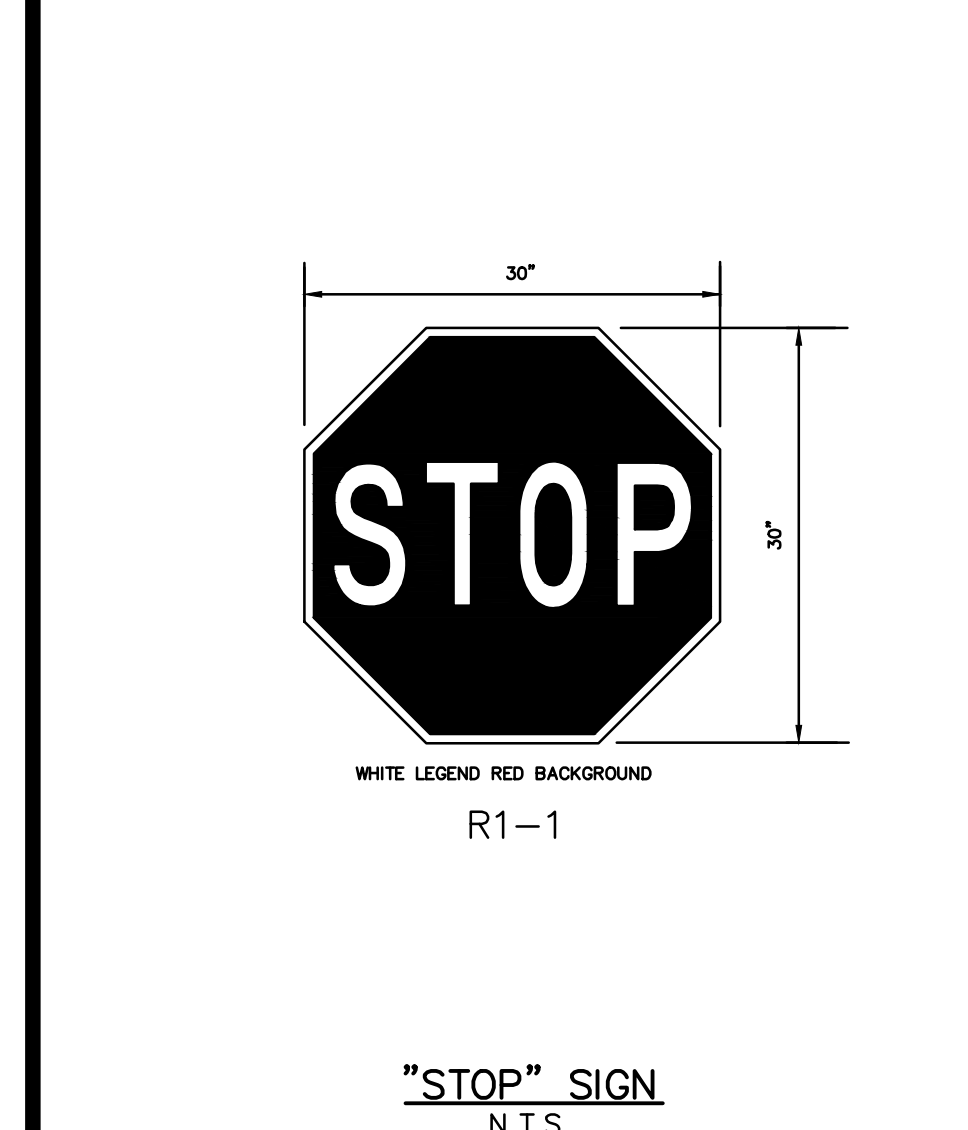
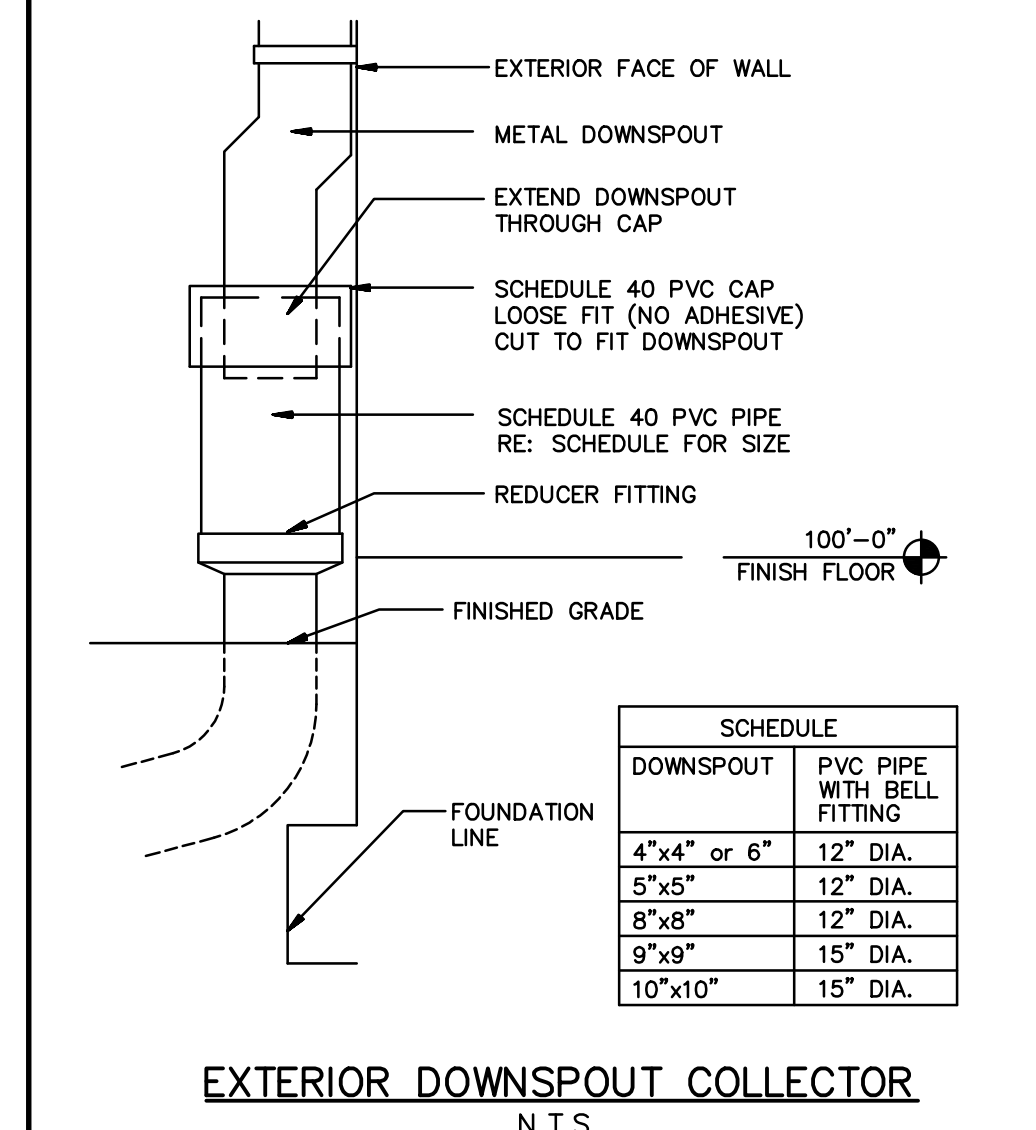
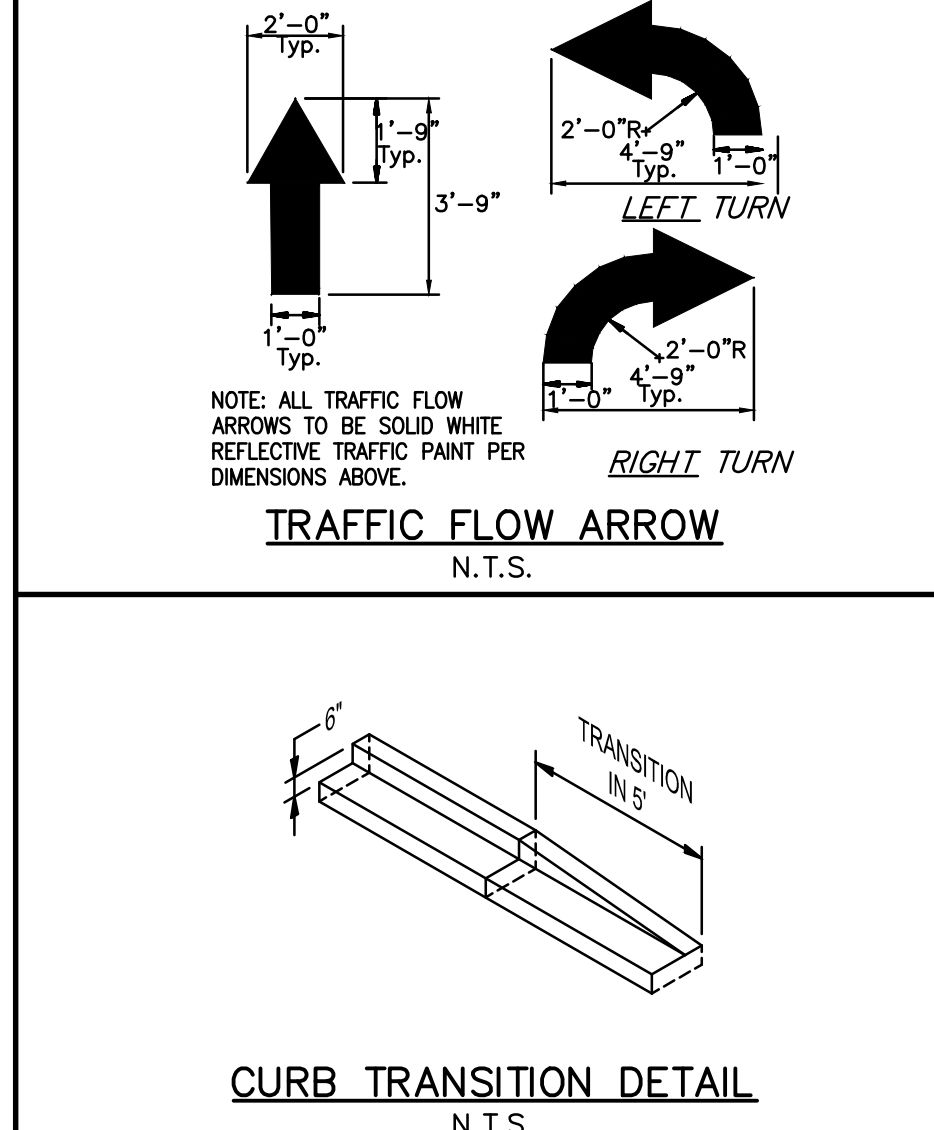
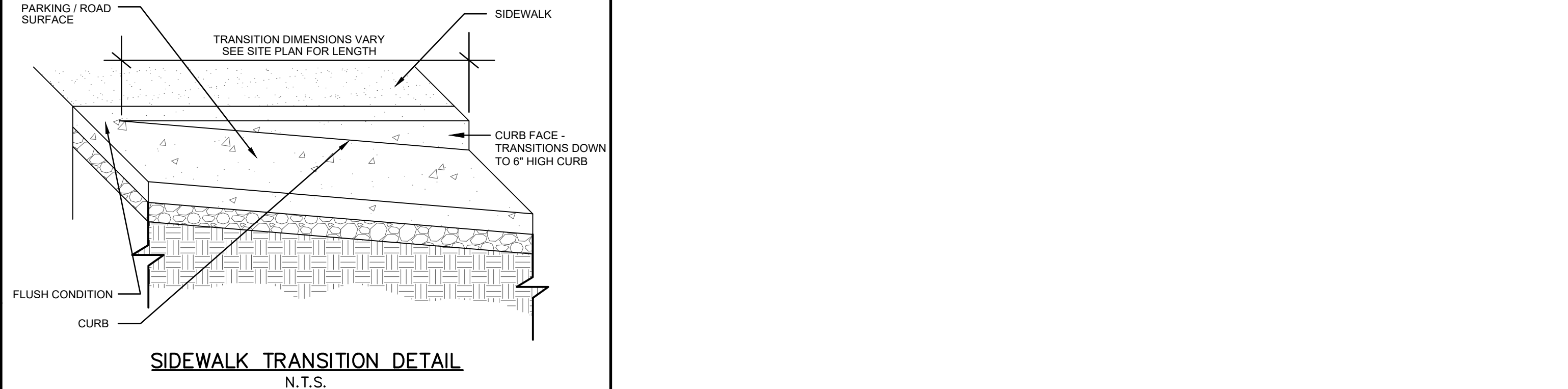
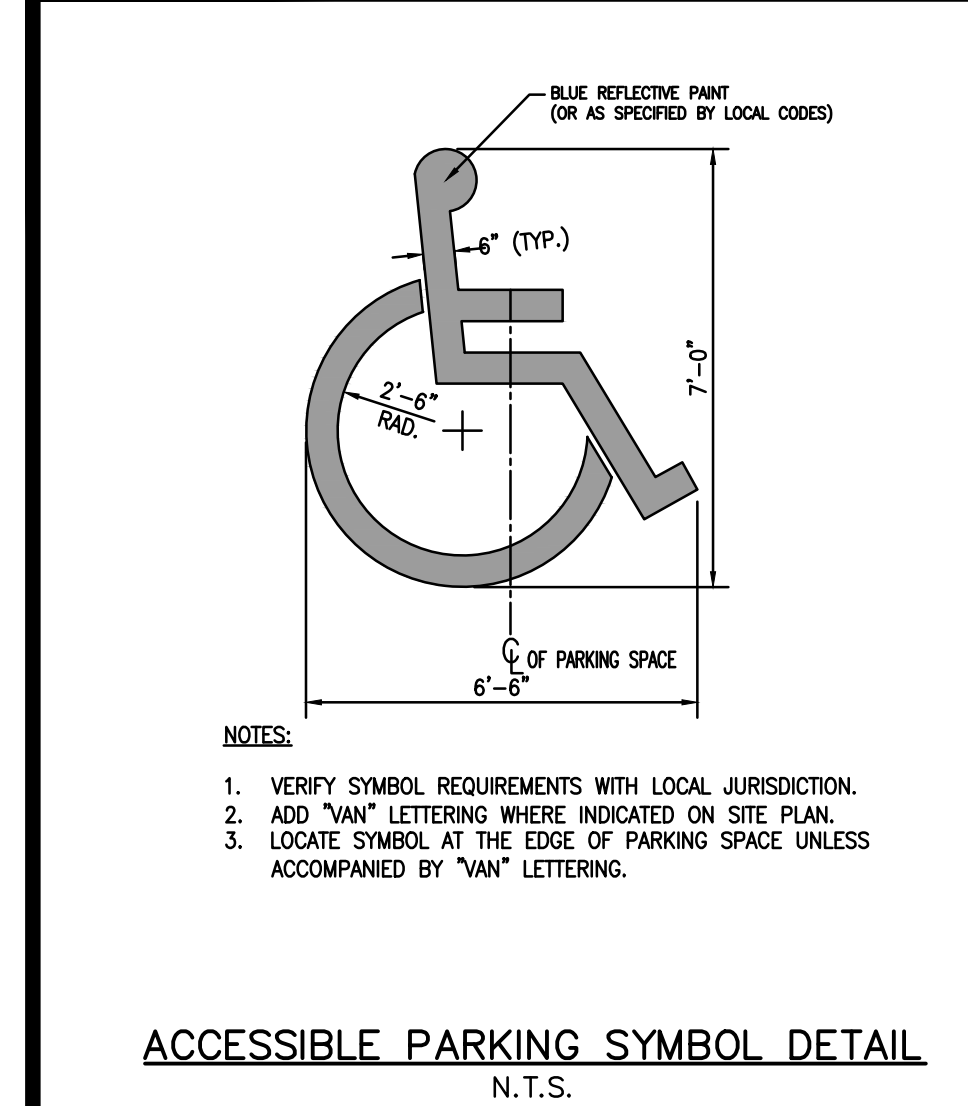
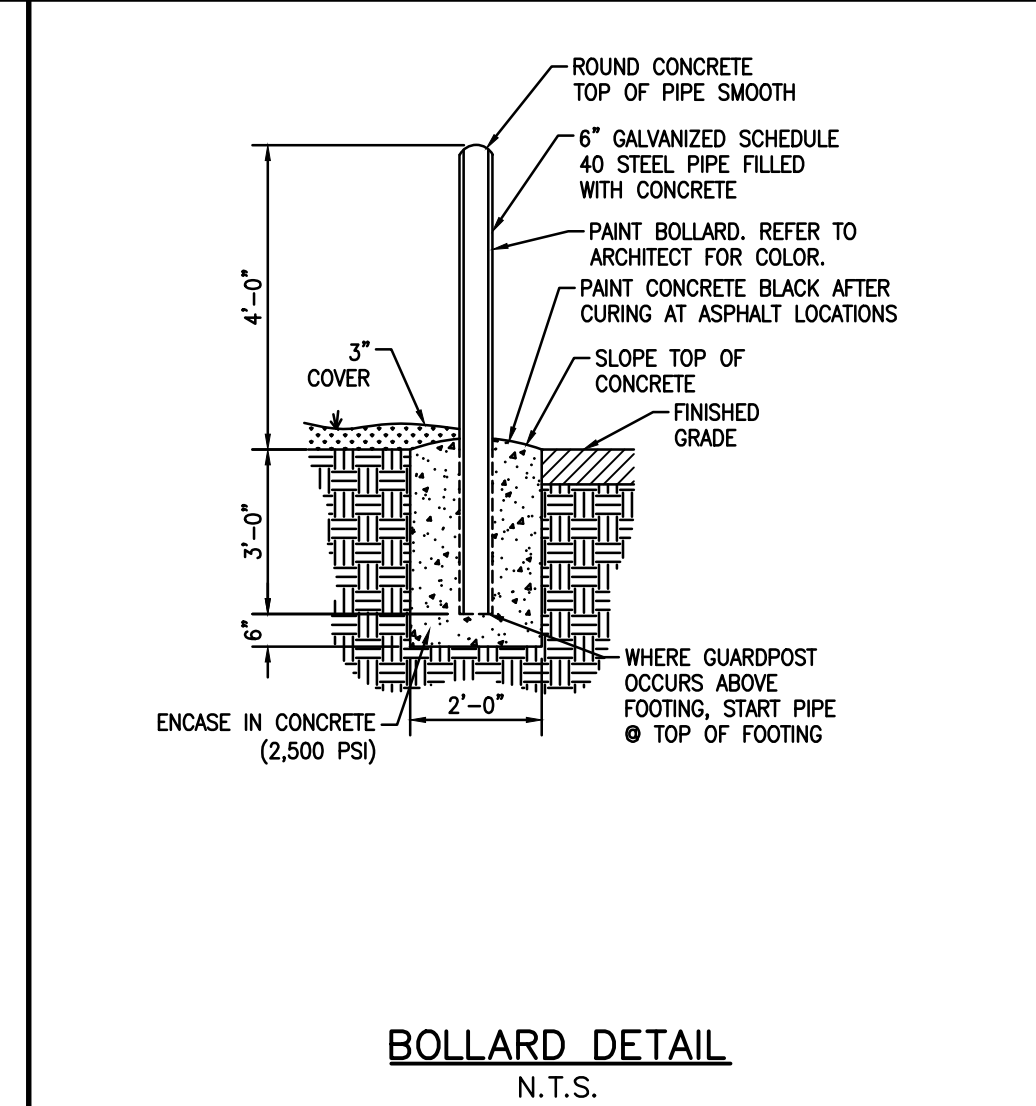
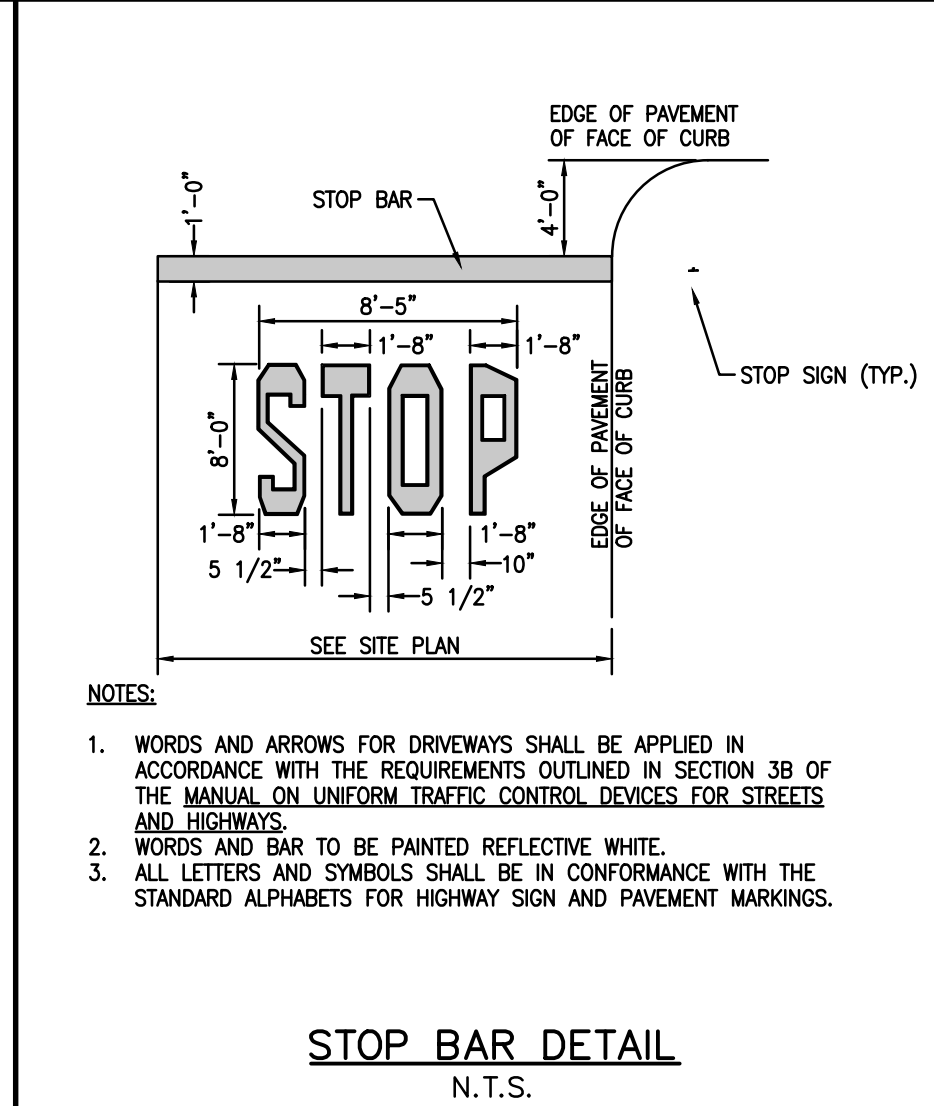
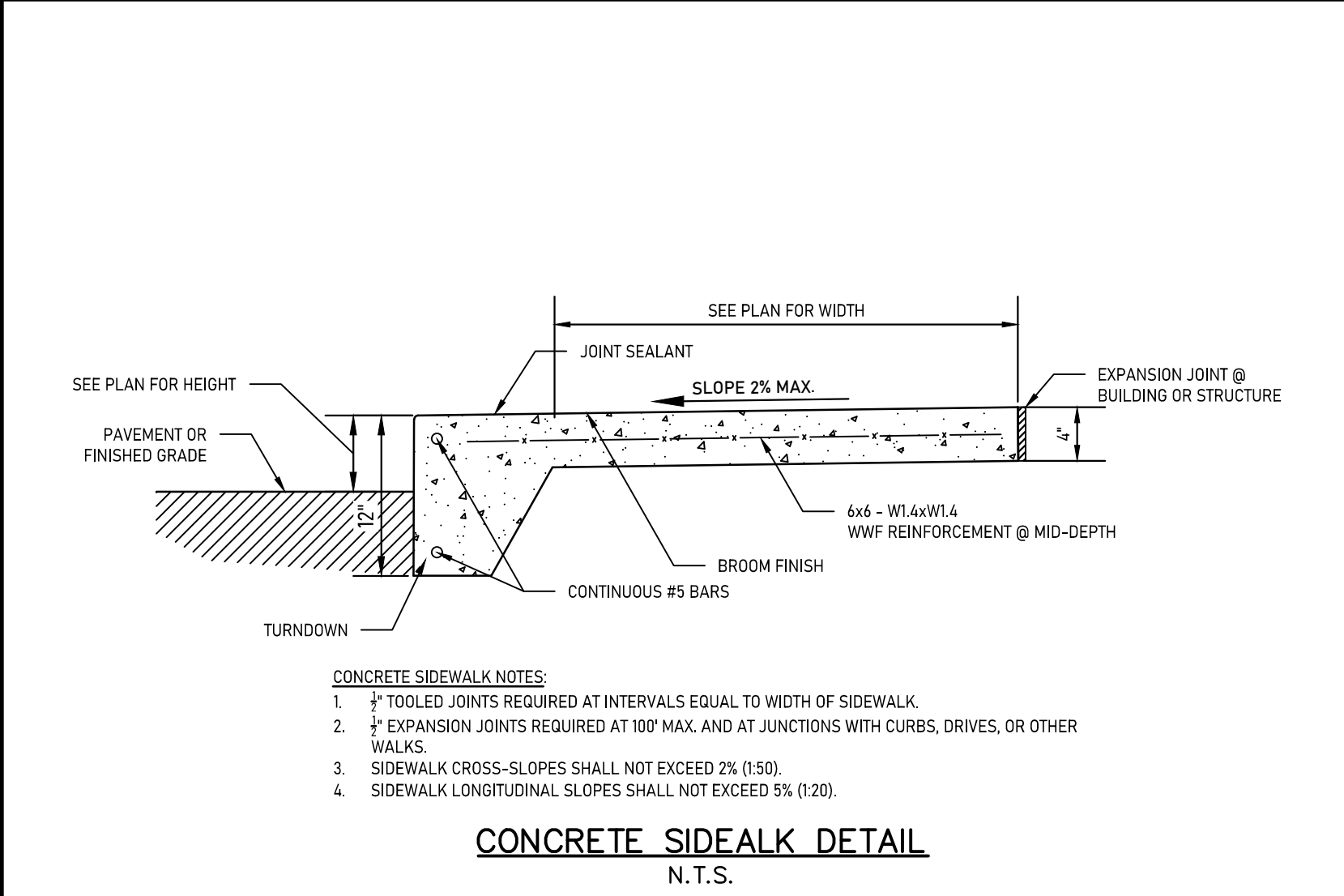
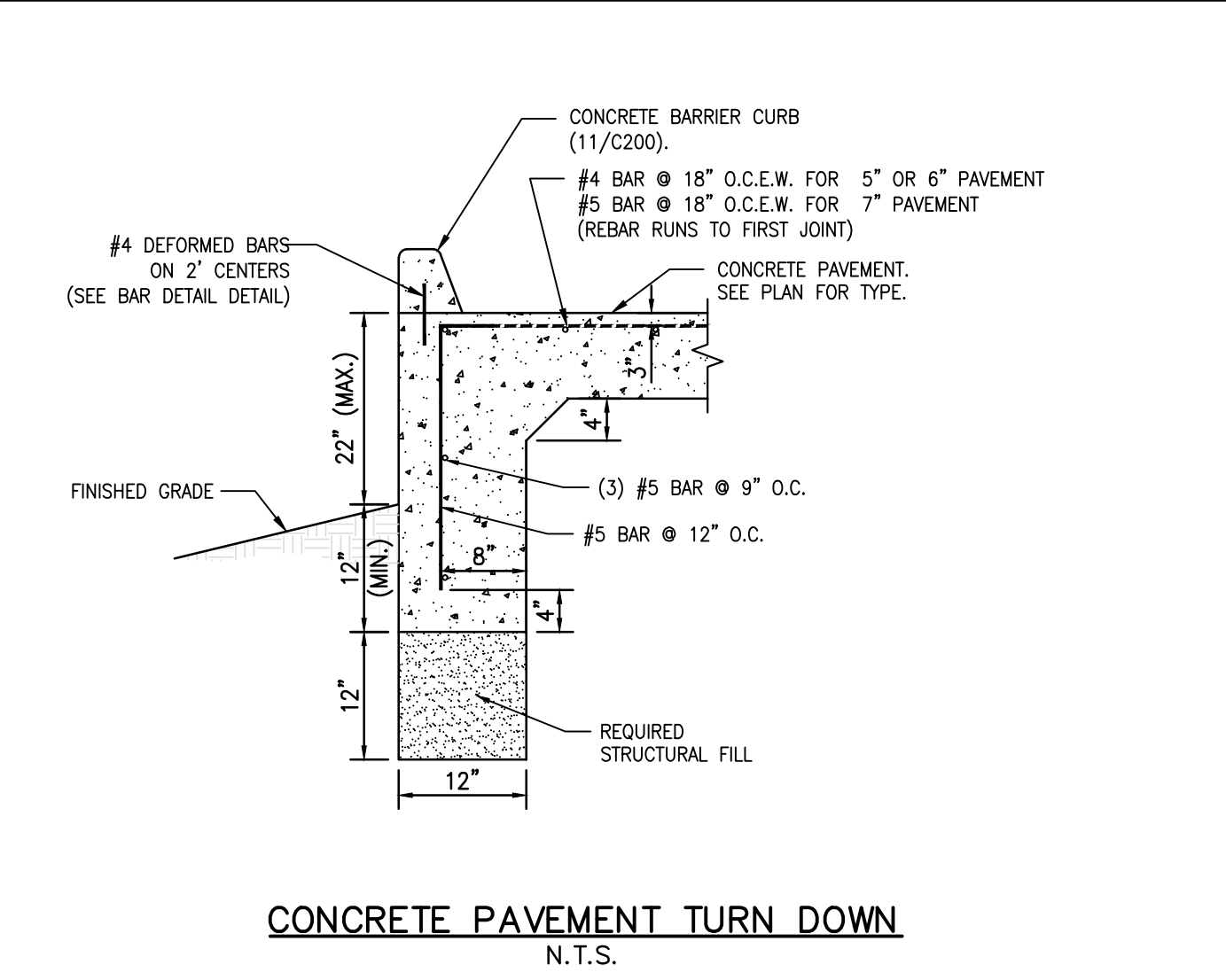
JANUARY 31, 2025  
DATE



PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

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FILE	22-218 C-4 Details
SHEET	C-4.1





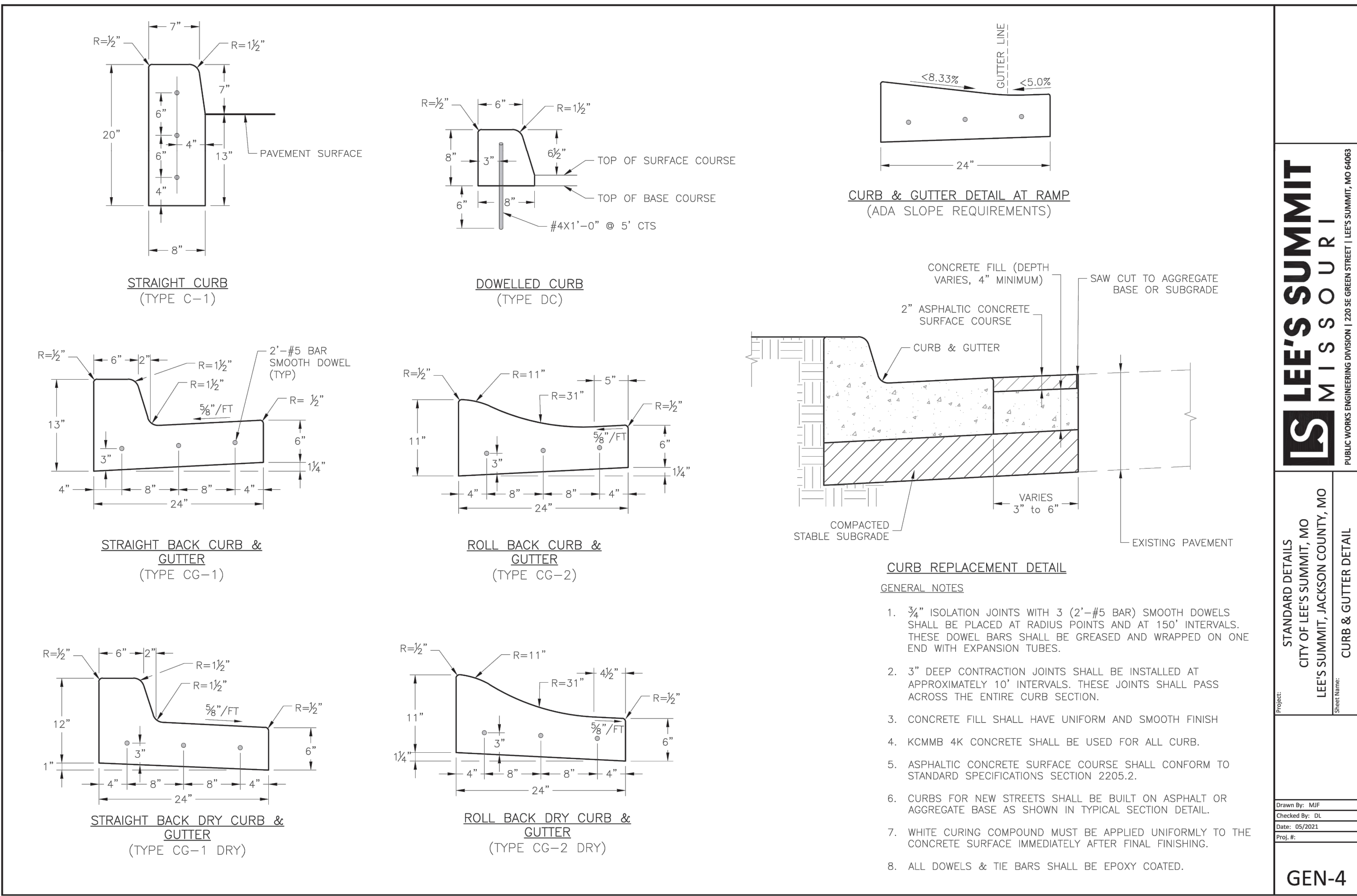
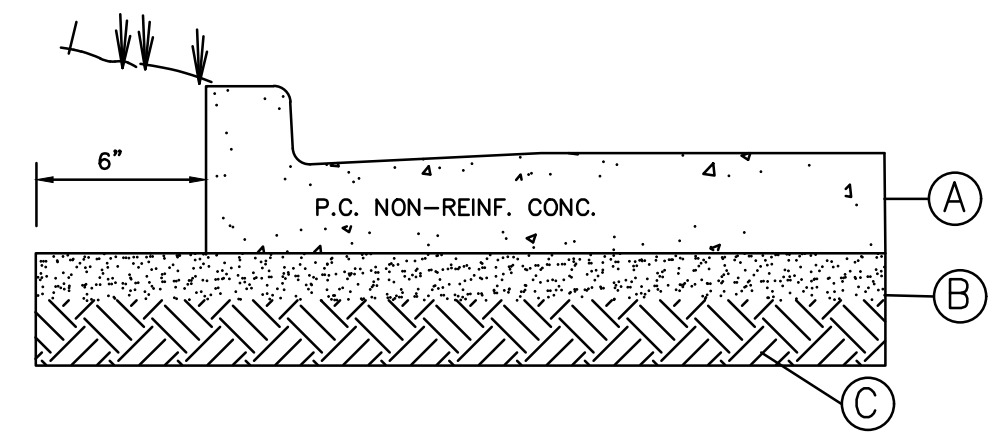
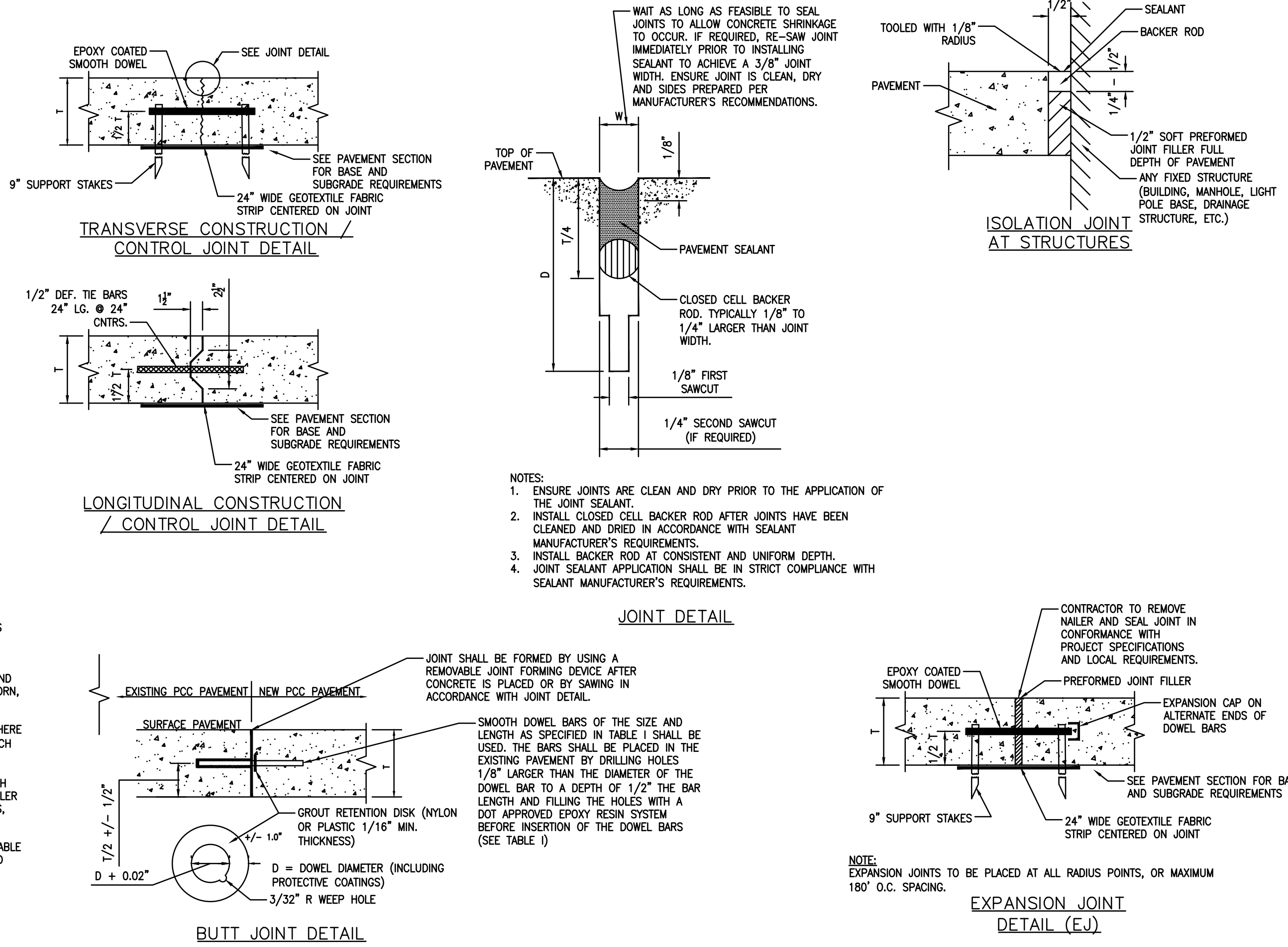


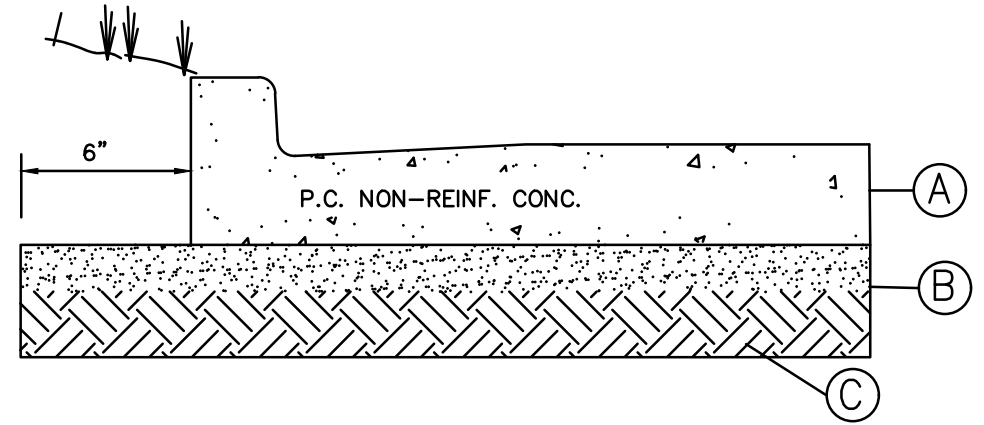
TABLE 1

PAVEMENT THICKNESS	SMOOTH DOWEL BARS				MINIMUM JOINT DEPTH
" T " (IN)	SIZE Ø (IN)	LENGTH (IN)	SPACING (IN)	" D " (IN)	
5"	1 1/2"	12"	18"	1 1/2"	
6"	3/4"	14"	12"	1 3/4"	
7"	1"	16"	12"	2"	
8"	1 1/4"	18"	12"	3"	
9"	1 1/4"	18"	12"	3"	
10"	1 1/4"	18"	12"	3 1/4"	

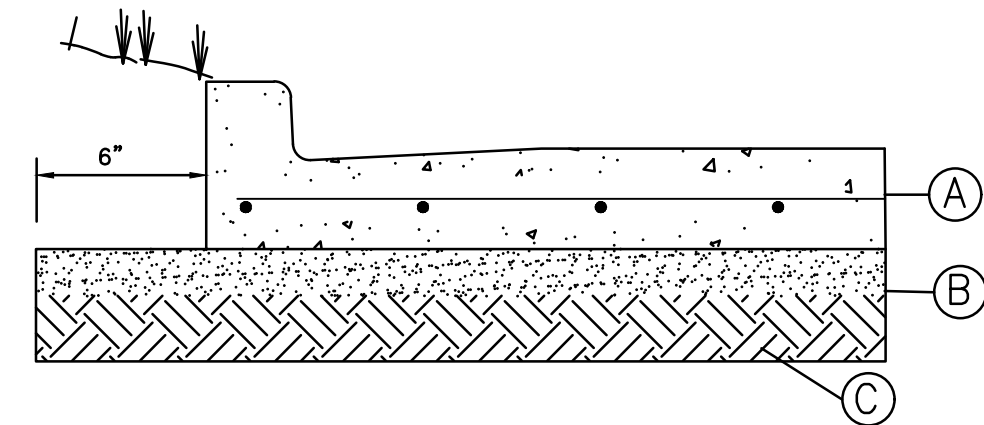
- NOTES:**
- JOINTS SHALL BE SAWCUT AS SOON AS THE CONCRETE HAS REACHED SUFFICIENT STRENGTH TO SUPPORT THE SAWING EQUIPMENT AND TEARING OF CONCRETE DOES NOT OCCUR.
  - GEOTEXTILE FABRIC SHALL BE CONSTRUCTED OF NON-WOVEN POLYPROPYLENE FIBERS RESISTANT TO CHEMICAL ATTACK, MILDEW, AND ROT. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A GEOTEXTILE MATERIAL SUBMITTAL FOR APPROVAL.
  - CONSTRUCT EXPANSION, WEAKENED PLANE CONTROL (CONTRACTION), AND CONSTRUCTION JOINTS STRAIGHT WITH FACE PERPENDICULAR TO CONCRETE SURFACE.
  - CONSTRUCT CONTROL JOINTS FOR DEPTH EQUAL TO AT LEAST 1/4 OF THE CONCRETE THICKNESS AS FOLLOWS:
    - FORM TOOLED JOINTS IN FRESH CONCRETE BY GROOVING TOP WITH RECOMMENDED TOOL AND FINISHING EDGE WITH JOINTER.
    - FORM SAWED JOINTS USING POWERED SAWS EQUIPPED WITH SHATTERPROOF ABRASIVE OR DIAMOND RIMMED BLADES. CUT JOINTS INTO HARDENED CONCRETE AS SOON AS SURFACE WILL NOT BE TORN, ABRADED, OR OTHERWISE DAMAGED BY CUTTING ACTION.
  - CONSTRUCTION JOINTS: PLACE CONSTRUCTION JOINTS AT END OF PLACEMENTS AND AT LOCATIONS WHERE PLACEMENTS OPERATIONS ARE STOPPED FOR PERIOD OF MORE THAN 1/2 HOUR, EXCEPT WHERE SUCH PLACEMENTS TERMINATE AT EXPANSION JOINTS. CONSTRUCT JOINTS IN ACCORDANCE WITH DETAILS.
  - EXPANSION JOINTS: LOCATE EXPANSION JOINTS AT MAXIMUM OF 180'-0" ON CENTERS, MAXIMUM EACH WAY UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS. PROVIDE PRE-MOLDED JOINT FILLER FOR EXPANSION JOINTS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, SIDEWALKS, AND OTHER FIXED OBJECTS.
  - BUTT JOINTS: FOR JOINTS AGAINST EXISTING PAVEMENT, PLACE DOWELS OF THE SIZE INDICATED IN TABLE 1 INTO HOLES DRILLED INTO CENTER OF EXISTING SLAB. EPOXY DOWELS INTO HOLES WITH APPROVED EPOXY COMPOUND. PLACE DOWELS PRIOR TO CONCRETE PLACEMENT FOR NEW CONCRETE. DOWEL SPACING TO BE AS INDICATED IN TABLE 1. SAW JOINTS AND FILL WITH JOINT SEALER.
  - JOINT FILLERS: EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT, AND NOT LESS THAN 1/2-INCH OR MORE THAN 1-INCH BELOW FINISHED SURFACE WHERE JOINT SEALER IS INDICATED. FURNISH JOINT FILLERS IN 1 PIECE LENGTHS FOR FULL WIDTH BEING PLACED, WHEREVER POSSIBLE. WHERE MORE THAN 1 LENGTH IS REQUIRED LACE OR CLIP JOINT FILLER SECTIONS TOGETHER.
  - JOINT SEALANTS: JOINTS SHALL BE SEALED WITH APPROVED EXTERIOR PAVEMENT JOINT SEALANTS AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - DOWELS SHALL NOT BE PLACED CLOSER THAN 12" TO A JOINT INTERSECTION.



STANDARD DUTY  
CONCRETE PAVEMENT

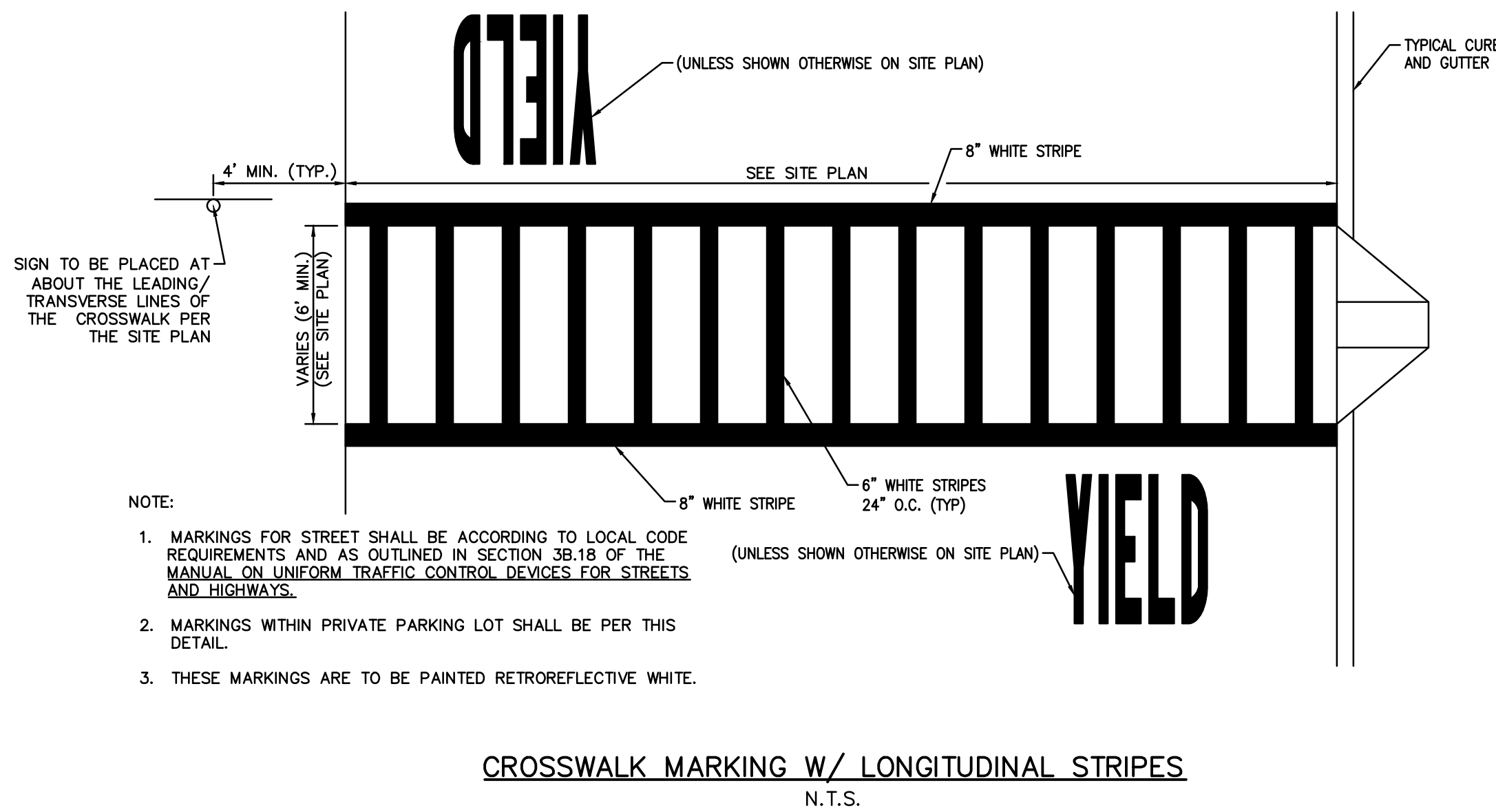


HEAVY DUTY  
CONCRETE PAVEMENT



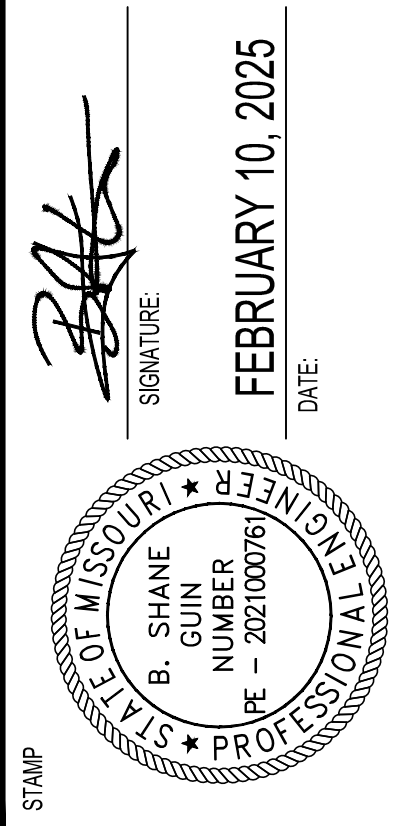
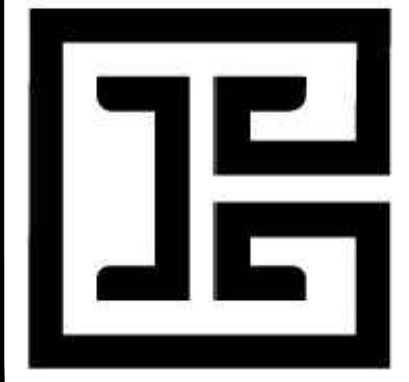
REINFORCED CONCRETE DUMPSTER PAD / APRON

- PAVEMENT NOTES (ALL SECTIONS):**
- PORTLAND CEMENT CONCRETE PAVEMENT SHALL BE KCMBB 4K MIX.
  - ALL PAVEMENT, BASE, FILL MATERIAL, AND SITE AND BUILDING PAD PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS. REPORT PREPARED BY TERRACON ENGINEERING, LLC DATED 11/2/2023. TERRACON PROJECT NO. 0225253.
  - THE EXPOSED SUBGRADE SHOULD BE PROOFROLLED WITH A RUBBER TIERED VEHICLE WEIGHING 20 TONS. SOILS WHICH ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD SHALL BE UNDERCUT AND REPLACED WITH COMPACTED STRUCTURAL FILL.
  - AGGREGATE SHALL BE MODOT TYPE 5.
  - GRANULAR FILL SHALL BE PLACED IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698 (STANDARD PROCTOR) WITHIN 3% OF OPTIMUM MOISTURE CONTENT.



SITE DETAILS

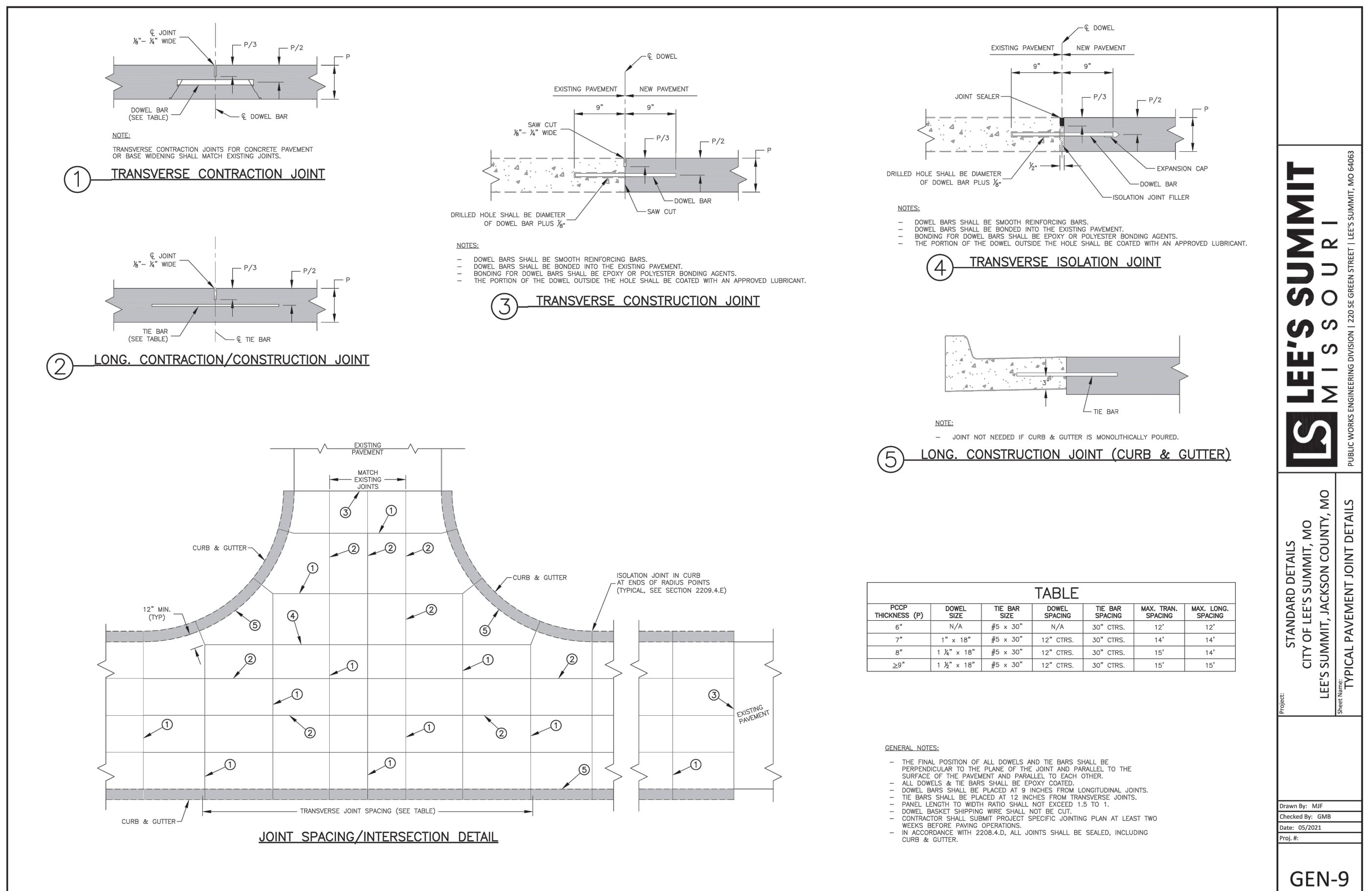
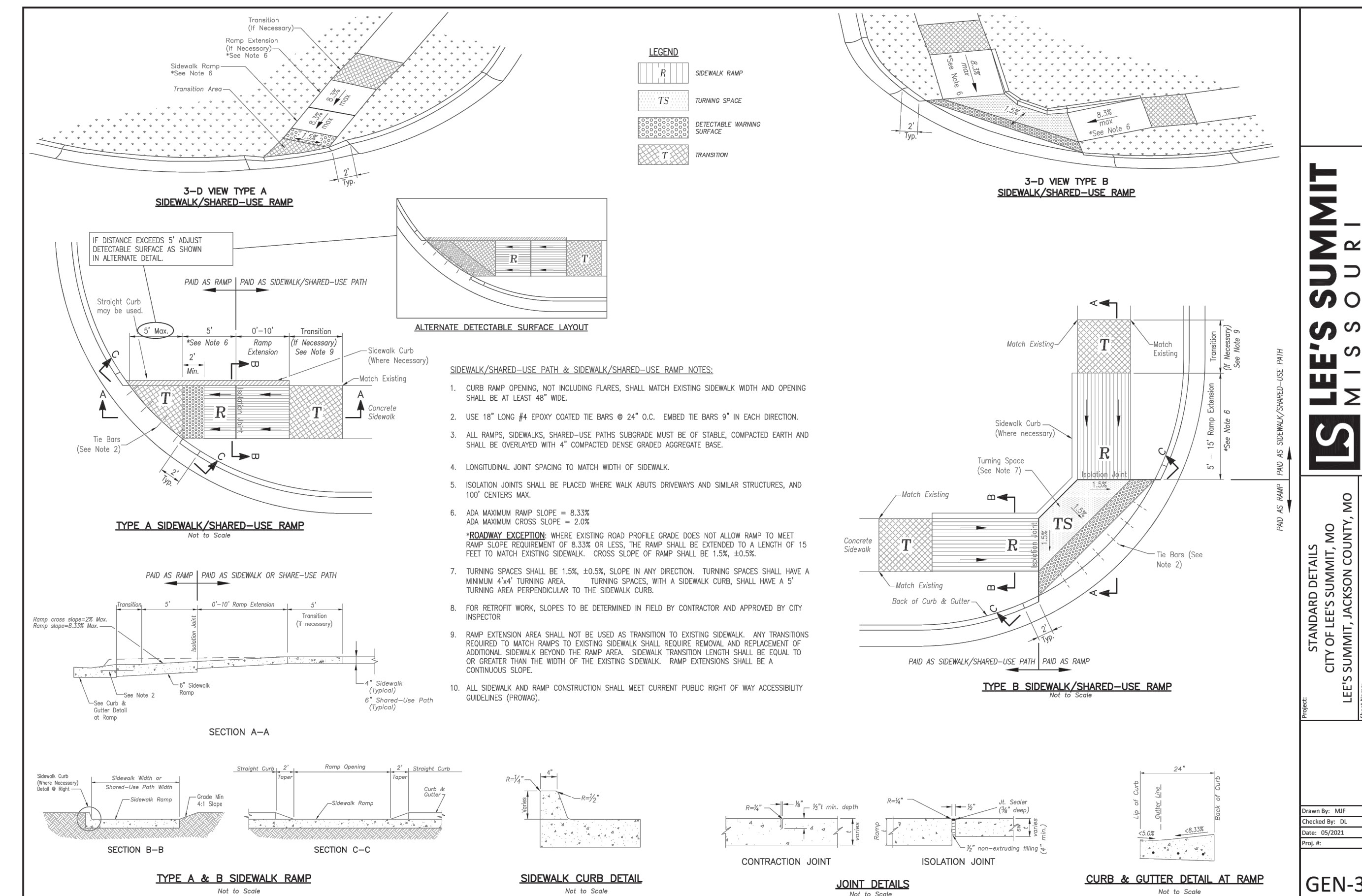
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FILE  
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SHEET  
C-4.2





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**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidelc.com



Signature: *[Signature]* DATE: FEBRUARY 14, 2025

Professional Engineer Seal: B. SHANE GUN, No. 202100076, State of Missouri

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SHEET	C-4.4

**NOTE:**

1. Location point at center of inlet.
2. A separate top slab may be utilized.
3. Not recommended for use in areas with bicycle traffic.

\* East Jordan is an approved manufacturer for castings.

**DOUBLE GRATE INLET DETAILS**

Heenah R-3336-G or Dealer #2512 or Clay & Bailey 2152 Grate and 2153 Frame or Dealer 2512 or Approved Equal

**SINGLE GRATE INLET DETAILS**

Heenah R-3336-F or Dealer #2511 or Clay & Bailey 2152 Grate and 2154 Frame or Dealer 2511 or Approved Equal

AMERICAN PUBLIC WORKS ASSOCIATION  
KANSAS CITY  
METROPOLITAN CHAPTER

GRATE INLET DETAILS  
STANDARD DRAWING NUMBER G1-1  
ADOPTED APRIL 17, 1996

PLAN

SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

WALL CORNER DETAIL

REINFORCING

BAR	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6

GENERAL NOTES:

1. LOCATE RING AND COVER ON BLANK WALL.
2. USE 3/8" CHAMFER STRIP OR 1/2" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H-BAR OVER A CAST-IN-PLACE PIPE AND 2 H-BARS OVER A PRECAST BOXOUT.
6. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
7. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
8. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

Project: CITY OF LEE'S SUMMIT, MO  
Lee's Summit, Jackson County, MO

Standard Details: JUNCTION BOX DETAIL

Drawn By: MEF  
Checked By: DS  
Date: 05/2021  
Drawn By: R

STM-3

**NON TRAFFIC INSTALLATION**

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

**YARD INLET**  
N. T. S.

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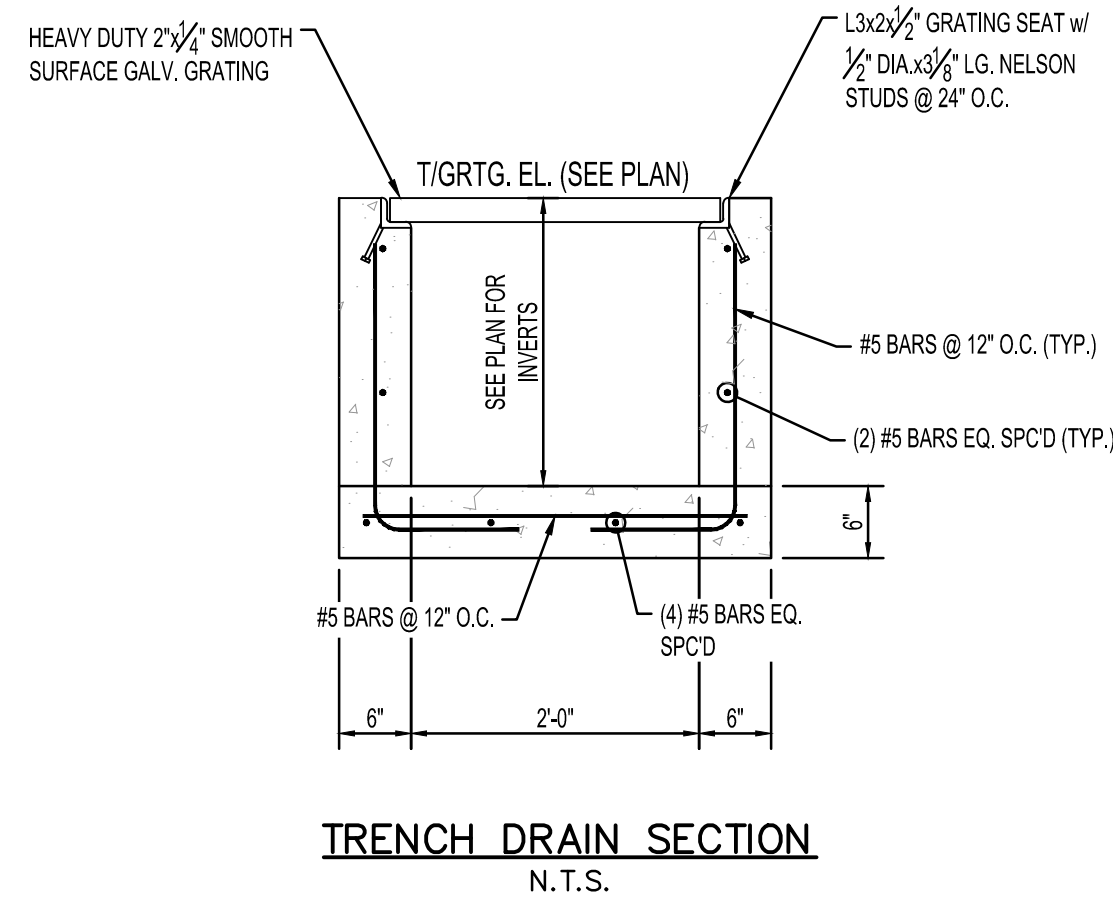
DRAWN BY	CJA	MATERIAL	
DATE	9-30-99	PROJECT NO. NAME	
REVISED BY	NHH		
DATE	03-11-16	DWG SIZE	A
		SCALE	SHEET 1 OF 1

3130 VERONA AVE  
BURLINGTON, IA 52601  
PHN (770) 852-2440  
FAX (770) 932-2490  
www.nyloplast-us.com

TITLE	DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION
DWG NO.	7001-110-111
REV	E

# DRAINAGE DETAILS





**UNDERDRAIN DETAIL**

**PLAN VIEW:**

- STORMTECH CHAMBERS
- STORMTECH END CAP
- OUTLET MANHOLE
- FOUNDATION STONE BENEATH CHAMBERS
- ADD GEONETICS/GEOTEXTILE
- NON-WOVEN GEOTEXTILE
- STORMTECH END CAP
- FOUNDATION STONE BENEATH CHAMBERS
- ADD GEONETICS/GEOTEXTILE
- NON-WOVEN GEOTEXTILE

**CROSS-SECTION A-A:**

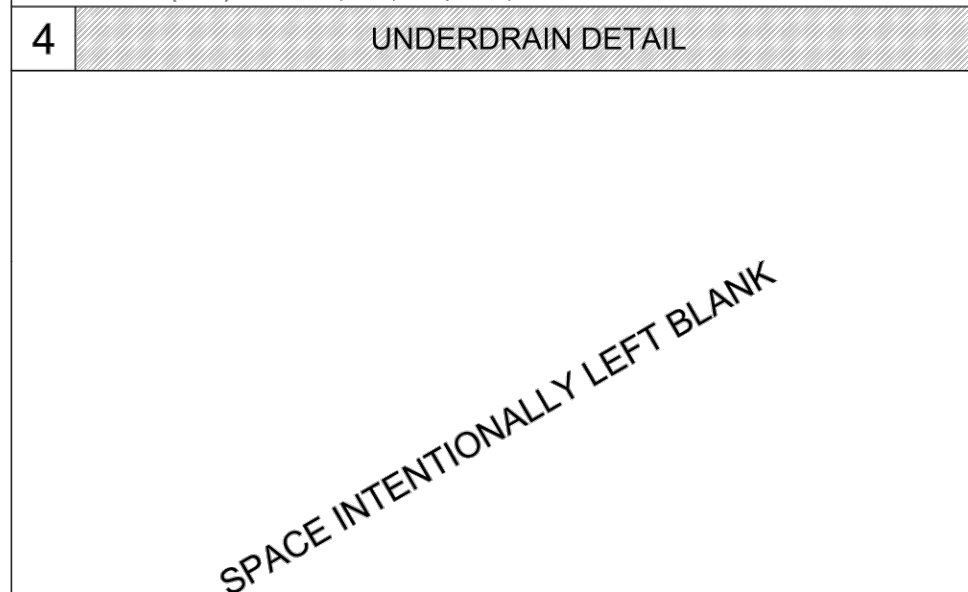
- DUAL WALL PERFORATED PIPE UNDERDRAIN

**CROSS-SECTION B-B:**

- FOUNDATION STONE BENEATH CHAMBERS

**NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER**

4" 120 mm TYP FOR SC-315 & SC-360 SYSTEMS  
 6" 150 mm TYP FOR SC-480, SC-600, SC-720, SC-900, MC-3000, MC-4200 & MC-7200 SYSTEMS



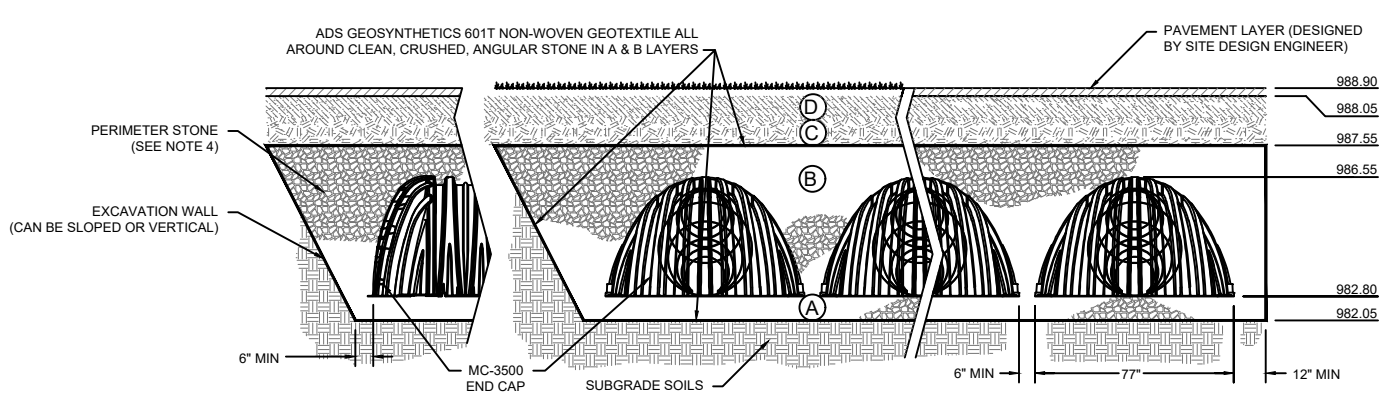
2	MC-3500 TECHNICAL SPECIFICATION
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PLEASE NOTE: THESE ASHOTO DESIGNATIONS ARE FOR GRADATIONS ON THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR A STONE WOULD STATE "CLEAN, CRUSHED, ANGULAR NO. 4 (ASHOTO) M5 STONES".

2. STORMWATER COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIAL WHEN PLACED AND COMPACTED IN 75 (230 mm) (MAX) LIFTS USING TWO FULL COVERS, FOLLOWING WITH A VIBRATORY COMPACTION ROLLER. THE VIBRATORY COMPACTION ROLLER SHALL BE OPERATED AT A MINIMUM OF 1000 VIBRATIONS PER MINUTE TO ACHIEVE THE REQUIRED COMPACTION. FOR SPECIAL LOAD DESIGNATIONS, CONTACT STORMWATER FOR ADDITIONAL INFORMATION REGARDING COMPACTION REQUIREMENTS.


3. ONCE LAYER C IS PLACED, ANY SOLID MATERIAL CAN BE PLACED IN LAYER D, UP TO THE FINISHED GRADE. MOSTLY, AVOIDING BURSTABLE SOLIDS CAN BE REPLACED BY THE MATERIAL REQUIRED FOR LAYER C OR LAYER D AT THE SITE DESIGN ENGINEER'S DISCRETION.

4. ONCE LAYER D OR AGGREGATE IS PLACED IN LAYER E, THE FINISHED GRADE, MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL SPEC. 620 "RECYCLED CONCRETE STRUCTURAL, SQA/C/L".



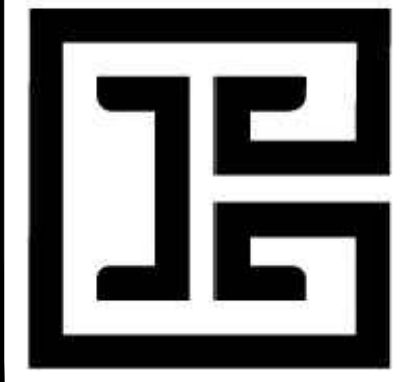
1	MC-3500 CROSS SECTION DETAIL
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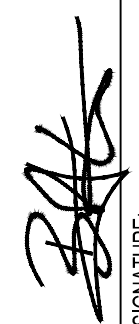
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 <b>ADS</b> 4640 TRUEMAN BLVD HILLIUS, OH 43026 1-800-733-4773	<b>StormTech®</b> Chamber System 4306 6TH ST. WYOMING, OH 43081 1-800-445-6710 WWW.STORMTECH.COM	TAKE 5 - LEE'S SUMMIT, MO	DRAWN: PM DATE: 10/23/2024
		LEE'S SUMMIT, MO, USA	CHECKED: N/A PROJECT #:
		REV:	NOT TO SCALE

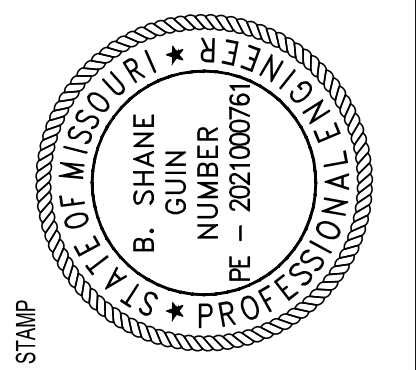



**HIGH TIDE**  
**CONSULTANTS LLC**  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com



  
SIGNATURE

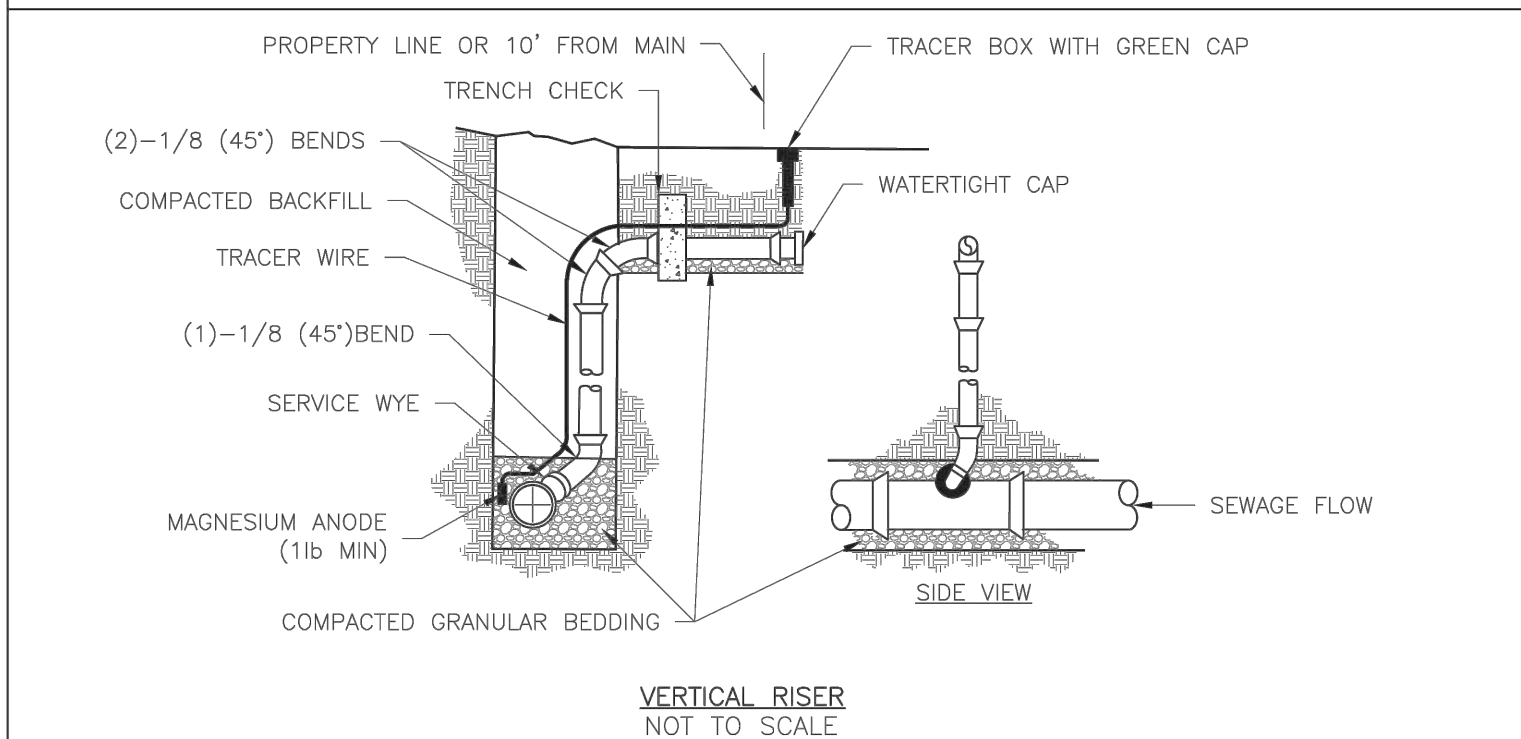
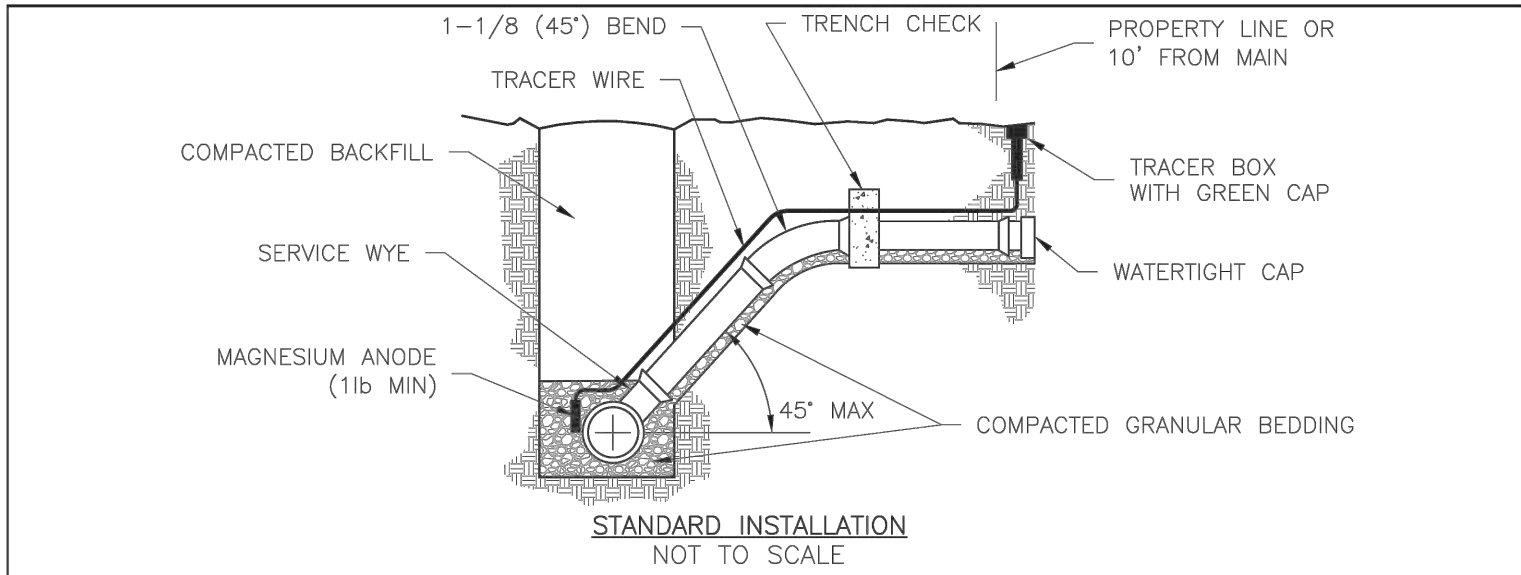
JULY 30, 2024  
DATE

  
STAMP

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN KRG
CHECKED RCG
ISSUED DATE 07/30/2024
ISSUED FOR PERMITTING
PROJECT NO. 22-218
FILE 22-218 C-4 Details
SHEET
C-4.6



- NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
  2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
  3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
  4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
  5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
  6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
  7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
  8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

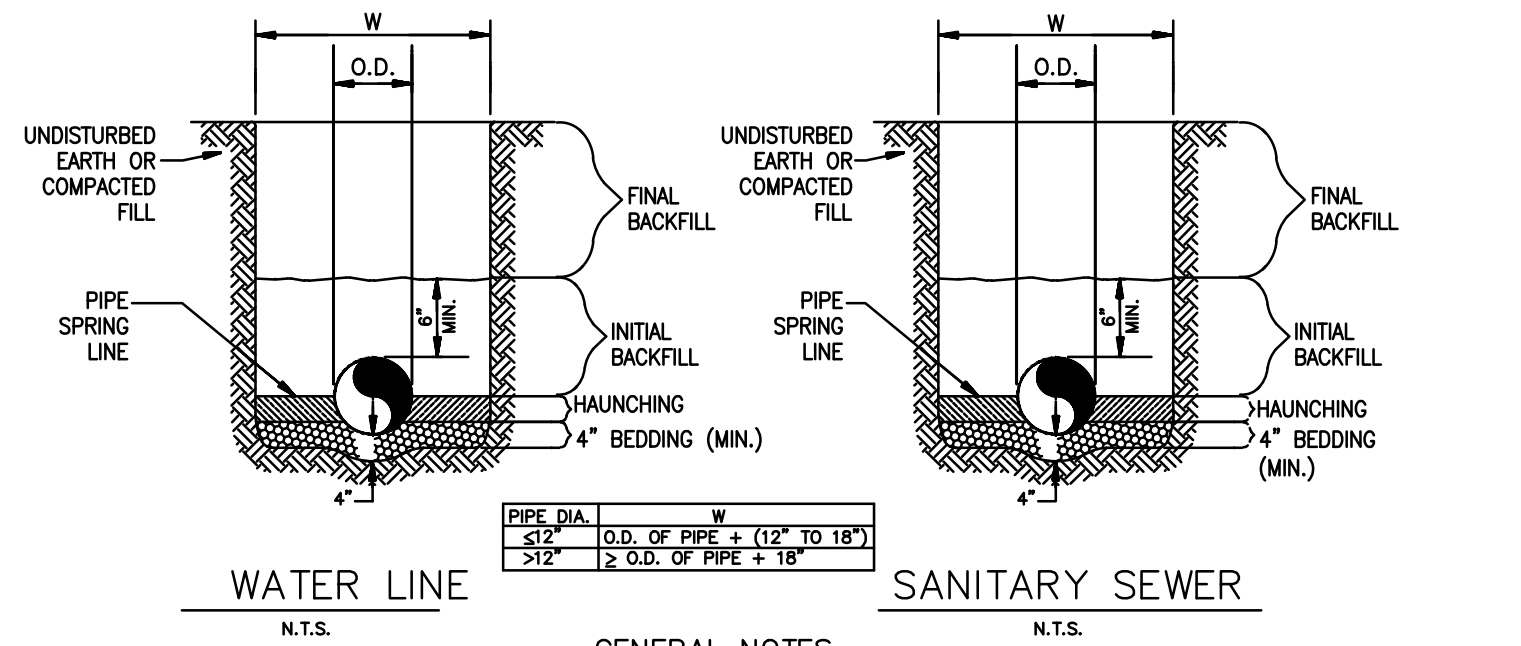


**LEE'S SUMMIT**  
**MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

Date: 12/20/15  
Drawn By: MEF  
Checked By: DL

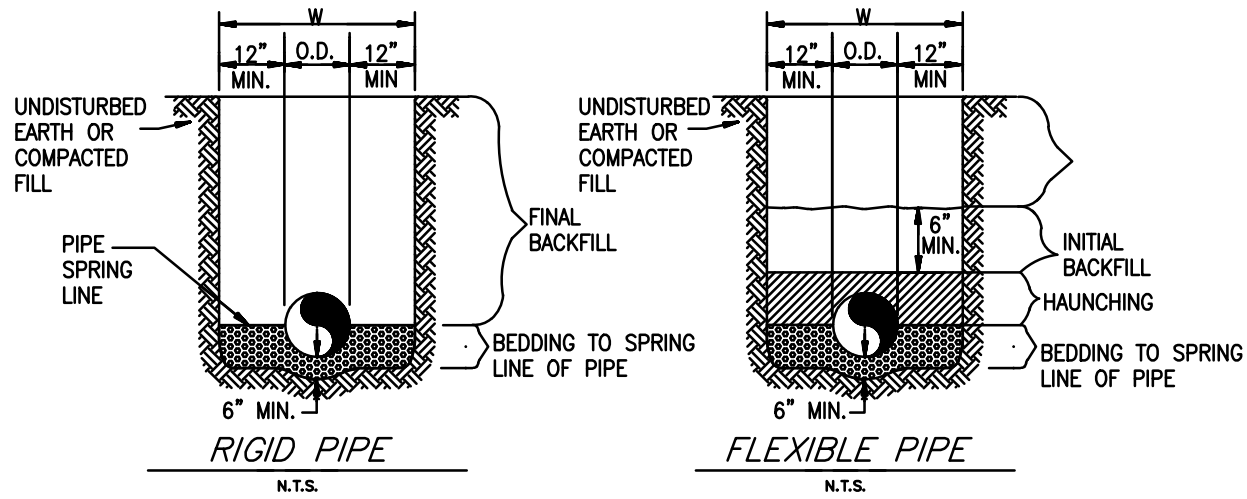
**SANITARY SEWER STUB DETAIL**

**SAN-1**



- GENERAL NOTES
1. BEDDING SHALL BE CLASS I-A WORKED BY HAND. IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR.
  2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
  3. INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
  4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
  5. FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
  6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
  7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
  8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
  9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
  10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

UTILITY TRENCH AND BEDDING  
N.T.S.

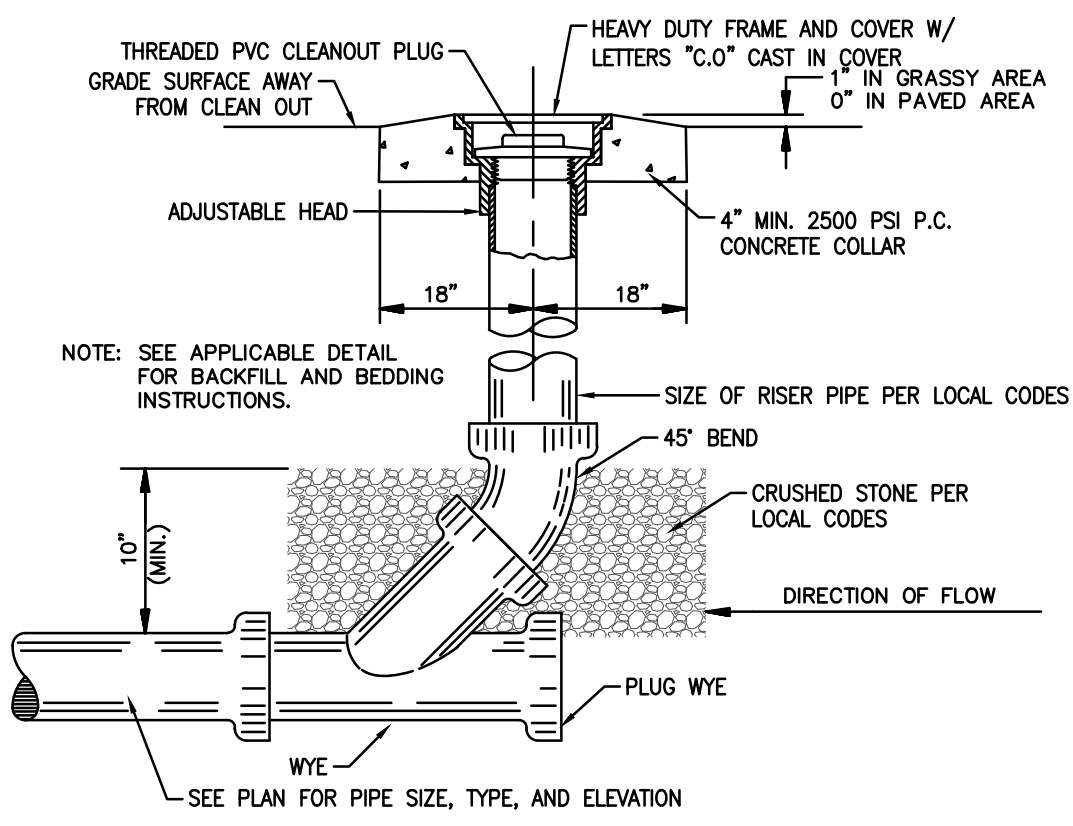


- GENERAL NOTES
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  2. HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 95% PROCTOR.
  3. INITIAL BACKFILL UNDER PAVED AREAS SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 95% STANDARD PROCTOR.
  4. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS II COMPACTED TO 90% STANDARD PROCTOR.
  5. FINAL BACKFILL UNDER PAVED AREAS SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3. AND 4.
  6. FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
  7. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-LATEST EDITION.
  8. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
  9. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
  10. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES.
  11. GEOTECH FABRIC TO BE USED UNDER BEDDING MATERIAL WHEN UNSUITABLE SOILS ARE ENCOUNTERED OR A STABLE NON-YIELDING FOUNDATION CANNOT BE OBTAINED.
  12. HAUNCHING FOR FLEXIBLE PIPE SHALL BE WORKED A MINIMUM OF 6" ABOVE THE TOP OF PIPE OR PER THE MANUFACTURER'S RECOMMENDATION, WHICHEVER IS MORE STRINGENT.

\*SEE CHART ON D-3 FILL TYPES

CLASS	TYPE	SOIL GROUP SYMBOL	DESCRIPTION
1A	MANUFACTURED AGGREGATES; OPEN-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS, LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES
1B	MANUFACTURED, PROCESSED AGGREGATES; DENSE-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS 1A MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS, CONTAIN LITTLE OR NO FINES (SEE X1.8)
II	COARSE-GRAINED SOILS CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES
		SW	WELL-GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
		SP	POORLY-GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
III	COARSE-GRAINED SOILS BORDERLINE CLEAN TO W/ FINES	e.g. GW-GC, SP-SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES
		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
		SM	SILTY SANDS, SAND-SILT MIXTURES
IV-A	FINE-GRAINED SOILS (INORGANIC)	SC	CLAYEY SANDS, SAND-CLAY MIXTURES
		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELY CLAYS; SANDY CLAYS; SILTY CLAYS; LEAN CLAYS
		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
IV-B	FINE-GRAINED SOILS (INORGANIC)	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
		PT	PEAT AND OTHER HIGH ORGANIC SOILS.
V	ORGANIC SOILS HIGHLY ORGANIC		

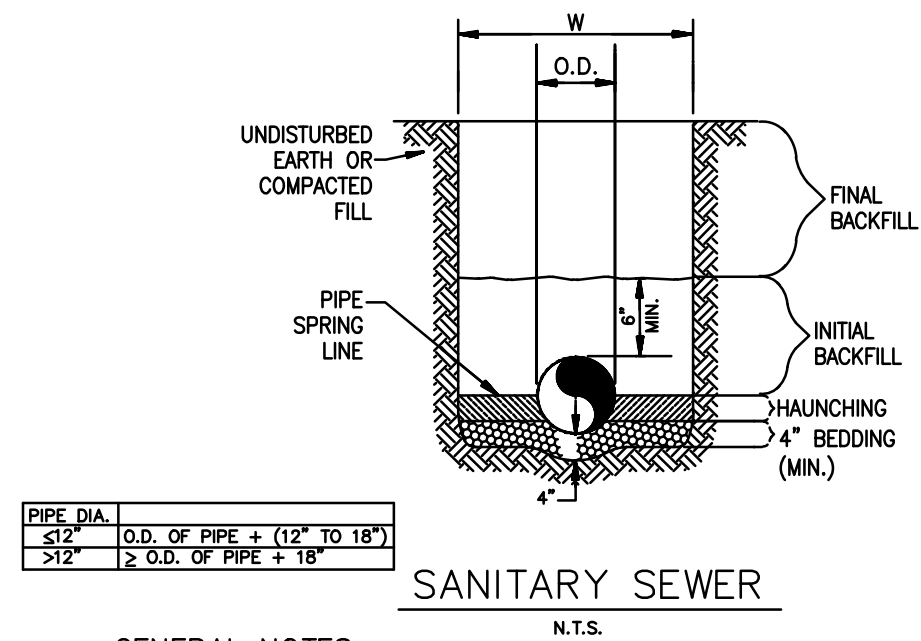
STORM SEWER TRENCH AND BEDDING  
N.T.S.



SANITARY SEWER CLEAN-OUT  
N.T.S.

SEWER DETAILS

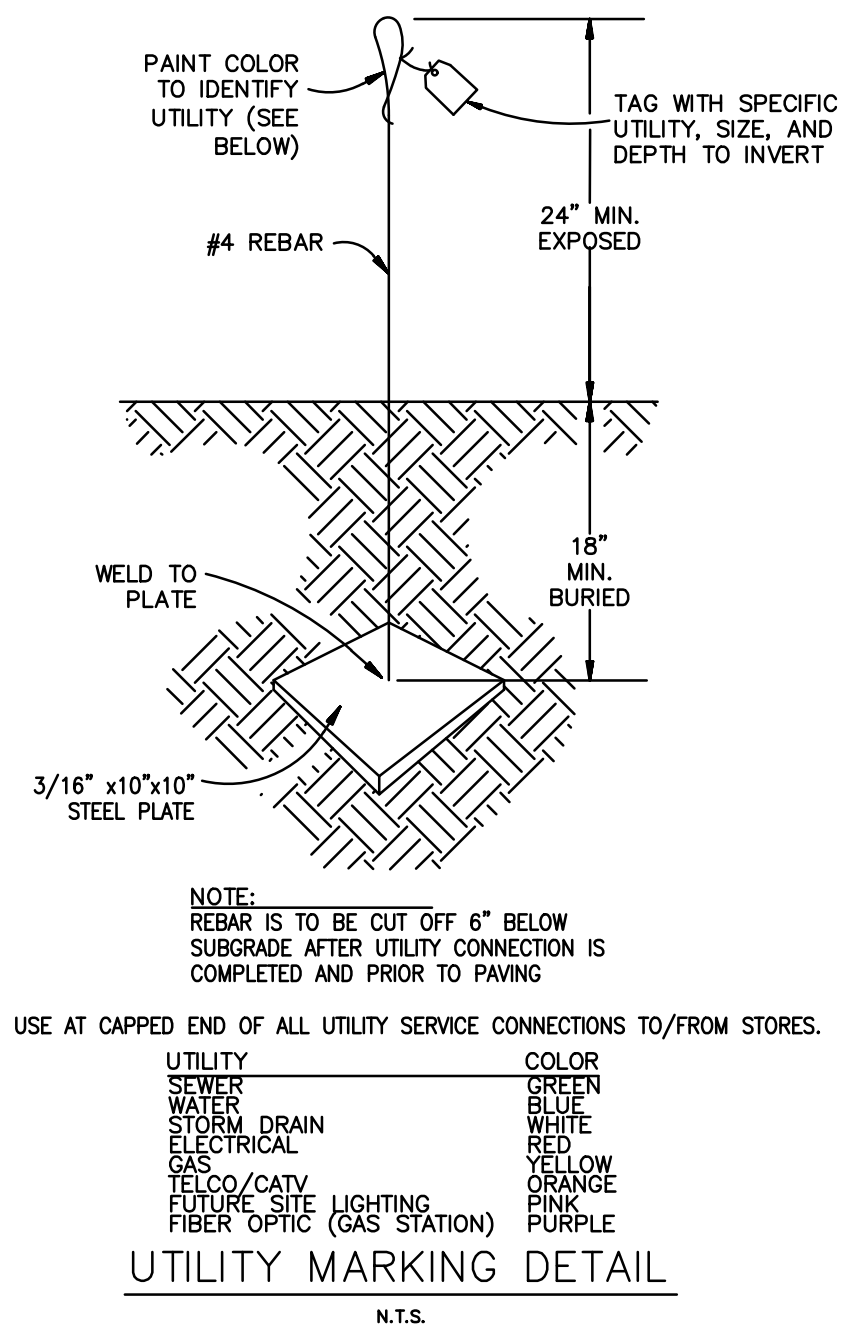




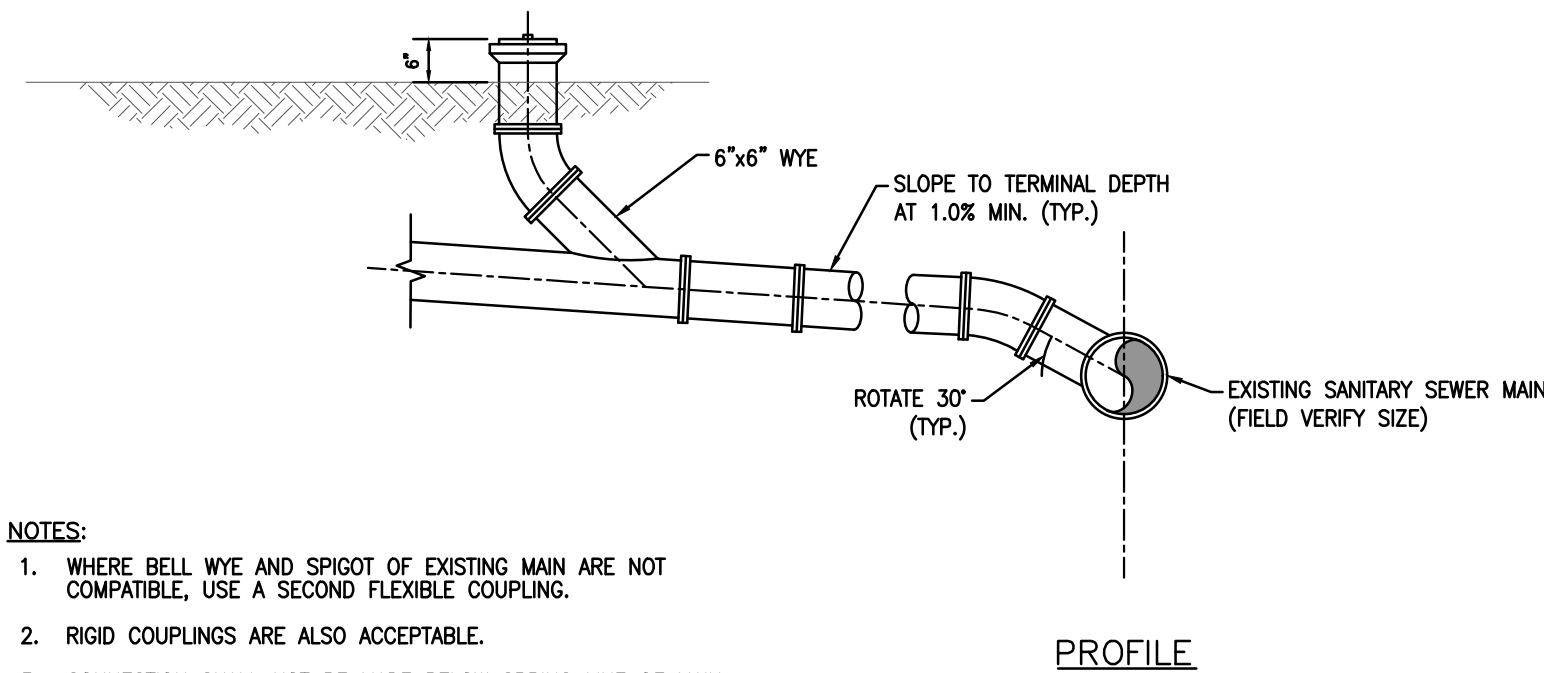
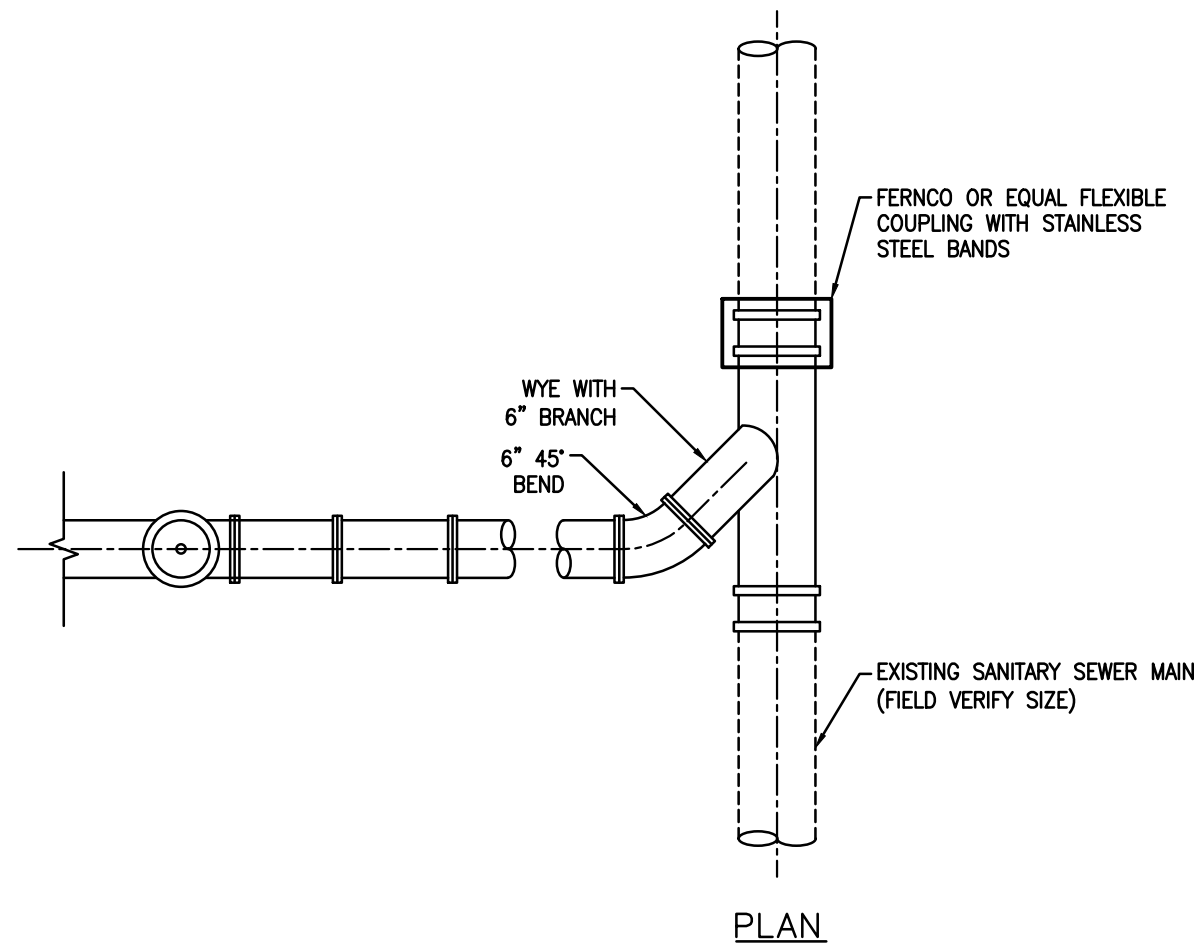
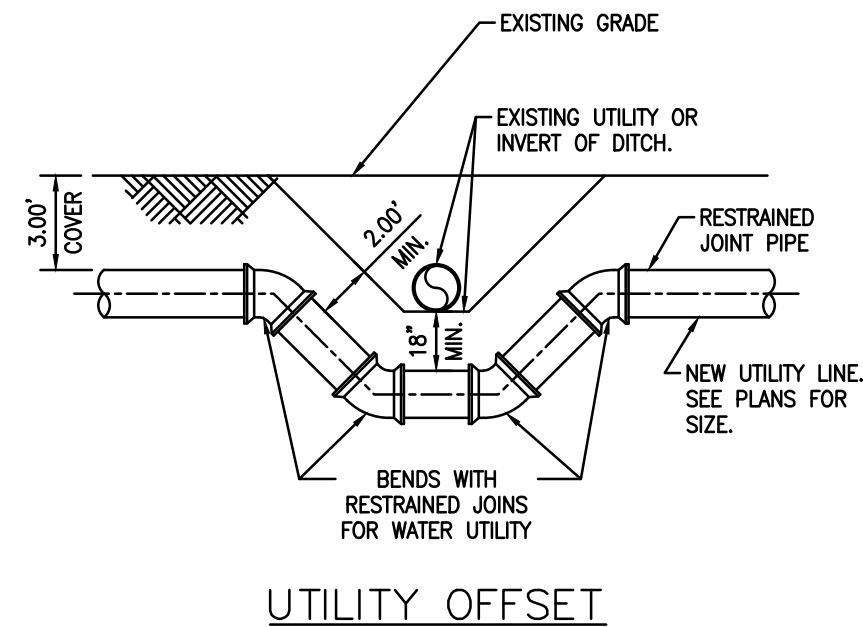
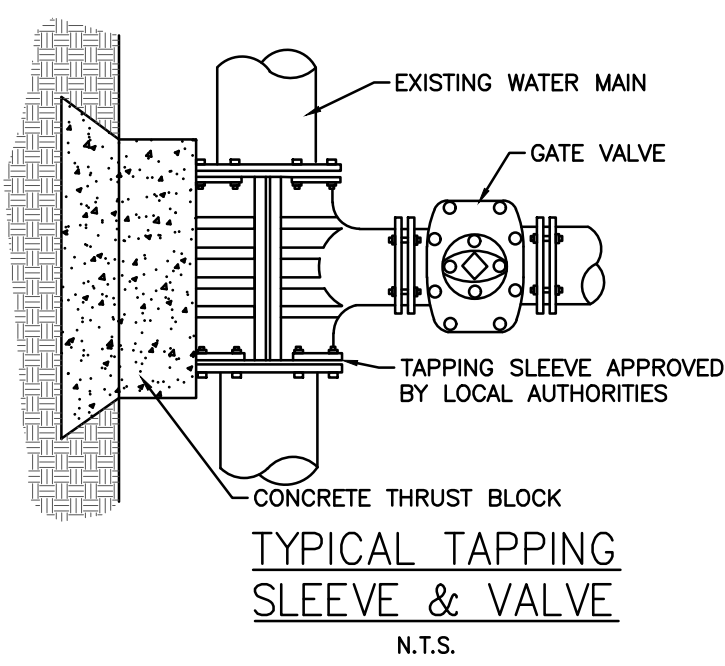
- GENERAL NOTES**
- BEDDING SHALL BE CLASS I-A WORKED BY HAND, IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR.
  - HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
  - INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
  - INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR.
  - FINAL BACKFILL SHALL BE CLASS I, II, OR III COMPACTED AS NOTED IN NOTES 3, AND 4.
  - FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
  - ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
  - ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 658. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
  - FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
  - ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

**UTILITY TRENCH AND BEDDING**

N.T.S.



CLASS	TYPE	SOIL GROUP SYMBOL	DESCRIPTION
1A	MANUFACTURED AGGREGATES, OPEN-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS; LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES
1B	MANUFACTURED, PROCESSED AGGREGATES, DENSE-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS 1A MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE 1.8)
II	COARSE-GRAINED SOILS CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES
		SW	WELL-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
		SP	POORLY-GRADED SANDS AND GRAVELLY SANDS; LITTLE OR NO FINES (NO. 200 SIEVE)
III	COARSE-GRAINED SOILS BORDERLINE CLEAN TO W/ FINES	e.g. GW-GC, SP-SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES
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		SM	SILTY SANDS, SAND-SILT MIXTURES
IV-A	FINE-GRAINED SOILS (INORGANIC)	SC	CLAYEY SANDS, SAND-CLAY MIXTURES
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		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
IV-B	FINE-GRAINED SOILS (INORGANIC)	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
		PT	PEAT AND OTHER HIGH ORGANIC SOILS
V	ORGANIC SOILS		
	HIGHLY ORGANIC		

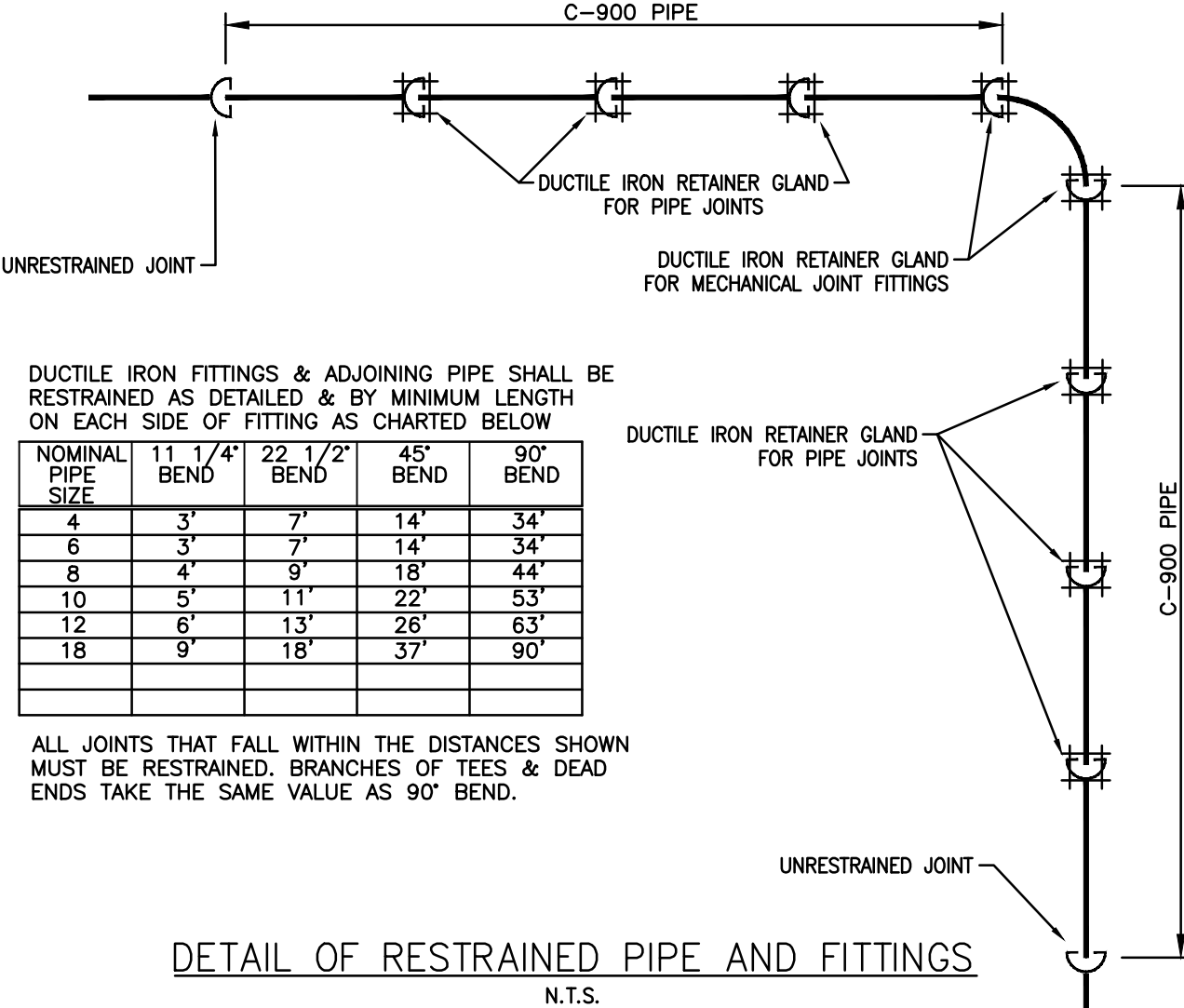


- NOTES:**
- WHERE BELL WYE AND SPIGOT OF EXISTING MAIN ARE NOT COMPATIBLE, USE A SECOND FLEXIBLE COUPLING.
  - RIGID COUPLINGS ARE ALSO ACCEPTABLE.
  - CONNECTION SHALL NOT BE MADE BELOW SPRING LINE OF MAIN.

**SANITARY SEWER WYE CONNECTION DETAIL**

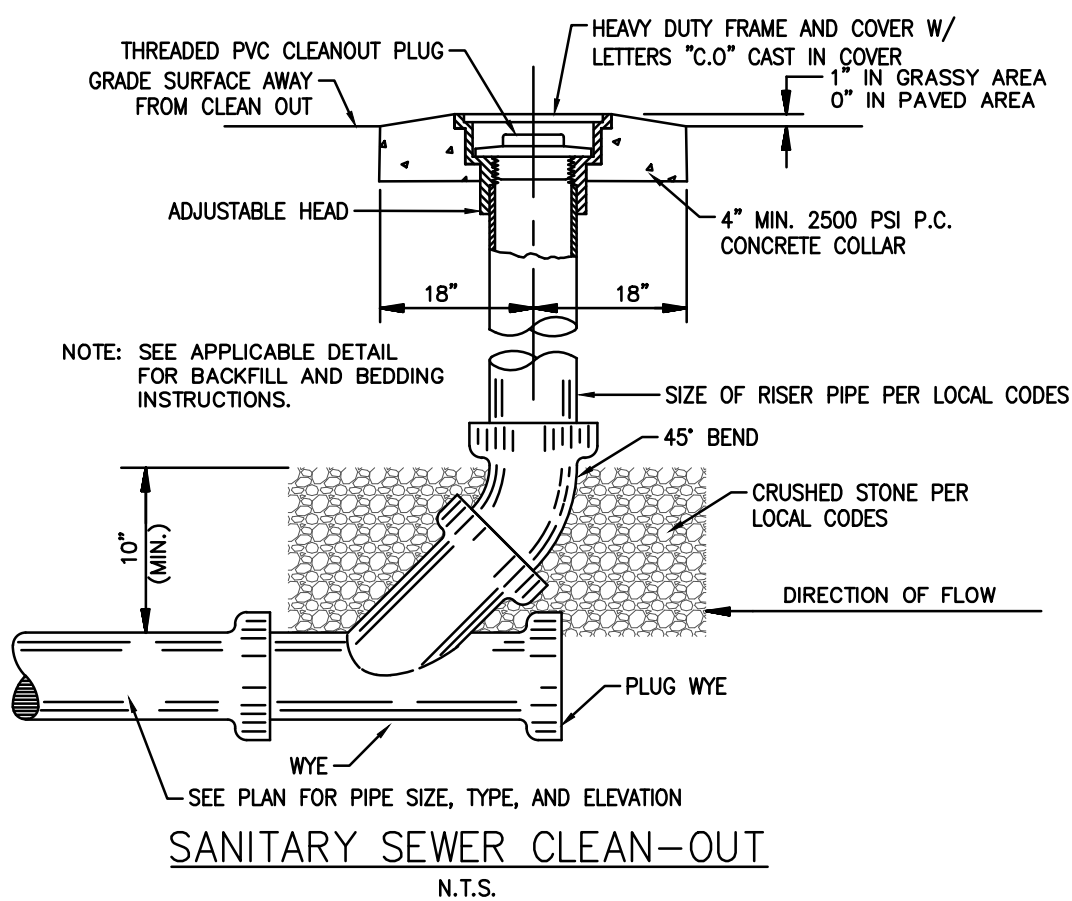
N.T.S.

- NOTES:**
- DISTANCES OF RESTRAINTS SHALL BE REQUIRED ON EVERY JOINT(S) ON EACH SIDE OF FITTING, IN ADDITION TO CONCRETE OR TIMBER BLOCKING.
  - RESTRAINTS NOT REQUIRED INSIDE OF CASING WHEN FITTING OR PIPE IS RODDED TO CASING ENDS.
  - RESTRAIN TEE WHEN USED AS A 90° BEND, DEAD END, OR AS NOTED ON PLANS.
  - AT ALL ROAD CROSSINGS AND WHERE NOTED ON PLANS, FITTINGS NOTED ON PLANS.
  - TIE-INS SHALL BE RESTRAINED AS IF A 90° BEND.
  - RESTRAINT SYSTEM:  
EITHER: (A) RODS FOR USE WITH MECHANICAL JOINT FITTINGS - 2 REQUIRED - 5/8" DIA STAINLESS STEEL FOR 8" PIPE & BELOW  
(B) RETAINER GLAND: USE EBBA IRON, UNI-FLANGE OR EQUAL IN COMPLIANCE WITH PIPE MATERIAL USED.



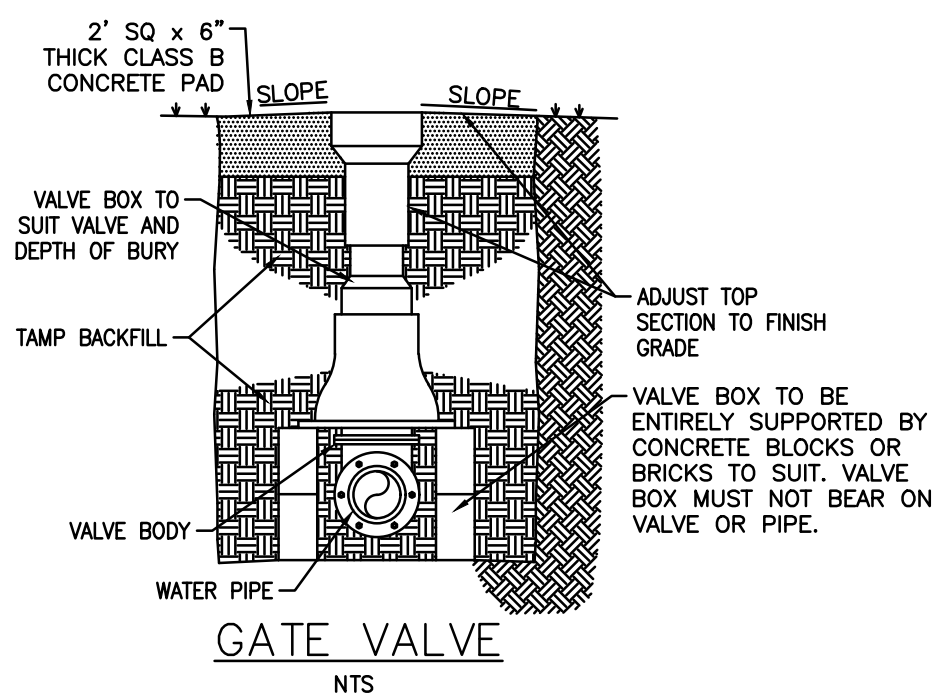
**DETAIL OF RESTRAINED PIPE AND FITTINGS**

N.T.S.



**SANITARY SEWER CLEAN-OUT**

N.T.S.



**GATE VALVE**

N.T.S.

**UTILITY DETAILS**

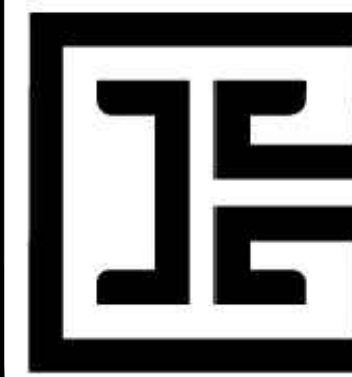
PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN  
KRG  
CHECKED  
RCG  
ISSUED DATE  
07/30/2024  
ISSUED FOR  
PERMITTING  
PROJECT NO.  
22-218  
FILE  
22-218 C-4 Details

SHEET

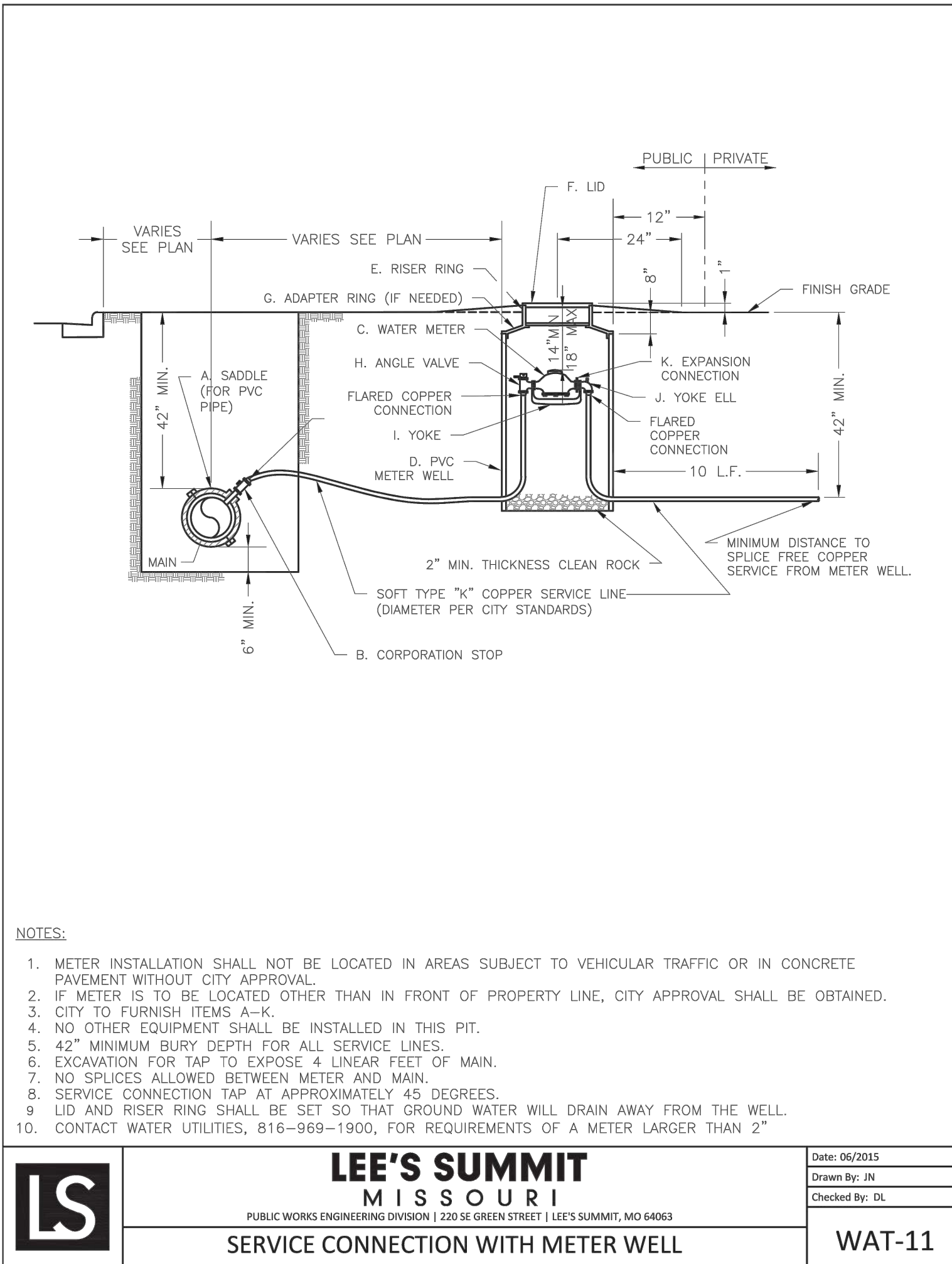
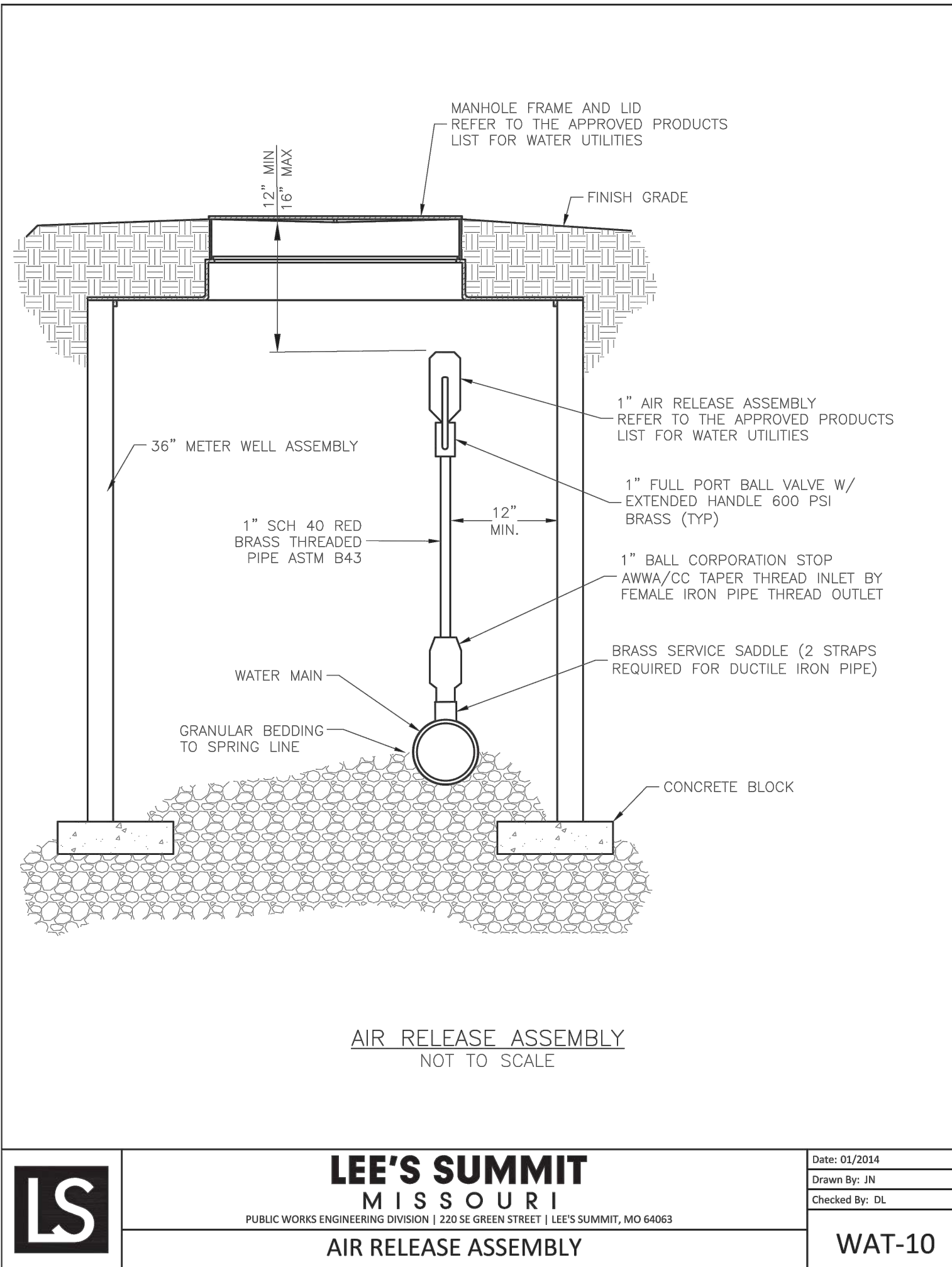
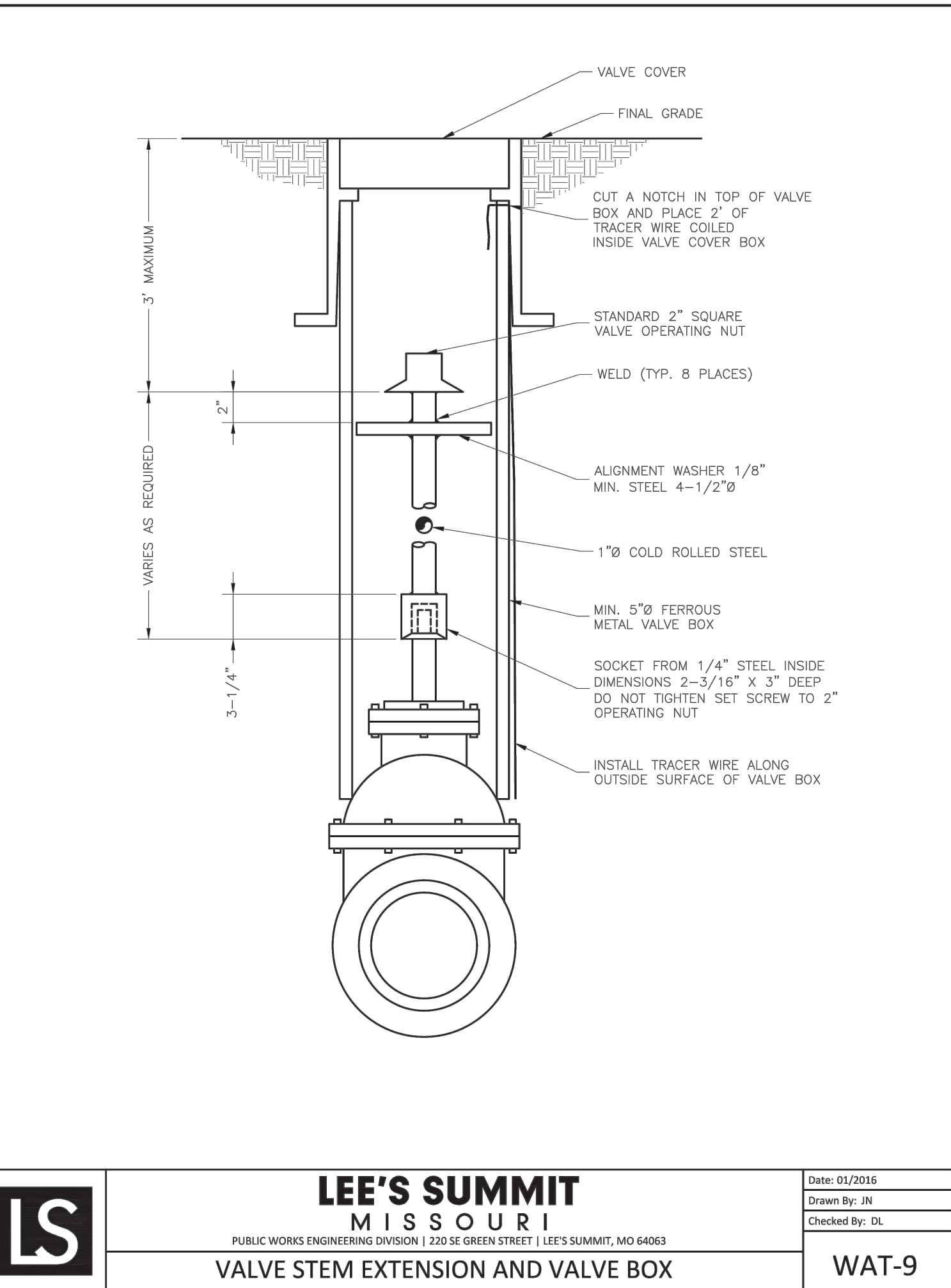
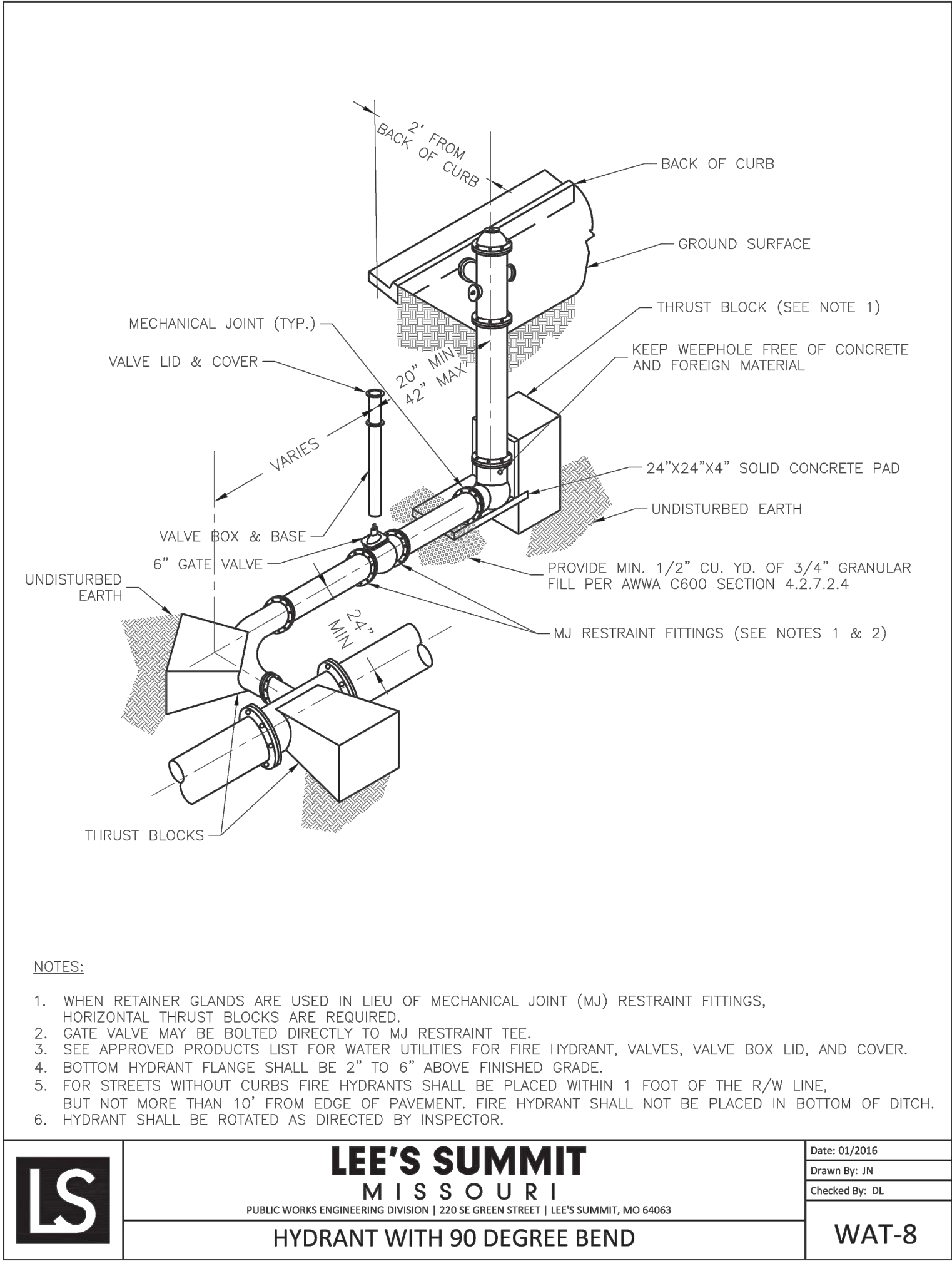
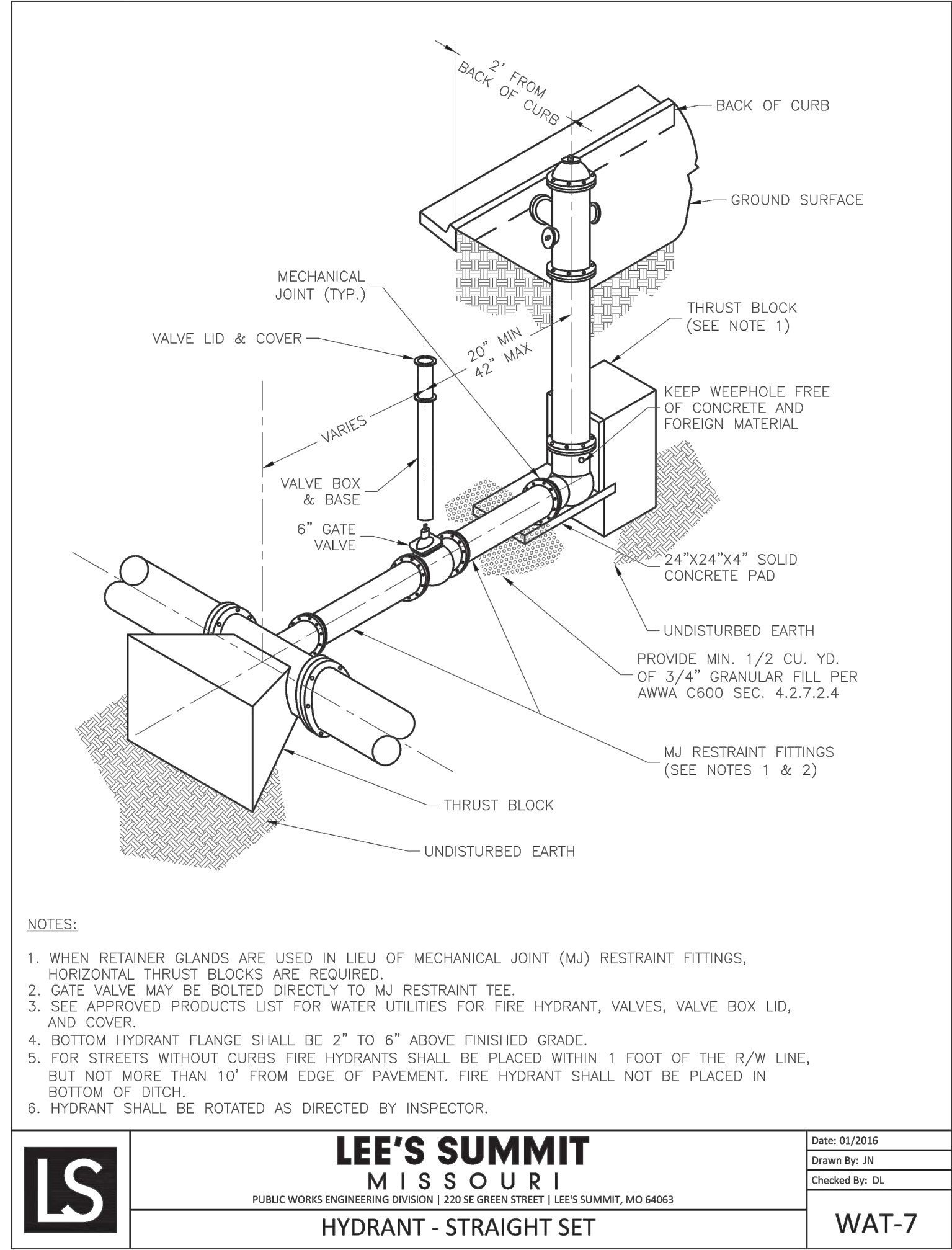
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B. SHANE  
GUIN  
NUMBER  
PE - 202100076  
PROFESSIONAL ENGINEER  
STATE OF MISSOURI  
JULY 30, 2024  
DATE  
SIGNATURE



**HIGH TIDE**  
CONSULTANTS LLC  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com





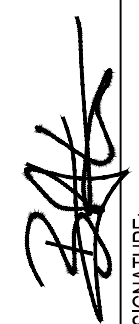
## UTILITY DETAILS

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review

REVISION

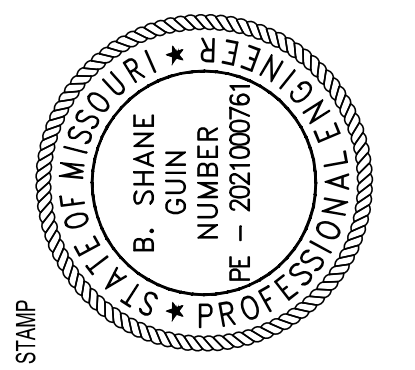
Development Services Department  
Lee's Summit, MO 64081  
03/12/2023

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PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI

FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN  
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ISSUED DATE  
07/30/2024

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PERMITTING

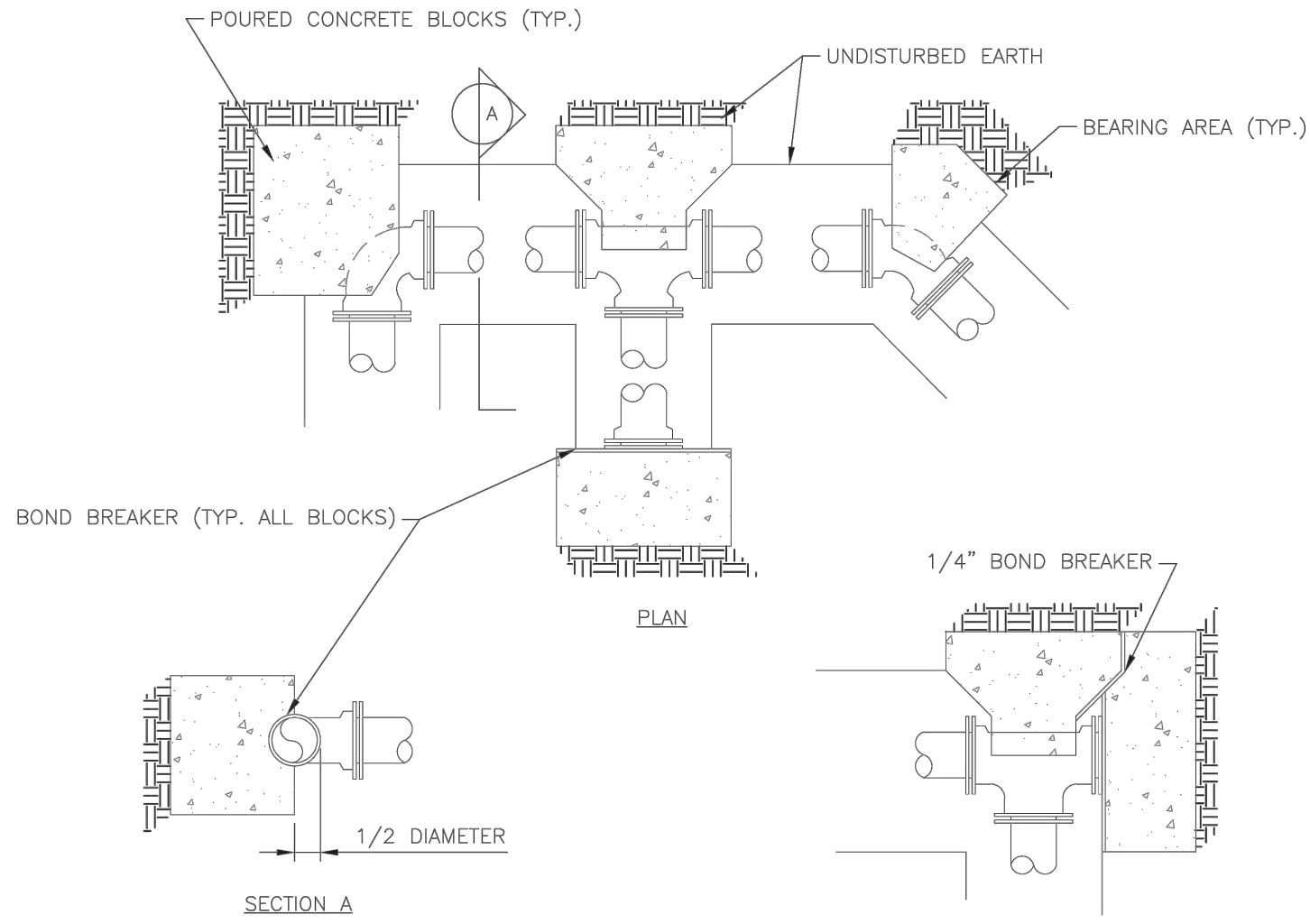
PROJECT NO.  
22-218

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22-218 C-4 Details

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C-4.8



REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)					
NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8



- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
  2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
  3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
  4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

LS

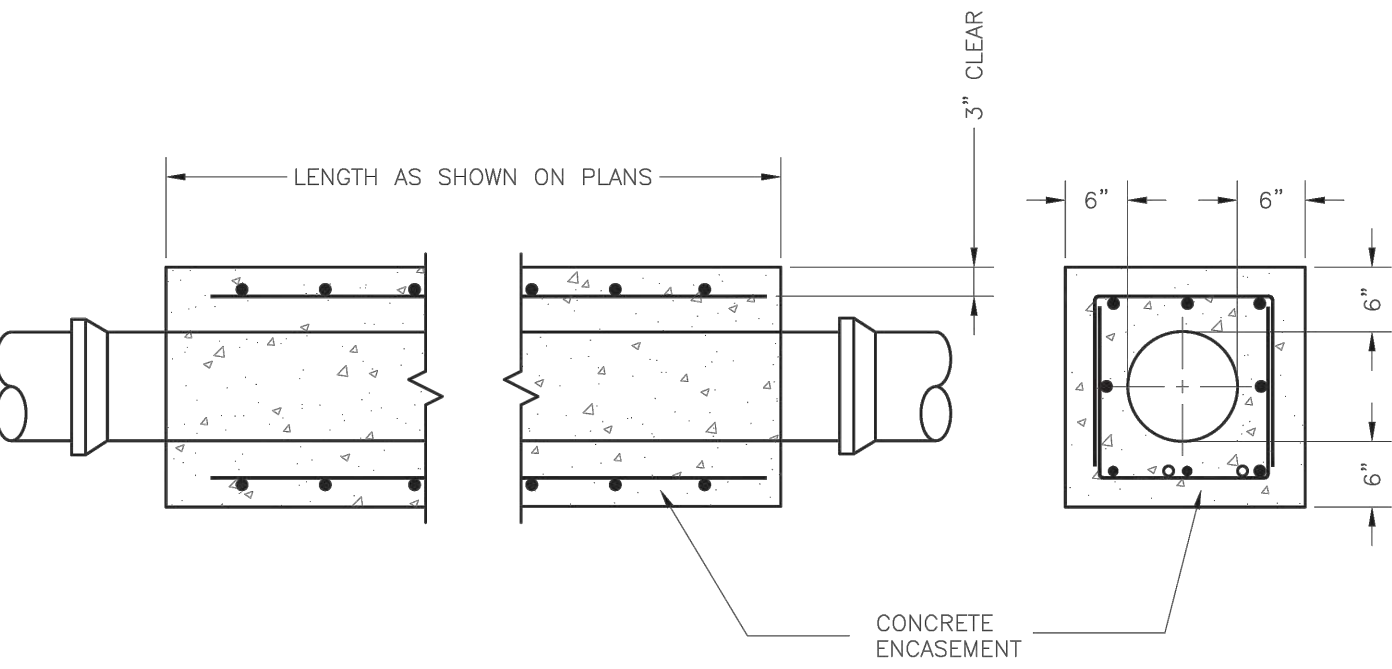
LEE'S SUMMIT

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HORIZONTAL THRUST BLOCK

WAT-1



- NOTES:
1. INTERMEDIATE BELLS SHALL BE ENCASED.
  2. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".
  3. THIS DETAIL IS FOR PIPES 12" AND SMALLER.

LS

LEE'S SUMMIT

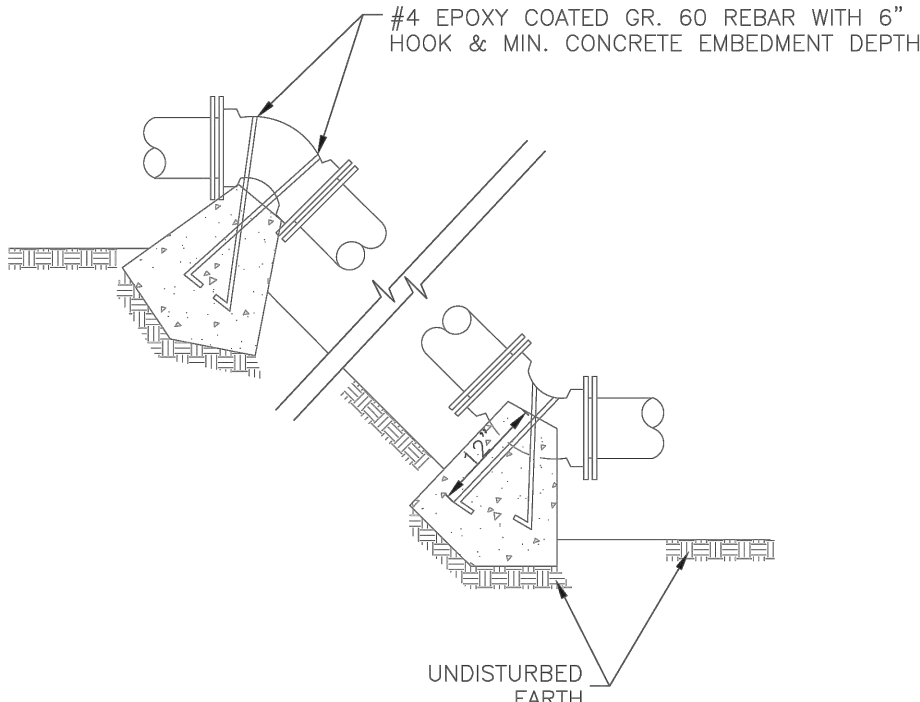
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WATER PIPE ENCASUREMENT

WAT-4

REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)					
NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4



- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
  2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
  3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
  4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

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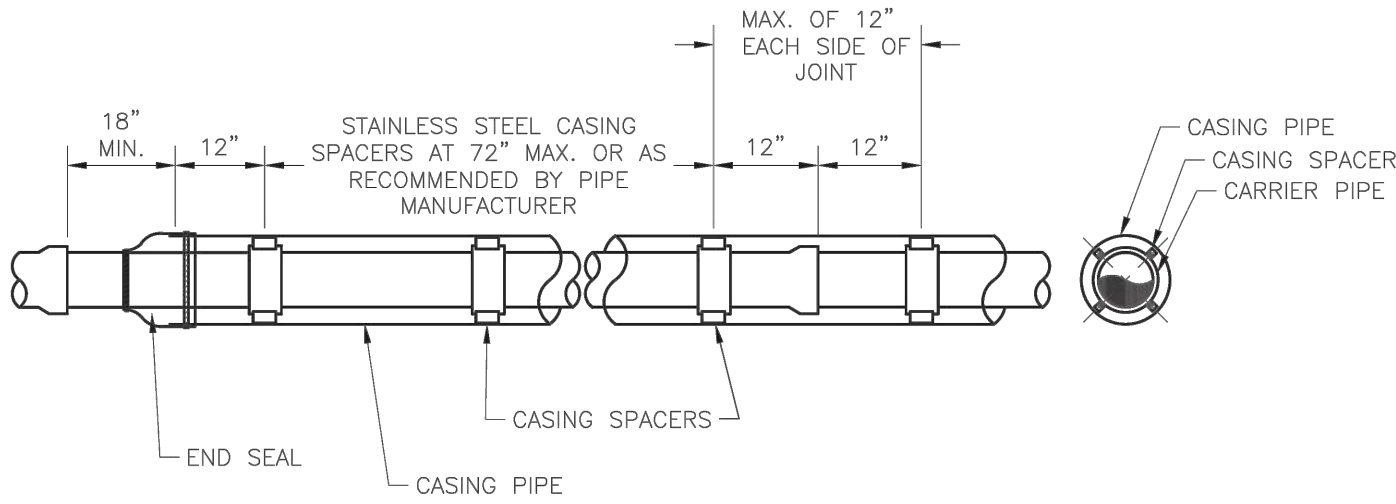
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VERTICAL THRUST BLOCK

WAT-2



- NOTES:
1. REFER TO SPECIFICATION SECTION 3900 FOR ADDITIONAL INFORMATION.
  2. LENGTH, DIAMETER, AND WALL THICKNESS TO BE SHOWN ON CONSTRUCTION PLANS.

LS

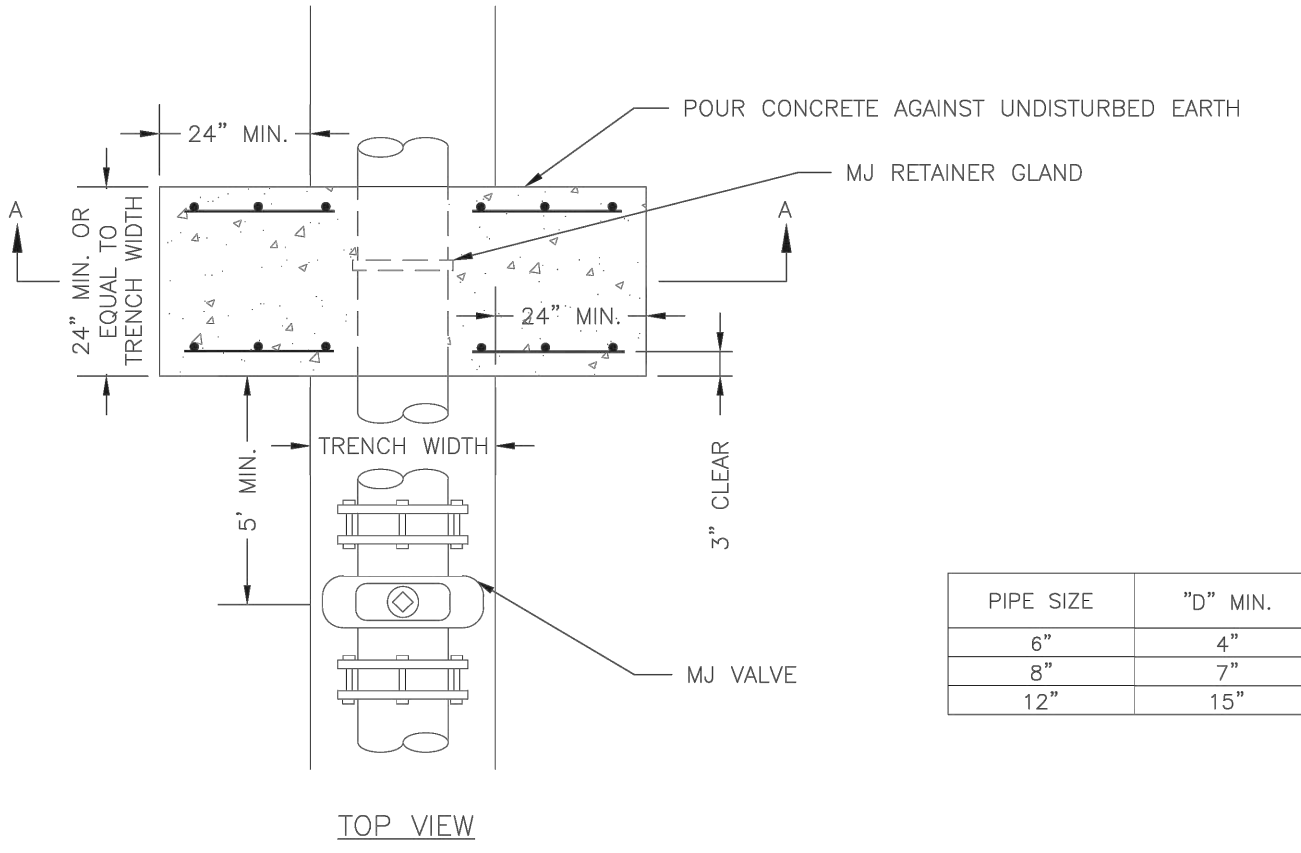
LEE'S SUMMIT

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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

WATER CASING PIPE DETAIL

WAT-5



PIPE SIZE	"D" MIN.
6"	4"
8"	7"
12"	15"

- NOTE:
1. THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LS

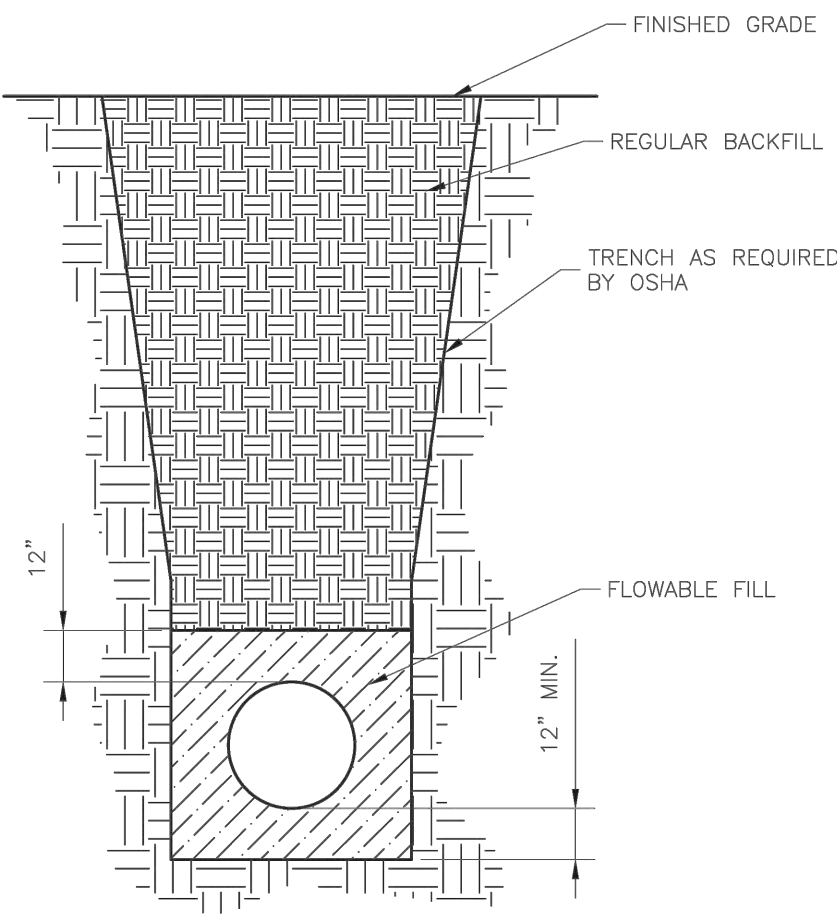
LEE'S SUMMIT

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STRADDLE BLOCK

WAT-3



- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
  2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
  3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
  4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

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LEE'S SUMMIT

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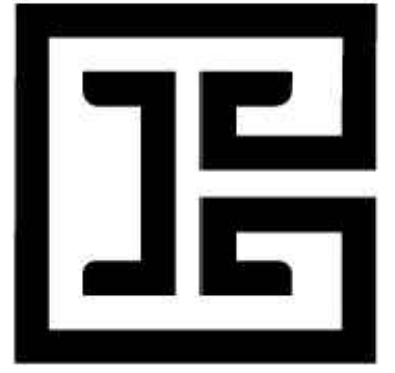
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WATER TRENCH CHECK DETAIL

WAT-6

## UTILITY DETAILS

**HIGH TIDE**  
**CONSULTANTS LLC**  
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COVINGTON, LA 70433  
[www.hightidela.com](http://www.hightidela.com)



Signature

DATE

July 30, 2024

DATE

Stamp

Professional Engineer

B. SHANE

GIN

NUMBER

PE - 202100076

PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

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ISSUED DATE

07/30/2024

ISSUED FOR

PERMITTING

PROJECT NO.

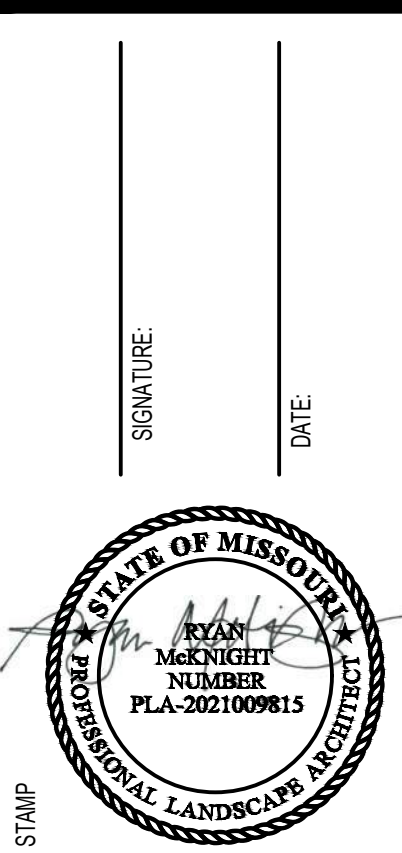
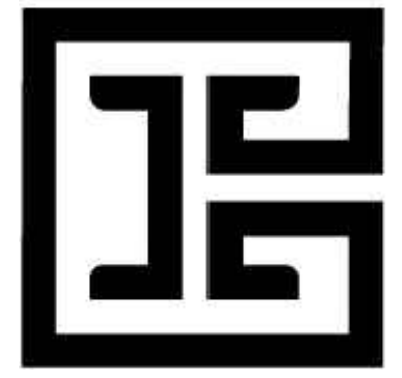
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COVINGTON, LA 70433  
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LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN ML
CHECKED BG/EM
ISSUED DATE 9/08/2023
ISSUED FOR PRELIMINARY DEVELOPMENT
PROJECT NO.
FILE L1.0 LANDSCAPE ORDINANCE PLAN
SHEET L1.0



668 S. FOSTER DRIVE, SUITE 101  
BATON ROUGE, LOUISIANA 70806  
(504) 225-9241 (504) 225-7999 (714) 8  
mcknight-la.com

## LANDSCAPE MATERIALS AND PLANTS LIST

QUANTITY	PLANT / MATERIAL NAME AND DESCRIPTION
832	Bed Preparation (square feet) 6" planting soil over 8" loosened topsoil. Mix top 4" of topsoil with first 3" of imported planting soil.
AS NEEDED	Hardwood Mulch, shredded (square feet) 3" thick layer in all planting areas and 2x root ball diameter ring around all trees
272	Metal Edging (linear feet) 1/2" x 4" aluminum edging color black; install between planting and gravel border
63	Gravel Border (square feet) 1/2" - 1" river rock. 3" deep layer over non-woven filter fabric
880	Lawn - Turf Type Fescue (square yards) certified weed and pest free
14	Drift Rose 'Popcorn' (Rosa 'Novarosop') 3 gallon container, 15"-18" spread, dense and compact growth habit
660	Liriope (Liriope muscari) 4" Container, 4"-6" height and spread, full container 4 per square foot
6	New Horizon Elm (Ulmus davidiana var. japonicus x Ulmus pumila) 45 gallon container, 12'-14' height, 5'-7' spread, 2 1/2"-3" caliper, straight trunk, heavily branched, heavy canopy
4	Sweetbay Magnolia 'Green Shadow'; (Magnolia virginiana 'Green Shadow') 7'-8' height, 4'-5' spread, standard, 1" caliper, heavily branched
6	Viburnum (Viburnum rhytidophyloides 'Allegheny') 5 gallon container, 3' height, dense foliage, full container
46	Japanese Yew (Podocarpus macrophyllus) 5 gallon container, 18" height, 18" spread, dense and compact growth habit, strong central leader
64	'Hayden's Sedge' Carex haydenii 3 gallon container, 7"- 8" height, 12" - 18" spread at base, full container, heavy and active foliage, planted 24" o.c.



NOTE:  
OWNER'S REPRESENTATIVE SHALL REVIEW LANDSCAPING FOLLOWING INSTALLATION TO CERTIFY COMPLIANCE WITH APPROVED PLAN.

## LANDSCAPE ORDINANCE STANDARDS

- THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL FINAL GRADE WITH THE LANDSCAPE ARCHITECT AND OR DESIGN TEAM PRIOR TO COMPLETION.
- LOCATION AND PLACEMENT OF ALL PLANT MATERIAL SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- THE LOCATION OF ALL UTILITIES ARE APPROXIMATE, THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS.
- REFER TO CIVIL DRAWINGS FOR ALL GRADING AND BERMING, EROSION CONTROL, STORM DRAINAGE, UTILITIES AND SITE LAYOUT.
- PLANT QUANTITIES ARE FOR INFORMATION ONLY DRAWING SHALL PREVAIL IF CONFLICT OCCURS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING OWN QUANTITIES AND BID ACCORDINGLY.
- THE CONTRACTOR IS TO NOTIFY LANDSCAPE ARCHITECT AFTER STAKING IS COMPLETE AND BEFORE PLANT PITS ARE EXCAVATED. PROVIDE PHOTOGRAPHS.
- TREE LOCATIONS IN AREAS ADJACENT TO DRIVES, WALKS, WALLS AND LIGHT FIXTURES MAY BE FIELD ADJUSTED AS APPROVED BY LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE LANDSCAPE ARCHITECT.
- THE PLAN IS SUBJECT TO CHANGES BASED ON PLANT SIZE AND MATERIAL AVAILABILITY. ALL CHANGES OR SUBSTITUTIONS MUST BE APPROVED BY THE CITY OF LEE'S SUMMIT, MISSOURI AND THE LANDSCAPE ARCHITECT.
- ALUMINUM LANDSCAPE EDGING TO BE USED ON ALL LANDSCAPE BEDS ABUTTING TURF AREAS AS NOTED ON LANDSCAPE PLANS/LEGEND.
- LANDSCAPE CONTRACTOR IS TO BE RESPONSIBLE FOR WATERING ALL PLANT MATERIAL UNTIL THE TIME THAT A PERMANENT WATER SOURCE IS READY.
- THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS ORNAMENTAL GRASSES AND ANNUALS WITHIN 21 DAYS FOLLOWING THE AWARD OF THE CONTRACT.
- CONTRACTOR SHALL PROVIDE FULL MAINTENANCE FOR NEWLY LANDSCAPED AREAS FOR A PERIOD OF 30 DAYS AFTER THE DATE OF FINAL ACCEPTANCE. AT THE END OF THE MAINTENANCE PERIOD, A HEALTHY, WELL-ROOTED, EVEN-COLORED, VIABLE TURF AND LANDSCAPED AREA MUST BE ESTABLISHED. THE LANDSCAPED AREAS SHALL BE FREE OF WEEDS, OPEN JOINTS, BARE AREAS AND SURFACE IRREGULARITIES.
- LANDSCAPE CONTRACTOR SHALL PROVIDE HARDWOOD MULCH SAMPLE TO OWNER FOR APPROVAL.

## LANDSCAPE ORDINANCE CALCULATIONS

LEE'S SUMMIT MO DEVELOPMENT CODE, DIVISION III, SECTION 8.710-900, ZONED: CP2

### STREET FRONTAGE (NON RESIDENTIAL ZONE)

- A. 1 TREE PER 30 L.F. OF STREET FRONTAGE  
REQUIRED: 5 TREES  
PROVIDED: 5 TREES
- B. 20' WIDE LANDSCAPE STRIP TO SEPARATE PARKING AREA FROM THE STREET.  
PROVIDED: 20' LANDSCAPE STRIP
- C. 1 SHRUB FOR EACH 20' OF STREET FRONTAGE  
REQUIRED: 7 SHRUBS  
PROVIDED: 14 SHRUBS (NEAR SIGNAGE)

### OPEN YARD AREA

LOT CONTAINS A LARGE CONSERVATION AREA THAT WILL REMAIN. CALCULATIONS BELOW ARE BASED ON CLEARED PORTION OF THE LOT; 23,670 SQUARE FEET.

- A. 2 SHRUBS PER 5,000 SQUARE FEET  
REQUIRED: 10 SHRUBS  
PROVIDED: 20 SHRUBS (PROVIDED TO HIDE TRASH ENCLOSURE AND DRIVEWAY)
- B. 1 TREE PER 5,000 SQUARE FEET  
REQUIRED: 5 TREES  
PROVIDED: 5 TREES

### PARKING LOT SCREENING

- A. 2 1/2' HEIGHT OF SCREENING REQUIRED ALONG THE EDGE OF PARKING LOT CLOSEST TO THE STREET
- B. A HEDGE CONSISTING OF AT LEAST 12 SHRUBS PER 40'. HEDGE MUST BE AT LEAST 18" TALL AT TIME OF PLANTING.  
REQUIRED: 36 SHRUBS (CONTINUOUS HEDGE)  
PROVIDED: 44 SHRUBS (PROVIDED TO HAVE CONTINUOUS HEDGE AROUND PARKING LOT PER CODE)

### SOUTH & EAST BUFFER (CP2 ADJACENT TO CP2)

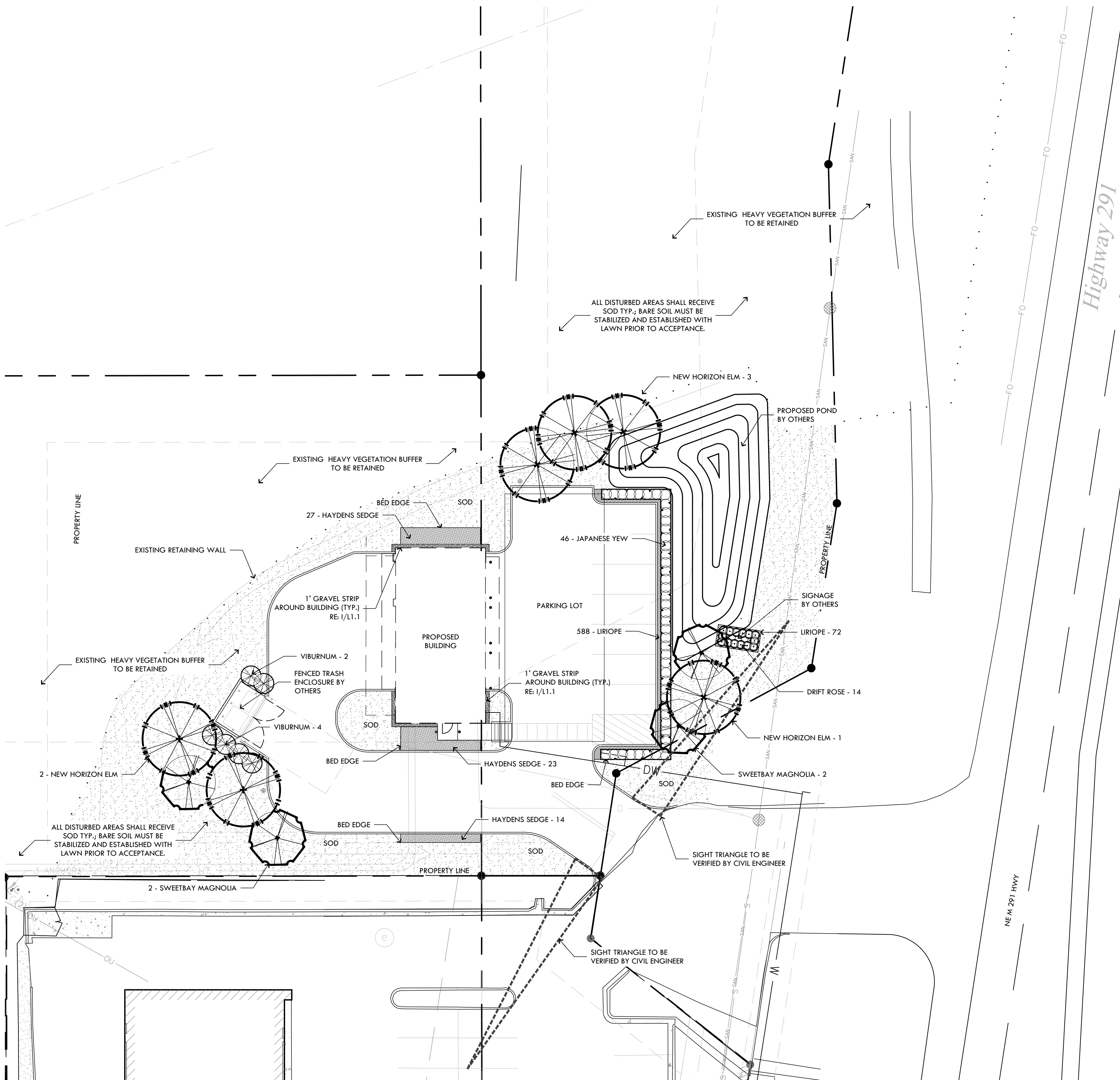
NO REQUIRED BUFFER

### NORTH & WEST BUFFER (CP2 ADJACENT TO RP-2 & RP-4)

REQUIRED: 20' BUFFER YARD (HEAVY)  
PROVIDED: EXISTING 30'-100' VEGETATED BUFFER & EXISTING RETAINING WALL

## GENERAL PLANTING NOTES

- LOCATE ALL UTILITIES ON SITE PRIOR TO COMMENCING WORK. ANY DAMAGE DONE TO EXISTING OR NEW UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO OWNER.
- PLANTS SHALL BE WELL FORMED, NO. 1 GRADE OR BETTER NURSERY STOCK AND SHALL MEET THE APPLICABLE STANDARDS NOTED HEREIN AND SHALL BE SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT.
- STAKE OUT ALL TREE LOCATIONS FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. LOCATE ALL TREES AS SHOWN ON PLAN.
- COORDINATE WORK WITH THE WORK OF OTHER TRADES ON THE SITE.
- ENTIRE SITE SHALL BE GRADED TO FINISH GRADE PRIOR TO SCHEDULING PLANTING INSTALLATION.
- PLANTS SHALL BE SPECIMEN QUALITY, FULL POT AND HEAD, SYMMETRICAL FOLIAGE AND BRANCHING STRUCTURE. SHRUBS SHALL BE FULL TO GROUND.
- PLANT MATERIAL OF THE SAME SPECIES SHALL BE MATCHING IN CHARACTER AND SIZE, OBTAINED FROM THE SAME SOURCE.
- ANY CHANGES IN PLANT MATERIAL SIZE, QUANTITY, SPECIES OR VARIETY MUST BE APPROVED BY THE OWNER AND/OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- INSTALLATION MUST BE COMPLIANT WITH LANDSCAPE ORDINANCE STANDARDS.
- SOD ALL AREAS DISTURBED BY CONSTRUCTION.



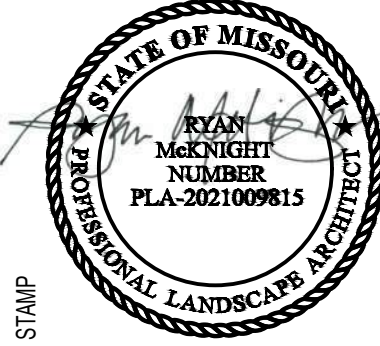
## 1 ORDINANCE PLAN

1"=20'-0"



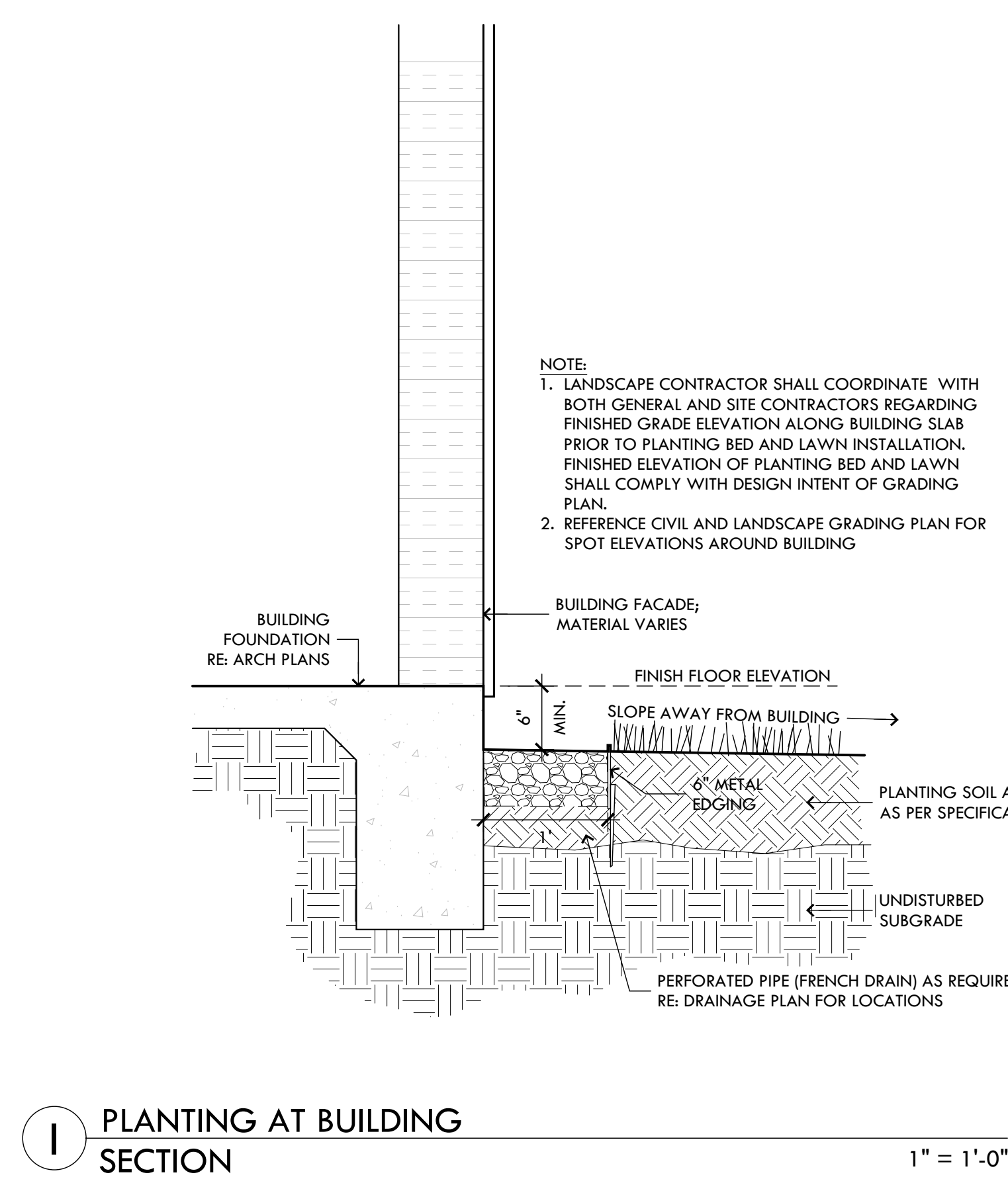
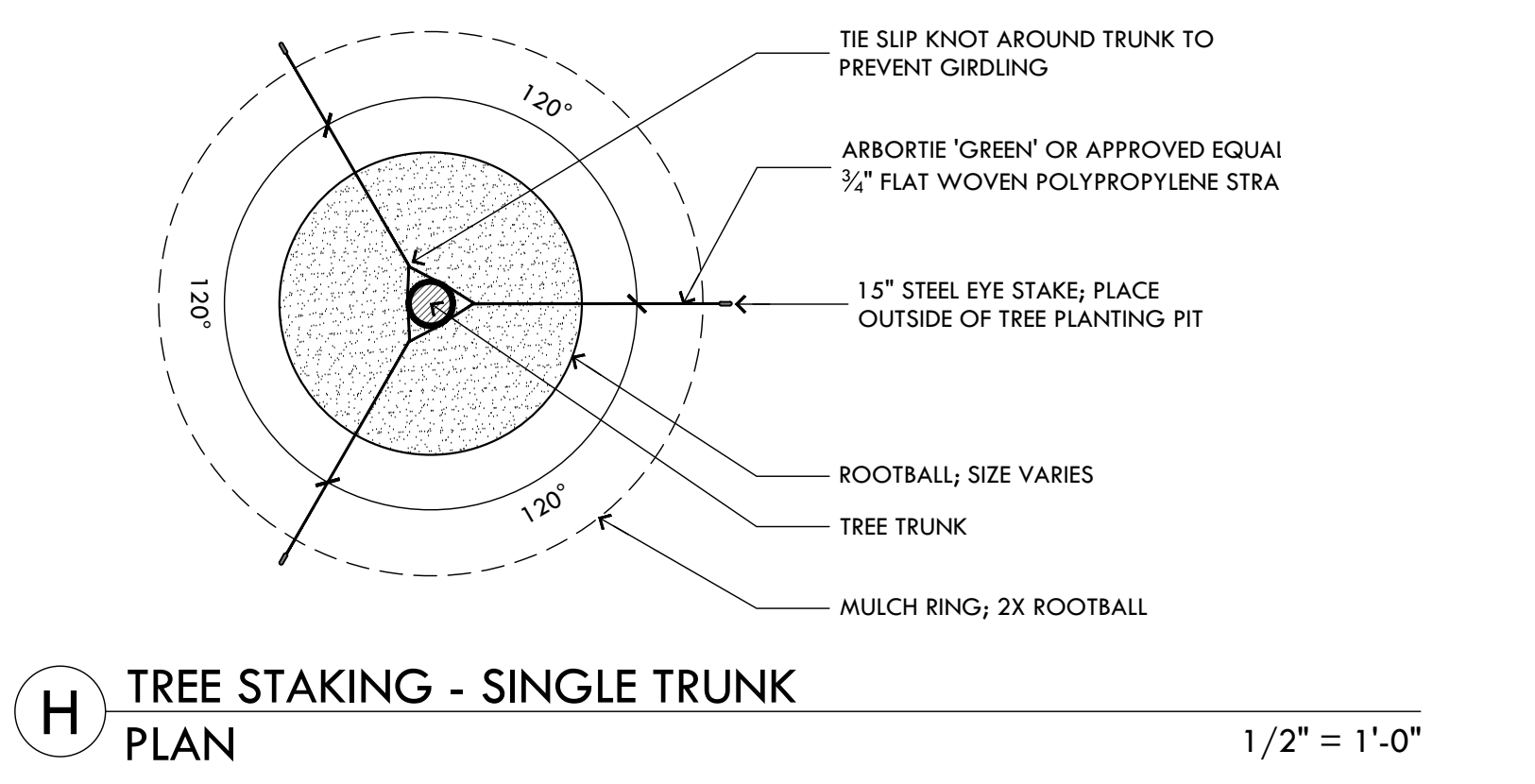
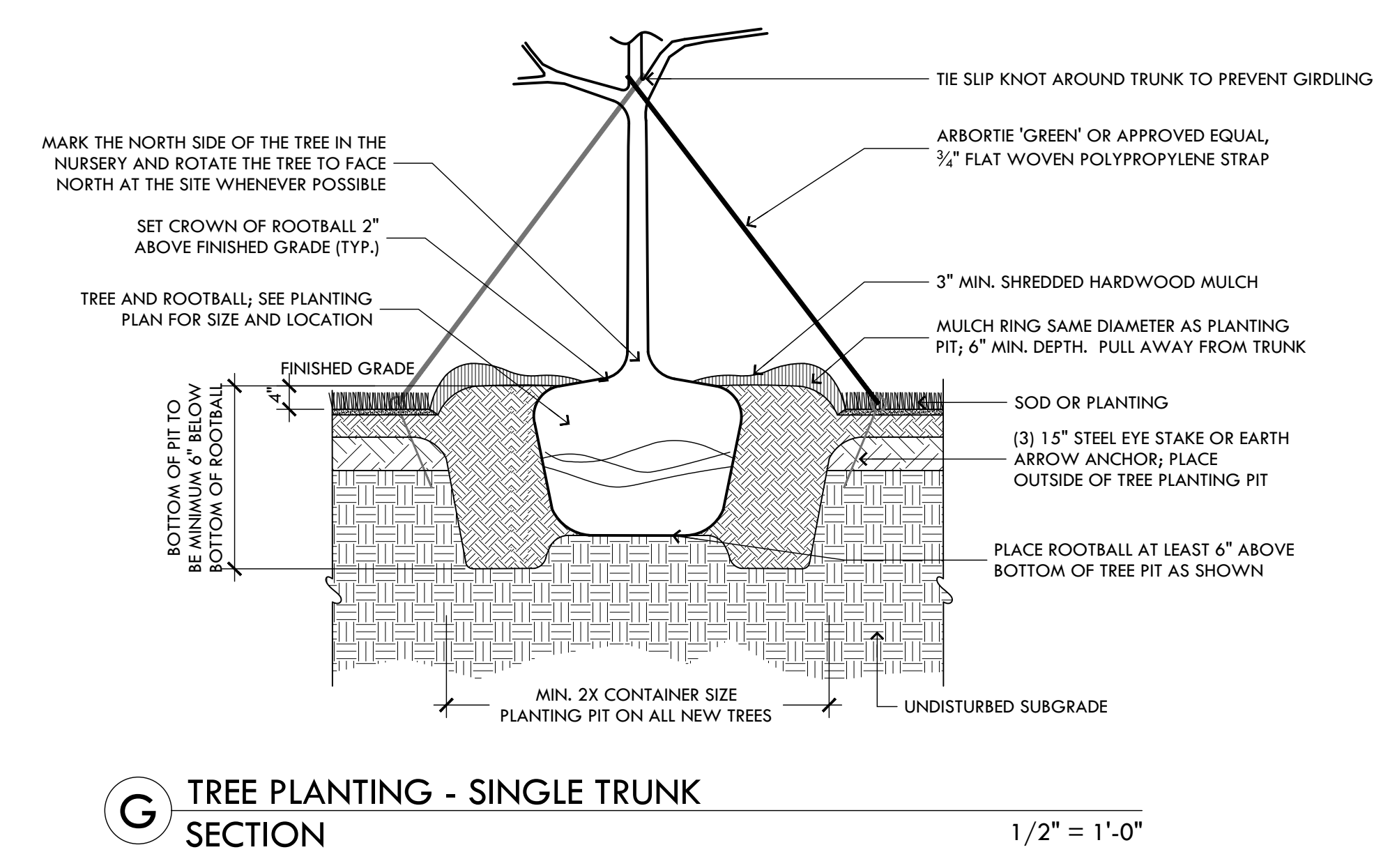
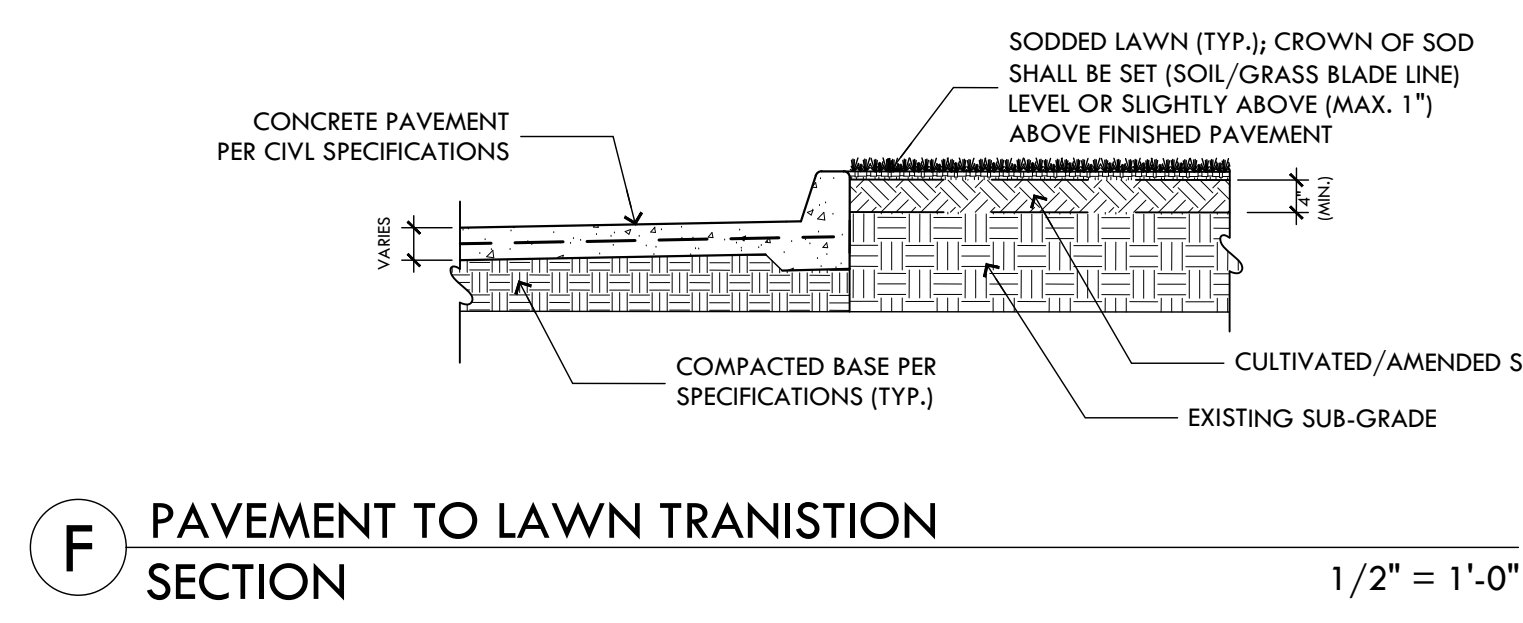
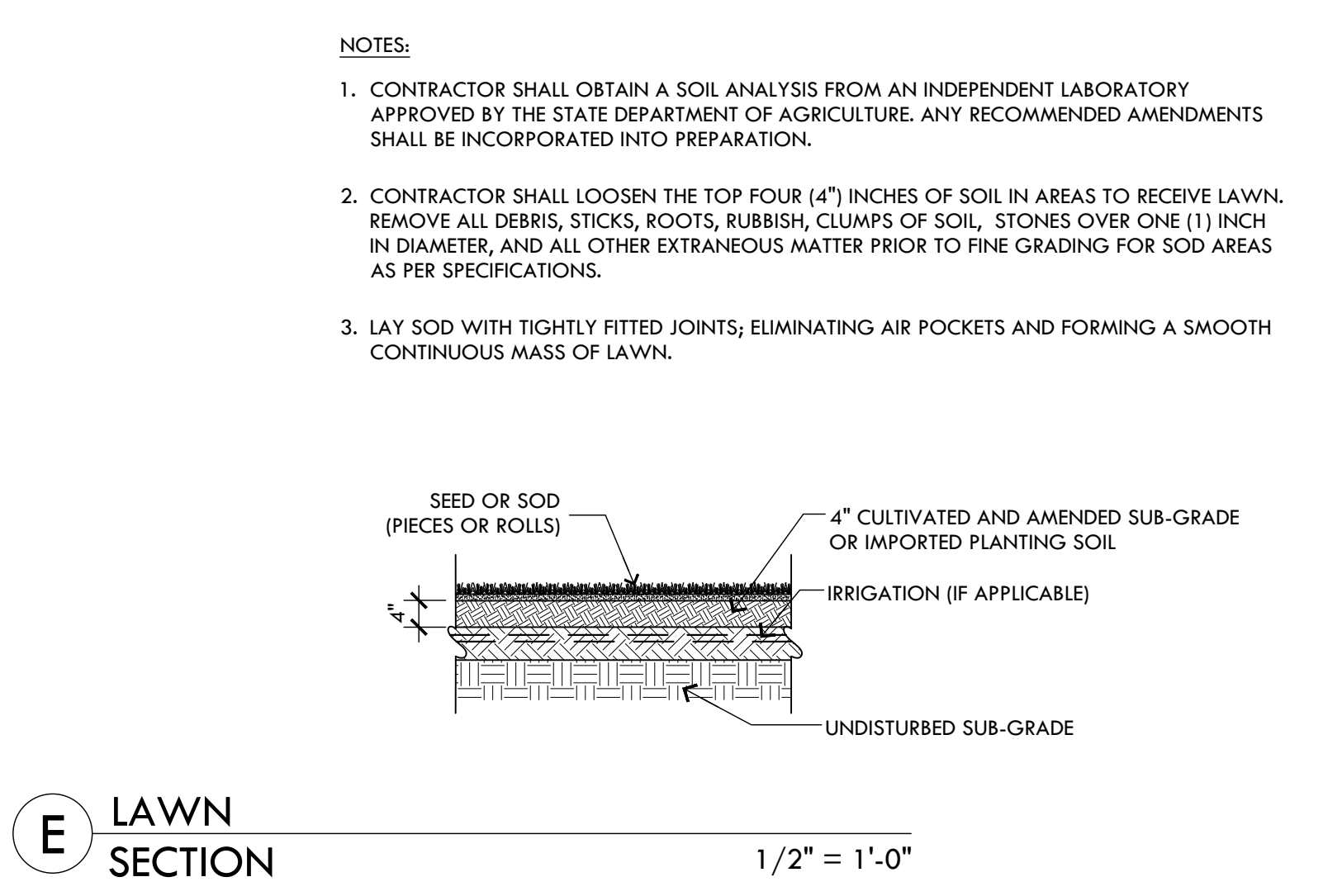
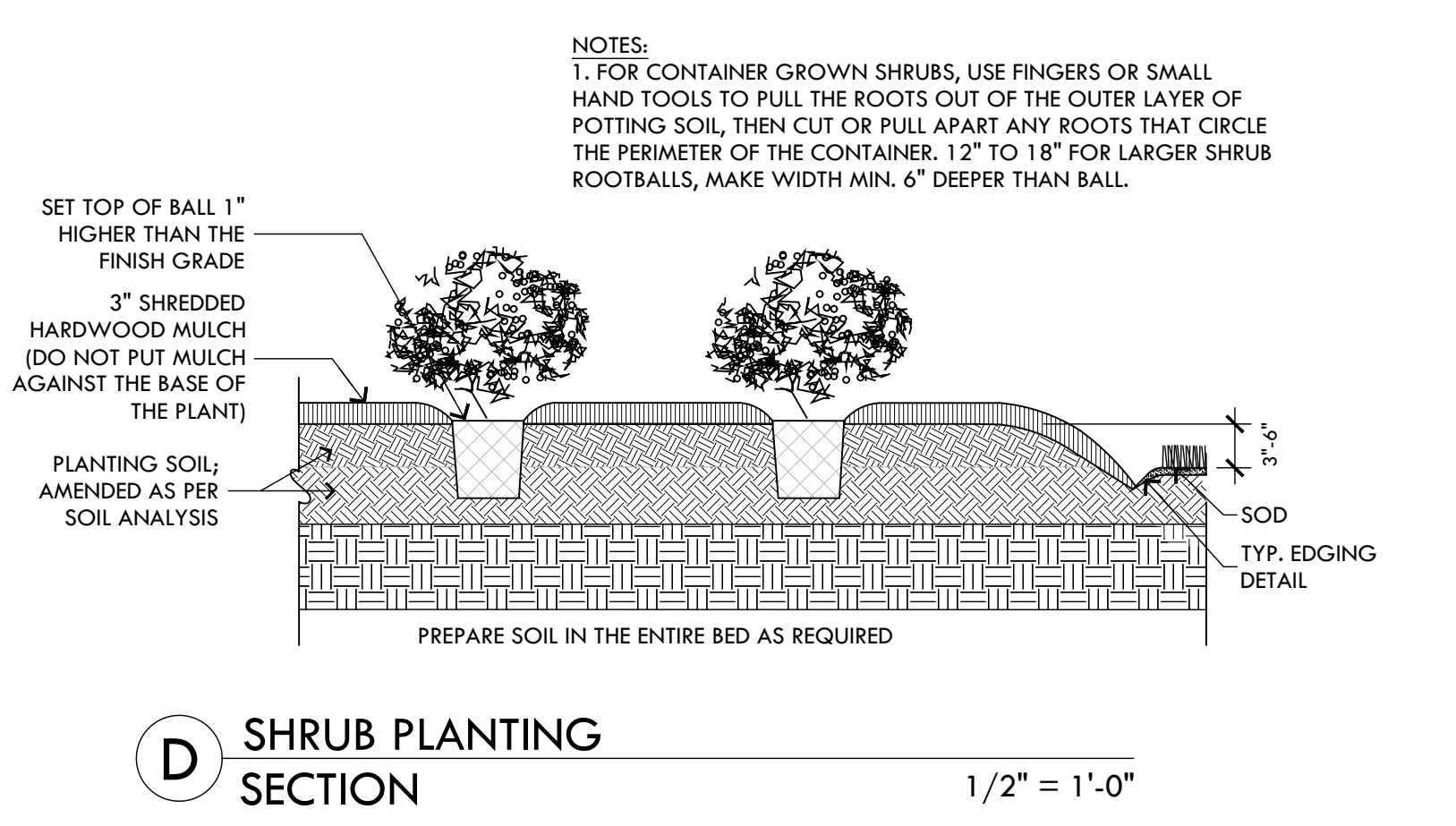
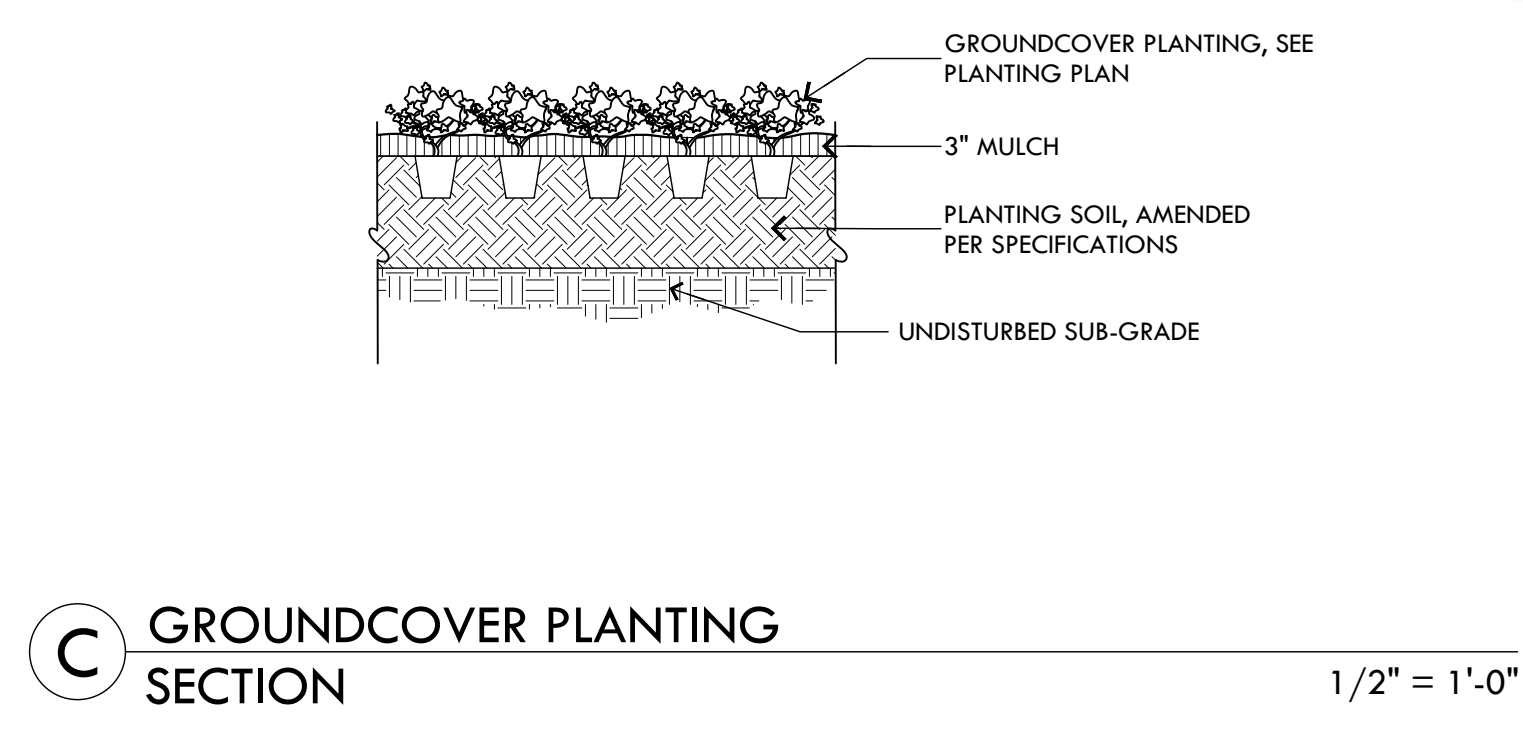
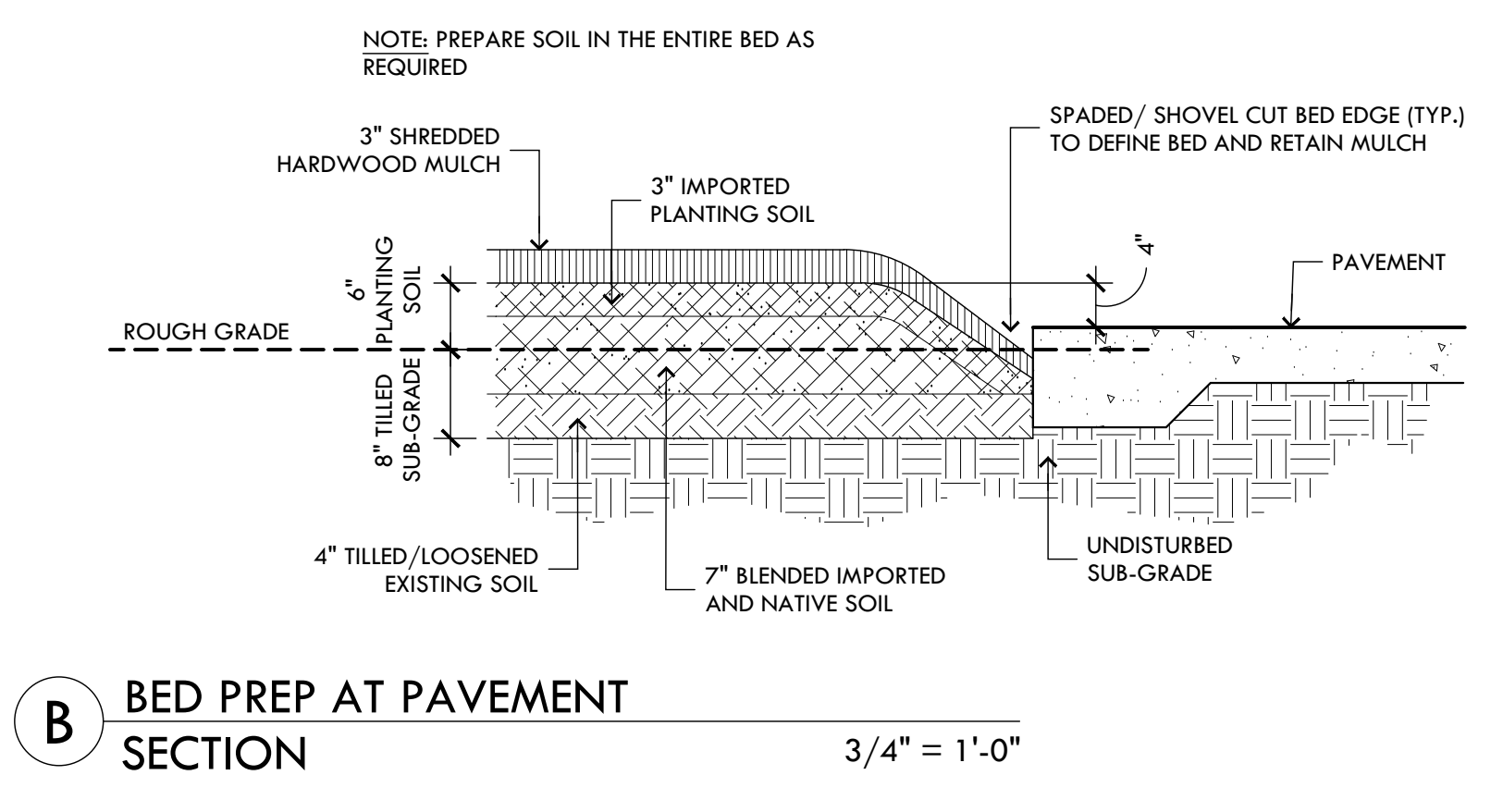
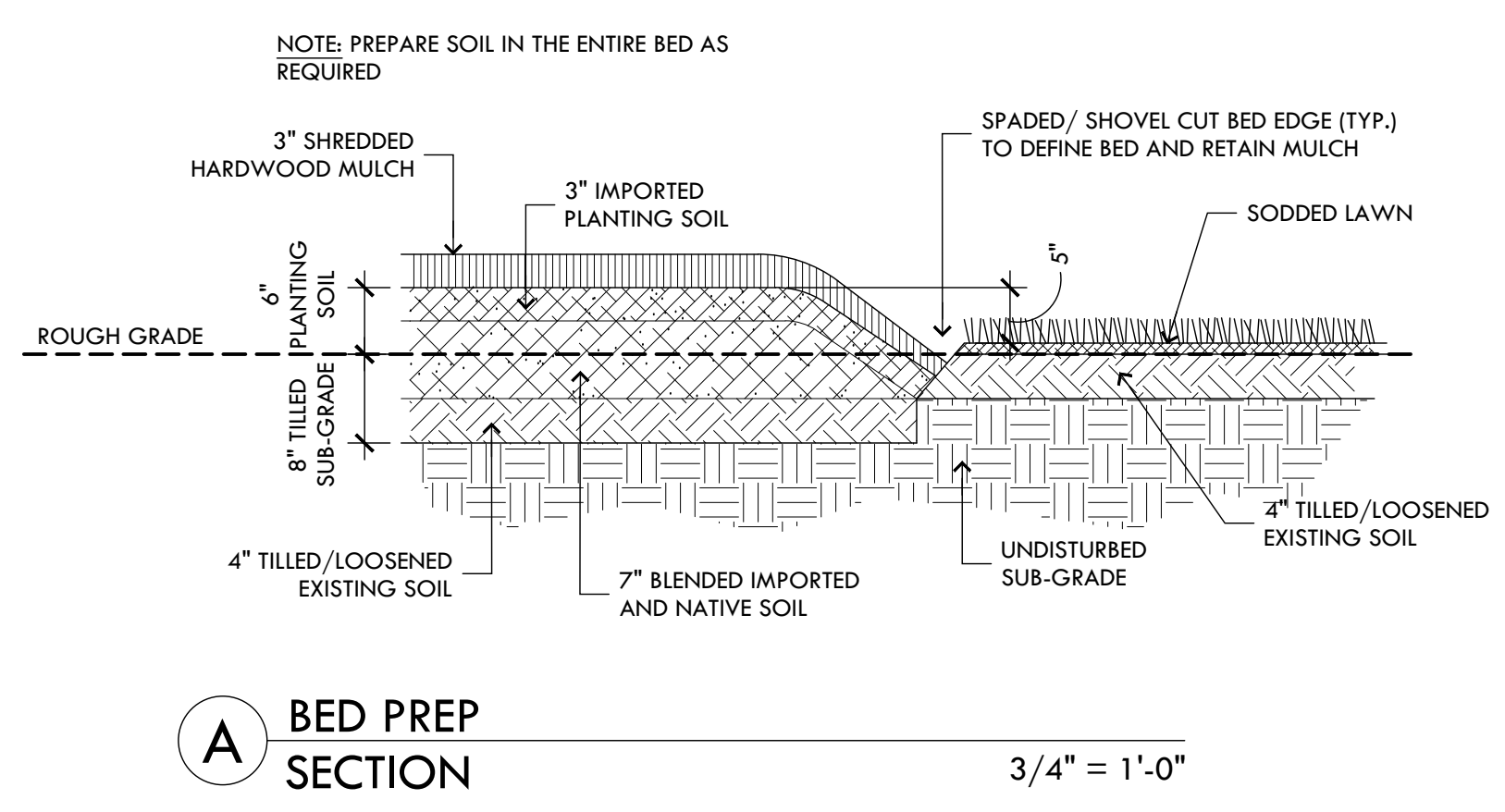
REVISION #1	

**HIGH TIDE**  
CONSULTANTS LLC  
434 N. COLUMBIA ST, SUITE 200A  
COVINGTON, LA 70433  
www.hightidela.com

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PROPOSED TAKE 5  
LEE'S SUMMIT, MISSOURI  
FOR DRIVEN ASSETS, LLC  
2101 PEARL STREET  
BOULDER, CO 80302

DRAWN ML
CHECKED BG/AM
ISSUED DATE 9/08/2023
ISSUED FOR PRELIMINARY DEVELOPMENT
PROJECT NO.
FILE L1.2 PLANTING DETAILS
SHEET <b>L1.1</b>









FINISH SCHEDULE NOTES:

NOTE 1. PAINT EXPOSED WALL SURFACE (GWB OR PWD).

NOTE 2. PAINT EXPOSED CEILING.

NOTE 3. ALL INTERIOR FINISHES ARE TO MEET TABLE 803.5 OF THE NCBC.

NOTE 4. INTERIOR PAINT COLOR TO BE SEMI GLOSS ENAMEL WHITE (SW 7006 "EXTRA WHITE") EXCEPT WHERE NOTED.

NOTE 7. SEE STRUCTURAL DWGS FOR DEPRESSED SLAB DETAILS.

NOTE 8. STAIN - H&C INFUSION REACTIVE CONC. STAIN (SIENNA RED 40.002084).

NOTE 9. SEALER - H&C PRO SERIES SOLVENT BASED DECORATIVE CONC. SEALER (CLEAR).

NOTE 10. ALL INTERIOR TRIM TO BE "INDUSTRIAL GRAY" (SW 7017 "DORIAN GRAY").

NOTE 11. ALL INTERIOR WALL PAINT AT TOILET ROOM TO BE ACRYLIC WASHABLE SEMI-GLOSS ENAMEL PAINT.

DOOR HARDWARE SET NOTES (ALL FIN. HARDWARE TO BE ADA COMPLIANT).

SET 1 1 1/2 PAIR HINGES NRP MORTISED DEADBOLT AND LOCKSET COMBINED WITH THUMB TURN INSIDE AND KEYED OUTSIDE. ONE ACTION OPERATED BOTH BOLT AND LOCKSET.

CLOSER  
FULL WEATHERSTRIP  
SWEEP  
RAIN DRIP ON FRAME OVERHEAD  
THRESHOLD  
SILENCERS  
FLOOR STOP

SET 2 1 1/2 PAIR HINGES.

LOCKSET - KEYED OUTSIDE, PUSH BUTTON INSIDE  
CLOSER  
FLOOR STOP - COOR. LOCATION W/ AC UNIT  
SILENCERS

SET 3 1 1/2 PAIR HINGES.

LOCKSET - KEYED OUTSIDE, PUSH BUTTON INSIDE  
CLOSER  
WALL STOP  
SILENCERS  
TACTILE SIGN W/ INTERNATIONAL SYMBOL: MEN/WOMEN

SET 4 1 1/2 PAIR HINGES.

LOCKSET - PASSAGE  
1 STOP - FLOOR MTD.  
CLOSER  
SILENCERS

NOTE: ALL FIN. HARDWARE TO BE ADA COMPLIANT.

**DOOR & WINDOW NOTES:**

**NOTE 1.    HARDWARE TO BE LEVER ACTION AND MEET ALL ADA REQUIREMENTS.**

**NOTE 2.    HARDWARE TO BE COMMERCIAL GRADE.**

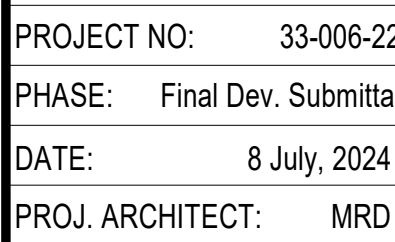
**NOTE 3.    HARDWARE PER MANUF. REQUIREMENTS.**

**NOTE 4.    SAFETY GLAZING TO MEET ANSI Z97.1 CLASS A.**

**NOTE 5.    DARK BRONZE PAINT COLOR TO BE (SW 6076 "TURKISH COFFEE").**

**NOTE 6.    EXTERIOR DOOR WHEN INDICATED ON PLAN 1/A-100**

KAWNEER TRIFAB 450 SERIES ALUMINUM STOREFRONT WINDOWS OR OLDCASTLE EQUAL.  
GLASS TO BE SOLARBRONZE 60.



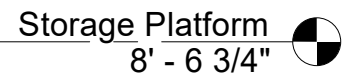
### Schedules - Room, Door,& Window

**SHEET NO.**

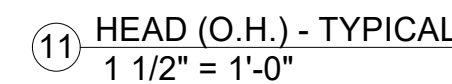
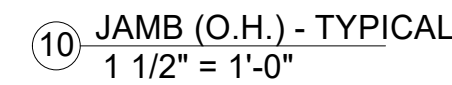
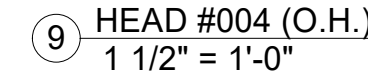
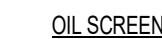
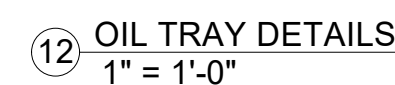
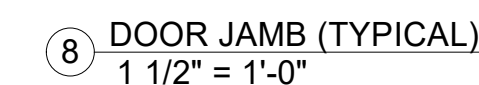
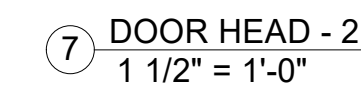
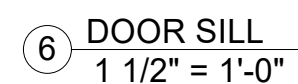
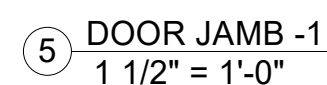
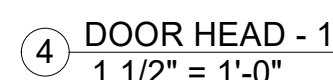
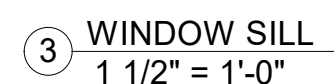
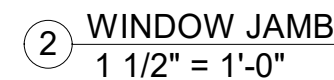
**A3.00**

OF





① WINDOW HEAD  
1 1/2" = 1'-0"

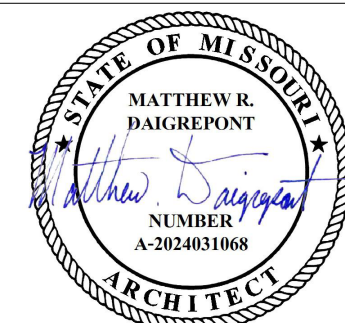


## Door & Window Details



COST OF DOORS SET  
BY VENDOR AND TAKE 5





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By: Matthew Daigle

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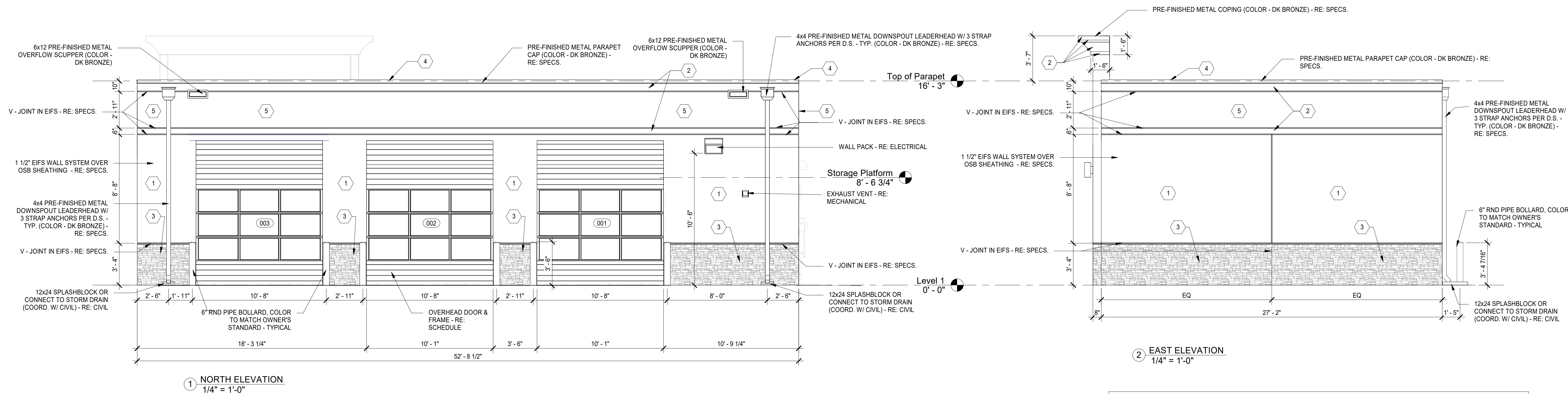
# New Construction For Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086

PROJECT NO:	33-006-2
PHASE:	Final Dev. Submittal
DATE:	8 July, 2024
PROJ. ARCHITECT:	MRD

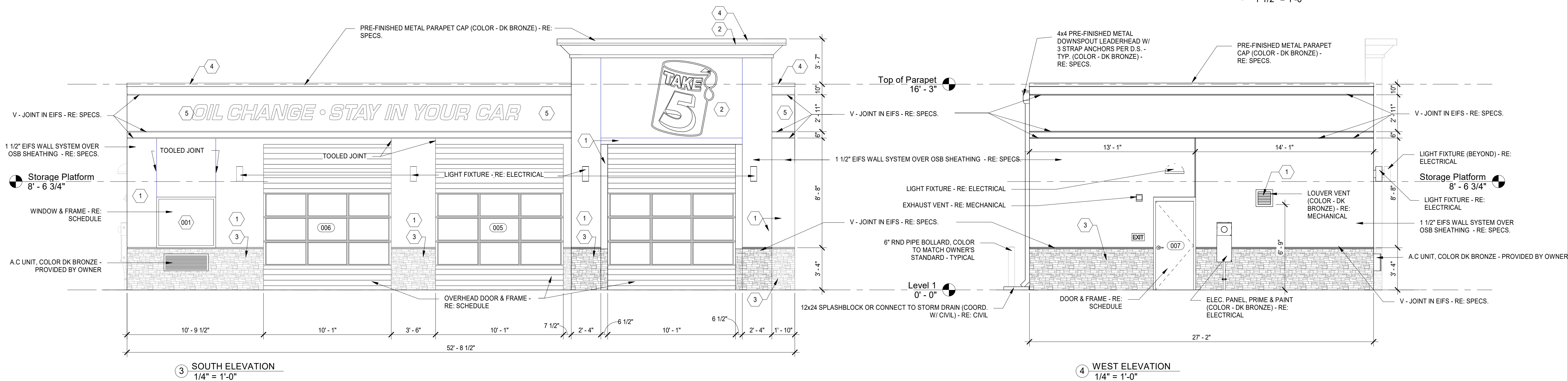
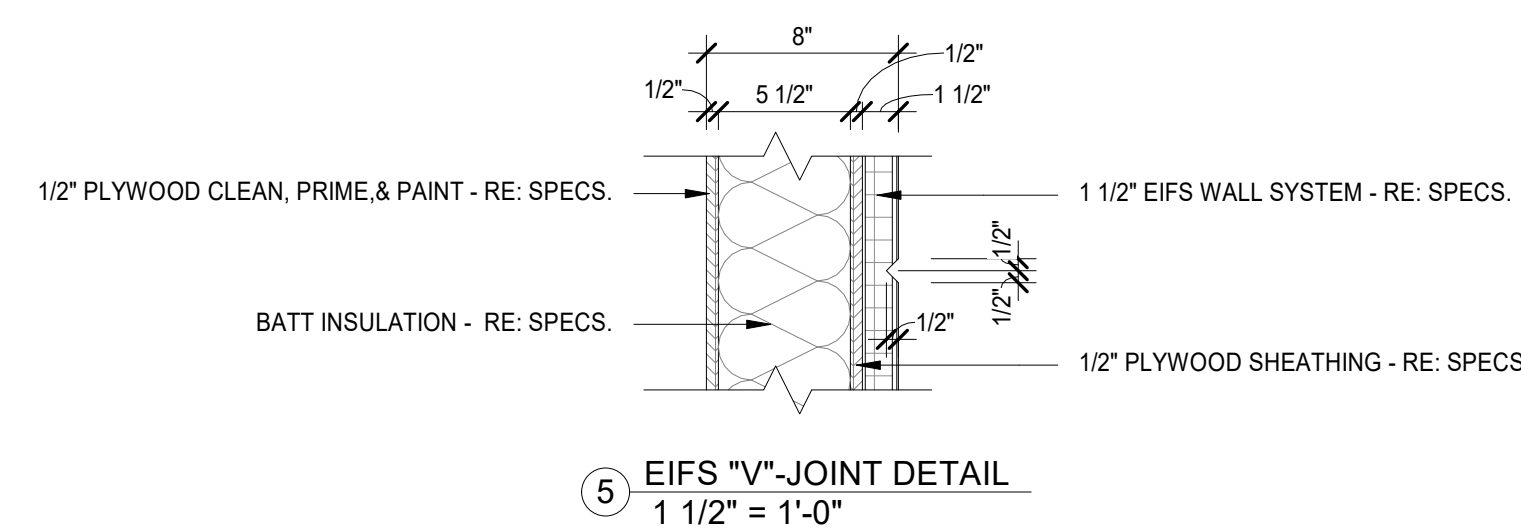
### Bldg Elevations

SHEET NO.  
**A4.00**  
OF



EXTERIOR FINISH SCHEDULE				
NO.	AREA	COATS	COLOR	FINISH
1	EIFS OR STUCCO MAIN COLOR	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	MATCH SW COLOR #7693, STONEBRIAR	FINISH TO MATCH STO "MEDIUM SAND" OR DRYVIT "SANDPEBBLE FINE"
2	EIFS OR STUCCO ACCENT BAND AND FACE EIFS OR STUCCO CORNICE	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	MATCH SW COLOR #7678, COTTAGE CREAM	FINISH TO MATCH STO "FINE SAND" OR DRYVIT "SANDBLAST"
3	CULTURED STONE WAINSCOT	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	VERIFY COLOR WITH OWNER	VERIFY COLOR WITH OWNER
4	COPING	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	MATCH SW COLOR #6871, POSITIVE RED	FINISH TO BE KYNAR 500 PREFINISHED
5	EIFS OR STUCCO SECONDARY COLOR	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	MATCH SW COLOR #6871, POSITIVE RED	FINISH TO MATCH STO "MEDIUM SAND" OR DRYVIT "SANDPEBBLE FINE"
6				
7	BOLLARDS	SEE SPECIFICATION & MANUFACTURER'S REQ'MENTS	MATCH SW COLOR #6871, POSITIVE RED	-----

- EXTERIOR FINISH NOTES:**
1. EIFS TO BE STO THERM CI CLASSIC, DRYVIT OUTSULATION PLUS MD OR APPROVED EQUAL.
  2. EIFS TO HAVE ULTRA-HIGH IMPACT MESH TO 4'-0" AFF.
  3. VENER STONE - BORAL PRO FIT, SOUTHERN LEDGESTONE, COLOR - "BUCKS COUNTY" CONTRACTOR TO PROVIDE SAMPLES AND OBTAIN APPROVAL FROM OWNER PRIOR TO ORDERING
  4. EIFS TO HAVE STANDARD IMPACT MESH ABOVE 8'-0" AFF.
  5. METAL ROOF TO BE ATAS DUTCH SEAM OR BERRIDGE MANUF. WITH DEEP VEE PANELS AND 2" BATTEN CAPS.
  6. METAL ROOF PANELS TO BE 24 GA. GALVALUME WITH KYNAR 500, 2.0 MILS THICK FLOUROCARBON FINISH.
  7. METAL COPING TO BE PREFINISHED, 24 GA. GALVALUME WITH KYNAR 500, 2.0 MILS THICK FLOUROCARBON FINISH.

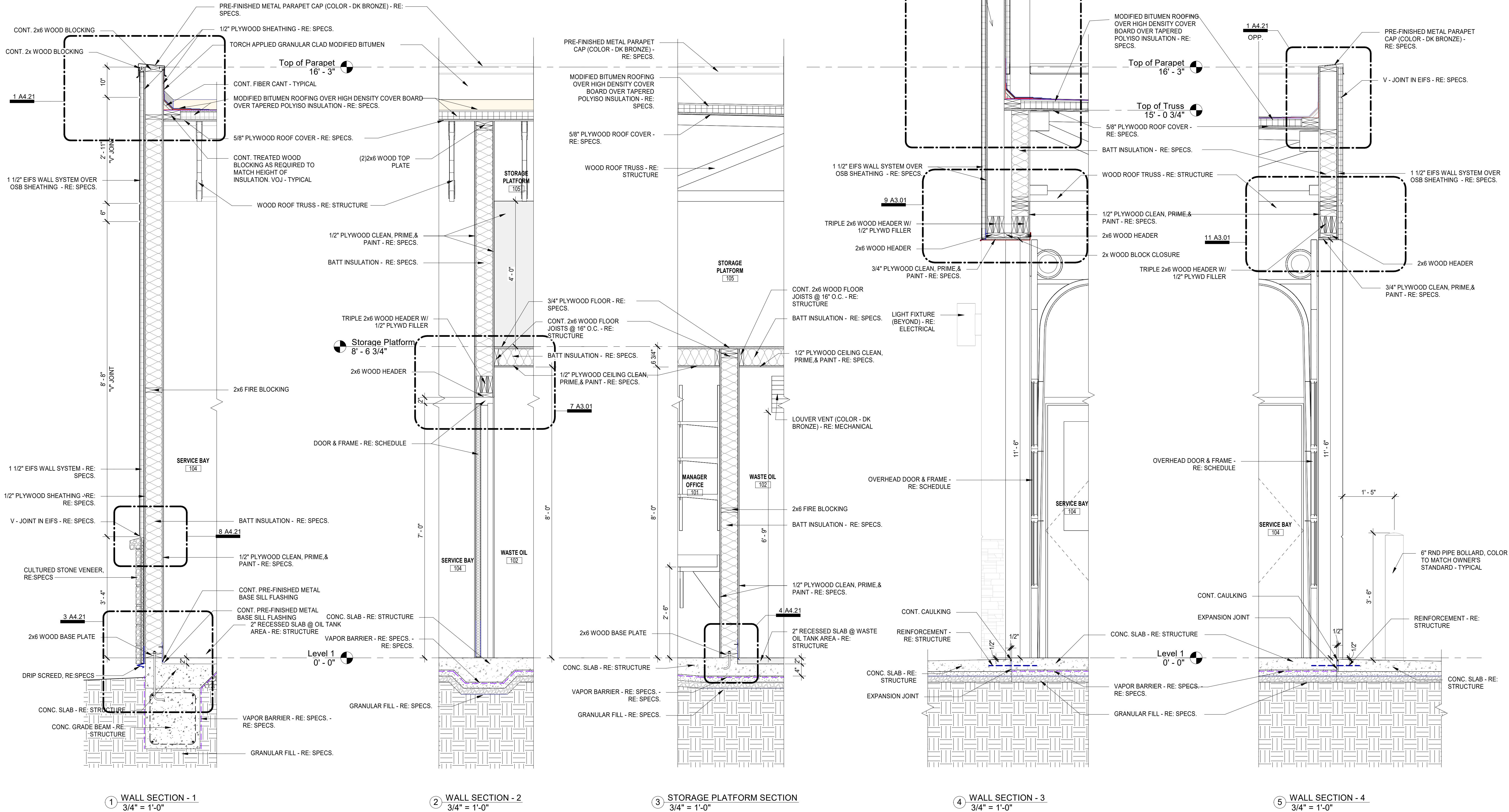




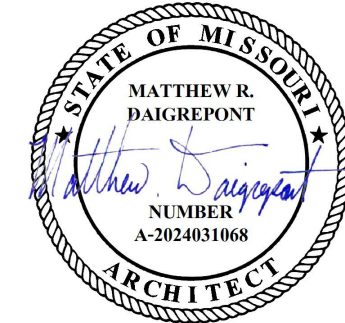




ONE PIECE OF HIGH PAPAPET  
WITH STRUCTURE OF TRUSS -  
RE - STRUCTURE ENG.



No.	REVISION	DATE



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By: *Matthew Baigrepost*

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New Construction For  
Take 5 Oil Change  
400 NE M State Route 291  
Lee's Summit, Missouri 64086

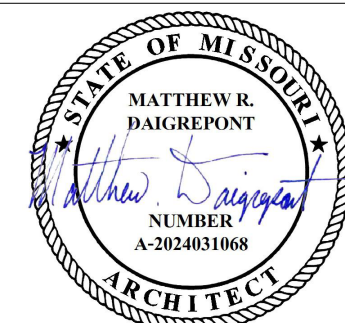


PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 8 July, 2024  
PROJ. ARCHITECT: MRD

Wall Sections

SHEET NO.  
**A4.20**  
OF





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By: Matthew Sargent

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# New Construction For Take 5 Oil Change

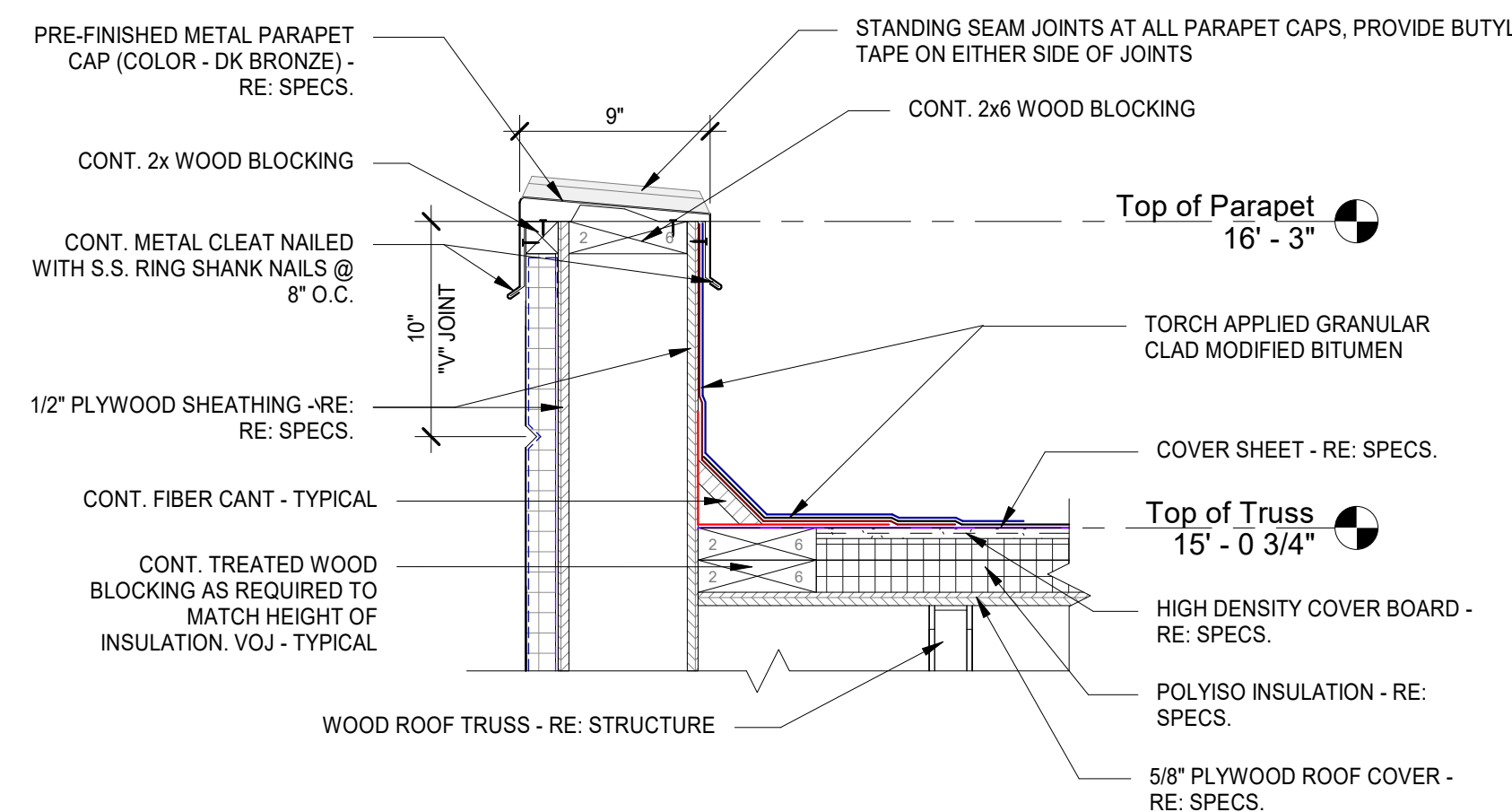
400 NE M State Route 291  
Lee's Summit, Missouri 64086



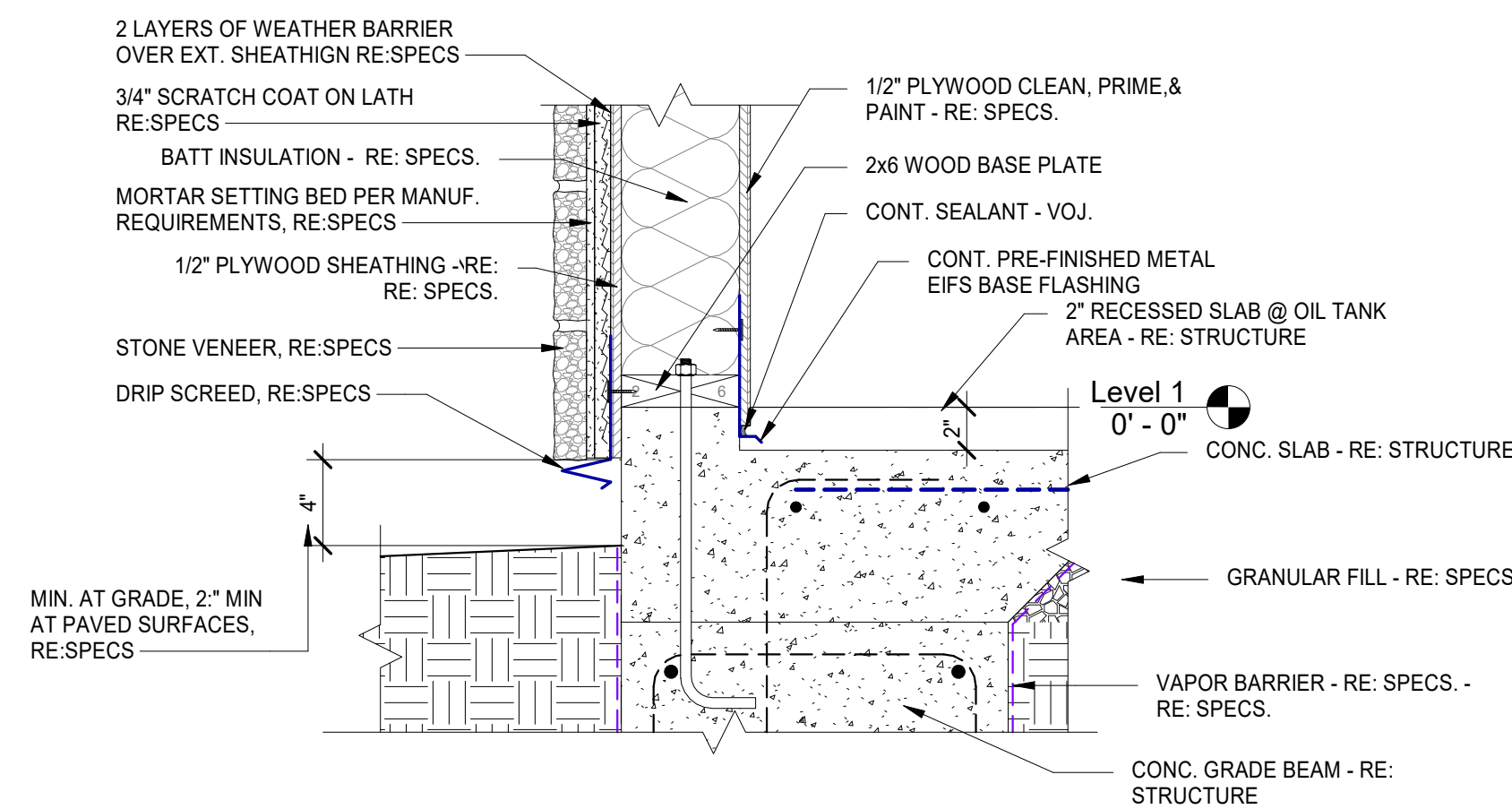
PROJECT NO:	33-006-2
PHASE:	Final Dev. Submittal
DATE:	8 July, 2024
PROJ. ARCHITECT:	MRD

## Enlarged Details

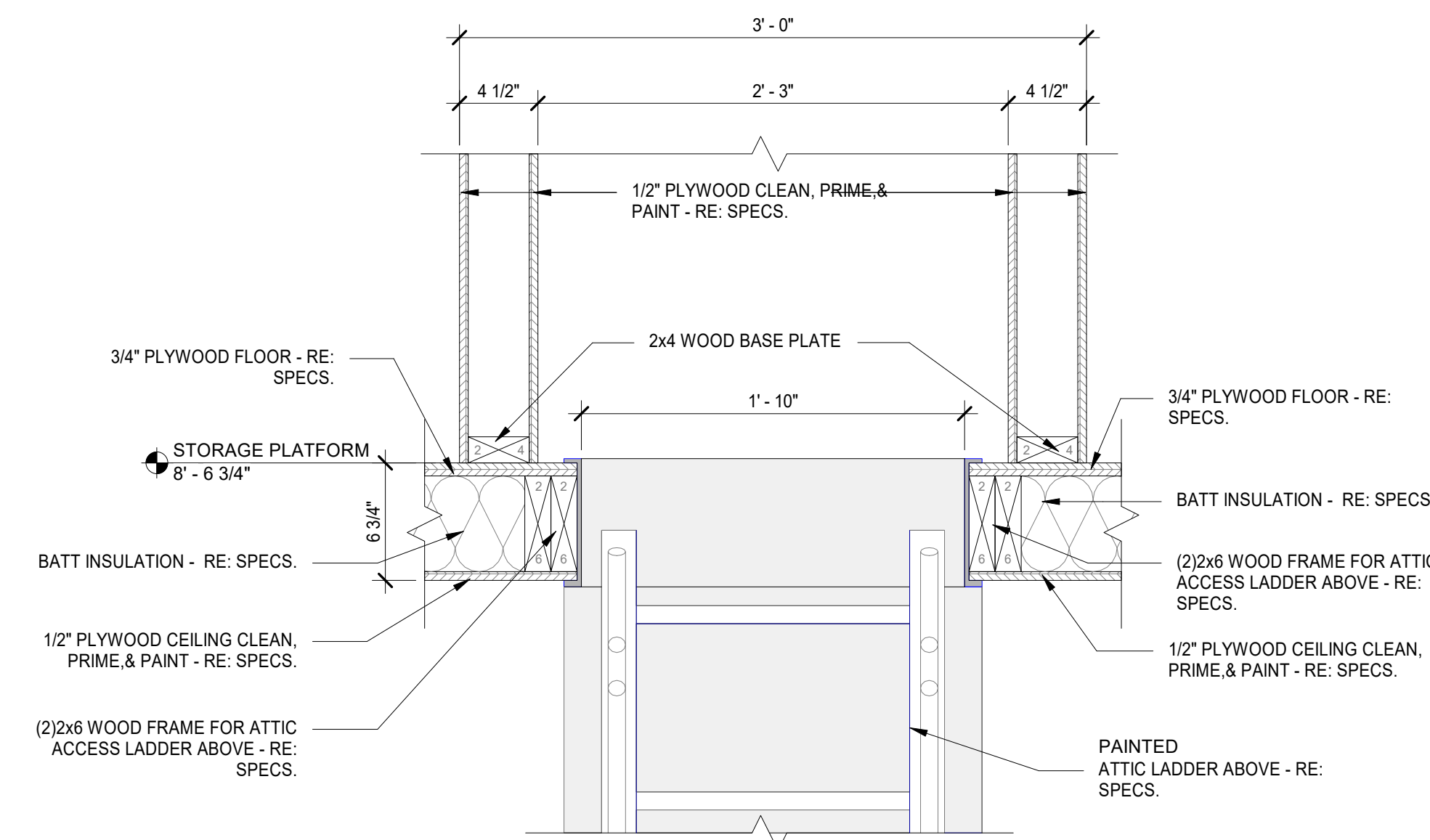
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**A4.21**  
OF



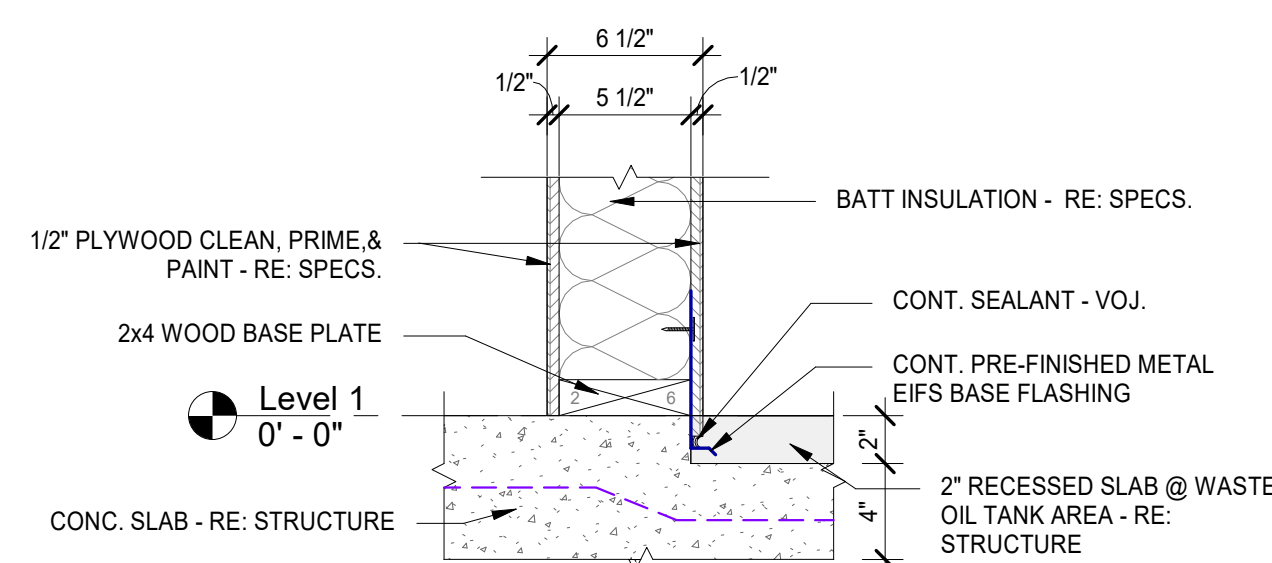
① PARAPET CAP DETAIL  
1 1/2" = 1'-0"



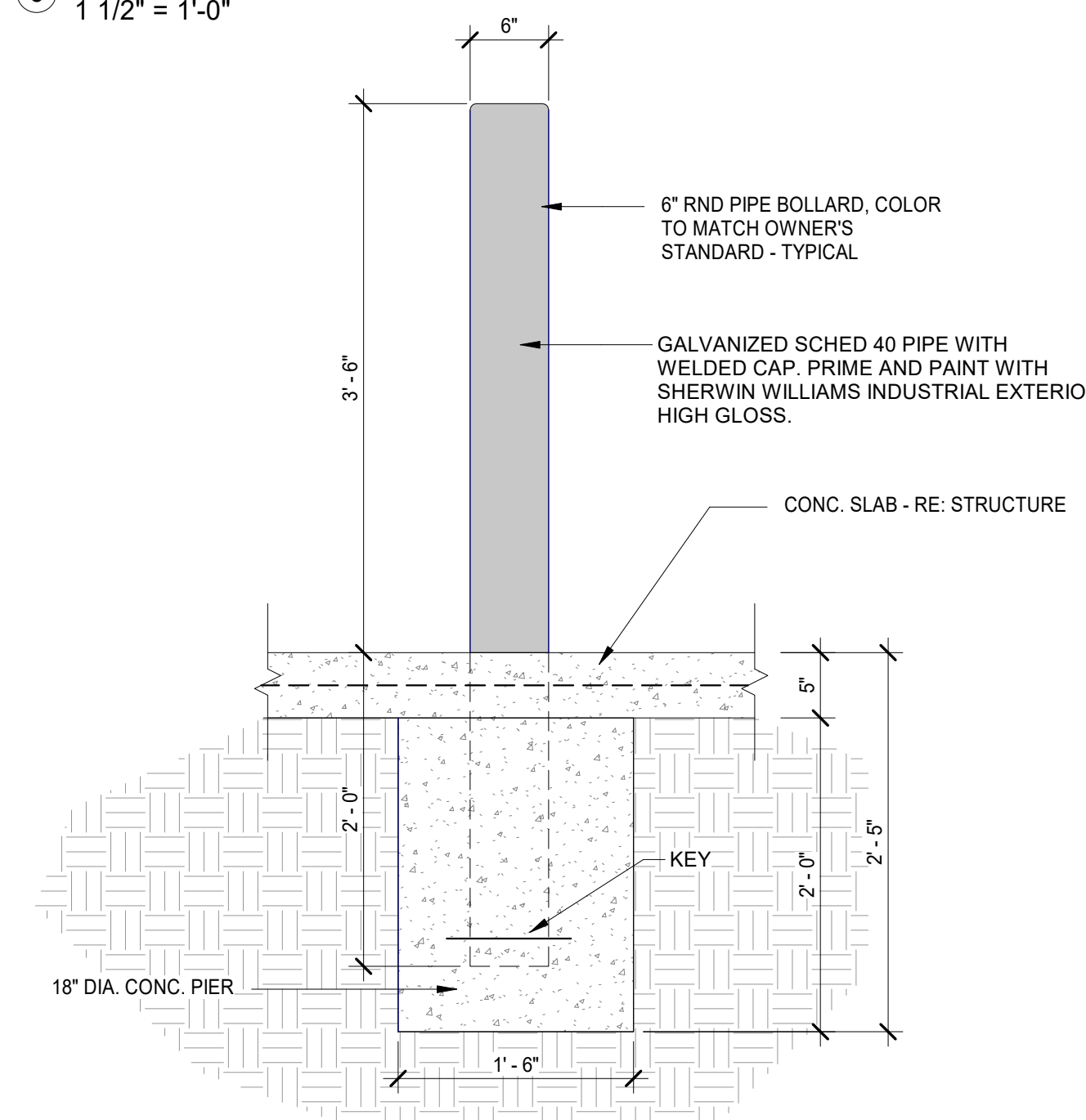
3 CONC. SLAB EDGE DETAIL - STONE  
VENEER  
1 1/2" = 1'-0"



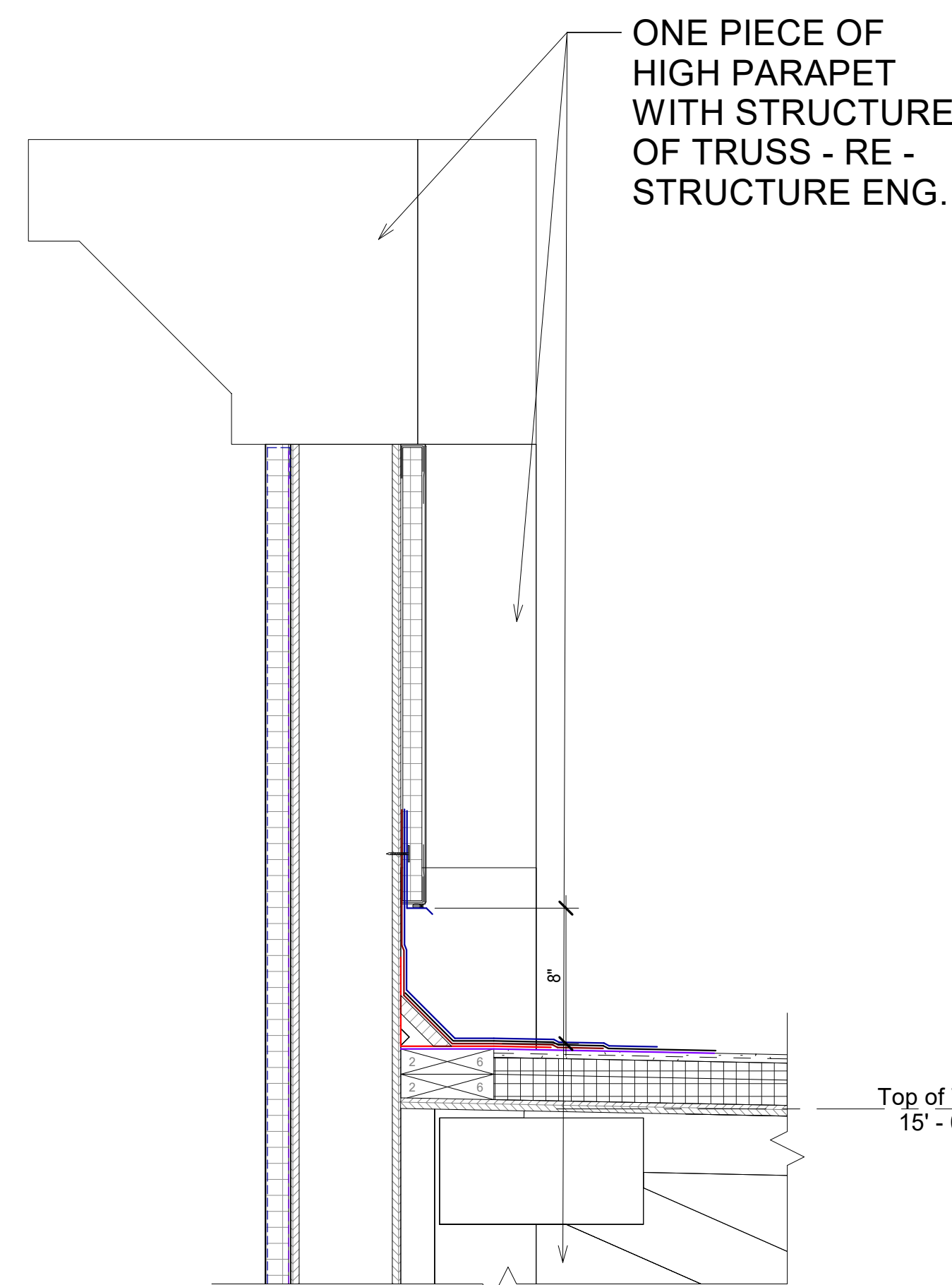
6 PLATFORM ACCESS LADDER DETAIL  
1 1/2" = 1'-0"



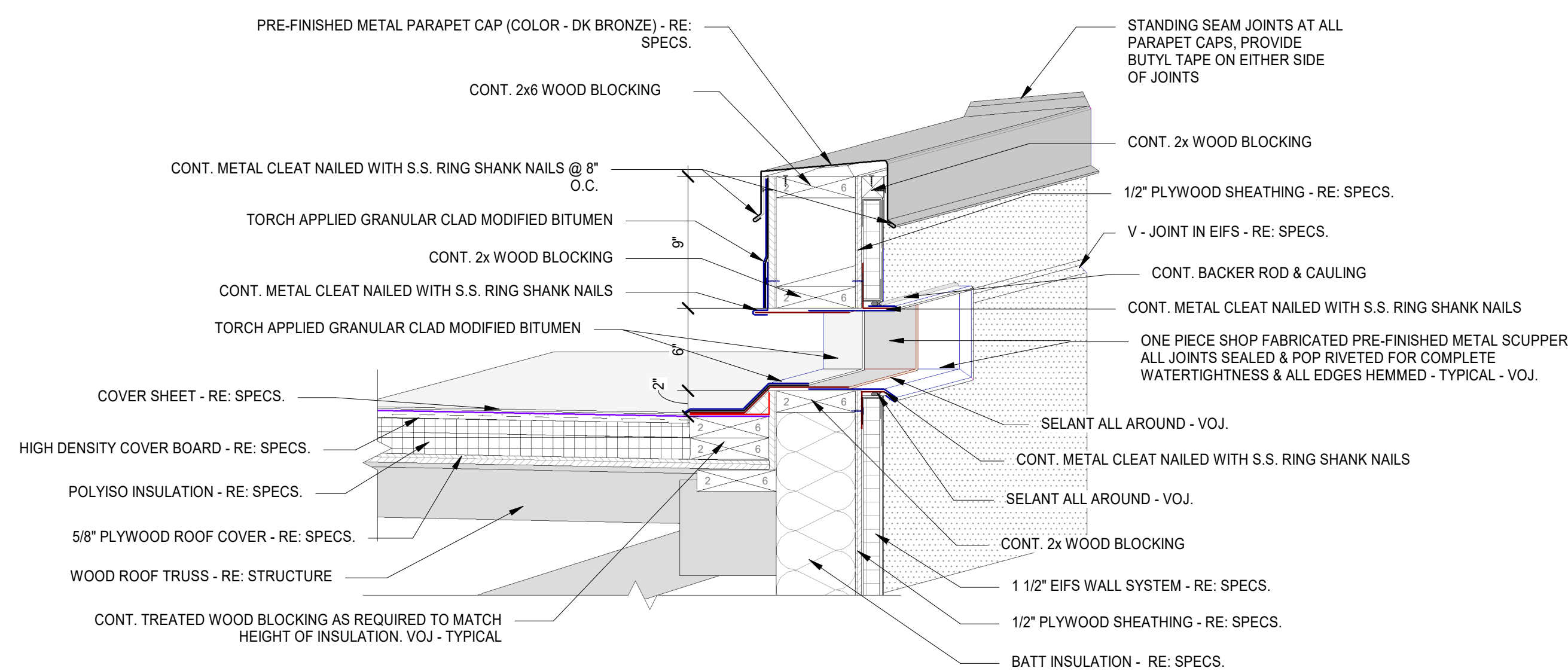
④ CONC. SLAB @ WASTE OIL TANK AREA  
1 1/2" = 1'-0"



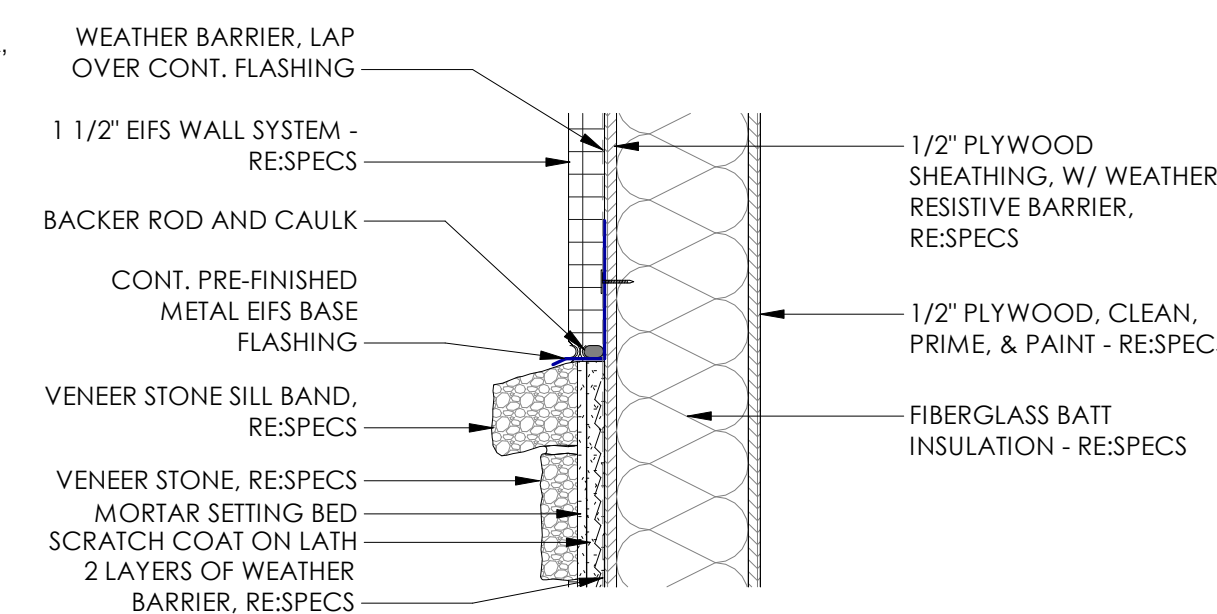
7 BALLARDS DETAIL  
1" = 1'-0"



② PARAPET COPING DETAIL  
1 1/2" = 1'-0"



⑤ SCUPPER DETAIL  
1 1/2" = 1'-0"

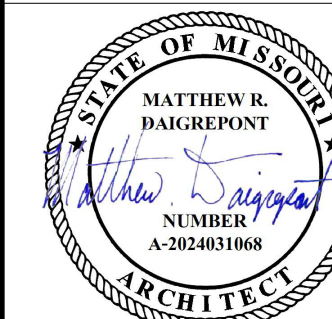


8 STONE SILL TRANSITION  
1 1/2" = 1'-0"









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By: Matthew Daigle

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# New Construction For Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086



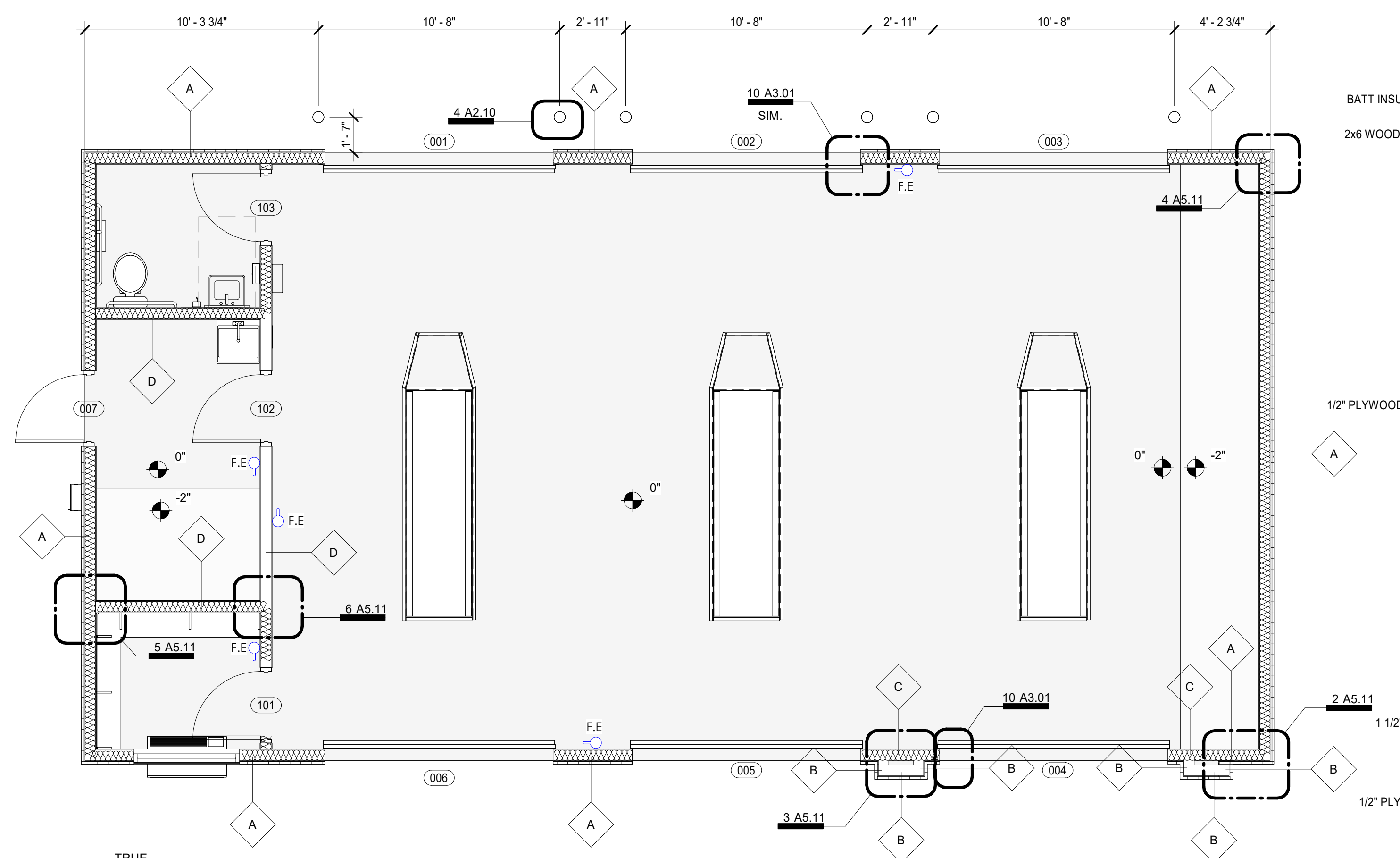
PROJECT NO:	33-006-
PHASE:	Final Dev. Submit
DATE:	8 July, 202
PROJ. ARCHITECT:	MR

### Plan Detail & Fire Extinguishers

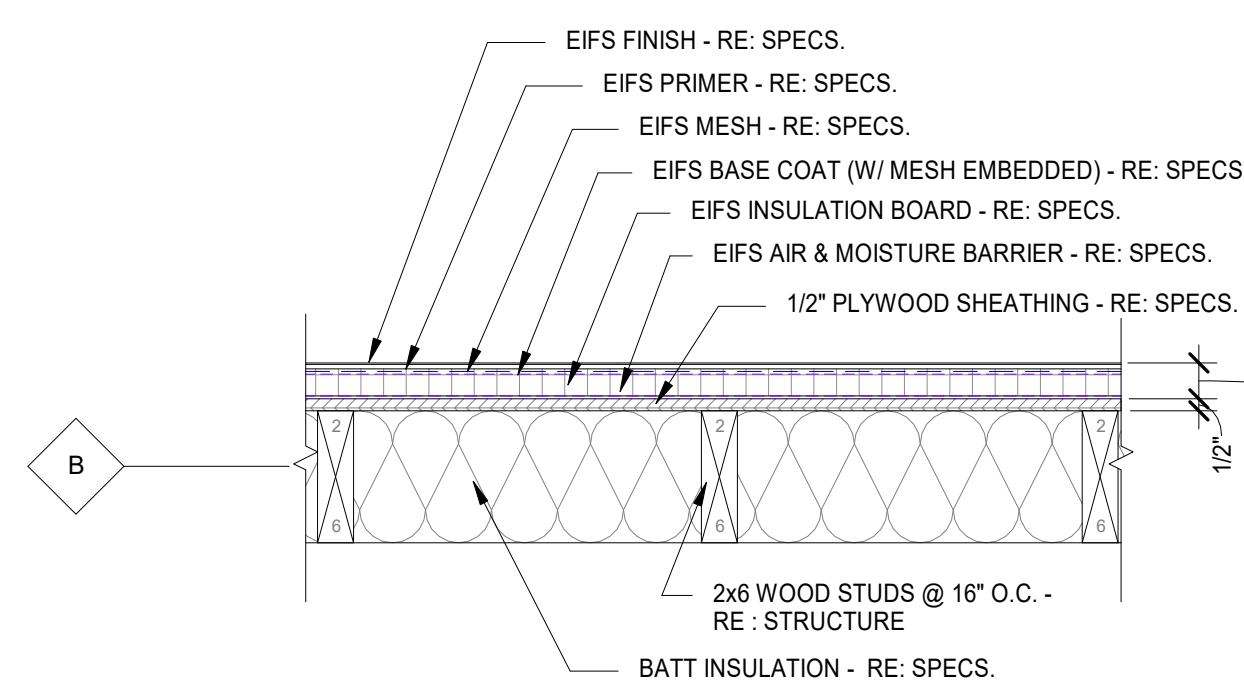
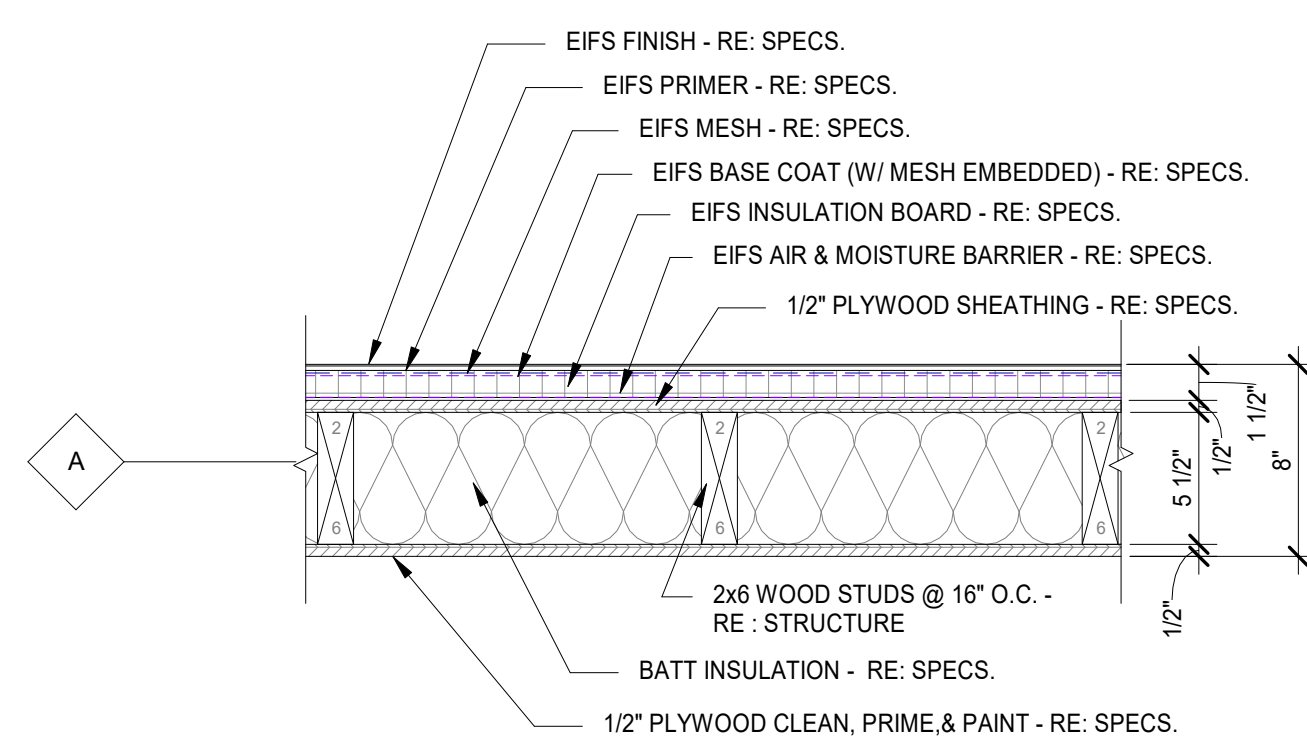
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## A5.11

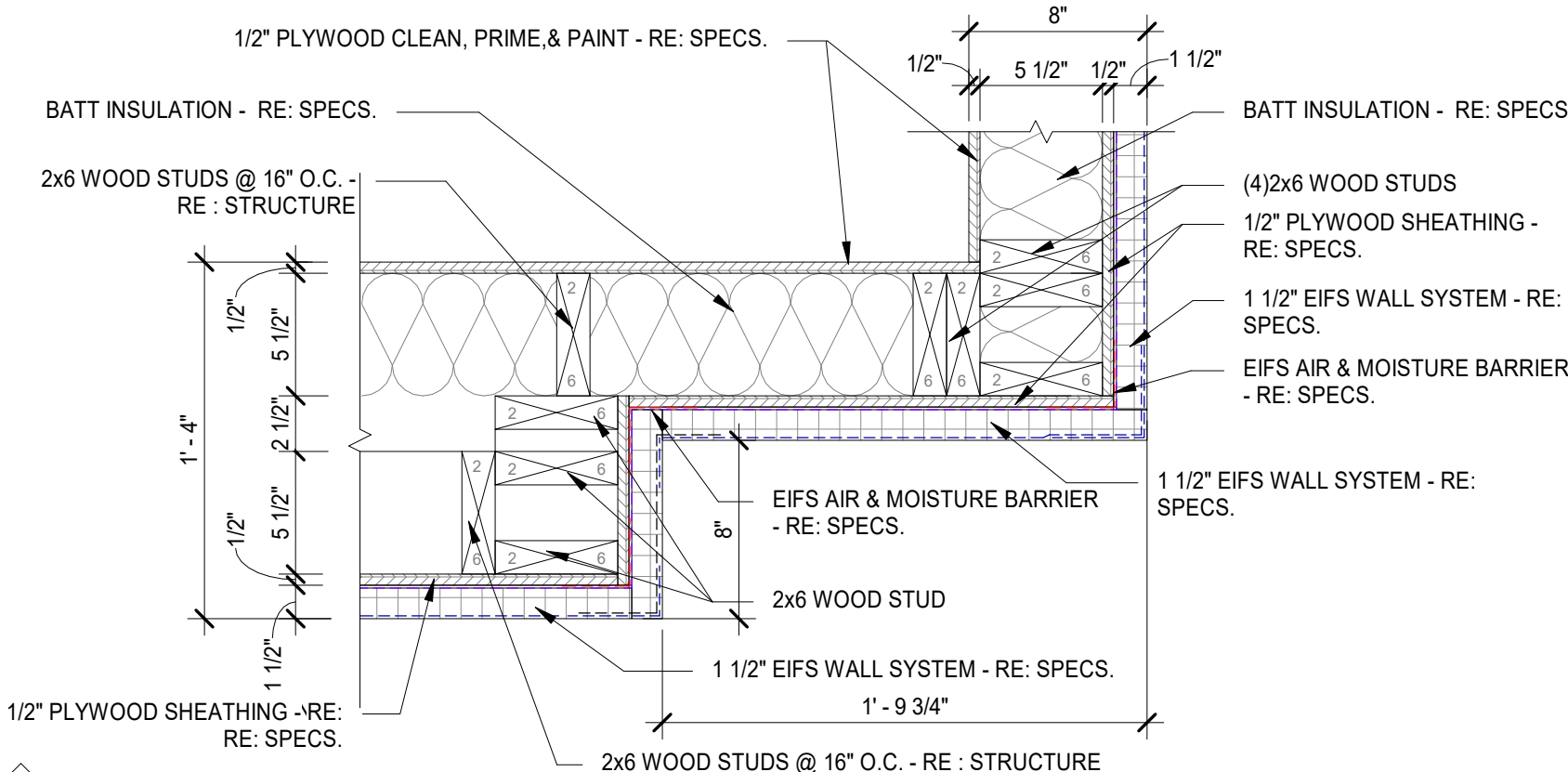
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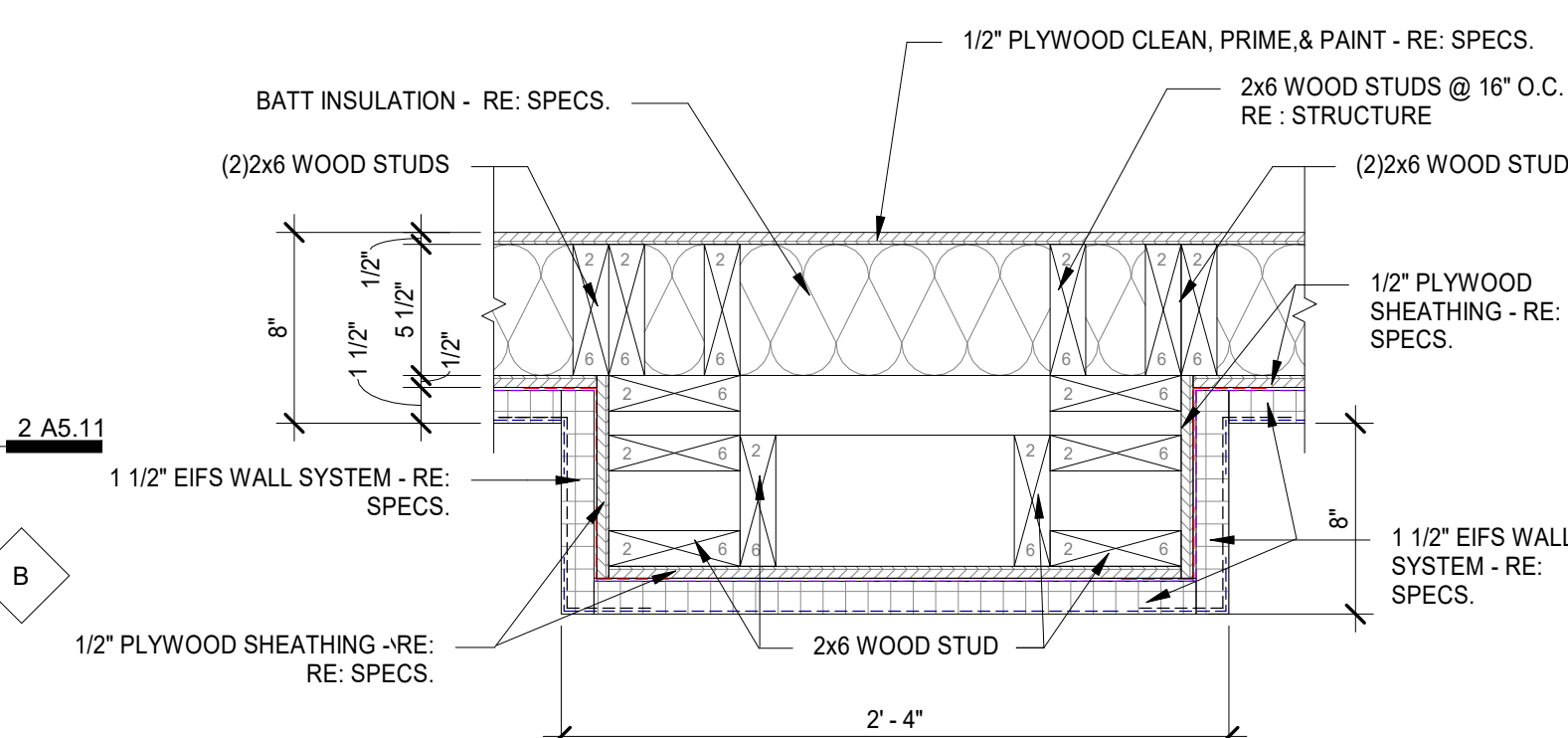
① WALL TYPES PLAN & FIRE EXTINGU.  
1/4" = 1'-0"



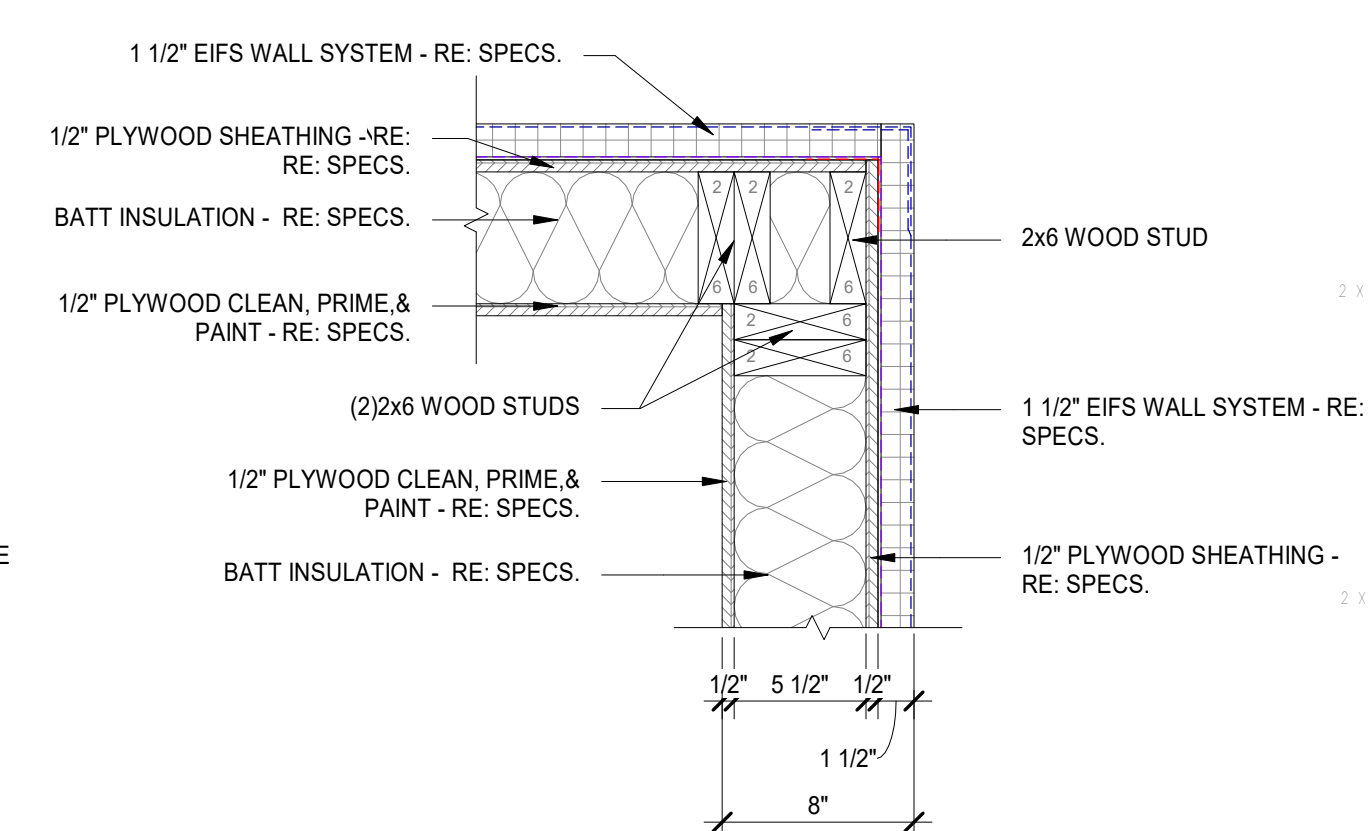
○ WALL TYPES PLAN  
1 1/2" = 1'-0"



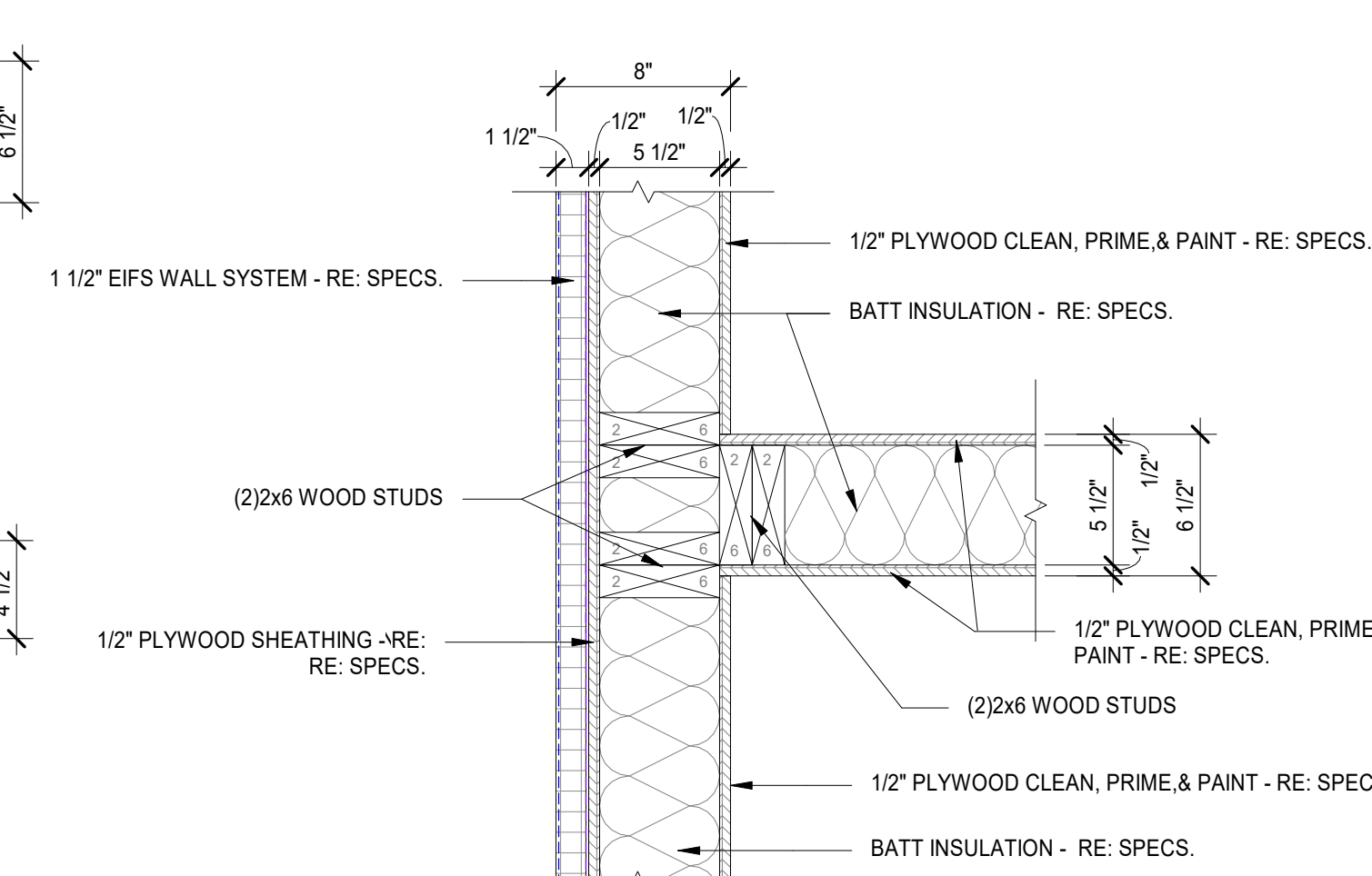
② PLAN DETAIL - 1  
1 1/2" = 1'-0"



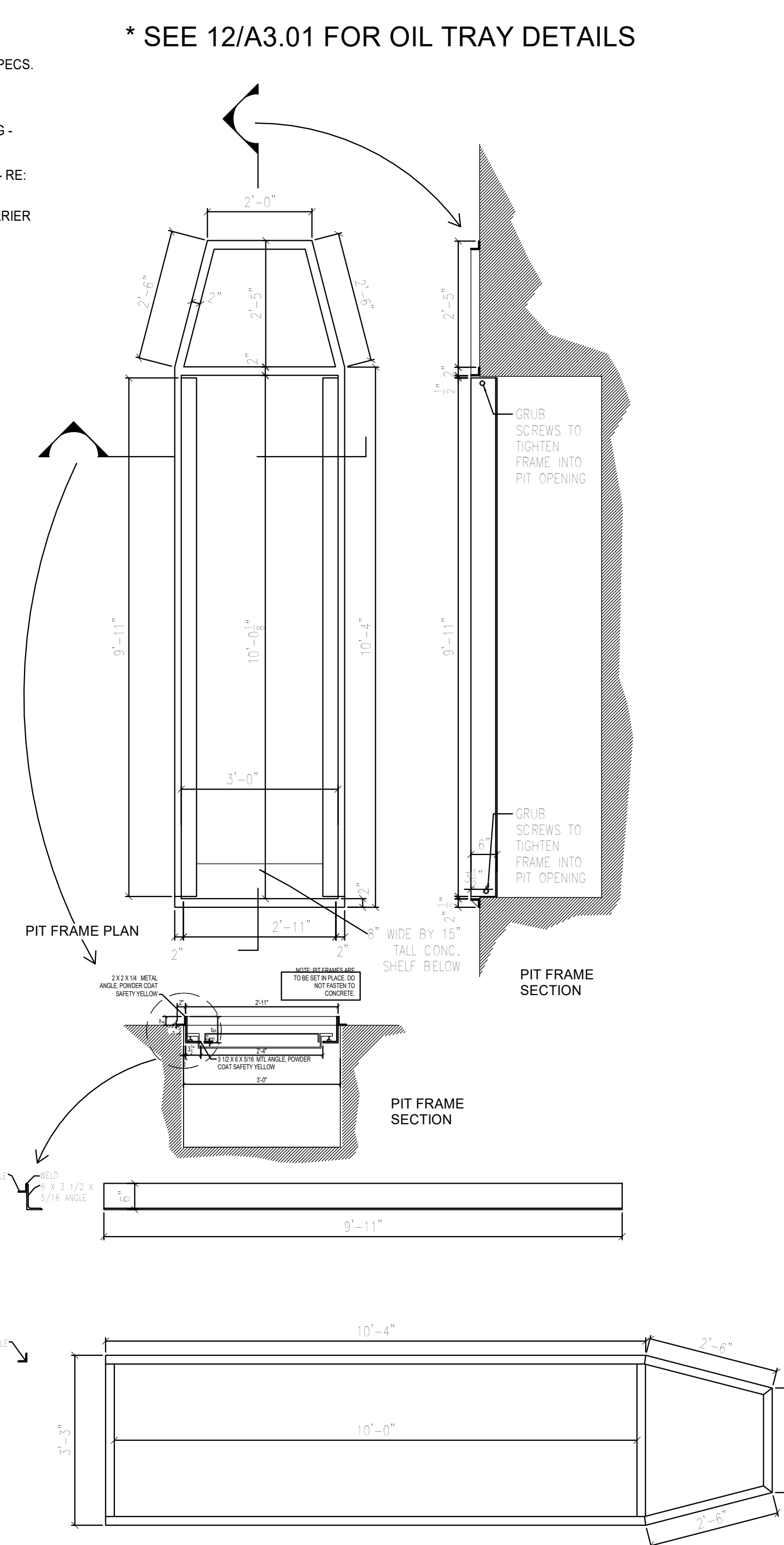
③ PLAN DETAIL - 2  
1 1/2" = 1'-0"



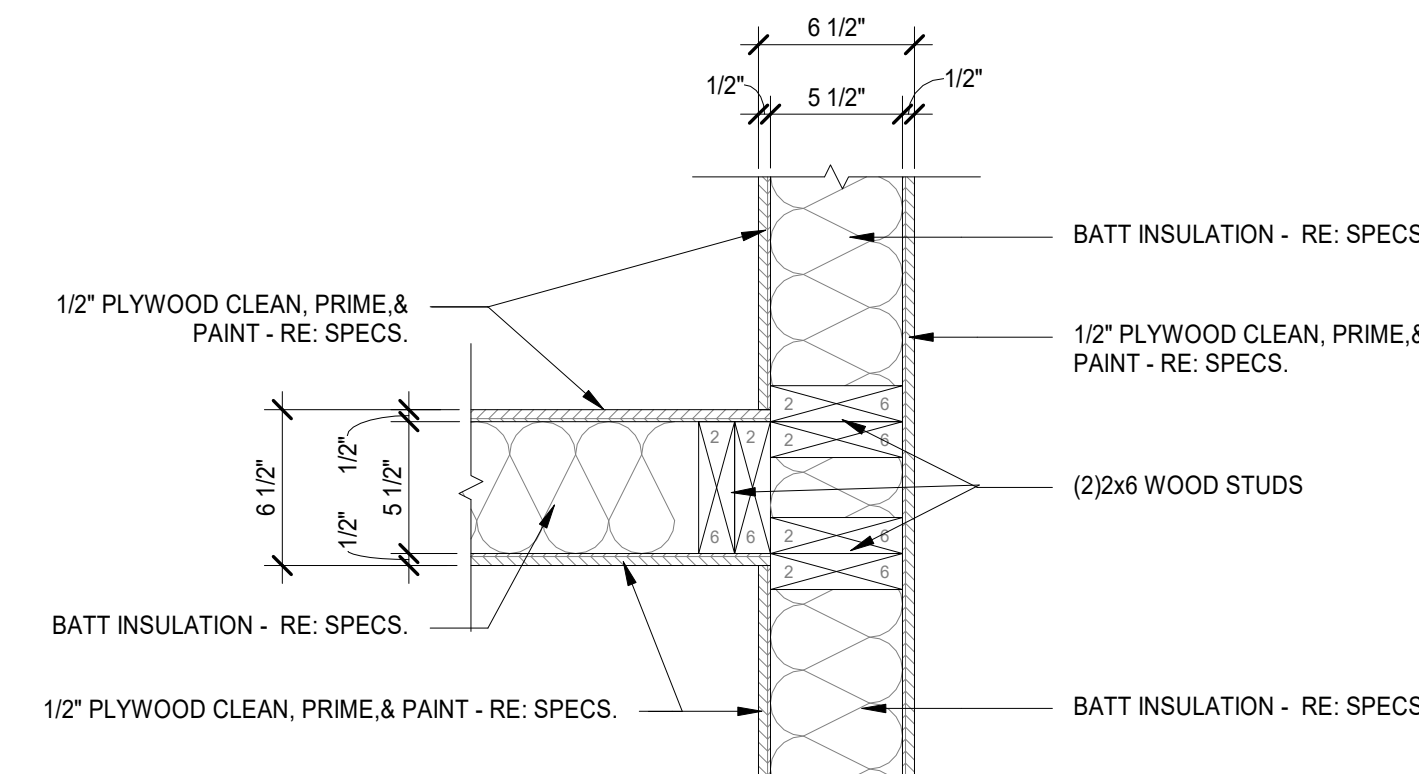
④ PLAN DETAIL - 3  
1 1/2" = 1'-0"



⑤ PLAN DETAIL - 4  
1 1/2" = 1'-0"



7 PIT FRAME DETAILS  
1/2" = 1'-0"

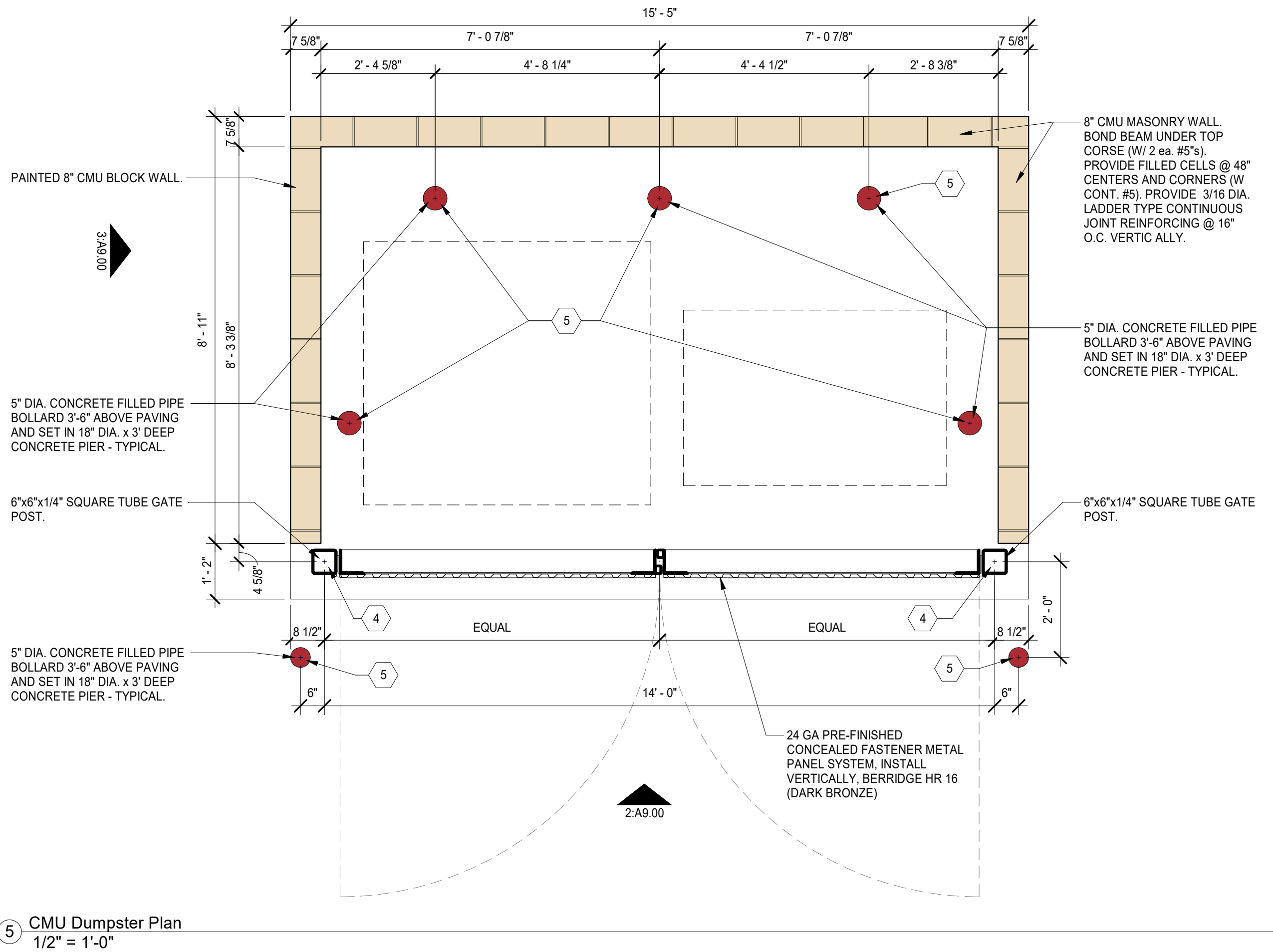


⑥ PLAN DETAIL - 5  
1 1/2" = 1'-0"

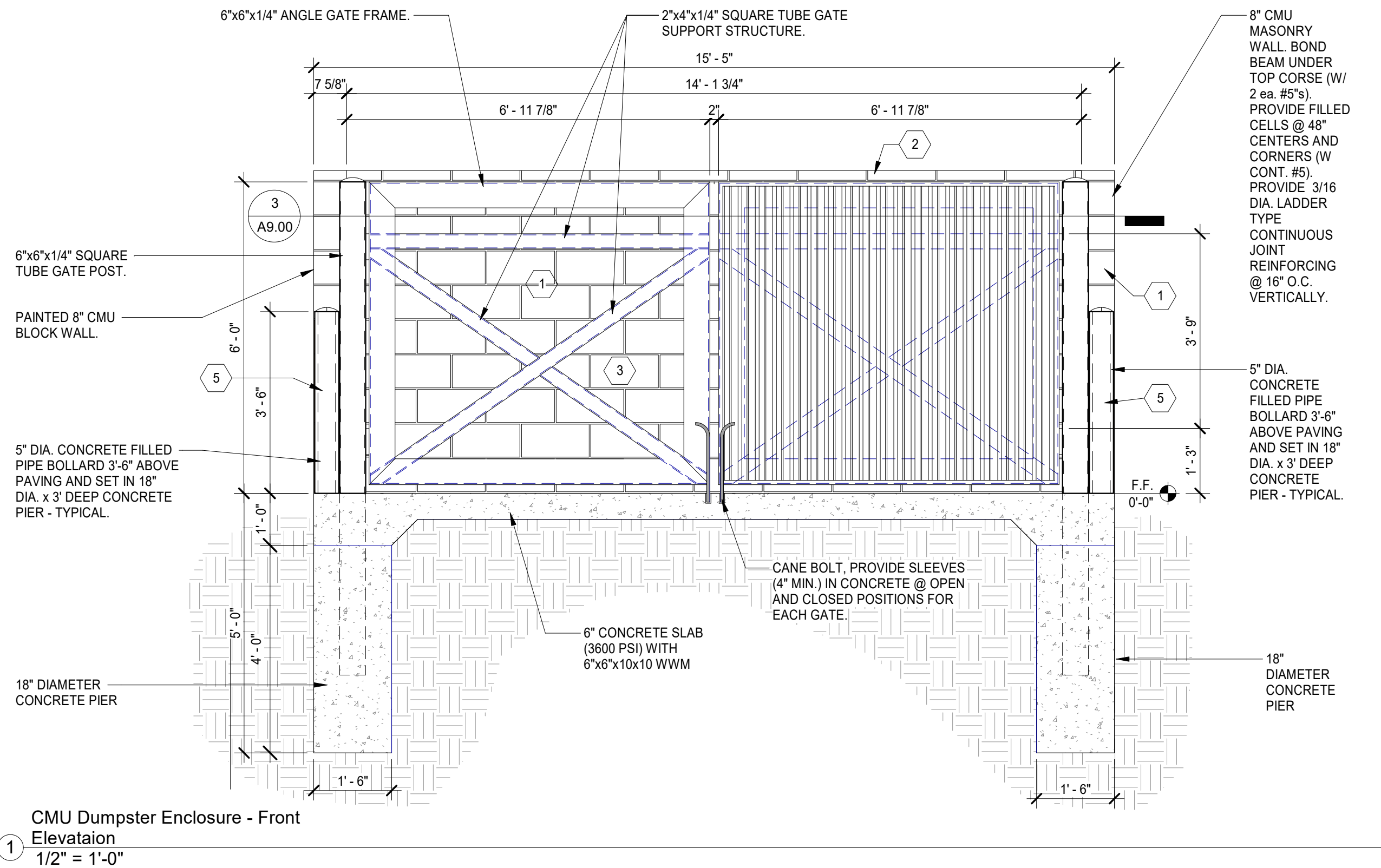


C:\Users\jensen\Documents\33- Lee's Summit, MO (24) Central Model.diaenrgFV5Z.vrt

C:\Users\jensen\Documents\33- Lee's Summit, MO (24) Central Model.diaenrgFV5Z.vrt



NOTE:  
ALL HARDWARE TO BE GALVANIZED UNLESS OTHERWISE NOTED.  
ALL STEEL POSTS AND GATE FRAME TO BE PRIMED AND PAINTED WITH 2 COATS EACH. COLOR TO BE DARK BRONZE SW6076.  
ALL STEEL MEMBERS TO BE SHOP WELDED. PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. ALL STEEL TO BE PAINTED DARK BRONZE SW6076.  
ALL METAL FRAMING, POST AND HARDWARE TO BE PRIMED AND PAINTED W/ MIN. 1 COAT PRIMER, AND 2 COATS FINISH. PAINT TO BE OIL BASED AND COLOR TO BE DARK BRONZE SW6076.



TAKE 5 OIL CHANGE, LLC  
STORAGE SYSTEM REVIEW

SYSTEMS ARE DIVIDED INTO 2 SEPARATE PROCESSES.

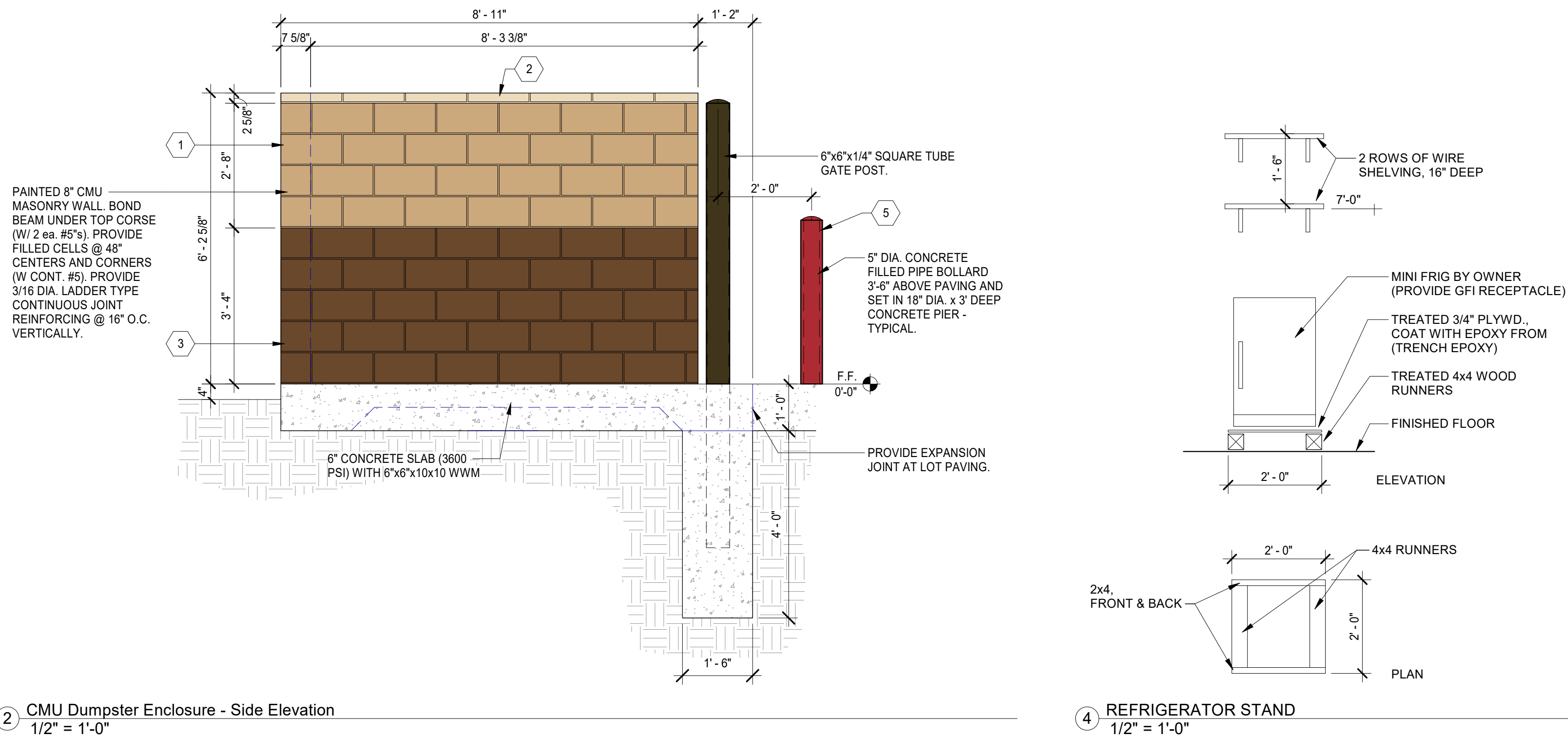
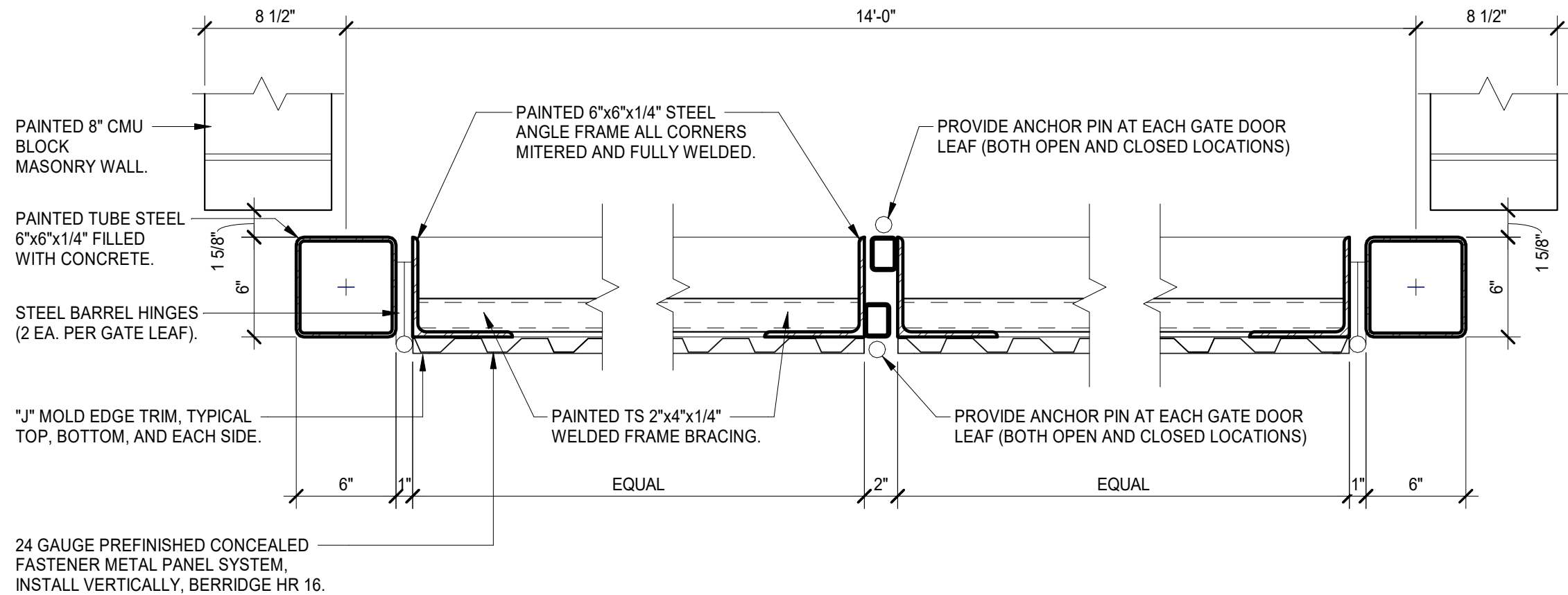
- USED OIL -**  
AFTER A TAKE 5 TECHNICIAN DIRECTS AND GUIDES THE CUSTOMER OVER A SHALLOW TRENCH THE USED OIL IS DRAINED INTO A ROLLING DRAIN PAN THAT IS POSITIONED UNDER THE VEHICLE. THE OIL FILTER IS ALSO CHANGED ABOVE THE DRAIN PAN. WHEN NECESSARY, THE DRAIN PANS ARE EMPTIED TO DESIGNATED OIL TANKS VIA 3/4" GASOLINE-RATED HOSE, ROUTED THROUGH CHASES TO THE STORAGE ROOM. THE HOSES ARE CONNECTED VIA A VACUUM DIAPHRAGM PUMP, SO THE SYSTEM IS TOTALLY NON-PRESSURIZED. 100% OF TAKE 5'S USED OIL AND OIL FILTERS ARE RECLAIMED AND RECYCLED BY OSHA CERTIFIED USED OIL RECYCLING COMPANIES.
- NEW OIL -**  
WE STORE NEW BULK OILS IN RHINO GRAVITY FEED SYSTEMS INSIDE THE BAY AREAS. THESE SYSTEMS HAVE NO PUMPS OR PRESSURE, ARE APPROVED BY OSHA AND DOT, AND ARE LOCATED WITHIN A RECESSED AREA WITHIN THE SHOP. TAKE 5 ALSO CARRIES A MINIMUM AMOUNT OF RETAIL BOTTLED OILS FOR SPECIALTY VEHICLES AS NECESSARY.

**NOTES -**

- TYPE OF LIQUIDS BEING STORED ARE CLASS IIIB LUBRICANTS ONLY.
- ALL TANKS ARE ABOVE GROUND. SINGLE WALL. 3 ARE STEEL AND 12 ARE HIGH-DENSITY POLYETHYLENE.
- VOLUME OF TANKS:  
(3) WASTE OIL TANKS OF APPROXIMATELY 330 GALLONS EACH  
(9) NEW OIL RHINO TANKS OF 120 GALLONS EACH  
(4) NEW OIL RHINO TANKS OF 220 GALLONS EACH

FOR CONTAINMENT - BULK TANKS ARE PLACED WITHIN RECESSED AREAS, THE RECESSED AREAS ARE CONNECTED VIA 3" CHASES TO THE SHALLOW TRENCHES, PROVIDING SECONDARY CONTAMINATION. EACH TRENCH MEASURES 10' X 3' X 30", YIELDING A TOTAL EXTRA VOLUME OF 1,683 GALLONS, IN ADDITION TO THE RECESSED AREAS WHERE THE TANKS ARE LOCATED.

- TAKE 5 DOES NOT INCORPORATE DRAINS IN THEIR SHOP, SHALLOW TRENCH, OR STORAGE AREAS. THE ONLY DRAIN IN A TAKE 5 IS LOCATED IN THE RESTROOM.
- WE MOP OUR FLOORS, RINSING THE MOP IN A MOP SINK THAT IS CONNECTED DIRECTLY TO AN OIL SEPARATOR.
- THE OIL SEPARATOR IS CLEANED/EMPTIED/MAINTAINED BY THE OSHA CERTIFIED RECYCLING COMPANY THAT COLLECTS AND RECYCLES THE USED OIL.
- SOME TANKS ARE PLACED ON SHOP FLOOR BETWEEN BAYS.



No.	REVISION	DATE



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New Construction For  
Take 5 Oil Change  
400 NE M State Route 291  
Lee's Summit, Missouri 64086



PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 8 July, 2024  
PROJ. ARCHITECT: MRD  
Dumpster Plan & Elevations  
SHEET NO.  
**A9.00**  
OF




2/25/2025 2:26:56 PM

Autodesk Docs/Take 5 - Lee's Summit MO - R224/Take 5 - Lee's Summit, MO - R22.1M

ABBREVIATIONS			
A.B. ADL. ADH. AFF. ALT. ARCH.	ANCHOR BOLT ADDITIONAL ADJACENT ADHESIVE ABOVE FINISH FLOOR ALTERNATE ARCHITECT	LBS LDG LLH LLV LSH LSV LT LVL LW	POUNDS LANDING LONG LEG HORIZONTAL LONG LEG VERTICAL LONG SIDE HORIZONTAL LONG SIDE VERTICAL LIGHT LEVEL LIGHT WEIGHT
B.L. BLDG BM B.O.D. BOT. BRG BTWN	BRICK LEDGE BUILDING BEAM BOTTOM OF DECK BOTTOM BEARING BETWEEN	MAT. MAX. MECH. MEZZ. MFR MID. MIN. MISS. M.L. MTL	MATERIAL MAXIMUM MECHANICAL MEZZANINE MANUFACTURER MIDDLE MINIMUM MISCELLANEOUS MATCH LINE METAL
CANT. CIP C.J. C.L. CLR CMU C.O. COL.(S) COMP. CONC. CONNX CONST. CONT. CONTR. CTR	CANTILEVER CAST IN PLACE CONSTRUCTION JOINT CENTERLINE CLEAR CONCRETE MASONRY UNIT CUT OFF COLUMN(S) COMPOSITE CONCRETE CONNECTION CONSTRUCTION CONTINUOUS CONTRACTOR CENTER	(N) NIC NO. N.S. NSG NTS NW O.C. O.D. O.H. OPNG	NEW NOT IN CONTRACT NUMBER NEAR SIDE NON-SHRINK GROUT NOT TO SCALE NORMAL WEIGHT ON CENTER OUTSIDE DIAMETER OUTSIDE FACE OPPOSITE HAND OPENING
D.B. D.B.A DBL DET./DTL. DEMO. OR (D) DPL DIA. DIAG. DIM. DIR. DISC. DWGS DWL(S)	DROPPED BEAM DEFORMED BAR ANCHOR DOUBLE DETAIL DEMOLISH DOUGLAS FIR-LARCH DIAMETER DIAGONAL DIMENSIONAL DIRECTION DISCONTINUOUS DRAWINGS DOWEL(S)	P.A.F. PARA. PC PCF PEMB PERIM. PERP. PJ PL PLY. PREFAB.	POWDER ACTUATED FASTENERS PARALLEL PRECAST POUNDS PER CUBIC FOOT PRE-ENGINEERED METAL BUILDING PERIMETER PERPENDICULAR PANEL JOINT PLATE PLYWOOD PRE-FABRICATED
EA. E.F. E.J. EL. ELEV. EMBED. ENGR EQ. E.W. EXIST. OR (E) EXP. EXT.	EACH EACH FACE EXPANSION JOINT ELEVATION ELEVATOR EMBEDMENT ENGINEER EQUAL EACH WAY EXISTING EXPANSION EXTERIOR	PSF PSI PT PTRN R REF. REINF. REQD RTU S.A. S.B. SCHED. SECT. SHT SHR. SIM. S.O.G. SPA SPEC. SS STD STIFF. STL. SW SYM. SYP	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST-TENSIONED PENETRATION REMAINDER OR RADIUS REFER TO OR REFERENCE REINFORCEMENT/REINFORCE REQUIRED ROOF TOP UNIT STUD ANCHOR STRAP BEAM SCHEDULE SECTION SHEET SHRINKAGE SIMILAR SLAB-ON-GROUND SPACING SPECIFICATION STAINLESS STEEL STANDARD STIFFENER STEEL SHEAR WALL SYMMETRICAL SOUTHERN YELLOW PINE
HAS HDR HI HK HORIZ. HR HSS HT	HEADED ANCHOR STUD HEADER HIGH HOOK HORIZONTAL HARD ROCK HOLLOW STEEL SECTION HEIGHT	T&B TEMP. TEN. TERM. THK T.O. T.O.C. T.O.F. T.O.P. T.O.S. TS TYP. U.N.O. VAR. VERT. W/ W/O WP WT WWF	TOP AND BOTTOM TEMPERATURE TENSION TERMINATE THICKNESS TOP OF TOP OF CONCRETE TOP OF FOOTING TOP OF PIER TOP OF STEEL / TOP OF SLAB TUBE STEEL TYPICAL UNLESS NOTED OTHERWISE VARIES VERTICAL WITH WITHOUT WORK POINT WEIGHT WELDED WIRE FABRIC

# STRUCTURAL DESIGN

1.



2018 INTERNATIONAL BUILDING CODE  
LOCAL AMENDMENTS TO BUILDING CODE  
ASCE 7-16

2.

STRUCTURAL DESIGN LOADS:

RISK CATEGORY

II

LIVE LOADS:

PUBLIC AREAS

100 psf

MEZZANINES/PLATFORMS

100 psf

ROOF

20 psf

DEAD LOADS:

PLYWOOD DECKING

3 psf/in.

CEILING/MECHANICAL

5 psf

TRUSSES

3 psf

MISCELLANEOUS

2 psf

PARTITIONS

5 psf

(NOTE: ALL DEAD LOADS ARE APPROXIMATE. CONTRACTOR TO COORDINATE FINAL DEAD LOADS W/ EOR FOR FABRICATED ITEMS).

SNOW LOAD:

GROUND SNOW LOAD,  $P_g$

20 psf

IMPORTANCE FACTOR,  $I_s$

1.0

EXPOSURE FACTOR,  $C_e$

1.0

THERMAL FACTOR,  $C_t$

1.0

(NOTE: ROOF PARAPET DRIFT LOADS & UNBALANCED SNOW LOADS TO BE CALCULATED FOR EACH BUILDING SECTION W/ ABOVE PARAMETERS & EACH SECTION'S PROPERTIES PER ASCE 7 FOR DESIGN OF PRE-FABRICATED TRUSSES AFFECTED BY SNOW LOADS). REFER TO ROOF FRAMING PLAN FOR SNOW DRIFT LOADING DIAGRAM.

WIND LOAD:

BASIC WIND SPEED,  $V_{50}$

115 MPH

IMPORTANCE FACTOR,  $I_w$

1.0

EXPOSURE CATEGORY

B

GUST & INTERNAL PRESSURE,  $GC_{pi}$

0.18 (ENCLOSED)

DIRECTIONALITY FACTOR,  $K_d$

0.85

TOPOGRAPHIC FACTOR,  $K_{zt}$

1.0

ELEVATION FACTOR,  $K_e$

1.0

(REFER TO ROOF FRAMING PLAN FOR COMPONENTS & CLADDING PRESSURES CHART)

SEISMIC LOAD:

SITE CLASS

C

SEISMIC DESIGN CATEGORY

B

IMPORTANCE FACTOR,  $I_e$

1.0

$S_s$

0.100

$S_1$

0.068

$S_{05}$

0.067

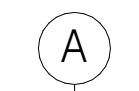

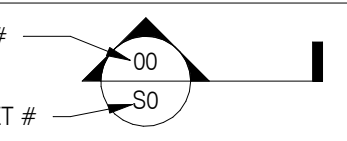
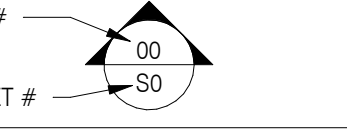
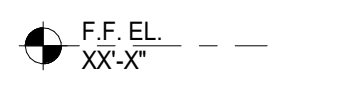
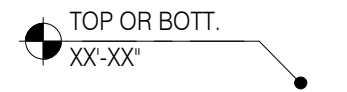

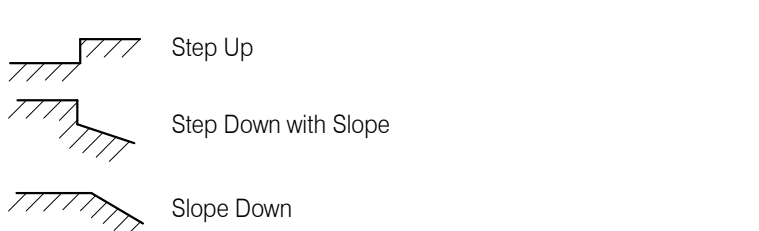
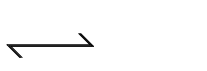
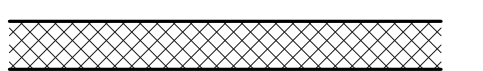
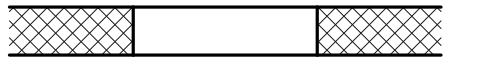
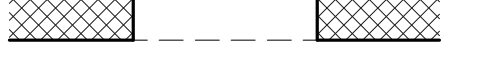
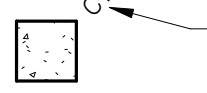



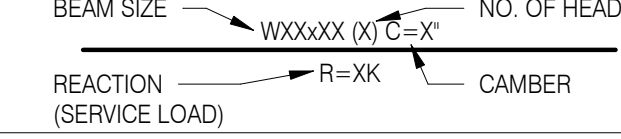
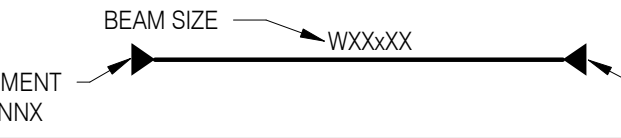
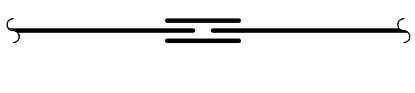
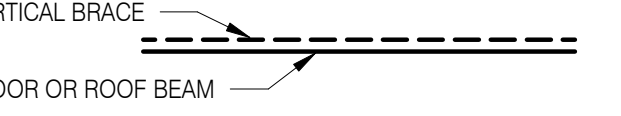
$S_{01}$

0.068

SEISMIC FORCE-RESISTING SYSTEM

LIGHT-FRAMED WOOD WALL SHEATHED W/  
WOOD STRUCTURAL PANELS (R=6.5)

SUBMITTALS	
1.	SHOP DRAWINGS SHALL BE PREPARED FOR ALL STRUCTURAL COMPONENTS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION IS IN FULL AGREEMENT WITH THE LATEST CONSTRUCTION DOCUMENTS.
2.	CONTRACTOR SHALL ALLOW TWO WEEKS FOR THE ENGINEER'S REVIEW OF EACH SUBMITTAL. SUBMITTALS WHICH DO NOT REFLECT THE CONTRACTOR'S APPROVAL, SIGNATURE AND DATE, OR DO NOT APPEAR TO HAVE BEEN REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELAYS CAUSED BY REJECTION OF INADEQUATE OR INCORRECT SHOP DRAWINGS.
3.	OMISSION FROM THE SHOP DRAWINGS OF ANY REQUIREMENTS AND/OR CORRECTIONS/COMMENTS ON THE SHOP DRAWINGS DURING REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS EVEN IF THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED. APPROVAL IS FOR GENERAL COMPLIANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS ONLY. APPROVAL ASSUMES NO RESPONSIBILITY FOR DIMENSIONS, QUANTITIES AND CONDITIONS THAT PERTAIN TO FABRICATION AND INSTALLATION OR FOR PROCESSES AND TECHNIQUES OF CONSTRUCTION. APPROVAL OF A SPECIFIC ITEM SHALL NOT INCLUDE APPROVAL OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. CALCULATION REVIEW AND COMMENTS DO NOT INFER A DETAILED CHECK OF THE CALCULATIONS.
4.	ALL ITEMS DEVIATING FROM THE STRUCTURAL DRAWINGS OR FROM PREVIOUSLY SUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.
5.	THE USE OF REPRODUCTIONS OR ELECTRONIC FILES OF THE STRUCTURAL DRAWINGS FOR THE PREPARATION OF SHOP DRAWINGS IS NOT ACCEPTABLE WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD. IF SUCH AUTHORIZATION IS OBTAINED, DO NOT SUBMIT SHOP DRAWINGS WITH THE CONTRACT DOCUMENTS TITLE BLOCK AND/OR THE SEAL OF THE REGISTERED ENGINEER OF RECORD AFFIXED. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE OF THE ENGINEERING PRACTICING ACT.
6.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED DESIGN OF CERTAIN ITEMS, REFERRED TO AS DEFERRED. DOCUMENTS FOR DEFERRED SHOP DRAWINGS, INCLUDING CALCULATIONS, SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW FOR GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS.
7.	DELEGATED STRUCTURAL DESIGN AND DEFERRED SUBMITTALS INCLUDE: 1. PREFABRICATED WOOD TRUSSES
8.	THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE ENGINEER OF RECORD AND THE BUILDING OFFICIAL.

SYMBOL	DESCRIPTION
	GRIDLINE IDENTIFIER
	EXISTING GRIDLINE IDENTIFIER
	DETAIL MARKER
	ELEVATION MARKER
	FINISH FLOOR ELEVATION MARKER
	SPOT ELEVATION MARKER
	WORK POINT MARKER
	ELEVATION CHANGE IN SLAB OR DECK
	DECK OR SLAB SPAN DIRECTION
	MASONRY WALL
	WINDOW IN MASONRY WALL
	DOOR IN MASONRY WALL
	CONCRETE COLUMN
	STEEL COLUMN
	STANDARD PAN WIDTH
	SKIP PAN WIDTH
	STEEL BEAM
	STEEL BEAM MOMENT CONNX
	STEEL BEAM SPLICE
	VERTICAL STEEL BRACE - REF. ELEVATION

GENERAL NOTES	
1.	THE DRAWINGS AND SPECIFICATIONS DO NOT INDICATE THE MEANS AND METHODS OF CONSTRUCTION UNLESS NOTED OTHERWISE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL MEANS AND METHODS MEET THE REQUIREMENTS OF THE LATEST OSHA REGULATIONS.
2.	ALL DETAILS AND SECTIONS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE, EXCEPT WHERE A DIFFERENT DETAIL OR SECTION IS SHOWN.
3.	RESPONSES TO QUESTIONS AND RFIs, COMMENTS MADE DURING THE REVIEW OF SUBMITTALS, AND DIRECTIVES PROVIDED IN ANY FORM BY THE ENGINEER TO THE CONTRACTOR DURING THE CONSTRUCTION PROCESS ARE INTENDED TO BE CLARIFICATIONS OF THE CONTRACT DOCUMENTS AND ARE NOT INTENDED TO REPRESENT A CHANGE IN COST OF THE PROJECT TO THE OWNER UNLESS A CHANGE ORDER REQUEST IS PROVIDED WITH DETAILED PRICING INFORMATION TO THE ARCHITECT BEFORE PURCHASING, DETAILING, FABRICATING, OR INSTALLING ANY COMPONENT RELATED TO SUCH CLARIFICATIONS AND CORRECTIONS.
4.	THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES IF APPLICABLE, INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT.
5.	IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSEMBLE AND COORDINATE THE REQUIREMENTS OF ALL COMPONENTS OF THE CONTRACT DOCUMENTS AND VERIFY EXISTING CONDITIONS OF THE SITE. REF. ARCHITECTURAL AND ALL OTHER TRADES DOCUMENTS FOR SIZE AND LOCATION OF PIPES, VENTS, CHASES, DUCTS, OPENINGS, DEPRESSIONS, RECESSES, SLOPES, BLOCKOUTS, CURBS, EMBEDMENTS, AND DETAILS NOT SHOWN ON THESE STRUCTURAL DRAWINGS. ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED WITH THE ARCHITECTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL REPORT ANY DISCREPANCY BETWEEN THESE DOCUMENTS AND THOSE OF THE ARCHITECT AND ALL PROJECT CONSULTANTS OR ANY ERROR, OMISSION OR DIFFICULTY AFFECTING HIS WORK TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.
6.	THE DESIGN LOADS LISTED IN THE STRUCTURAL DESIGN CRITERIA SHALL NOT BE EXCEEDED DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION LOADS, MATERIAL STORAGE, TEMPORARY BRACING, SHORING AND FORMWORK AS REQUIRED TO KEEP ALL ELEMENTS OF THE STRUCTURE PLUMB AND IN TRUE ALIGNMENT DURING ALL PHASES OF CONSTRUCTION. DESIGN OF TEMPORARY BRACING AND SHORING SHOULD BE PROPERLY DESIGNED UNDER THE SUPERVISION OF A LICENSED STRUCTURAL ENGINEER. PERMANENT BRACING MEMBERS SHOWN ON STRUCTURAL DRAWINGS ARE REQUIRED FOR THE COMPLETED STRUCTURE AND MAY NOT BE ADEQUATE DURING CONSTRUCTION.
7.	SPECIAL INSPECTIONS SHALL BE DONE BY A QUALIFIED, INDEPENDENT INSPECTION COMPANY. JOB SITE VISITS BY THE ENGINEER SHOULD BE CONSIDERED A PERIODIC CHECK TO INFORM THE OWNER OF DEFECTS IN THE WORK OF THE CONTRACTOR AND DO NOT CONSTITUTE, OR SUBSTITUTE, INSPECTIONS UNLESS SPECIFICALLY CONTRACTED FOR.
8.	STRUCTURAL MEMBERS AND FOUNDATIONS SUPPORTING MECHANICAL EQUIPMENT HAVE BEEN DESIGNED FOR THE WEIGHT OF THE UNITS SHOWN IN THE STRUCTURAL DRAWINGS. ANY CHANGES IN SIZE, WEIGHT, OR QUANTITY OF UNITS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS OR RELATED MATERIALS.
9.	NOTICE IN WRITING OF ANY PROPOSED SUBSTITUTIONS OR ANY PROPOSED DEVIATIONS TO THE STRUCTURE AS REQUIRED BY THESE DOCUMENTS SHALL BE SUBMITTED WITH A CURRENT ICC REPORT.
10.	DIMENSIONS SHOWN IN STRUCTURAL PLANS, SECTIONS, AND DETAILS TAKE PRECEDENT OVER SCALE. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT INDICATED IN THE STRUCTURAL DRAWINGS.
11.	THESE PLANS MUST BE SUBMITTED TO THE GEOTECHNICAL ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
12.	IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
13.	THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING PRECONSTRUCTION MEETINGS FOR THE FOUNDATION AND SUPERSTRUCTURE ELEMENTS WITH A MINIMUM OF TWO WEEKS OF NOTICE PRIOR TO START OF THE RELEVANT WORK. ATTENDEES SHALL INCLUDE THE CONTRACTORS, APPROPRIATE SUBCONTRACTORS, FABRICATORS, INSPECTORS, ARCHITECT/ENGINEERS. ON THE MEETING AGENDA SHALL BE REVIEW OF WORK SCOPE, PROJECT SCHEDULE OF THE ELEMENT IN QUESTION, CONTACT INFORMATION OF RESPONSIBLE PARTIES, INSPECTION POINTS, REVIEW OF MATERIALS AND ANY SPECIAL DESIGN ISSUES, CLARIFICATIONS TESTING AND ACCEPTANCE, AND ANY OTHER TOPICS DEEMED APPROPRIATE BY THE CONTRACTOR OR THE ARCHITECT.
14.	THE ROOF STRUCTURE AND ITS SUPPORTING ELEMENTS HAVE BEEN DESIGNED WITH THE ASSUMPTION THAT SUFFICIENT DRAINAGE HAS BEEN PROVIDED TO PREVENT ANY PONDING OF WATER. IT IS THE RESPONSIBILITY OF THE BUILDING OWNER TO MAINTAIN THE ROOF DRAINAGE SYSTEM SUCH THAT IT FUNCTIONS AS INTENDED.
GEOTECHNICAL REPORT	
1.	FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON THE RECOMMENDATIONS GIVEN IN THE FOLLOWING GEOTECHNICAL INVESTIGATION REPORT:  GEOTECHNICAL CONSULTANT: TERRACON REPORT NUMBER: 02225258 REPORT DATE: 11/02/2023 SYSTEM TYPE: CONVENTIONAL SHALLOW FOUNDATION VOID FORM DEPTH: N/A MOISTURE RETARDER: 15 MIL VAPOR BARRIER
2.	THE CONTRACTOR MUST READ THE GEOTECHNICAL INVESTIGATION REPORT AND BE THOROUGHLY FAMILIAR WITH SITE AND SUBGRADE INFORMATION GIVEN THEREIN. ALL SUBGRADE PREPARATION AND FOUNDATION CONSTRUCTION SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE STRUCTURAL DOCUMENTS AND THE GEOTECHNICAL REPORT, AND SHALL BE OBSERVED, TESTED, AND APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH FOUNDATION CONSTRUCTION.



salasobrien.com  
New Orleans  
541 Julia St., Suite 200  
New Orleans, LA 70130  
  
Registration: F-4111  
Project No: 2497-66352-00

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025

02-24-2025


CITY COMMENTS

1


DATE

REVISION

No.




26 JULY, 2024



3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
P: 225.760.3486 F: 225.766.4724  
fusionapc.com

New Construction For  
Take 5 Oil Change

Lee's Summit, Missouri 64063



PROJECT NO: 2497-66352-00  
PHASE: Final Dev. Submittal  
DATE: 26 JULY, 2024  
PROJ. ENGINEER: BC

STRUCTURAL INFORMATION

SHEET NO.  
**\$0.10**  
OF



 **Salas O'Brien**

salasobrien.com  
New Orleans  
541 Julia St., Suite 200  
New Orleans, LA 70130

Registration: F-4111  
Project No: 2497-66352-00

[illegible]

**FUSION**  
ARCHITECTS

3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
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[fusionapc.com](http://fusionapc.com)

# New Construction For Take 5 Oil Change



PROJECT NO:	2497-66352-00
PHASE:	Final Dev. Submittal
DATE:	26 JULY, 2024
PROJ. ENGINEER:	BC

SHEET NO.  
**S0.12**  
OF

## WOOD FRAMING NOTES

1. ALL WOOD FRAMING SHALL BE USED AT 19% MAXIMUM MOISTURE CONTENT AND SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS (ALLOWABLE STRESSES ARE UNFACTORED AND ARE BASED ON THE 2015 NATIONAL DESIGN SPECIFICATION (NDS) PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION):

2x BEAMS, HEADERS, JOISTS, SILL PLATES	#2 SYP	Fv=175 psi E=1,400,000 psi	#2 SYP	Fb
			2x4	1100
			2x6	1000
			2x8	925
			2x10	800
ENGINEERED LUMBER BEAMS LAMINATED VENER LUMBER (LVL)	LVL 2.0E	Fb=2,600 psi Fv=285 psi	2x12	750

GLUED LAMINATED TIMBER (GLULAM)	24F-V1 (SP/SP)	Fb(+)=2,600 psi Fb(-)=1,450 psi Fv=210 psi Ft=775 psi Fc <sub>g</sub> =500 psi E=1,700,000 psi
------------------------------------	----------------	---

BEARING PLATES, LEDGERS	#3 SPY	Fb=650 psi
		Fv=175 psi
		Ft=400 psi
		Fc <sub>L</sub> =565 psi
		E=1,300,000 psi

STUDS AND STUD PACKS	STUD	Fb=650 psi Fc=850 psi E=1,200,000 psi
----------------------	------	---

POST COLUMNS	#2 SYP	Fb=850 psi
5'x5" AND GREATER		Fc=525 psi
		E=1,200,000 psi

ENGINEERED LUMBER COLUMNS	PSL 1.8 E	Fb=2,400 psi
PARALLEL STRAND LUMBER (PSL)		Fc=2,500 psi
		E=1,800,000 psi

2. SILL PLATES AND OTHER WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED FOR MOISTURE RESISTANCE. ALL WOOD MEMBERS EXPOSED TO WEATHER SHALL BE PRESSURE TREATED FOR MOISTURE RESISTANCE.
3. PREFABRICATED WOOD TRUSSES SHALL BE "GANG-NAIL, RAY BAY, OR APPROVED EQUAL AND SHALL BE DESIGNED, DETAILED, AND FABRICATED IN ACCORDANCE WITH THE LATEST EDITION OF THE "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" BY THE TRUSS PLATE INSTITUTE AND APPROVED BY THE CITY. WOOD TRUSS SHOP DRAWINGS SHALL INCLUDE FRAMING PLANS SHOWING ALL PREFABRICATED MEMBERS WITH MARK NUMBERS FOR EACH MEMBER TYPE. WOOD TRUSS SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER FROM THE STATE OF WHERE THIS PROJECT IS LOCATED AND SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.
4. COMPOSITE WOOD 1-BEAMS' SHALL BE TJI BY WEYERHAEUSER OR EQUIVALENT AND SHALL MEET THE STRENGTH AND STIFFNESS REQUIREMENTS OF THE SPECIES INDICATED ON PLANS.
5. ALL BEAMS AND TRUSSES SHALL BE GRADE STAMPED PER W.C.I.B. RULES.
6. IF A RIGID CEILING MATERIAL SUCH AS GYPSUM BOARD IS NOT APPLIED DIRECTLY TO THE BOTTOM OF FLOOR OR ROOF FRAMING, PROVIDE THE FOLLOWING BRIDGING: LUMBER FRAMING - PROVIDE FULL-DEPTH BLOCKING AT 1/3 POINTS OF SPAN. PRE-ENGINEERED TRUSS FRAMING - PROVIDE BOTTOM CHORD BRIDGING PER TRUSS SUPPLIER.
7. RIGID CEILING MATERIALS NOT ATTACHED DIRECTLY TO THE BOTTOM OF FLOOR OR ROOF FRAMING
8. MEMBERS ARE TO BE SUPPORTED BY CEILING JOISTS AS FOLLOWS: SPANS LESS THAN 10 FT. - 2x4 @ 16" O.C. SPANS BETWEEN 10 FT & 16 FT - 2x6 @ 16" O.C. SPANS EXCEEDING 16 FT. - CONTACT ENGINEER.

## FLOOR AND ROOF FRAMING

1. "HANDLING, INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES" (HIB-91) BY THE TRUSS PLATE INSTITUTE SHALL BE COMPLIED WITH DURING STORAGE AND INSTALLATION OF FLOOR AND ROOF TRUSSES.
2. NOTCHES ON THE ENDS OF JOISTS SHALL NOT EXCEED ONE FOURTH OF THE JOIST DEPTH. HOLES BORED IN JOISTS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM OF THE JOIST, AND THE DIAMETER OF ANY HOLE SHALL NOT EXCEED ONE THIRD OF THE DEPTH OF THE JOIST. NOTCHES IN THE TOP OR BOTTOM OF JOISTS SHALL NOT EXCEED ONE SIXTH OF THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN. THE GENERAL CONTRACTOR SHALL COORDINATE THESE GUIDELINES WITH ALL TRADES.
3. HOLES AND NOTCHES IN BEAMS AND HEADERS ARE NOT PERMITTED UNLESS VERIFIED IN WRITING BY THE ENGINEER OF RECORD.
4. BEAMS COMPRISED OF TWO OR MORE MEMBERS SHALL BE GLUED AND NAILED TOGETHER WITH A MINIMUM OF TWO (2) ROWS OF 16d NAILS AT 12" O.C. BEAMS COMPRISED OF THREE OR MORE MEMBERS SUPPORTING LOAD THROUGH SIDE HANGERS SHALL BE NAILED PER ABOVE WITH ADDITIONAL 1/2" DIAMETER THRU BOLTS AT 18" O.C. STAGGERED TOP AND BOTTOM.
5. SPLICING OF MEMBERS SHALL NOT BE PERMITTED UNLESS SHOWN ON THE PLANS OR VERIFIED IN WRITING BY THE ENGINEER.
6. INSTALL MEMBERS TRUE, PLUMB AND LEVEL AND PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING UNTIL FINAL CONNECTIONS ARE MADE.

### WALL FRAMING

1. BUILD-UP STUD COLUMNS SHALL BE NAILED TOGETHER WITH 16d NAILS @ 20" O.C. FOR THE FULL STUD HEIGHT. REFER TO PLAN FOR BUILD - UP STUD REQUIREMENTS. LOCATIONS OF BUILD - UP STUDS MUST BE COORDINATED WITH THE TRUSS LAYOUT PROVIDED BY THE TRUSS SUPPLIER.
2. DOUBLE TOP PLATES SHALL LAP A MINIMUM OF FOUR (4) FEET. SPLICES SHALL OCCUR AT CENTER OF SUPPORTING STUD.
3. REFERENCE SHEATHING NOTES BELOW AND ARCHITECTURAL DRAWINGS FOR SHEATHING TYPE AND NAILING REQUIREMENTS.
4. INSTALL CORNER BRACING IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS AT OR ADJACENT TO EVERY EXTERIOR CORNER.
5. BORED HOLES IN 2x4 STUDS SHALL NOT EXCEED 1-3/8" FOR LOAD-BEARING WALLS AND 2-1/8" FOR NON-LOAD-BEARING WALLS. BORED HOLES IN 2x6 STUDS SHALL NOT EXCEED 2-1/8" FOR LOAD-BEARING WALLS AND 3-1/4" FOR NON-LOAD-BEARING WALLS. IN NO CASE SHALL THE BORED HOLE BE NEARER THAN 5/8" OF THE EDGE OF THE STUD.
6. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE ALL CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO ANY CONSTRUCTION OR FABRICATION OF MATERIALS.

## CONNECTORS

1. TRUSS TO TRUSS AND TRUSS HANGER CONNECTIONS ARE THE RESPONSIBILITY OF THE TRUSS MANUFACTURER.
2. NAILS, SPIKES, STAPLES, BOLTS, NUTS WASHERS, ETC. SHALL BE GALVANIZED FOR EXTERIOR OR TREATED WOOD LOCATIONS; PLAIN FINISH FOR INTERIOR LOCATIONS.
3. FRAMING CONNECTORS SHALL BE SIMPSON 'STRONG-TIE' OR APPROVED EQUAL AND SHALL BE APPROVED BY THE GOVERNING BUILDING CODE FOR THE APPLICATION INDICATED.

SILL PLATES AT THE BUILDING EXTERIOR SHALL BE FASTENED TO THE FOUNDATION WITH 1/2" DIAMETER F1554-36 ANCHOR BOLTS WITH 7 MIN. EMBED. AND 1" HOOK @ 32° O.C. (MIN. TWO BOLTS PER SILL). INTERIOR SILL PLATES (EXCLUDING SHEAR WALLS) SHALL BE ANCHORED WITH 1/2" DIAMETER F1554-36 ANCHOR BOLTS @ 48" O.C. OR POWDER ACTUATED FASTENERS: HLTX K-C P8S/SIMPSON STRONG-TIE PDP4WL-287 @ 16" O.C. MAX. REFER TO SHEAR WALL SCHEDULE FOR ANCHORS AT SHEAR WALLS.

## SHEATHING AND DECKING

1. FLOOR CEILING TO BE NOMINAL 3/4" APA RATED EXPOSURE 1 SHEATHING WITH PANEL INDEX 48/24, NAILED WITH 8d NAILS @ 6" O.C. AT ALL EDGE SUPPORTS AND 8d NAILS @ 12" O.C. AT ALL INTERMEDIATE SUPPORTS. PROVIDE STANDARD EDGE CLIPS AT MID-SPAN BETWEEN ALL SUPPORTS.
2. ROOF DECKING TO BE NOMINAL 5/8" APA RATED EXPOSURE 1 OSB SHEATHING WITH PANEL INDEX 24/1, NAILED WITH 10d NAILS @ 6" O.C. AT ALL EDGE SUPPORTS AND 10d NAILS @ 12" O.C. AT ALL INTERMEDIATE SUPPORTS. PROVIDE STANDARD EDGE CLIPS AT MID-SPAN BETWEEN ALL SUPPORTS.
3. EXTERIOR WALL SHEATHING TO BE 1/2" OSB SHEATHING, INSTALLED W/ LONG DIMENSION HORIZONTAL OR VERTICAL, ATTACHED W/ 10d NAILS @ 6" O.C. AT ALL PANEL EDGES AND @ 6" O.C. AT INTERMEDIATE SUPPORTS.
4. INTERIOR WALL SHEATHING SHALL BE GYPSUM WALLBOARD AS SPECIFIED BY THE ARCHITECT.

## STANDARD FASTENING SCHEDULE

CONNECTION, LOCATION		FASTENING
1.	JOIST TO SILL OR GIRDER; TOENAIL	3-8d
2.	BRIDGING TO JOIST; TOENAIL, EACH END	2-8d
3.	1" x 6" SUBFLOOR OR LESS TO EACH JOIST; FACE NAIL	2-8d
4.	WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST; FACE NAIL	3-8d
5.	2" SUBFLOOR TO JOIST OR GIRDER; BLIND AND FACE NAIL	2-16d
6.	SOLE PLATE TO JOIST OR BLOCKING; TYPICAL FACE NAIL	16d @ 16" O.C.
	SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL; BRACED WALL PANELS	3-16d PER 16"
7.	TOP PLATE TO STUD; END NAIL	2-16d
8.	STUD TO SOLE PLATE	4-8d TOENAIL OR 2-16d END NAIL
9.	DOUBLE STUDS; FACE NAIL	16d @ 24" O.C.
10.	DOUBLE TOP PLATES; TYPICAL FACE NAIL	16d @ 16" O.C.
	DOUBLE TOP PLATES; LAP SPLICE	8-16d
11.	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE; TOENAIL	3-8d
12.	RIM JOIST TO TOP PLATE; TOENAIL	8d @ 6" O.C.
13.	TOP PLATES, LAPS AND INTERSECTIONS; FACE NAIL	2-16d
14.	CONTINUOUS HEADER, TWO PIECES; ALONG EDGE	16" O.C.
15.	CEILING JOISTS TO PLATE; TOENAIL	3-8d
16.	CONTINUOUS HEADER TO STUD; TOENAIL	4-8d
17.	CEILING JOISTS, LAPS OVER PARTITIONS; FACE NAIL	3-16d
18.	CEILING JOISTS TO PARALLEL RAFTERS; FACE NAIL	3-16d
19.	RAFTER TO PLATE; TOENAIL	3-8d
20.	1" DIAGONAL BRACE TO EACH STUD AND PLATE; FACE NAIL	2-8d
21.	1" x 8" SHEATHING TO EACH BEARING WALL; FACE NAIL	2-8d
22.	WIDER THAN 1" x 8" SHEATHING TO EACH BEARING; FACE NAIL	3-8d
23.	BUILT-UP CORNER STUDS	24" O.C.
24.	BUILT-UP GIRDER AND BEAMS; FACE NAIL	20d @ 32" O.C. TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES 2-20d AT ENDS AND AT EACH SPLICE
25.	2" PLANKS, AT EACH BEARING	16d
26.	COLLAR TIE TO RAFTER; FACE NAIL	3-10d
27.	JACK RAFTER TO HIP	3-10d TOENAIL OR 2-16d FACE NAIL
28.	ROOF RAFTER TO 2x RIDGE BEAM	2-16d TOENAIL OR 2-16d FACE NAIL
29.	JOIST TO BAND JOIST; FACE NAIL	3-16d
30.	LEDGER STRIP; FACE NAIL	3-16d
31.	WOOD STRUCTURAL PANELS AND PARTICLE BOARD: <sup>a</sup>	
	SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING):	
	1/2" AND LESS	6d <sup>3x</sup>
	19/32" TO 3/4"	8d <sup>3</sup> OR 6d <sup>9</sup>
	7/8" TO 1"	8d <sup>9</sup>
	1-1/8" TO 1-1/4"	10d <sup>3</sup> OR 8d <sup>9</sup>
	SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING):	
	3/4" AND LESS	6d <sup>9</sup>
	7/8" TO 1"	8d <sup>9</sup>
	1-1/8" TO 1-1/4"	10d <sup>3</sup> OR 8d <sup>9</sup>
32.	PANEL SIDING (TO FRAMING)	
	1/2"	6d <sup>3</sup>
	5/8"	8d <sup>3</sup>
33.	FIBERBOARD SHEATHING: <sup>a</sup>	
	1/2"	NO. 11 GA. ROOFING NAIL <sup>3</sup> OR 6d
	25/32"	NO. 11 GA. ROOFING NAIL <sup>3</sup> OR 8d
34.	INTERIOR PANELING	
	1/4"	4d <sup>3</sup>
	3/8"	6d

- a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED. REFER TO GOVERNING BUILDING CODE FOR ALLOWABLE STAPLE FASTENING ALTERNATIVES.
- b. NAILS SPACED AT 6" O.C. AT EDGES, 12" O.C. AT INTERMEDIATE SUPPORTS EXCEPT 6" AT SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SHEARWALL NOTES. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
- c. COMMON OR DEFORMED SHANK
- d. COMMON.
- e. DEFORMED SHANK.
- f. CORROSION-RESISTANT SIDING OR CASING NAIL.
- g. FASTENERS SPACED 3" O.C. AT EXTERIOR EDGES AND 6" O.C. AT INTERMEDIATE SUPPORTS.
- h. CORROSION-RESISTANT ROOFING NAILS WITH 7/16" DIAMETER HEAD AND 1-1/2" LENGTH FOR 1/2" SHEATHING AND 1-3/4" LENGTH FOR 25/32" SHEATHING.
- i. CASING OR FINISH NAILS SPACED 6" ON PANEL EDGES, 12" AT INTERMEDIATE SUPPORTS.
- j. PANEL SUPPORTS AT 24". CASING OR FINISH NAILS SPACED 6" ON PANEL EDGES, 12" AT INTERMEDIATE SUPPORTS.
- k. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS ARE THE MINIMUM REQUIRED FOR STRUCTURAL PANELS.

## WOOD SHRINKAGE CONSIDERATIONS

1. WOOD PLATE SHRINKAGE IS TO BE 1/8" PER STORY, TYPICAL.
2. ACCOUNT FOR ADDITIONAL 1/8" SETTLEMENT PER STORY ON FRAMING GAPS DUE TO CREEP AND GRAVITY LOADING.
3. 4-STORY BUILDINGS ARE ESTIMATED TO SETTLE UP TO 3/4" AT THE UPPERMOST LEVEL.
4. ROUGH OPENING HEIGHTS SHALL BE OVERSIZED TO ACCOUNT FOR THE ESTIMATED SETTLEMENT STATED ABOVE.



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TRUSS LOADING SCHEDULE					
DESIGNATION	DEPTH	TOPPING	TOLL (PSF)	BCLL (PSF)	TCDL (PSF)
RT	REF. ARCH.	ROOF ASSEMBLY OVER ROOF SHEATHING	20	0	12

- NOTES
- SELF WT OF TRUSS IS NOT INCLUDED.
  - TOP CHORD SLOPING TO PROVIDE POSITIVE DRAINAGE, REF. ARCH.
  - REFER TO STRUCTURAL NOTES FOR SUBFLOOR & ROOF SHEATHING INFORMATION.

5 TRUSS SCHEDULE

NTS

SHEARWALL SCHEDULE		
LEVEL	EXTERIOR WALL	INTERIOR WALL
	SHEATHING	SHEATHING
1	SW5	SW4

- NOTES
- ALL SHEARWALL DESIGNATION APPLY TO EACH LOCATION UNLESS NOTED OTHERWISE ON PLAN.
  - REFER TO WOOD SHEARWALL SHEATHING AND ATTACHMENT SCHEDULE BELOW FOR MORE INFORMATION ON EACH SHEARWALL TYPE.
  - \*\* DENOTES SHEATHING REQUIRED ON BOTH SIDES OF SHEARWALL.
  - EXTERIOR WALL SHALL RECEIVE SHEATHING ON EXTERIOR SIDE OF THE WALL U.N.O.
  - DEMISING WALL SHALL RECEIVE SHEATHING ON UNIT SIDE OF THE WALL U.N.O.
  - CORRIDOR WALL SHALL RECEIVE SHEATHING ON CORRIDOR SIDE OF THE WALL U.N.O.

WOOD SHEARWALL SHEATHING AND ATTACHMENT SCHEDULE				
SW #	DESCRIPTION	SILL NAILING	SILL ANCHORS	TRUSS BLOCK SPACING
SW1	5/8" GYPSUM WALLBOARD UNBLOCKED AND FASTENED WITH WALLBOARD 6d NAILS @ 7" O.C. AT ALL PANEL EDGES.	16d @ 16" O.C.	X-CP 72 P8 S23 @ 24" O.C.	EVERY 4TH TRUSS SPACE OR 8'-0" O.C.
SW2	5/8" GYPSUM WALLBOARD UNBLOCKED AND FASTENED WITH WALLBOARD 6d NAILS @ 4" O.C. AT ALL PANEL EDGES	16d @ 12" O.C.	X-CP 72 P8 S23 @ 16" O.C.	EVERY 3RD TRUSS SPACE OR 6'-0" O.C.
SW3	5/8" GYPSUM WALLBOARD BLOCKED AND FASTENED WITH WALLBOARD 6d NAILS @ 4" O.C. AT ALL PANEL EDGES.	16d @ 10" O.C.	X-CP 72 P8 S23 @ 16" O.C.	EVERY 3RD TRUSS SPACE OR 6'-0" O.C.
SW4	5/8" GYPSUM SHEATHING BLOCKED AND FASTENED WITH WALLBOARD 6d NAILS @ 4" O.C. AT EDGES AND @ 7" O.C. AT INTERMEDIATE SUPPORTS.	2-16d @ 18" O.C.	X-CP 72 P8 S23 @ 12" O.C.	EVERY OTHER TRUSS SPACE OR 4'-0" O.C.
SW5	15/32" WOOD STRUCTURAL PANEL SHEATHING BLOCKED AND FASTENED WITH 8d NAILS @ 6" O.C AT ALL PANEL EDGES.	2-16d @ 10" O.C.	1/2" F1554-36 @ 48" O.C.	EVERY TRUSS SPACE
SW6	15/32" WOOD STRUCTURAL PANEL SHEATHING BLOCKED AND FASTENED WITH 10d NAILS @ 6" O.C AT ALL PANEL EDGES.	2-16d @ 8" O.C.	1/2" F1554-36 @ 36" O.C.	EVERY TRUSS SPACE
SW7	15/32" WOOD STRUCTURAL PANEL SHEATHING BLOCKED AND FASTENED WITH 10d NAILS @ 4" O.C AT ALL PANEL EDGES.	2-16d @ 4" O.C.	1/2" F1554-36 @ 24" O.C.	EVERY TRUSS SPACE(6)

- NOTES
- ALL THE SHEARWALL TYPES ARE NOT USED, IF THEY ARE NOT MARKED ON SHEARWALL SCHEDULE OR ON PLANS.
  - "BLOCKED" SHEAR WALLS SHALL INCLUDE 2x BLOCKING AT ALL PANEL EDGES.
  - INTERMEDIATE SUPPORTS TO BE FASTENED @ 12" O.C. U.N.O.
  - STRUCTURAL PANELS ARE TO BE GRADE STRUCTRUAL 1.
  - THE X-CP 72 P8 S23 ARE HILTl POWDER ACTUATED FASTENERS WITH INTEGRAL WASHERS.
  - TRUSS BLOCK CAPACITY SHALL BE 1500 LBS

4 SHEARWALL SCHEDULE

NTS

LOAD BEARING STUD SCHEDULE		
LEVEL	EXTERIOR WALL	INTERIOR WALL
1	**2x6 @ 16" O.C.	**2x6 @ 16" O.C.

- NOTES
- ALL EXTERIOR AND CORRIDOR WALLS ARE CONSIDERED TO BE LOAD BEARING WALLS.
  - REFER TO SHEET S0.12 FOR STUD SPECIES.
  - BALLOON FRAMED WALLS SHALL BE 2x6 @ 12" O.C.
  - NON LOAD BEARING WALLS SHALL BE 2xs @ 16" O.C. MINIMUM.
  - EXITWAYS ENCLOSES CORRIDORS WIDER THAN 8 FT INCLUDING BOTH ELEVATOR LOBBY & CORRIDORS LEADING TO STAIRS.

3 STUD SCHEDULE

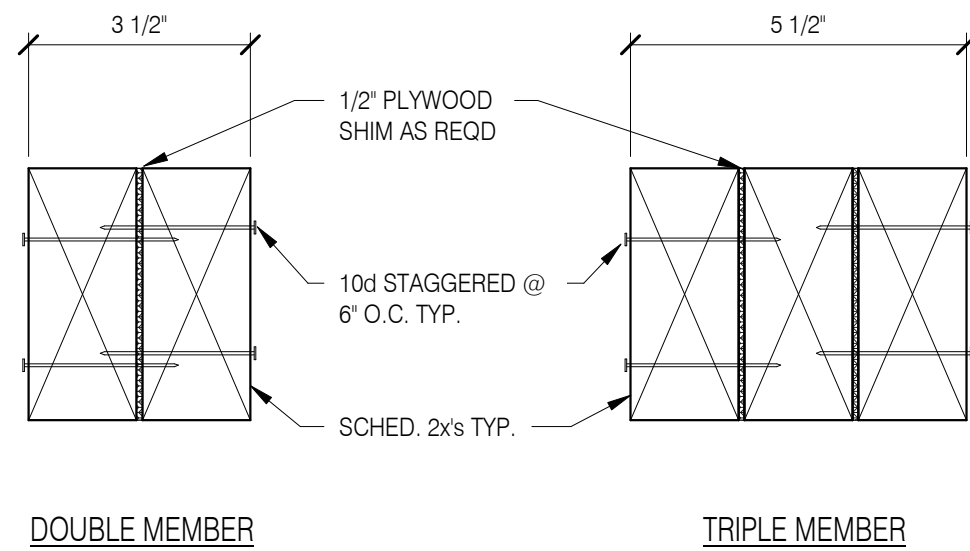
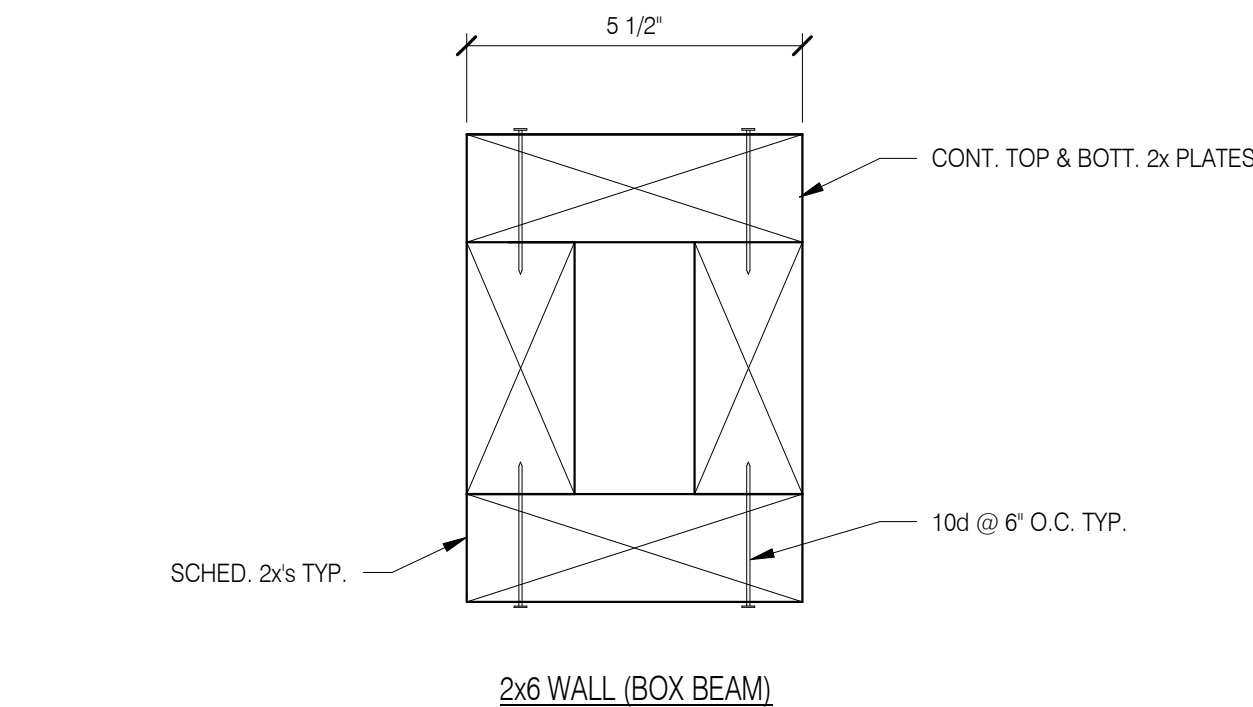
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HOLDDOWN AND TENSION TIE SCHEDULE					
MARK	PRODUCT	FASTENERS	ANCHOR	STUD/PACK MIN. THICKNESS	ALLOWABLE CAPACITY1
1	CS20	(14) 0.148x2 1/2 NAILS	N/A	(1) - 2x4	1030
2	CS16	(22) 0.148x2 1/2 NAILS	N/A	(1) - 2x4	1705
3	CS14	(30) 0.148x2 1/2 NAILS	N/A	(1) - 2x4	2490
4	CMST14	(36) 0.148x2 1/2 NAILS	N/A	(2) - 2x4	3531
5	CMST14	(56) 0.148x2 1/2 NAILS	N/A	(2) - 2x4	5494
6	CMST14	(66) 0.148x2 1/2 NAILS	N/A	(2) - 2x4	6475
7	LTPP2	(12) 0.148x2 1/2 NAILS	1/2"	(2) - 2x4	2230
8	HTT4	(18) 0.148x2 1/2 NAILS	5/8"	(2) - 2x4	3610
9	HTT5	(26) 0.162x3 NAILS	5/8"	(2) - 2x4	4670
10	HDU8	(20) 1/4x2 1/2 SDS	7/8"	(3) - 2x4	6970
11	HDU11	(30) 1/4x2 1/2 SDS	1"	(3) - 2x6	9535
12	HDU14	(36) 1/4x2 1/2 SDS	1"	(3) - 2x6	10770

- NOTES
- ALLOWABLE CAPACITIES ARE BASED ON DF/SYP SPECIES.
  - REF. MFR. INSTALLATION GUIDELINES AND NOTES TO ENSURE REQ'D CAPACITIES ARE PROVIDED.

2 HOLDDOWN SCHEDULE

NTS



BEAM/HEADER SCHEDULE				
MARK	HEADER	JACK STUDS	KING STUDS	SIMPSON HANGER
WB1	(2) 2x8	(1) - 2x	(2) - 2x	HU48
WB2	(2) 2x10	(1) - 2x	(2) - 2x	HU410
WB3	(2) 2x12	(1) - 2x	(3) - 2x	HU412
WB4	(3) 2x8	(2) - 2x	(3) - 2x	HU68
WB5	(3) 2x10	(2) - 2x	(3) - 2x	HU610
WB6	(3) 2x12	(2) - 2x	(3) - 2x	HU612
LVL1	3 1/2" x 9 1/2" LVL	(1) - 2x	(3) - 2x	HGLTV 3.59X
LVL2	3 1/2" x 11 7/8" LVL	(1) - 2x	(3) - 2x	HGLTV 3.512
LVL3	3 1/2" x 14" LVL	(2) - 2x	(4) - 2x	HGLTV 3.514
LVL4	3 1/2" x 16" LVL	(2) - 2x	(4) - 2x	HGLTV 3.516
LVL5	3 1/2" x 18" LVL	(2) - 2x	(4) - 2x	HGLTV 3.518
LVL6	5 1/4" x 9 1/2" LVL	(2) - 2x	(4) - 2x	HGLTV 5.59X
LVL7	5 1/4" x 11 7/8" LVL	(2) - 2x	(4) - 2x	HGLTV 5.512
LVL8	5 1/4" x 14" LVL	(2) - 2x	(4) - 2x	HGLTV 5.514
LVL9	5 1/4" x 16" LVL	(2) - 2x	(4) - 2x	HGLTV 5.516
LVL10	5 1/4" x 18" LVL	(2) - 2x	(4) - 2x	HGLTV 5.518

- NOTES
- REFER TO STRUCTURAL NOTES FOR HEADER SPECIES.
  - USE 1/2" PLYWOOD SPACER(S) BETWEEN 2x AND 3x MEMBERS. TYPICAL.
  - 2x HEADERS ON 6" WALLS (OR WIDER) SHALL INCLUDE BOX BEAM FRAMING AS SHOWN.
  - REFER TO 1/3.11 FOR JACK & KING STUD FRAMING REQUIREMENTS.
  - HANGERS OCCUR IF BEAM OR HEADER IS SUPPORTED BY ANOTHER BEAM IN LIEU OF STUD COLUMN SUPPORT.
  - PROVIDE SIMPSON HU48 (OR EQ.) FOR CONX TO CMU.
  - ALL THE BEAM/HEADER TYPES ARE NOT USED, IF THEY ARE NOT MARKED ON PLANS.

1 BEAM/HEADER SCHEDULE

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New Orleans

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New Orleans, LA 70130

Registration:

F-4111

Project No:

2497-66352-00



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ARCHITECTS

3488 BRENTWOOD DRIVE

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Lee's Summit, Missouri 64063

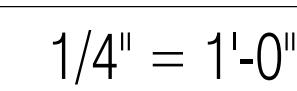


PROJECT NO: 2497-66352-00  
PHASE: Final Dev. Submittal  
DATE: 26 JULY, 2024  
PROJ. ENGINEER: BC

STRUCTURAL  
INFORMATION

SHEET NO.  
**S0.13**  
OF







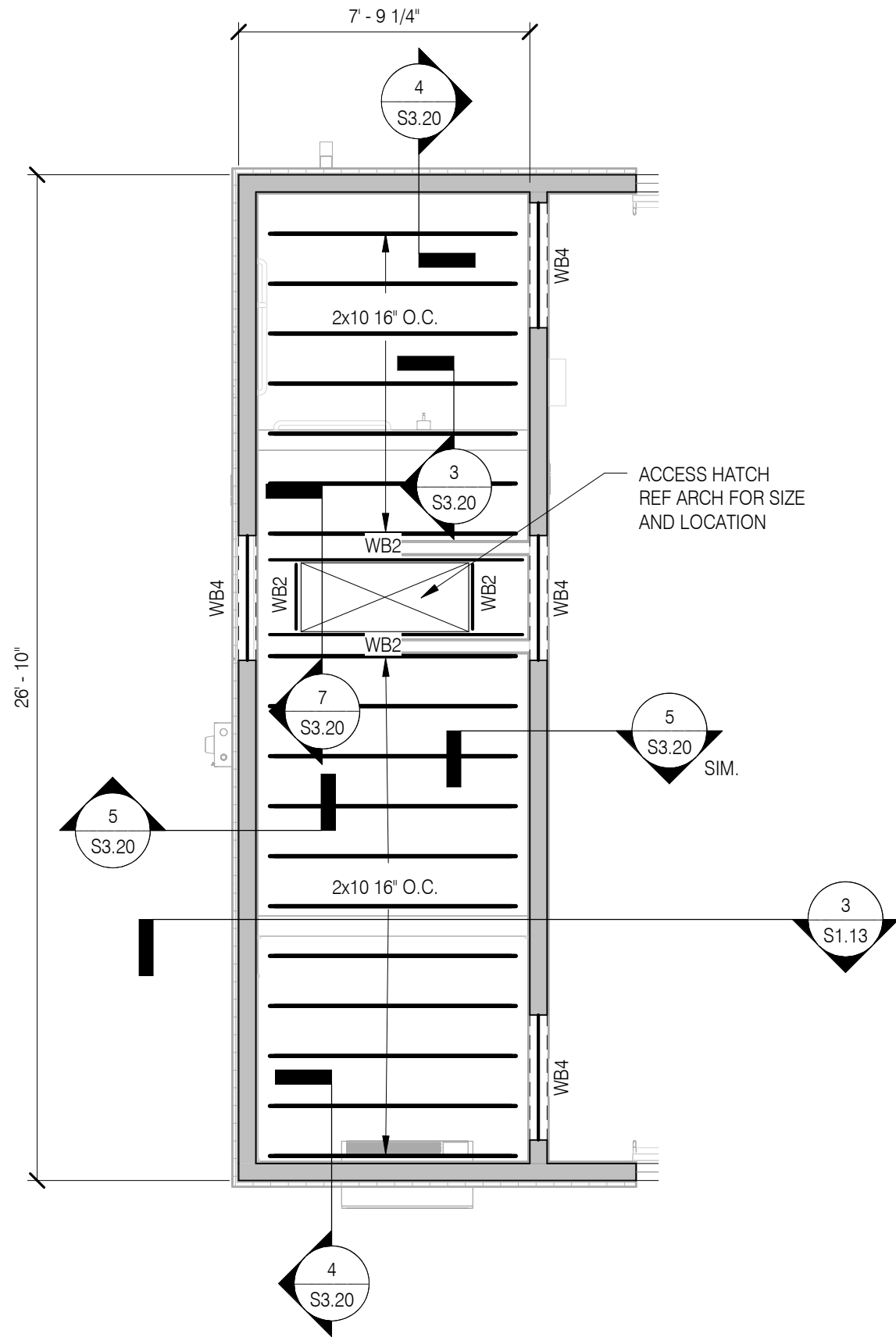
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1 MEZZANINE FRAMING PLAN

1/4" = 1'-0"



PLAN NOTES AND KEY

- REFER TO SHEET **S1** SERIES FOR STRUCTURAL INFORMATION, WOOD FRAMING NOTES AND WOOD SCHEDULES AND TYPICAL DETAILS.
- THE BACKGROUND SHOWN ON THE PLAN IS FOR THE FLOOR BELOW.
- ALL EXTERIOR WALLS ARE CONSIDERED LOAD-BEARING WALLS REGARDLESS OF HATCHING.
- PROVIDE 3/4" FLOOR DECK PER WOOD FRAMING NOTES ON SHEET SX:XX ON TOP OF WOOD JOISTS AS NOTED ON THE PLAN.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL CONTROL.
- BOTTOM OF DECK ELEVATION =8'-0"

SYMBOL LEGEND	
	LOAD-BEARING WALL BELOW (REF. <b>3/S0.13</b> FOR LOAD-BEARING WALL SCHEDULE)
	SHEARWALL BELOW (REF. <b>4/S0.13</b> FOR SHEARWALL SCHEDULE)
	HOLDDOWN / FLOOR TIE APPROX. LOCATION PER SHEARWALL SCHEDULE (REF. <b>2/S0.13</b> FOR HOLDDOWN/FLOOR TIE SCHEDULE)
	SHEARWALL PLAN VIEW
	BEAM (REF. <b>1/S0.13</b> FOR BEAM SCHEDULE)
	POINT LOAD FROM ABOVE, SUPPORTED BY THE TRUSS. TRUSS MFR TO INCLUDE THIS LOADING IN TRUSS DESIGN.
	LINE LOAD FROM ABOVE, SUPPORTED BY THE TRUSS. PROVIDE TRUSS BLOCKING DIRECTLY BENEATH LOAD-BEARING WALL. TRUSS MANUFACTURER TO INCLUDE THIS LOADING IN TRUSS DESIGN.

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26 JULY, 2024

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MEZZANINE  
FRAMING PLAN

SHEET NO.

**S1.11**

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PLAN NOTES AND KEY

- 1

ROOF DECK PER WOOD NOTES ON 1/S0.12 OVER PRE-ENGINEERED WOOD TRUSSES @ 2'-0" O.C. TYP. U.N.O. REFER ARCH. FOR ROOF PROFILES.
- 2

REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL CONTROL.
- 3

TRUSS BEARING ELEVATION = 12'-6 1/2"
- 4

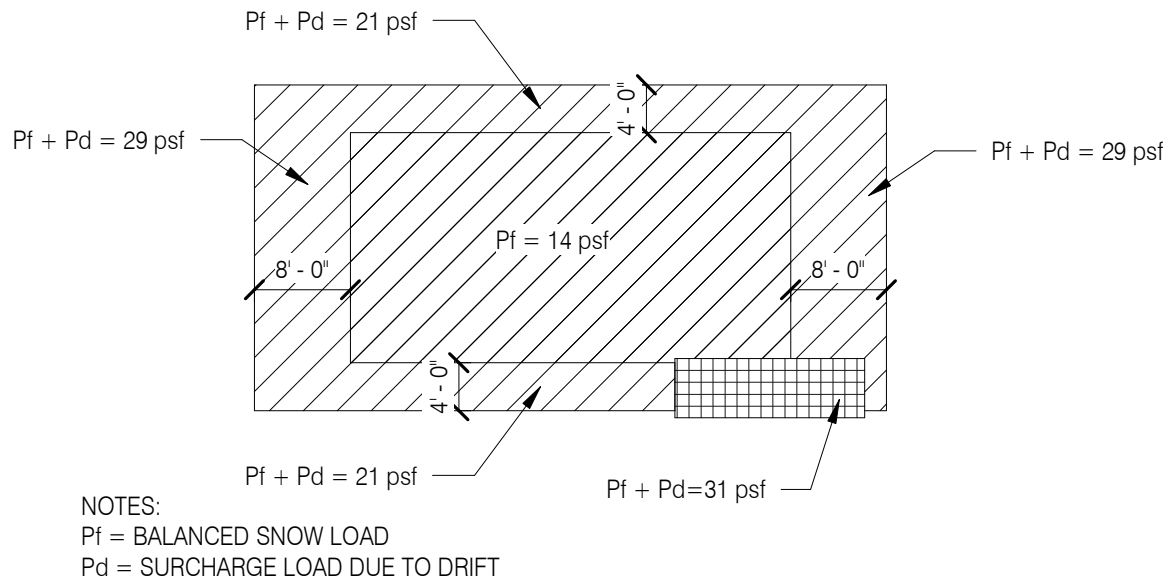
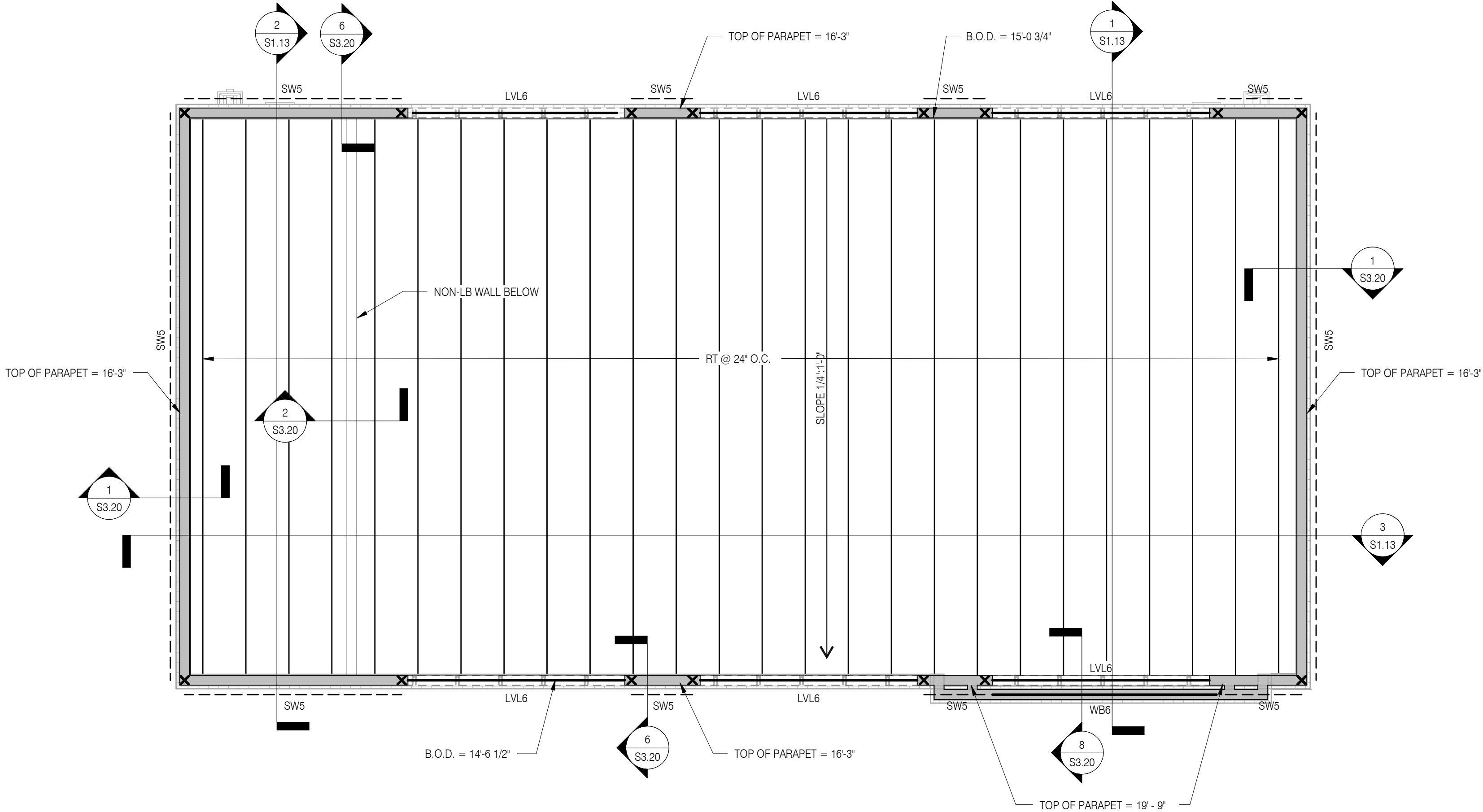
ROOF TRUSS TOP CHORDS SHALL BE SLOPED TO MATCH PROFILE OF ROOF
- 5

EACH END OF ALL ROOF TRUSSES SHALL BE ANCHORED TO WALL FRAMING WITH HURRICANE TIES PER DETAILS ON S3.20
- 6

PROVIDE TRUSS ABOVE SHEAR WALLS. PROVIDE BLOCKING BETWEEN TRUSSES WHERE SHEAR WALL RUNS PERPENDICULAR TO THE TRUSSES. REFER 3/S3.11
- 7

ALL EXTERIOR WALL AND CORRIDOR WALL HEADERS TO BE WB4 U.N.O. INTERIOR WALL HEADERS AND BEAMS NOT NOTED ON PLAN ARE TYPE WB2. REFER 1/S0.13
- 8

G.T. DESIGNATES PRE-FABRICATED GIRDER TRUSS.



2 SNOW LOADING DIAGRAM

1/16" = 1'-0"




1 ROOF FRAMING PLAN

1/4" = 1'-0"


SYMBOL LEGEND	
	LOAD-BEARING WALL BELOW (REF. 3/S0.13 FOR LOAD-BEARING WALL SCHEDULE)
	SHEARWALL BELOW (REF. 4/S0.13 FOR SHEARWALL SCHEDULE)
	HOLDDOWN / FLOOR TIE APPROX. LOCATION PER SHEARWALL SCHEDULE (REF. 2/S0.13 FOR HOLDDOWN/FLOOR TIE SCHEDULE)
	SHEARWALL PLAN VIEW
	BEAM (REF. 1/S0.13 FOR BEAM SCHEDULE)
	POINT LOAD FROM ABOVE, SUPPORTED BY THE TRUSS. TRUSS MFR TO INCLUDE THIS LOADING IN TRUSS DESIGN.
	LINE LOAD FROM ABOVE, SUPPORTED BY THE TRUSS. PROVIDE TRUSS BLOCKING DIRECTLY BENEATH LOAD-BEARING WALL. TRUSS MANUFACTURER TO INCLUDE THIS LOADING IN TRUSS DESIGN.

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025

DATE  
REVISION  
No.




26 JULY, 2024



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ROOF FRAMING PLAN

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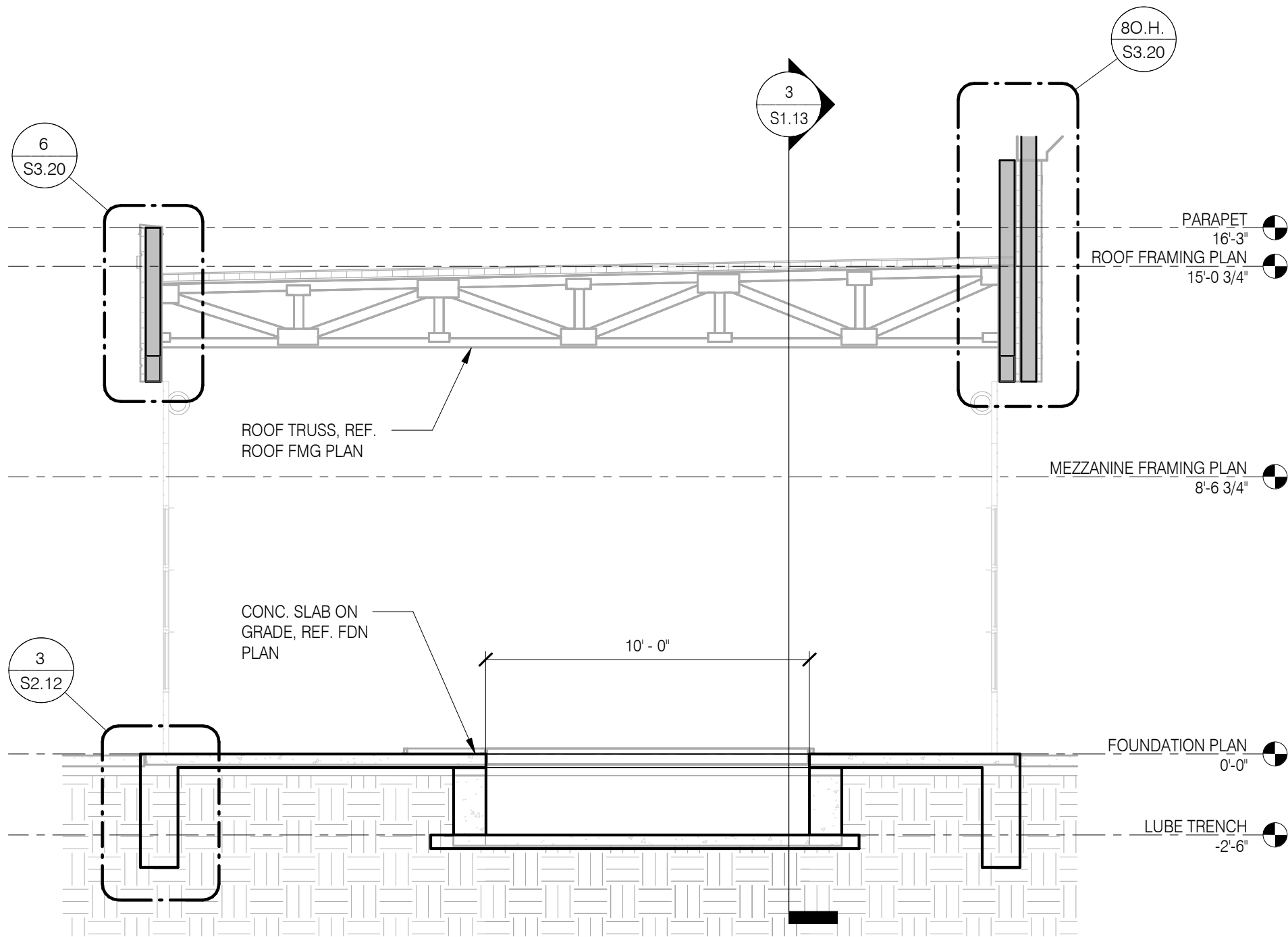
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**Salas O'Brien**

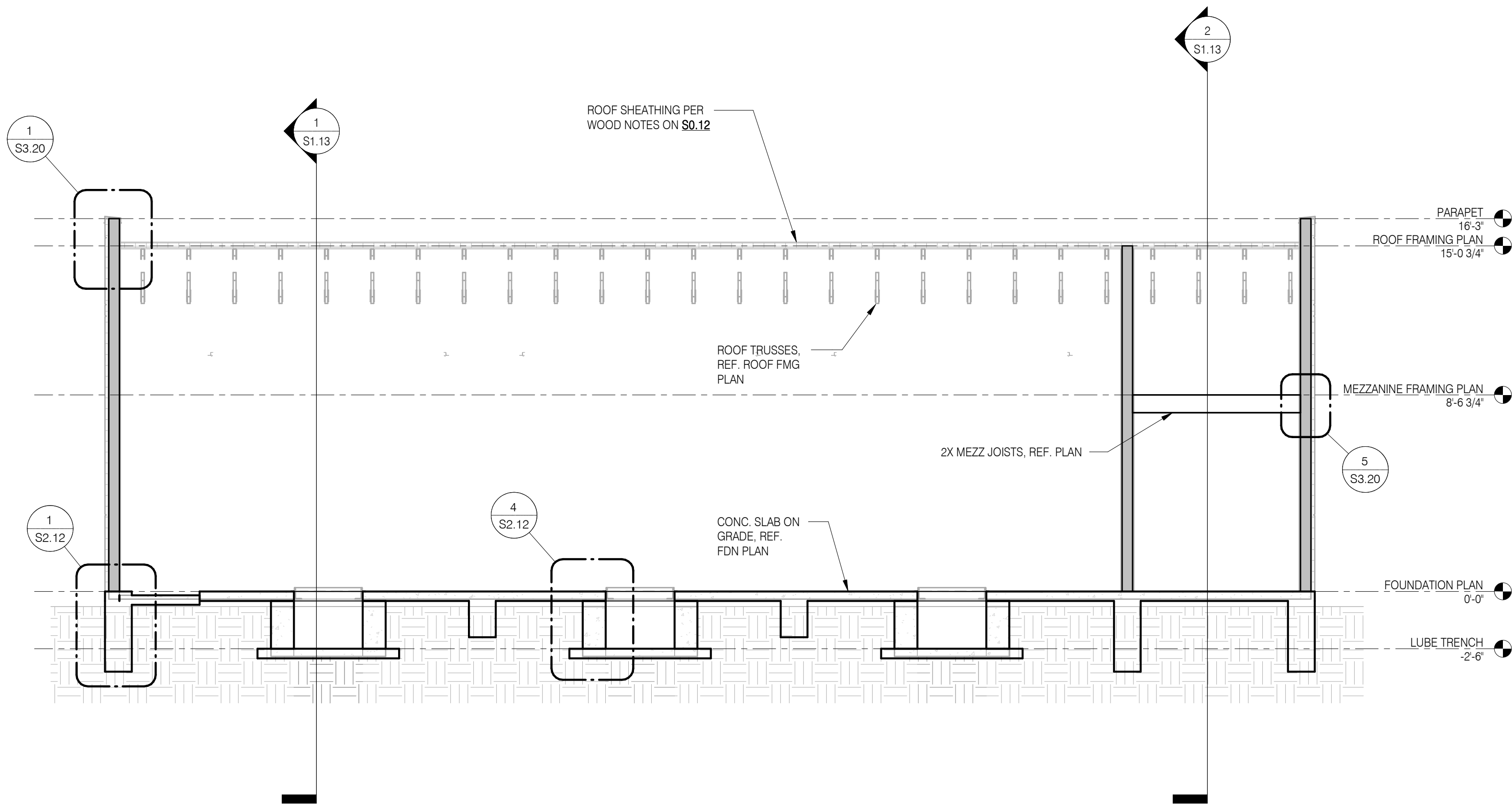
salasobrien.com  
New Orleans  
541 Julia St., Suite 200  
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Registration: F-4111  
Project No: 2497-66352-00



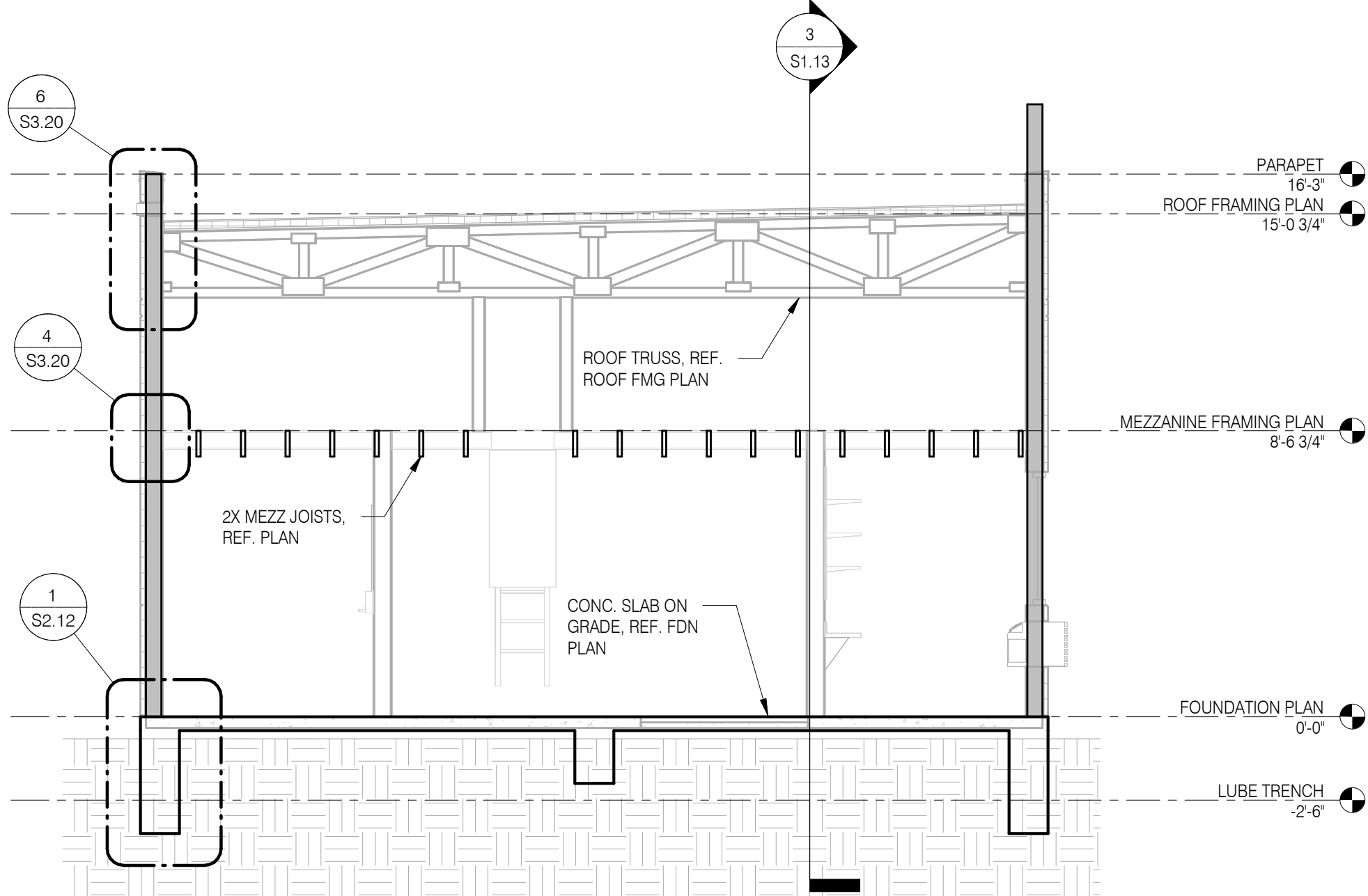
1 BUILDING SECTION

1/4" = 1'-0"



3 BUILDING SECTION

1/4" = 1'-0"



2 BUILDING SECTION

1/4" = 1'-0"

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
03/12/2025



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ARCHITECTS

3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
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fusionapp.com

New Construction For  
Take 5 Oil Change

Lee's Summit, Missouri 64063



PROJECT NO: 2497-66352-00  
PHASE: Final Dev. Submittal  
DATE: 26 JULY, 2024  
PROJ. ENGINEER: BC

BUILDING SECTIONS

SHEET NO.  
**S1.13**  
OF





AFFECTED ZONE

2-#5 x 2'-6" ABOVE AND  
BELOW SLEEVE

**NOTE**  
CONSTRUCTION JOINT SHALL BE LOCATED IN THE MIDDLE  
THIRD OF THE SPAN BETWEEN SUPPORTS. DO NOT LOCATE  
A CONSTRUCTION JOINT IN AN END SPAN

**NOTES**

1. PREFORMED 24 GA MIN. COLD KEY MAY BE USED.
2. CONSTRUCTION JOINT SHALL BE LOCATED IN THE MIDDLE THIRD OF THE SPAN BETWEEN SUPPORTS. DO NOT LOCATE SLAB CONSTRUCTION JOINT IN AN END SPAN.

NTS

### A. TYPICAL SECTION

### B. TYPICAL CONTROL JOINT

### A. TYPICAL CONSTRUCTION JOINT

1

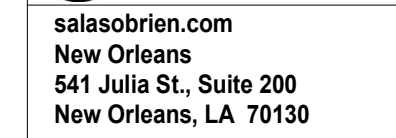
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**NOTES**

1. TENSION DEVELOPMENT LENGTH =  $L_d$ . LENGTHS LISTED IN TABLE ARE IN INCHES.  
USE THE ABOVE DEVELOPMENT LENGTH AND LAP SPICE TABLE FOR BEAMS, JOISTS,  
COLUMNS, WALLS, SLABS, ETC. WHEN THE CLEAR SPACING BETWEEN BARS IS GREATER  
OR EQUAL TO TWO BAR DIAMETERS AND CLEAR COVER IS NOT LESS THAN ONE  
BAR DIAMETER.
2. WHEN THE CLEAR SPACING BETWEEN BARS IS LESS THAN TWO BAR DIAMETERS,  
MULTIPLY DEVELOPMENT AND SPICE LENGTHS LISTED IN TABLE BY 1.30.
3. PROVIDE LAP SPICE LENGTH BASED ON THE LARGER BAR BEING LAPPED WHEN  
BARS OF DIFFERENT SIZES ARE LAP SPICED.
4. FOR TOP BARS, MULTIPLY THE DEVELOPMENT AND SPICE LENGTHS BY 1.3.  
TOP REINFORCED AS ANCEMENT SO PLACED THAT MORE THAN 12  
INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

NTS





STATE OF MISSOURI  
SCOTT R. ARMSTRONG  
NUMBER  
PE-2007032756  
26 JULY, 2024

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# New Construction For Take 5 Oil Change



OF







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Registration: F-4111  
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26 JULY, 2024



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# New Construction For Take 5 Oil Change

Lee's Summit, Missouri 64063



PROJECT NO: 2497-66352-00

PHASE: Final Dev. Submittal

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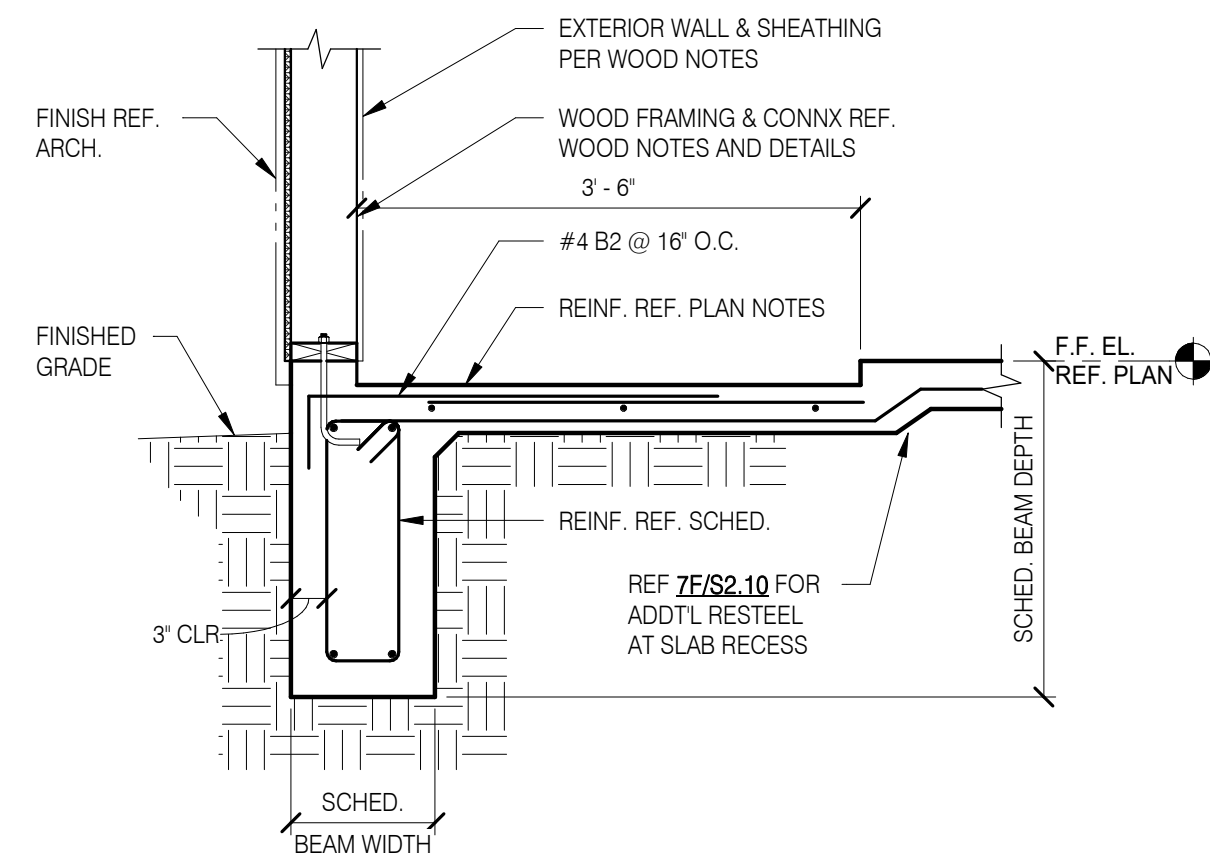
PROJ. ENGINEER: BC

## FOUNDATION DETAILS

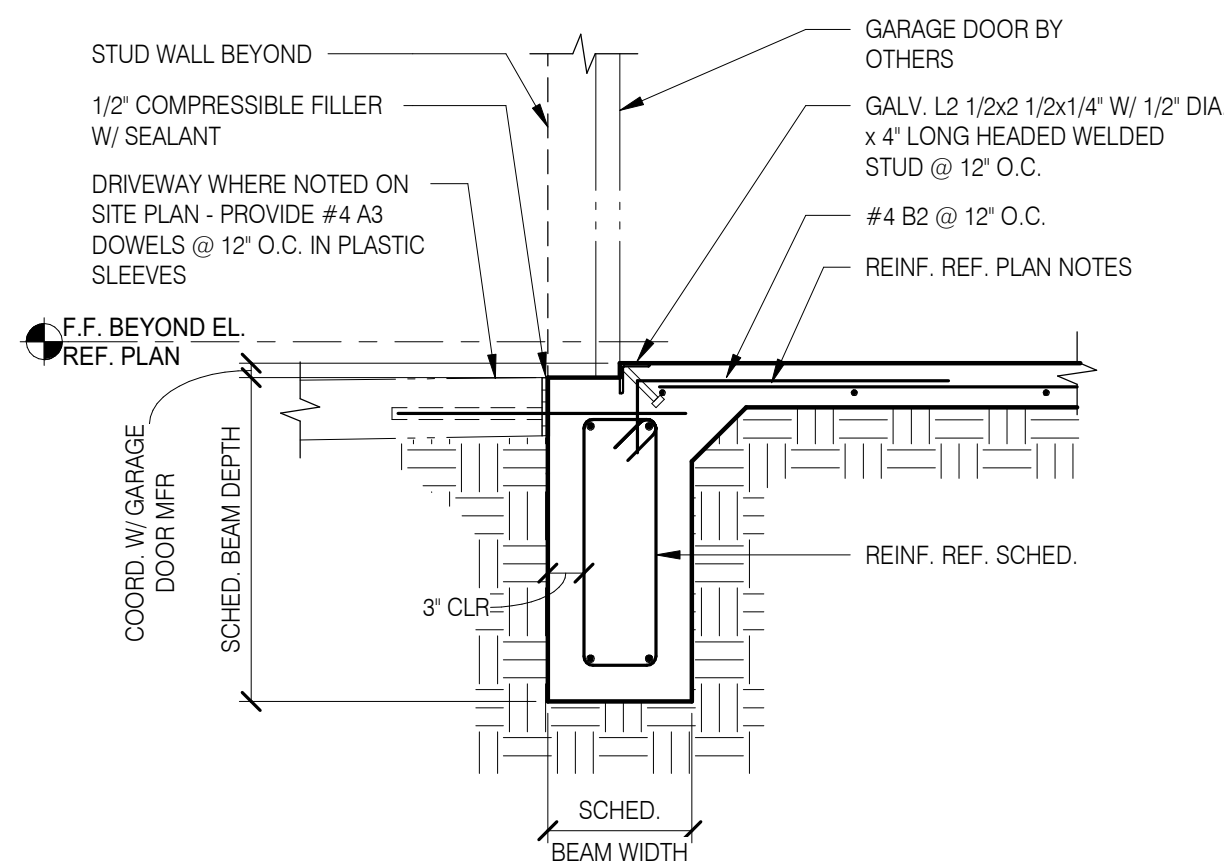
SHEET NO.

## S2.12

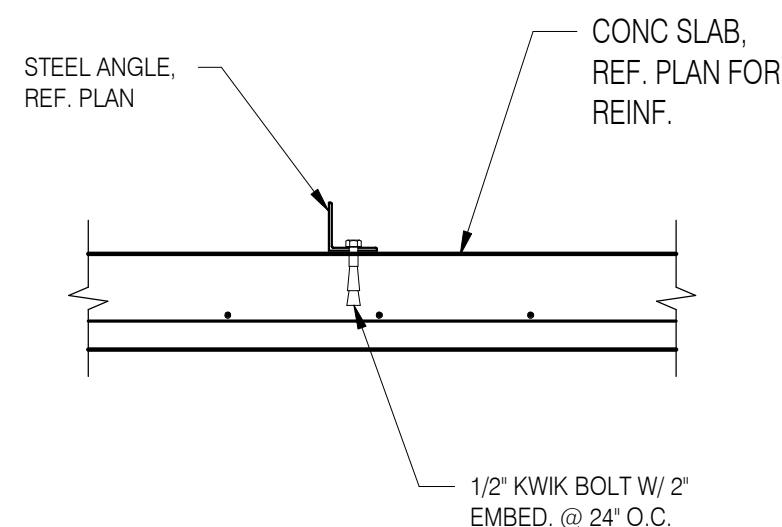
OF



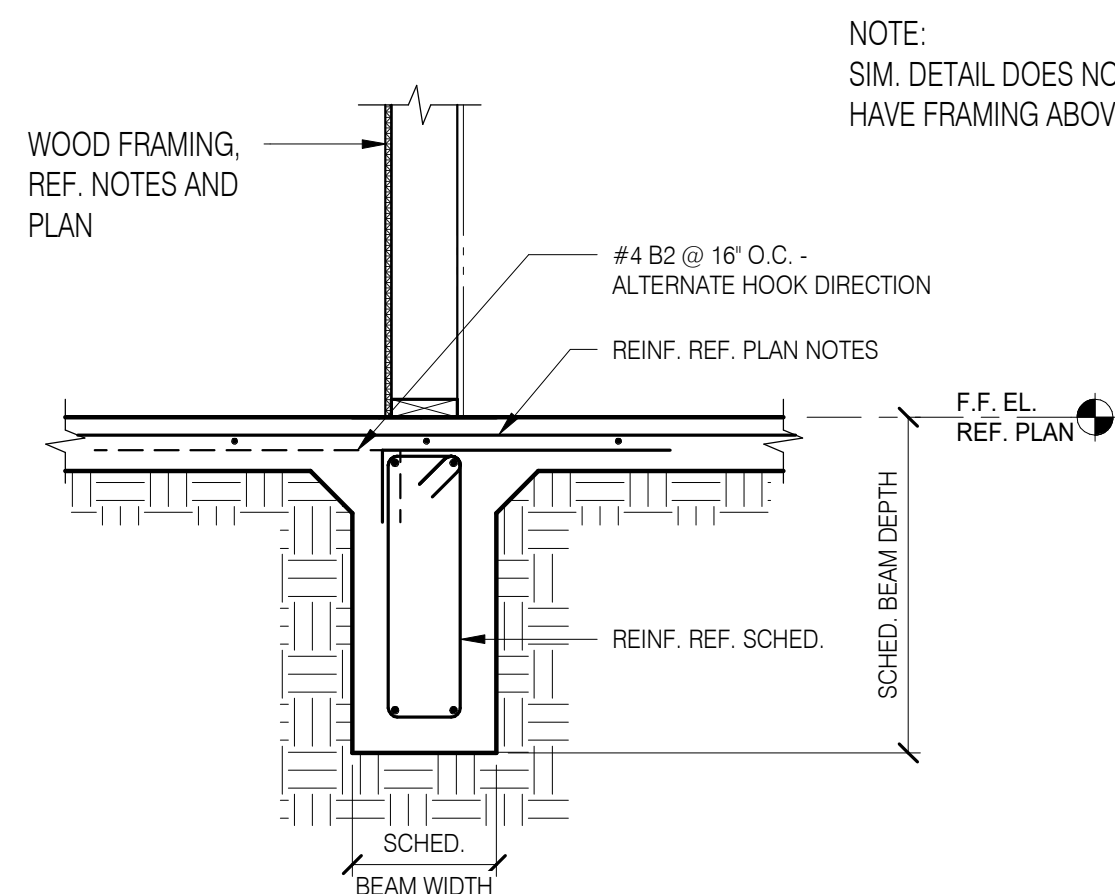
6 PERIM. GB @ RECESS



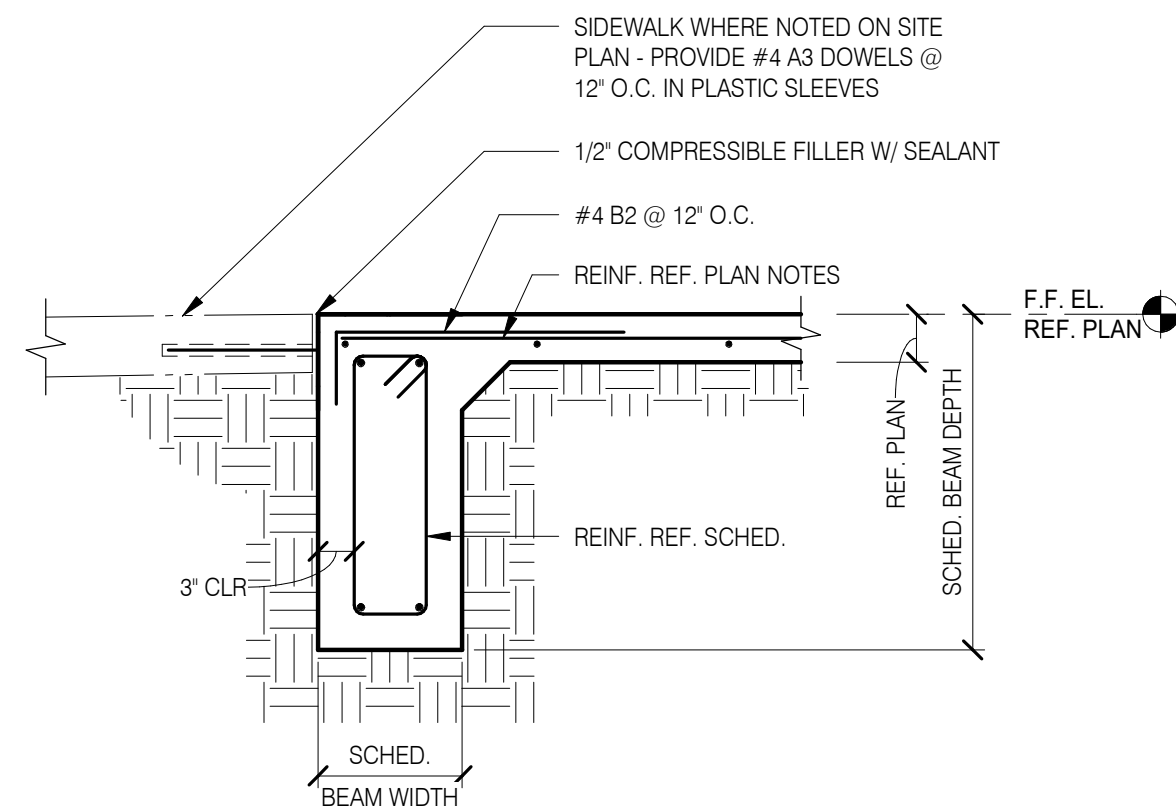
NTS 3 ENTRANCE @ GARAGE



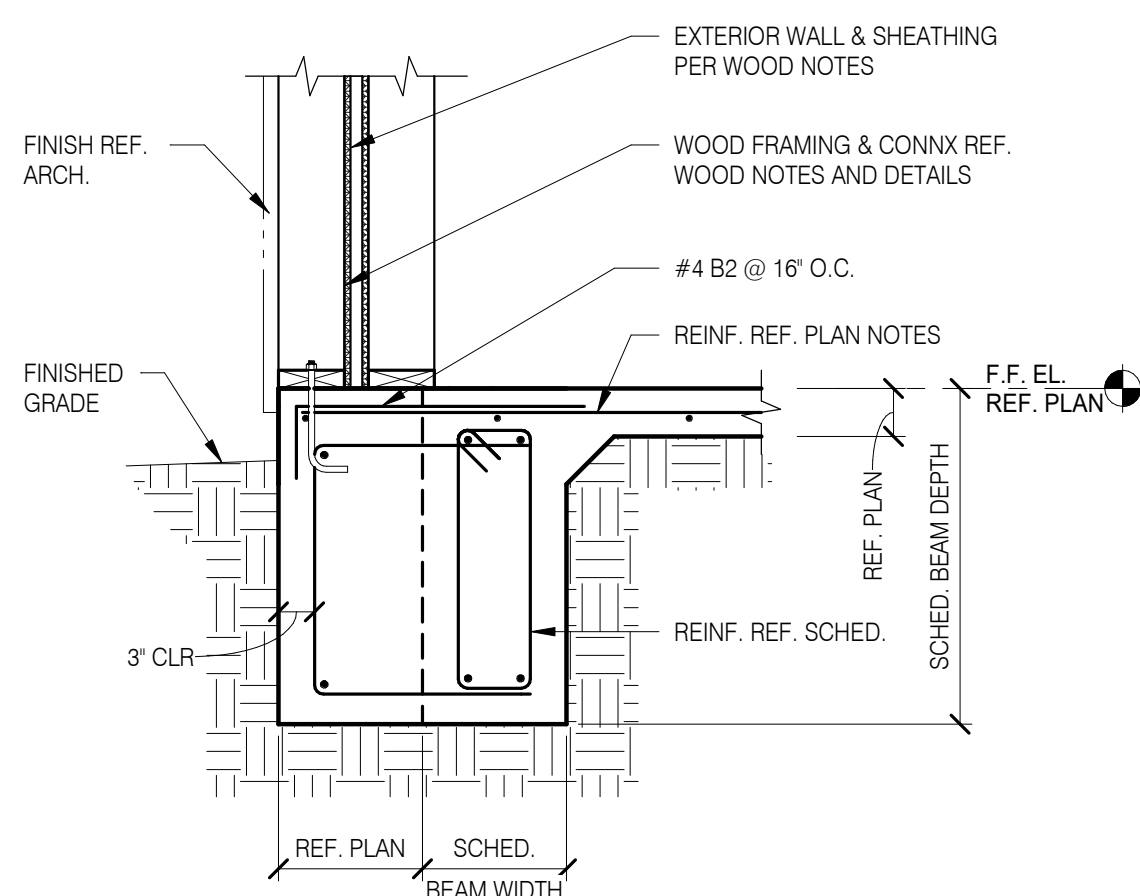
## 8 DETAIL AT ANGLE ATOP SLAB



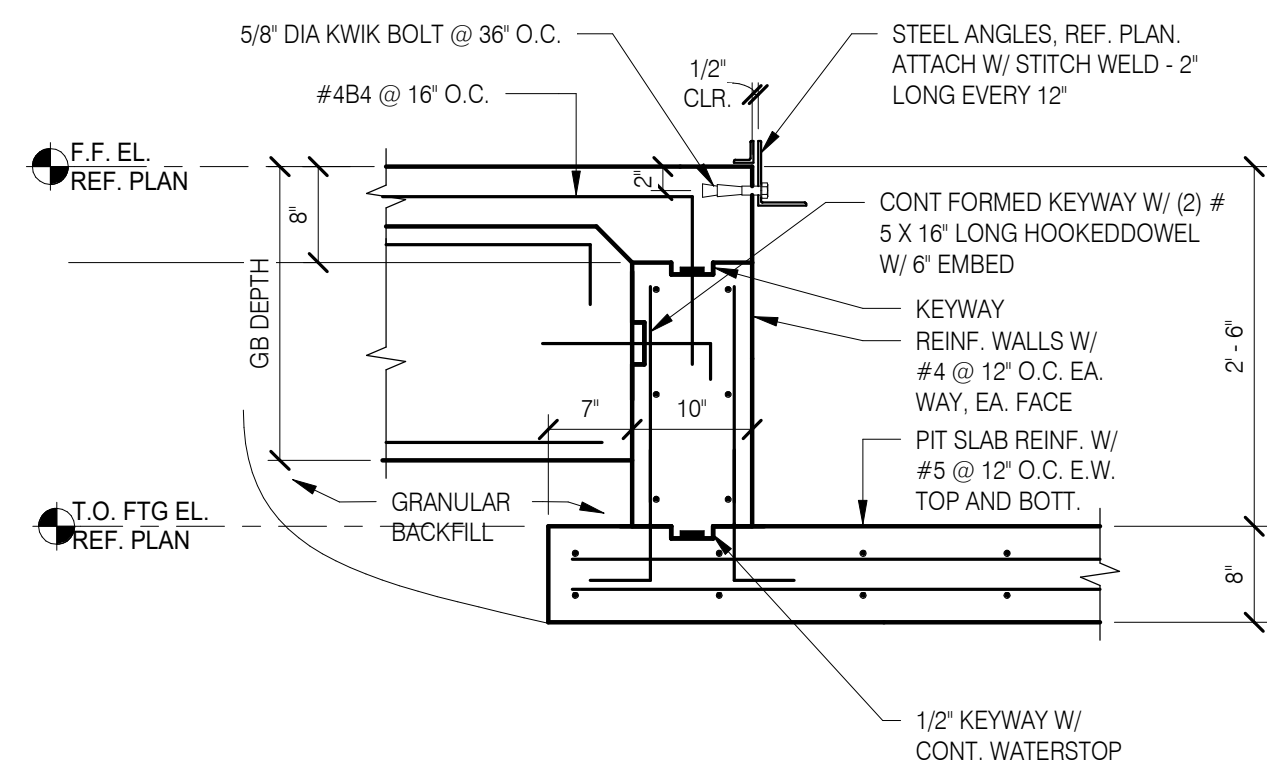
5 TYP. INTERIOR GRADE BEAM



NTS 2 TYP. GRADE BEAM @ ENTRY

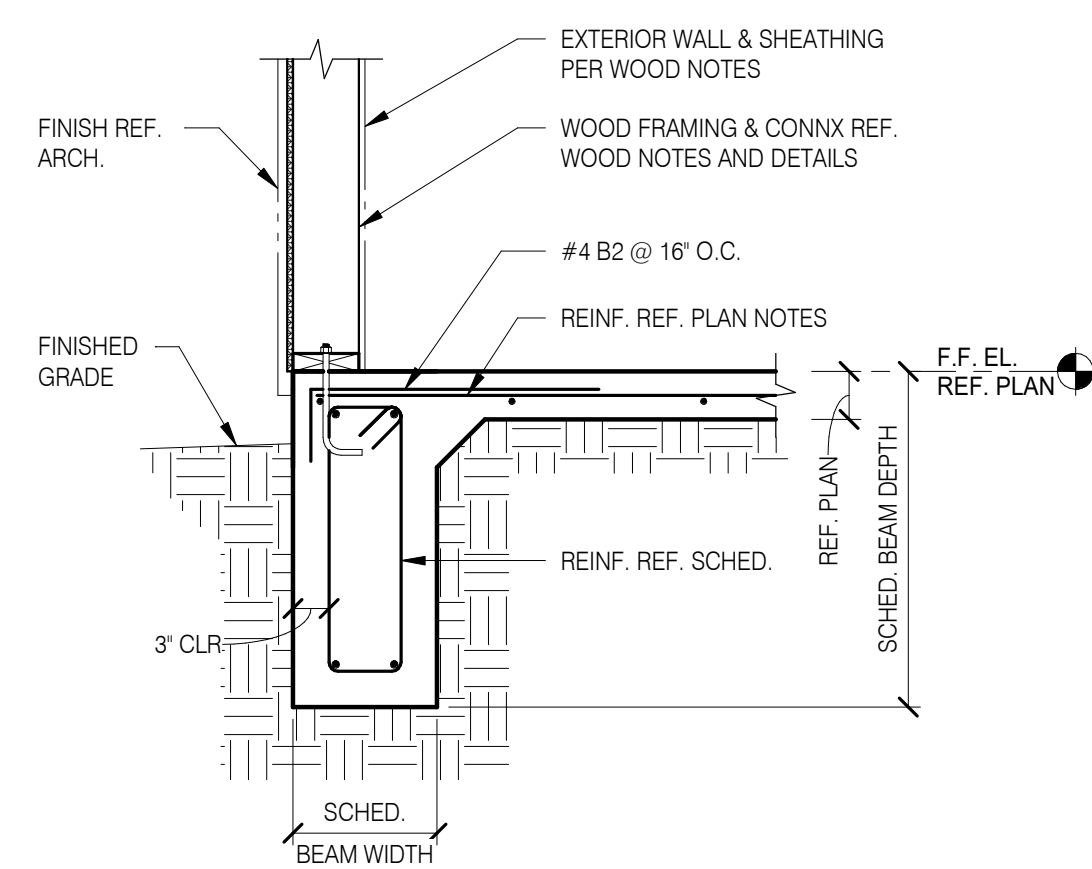


7 SECTION AT WIDENED GB



### A. TYPICAL SECTION

## 4 LUBE TRENCH DETAILS



NTS 1 TYP. PERIMETER GRADE BEAM





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SCOTT R. ARMSTRONG  
NUMBER  
PE-2007052756  
PROFESSIONAL ENGINEER

26 JULY, 2024



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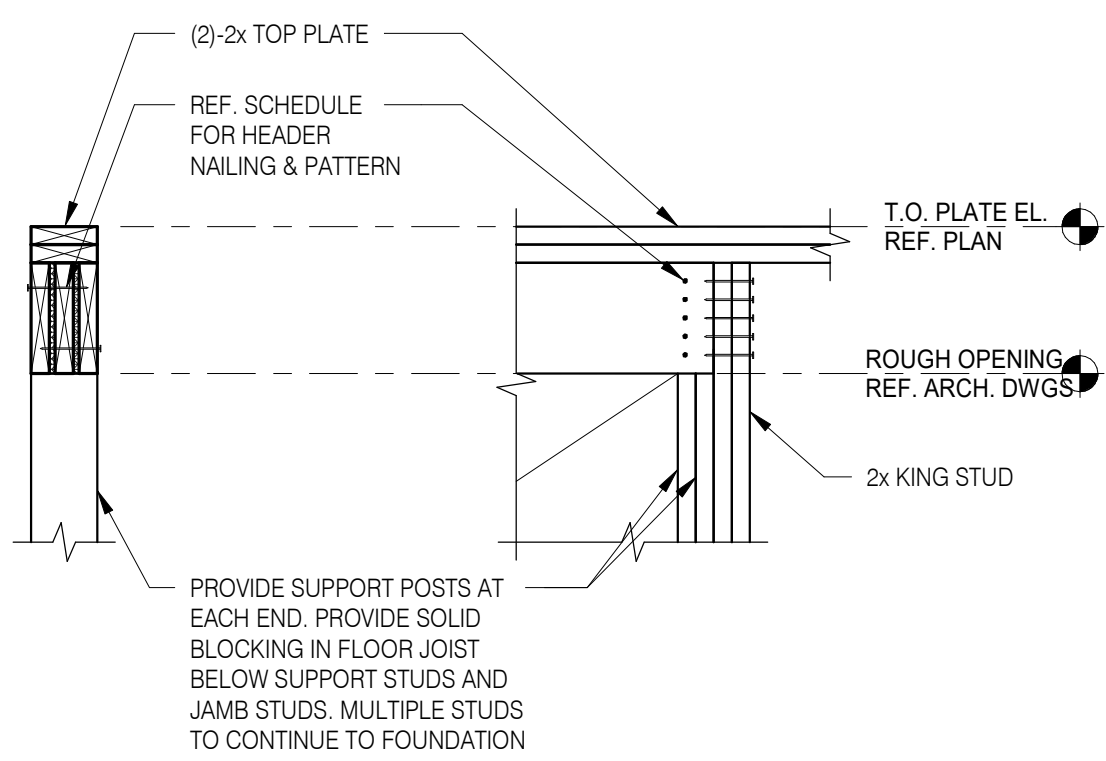
Lee's Summit, Missouri 64063



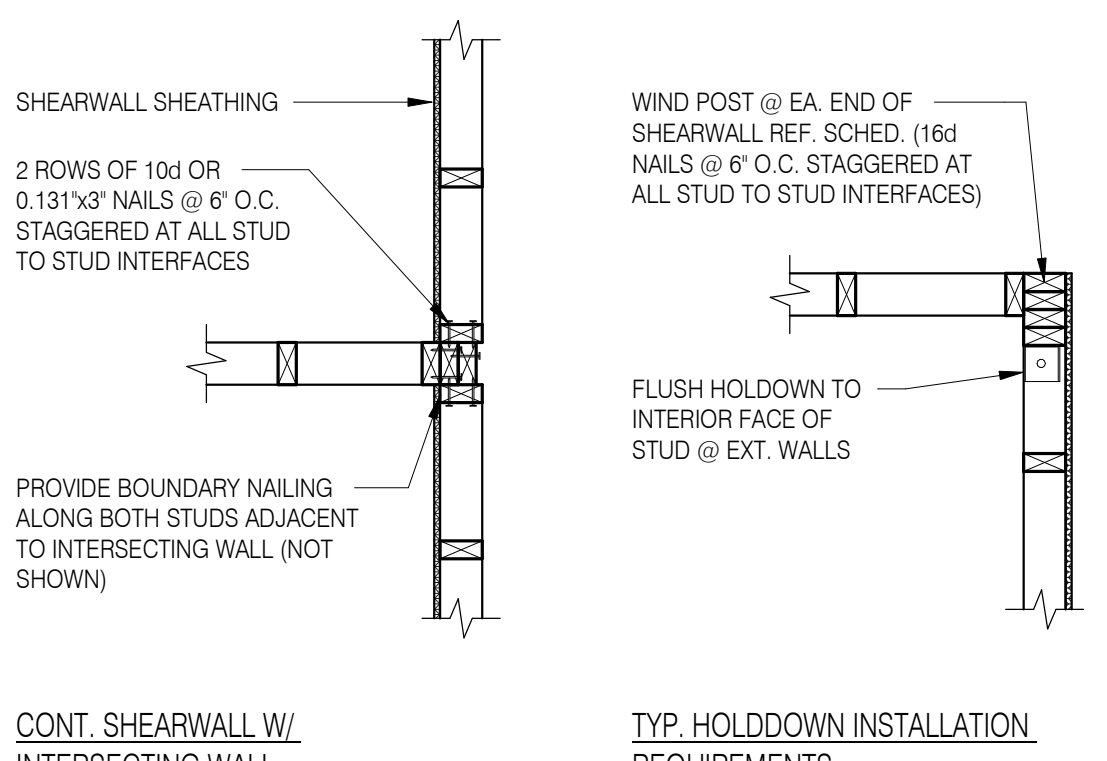
PROJECT NO: 2497-66352-00  
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FRAMING SECTIONS & DETAILS

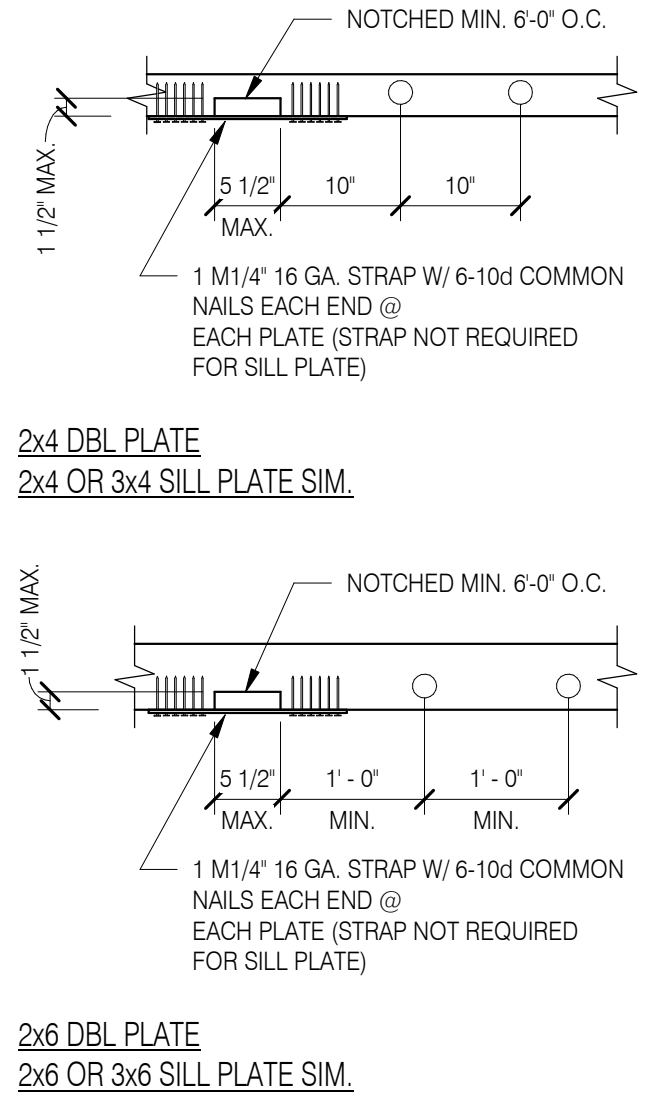
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**S3.10**  
OF



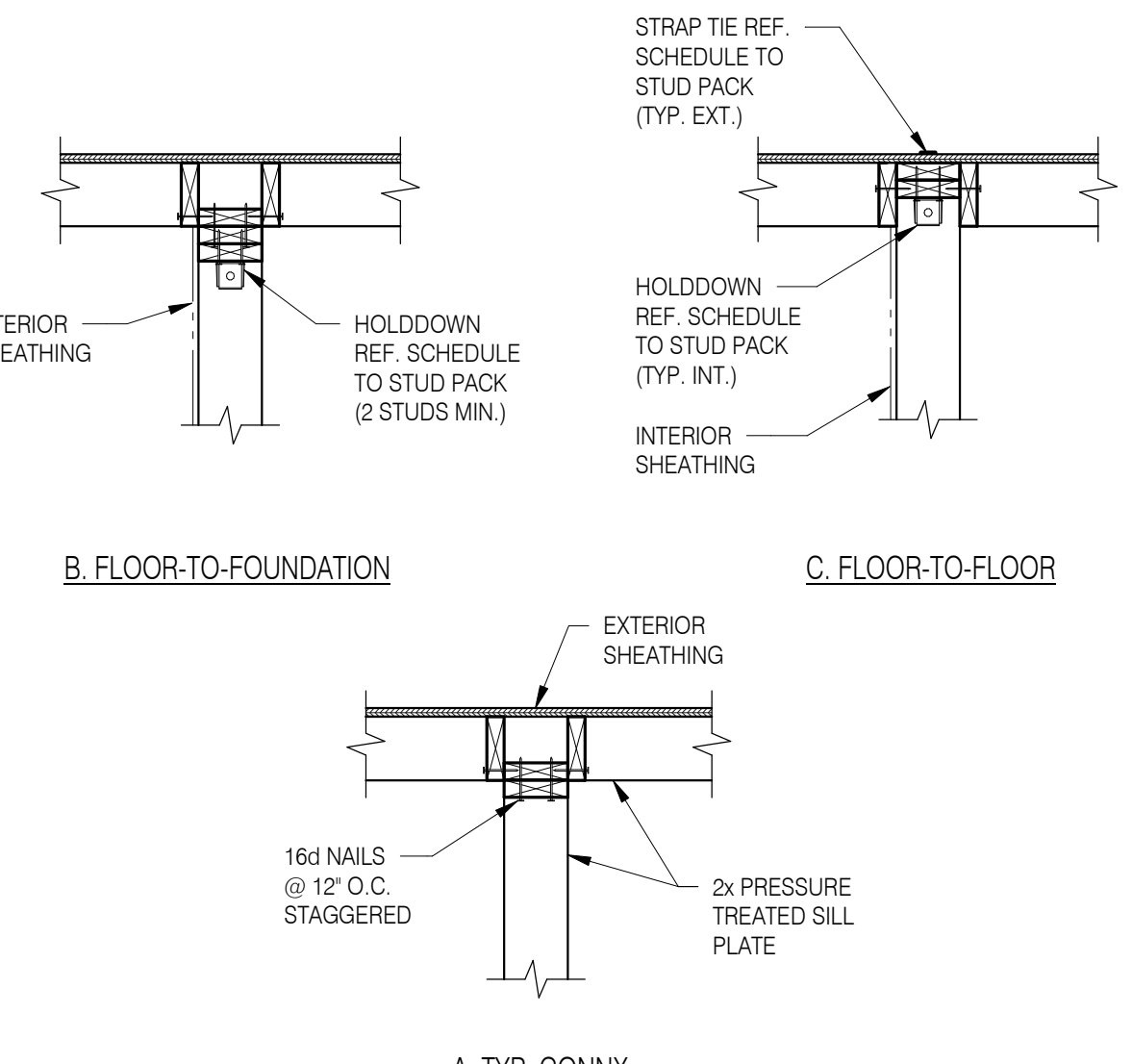
6 TYP. WOOD HEADER



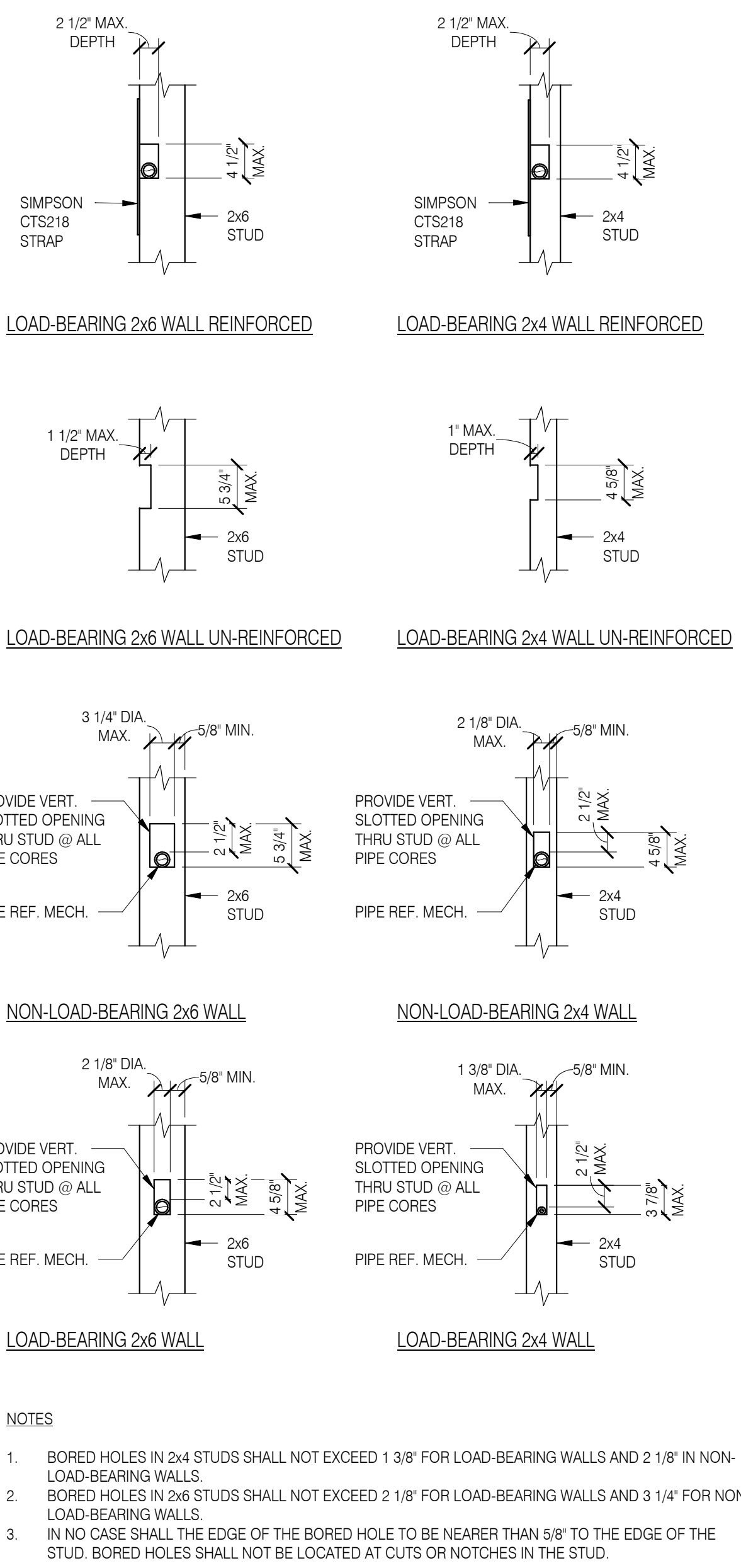
3 SHEATHING & HOLD DOWN @ SW



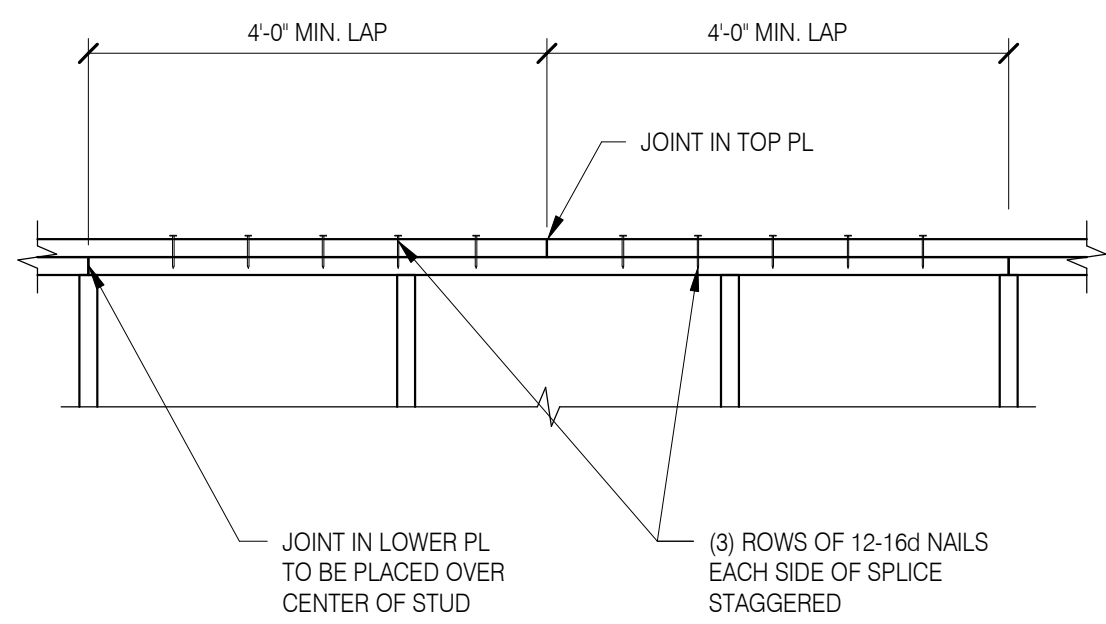
5 NOTCHES & BORINGS TOP, BOT.



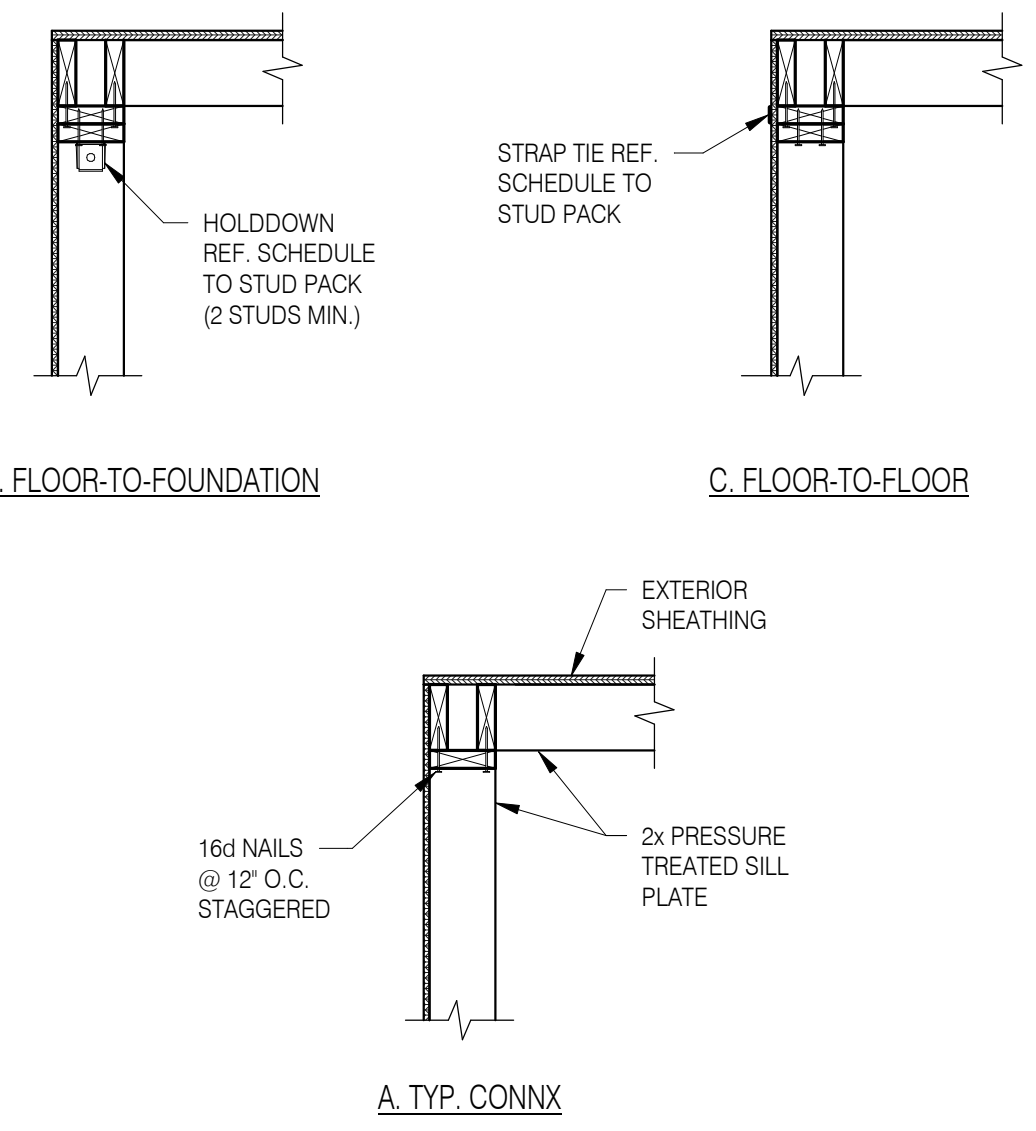
2 TYP. WALL INTERSECTION



7 WALL BORING DETAILS



4 TYP. TOP PLATE SPLICE



1 TYP. WALL INTERSECTION



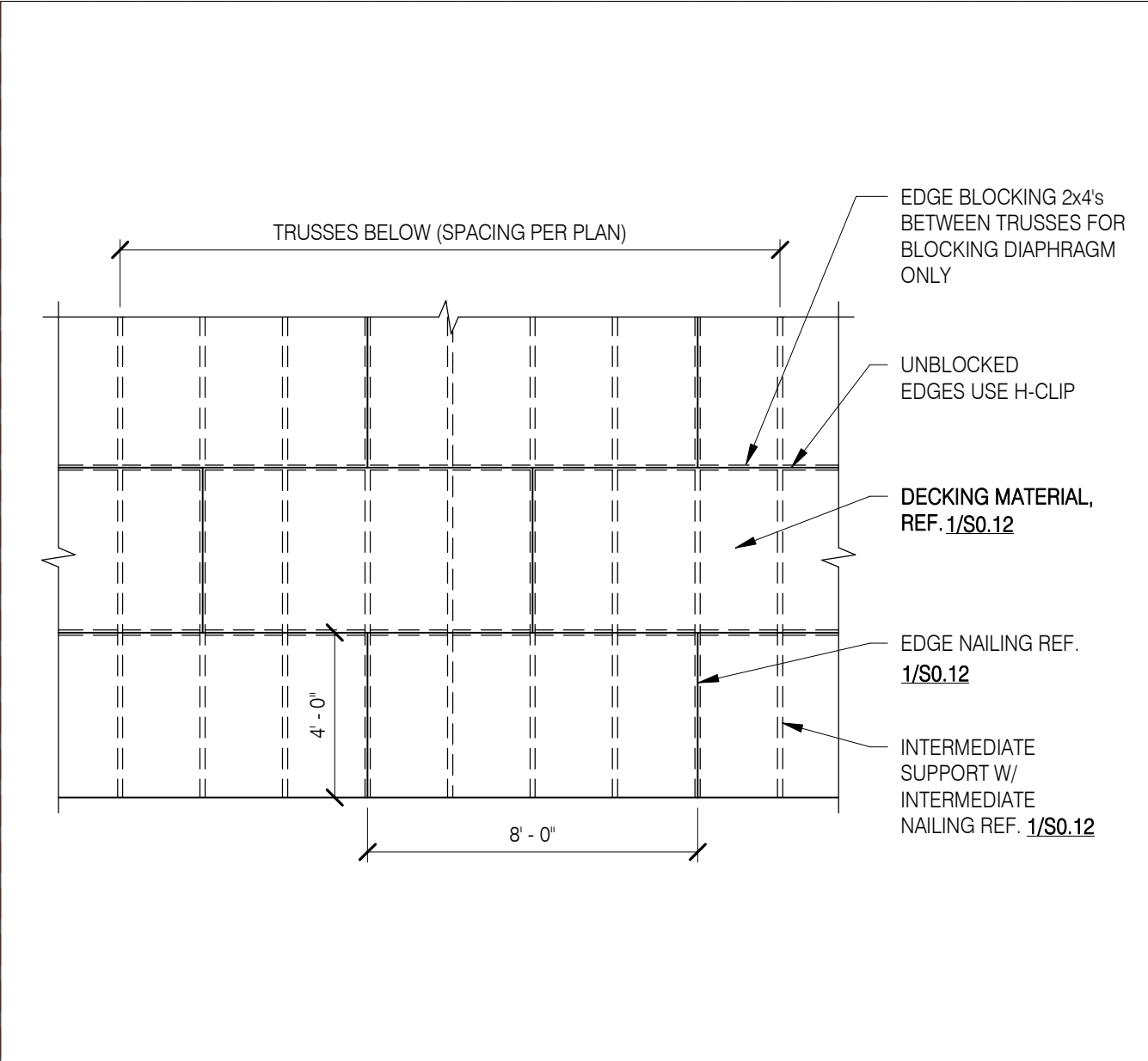
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TRUSSES BELOW (SPACING PER PLAN)

EDGE BLOCKING 2x4's BETWEEN TRUSSES FOR BLOCKING DIAPHRAGM ONLY

UNBLOCKED EDGES USE H-CLIP

DECKING MATERIAL, REF. 1/S0.12

EDGE NAILING REF. 1/S0.12

INTERMEDIATE SUPPORT W/ INTERMEDIATE NAILING REF. 1/S0.12

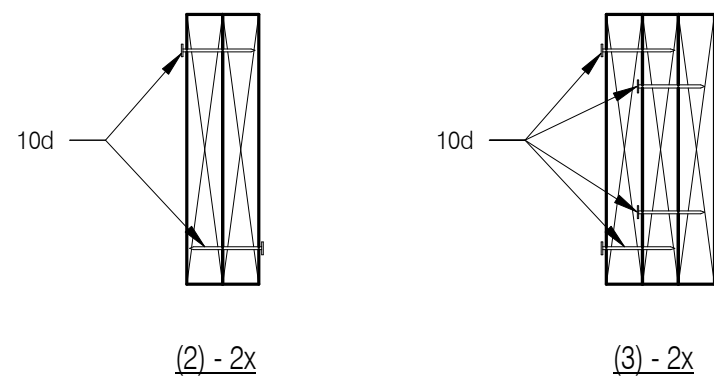
4'-0"

8'-0"

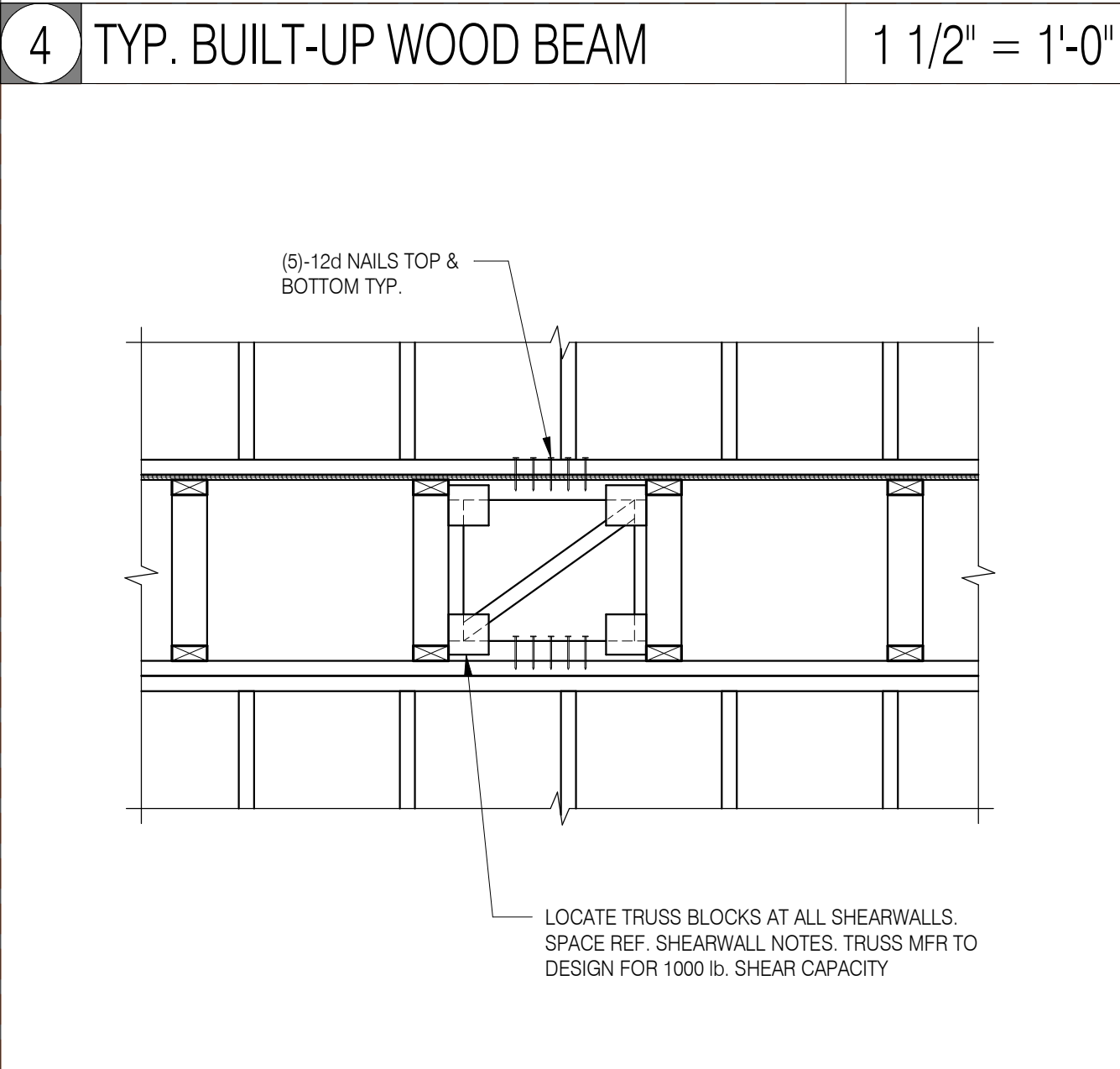
5

TYP. FLOOR & ROOF DIAPHRAGM

1/4" = 1'-0"



- NOTES
- GLUE TOGETHER INDIVIDUAL MEMBERS PRIOR TO NAILING.
  - ALL NAILS TO BE 10d (UNLESS NOTED OTHERWISE) @ 16" TOP & BOTTOM STAGGERED. PROVIDE AND INSTALL (2)-10d @ ENDS (TYP. EA. SIDE OF BEAM).



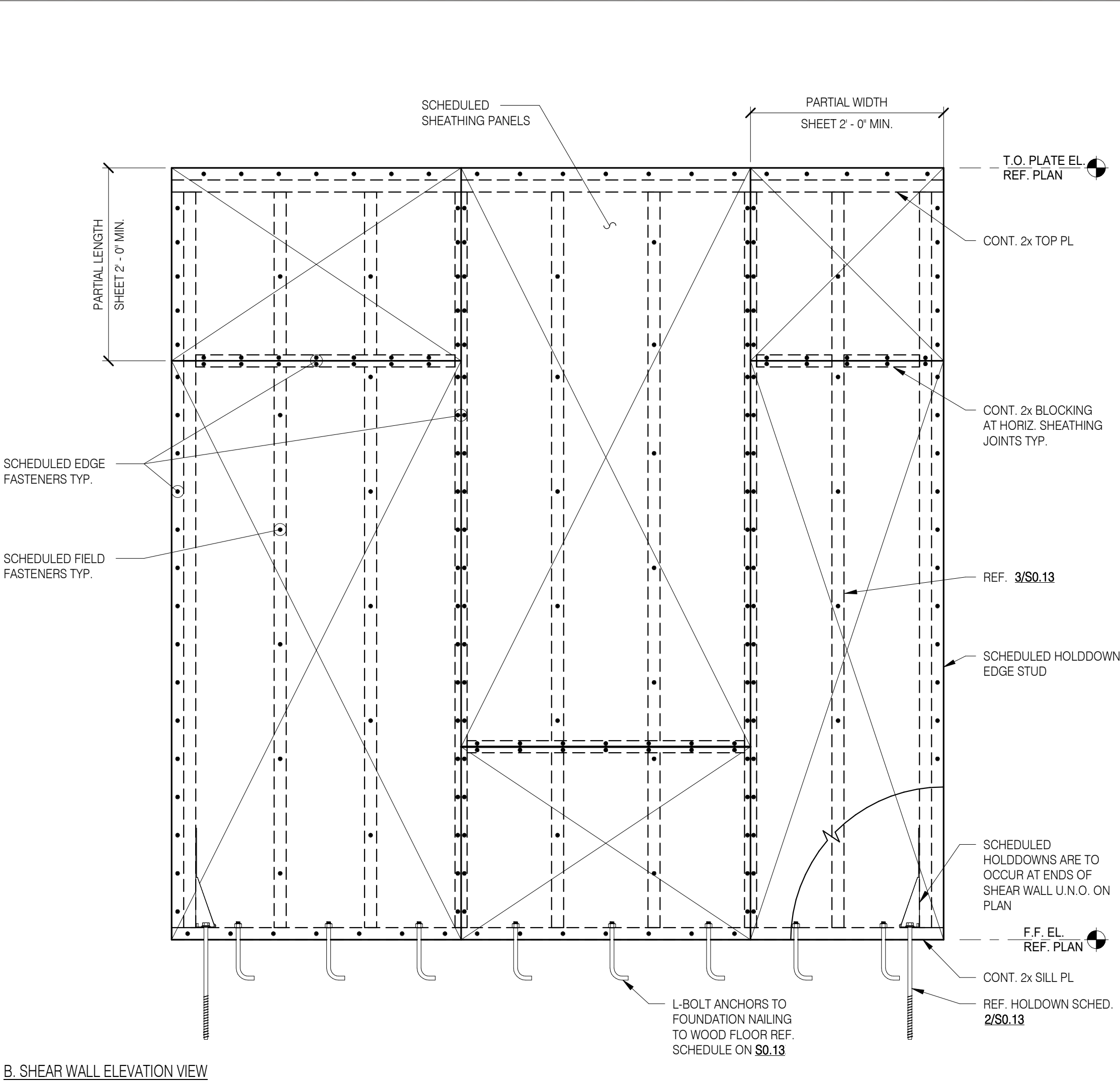
(5)-12d NAILS TOP & BOTTOM TYP.

LOCATE TRUSS BLOCKS AT ALL SHEARWALLS. SPACE REF. SHEARWALL NOTES. TRUSS MFR TO DESIGN FOR 1000 lb. SHEAR CAPACITY

4

TYP. BUILT-UP WOOD BEAM

1 1/2" = 1'-0"



SCHEDULED SHEATHING PANELS

PARTIAL WIDTH SHEET 2'-0" MIN.

T.O. PLATE EL. REF. PLAN

CONT. 2x TOP PL.

CONT. 2x BLOCKING AT HORIZ. SHEATHING JOINTS TYP.

REF. 3/S0.13

SCHEDULED HOLDDOWN EDGE STUD

SCHEDULED HOLDDOWNS ARE TO OCCUR AT ENDS OF SHEAR WALL U.N.O. ON PLAN

F.F. EL. REF. PLAN

CONT. 2x SILL PL.

REF. HOLDDOWN SCHED. 2/S0.13

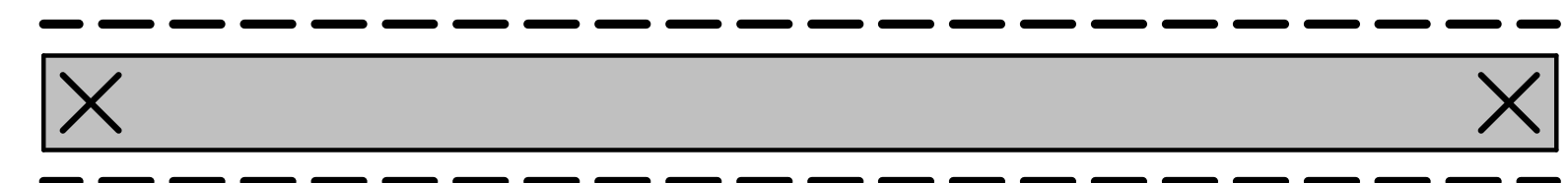
L-BOLT ANCHORS TO FOUNDATION NAILING TO WOOD FLOOR REF. SCHEDULE ON S0.13

SCHEDULED EDGE FASTENERS TYP.

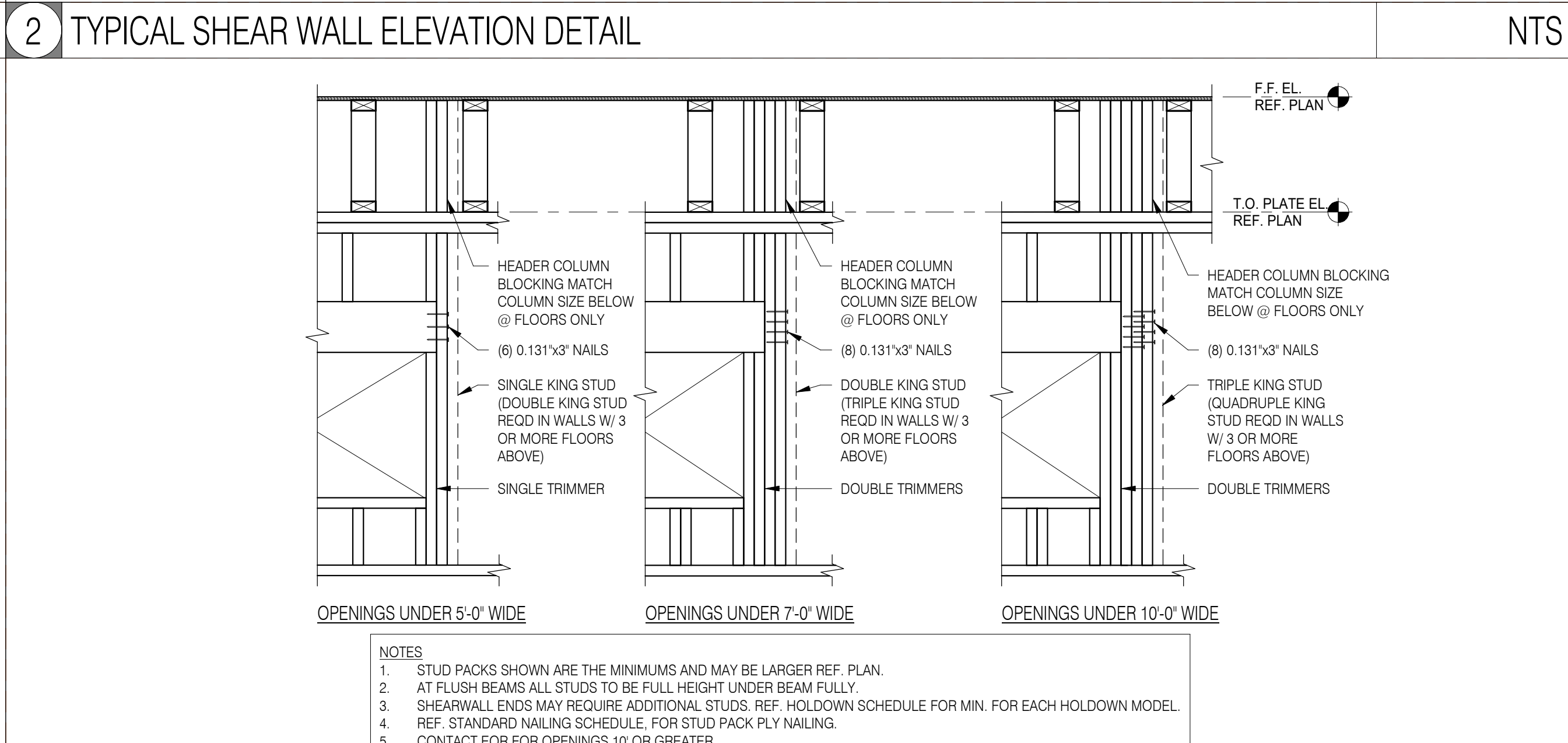
SCHEDULED FIELD FASTENERS TYP.

PARTIAL LENGTH SHEET 2'-0" MIN.

B. SHEAR WALL ELEVATION VIEW



A. SHEAR WALL PLAN VIEW



F.F. EL. REF. PLAN

T.O. PLATE EL. REF. PLAN

HEADER COLUMN BLOCKING MATCH COLUMN SIZE BELOW @ FLOORS ONLY

(6) 0.131"x3" NAILS

SINGLE KING STUD (DOUBLE KING STUD REQD IN WALLS W/ 3 OR MORE FLOORS ABOVE)

SINGLE TRIMMER

OPENINGS UNDER 5'-0" WIDE

HEADER COLUMN BLOCKING MATCH COLUMN SIZE BELOW @ FLOORS ONLY

(8) 0.131"x3" NAILS

DOUBLE KING STUD (TRIPLE KING STUD REQD IN WALLS W/ 3 OR MORE FLOORS ABOVE)

DOUBLE TRIMMERS

OPENINGS UNDER 7'-0" WIDE

HEADER COLUMN BLOCKING MATCH COLUMN SIZE BELOW @ FLOORS ONLY

(8) 0.131"x3" NAILS

TRIPLE KING STUD (QUADRUPLE KING STUD REQD IN WALLS W/ 3 OR MORE FLOORS ABOVE)

DOUBLE TRIMMERS

OPENINGS UNDER 10'-0" WIDE

NOTES

- STUD PACKS SHOWN ARE THE MINIMUMS AND MAY BE LARGER REF. PLAN.
- AT FLUSH BEAMS ALL STUDS TO BE FULL HEIGHT UNDER BEAM FULLY.
- SHEARWALL ENDS MAY REQUIRE ADDITIONAL STUDS. REF. HOLDDOWN SCHEDULE FOR MIN. FOR EACH HOLDDOWN MODEL.
- REF. STANDARD NAILING SCHEDULE, FOR STUD PACK PLY NAILING.
- CONTACT EOR FOR OPENINGS 10' OR GREATER.

1

TYP. LOAD-BEARING WALL HEADER SUPPORT

3/4" = 1'-0"

2

TYPICAL SHEAR WALL ELEVATION DETAIL

NTS

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New Construction For  
Take 5 Oil Change

Lee's Summit, Missouri 64063



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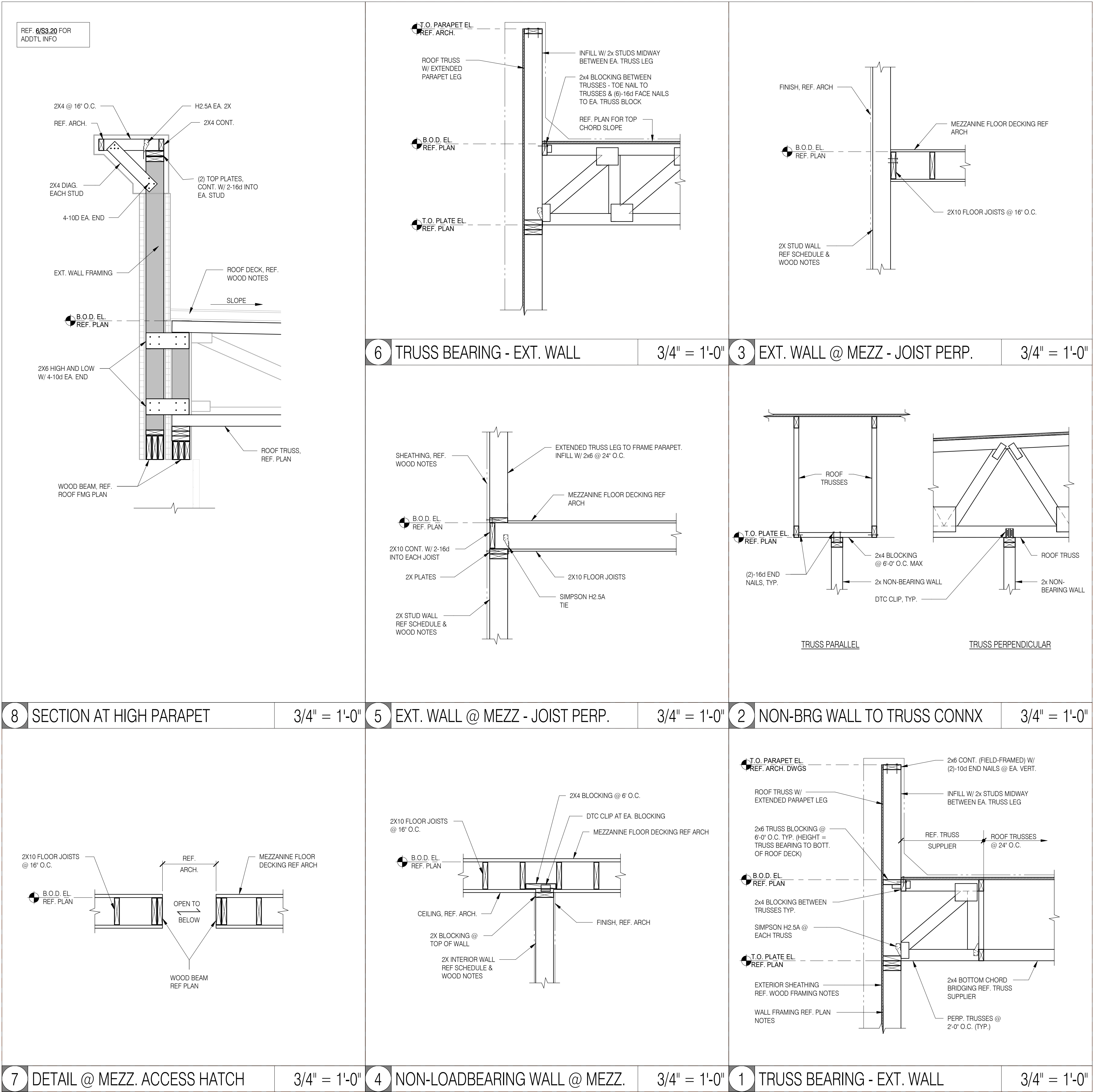
FRAMING SECTIONS

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**S3.11**  
OF



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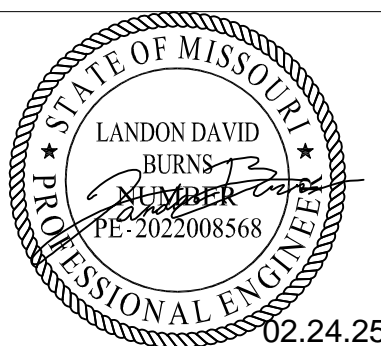
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**S3.20**

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These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.

By: \_\_\_\_\_

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BATON ROUGE, LA 70809

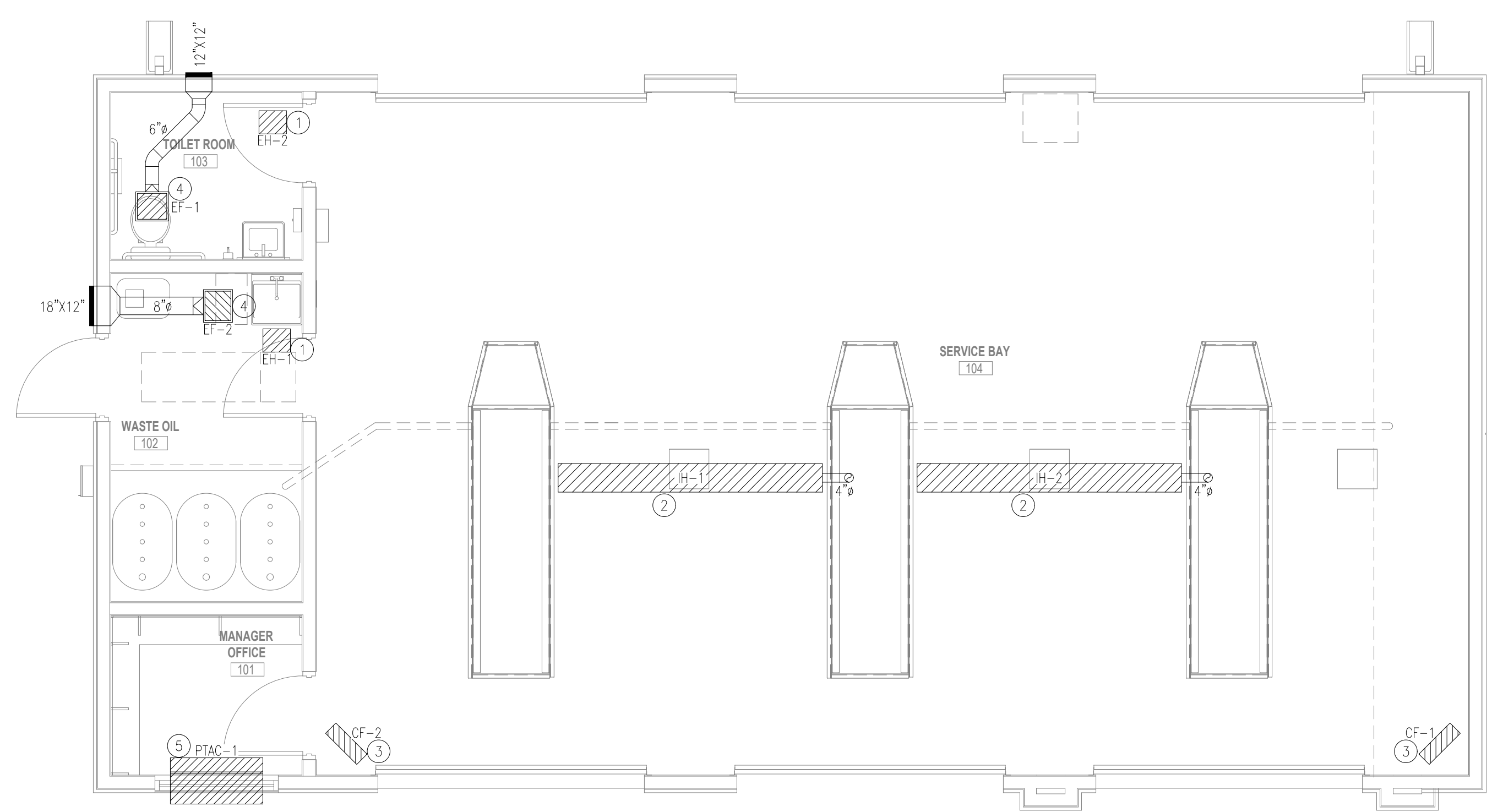
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New Construction For  
Take 5 Oil Change  
(NO ADDRESS ASSIGNED) NE M 291 Hwy  
Lee's Summit, Missouri 64086



PROJECT NO:
PHASE:
DATE:
PROJ. ARCHITECT:
MECHANICAL PLAN
SHEET NO. <b>M1.00</b> OF



1 MECHANICAL FLOOR PLAN  
1/4" = 1'-0"

MECHANICAL PLAN NOTES:

- 1 CEILING MOUNTED UNIT HEATER, INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS. RE: SCHEDULE.
- 2 INFRARED GAS HEATER SUSPENDED FROM CEILING. PROVIDE GAS PIPING AS REQ'D. COORDINATE WITH PLUMBING PLAN FOR GAS PIPING LOCATION. ROUTE NEW DOUBLE WALL 4" FLUE UP THRU ROOF TO TYPE B ROOF CAP. ROOF PENETRATION SHALL BE SEALED WEATHER TIGHT. INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS. RE: SCHEDULE.
- 3 CIRCULATING FAN. INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH ARCHITECT FOR EXACT MOUNTING HEIGHT. RE: SCHEDULE.
- 4 CABINET TYPE EXHAUST FAN. CFMS AS SCHEDULED. CONTRACTOR SHALL ROUTE EXHAUST DUCT, SIZED AS SHOWN, TO EXTERIOR WALL LOUVER, GREENHECK ESD-403' OR APPROVED EQUAL..
- 5 .5 TON PACKAGE TERMINAL AIR CONDITIONER, REFER TO MECHANICAL SCHEDULE. PTAC UNIT SHALL HAVE INTEGRAL CONTROLS AND THERMOSTAT MOUNTED ON INTERIOR FACE OF UNIT. COORDINATE EXACT MOUNTING HEIGHT OF UNIT WITH ARCHITECT PRIOR TO INSTALLATION.



PTAC SCHEDULE

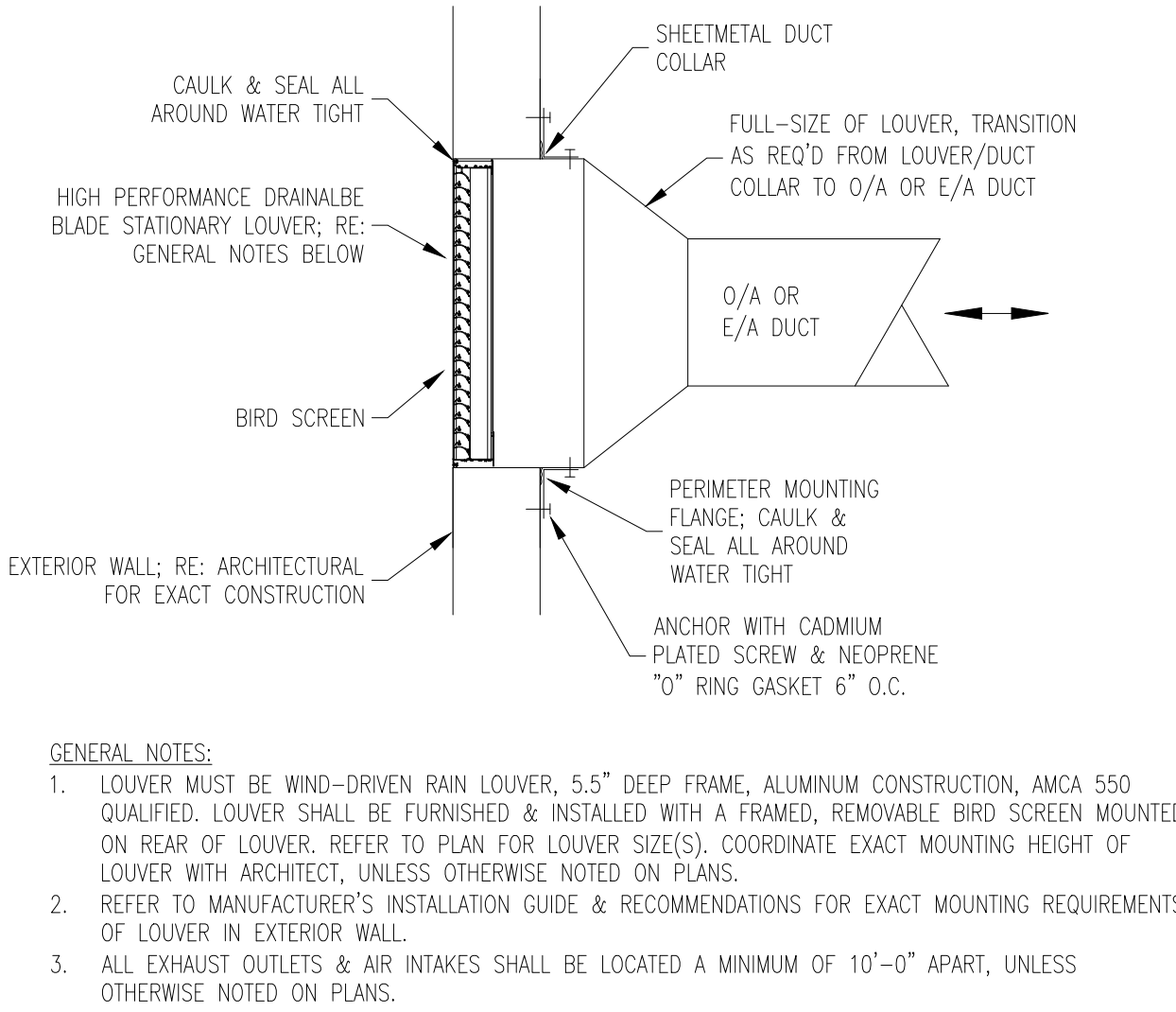
NOTES:

1. CAPACITIES SHALL BE IN ACCORDANCE WITH ARI STANDARD 210/240: (A) COOLING: 80°F DB / 67°F WB ENTERING INDOOR COIL; 95°F ENTERING OUTDOOR COIL AT PUBLISHED NOMINAL CFM (B) HEATING: 47°F DB...

GENERAL		EVAPORATOR COIL	ELECTRIC HEAT		ELECTRIC SERVICE					WEIGHT	ACCEPTABLE MANUFACTURERS	NOTES
MARK	NOMINAL TONS	COOLING TOT CAP	MIN STAGES	MIN CAP	VOLTS	PH	FREQ	MCA	MOCP			
PTAC-1	0.5	7200 BTU/H	1	3.0KW	240 V	1	60 Hz	17 A	20 A	—	TRANE PTHE070 OR APPROVED EQUAL	1

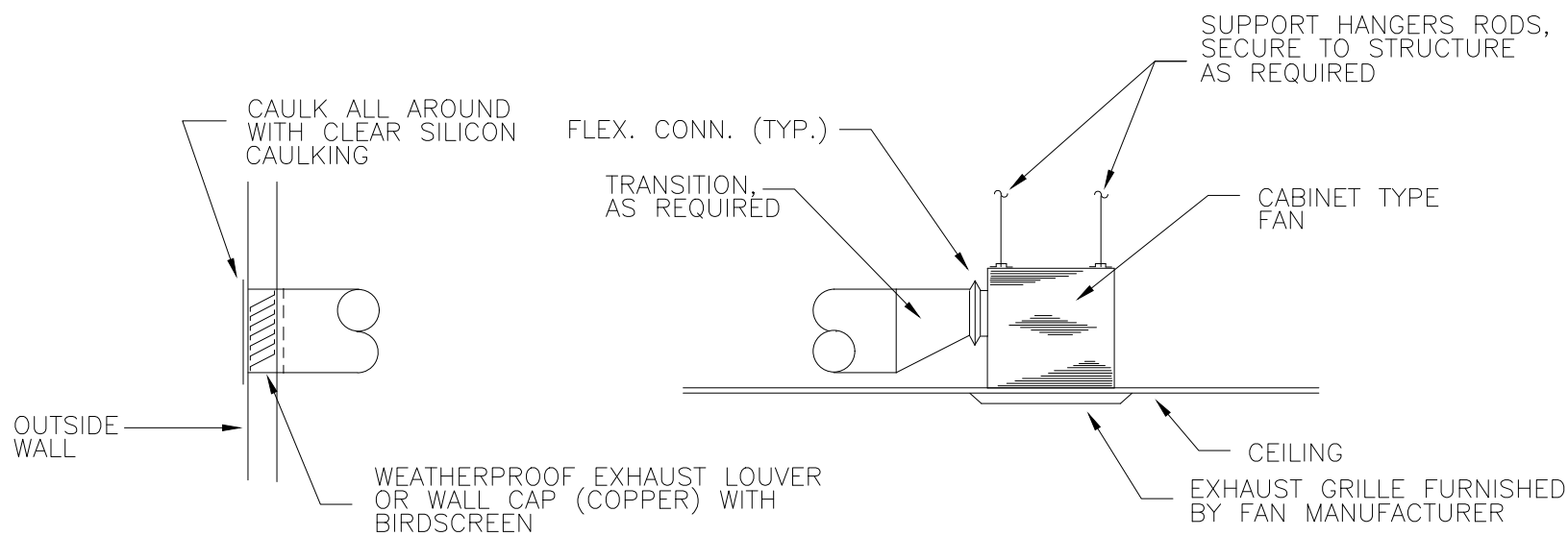
FAN SCHEDULE													
PLAN MARK	SERVICE AREA	TYPE	TOTAL CFM	S.P. LOSS IN W.C.	HP/W	FAN RPM	MOTOR RPM	DRIVE TYPE	INLET SONES	FLA	ELECTRIC SERVICE	MANUFACTURERS	NOTES
EF-1	SEE PLAN	CABINET	75	.25	19 W	950	--	DIRECT	0.8	--	120/1ø/60	GREENHECK SP-A110 OR APPROVED EQUAL	1,2
EF-2	SEE PLAN	CABINET	150	.25	51 W	1400	--	DIRECT	2.0	--	120/1ø/60	GREENHECK SP-A190 OR APPROVED EQUAL	1,2
CF-1,2	SEE PLAN	CIRCULATING	3700	--	1/8 HP	1200	--	DIRECT	--	--	120/1ø/60	DAYTON 2LY99 OR APPROVED EQUAL	3
1. INTERLOCK EXHAUST FAN WITH LIGHT SWITCH TO WHERE FAN IS ON WHEN LIGHT SWITCH IS TURNED ON. 2. FAN SHALL COME WITH GRAVITY TYPE BACKDRAFT DAMPER. 3. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.													

UNIT HEATER SCHEDULE									
NO.	BTUH OUTPUT	CFM	KW	MCA	MFS	STAGES	ELECTRIC SERVICE	REMARKS	
EH-1	2,560	65	.75	6.3	—	1	120V/1ø/60Hz	QMARK QCH1151F OR APPROVED EQUAL	
EH-2	5,120	65	1.5	7.3	—	1	240V/1ø/60Hz	QMARK QCH1202F OR APPROVED EQUAL	
IH-1,2	40,000	--	--	1.8	—	1	120V/1ø/60Hz	SPACE RAY PTS-40-10-N7 OR APPROVED EQUAL	
1. FURNISH AND INSTALL A THERMOSTAT, LOW VOLTAGE CONTROL WIRE AND CONDUIT, ETC. 2. LOCATE THE THERMOSTAT AS DIRECTED BY ENGINEER, ONE T'STAT/UNIT HEATER. 3. THE THERMOSTAT SHALL BE SET FOR 40°F 4. BTUH, CFM, AIR TEMP RISE, KW AND HP LISTED ABOVE ARE MIN VALUES.									



- GENERAL NOTES:
- LOUVER MUST BE WIND-DRIVEN RAIN LOUVER, 5.5" DEEP FRAME, ALUMINUM CONSTRUCTION, AMCA 550 QUALIFIED. LOUVER SHALL BE FURNISHED & INSTALLED WITH A FRAMED, REMOVABLE BIRD SCREEN MOUNTED ON REAR OF LOUVER. REFER TO PLAN FOR LOUVER SIZE(S). COORDINATE EXACT MOUNTING HEIGHT OF LOUVER WITH ARCHITECT, UNLESS OTHERWISE NOTED ON PLANS.
  - REFER TO MANUFACTURER'S INSTALLATION GUIDE & RECOMMENDATIONS FOR EXACT MOUNTING REQUIREMENTS OF LOUVER IN EXTERIOR WALL.
  - ALL EXHAUST OUTLETS & AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10'-0" APART, UNLESS OTHERWISE NOTED ON PLANS.

1 | DETAIL-EXTERIOR WALL LOUVER  
SCALE: N.T.S.



2 | DETAIL-CABINET TYPE EXHAUST FAN  
SCALE: N.T.S.

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Lee's Summit, Missouri  
03/12/2025

02.24.2025  
DATE

1  
No.

REVISION

REVISE PER COMMENTS

STATE OF MISSOURI  
LANDON DAVID BURNS  
Professional Engineer  
PE-2022008568

02.24.25

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By: \_\_\_\_\_

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New Construction For  
Take 5 Oil Change

(NO ADDRESS ASSIGNED) NE M 291 Hwy  
Lee's Summit, Missouri 64086

PROJECT NO:

PHASE:

DATE:

PROJ. ARCHITECT:

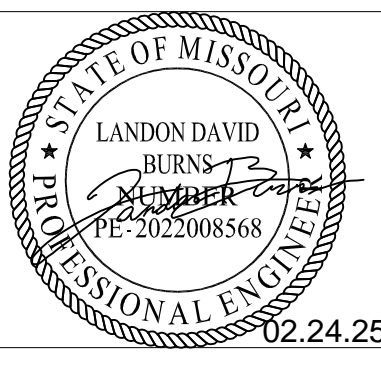
MECHANICAL SCHEDULE & DETAILS

SHEET NO.  
M2.00  
OF



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DATE

REVISION  
1  
No.



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Scales as stated hereon are valid on the original drawing only.  
These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.  
By: \_\_\_\_\_

FUSION

ARCHITECTS

BCB

3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
P. 225.766.4848 F. 225.766.4724  
FUSIONARCHITECTURE.COM

New Construction For  
Take 5 Oil Change  
(NO ADDRESS ASSIGNED) NE M 291 Hwy  
Lee's Summit, Missouri 64086

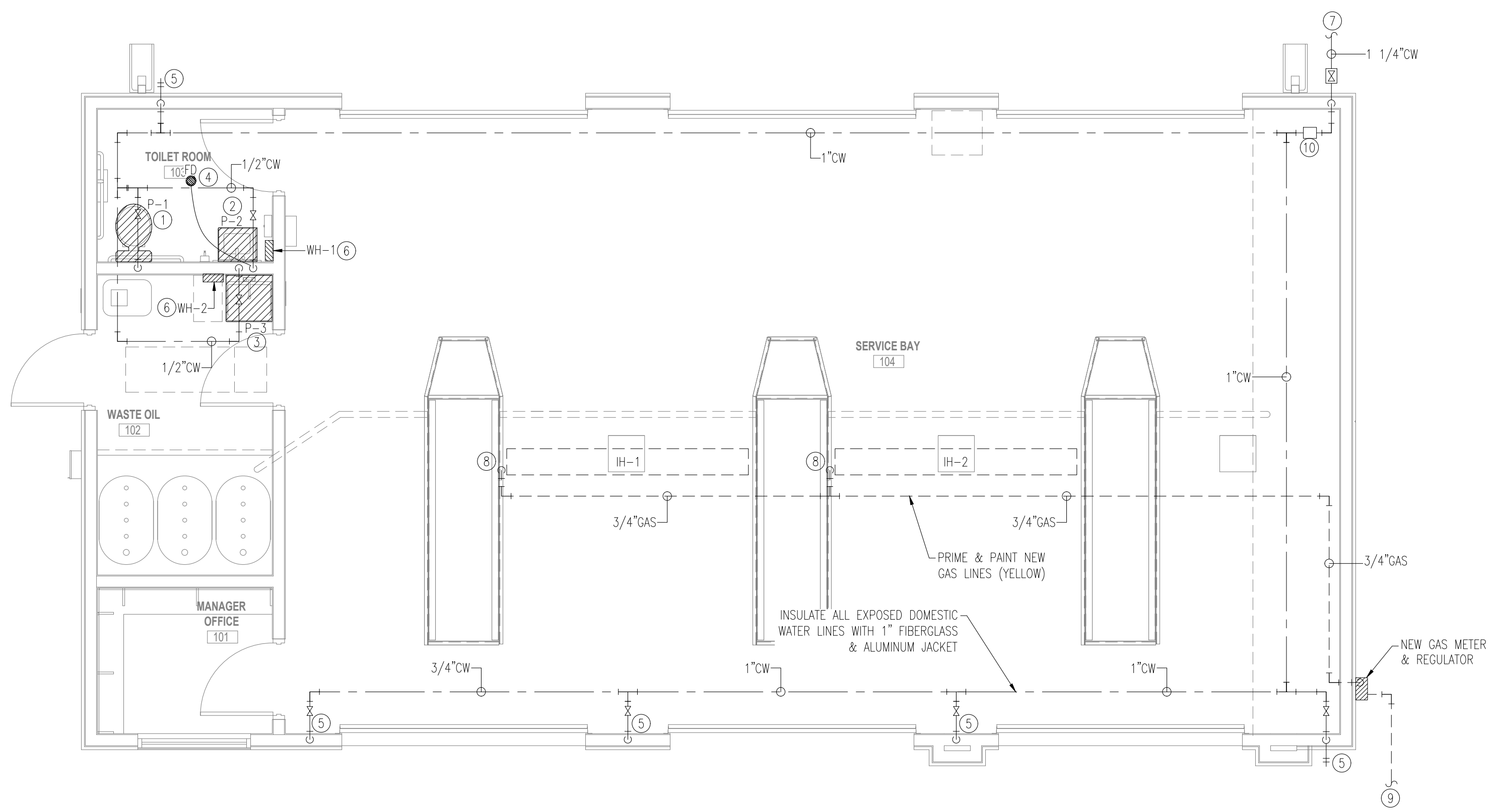


PROJECT NO:  
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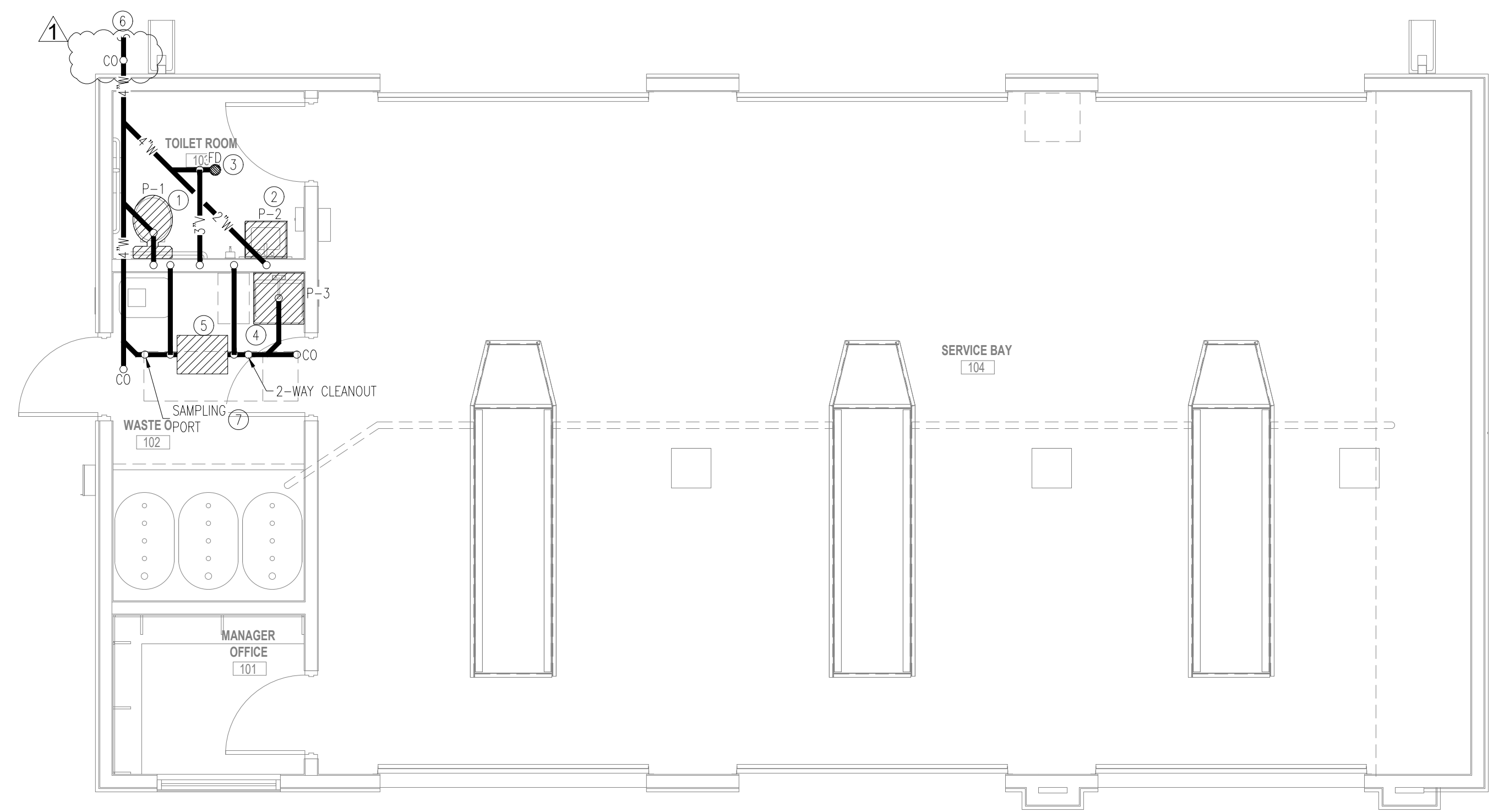
PLUMBING  
PLAN

SHEET NO.  
P1.00  
OF

PLUMBING LEGEND		
SYMBOL	ABBREVIATION	DECRYPTION
----	DCW	DOMESTIC COLD WATER PIPE
----	DHW	DOMESTIC HOT WATER PIPE
----	DHWR	DOMESTIC HOT WATER RETURN PIPE
----	-	FILTER WATER PIPING
----	-	GATE VALVE (SAME SIZE AS PIPE IF NOT SPECIFIED)
+	-	PIPE DOWN
-	-	PIPE UP
+	-	PIPE TEE
+	-	PIPE ELL
+	-	PIPE TEE UP
+	-	PIPE TEE DOWN
----	-	FULL SIZE SHUTOFF VALVE, PROVIDE ACCESS PANEL
----	-	PIPE CONTINUES
----	SS	SANITARY SEWER PIPE AND SIZE
----	V	SANITARY VENT PIPE AND SIZE
----	GW	GREASE WASTE PIPE AND SIZE
----	CO	CLEAN OUT
----	FD	FLOOR DRAIN AND SIZE
①	-	PLUMBING PLAN NOTE
●	-	POINT OF CONNECTION
1/2"	-	PIPE SIZE



1 PLUMBING FLOOR PLAN - DOMESTIC WATER  
1/4" = 1'-0"



2 PLUMBING FLOOR PLAN - SANITARY SEWER  
1/4" = 1'-0"

- DOMESTIC WATER NOTES:
- 1" CW TO SERVE WATER CLOSET, TYPICAL.
  - 1/2" C&HW TO SERVE LAVATORY/SINK, TYPICAL.
  - 1/2" C&HW TO SERVE JANITOR SINK, TYPICAL.
  - 1/2" TRAP PRIMER TO SERVE 4" FLOOR DRAIN, TYPICAL.
  - 3/4" CW DN TO FREEZE PROOF HOSE BIBB.
  - 1" CW SUPPLY WITH BALL VALVE LOCATED 3'-6" FROM WALL, CENTERED BETWEEN DOORS, STUB OUT ON WALL AT 10' A.F.F.
  - INSTANTANEOUS WATER HEATER ON WALL. PROVIDE THERMOSTATIC MIXING VALVE. RE: SCHEDULE FOR SIZE.
  - CONNECT NEW 1 1/4" CW INTO EXISTING CITY SERVICES. VERIFY EXACT LOCATION AND SIZE PRIOR TO INSTALLATION.
  - 1/2" GAS WITH FULL SIZE GAS COCK TO SERVE INFRARED GAS HEATER. INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS. RE: MECHANICAL SCHEDULE
  - NEW GAS SERVICE FROM GAS COMPANY. PROVIDE NEW METER AND LOW PRESSURE REGULATOR. COORDINATE WITH LOCAL GAS COMPANY AS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR ALL FEES, PERMITS, ASSOCIATED WITH NEW SERVICE.
  - NEW RPZ BACKFLOW PREVENTER LOCATED INSIDE BUILDING. COORDINATE EXACT REQUIREMENTS WITH LOCAL WATER COMPANY.

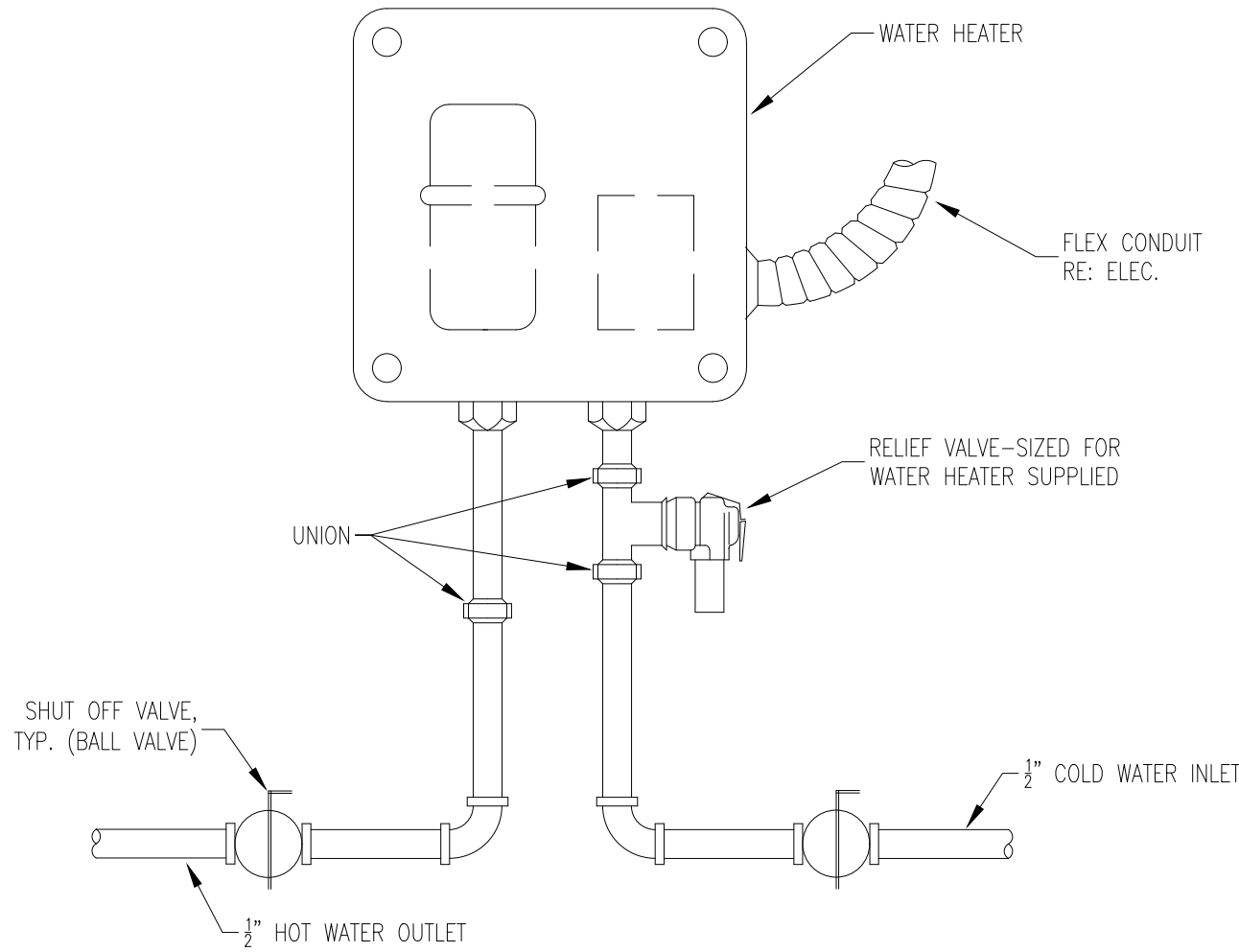
- SANITARY SEWER NOTES:
- 4"W, 3"V TO SERVICE WATER CLOSET, TYPICAL
  - 2"W, 2"V TO SERVICE LAVATORY/SINK, TYPICAL
  - 4"W, 3"V TO SERVICE 4" FLOOR DRAIN, TYPICAL
  - 2"W, 2"V TO SERVICE SINK, TYPICAL
  - NEW MIFAB LUL-35-0 OIL INTERCEPTOR. TOP OF OIL INTERCEPTOR SHALL BE FLUSH WITH FINISHED FLOOR. INSTALL IN STRICT ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS. PROVIDE SAMPLING PORT & 2 WAY CLEANOUT AS REQUIRED.
  - TIE NEW 4"W INTO EXISTING CITY SERVICE. VERIFY EXACT LOCATION AND SIZE PRIOR TO INSTALLATION.
  - SAMPLING PORT SHALL BE SCHER MODEL SV10 OR APPROVED EQUAL. MAINTAIN MINIMUM OF 18" TO ALLOW FOR SUFFICIENT ACCESS TO COLLECT WASTEWATER SAMPLES.



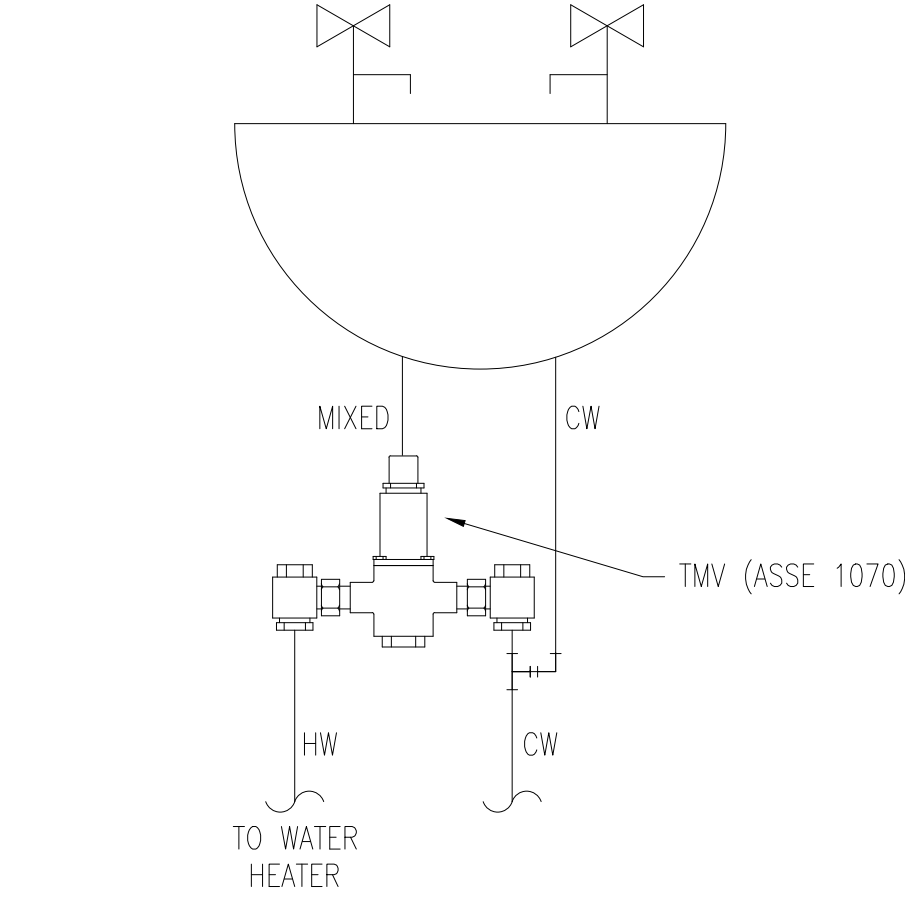
PLUMBING FIXTURE SCHEDULE													
TAG	FIXTURE DESCRIPTION	MANUFACTURER & MODEL NUMBER	TRIM					CONNECTION SIZE				NOTES	
			SEAT	CARRIER	FAUCET	DRAIN	MISCELLANEOUS	CW	HW	SAN.	VENT		
P-1	FLOOR MOUNTED WHITE VITREOUS CHINA TANK TYPE WATER CLOSET WITH PRESSURE-ASSISTED SIPHON JET FLUSH ACTION(1.6 GPF); ADA COMPLIANT	AMERICAN STANDARD 2467.016 OR APPROVED EQUAL	BENEKE 527 SS CHURCH 9500 SSC	--	--	--	CLOSET SUPPLY WITH STOP BRASSCRAFT CR1912DL EASTMAN CM12	½"	--	4"	3"		
P-2	20"x18" WHITE VITREOUS CHINA WITH OVERFLOW WALL HUNG LAVATORY WITH 4" CENTER FAUCET HOLES	AMERICAN STANDARD 0355.012 OR APPROVED EQUAL	--	JAY R. SMITH 0700-Z ZURN Z1231 JOSAM 17100	AMERICAN STANDARD 7385.003 T&S BRASS B-2711 ZURN Z81000-G	--	1½" CAST BRASS "P" TRAP W/ CLEAN OUT; ¾" ANGLE STOP SUPPLIES WITH LOOSE KEY STOP	½"	½"	2"	2"	CONTRACTOR SHALL COORDINATE EXACT CONCEALED ARM SUPPORT WALL CARRIER WITH WALL THICKNESS THAT LAVATORY OCCURS ON. PROVIDE THERMOSTATIC MIXING VALVE.	
P-3	24"x24"x12" FLOOR MOUNTED SERVICE SINK W/STAINLESS STEEL CAP ALL SIDES AND STAINLESS STEEL BACKSPLASH	FIAT TSB-3010 OR APPROVED EQUAL	--	--	TS BRASS B-0665-BSTP ZURN 843M1-RC	JUST J-15-SS	1½" CAST BRASS "P" TRAP W/ CLEAN OUT; ¾" ANGLE STOP SUPPLIES WITH LOOSE KEY STOP	½"	½"	3"	2"	PROVIDE HOSE W/BACKET TO SUPPORT HOSE & MOP HANGER FOR EASY STORAGE OF THE MOP OVER SINK.	
FD	CAST IRON FLOOR DRAIN WITH ½" TRAP PRIMER CONNECTION AND ADJUSTABLE SQUARE NICKEL BRONZE STRAINER	JAY R. SMITH 2005 OR APPROVED EQUAL	--	--	--	--	--	--	--	4"	3"	ALL FLOOR DRAINS SHALL BE INSTALLED WITH ½" TRAP PRIMER. SEE PLANS FOR SANITARY SEWER AND VENT CONNECTION SIZES.	
F.P.H.B.	¾" FREEZE PROOF HOSE BIBB IN WALL BOX WITH LOOSE KEY	JAY R. SMITH 5519 WOODFORD B65	--	--	--	--	--	¾"	--	--	--		

TANKLESS ELECTRIC WATER HEATER SCHEDULE								MANUFACTURER
MARK	ELECTRIC SERVICE	KW	FLA	MIN. GPM	TEMP RISE @ 0.5 GPM	TEMP RISE @ 1.0 GPM		
WH-1	120/1ø/60	3.6	30	0.35	49°	25°		CHRONOMITE M-30L/120 OR APPROVED EQUAL
WH-2	208/1ø/60	4.16	20	0.35	57°	28°		CHRONOMITE M-30L/208 OR APPROVED EQUAL

1. HEATER MUST COME WITH ISOLATION VALVES.

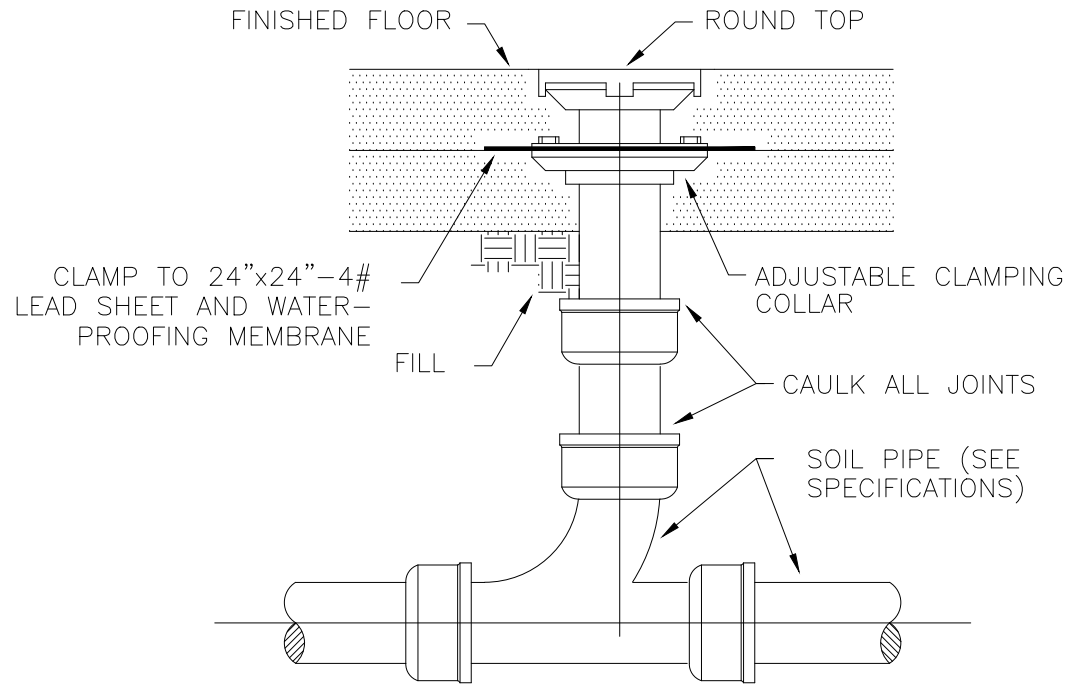


1 | DETAIL-ELECTRIC INSTANTANEOUS WATER HEATER  
SCALE: N.T.S.

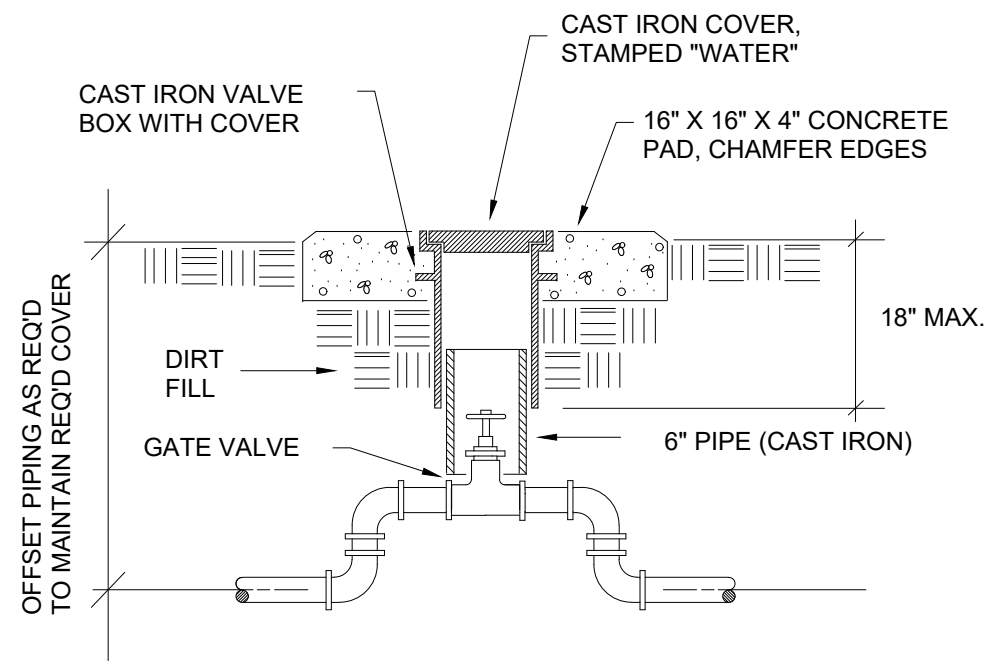


CONTRACTOR SHALL PROVIDE AND INSTALL LEONARD 170-LF OR 270-LF (FOR MULTIPLE FIXTURES) THERMOSTATIC MIXING VALVE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

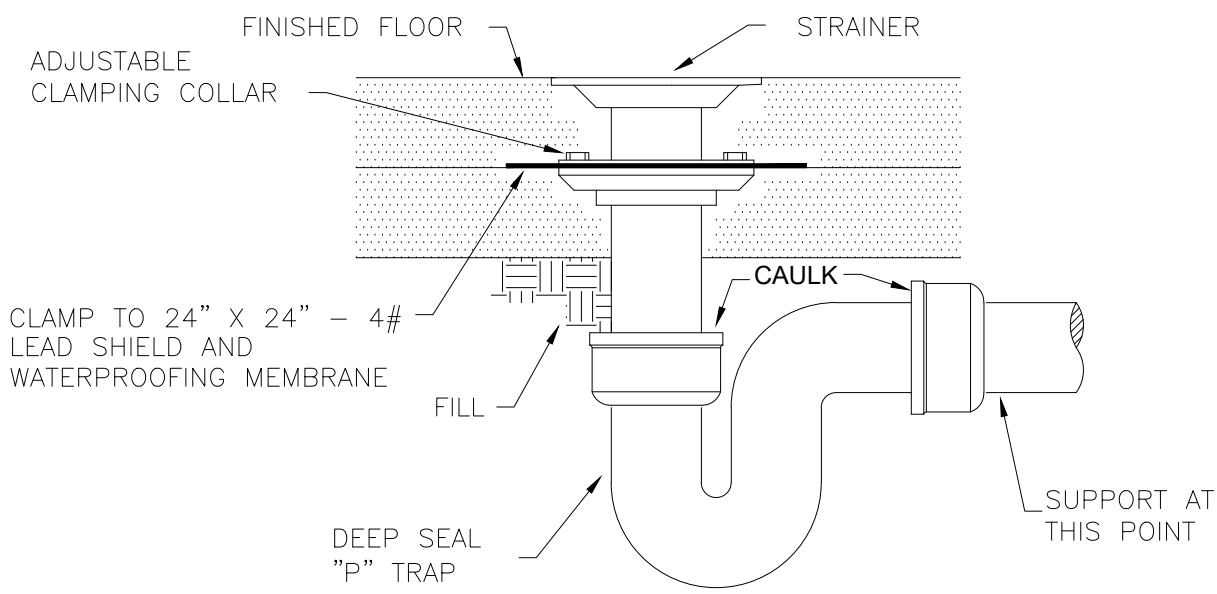
2 | DETAIL- ASSE 1070 TMV  
SCALE: N.T.S.



3 | DETAIL-INTERIOR FLOOR CLEANOUT  
SCALE: N.T.S.

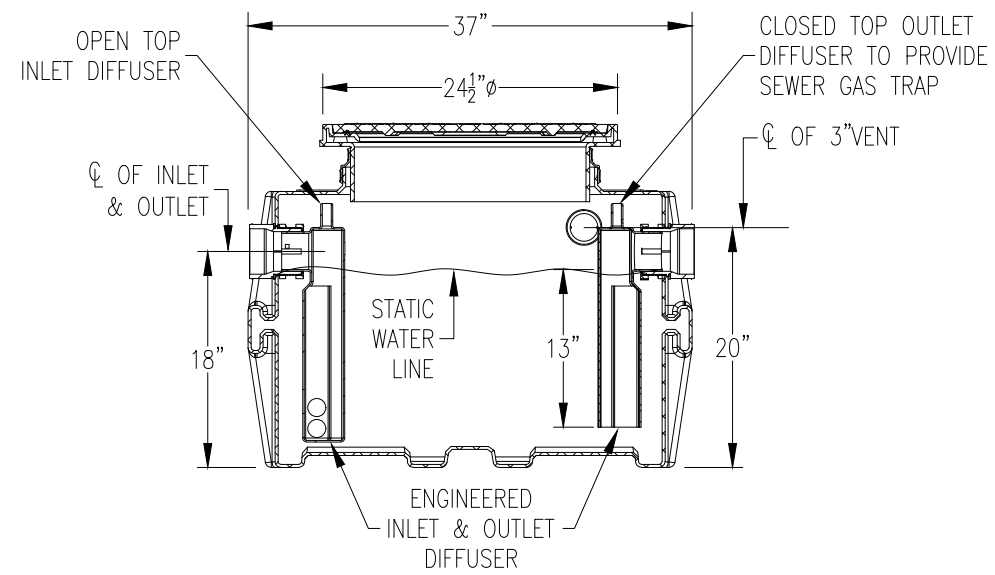


4 | DETAIL-VALVE BOX FOR DOMESTIC WATER SERVICE  
SCALE: N.T.S.



ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS.

5 | DETAIL-FLOOR DRAIN  
SCALE: N.T.S.



6 | DETAIL- OIL/WATER SEPERATOR  
SCALE: N.T.S.

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review

Development Services Department  
Lee's Summit, Missouri  
03/12/2025

02.24.25  
DATE

REVISION  
1  
No.

REVIS PER COMMENTS

STATE OF MISSOURI  
LANDON DAVID BURNS  
Professional Engineer  
PE-2022008568

02.24.25

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These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.

By: \_\_\_\_\_

FUSION ARCHITECTS

BCB

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New Construction For  
Take 5 Oil Change

(NO ADDRESS ASSIGNED) NE M 291 Hwy  
Lee's Summit, Missouri 64086

PROJECT NO:

PHASE:

DATE:

PROJ. ARCHITECT:

PLUMBING SCHEDULE & DETAILS

SHEET NO.  
P2.00  
OF



## HVAC SPECIFICATIONS

### 15010 BASIC MECHANICAL REQUIREMENTS

#### GENERAL REQUIREMENTS

"PROVIDE" MEANS FURNISH AND INSTALL. THIS CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED "BY OTHERS" AND/OR OWNER.

GENERAL REQUIREMENTS SHALL BE INCLUDED AS PART OF THESE SPECIFICATIONS.

CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM. ALL EQUIPMENT AND RELATED ITEMS BY HVAC CONTRACTOR UNLESS OTHERWISE NOTED IN THESE SPECIFICATIONS.

IT IS THE INTENT OF THESE CONSTRUCTION DOCUMENTS TO DEPICT ENGINEERED DUCT, PIPE, AND EQUIPMENT ARRANGEMENTS THAT MINIMIZE CONFLICTS AND/OR INTERFERENCES WITH STRUCTURES AND OTHER TRADES. FINAL CONSTRUCTION COORDINATION WITH OTHER TRADES TO AVOID SUCH CONFLICTS IS THE RESPONSIBILITY OF THIS HVAC SUBCONTRACTOR.

DIFFERENCES AND/OR CONFLICTS BETWEEN CONTRACT DRAWING AND SPECIFICATION AND SHOP DRAWINGS, SHALL BE CALLED TO THE ENGINEERS ATTENTION.

TRADE NAMES ARE USED TO ESTABLISH QUALITY. SUBSTITUTIONS OF EQUIVALENT QUALITY MAY BE USED IF PRIOR APPROVED BY THE ENGINEER.

#### RECORD DRAWINGS

PROVIDE RECORD DRAWINGS SHOWING LOCATIONS OF ALL CHANGES IN EQUIPMENT, PIPING AND DUCT ARRANGEMENTS. DRAWINGS SHALL BE RED PENCIL ON BLUE OR BLACK LINE PRINTS, DETAILS AND SCHEDULES SHALL BE KEPT UP TO DATE ON A DAILY BASIS. THESE DRAWINGS SHALL BE AVAILABLE TO THE BUILDER OR HIS REPRESENTATIVE AT THE JOB SITE.

AT COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT UPDATED PRINTS TO THE BUILDER, BEFORE RECEIPT OF FINAL PAYMENT.

#### MATERIALS FURNISHED BY OWNER

WILL BE RECEIVED, CHECKED FOR PROPER ACCESSORIES AND STORED AT THE SITE IN A CONVENIENT LOCATION FOR THE CONTRACTOR. UNLESS OTHERWISE SPECIFIED, ALL EQUIPMENT INDICATED IN THE SPECIFICATIONS, DETAILS, SCHEDULES, AND/OR ON THE DRAWINGS AS "FURNISHED BY OWNER" WILL BE FURNISHED BY OWNER AND INSTALLED BY THE CONTRACTOR. ALL OTHER EQUIPMENT AND MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR.

#### CONTRACTOR'S EQUIPMENT STORAGE

EQUIPMENT STORED AT THE SITE SHALL BE ADEQUATELY PROTECTED FROM THE WEATHER.

#### START UP

CONTRACTOR TO LUBRICATE BEARINGS AS REQUIRED, INSTALL BELTS AND CHECK FOR PROPER BELT TENSION AND MOTOR ROTATION, INSTALL ALL SAFETY DEVICES, RELIEF VALVES, AND FILTERS. CONNECT ALL DAMPER LINKAGES AND REMOVE ALL SHIPPING HOLD DOWN CLAMPS AND BLOCKING.

#### SYSTEM BALANCING

OBTAIN THE SERVICES OF AN INDEPENDENT AIR BALANCE AND TESTING AGENCY WHICH SPECIALIZES IN THE TESTING AND BALANCING OF HEATING, VENTILATING, AIR CONDITIONING SYSTEMS; TO TEST; ADJUST AND BALANCE ALL SUPPLY, RETURN, AND EXHAUST SYSTEMS.

ALL WORK TO BE PERFORMED IN COMPLETE ACCORDANCE WITH THE ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION. LATEST ADDITION, THOSE SECTIONS APPLICABLE TO AIR DISTRIBUTION.

#### EQUIPMENT SUPPORT

ALL DEVICES AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT DEPEND UPON CEILING OR WALL SURFACES FOR THEIR SUPPORT. THEY SHALL BE INCAPABLE OF BEING ROTATED OR DISPLACED. THE SUPPORT ATTACHMENT SHALL ADEQUATELY SUPPORT THE WEIGHT OF THE FIXTURE, DEVICE, OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT.

#### TOUCH-UP AND COMPLETION

BUILDER WILL PAINT ALL EXTERIOR EXPOSED HVAC EQUIPMENT INCLUDING DUCTS, PIPES, LOUVERS, ETC. WHICH ARE SCRATCHED OR MARRED DURING CONSTRUCTION.

HVAC CONTRACTOR WILL RESPONSIBLE FOR PROTECTING AND KEEPING CLEAN HVAC EQUIPMENT DURING INSTALLATION. HVAC CONTRACTOR TO TEST EACH SYSTEM OR PIECE OF EQUIPMENT INSTALLED AND REPORT TO BUILDER ANY EQUIPMENT DAMAGE OR MALFUNCTION.

#### ELECTRICAL WIRING

ELECTRICAL CONTRACTOR (E.C.) SHALL PROVIDE ALL POWER WIRING INCLUDING CONDUIT, WIRE AND CONNECTIONS, ALL STARTERS, FUSES, AND DISCONNECTS BY OTHERS EXCEPT WHERE SPECIFIED AS PART OF PACKAGE EQUIPMENT. STARTERS THAT COME WITH EQUIPMENT SHALL BE AUTOMATIC AND HAVE T.O.L. APPROPRIATE COVERS AND INTERLOCKS. ALL MOTORS LESS THAN 1/2 HP ARE 115/60/1 WITH INTEGRAL THERMAL OVERLOAD UNLESS OTHERWISE SPECIFIED.

ELECTRICAL CONTRACTOR SHALL LABEL ALL REMOVABLE PANELS FOR DISCONNECTS IN EQUIPMENT CABINETS WITH NAMEPLATE FURNISHED BY BUILDER (LABELED "ELECTRICAL SERVICE DISCONNECT LOCATED BEHIND THIS PANEL.")

#### SHOP DRAWINGS

SUBMIT TO THE ENGINEER FOR REVIEW IMMEDIATELY AFTER AWARD OF CONTRACT, SIX (6) COPIES OF COMPLETE DESCRIPTIVE INFORMATION AND DIMENSIONAL DATA ON ALL ITEMS OF EQUIPMENT, MATERIALS, AND ACCESSORIES. SUBMIT ALL SHOP DRAWINGS AT ONE TIME. PIECE MEAL SUBMISSION SHALL NOT BE ACCEPTABLE.

"AS BUILT DRAWINGS": CONTRACTOR SHALL BE FURNISHED WITH ONE (1) SET OF BLUE OR BLACK LINE PRINTS, ON WHICH CONTR. SHALL SHOW ANY CHANGES IN THE WORK CAUSED BY UNFORESEEN CIRCUMSTANCES AND THESE DRAWINGS SHALL BE TURNED OVER TO THE ENGINEER IN GOOD ORDER PRIOR TO FINAL ACCEPTANCE OF THE BLDG. ENGINEER IN TURN PREPARE RECORD DRAWINGS FROM INFORMATION FURNISHED BY CONTR.

"PARTS CATALOG": FURNISH TO THE ENGINEER FOR THE OWNER, THREE (3) COMPLETE SETS OF PARTS CATALOGS AND OPERATING INSTRUCTIONS BOUND IN LARGE BINDERS FOR HIS USE. CONTR. SHALL INSTRUCT OWNER'S OPERATOR IN THE PROPER CARE, OPERATION, LUBRICATION, AND MAINTENANCE OF MECHANICAL EQUIPMENT INSTALLED.

#### GUARANTEE AND SERVICE

GUARANTEE ALL EQUIPMENT, MATERIALS, AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FOLLOWING DATE OF ACCEPTANCE. GUARANTEE ALL EQUIPMENT CONTAINING ALL RECIPROCATING REFRIGERATION COMPRESSORS FULL FIVE (5) YEARS COVERING COMPRESSORS, LABOR, AND REFRIGERANT. GUARANTEE DOES NOT INCLUDE NORMAL MAINTENANCE ITEMS.

### 15050 BASIC MATERIALS AND METHODS

#### MECHANICAL IDENTIFICATION

EQUIPMENT STENCILS SHALL IDENTIFY THE TYPE AND SERVICE WITH THE SAME NAMES, NUMBERS, AND/OR LETTERS USED TO IDENTIFY THE EQUIPMENT ON THE DRAWINGS. ALL STARTERS SHALL BE SIMILARLY STENCILED. OMIT IDENTIFICATION OF MINOR HEATING EQUIPMENT LOCATED IN THE ROOM IT SERVES, SUCH AS CONVECTORS, FINNED PIPE, UNIT HEATERS, ETC.

#### VIBRATION ISOLATORS

INSTALL VIBRATION ISOLATORS AS SHOWN ON DETAILS OR AS NOTED ON SCHEDULES.

#### PIPE INSULATION

##### REFRIGERANT SUCTION & CONDENSATE DRAIN LINES

INSTALL 3/4 INCH ARMAFLEX PER MANUFACTURER'S INSTRUCTIONS. ALL OUTSIDE LINES TO BE PAINTED WITH ARMSTRONG OUTDOOR FINISH. FOR LINES IN CEILING PLENUMS USE 1-1/2 INCH GLASS FIBER WITH INTEGRAL VAPOR BARRIER. MUST HAVE A CONTINUOUS SEALED VAPOR BARRIER ON ALL SUCTION LINES.

##### HOT AND COLD WATER DOMESTIC PIPING

INSULATE ALL HW AND CW PIPING IN EXTERIOR WALLS AND IN ATTIC SPACE W/ 3/4 INCH THK. FIBERGLASS INSULATION WITH FRJ JACKET. ALL JOINTS AND ELBOWS SHALL BE NEATLY MITERED AND SEALED COVERED PVC COVER/JACKET.

#### SLEEVES

PIPE SLEEVES: WROUGHT IRON OR STEEL OF SUFFICIENT SIZE FOR PIPING INSTALLATION IN FLOORS, WALLS, BELOW GRADE, AND GRADE BEAMS WHERE PIPING PASSES THROUGH. PVC MAY ONLY BE USED WHERE SPECIFICALLY NOTED.

#### HANGERS AND SUPPORTS

HORIZONTAL PIPING ABOVE GRADE: RIGIDLY SUPPORTED ON MALLEABLE IRON SPLIT RING HANGERS; SUPPORTS FOR TWO OR MORE SYSTEMS OF PIPING RUN PARALLEL AND WITH SAME GRADE, TRAPEZE HANGERS MAY BE USED. USE ALL THREADED RODS FOR HANGERS AND SUPPORTS.

MAXIMUM SPACING OF SUPPORTS AND HANGERS FOR HORIZONTAL RUNS OF PIPE: FIVE (5) FEET FOR SOIL, TEN (10) FOR OTHER SOIL PIPE EXCEPT SUPPORT PIPING 1-1/2 INCH AND SMALLER EVERY SIX (6) FEET. PROVIDE GALVANIZED IRON SHIELDS BETWEEN HANGERS AND PIPE COVERING ON INSULATED PIPING. NO STRAP HANGERS OR WIRE WILL BE ACCEPTED.

SET INSERTS IN CONCRETE FOR HANGER RODS AND DUCT HANGERS WHERE APPLICABLE.

CONTR. SHALL SUPPORT DUCTWORK IN STRICT ACCORDANCE TO SMACNA STANDARDS, REFER TO DUCTWORK SPECIFICATION, THIS SHEET.

#### ACCESS PANELS

FACTORY MADE ACCESS DOORS AND FRAMES, PRIME COAT FINISH, SCREWDRIVER LATCH(S) OF SUITABLE SIZE AS REQUIRED. ACCESS PANELS IN RATED CEILING TO HAVE SAME RATING AS CEILING. ACCESS PANELS IN LINED DUCTWORK TO BE DOUBLE WALL TYPE WITH INSULATION SANDWICHED IN BETWEEN. SAME INSULATION VALUE AS ADJACENT DUCTWORK. WHERE VALVES, DAMPERS, CONTROLS, FIRE DAMPERS, SMOKE DAMPERS AND DETECTORS, REHEAT COILS, ETC. ARE CONCEALED IN WALLS OR NON-ACCESSIBLE CEILINGS, INSTALL FACTORY MADE ACCESS DOORS AND FRAMES.

#### FLOOR, WALL, AND CEILING PLATES (ESCUTCHEONS)

WHERE ANY PIPE OR RISERS PASS EXPOSED THROUGH WALLS, PARTITIONS, FLOORS OR CEILING, USE CHROME PLATED FLOOR OR CEILING PLATES. PLATES SHALL BE LARGE ENOUGH TO COMPLETELY CLOSE HOLE AROUND THE PIPES AND BE ROUND WITH THE LEAST DIMENSION NOT LESS THAN 1-1/2" LARGER THAN THE DIAMETER OF THE PIPE. PLATES SHALL BE SECURED IN AN APPROVED MANNER.

#### CUTTING AND PATCHING

CUT ALL OPENINGS AS REQUIRED FOR THE WORK UNDER THIS SECTION. PATCHING SHALL BE DONE BY THE CRAFT WHOSE WORK IS INVOLVED. FURNISH AND INSTALL ALL NECESSARY SLEEVES, THIMBLES, HANGERS, INSERTS, ETC., AT SUCH TIME AND IN SUCH A MANNER SO AS NOT TO DELAY OR INTERFERE WITH WORK OF OTHER TRADES. NO BEAMS OR JOISTS SHALL BE CUT. AFTER RESURFACING HAS BEEN DONE, ANY FURTHER CUTTING, PATCHING AND PAINTING SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.

### 15400 PLUMBING

#### GENERAL

ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LOUISIANA STATE SANITARY CODE ALONG WITH ALL LOCAL CODES, ORDINANCES, AND REGULATIONS.

SLOPE DRAINAGE LINES, 3" AND SMALLER, 1/4" PER FOOT AND LINES 4" AND LARGER 1/8" PER FOOT.

ALL PIPES THRU WALL TO BE EQUIPPED WITH ESCUTCHEONS, CHROME PLATED.

SANITARY SEWER PIPING: ASTM D2556, PVC-DWV, SCHEDULE 40 SEWER PIPE WITH PVC FITTINGS, SOLVENT WELD JOINTS, ASTM D2564, UNLESS OTHERWISE STATED ON PLANS.

WATER PIPING: COPPER TUBING, ASTM B88 TYPE "L" SOFT DRAWN (UNDERGROUND) AND TYPE "L" HARD (ABOVE SLAB) DRAWN WITH ANSI/ASME B16.29 WROUGHT COPPER FITTINGS, JOINT SILVER SOLDERED NO JOINTS ALLOWED UNDERGROUND.

CONTRACTOR SHALL PROVE EITHER AIR CHAMBERS (MIN. 18" HIGH) OR SHOCK ABSORBERS AT ALL FIXTURES TO PREVENT WATER HAMMER, APPLIES ALL RISER DIAS.

SUPPORT ALL PIPING W/ CLEVIS TYPE HANGERS, EIGHT (8) FOOT CENTERS.

THE AIR CONTRACTOR SHALL PROVIDE NEW WATER SERVICE. CONTRACTOR SHALL OBTAIN PRICES FROM LOCAL WATER COMPANY FOR THEIR REQUIRED SERVICES. PRICES SHALL INCLUDE ALL NECESSARY EQUIPMENT, LABOR, ETC. FOR TIE-INS TO MAIN INCLUDING COST OF BUT NOT LIMITED TO ALL METERS, FEES, PERMITS, ETC.

PLUMBING CONTRACTOR SHALL INSTALL AND CONNECT ALL OWNER FURNISHED EQUIP. REQUIRING SERVICES (WATER OR SANITARY WASTE).

CONTRACTOR SHALL PROVIDE NEW SANITARY SEWER SERVICES. CONTRACTOR SHALL COORDINATE WITH CITY-PARISH FOR LOCATION OF TIE-IN ALONG WITH INCLUDING COSTS OF ALL PERMITS, FEES, ETC. IN HIS BID. BEFORE COMMENCING WORK CHECK ALL INVERT ELEVATIONS FOR SEWER CONNECTIONS, CONFIRM INVERTS AND ENSURE THAT THESE CAN BE PROPERLY CONNECTED WITH PROPER SLOPE FOR DRAINAGE.

CONTRACTOR SHALL PROVIDE EXTERIOR CLEANOUTS EVERY 75 FEET AND AT ALL TURNS.

### 15850 AIR HANDLING

#### GENERAL

ALL RIGHTS AND LEFTS FOR FAN UNITS SHALL BE DETERMINED BY LOOKING INTO THE AIR FLOW, CLOCKWISE AND COUNTERCLOCKWISE ROTATION SHALL BE DETERMINED BY VIEWING FROM THE DRIVE SIDE.

#### EXHAUST FANS

HVAC CONTRACTOR SHALL FURNISH AND SUPPLY EXHAUST FANS OF TYPE, CAPACITY AND SIZED AS SPECIFIED IN THE EXHAUST FAN EQUIPMENT SCHEDULE.

ALL CABINET TYPE FANS SHALL COME EQUIPPED WITH SPEED CONTROLLERS. ALL ROOF MOUNTED FANS SHALL COME WITH PREFABRICATED ROOF CURBS, REFER TO ARCH. DWGS. FOR ROOF SLOPE.

### 15880 AIR DISTRIBUTION

#### DUCTWORK

VERIFY ALL DIMENSIONS. DIMENSIONS SHOWN ARE METAL TO METAL AREAS. ALL DUCTWORK SHALL HAVE MAXIMUM 5% LEAKAGE.

GALVANIZED SHEET METAL DUCTWORK FIRST QUALITY, COLD ROLLED, GALVANIZED, OPEN HEARTH SOFT STEEL SHEETS, CAPABLE OF DOUBLE SEAMING WITHOUT FRACTURE. TRANSVERSE JOINTS ON RECTANGULAR DUCTWORK WITH SLIPS AND DRIVES SHALL HAVE DRIVES BENT OVER AT CORNERS. GAUGES AND JOINT CONNECTORS PER LOCAL CODES, SMACNA, OR ASHRAE RECOMMENDATIONS AND THE FOLLOWING UNLESS OTHERWISE NOTED. FLEX DUCT WILL BE PERMITTED, FOR RUN-OUTS SHORTER THAN 10 FEET AND THE LAST 4 FEET OF A RUN OUT.

ALL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.F. WITH THE FOLLOWING METAL THICKNESS.

##### ROUND DUCTS -- SNAP LOCK

UP TO 12 DIAMETER #26 GAUGE MINIMUM.  
13 INCH TO 18 INCH DIAMETER #24 GAUGE MINIMUM  
19 INCH TO 24 INCH DIAMETER #22 GAUGE MINIMUM

SPIRAL LOCK SEAM ROUND DUCTS MAY BE ONE GAUGE LIGHTER THAN GAUGES SHOWN.

##### RECTANGULAR DUCTS AND PLENUMS

MAXIMUM SIDE UP TO 12 INCH #26 GAUGE MINIMUM  
MAXIMUM SIDE 13 INCH TO 30 INCH #24 GAUGE MINIMUM  
MAXIMUM SIDE 31 INCH TO 50 INCH #22 GAUGE MINIMUM  
MAXIMUM SIDE 51 INCH TO 84 INCH #20 GAUGE MINIMUM  
MAXIMUM SIDE 85 INCH AND UP #18 GAUGE MINIMUM

AS NOTED ON DRAWINGS #16 GAUGE

FOR GREATER THAN 24 INCHES USE REINFORCEMENT AS LISTED IN LATEST SMACNA LOW PRESSURE SHEET METAL CONSTRUCTION GUIDE, SECURELY HUNG, BRACED AND STIFFENED TO PREVENT BREATHING, RATTLING, VIBRATION AND SAGGING.

DUCT SIZES 19 INCHES WIDE AND LARGER WHICH HAVE MORE THAN 10 SQUARE FEET OF UNBRACED PANEL SHALL BE CROSS BROKEN OR BEADED.

SUPPORT ALL DUCTS IN ACCORDANCE WITH SMACNA, EXCEPT WIRE HANGERS SHALL NOT BE PERMITTED. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD.

SEAL ALL DUCTWORK SERVING SYSTEMS HAVING FANS RATED FOR LESS THAN 2 INCHES STATIC PRESSURE IN ACCORDANCE WITH SMACNA, SEAL CLASS C. ALL TRANSVERSE JOINTS, FITTING CONNECTIONS, AND SQUARE OR RECTANGULAR TO ROUND CONNECTIONS IN DUCTWORK SHALL BE SEALED USING ADHESIVE TYPE SLIPS, DUCT SEALER OR HARD CAST. ROUND TO ROUND CONNECTIONS WITH FIRM FIT AND SEALED. SEAL ALL DUCTWORK SERVING SYSTEMS HAVING FANS RATED FOR 2 INCHES STATIC PRESSURE OR GREATER IN ACCORDANCE WITH SMACNA SEAL CLASS A. ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCT WALL PENETRATIONS TO BE SEALED.

BRANCH TAKEOFFS NOT TO EXCEED 45 DEGREES. PROVIDE A VOLUME DAMPER IN EACH AND EVERY BRANCH OF SUPPLY, RETURN AND EXHAUST DUCT. (SEE FLOOR PLANS AND DETAILS).

##### NO FIBERGLASS DUCT WILL BE ALLOWED ON THIS PROJECT

#### CANVAS CONNECTORS

18 OUNCE FIREPROOF CANVAS OR NEOPRENE AT ALL FANS AND HVAC UNITS (EXCEPT ROOF VENTILATORS AND VANE AXIAL FANS WITH COMPANION FLANGES).

#### DUCT INSULATION

INSULATION PRODUCTS PER NFPA-90A WITH 25 OR LESS FLAME SPREAD AND 50 OR LESS SMOKE DEVELOPMENT RATINGS. NO PLASTIC LINERS OR COVERS PERMITTED.

##### DUCT LINER INSULATION

OWENS-CORNING AEROFLEX OR EQUIVALENT MANVILLE LINACOUSTIC OR KNAUF DUCT LINER M FIRE RESISTANT MATTE FACED GLASS FIBER DUCT LINER, 1-1/2 LB DENSITY, CERTIFIED EROSION RESISTANT DUCT LINER FOR DUCT AIR VELOCITIES UNDER 2000 F/F/M. K APPROX. 0.24 AT 50 DEGREES F. DUCT LINERS SHALL BE ADHERED TO THE SHEET METAL WITH A 100% COVERAGE OF ADHESIVE, AND ALL EXPOSED LEADING EDGES AND ALL TRANSVERSE JOINTS COATED WITH ADHESIVE. DUCT LINER SHALL BE CUT TO ASSURE OVERLAPPED AND COMPRESSED LONG- LONGITUDINAL CORNER JOINTS. THE DUCT LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS WHICH SHALL COMPRESS THE DUCT LINER SUFFICIENTLY TO HOLD IT FIRMLY IN PLACE. FOR VELOCITIES TO 2000 F/P/M.

FASTENERS SHALL START WITHIN 3 INCHES OF THE UPSTREAM TRANSVERSE EDGES OF THE DUCT LINER AND 3 INCHES FROM THE LONGITUDINAL JOINTS AND SHALL BE SPACED A MINIMUM OF 12 INCHES O.C. AROUND THE PERIMETER OF THE DUCT, EXCEPT THAT THEY MAY BE A MAXIMUM OF 12 INCHES FROM A CORNER BREAK. ELSEWHERE THEY SHALL BE A MAXIMUM OF 18 INCHES O.C. EXCEPT THAT THEY SHALL BE PLACED NOT MORE THAN 6 INCHES FROM A CORNER BREAK.

##### DUCT WRAP INSULATION

OWENS-CORNING FIBERGLASS ALL-SERVICE FACED DUCT WRAP INSULATION, OR EQUAL. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP INSULATION SHALL BE TIGHTLY BUTTED. IF DUCTS ARE RECTANGULAR, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. SEAMS SHALL BE STAPLED APPROX. 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES.

SEAL SEAMS WITH PRESSURE-SENSITIVE TAPE MATCHING THE FACING, WHERE RECTANGULAR DUCTS ARE 24 INCHES IN WIDTH OR GREATER, DUCT WRAP INSULATION SHALL BE ADDITIONALLY SECURED TO THE BOTTOM OF THE DUCT WITH MECH. FASTENERS SUCH AS PINS AND SPEED CLIP WASHERS, SPACED ON 18 INCH CENTERS (MAXIMUM) TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF WRAP INSULATION SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. SEAL ALL TEARS, PUNCTURES, AND OTHER PENETRATIONS OF THE DUCT WRAP INSULATION FACING WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM.

##### DUCT INSULATION LOCATION

##### EXHAUST DUCTS

WRAP ALL RECTANGULAR AND ROUND EXHAUST DUCTS AND EXHAUST PLENUMS AT ROOF EXHAUST FANS WITH 1-1/2 INCH THICK DUCT WRAP INSULATION. WRAP FOR ENTIRE LENGTH. LINE ALL EXHAUST GRILLE BOOTS WITH 1/2" DUCT LINER.

##### SUPPLY AIR DUCTS

WRAP ALL RECTANGULAR SUPPLY AIR DUCTS WITH 2" WRAP. LINEAR DIFFUSER BOOTS W/ 1" THICK DUCT LINER. WRAP ALL ROUND SUPPLY AIR DUCTS AND DUCTS 4" OR LESS IN ANY DIMENSION WITH 2" DUCT WRAP INSULATION.

##### RETURN AIR DUCTS

WRAP ALL RECTANGULAR DUCTS WITH 2" DUCT WRAP. GRILLE BOOTS W/ 1" THICK DUCT LINER. INSTALL RETURN GRILLE ACOUSTICAL PLENUMS FURNISHED BY BUILDER. WRAP ALL ROUND DUCTS AND DUCTS 4" OR LESS IN ANY DIMENSION WITH 2" THICK DUCT WRAP INSULATION.

### DUCT ACCESSORIES

##### TURNING VANES

TURNING VANES TO BE DOUBLE WALL FABRICATED PER SMACNA STANDARDS.

##### VOLUME DAMPERS

MANUAL VOLUME DAMPERS, FABRICATED PER SMACNA STANDARDS, W/ LOCKING QUADRANT. PROVIDE MULTIBLADE DAMPERS FOR ALL DUCTS 12" DEEP AND LARGER.

BALANCING DAMPERS WIDTH OF THE BRACH TAKEOFF. PROVIDE CEILING ACCESS FOR OPERATING DAMPERS. LEAVE ALL DAMPERS OPEN. VOLUME DAMPERS WHERE SHOWN ON DRAWING.

FOR ROUND DUCTS, HART & COOLEY #607 AND #608, OR EQUIVALENT, WITH 2 BEARING POINTS AND HANDLE AND WING NUT ASSEMBLY.

##### BACK DRAFT DAMPERS

INSTALL PER MANUFACTURER'S INSTRUCTIONS. SEE SCHEDULE INTERLOCKED, FELT EDGED BLADE, ADJUSTABLE SPRING LOADED. PREFCO PHL, OR EQUIVALENT.

##### DUCT ACCESS PANELS

FOR MAINTENANCE, CLEANING, RESETTNG, OR EXAMINATION. AIR TIGHT HINGED ACCESS DOORS W/ FELT OR TUBULAR NEOPRENE GASKET, WITH CAM LATCHES (NOT SCREWS). KARP OR EQUIVALENT. INSULATED AT INSULATED DUCTS.

##### GRILLES AND DIFFUSERS

ALL GRILLES AND DIFFUSERS SHALL BE AS INDICATED ON THE PLANS AND SHALL BE EQUIPPED W/ OPPOSED BLADE DAMPERS AND HAVE A WHITE BAKED ON ENAMEL FINISH UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.

#### FILTERS

FILTERS FURNISHED W/ ALL AIR HANDLING UNITS AND FURNACES. SEE SCHEDULES. SPARE FILTERS PROVIDED WHERE INDICATED IN SCHEDULE. HVAC CONTRACTOR IS REQ'D DURING AND AT THE COMPLETION OF THE BUILDING CONSTRUCTION TO PROVIDE NEW REPLACEMENT AIR FILTERS OF EQUAL EFFICIENCY AT ALL HVAC UNITS USED DURING CONSTRUCTION.

### HVAC CONTROLS

##### SEQUENCE OF OPERATION

AIR CONDITIONING SYSTEM (TYPICAL): PROVIDE PROGRAMMABLE ROOM TYPE THERMOSTATS TO CYCLE THE CONDENSING UNIT ON THE COOLING CYCLE AND THE HEATING CYCLE. REFER TO SCHEDULE AS REQ'D TO MAINTAIN SPACE CONDITIONS. AIR HANDLING UNIT SHALL BE WIRED FOR AND ELECTRICALLY INTERLOCKED SUCH THAT THE CONDENSING UNIT MAY NOT RUN NOR THE ELECTRIC HEATER BE ENERGIZED UNLESS THE EVAPORATOR FAN IS OPERATIONAL. THERMOSTAT SHALL BE EQUIPPED WITH "HEAT-OFF-COOL" AND "ON-AUTO" SELECTOR SWITCHES AND SHALL BE WIRED FOR EITHER CONSTANT FAN OPERATION OR AUTOMATIC FAN OPERATION ON BOTH THE HEATING AND COOLING CYCLE. IF AUX. DRAIN PAN FILLS W/ WATER, FLOAT SWITCH SHALL DE-ENERGIZE CONDENSING UNIT.

RELEASED FOR  
CONSTRUCTION  
As Noted on Plans Review

Development Services Department  
Lee's Summit, Missouri  
03/12/2025


02/24/2025  
DATE

REVISION

1  
No.

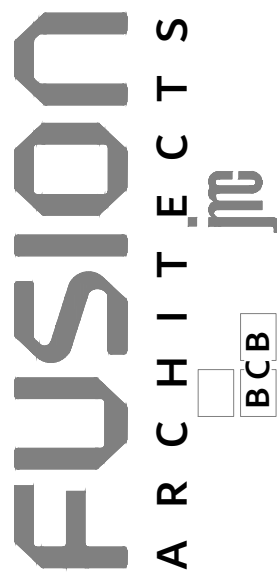
REVISION

02/24/25  
DATE



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Scales as stated hereon are valid on the original drawing only.  
These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes.  
Will generally administer construction.


By: \_\_\_\_\_



3488 BRENTWOOD DRIVE  
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BATON ROUGE, LA 70809  
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# New Construction For Take 5 Oil Change

(NO ADDRESS ASSIGNED) NE M 291 Hwy  
Lee's Summit, Missouri 64086



PROJECT NO:  
PHASE:  
DATE:  
PROJ. ARCHITECT:  
MECHANICAL/  
PLUMBING  
SPECIFICATIONS  
SHEET NO.  
**MP1.00**  
OF



1 ELECTRICAL GENERAL NOTES

- ROUTE NEW CONDUITS & WIRING CONCEALED IN WALLS & CEILING WHERE POSSIBLE - COORDINATE INSTALLATION OF EXPOSED CONDUIT & WIRING WITH THE ARCHITECT.
- ELECTRICAL SERVICE TO BE FURNISHED TO NEW HVAC UNITS AS FURNISHED BY THE MECHANICAL CONTRACTOR.
- ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE.
- BEFORE INSTALLATION, THE ELECTRICAL CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS TO THE ENGINEER FOR REVIEW COVERING PROPOSED LOCATIONS, MOUNTING, AND ROUTING FOR ALL CONDUITS, SERVICES, FITTINGS, GROUND RODS, SUPPORTS, ETC.
- CONTRACTOR IS RESPONSIBLE FOR OVER-CURRENT PROTECTIVE DEVICE SHORT CIRCUIT, COORDINATION, AND ARC-FLASH STUDIES.
- MATERIALS AND MANUFACTURERS NOTED ON DRAWINGS ARE TO BE USED AS BASIS OF DESIGN TO ESTABLISH QUALITY AND PERFORMANCE STANDARDS AND SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS WILL BE CONSIDERED WHERE SUFFICIENT PRODUCT INFORMATION IS PROVIDED TO MAKE A PROPER EVALUATION. APPROVAL OF A SUBSTITUTION IS AT THE SOLE DISCRETION OF THE PROFESSIONAL.
- THE CONTRACTOR SHALL SUBMIT COPIES OF THE PRODUCT DATA, SHOP DRAWINGS, ETC. OF ALL MATERIALS NOTED ON THE DRAWINGS. ALL SUBMITTED PRODUCT DATA, SHOP DRAWINGS, ETC. SHALL BE MARKED WITH THE NAME OF THE PROJECT AND SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE MATERIAL HAS BEEN CHECKED BY THE CONTRACTOR.
- DRAWINGS SPECIFIC TO THIS TRADE DO NOT LIMIT THE RESPONSIBILITY OR WORK REQUIRED BY THE CONTRACT DOCUMENTS. REFER TO DRAWINGS AND SPECIFICATIONS OF OTHER TRADES FOR COMPLETE INFORMATION PRIOR TO BID.
- WHERE CONFLICTS EXIST AMONG DRAWINGS, SPECIFICATIONS, AND EQUIPMENT SCHEDULES, THE MOST STRINGENT REQUIREMENT OR QUANTITY SHALL APPLY. NOTIFY THE ARCHITECT/ENGINEER OF ALL CONFLICTS FOR RESOLUTION OR INTERPRETATION.
- NO EQUIPMENT SHALL BE ORDERED OR INSTALLED UNTIL THE PROJECT ENGINEER HAS RECEIVED A COPY STAMPED "NO EXCEPTIONS TAKEN." "NO EXCEPTIONS TAKEN" DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMANCE WITH THE CONTRACT, EXTEND TO QUANTITIES OR DIMENSIONS, IMPLY THAT THE EQUIPMENT CAN BE INSTALLED OR OPERATE SATISFACTORILY, THAT THE EQUIPMENT CONTAINS ALL NECESSARY COMPONENTS, OR THAT IT WILL COORDINATE WITH OTHER APPROVED ITEMS.
- OMISSION FROM THIS SHEET OF ANY ITEM SHOWN ELSEWHERE IN THE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ANY ASSOCIATED WORK.
- COORDINATE INSTALLATION OF NEW ITEMS AND EQUIPMENT WITH THE OWNER'S REPRESENTATIVE AND THE WORK OF OTHER CONTRACTORS. THE CONTRACTOR SHALL INCUR ALL COSTS ASSOCIATED WITH THE RELOCATION OF EQUIPMENT CONFLICTING WITH NEW WORK BY OTHER DISCIPLINES THAT HAS NOT BEEN COORDINATED.
- COORDINATE ALL ASPECTS OF NEW SERVICE WITH UTILITY COMPANY AND INCLUDE ALL COSTS IN BID.
- WARNING TAPE SHALL BE INSTALLED 12 TO 18 INCHES BELOW GRADE OVER ALL CONDUITS.
- PROVIDE 1/4" MINIMUM DIAMETER PULL ROPE. PULL ROPE SHALL NOT BE NYLON STRING.
- FOR SERVICE ENTRANCE CONDUITS, UTILIZE LONG RADIUS (36") CONDUIT BENDS.
- ALL CONDUIT RISERS FROM UNDERGROUND SHALL HAVE RIGID METAL ELLS AND RISERS.
- PRIOR TO CONSTRUCTION, VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES. AVOID DISTURBANCE OF EXISTING UTILITIES NOT INCLUDED IN THIS PROJECT.
- ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.
- ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- PROVIDE CONDUIT SEALS AS REQUIRED WHERE PENETRATING NEC CLASSIFIED AREAS
- VERIFY EXACT LOCATION, VOLTAGE, PHASE, AMPERAGE, ETC. OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ORDERING ELECTRICAL GEAR.

2 LIGHTING GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- VERIFY THE EXACT LOCATION OF ALL LIGHTING SWITCHES WITH THE ARCHITECT PRIOR TO ROUGH-IN.
- VERIFY THE EXACT LOCATION OF ALL LIGHTING FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ROUGH-IN.
- ROUTE NEW CONDUIT AND WIRING CONCEALED IN WALLS AND ABOVE CEILING WHERE POSSIBLE - COORDINATE INSTALLATION OF EXPOSED CONDUIT AND WIRING WITH THE ARCHITECT.
- VERIFY THE EXACT LOCATION OF CEILING MOUNTED OCCUPANCY SENSORS WITH THE MANUFACTURER PRIOR TO INSTALLATION FOR MAXIMUM PERFORMANCE.
- EMERGENCY FIXTURES AND EXIT FIXTURES SHALL BE CONNECTED TO NEAREST CIRCUIT AHEAD OF SWITCH.
- WALL MOUNT TYPE "Z" FIXTURES ABOVE DOOR AS SHOWN ON DRAWINGS. COORDINATE WITH ARCHITECT.
- MOUNT TYPE "EM" FIXTURES 8'-0" AFF UNLESS OTHERWISE NOTED.
- VERIFY THE CEILING TYPES FOR ALL LIGHT FIXTURES TO BE FLUSH MOUNTED OR SUSPENDED AND ADJUST FIXTURE MOUNTING TYPES IN ACCORDANCE WITH THE CEILING TYPE, AS REQUIRED.
- ALL VANITY FIXTURES SHALL BE MOUNTED WITH 0'-3" OF SPACE BETWEEN THE BOTTOM OF THE FIXTURE AND THE TOP OF THE MIRROR.
- VERIFY THE EXACT MOUNTING LOCATION FOR ANY PHOTOELECTRIC CELLS WITH THE ARCHITECT PRIOR TO ROUGH-IN. ALL PHOTOELECTRIC CELLS MUST FACE NORTH.
- CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES/SWITCHES/DIMMERS WITH LIGHTING FIXTURES AND BALLASTS/DRIVERS PRIOR TO SUBMITTAL.
- COORDINATE LOCATION OF LIGHT FIXTURES IN MECHANICAL ROOMS WITH DIVISION 15/23 PLANNED EQUIPMENT LOCATION AND DUCT INSTALLATION. WALL MOUNT LIGHTS OR PROVIDE PENDANT MOUNTING AS REQUIRED TO ILLUMINATE THE SPACE.

3 POWER SYMBOL LEGEND

	POWER PANEL		VOICE/DATA/POWER FLUSH FLOOR BOX
	FUSED SAFETY DISCONNECT SWITCH		DUPLEX RECEPTACLE FLUSH FLOOR BOX
	JUNCTION BOX		QUADRAPLEX RECEPTACLE FLUSH FLOOR BOX
	JUNCTION BOX FOR MOTORIZED DAMPER		DATA OUTLET PROVIDE 3/4" C. BACK TO ROUTER IN OFFICE.
	DUPLEX RECEPTACLE		DATA OUTLET PROVIDE 3/4" C. BACK TO ROUTER IN OFFICE.
	ABOVE-COUNTER DUPLEX RECEPTACLE (42" AFF)		DATA/VOICE OUTLET PROVIDE 3/4" C. BACK TO ROUTER IN OFFICE.
	GFI DUPLEX RECEPTACLE		VOICE OUTLET PROVIDE 3/4" C. BACK TO ROUTER IN OFFICE.
	ABOVE-COUNTER GFI DUPLEX RECEPTACLE		DATA FLUSH FLOOR BOX
	QUADRAPLEX RECEPTACLE		ABOVE COUNTER DATA OUTLET
	ABOVE-COUNTER QUADRAPLEX RECEPTACLE		CABLE TV OUTLET
	SPECIAL PURPOSE RECEPTACLE		MOTOR
			WIRELESS ACCESS POINT
			CT CABINET
			AUTOMATIC TRANSFER SWITCH
			MANUAL TRANSFER SWITCH
			GENERATOR
			ABOVE-SLAB CONDUIT
			BELOW-SLAB CONDUIT

4 LIGHTING & SWITCHING SYMBOL LEGEND

	2X4 LED FIXTURE; "A" DENOTES TYPE		PHOTOELECTRIC CELL
	2X2 LED FIXTURE; "A" DENOTES TYPE		SINGLE POLE TOGGLE SWITCH
	LINEAR LED FIXTURE; "A" DENOTES TYPE		3-WAY TOGGLE SWITCH
	DOWNLIGHT LED FIXTURE; "A" DENOTES TYPE		LINEAR SLIDE DIMMER SWITCH
	TRACK LED FIXTURE; "A" DENOTES TYPE		3-WAY LINEAR SLIDE DIMMER SWITCH
	EMERGENCY LIGHTING UNIT		MOTOR RATED TOGGLE SWITCH
	EXIT/EMERGENCY LIGHTING UNIT		WALL MOUNT OCCUPANCY SENSOR
	SINGLE-SIDED EXIT LIGHT		CEILING MOUNT OCCUPANCY SENSOR
	DOUBLE-SIDED EXIT LIGHT		CEILING MOUNT VACANCY SENSOR
	SINGLE-SIDED DIRECTIONAL EXIT LIGHT		
	DOUBLE-SIDED DIRECTIONAL EXIT LIGHT		

5 ABBREVIATION LEGEND

	KEYNOTE	AFF	ABOVE FINISHED FLOOR	E	EXISTING TO REMAIN
WP	WEATHERPROOF	GFI	GROUND-FAULT INTERRUPTER	D	EXISTING TO BE DEMOLISHED
SIGN	PROVIDE J-BOX AND CONNECTION FOR EXTERIOR SIGNS. COORDINATE EXACT ROUGH-IN LOCATION WITH SIGN VENDOR PRIOR TO ROUGH-IN.	NL	FIXTURE TO BE ALWAYS ON, SWITCHED VIA BREAKER.		

ALL SYMBOLS, ABBREVIATIONS, AND NOTES ABOVE ARE TYPICAL AND ARE NOT NECESSARILY USED IN THESE CONSTRUCTION DOCUMENTS

6 DATA GENERAL NOTES

- PROVIDE 1" CONDUIT AND TWO (2) CAT 6 CABLES AT EACH DATA OUTLET SHOWN. ROUTE TO ABOVE CEILING AND ROUTE TO TELEPHONE BACKBOARD IN IT ROOM. COIL UP 10' OF SLACK FOR TERMINATIONS BY OWNER.
- OWNER SHALL PROVIDE THE WALL MOUNT DATA RACK, ALL ITEMS INCLUDED IN THE DATA RACK, AND ANY NECESSARY TELEPHONE EQUIPMENT.
- PLYWOOD FOR BACKBOARDS SHALL BE 0'-1" AC INDOOR GRADE, FIRE RETARDANT, AND PAINTED AS SPECIFIED.
- COMMON BOND RACKS, PATCH PANELS, CABLE SHIELDS, PROTECTORS, AND THE BUILDING MAIN ELECTRICAL GROUNDING CONDUCTORS SHALL BE, AT MINIMUM, #6 AWG INSULATED AND STRANDED COPPER. FASTENERS SHALL BE RECESSED AND ANCHORED.
- SUBMIT DIGITAL PHOTOGRAPHS OF ALL TERMINATIONS TO MAIN ELECTRICAL SERVICE GROUNDING MEANS.
- ALL BACKBOARDS SHALL BE EQUIPPED WITH D-RINGS SPACED AT 1'-0" APART AROUND ALL EDGES OF THE PLYWOOD TO SUPPORT CABLE AND WIRE.
- CAT 6 CABLES FOR DATA OUTLETS SHALL HAVE BLUE JACKETS AND CAT 6 CABLES FOR VOICE OUTLETS SHALL HAVE WHITE JACKETS.

LIGHTING FIXTURE SCHEDULE										
NOTES:										
** FINISH TO BE SELECTED BY ARCHITECT										
MARK	DESCRIPTION	LAMPS	VOLTS	LOAD	TEMP.	LUMENS	MOUNTING	MANUFACTURER	CATALOG NO.	COUNT
A	8' LED STRIP LIGHT WITH SEMI-FROSTED LENS. PROVIDE SUSPENSION HARDWARE AS REQUIRED.	LED	UNV	125 VA	4,000	14,000	CEILING/SUSPENDED	LITHONIA LIGHTING	ZL1D-L96-14000LM-FST-MVOLT-35K-80CRI	5
AE	8' LED STRIP LIGHT WITH SEMI-FROSTED LENS. PROVIDE SUSPENSION HARDWARE AS REQUIRED.	LED	UNV	125 VA	4,000	14,000	CEILING/SUSPENDED	LITHONIA LIGHTING	ZL1D-L96-14000LM-FST-MVOLT-35K-80CRI-E7W	3
B	4' LED STRIP LIGHT WITH SEMI-FROSTED LENS. PROVIDE SUSPENSION HARDWARE AS REQUIRED.	LED	UNV	60 VA	4,000	7,000	CEILING/SUSPENDED	LITHONIA LIGHTING	ZL1D-L48-7000LM-FST-MVOLT-35K-80CRI	4
BE	4' LED STRIP LIGHT WITH SEMI-FROSTED LENS. PROVIDE SUSPENSION HARDWARE AS REQUIRED.	LED	UNV	60 VA	4,000	7,000	CEILING/SUSPENDED	LITHONIA LIGHTING	ZL1D-L48-7000LM-FST-MVOLT-35K-80CRI-E7W	1
C	UP/DOWN WET LOCATION LISTED WALL SCONCE	LED	UNV	30 VA	4,000	1080 UP/DOWN	WALL/SURFACE	METEOR	LANCE4-30-408-UNV-NOD-30-15-**-**	4
EM	EMERGENCY LIGHTING UNIT EQUIPMENT WITH TWO ADJUSTABLE LED HEADS. INTEGRAL BATTERY WITH SELF-DIAGNOSTICS.	LED	UNV	2 VA	N/A	N/A	CEILING/WALL	LITHONIA LIGHTING	ELM6L	5
F	EXTERIOR WET LOCATION LISTED WALL PACK	LED	UNV	25 VA	4,000	2,200	WALL/SURFACE	LITHONIA LIGHTING	WSQLED-P1-40K-S2-MVOLT-BBW-**-E10WH	1
FE	EXTERIOR WET LOCATION LISTED WALL PACK WITH EMERGENCY BATTERY BACKUP	LED	UNV	25 VA	4,000	2,200	WALL/SURFACE	LITHONIA LIGHTING	WSQLED-P1-40K-S2-MVOLT-BBW-**-E10WH	1
G	PARKING LOT FIXTURE ON 25' SSS POLE. PROVIDE ALL MOUNTING HARDWARE AS REQUIRED. PROVIDE HOUSESIDE SHIELD	LED	UNV	60 VA	4,000	6,500	25' SSS POLE	LITHONIA LIGHTING	DSX1 LED 12 40K T3M MVOLT HS	3
G1	(2) HEAD PARKING LOT FIXTURE ON 25' SSS POLE. PROVIDE ALL MOUNTING HARDWARE AS REQUIRED. PROVIDE HOUSESIDE SHIELD. LOAD AND LUMENS ARE THE TOTAL FOR BOTH HEADS.	LED	UNV	120 VA	4,000	13,000	25' SSS POLE	LITHONIA LIGHTING	DSX1 LED 12 40K T3M MVOLT HS	1
H	6" LED DOWNLIGHT	LED	UNV	20 VA	3,500	1,500	RECESSED	LITHONIA LIGHTING	LDN6-35K-15-LO6-LSS-MVOLT	1
X	COMBO UNIT EXIT SIGN WITH RED LETTERS AND TWO ADJUSTABLE LED HEADS. PROVIDE WITH NUMBER OF FACES AND DIRECTIONAL ARROWS AS INDICATED.	LED	UNV	1 VA	N/A	N/A	WALL/CEILING	LITHONIA LIGHTING	ECR LED	2

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
01/17/25  
03/12/2025

01/17/25  
11/22/25

Revised Per City Comment  
Revised Per City Comment

2  
1

DATE  
REVISION

STATE OF MISSOURI  
LONDON DAVID BURNS  
PE-2022008568  
02.24.25  
PROFESSIONAL ENGINEER

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Scales as stated hereon are valid on the original drawing only.  
These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.  
By: *Matthew Sargent*

FUSION ARCHITECTS

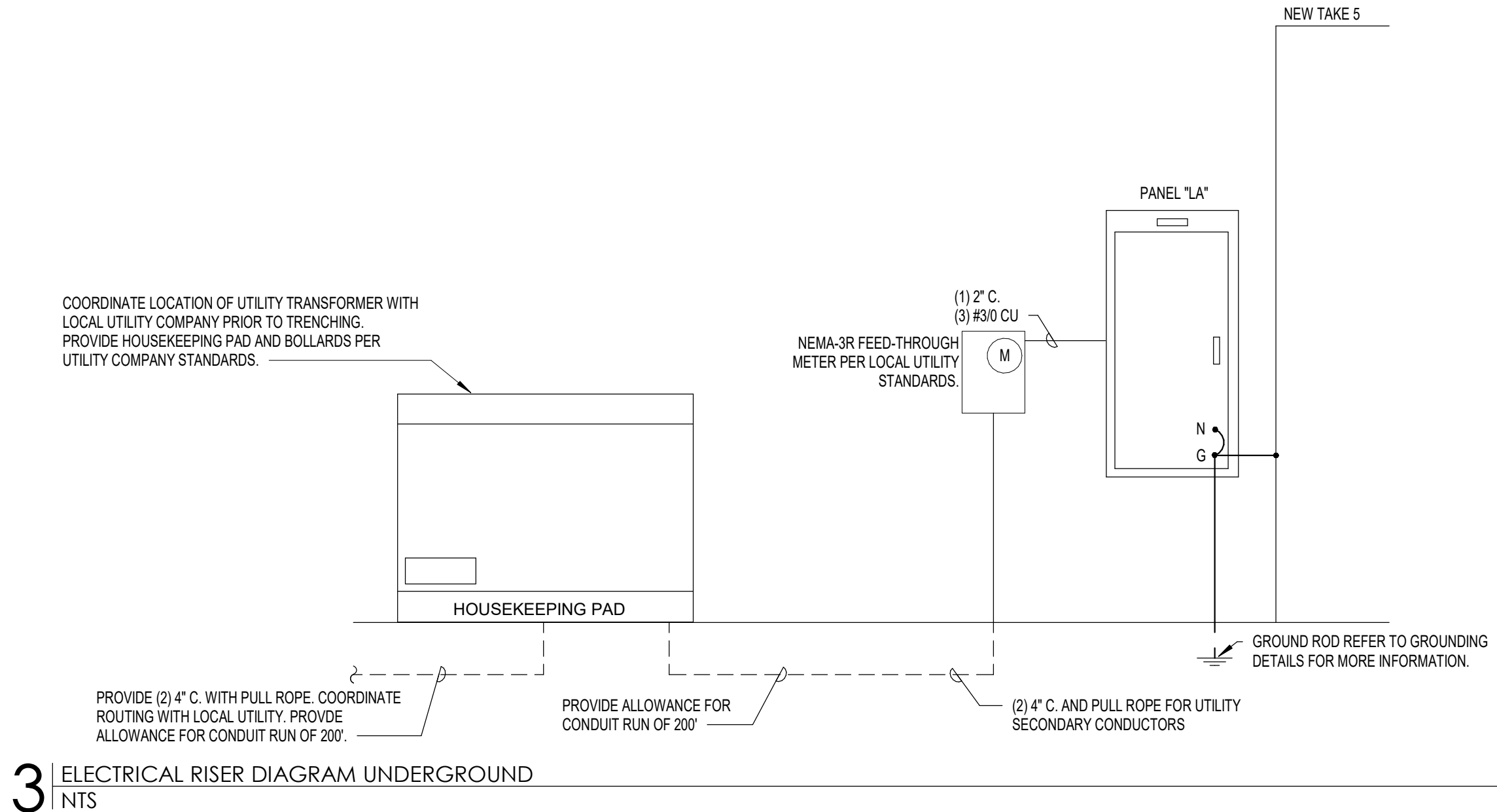
3488 BRENTWOOD DRIVE  
BATON ROUGE, LA 70809  
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New Construction For  
Take 5 Oil Change

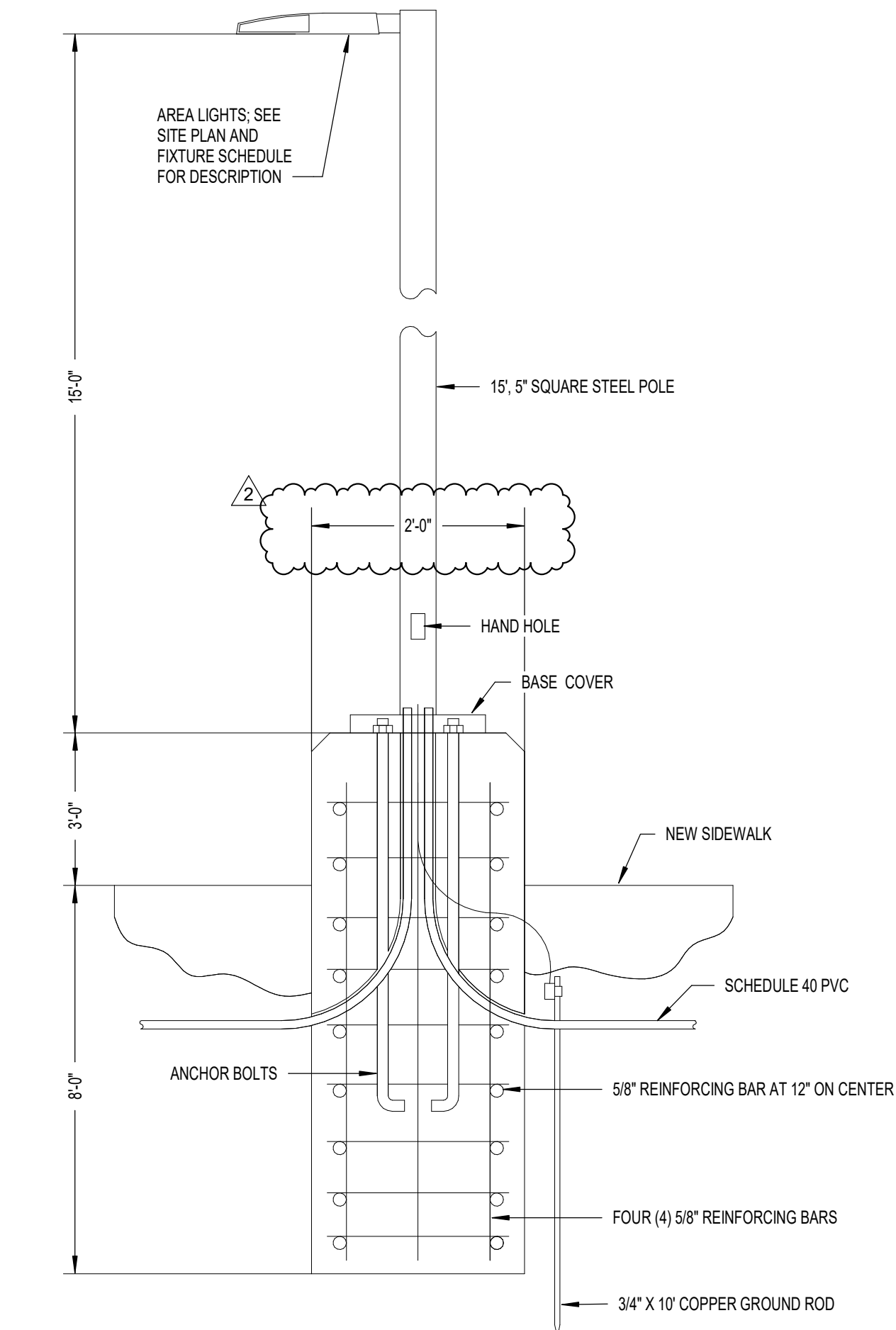
400 NE M State Route 291  
Lee's Summit, Missouri 64086

PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD  
ELECTRICAL COVER SHEET  
SHEET NO.  
**E1.00**  
OF

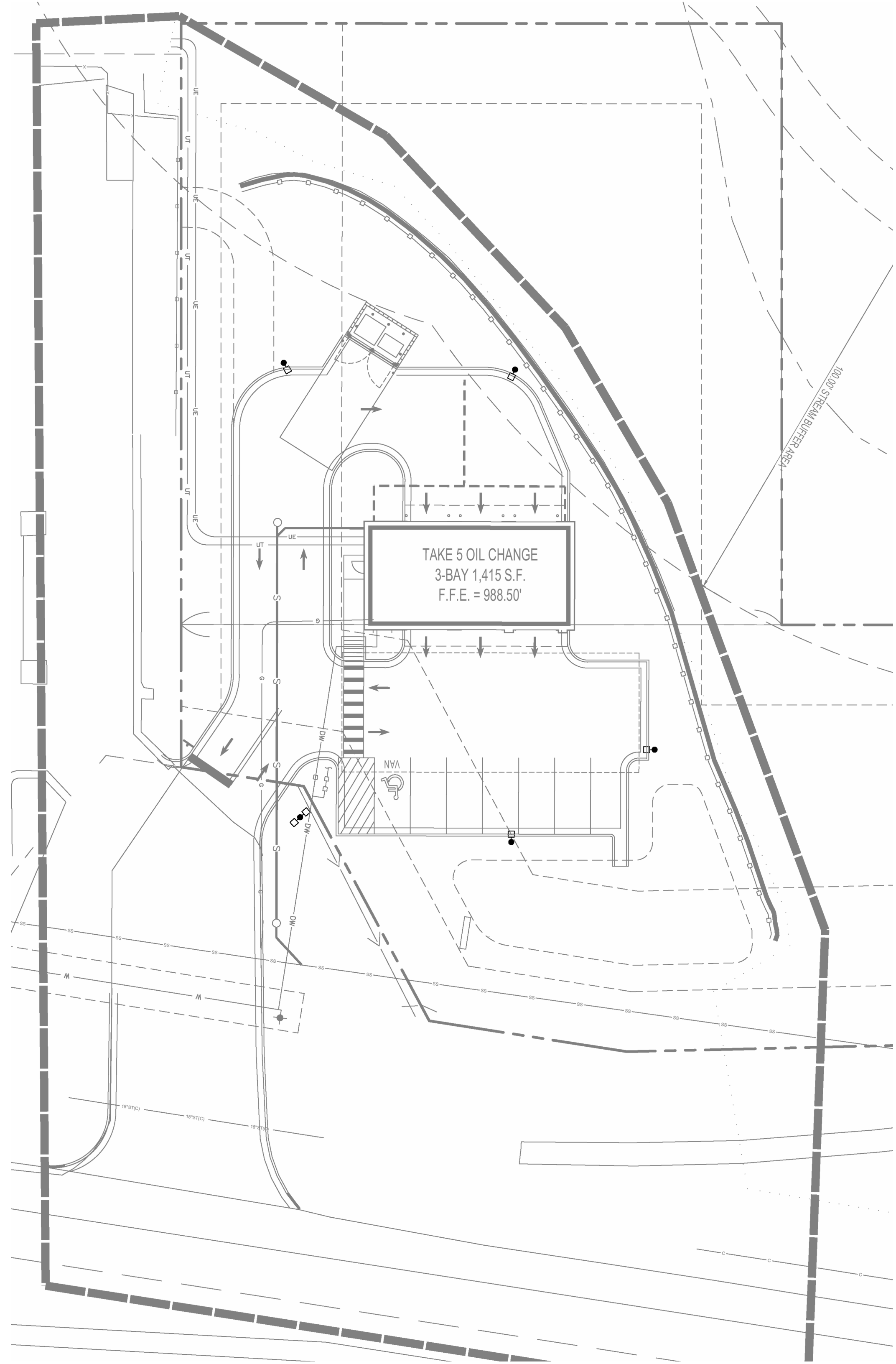




3 ELECTRICAL RISER DIAGRAM UNDERGROUND  
NTS



2 DETAIL - PARKING LOT POLE  
N.T.S.



1 ELECTRICAL SITE PLAN  
1" = 20'-0"

New Construction For  
Take 5 Oil Change

400 NE M State Route 291  
Lee's Summit, Missouri 64086



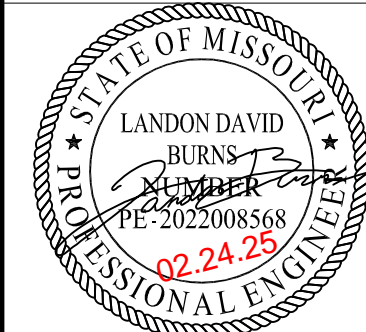
PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD

ELECTRIAL SITE  
PLAN

SHEET NO.

E1.01

OF

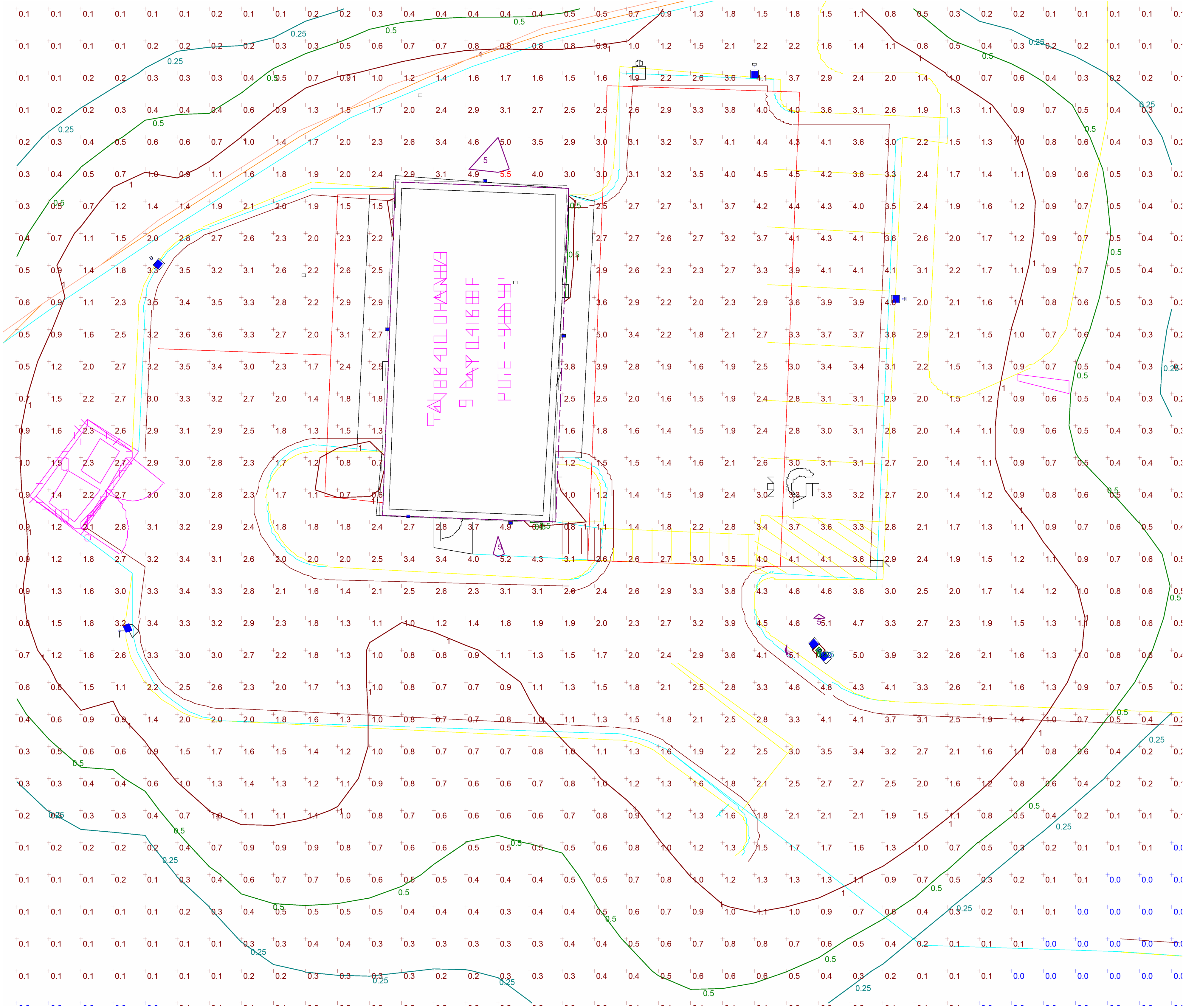


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By: *Matthew Sargent*

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2			
1			
No.			





1 SITE PHOTOMETRIC PLAN  
NTS

PHOTOMETRIC PLAN GENERAL NOTES

1. ALL CALCULATION POINTS WITHIN THE RED CONTOUR LINE ARE GREATER THAN OR EQUAL TO 1 FC.
2. ALL CALCULATION POINTS WITHIN THE GREEN & RED CONTOUR LINE ARE GREATER THAN 0.5 FC AND LOWER THAN 1 FC.

New Construction For  
Take 5 Oil Change

PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD

PHOTOMETRIC  
PLAN  
SHEET NO.  
**E1.02**  
OF



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DATE	DATE
01/17/25	11/22/24

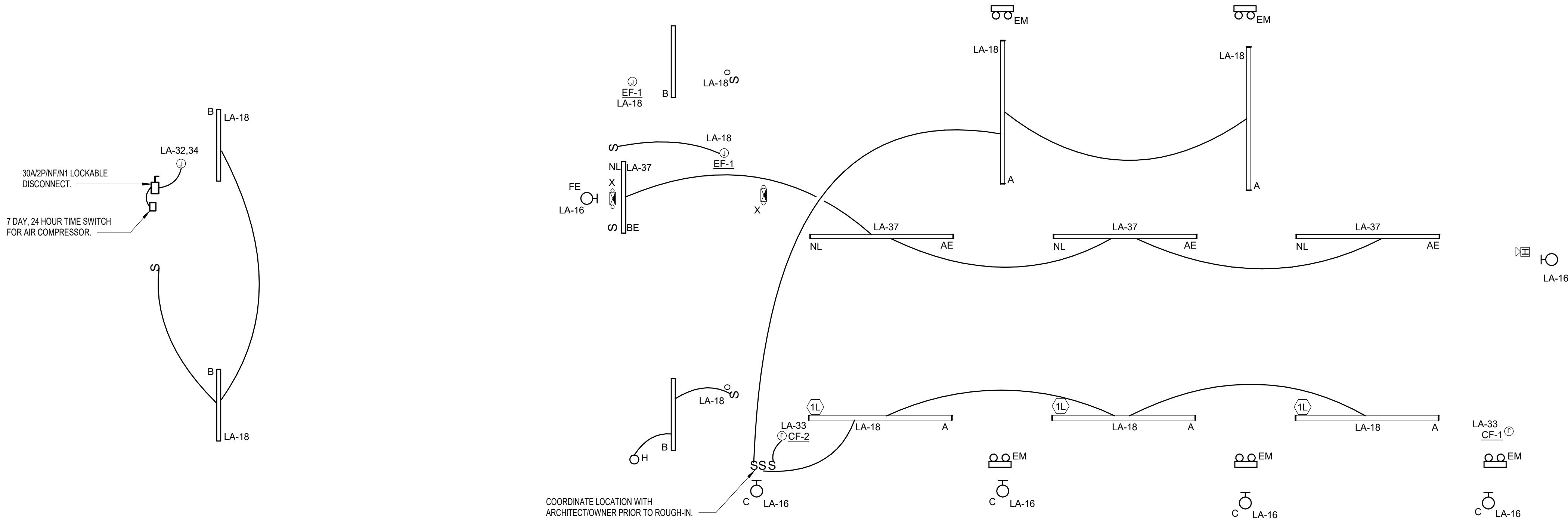
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Lee's Summit, Missouri  
03/12/2025

Development Services Department  
Lee's Summit, Missouri  
03/12/2025



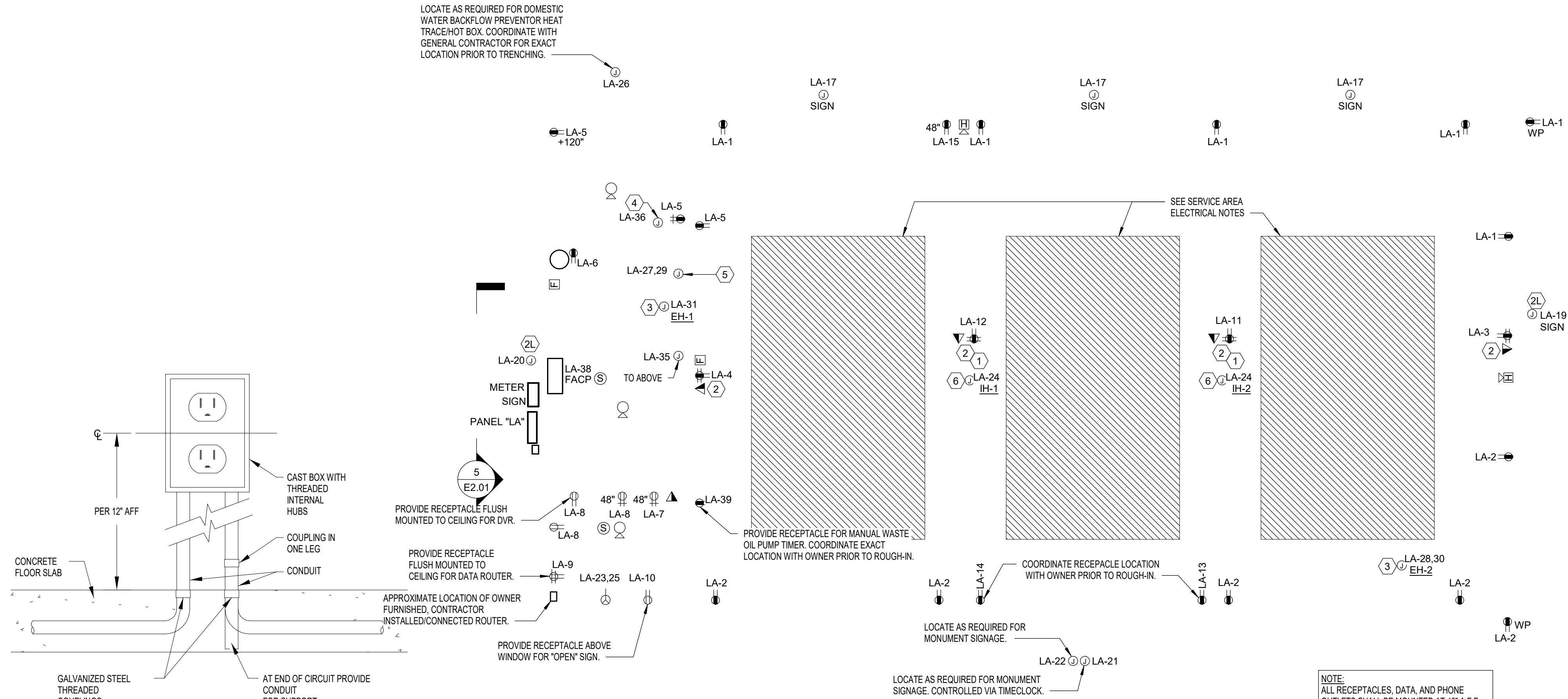
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C:\Users\jlab\Documents\23-138 TAKE 5 LEE'S SUMMIT R24 (new) breg5EE5.dwt



3 ELECTRICAL MEZZANINE PLAN  
1/4" = 1'-0"

1 ELECTRICAL LIGHTING PLAN  
1/4" = 1'-0"



4 RECEPTACLE STUB-UP DETAIL  
NTS

2 ELECTRICAL FLOOR PLAN  
1/4" = 1'-0"

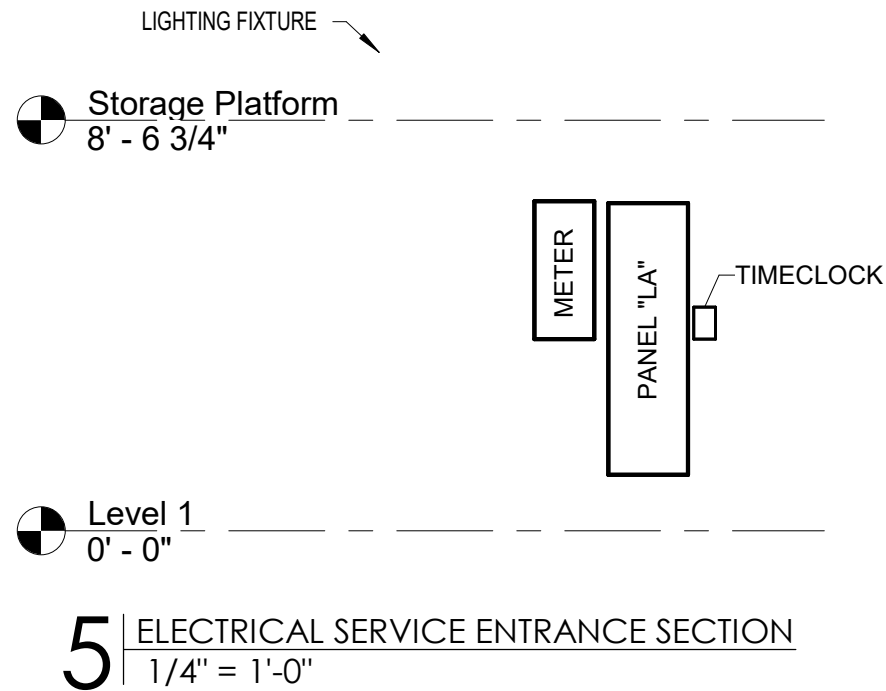
ALL EXTERIOR LIGHTING SHALL BE  
CONTROLLED VIA TIMECLOCK

LIGHTING KEYED NOTES:

- COORDINATE EXACT LOCATION OF LIGHT FIXTURE WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
- SIGNAGE CONTROLLED VIA TIMECLOCK

ELECTRICAL KEYED NOTES:

- INSTALL PODIUM DATA JUNCTION BOX ADJACENT TO PODIUM RECEPTACLE. FIELD VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF UNDERGROUND CONDUIT. INSTALL PODIUMS 8'-6" FROM FRONT OF PIT AND TO FACE FRONT OF BUILDING.
- PROVIDE (4) 3/4" C. BACK TO DATA ROUTER. PROVIDE DEDICATED 3/4" C. FOR EACH DATA RUN BACK TO ROUTER. ROUTE BELOW SLAB AND TURN UP AT ROUTER. PROVIDE JUNCTION BOX AT ROUTER. FIELD VERIFY EXACT LOCATION AND CONDUIT ROUTING PRIOR TO INSTALLATION.
- COORDINATE ELECTRICAL REQUIREMENTS WITH DIVISION 23 PRIOR TO PURCHASE.
- LOCATE AS REQUIRED FOR INSTANT WATER HEATER. COORDINATE EXACT LOCATION WITH DIVISION 22 PRIOR TO ROUGH-IN. PROVIDE 30A SPST HEAVY DUTY TOGGLE SWITCH FOR LOCAL MEANS OF DISCONNECT.
- LOCATE AS REQUIRED FOR INSTANT WATER HEATER. COORDINATE EXACT LOCATION WITH DIVISION 22 PRIOR TO ROUGH-IN. PROVIDE 30A/2P/NF/N1 DISCONNECT ADJACENT TO HEATER FOR LOCAL MEANS OF DISCONNECT.
- MAKE CONNECTION TO GAS HEATERS FURNISHED AND INSTALLED BY DIVISION 23.



ELECTRICAL NOTES FOR SERVICE BAYS

BUILDING IS CONSIDERED A "MINOR REPAIR GARAGE" PER NEC ARTICLE 511.2 FLAMMABLE LIQUIDS HAVING A FLASH POINT BELOW 38°C (100°F) SUCH AS GASOLINE, OR GASEOUS FUELS SUCH AS NATURAL GAS OR HYDROGEN, WILL NOT BE DISPENSED OR TRANSFERRED.

ACCORDING TO NEC ARTICLE 511.3(D) THE FOLLOWING LOCATIONS IN THE SERVICE AREAS SHALL BE CONSIDERED CLASS 1 DIVISION 2 LOCATIONS:  
1) FLOOR AREAS UP TO A LEVEL OF 18" ABOVE THE PITS AND EXTENDING A DISTANCE 3' HORIZONTALLY FROM THE EDGE OF ANY PIT.  
2) PIT AREAS UP TO THE FLOOR LEVEL.

NOTE: CEILING AREAS ARE UNCLASSIFIED SINCE LIGHTER THAN AIR GASSES (SUCH AS NATURAL GAS AND HYDROGEN) WILL NOT BE TRANSFERRED.

ALL ELECTRICAL WORK IN THESE CLASSIFIED AREAS SHALL CONFORM TO ARTICLE 511 FOR CLASS 1 DIVISION 2 LOCATIONS.

PROVIDE SEALS IN CONDUIT AND CABLE SYSTEMS PER ARTICLE 501 IN CLASSIFIED AREAS.

NOTE: OFFICE, RESTROOM AND OIL STORAGE AREAS ARE UNCLASSIFIED SINCE WALLS ARE USED TO EFFECTIVELY CUT OFF SEPARATE THESE ROOMS FROM AREAS WHERE FLAMMABLE VAPORS ARE LIKELY TO BE RELEASED AND THESE AREAS ARE TYPICALLY OUTSIDE THE 3' HORIZONTAL DISTANCE FROM PIT EDGE.

NOTE:  
ALL RECEPTACLES, DATA, AND PHONE  
OUTLETS SHALL BE MOUNTED AT 48" A.F.F.  
UNLESS OTHERWISE NOTED.

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Lee's Summit, Missouri  
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11/22/23	1	Revised Per City Comment	

STATE OF MISSOURI  
LONDON DAVID  
BURNS  
PE-2022008568  
02-24-25  
PROFESSIONAL ENGINEER

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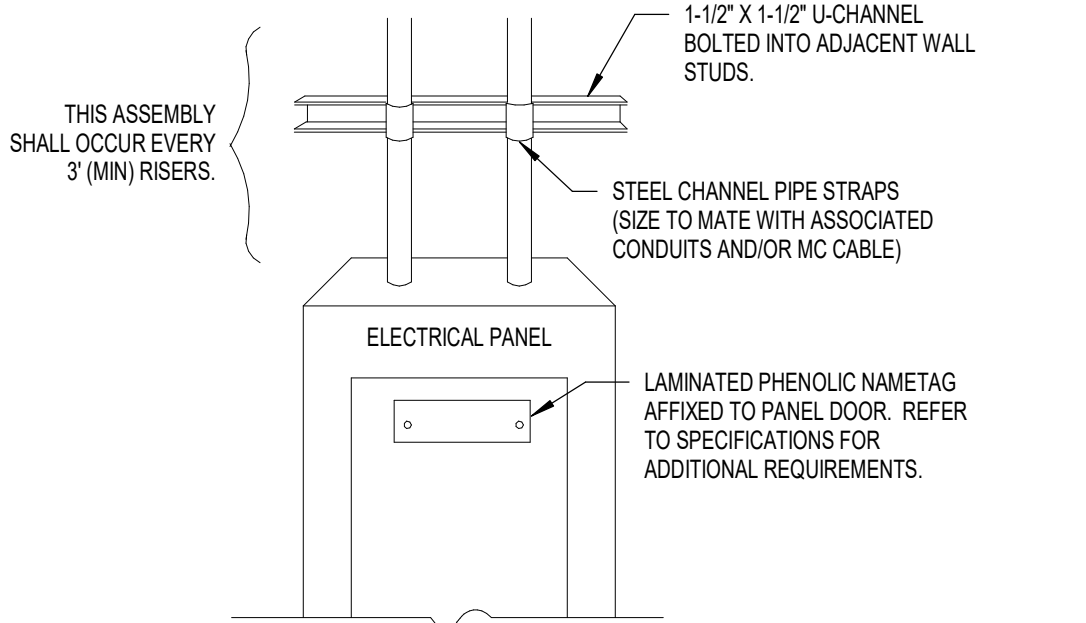
New Construction For  
Take 5 Oil Change  
400 NE M State Route 291  
Lee's Summit, Missouri 64086

TAKE 5  
OIL CHANGE

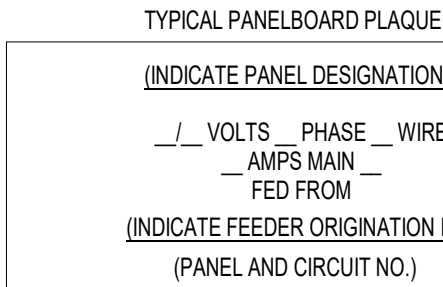
PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD  
ELECTRICAL PLANS  
SHEET NO.  
E2.01  
OF



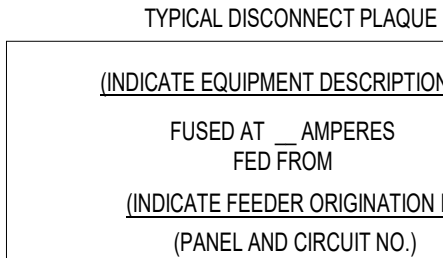
Branch Panel: LA																	
Location:						Volts: 120/240 Single						A.I.C. Rating: 22,000					
Supply From:						Phases: 1						Mains Rating: 200 A					
Mounting: SURFACE						Wires: 3						MCB Rating: 200 A					
Enclosure: NEMA-3R																	
Number of Sections: 1																	
Panel Schedule Notes:																	
CKT	Trip	Poles	Wire	GRND	Conduit	Circuit Description	A		B		Circuit Description	Conduit	GRND	Wire	Poles	Trip	CKT
1	20 A	1	2#12	#12	3/4"	RECEPT BAY	1260 VA	1260 VA			RECEPT BAY	3/4"	#12	2#12	1	20 A	2
3	20 A	1	2#12	#12	3/4"	RECEPT WORKSTATION			360 VA	360 VA	RECEPT WORKSTATION	3/4"	#12	2#12	1	20 A	4
5	20 A	1	2#12	#12	3/4"	RECEPT TOILET	540 VA	180 VA			RECEPT STORAGE	3/4"	#12	2#12	1	20 A	6
7	20 A	1	2#12	#12	3/4"	RECEPT OFFICE			1200 VA	540 VA	RECEPT OFFICE	3/4"	#12	2#12	1	20 A	8
9	20 A	1	2#12	#12	3/4"	ROUTER	360 VA	180 VA			OPEN SIGNAGE	3/4"	#12	2#12	1	20 A	10
11	20 A	1	2#12	#12	3/4"	RECEPT WORKSTATION			500 VA	500 VA	RECEPT WORKSTATION	3/4"	#12	2#12	1	20 A	12
13	20 A	1	2#12	#12	3/4"	RECEPT BAY	500 VA	500 VA			RECEPT BAY	3/4"	#12	2#12	1	20 A	14
15	20 A	1	2#12	#12	3/4"	RECEPT BAY			500 VA	459 VA	LIGHTING EXTERIOR	3/4"	#12	2#12	1	20 A	16
17	20 A	1	2#12	#12	3/4"	SIGNAGE	1500 VA	968 VA			LIGHTING INTERIOR	3/4"	#12	2#12	1	20 A	18
19	20 A	1	2#12	#12	3/4"	SIGNAGE			500 VA	500 VA	SIGNAGE	3/4"	#12	2#12	1	20 A	20
21	20 A	1	2#10	#10	1"	PYLON SIGN	500 VA	500 VA			PYLON SIGN	3/4"	#10	2#10	1	20 A	22
23	20 A	2	3#12	#12	3/4"	MSAHU-1			1500 VA	400 VA	GARAGE HEATERS	3/4"	#12	2#12	1	20 A	24
25	--	--	--	--	--	--	1500 VA	500 VA			HEAT TRACE/HOT BOX	1"	#10	2#10	1	20 A	26
27	20 A	2	2#12	#12	3/4"	WH-2			2080 VA	750 VA	EH-2	3/4"	#12	3#12	2	15 A	28
29	--	--	--	--	--	--	2080 VA	750 VA			--	--	--	--	--	--	30
31	20 A	1	2#12	#12	3/4"	EH-1			750 VA	1500 VA	COMPRESSOR	3/4"	#12	2#12	2	20 A	32
33	20 A	1	2#12	#12	3/4"	FANS	1500 VA	1500 VA				3/4"	#10	2#10	1	20 A	34
35	20 A	1	2#12	#12	3/4"	J-BOX IN ATTIC			500 VA	3600 VA	WH-1	3/4"	#10	2#10	1	30 A	36
37	20 A	1	2#12	#12	3/4"	NIGHT LIGHTS	435 VA	500 VA			FACP	3/4"	#12	2#12	1	20 A	38
39	20 A	1	2#12	#12	3/4"	TIMER			180 VA	--	SPACE	--	--	--	1	--	40
41	20 A	1	--	--	--	SPARE	0 VA	--			SPACE	--	--	--	1	--	42
43	20 A	1	--	--	--	SPARE			0 VA	--	SPACE	--	--	--	1	--	44
45	20 A	1	--	--	--	SPARE	0 VA	--			SPACE	--	--	--	1	--	46
47	20 A	1	--	--	--	SPARE			0 VA	--	SPACE	--	--	--	1	--	48
49	20 A	1	--	--	--	SPARE	0 VA	0 VA			SPARE	--	--	--	1	20 A	50
51	20 A	1	--	--	--	SPARE			0 VA	0 VA	INTERNAL SPD	--	--	--	2	30 A	52
53	20 A	1	--	--	--	SPARE					--	--	--	--	--	--	54
							16084 VA		16661 VA								
							134 A		139 A								
Load Classification							Connected Load		Demand Factor		Estimated Demand		Panel Totals				
Other							14660 VA		100.00%		14660 VA						
Receptacle							8920 VA		100.00%		8920 VA		Total Conn. Load: 32723 VA				
Lighting							3747 VA		125.00%		4684 VA		Total Est. Demand: 33604 VA				
HVAC							5650 VA		100.00%		5650 VA		Total Conn.: 136 A				
													Total Est. Demand: 140 A				
Load Summary Notes:																	



1 | DETAIL - CONDUIT SUPPORT  
N.T.S.

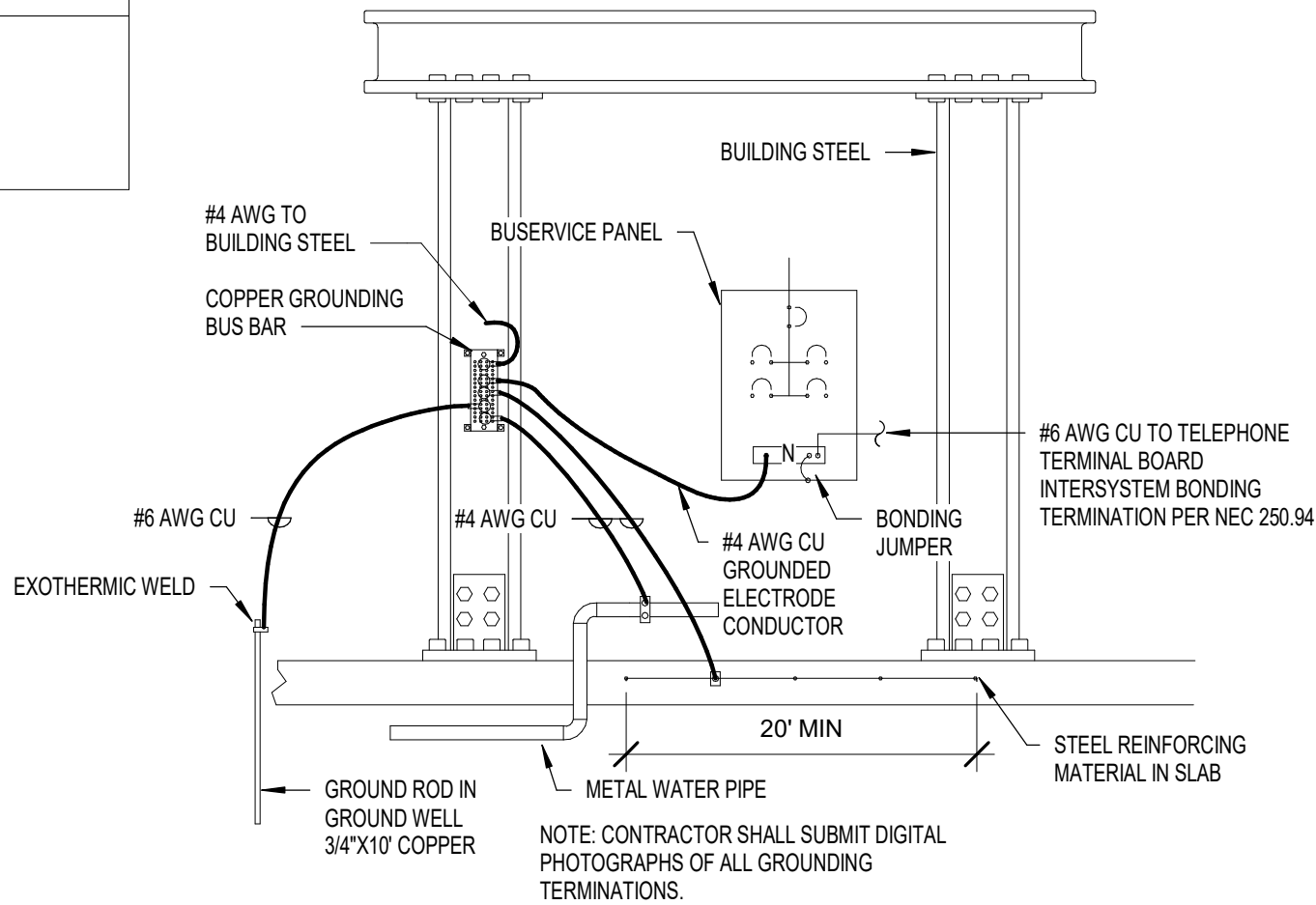


SEE SPECIFICATIONS FOR MATERIALS, COLORS SIZE LETTERING, ETC.

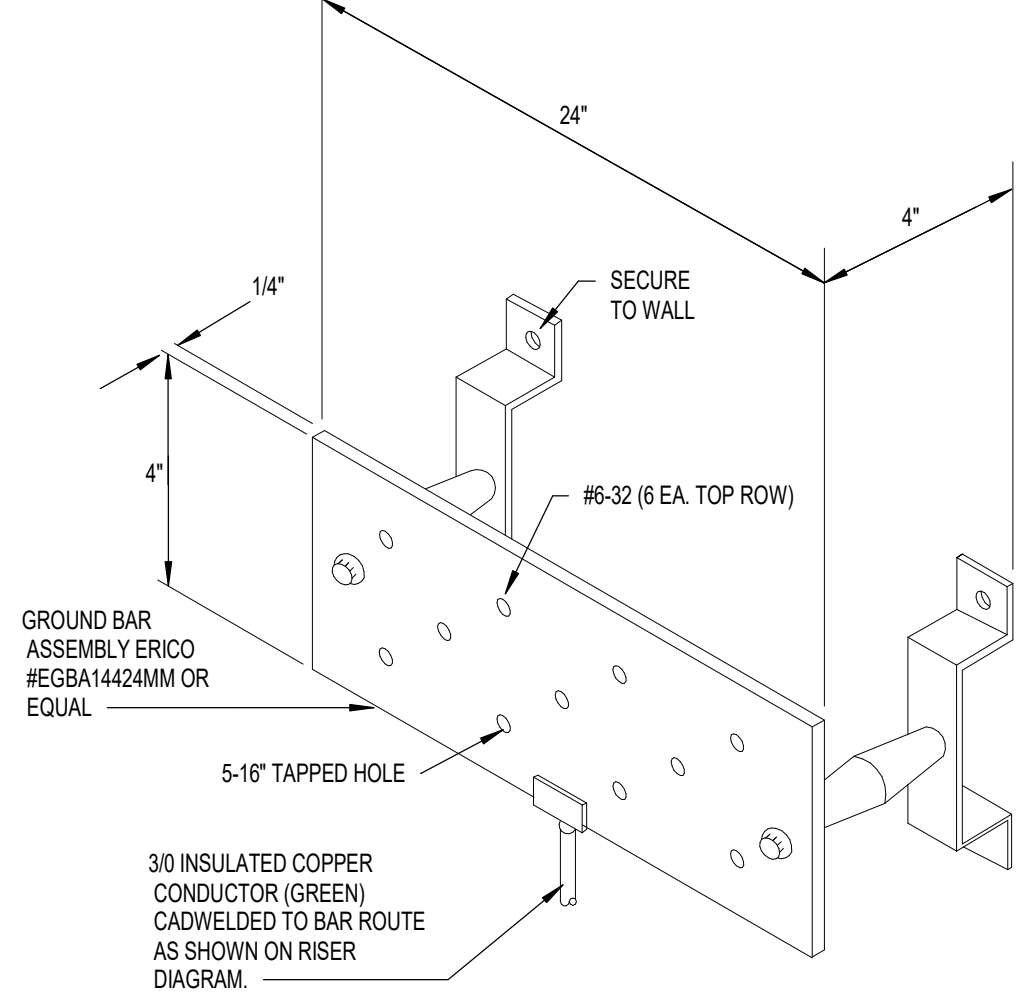


ATTACH PLAQUES USING INDUSTRIAL GRADE DOUBLE FACE ADHESIVE.

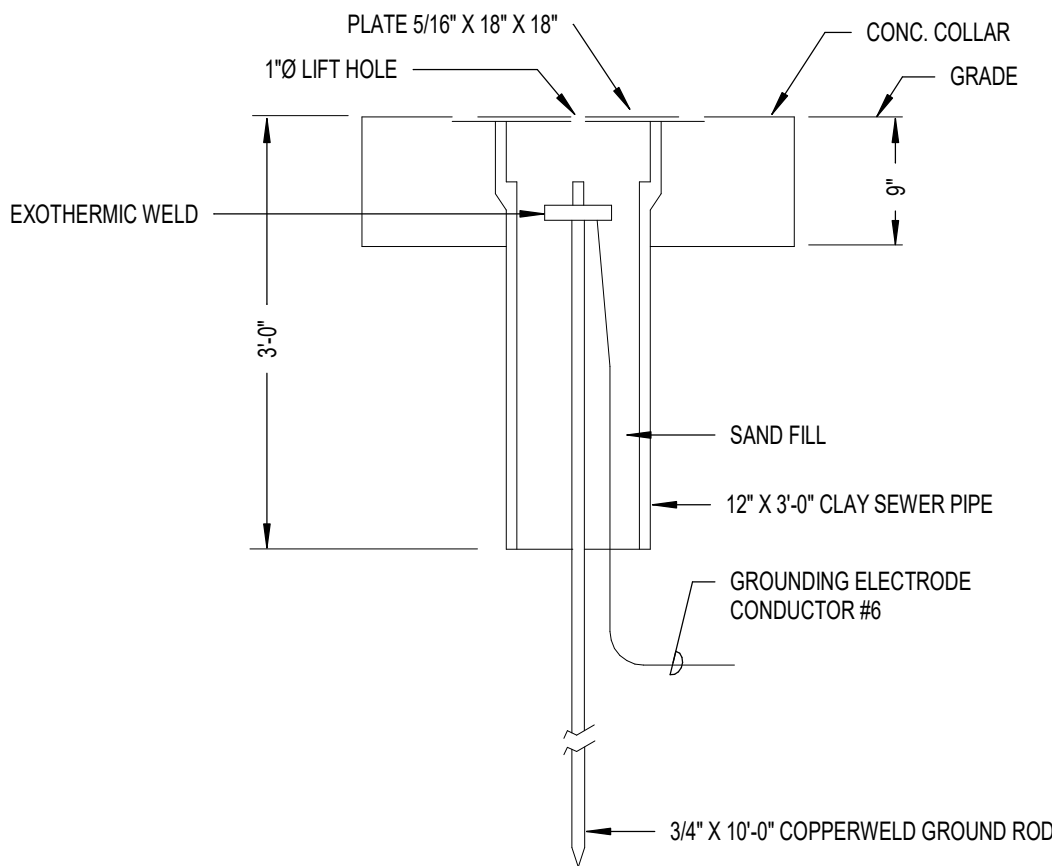
2 | DETAIL - EQUIPMENT SIGNAGE  
N.T.S.



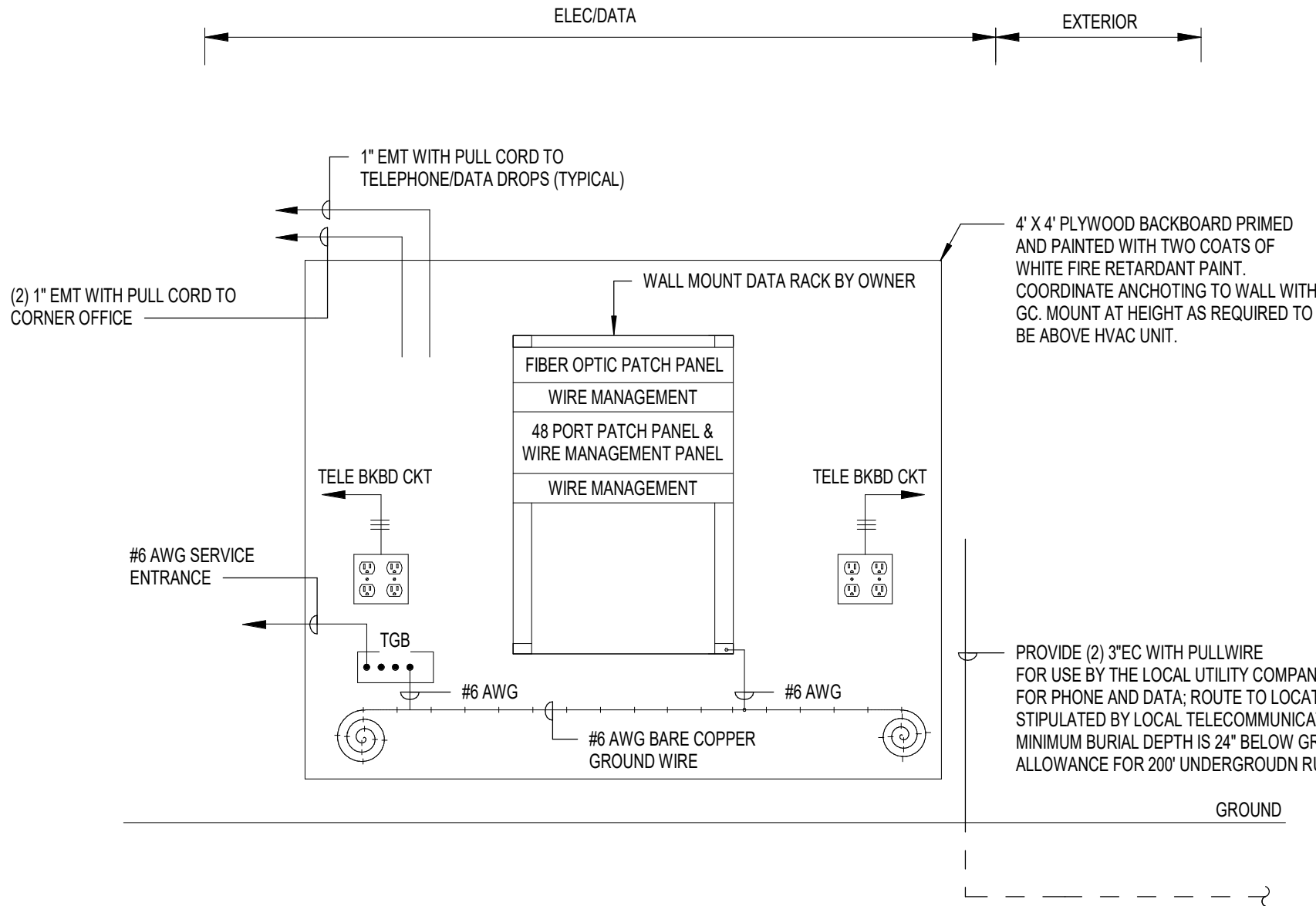
3 | DETAIL - GROUNDING TO BLDG STEEL  
N.T.S.



4 | DETAIL - COPPER GROUNDING BUSBAR  
N.T.S.



6 | DETAIL - GROUNDWELL  
N.T.S.



5 | DETAIL - TELEPHONE BACKBOARD  
N.T.S.

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PROJ. ARCHITECT: MRD  
ELECTRICAL DETAILS  
SHEET NO.  
**E3.01**  
OF



PART 1.0 GENERAL

1.1 GENERAL CONDITIONS

- A. The General Conditions and Supplementary General Conditions are a part of this section of these Specifications. The Contractor is cautioned to read and be thoroughly familiar with all provisions of the General Conditions. These conditions shall be complied with in every aspect. The word "shall" where used, is to be understood, as mandatory and the word "should" as advisory. "May" is used in the permissive sense.

1.2 MINIMUM STANDARDS

- A. Applicable rules of the National Electrical Code apply as a minimum standard for this contract, but do not replace or reduce any specific requirement herein.

1.3 LAWS, PERMITS AND FEES

- A. The entire electrical work shall comply with the rules and regulations of the State, including the State Fire Marshal and State Board of Health, whether so shown on plans or not.

PART 2.0 PRODUCTS

2.1 RACEWAYS AND FITTINGS

- A. Raceways permitted on this project shall be hot dipped galvanized rigid steel conduit; electrical metallic tubing (EMT); flexible metallic tubing; and liquid-tight flexible metal conduit. All conduits shall be new and shall bear the inspection label of the Underwriter's Laboratories, Inc. Metallic conduit shall be metalized. Non-metallic conduit shall be schedule 40 PVC.
- B. Fittings for conduit shall be an approved type specially designed and manufactured for their purpose. EMT fittings shall be water tight, compression type. Setscrew connector fittings shall not be permitted.
- C. Galvanized conduit furnished in accordance with these specifications shall be of mild steel piping, galvanized inside and outside, and shall conform in all respects to the American Standard Association rigid Steel Conduit Specification C80.1-1959 and Underwriter's Laboratories Specifications.

2.2 OUTLET AND SWITCH BOXES

- A. Outlet boxes in concealed conduit systems shall be flush mounted. Boxes shall be galvanized steel of sufficient size to accommodate devices shown and shall have raised covers where required to meet requirements of NEC Article 314. All boxes shall be stamped, one piece, galvanized steel, of proper size and shape for conduits entering them, and shall be UL listed and NEC approved for the intended use.
- B. Boxes for lighting fixtures shall be 4 inches octagon, not less than 1-1/2 inches deep, with fixtures stud fastened through from back box. Outlet boxes for switches in concealed work shall be standard switch boxes of required number of gangs. Outlet boxes for receptacles, telephone, and communication use in concealed work shall be 4 inch square, not less than 1-1/2 inches deep.
- C. Boxes are not to be installed back to back in walls. Do not use long, extended boxes that would effectively couple light and sound between adjoining spaces.

2.3 WIRE (600 VOLT AND BELOW)

- A. All conductors used in the work shall be of soft drawn annealed copper having a conductivity of not less than 98% of that of pure copper. Conductors shall be standard code gauge in size, insulated and shall have insulation rated for use at 600 volts. Unless noted otherwise or specified, insulation shall be type MC, THW, THWN, or THHN for sizes up to and including No. 2 AWG. Insulation for wire sizes larger than No. 2 AWG shall be type THW, XHHW, or THHN. Lighting fixture wire shall be heat resistant type TF (150oC) with 300-volt insulation minimum. Wires shall be of the single conductor type. Sizes No. 8 AWG and larger shall be stranded. Sizes No. 12 thru No. 14 shall be single strand solid copper.
- B. Throughout the system, all conductors shall be identified as to the phase and voltage of the system by color-coding in accordance with NEC 210.5. Color-coding shall be continuous the full length of the wire with surface printing at regular intervals on all conductors and for neutral conductors.
- 2.4 CIRCUIT BREAKER PANELBOARDS
- A. Panelboards shall be sized as shown on the drawings and schedules, and shall be the bolted breaker panelboard type. All panelboard bussing shall be copper. Load centers are not acceptable.
- B. Panel board shall be dead front safety type with main breaker or main lugs, as required by code. Panel boards shall have single, feed through, or double lugs to accommodate feeder conductors. Panel boards with neutrals shall have a neutral buss and a neutral bar insulated from the enclosure for terminating feeder and branch circuit neutral conductors. Each panel board shall have an equipment grounding bar connected to the cabinet for terminating feeder and branch circuit ground conductors.
- C. All breakers shall be bolt on type. Panelboards for 120/208 volt service shall be GE type NLAB, Square D type NQOD, Siemens type CDP\_7, Cutler-Hammer POW-R-LINE series, or equal. Panelboards for 480/277 volt service shall be Square D type NEHB, Siemens type Sentron, Cutler-Hammer POW-R-LINE series, or equal.

2.5 WIRING DEVICES

- A. Unless otherwise specified, all outlets including voice/data outlets shall be fitted with cover plates. Cover plates shall be standard size, uniform in design and finish for switches, receptacles and other outlets requiring cover plates.
- B. Wiring devices shall be as listed. The color of device shall match color of outlet cover plate. It shall be the responsibility of the Contractor to provide plugs, receptacles, and fittings required for any equipment furnished or installed or connected under the contract. Color as selected by the Architect.
- |   | Leviton | P&S     | Hubbell   |
|---|---------|---------|-----------|
| Toggle Switches: 20A 120/277V   |         |         |           |
| Single pole   | 1221-I  | 20AC1-I | 1221-I    |
| Three-way   | 1223-I  | 20AC3-I | 1223-I    |
| Duplex Receptacle: 20A, 125V, NEMA 5-20R                              | 5362-I  | 5362-I  | 5363-I    |
| Ground Fault Circuit Interrupter: 20A, 125V, Feed Through, NEMA 5-20R | 6899-I  | 2091-S  | GF-5362-I |
- C. Quad receptacles shall be 20 amp, 125 volt rated, NEMA 5-20R, with two (2) duplex receptacles or single four-plex device.

2.6 VOICE & DATA STATION CABLES

- A. Voice and data station wiring shall be Category 6 enhanced (Cat 6e) communications wire and cable. Station Cable shall be four-pair, unshielded, twisted pair, inside-station cable, and shall be constructed of solid 24 gauge annealed copper. Each conductor shall be insulated with a continuous layer of fluorinated ethylene propylene (FEP). The sheath shall be all weather, flame resistant, polyvinyl chloride. Station wire shall be constructed of 4 twisted pair sharing one sheath. Cable shall have Category 6e transmission characteristics as specified by ANSI/EIA/TIA-568-B2.1. Cables routed in air plenum shall have a sheath and conductor insulation constructed of material so as to be classified as type CMP as defined by the NEC 800-3(b)(3). Voice cable shall be GRAY. Data station cables shall be BLUE.

2.7 LED LIGHTING

- A. Lighting fixtures with LED light sources shall meet the following fixture and light source requirements:
- LED Color Temperature - Cool White (CW), 5800K nom., CRI > 70
  - Line Voltage - Universal Voltage 120-277 volts
  - Governmental Standards - LM79 and LM80 Compliant
  - Expected Lamp Life - LED Life Rating (L70 B10) to be 60,000 hours to 100,000 hours; Defined as time of operation (in hours) to 30% lumen depreciation (i.e. 70% lumen maintenance), derived from Luminaire in-situ temperature measurement testing (i.e. LED chip package temperature (TS) measurement obtained with the LED chip package operating in given luminaire and in a given stabilized ambient environment) under UL1936 environments and directly correlated to LED package manufacturers IESNA LM-80-08 data. Predicted (L70 B10) Limits (@ 25 °C luminaire ambient operating environment): Greater than 60,000 hours @ 350mA Drive Current
  - Driver - Components must be fully encased in potting material for moisture resistance, and must comply with IEC and FCC standards
  - Surge Protection - Surge protection must be provided including separate sure protection built into electronic driver
  - Mechanical - Luminaire LED system components to be low copper aluminum, with high performance heat sink(s) designed specifically for LED luminaires. No active cooling features (Fans, etc.). Luminaire configuration must allow for modular upgradability and/or field repair of all electrical components (i.e. LED modules, Driver(s), etc.). Drivers and vertical light bars must be all mounted to a twist-lock tool-less assembly for ease of installation and trouble-shooting.
  - Drivers shall be provided with a minimum warranty of 5 years.

PART 3.0 EXECUTION

3.1 WIRING - GENERAL

- A. Unless otherwise specified, all wiring shall be installed in conduit. No wire shall be smaller than No. 12 unless noted otherwise. Wire for each branch circuit shall be of single size and type from the branch circuit protective device the last outlet of the circuit. BX wiring shall not be allowed.

3.2 CONDUIT - MATERIALS AND METHODS

- A. Conduit shall be installed as per NEC and NEMA regulations and the manufacturer's recommendations. Electrical Metallic Tubing shall be used for feeders, branch circuit and communications and control wiring. In places where EMT is permitted, 1/2" through 2" sizes shall be the only sizes permitted. Fittings for EMT shall be the compression ring type fittings. Communications wiring may be installed without conduits above accessible ceilings.

3.3 MOUNTING HEIGHTS

- A. Unless otherwise noted on the drawings or required by the Architect, the following mounting heights shall apply: Toggle Switches - 4'-0"; Receptacles - 1'-6"; Communication Outlets - 1'-6" (48" for wall phone).

3.4 COMMUNICATIONS WIRING INSTALLATION

- A. Unless otherwise specified, all communications systems shall be permanently installed and connected to the wiring system. The systems must be installed according to manufacturer standards and recommendations. Wiring installation shall be tested after completion of installation. Test results and as-built documents will be provided to architect in both hard copy and electronic copy, furnished on a CD.
- B. Wiring map/as built documents showing voice and data outlets, device numbers, room locations, and termination locations will be displayed in each wiring closet.
- C. Wireless drop wiring shall be punched down on a separate punch down block at the end of the data punch down blocks. The wireless punch down block shall be a different color.
- D. Voice and data wiring routed above accessible ceilings shall be supported on J-hooks, and shall be loose bundled using Velcro wraps. Voice and data wire bundles shall not include power wiring or wiring for other low voltage systems (fire alarm, intercom, security, CCTV, etc.).
- E. COMMUNICATIONS SYSTEM CABLES ROUTED EXPOSED ABOVE CEILINGS SHALL BE PLENUM RATED.

3.5 LIGHTING INSTALLATION

- A. Unless otherwise specified, lighting fixtures shall be permanently installed and connected to the wiring system. The Contractor shall support each fixture, independently from the building structure. Ceiling framing members shall not be used to support fixtures except in specified areas where ceiling supports for this purpose have been specified elsewhere in these specifications. Each fixture shall have at least two fixture supports. Flexible conduit used for fixture whips shall be at least twelve (12) inches, but not more than 48 inches long.

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400 NE M State Route 291  
Lee's Summit, Missouri 64086



PROJECT NO: 33-006-22  
PHASE: Final Dev. Submittal  
DATE: 26 July, 2024  
PROJ. ARCHITECT: MRD

ELECTRICAL  
SPECIFICATIONS

SHEET NO.

E4.01

OF



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Scales as stated hereon are valid on the original drawing only.

These plans were prepared in this office under our personal supervision, and to the best of our knowledge comply with state and local codes. Will generally administer construction.

By: *Matthew Sargent*

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